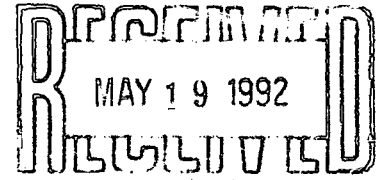


Golder Associates Inc.

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NORTHEAST DISTRICT



DER - JACKSONVILLE

REPORT ON

1214294

MONITORING WELL INSTALLATION

TRAIL RIDGE LANDFILL

JACKSONVILLE, FLORIDA

33628

Submitted to:

Trail Ridge Landfill, Inc.
500 Cypress Creek Road, West
Suite 300
Fort Lauderdale, Florida 33309

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May 1992

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Golder Associates Inc.

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May 15, 1992

923-3350

Trail Ridge Landfill, Inc.
500 Cypress Creek Road, West
Suite 300
Fort Lauderdale, FL 33309

Attn: Mr. Scott McCallister

RE: REPORT ON
MONITORING WELL INSTALLATION
TRAIL RIDGE LANDFILL
JACKSONVILLE, FLORIDA

Gentlemen:

Golder Associates Inc. is pleased to submit the report on Monitoring Well Installation for Trail Ridge Landfill, Jacksonville, Florida . This report has been prepared in partial fulfillment of Specific Condition Number 38 of Permit Number SC16-184444, issued by the Florida Department of Environmental Regulation.

Golder Associates Inc. appreciates the opportunity to work on this project. Please feel free to call if you have any questions or comments.

Very truly yours,

GOLDER ASSOCIATES INC.

Kath B. Karably for
Donald J. Miller, P.Eng.
Associate

DJM/grd
923-3350.MAY/#1/grd

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1.0 INTRODUCTION

1.1 Background

Trail Ridge Landfill, Inc. retained Golder Associates Inc. (Golder Associates) to complete the groundwater and monitoring permit requirements as stated in Specific Condition Number 38 of the Florida Department of Environmental Regulation (FDER) Permit Number SC16-184444. The permit was issued to Trail Ridge Landfill, Inc. on December 24, 1991.

The Trail Ridge Landfill site is located in west Duval County, Florida, about six miles southwest of Baldwin, Florida and about two miles northwest of Maxville, Florida (Figure 1). Present site access is from U.S. 301, approximately one mile north of SR 228 (Normandy Boulevard). The land surrounding the site on all four sides is owned by Gilman Timberland and Land Development Company and is used for silva culture.

1.2 Previous Investigations

A preliminary (Phase I) hydrogeologic investigation was conducted by WMNA in the summer of 1989. The Phase I investigation included the review of pertinent literature and the collection of site-specific hydrogeologic data.

Five borings were drilled by Ellis & Associates, Inc. at five different locations (B-1 through B-5). Boring B-1 was drilled to a total depth of 155 feet and the other four to depths ranging from 55 to 65 feet. Piezometers were installed to a depth of 15 feet in each borehole. Boring logs for the five borings completed by Ellis & Associates, Inc., are included as Appendix A-1.

A Phase II hydrogeological investigation was conducted by Golder Associates in 1990. The scope of the Phase II hydrogeological investigation included:

- a desk study to define regional geology and hydrogeology; and
- a field investigation to provide site-specific data on engineering soil properties, site stratigraphy, and hydraulic characteristics of the upper geologic units.

A total of 25 monitoring wells and six piezometers were installed at 15 separate locations during the Phase II hydrogeological investigations. Monitoring wells were typically installed in clusters of two or three. The shallow wells or piezometers were generally completed to a depth of 25 feet, and the intermediate wells or piezometers were completed to a depth of approximately 60 feet. Deep monitoring wells or piezometers were completed at a range in depth from 112 feet to 150 feet. Soil boring logs and the well construction logs for the Phase II hydrogeological study are presented in Appendix A-2 and Appendix B-1, respectively. Monitoring well/piezometer construction details installed during previous investigations are in Table 1. Some of the results of the Phase II hydrogeologic investigation are presented as discussions concerning the site hydrogeology in the next section.

1.3 Scope of Current Project

Specific Condition 38 to FDER Permit Number SC16-184444, required the installation of monitoring wells for the purpose of monitoring Phase I of the landfill operation. In addition, the installation of certain other wells proposed for the monitoring of subsequent phases of the landfill operation was required to monitor water levels at the site. The scope of this current project was the installation of these wells to satisfy the permit.

2.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

2.1 Regional Geology Overview

The site is located within the western portion of Duval County. The uppermost regional geologic units in this area consist of three sedimentary deposits; undifferentiated post-Hawthorn, the Hawthorn Group, and the Floridan Limestone Aquifer Units. These sedimentary units dip eastward at approximately 4 to 8 feet per mile.

The undifferentiated post-Hawthorn sediments are Holocene, Pleistocene, Pliocene, and upper Miocene in age. The Holocene and Pleistocene sediments consist of fine to medium grained unconsolidated quartz sands with varying amounts of silt and clay. These units were deposited on marine terraces and beach ridges. The Pliocene and upper Miocene sediments consist of sand, shell, calcareous clays, and soft friable limestone and were deposited in a shallow water environment. The undifferentiated post-Hawthorn sediments vary in thickness from less than 10 feet along the coast to over 100 feet in western Duval County.

Unconformably underlying the surficial sediment is the Hawthorn Group of early to middle Miocene age. These sediments consist of sandy clays and clayey sands with layers of phosphatic sands, limestone and dolomite. The phosphatic sands are a distinguishing characteristic that is not seen in the overlying post-Hawthorn sediments. The Hawthorn Group is subdivided into four formations; Statenville Formation, the Coosawhatchee Formation, the Marks Head Formation, and the Penny Farms Formation.

The units of the Floridan Aquifer unconformably underlie the Hawthorn Group. The geologic units that comprise the Floridan Aquifer are; the Ocala Group, the Avon Park Limestone, the Lake City Limestone and the Oldsmar Limestone. These four units consist mainly of massive limestone and dolomite.

2.2 Regional Hydrogeology Overview

The regional hydrogeologic system in northeast Florida is generally described in terms of a three-unit system. The three units are: the Surficial Aquifer system, the Upper Confining Unit, and the Floridan Aquifer system.

The Surficial Aquifer is comprised of two hydrogeologic zones, the Water Table Zone and the Rock Aquifer. These hydrogeologic zones correspond to the geologic post-Hawthorn sediments. The Water Table Zone consists of fine to medium grained sands and is principally recharged directly from precipitation. Discharge from the Water Table Zone is from evapotranspiration, pumping and seepage into surface water bodies. The Rock Aquifer is the principal water-bearing zone of the Surficial Aquifer system in Duval County, and consists of a permeable limestone that grades into a medium to coarse sand and shell deposit. The Rock Aquifer is located at the bottom of the post-Hawthorn sediments.

The potentiometric surface for the Surficial Aquifer system is generally less than 15 feet below ground surface. The general trend of groundwater flow is towards the major discharge areas; -the St. Johns River and the Atlantic Ocean.

The Hawthorn Group acts as a confining layer (Upper Confining Unit) to the Floridan Aquifer system. The clayey sands and sandy clays act as an aquiclude and greatly inhibit the flow of groundwater from the Surficial Aquifer system to the lower Floridan Aquifer system.

The Floridan Aquifer system is the major source of potable water in northeast Florida. The Floridan Aquifer system is approximately 335 feet below Mean Sea Level (MSL) and is estimated to be between 1,000 to 1,800 feet thick in western Duval County.

Recharge of the Floridan Aquifer system is in western Putnam County, southwestern Clay County, eastern Alachua County, and Bradford County. The Upper Confining unit in these areas is usually thin or absent and allows downward recharge from the Surficial Aquifer system. An average estimated transmissivity for the upper permeable zone of the Floridan Aquifer system in Duval County is on the order of 8×10^4 ft²/day.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

3.1 Site Geology

The field drilling program identified three distinct units on site. Two of these units, the Upper Sand Unit and the Clay Unit, were within the undifferentiated post-Hawthorn sediments. The third unit, the Marl Unit, formed the upper boundary of the Hawthorn Group. Each of these units is discussed in greater detail below.

3.1.1 Upper Sand Unit

The Upper Sand Unit ranged in depth across the site, from about 110 feet below ground surface (bgs) on the east margin and to about 130 feet bgs on the west margin. The relatively uninterrupted sequence of sands ranged in color from tan to dark brown. Although the unit was primarily a poorly graded fine sand, there were several well graded fine to coarse sand layers that, if present, generally appear in the middle portion of the unit 45 to 65 feet bgs. Several silty sand layers were encountered, the most common of which is a black "hardpan". These silty sand layers were typically less than ten feet thick and were found only in the upper 30 feet of the sand unit.

3.1.2 Clay Unit

A thin silty clay (Clay Unit) lies beneath the Upper Sand Unit, and ranges in thickness from one to five feet. The Clay Unit varied in color from blue-gray to black, to olive, and graded downward from a silty clay with little to some fine sand to a silty clay with trace fine sand. The Clay Unit was found in all the deep borings drilled during the well installation program.

3.1.3 Marl Unit

The top of the Hawthorn Group is a marl which is a variously colored, calcareous, fine to medium sand and shell fragments, with sand-sized phosphate grains. At the site, this marl was tan in color and was found at depths ranging from 109 feet bgs at B-11D to 131.5 feet bgs at B-31D. Several boreholes had thin (1-5 feet) layers of partially cemented shell fragments and fine to medium sand below the clay unit. Recent borings showed that these thin partially cemented shell layers are discontinuous and, when present, interbedded with the marl.

4.0 DRILLING AND WELL INSTALLATION

4.1 Objective and Scope

The objective of the field program was to complete the installation of the groundwater monitoring system as required by FDER Permit Number SC16-184444. The field investigation program consisted of:

- the drilling and installation of 32 monitoring wells and 4 piezometers;
- development of the monitoring wells and piezometers;
- hydraulic conductivity testing in each well and piezometer; and
- weekly groundwater level measurements in each well and piezometer.

Details of the field program are discussed below.

4.2 Drilling and Soil Sampling Methods

Drilling began on January 7, 1992, with two drill rigs operated by Law Engineering and was completed on March, 6 1992. Golder Associates' personnel were present to monitor the well or piezometer installation and to prepare the lithologic descriptions at each borehole.

A total of 36 borings were drilled (Figure 2) to determine lithologic information and to provide for monitoring well or piezometer installations. All drilling was performed using either mud rotary or hollow stem auger drilling techniques. Soil samples were collected ahead of the mud rotary drilling with a split spoon sampler. Piezometers or monitoring wells were installed in the sampled boreholes and in adjacent unsampled boreholes.

Generally, the boreholes were drilled and sampled continuously to 60 feet below ground surface. Below 60 feet, the boreholes were sampled every five feet to the desired borehole termination depth (140 feet or less). The boreholes were sampled using a 2-inch diameter split spoon sampler driven ahead of the drill bit using a 30-inch fall of a 140-pound hammer (ASTM D 1586). Golder Associates' personnel logged the soil samples and recorded the standard penetration test (SPT) values. The soil borehole logs are presented in Appendix A-3.

4.3 Monitoring Well and Piezometer Installation

After the borehole was logged and the piezometer/well depth determined, the borehole was reamed to a nominal 6 inches in diameter (10 inches for shallow wells) for monitoring well or piezometer installation.

Monitoring wells/piezometers were generally installed either in clusters of three wells per each location, or as a single shallow monitoring well. Well clusters were completed in the surficial sand aquifer; one well generally at a depth of less than 20 feet (designated the shallow well), another well at a depth of approximately 60 feet (designated the intermediate well), and the third well at a range in depth from 100 feet to 130 feet (designated the deep well). The depth of the shallow well was selected to bracket the water table with the screen interval. The depth of the intermediate well was selected to coincide with a more coarse sand and fine gravel layer. The deep well was set just above the sand and clay/marl contact. Generally, a shallow well was installed between well cluster locations (Figure 2).

The monitoring wells were constructed of two-inch diameter, Schedule 40, flush-threaded, PVC riser and screen. The screen sections were machine slotted with a slot width of 0.010-inch (#10 slot). The screen lengths were 15 feet for the shallow wells and 5 feet for the intermediate and deep wells. After setting the well-pipe, the drilling mud was washed out of the borehole and the filter pack and bentonite pellets placed. The filter pack consisted of graded 20-30 silica sand for intermediate and deep wells, and graded 30-40 silica sand was used for the shallow wells. These filter pack grain sizes were selected based on the grain size distribution of the formation. The filter pack was placed around the screen section, and extended about two feet above the top of the screen. Approximately two to three feet of one-half inch diameter bentonite pellets were then placed on top of the filter sand. The remaining annulus was then tremie-grouted from the bottom upwards using a thick bentonite slurry (about 1.5 pounds of bentonite per gallon of water). The top of the well was completed by securing a six inch diameter locking aluminum protective casing in place with concrete.

Shallow wells were designed to bracket the water table, and in many locations, the water table was less than three feet bgs. At such locations, wells were set at 16.5 feet bgs, with the top of the screen at 1.5 feet bgs. The filter pack was placed from 16.5 to 1.0 feet bgs, and the remaining foot of annulus space was filled with saturated Naturalgel bentonite powder as the seal.

At five locations, B-2S, B-3S, B-7S, B-11S, and B-12S, existing shallow wells were replaced. These wells were replaced to satisfy the FDER permit condition that new and existing shallow monitoring wells be constructed such that their screened interval bracket the water table, and extend a minimum of approximately five feet below the water table. New wells were installed in unsampled boreholes made by hollow stem auger drilling.

Two well clusters, B-13 and B-14, were relocated less than one hundred feet west from their initial locations. These wells were relocated at the request of FDER so that they would be closer to the edge of waste. At the first location, the intermediate borehole, B-13IR, was sampled continuously to sixty feet. Shallow well B-13SR was installed in an adjacent unsampled boring. The stratigraphies of the original B-13 and the newly installed B-13R clusters matched so closely that the boring for B-14IR was sampled on five foot centers. B-14SR was installed in an adjacent unsampled borehole.

The monitoring well and piezometer system installed at the site includes 32 monitoring wells, two deep piezometers, and two intermediate piezometers as shown on Figure 2. Details concerning the construction of wells and piezometers are presented in Table 1. Monitoring Well and Piezometer Construction Logs, which provide more detailed information concerning the construction of each well or piezometer, are presented in Appendix B-2. A summary of the well construction information requested in the FDER permit is provided in Appendix B-3.

4.4 Laboratory Soil Testing

Representative soil samples from the screened intervals, identified by field borehole logging, were submitted for grain size distribution laboratory testing. Wet sieve analyses (ASTM Method D 422-63) were performed on 29 samples. The grain size distribution curves from these analyses are presented in Appendix C. In addition, samples of materials used in drilling and well installation (powdered bentonite clay, bentonite pellets, and filter pack sand) were collected and stored on site.

4.5 Decontamination

Decontamination activities for drilling equipment and well materials occurred on the north side of the proposed landfill site. All drilling equipment was decontaminated on arrival at the site and between well locations. All well materials were decontaminated before they were used in any well installation.

Decontamination procedures consisted of washing with laboratory grade detergent (Alconox) and steam cleaning. Water for the steam cleaner came from several ponds on the site. The water was first pumped into the tank of a water truck prior to its use for the steam cleaner. All equipment placed in the well after installation (e.g., PVC bailers, measuring tapes, water level indicators) were decontaminated as above and triple rinsed with distilled water.

4.6 Well Development

Each monitoring well and piezometer was developed following installation to remove any remaining drilling fluids and to enhance the communication of the well screen with the formation. Well and piezometer development began during the drilling phase and concluded one day after the last well was installed. Two different methods were used to develop the wells and piezometers. A centrifugal pump was used on the shallow and intermediate wells (pumping method), and the deep wells were evacuated using nitrogen (gas lift method).

The pumping method consisted of lowering a 1-inch diameter PVC pipe into the well, connecting the pipe to the pump, and pumping until the water became visibly clear (not possible in all wells due to the natural organic coloring of the water) and the indicator parameters: pH, specific conductance, and temperature, stabilized. To facilitate screen development, the intake of the PVC pipe was incrementally lowered from the top of the screen to the bottom of the well. In addition, surging the PVC pipe was also used to help with development. Generally, if the hydraulic conductivity was sufficiently high, each well was pumped for several hours, removing more than 1000 gallons of water. A minimum of five well volumes were developed from each monitoring well and piezometer.

The gas lift method consisted of placing a 1-inch diameter PVC pipe (with foot valve) down the well to serve as an eductor pipe, placing a length of small diameter polyethylene tubing down the eductor pipe and pressurizing it with nitrogen gas. When water became visibly clear, pH, specific conductance, and temperature measurements were taken at regular intervals. Development continued until these parameters stabilized. As discussed above, incremental lowering and surging of the educator pipe was also used to facilitate development. A minimum of five well volumes were developed from each deep monitoring well and piezometer.

Development data from both methodologies are presented in Appendix D, and are summarized in Table 2.

4.7 Hydraulic Conductivity Testing

In order to obtain an estimate of in-situ hydraulic conductivity values of the various geologic units present on site, rising head tests were performed on nearly all the wells and piezometers as listed in Table 3.

Drawdown for the rising head tests was accomplished by using a centrifugal pump attached to a tremie pipe in the well. After pumping for about fifteen minutes, the tremie pipe was removed and recovery was measured using a SINCO electric water level indicator and engineer's rule, recording time versus water level. The water level in the well was monitored until it returned to approximately 80 percent of static level.

The rising head test data was analyzed to determine hydraulic conductivity values using two methods, one by Hvorslev, and the other by Bouwer and Rice. The Hvorslev analysis was performed on the rising head tests for the intermediate and deep monitoring wells/piezometers which had completely saturated screen sections. The Bouwer and Rice analysis was performed on the rising head tests for the shallow monitoring wells (i.e., B-11SR through B-30S) because groundwater levels in the shallow wells were within the screen interval. The Bouwer and Rice method takes into account the length and volume of the dewatered sandpack, whereas the Hvorslev method does not. Hydraulic conductivity results are summarized in Table 3 and the data are presented in Appendix E.

4.8 Water Level Measurements and Surveying

Water level data have generally been collected on weekly intervals since January 7, 1992. A Sinco Electric Water Level Indicator and an engineer's rule were used to collect water level data to the nearest 0.01 feet. These data are tabulated in Table 4.

Sunshine State Surveyors, Inc., a licensed surveyor in the State of Florida, surveyed all wells after installation. This survey includes well location information (Northing and Easting), top of well elevations to the nearest 0.01 feet, and ground surface elevation to the nearest 0.1 foot. Survey elevations are shown on Table 1. State plane and locate coordinates of the wells are shown in Appendix F.


4.9 Well Abandonment

Except for piezometers B-1, B-6S, and B-6I, wells or piezometers not specifically required under the permit were plugged and abandoned in accordance with FAC 17-21-10(4) and St. Johns River Water Management District Rule 40C3.531. Piezometers B-1, B-6S, and B-6I were not abandoned because their locations provide useful water level data. A request for an exemption for abandoning wells B-1, B-6S and B-6I was made and received. Information pertaining to the abandonment of these wells and piezometers is provided in Appendix G.

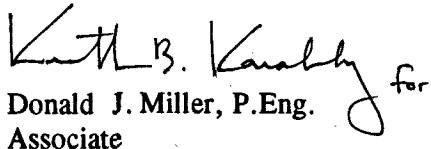
5.0 SUMMARY

The monitoring system required by Specific Condition Number 38 of Permit Number SC16-184444 has been installed in accordance with the permit. A total of 32 monitoring wells and four piezometers were installed. In addition, other wells and piezometers not required as part of the groundwater monitoring system were plugged and abandoned in accordance with this permit. The location of all monitoring wells is shown on Figure 2. This information is also presented on a survey drawing in Appendix F. Information pertaining to the construction of the wells is included on Table 1, and again in Appendix B-3.

GOLDER ASSOCIATES INC.



for James M. Frere, P.G.
Project Hydrogeologist



Donald J. Miller, P.Eng.
Associate

JMF/DJM:hw/grd

923-3350.MAY/#1/grd

TABLE 1
WELL CONSTRUCTION SUMMARY
 (Page 1 of 2)

WELL #	GROUND SURFACE ELEVATION (FT. MSL)	TOP OF RISER ELEVATION (FT. MSL)	BOTTOM OF HOLE (FT. BGS)	STICK-UP (FT)	SCREENED INTERVAL (FT. BGS)	TOP OF FILTER PACK (FT. BGS)	TOP OF BENTONITE PELLETS (FT. BGS)
B-1S	140.7	143.12	15.0	2.42	9.7-15.0	9.5	6.7
B-2S *	143.8	145.98	15.0	2.18	9.7-15.0	7.7	6.2
B-2SR	144.1	146.64	17.5	2.54	2.5-17.5	2.0	0.0
B-2I	143.8	145.69	59.8	1.89	54.3-59.8	52.3	47.5
B-3S *	151.0	152.49	11.0	1.49	5.7-11.0	5.0	3.0
B-3SR	151.5	153.48	18.0	1.98	3.0-18.0	2.5	0.0
B-3I	151.0	151.86	60.0	0.86	54.7-60.0	53.3	51.0
B-5I *	130.5	132.27	60.0	1.77	54.5-60.0	53.5	50.5
B-5D *	130.5	132.24	150.2	1.74	144.8-150.2	143.4	142.5
B-6S	97.5	99.97	28.0	2.47	17.7-28.0	15.5	12.5
B-6I	97.5	99.67	60.0	2.17	51.7-57.0	50.3	46.0
B-7S *	119.7	121.97	28.1	2.27	17.8-28.1	15.0	12.0
B-7SR	120.6	123.29	16.5	2.69	1.5-16.5	1.0	0.0
B-7I	119.7	121.52	63.3	1.82	58.0-63.3	56.8	51.8
B-7D	119.7	121.63	114.7	1.93	109.7-114.7	108.2	105.0
B-8S	123.2	125.33	15.0	2.13	9.7-15.0	8.0	6.0
B-8I	123.2	125.42	60.7	2.22	55.0-60.5	53.0	50.0
B-8D	123.2	125.27	113.0	2.07	107.5-113.0	105.5	92.0
B-9S	145.8	148.17	15.0	2.37	9.7-15.0	8.0	5.6
B-9I	145.8	147.82	60.0	2.02	54.5-60.0	48.7	46.3
B-10S	121.5	123.54	22.0	2.04	16.7-22.0	15.5	13.5
B-10I	121.5	123.4	52.0	1.9	46.5-52.0	45.0	42.0
B-11S *	118.4	120.27	15.0	1.87	9.5-15.0	8.5	6.5
B-11SR	118.5	120.81	18.0	2.31	3.0-18.0	1.0	0.0
B-11I	118.4	120.39	60.0	1.99	54.5-60.0	53.5	48.5
B-11D *	118.4	120.46	150.0	2.06	144.6-150.0	136.0	134.0
B-12S *	122.9	124.79	15.0	1.89	4.7-15.0	4.0	2.0
B-12SR	122.9	124.63	25.0	1.73	10.0-25.0	8.0	5.0
B-12I	122.9	124.72	69.6	1.82	64.1-69.6	61.0	57.5
B-12D	122.9	124.78	112.8	1.88	107.4-112.8	105.0	102.5
B-13S *	122.1	123.95	15.0	1.85	4.7-15.0	4.0	2.0
B-13I *	122.1	124.21	60.0	2.11	54.5-60.0	51.0	49.0
B-13SR	124.1	126.06	24.6	1.96	9.6-24.6	8.0	5.5
B-13IR	124.1	125.98	58.6	1.88	53.6-58.6	51.0	48.0

* - Denotes decommissioned wells

TABLE 1
WELL CONSTRUCTION SUMMARY
 (Page 2 of 2)

WELL #	GROUND SURFACE ELEVATION (FT. MSL)	TOP OF RISER ELEVATION (FT. MSL)	BOTTOM OF HOLE (FT. BGS)	STICK-UP (FT)	SCREENED INTERVAL (FT. BGS)	TOP OF FILTER PACK (FT. BGS)	TOP OF BENTONITE PELLETS (FT. BGS)
B-14S *	120.1	122.74	15.0	2.64	9.7-15.0	8.0	6.0
B-14I *	120.1	122.35	60.0	2.25	54.5-60.0	53.2	51.0
B-14D *	120.1	122.15	112.0	2.05	106.7-112.0	105.0	102.8
B-14SR	123.4	126.05	16.5	2.65	1.5-16.5	1.0	0.0
B-14IR	123.4	125.92	60.0	2.52	55.0-60.0	53.0	50.0
B-14DR	123.4	125.87	106.0	2.47	101.0-106.0	99.0	96.0
B-16S	141.7	144.01	17.5	2.31	2.5-17.5	2.0	0.5
B-17S	136.1	138.31	16.1	2.21	1.1-16.1	0.5	0.0
B-17I	136.2	138.43	57.9	2.23	52.9-57.9	51.0	48.0
B-17D	136.0	138.52	124.8	2.52	119.8-124.8	118.0	115.0
B-18S	131.1	134.09	16.5	2.99	1.5-16.5	1.0	0.0
B-19S	125.7	127.38	18.0	1.68	3.0-18.0	1.5	0.0
B-19I	125.5	127.94	56.5	2.44	51.5-56.5	50.0	47.0
B-19D	125.5	128.23	109.0	2.73	104.0-109.0	102.0	99.0
B-20S	118.9	121.01	18.0	2.11	3.0-18.0	2.5	0.0
B-21S	121.0	122.84	18.0	1.84	3.0-18.0	2.5	0.0
B-22S *	124.4	126.13	22.4	1.73	7.4-22.4	5.5	3.5
B-22S-R	124.5	126.97	25.0	2.47	10.0-25.0	8.0	5.0
B-23S	122.5	125.34	25.0	2.84	10.0-25.0	8.0	0.0
B-24S	122.2	126.04	16.5	3.84	1.5-16.5	1.0	0.0
B-25S	122.1	125.22	17.2	3.12	2.2-17.2	2.2	0.0
B-25I	122.1	124.03	58.3	1.93	53.3-58.3	51.0	48.0
B-25D	122.1	124.64	106.0	2.54	101.0-106.0	99.0	96.0
B-26S	124.4	126.55	16.5	2.15	1.5-16.5	1.0	0.0
B-27S	126.4	128.42	16.3	2.02	1.3-16.3	1.0	0.0
B-27I	126.5	128.63	60.1	2.13	55.1-60.1	53.0	50.0
B-27D	126.1	128.88	107.0	2.78	102.0-107.0	100.0	97.0
B-28S	131.4	133.73	17.0	2.33	2.0-17.0	1.5	0.0
B-29S	135.5	138.02	16.5	2.52	1.5-16.5	1.0	0.0
B-29I	135.4	138.08	60.0	2.68	55.0-60.0	53.0	50.0
B-29D	135.4	138.18	109.0	2.78	104.0-109.0	102.0	99.0
B-30S	140.2	142.52	16.5	2.32	1.5-16.5	1.0	0.0
B-31D	154.0	156.15	129.5	2.15	124.5-129.5	122.5	119.5

* - Denotes decommissioned wells

TABLE 2
DEVELOPMENT SUMMARY
TRAIL RIDGE LANDFILL
JACKSONVILLE, FLORIDA

WELL NO.	DATE	CUMULATIVE TIME (MIN)	pH	TEMP CELCIUS	COND μohms	CUMULATIVE AMOUNT (GAL)	TYPE OF PURGE
B-2S-R	01/16/92	95	4.74	19.3	40	225	CENTR. PUMP
B-3S-R	01/17/92	160	5.56	21.3	23	175	CENTR. PUMP
B-7S-R	01/31/92	74	4.59	19.0	55	740	CENTR. PUMP
B-11S-R	02/12/92	80	4.46	21.8	30	700	CENTR. PUMP
B-12S-R	01/31/92	115	4.69	24.3	60	360	CENTR. PUMP
B-13S-R	01/22/92	140	5.52	23.2	35	560	CENTR. PUMP
B-13I-R	01/22/92	250	5.23	22.4	29	675	CENTR. PUMP
B-14S-R	02/11/92	165	4.31	18.3	50	1650	CENTR. PUMP
B-14I-R	02/11/92	150	5.43	21.1	30	900	CENTR. PUMP
B-14D-R	02/11/92	62	6.76	20.2	141	225	COM. NITROGEN
B-16S	01/21/92	70	4.90	21.3	25	350	CENTR. PUMP
B-17S	01/17/92	120	5.26	21.2	21	300	CENTR. PUMP
B-17I	01/17/92	50	5.63	20.1	30	500	CENTR. PUMP
B-17D	02/09/92	125	6.28	20.1	99	195	COM. NITROGEN
B-18S	01/27/92	113	4.15	19.4	45	1100	CENTR. PUMP
B-19S	01/20/92	67	4.50	19.5	40	590	CENTR. PUMP
B-19I	01/21/92	100	5.24	19.5	30	450	CENTR. PUMP
B-19D	02/06/92	341	7.25	19.4	220	175	COM. NITROGEN
B-20S	03/05/92	54	4.78	20.3	51	730	CENTR. PUMP
B-21S	03/06/92	15	4.62	20.5	45	1100	CENTR. PUMP
B-22S	01/29/92	150	5.07	23.7	55	300	CENTR. PUMP
B-22S-R	03/06/92	190	4.58	22.6	61	760	CENTR. PUMP
B-23S	02/03/92	100	4.73	19.8	47	400	CENTR. PUMP
B-24S	02/08/92	190	4.19	18.9	50	1075	CENTR. PUMP
B-25S	02/11/92	125	4.46	19.0	39	1250	CENTR. PUMP
B-25I	02/10/92	165	5.73	20.0	45	1650	CENTR. PUMP
B-25D	02/10/92	70	7.08	18.9	210	190	COM. NITROGEN
B-26S	02/08/92	277	4.31	18.2	50	2096	CENTR. PUMP
B-27S	02/01/92	120	4.92	21.4	45	600	CENTR. PUMP
B-27I	02/01/92	110	5.79	20.6	65	575	CENTR. PUMP
B-27D	02/06/92	140	6.97	19.4	150	260	COM. NITROGEN
B-28S	01/28/92	75	5.52	20.2	-	525	CENTR. PUMP
B-29S	02/03/92	105	4.80	20.5	30	550	CENTR. PUMP
B-29I	02/05/92	122	5.22	22.0	30	1350	CENTR. PUMP
B-29D	02/07/92	142	6.38	19.2	101	185	COM. NITROGEN
B-30S	01/30/92	165	4.26	20.3	45	825	CENTR. PUMP
B-31D	01/28/92	275	7.12	19.7	340	100	COM. NITROGEN

NOTE: FINAL DEVELOPMENT READINGS FROM EACH WELL

TABLE 3
SUMMARY OF
HYDRAULIC CONDUCTIVITIES

WELL	HYDRAULIC CONDUCTIVITY (cm/s)	ANALYTICAL METHOD
B-1S	1.10E-02	B&R
B-2SR	N/D	-
B-2I	1.90E-02	H
B-3SR	N/D	-
B-3I	1.00E-03	H
B-6S	1.10E-03	B&R
B-6I	1.00E-03	H
B-7SR	N/D	-
B-7I	N/D	-
B-7D	N/D	-
B-8S	3.50E-03	B&R
B-8I	9.10E-03	H
B-8D	1.50E-05	H
B-9S	3.60E-03	B&R
B-9I	2.40E-04	H
B-10S	6.90E-04	B&R
B-10I	2.90E-03	H
B-11SR	1.23E-03	B&R
B-11I	1.10E-03	H
B-12SR	N/D	-
B-12I	1.90E-02	H
B-12D	1.60E-03	H
B-13SR	1.40E-04	B&R
B-13IR	5.55E-04	H
B-14SR	1.10E-03	B&R
B-14IR	1.21E-04	H
B-14DR	3.45E-04	H
B-16S	N/D	-
B-17S	1.82E-03	B&R
B-17I	5.68E-04	H
B-17D	4.40E-04	H
B-18S	1.17E-03	B&R
B-19S	3.29E-04	B&R
B-19I	2.35E-04	H
B-19D	3.41E-05	H
B-20S	7.49E-04	B&R
B-21S	2.49E-04	B&R
B-22SR	3.25E-04	B&R
B-23S	1.16E-03	B&R
B-24S	1.89E-03	B&R
B-25S	1.13E-03	B&R
B-25I	2.67E-04	H
B-25D	4.38E-04	H
B-26S	2.55E-03	B&R
B-27S	1.89E-04	B&R
B-27I	2.66E-04	H
B-27D	4.61E-04	H
B-28S	7.41E-04	B&R
B-29S	1.95E-03	B&R
B-29I	1.65E-03	H
B-29D	7.20E-04	H
B-30S	N/D	-
B-31D	3.62E-04	H

Notes: B&R - Bouwer and Rice, H - Hvorslev
S - Shallow well, I - Intermediate well, D - Deep well, R - Replacement well
N/D - No data

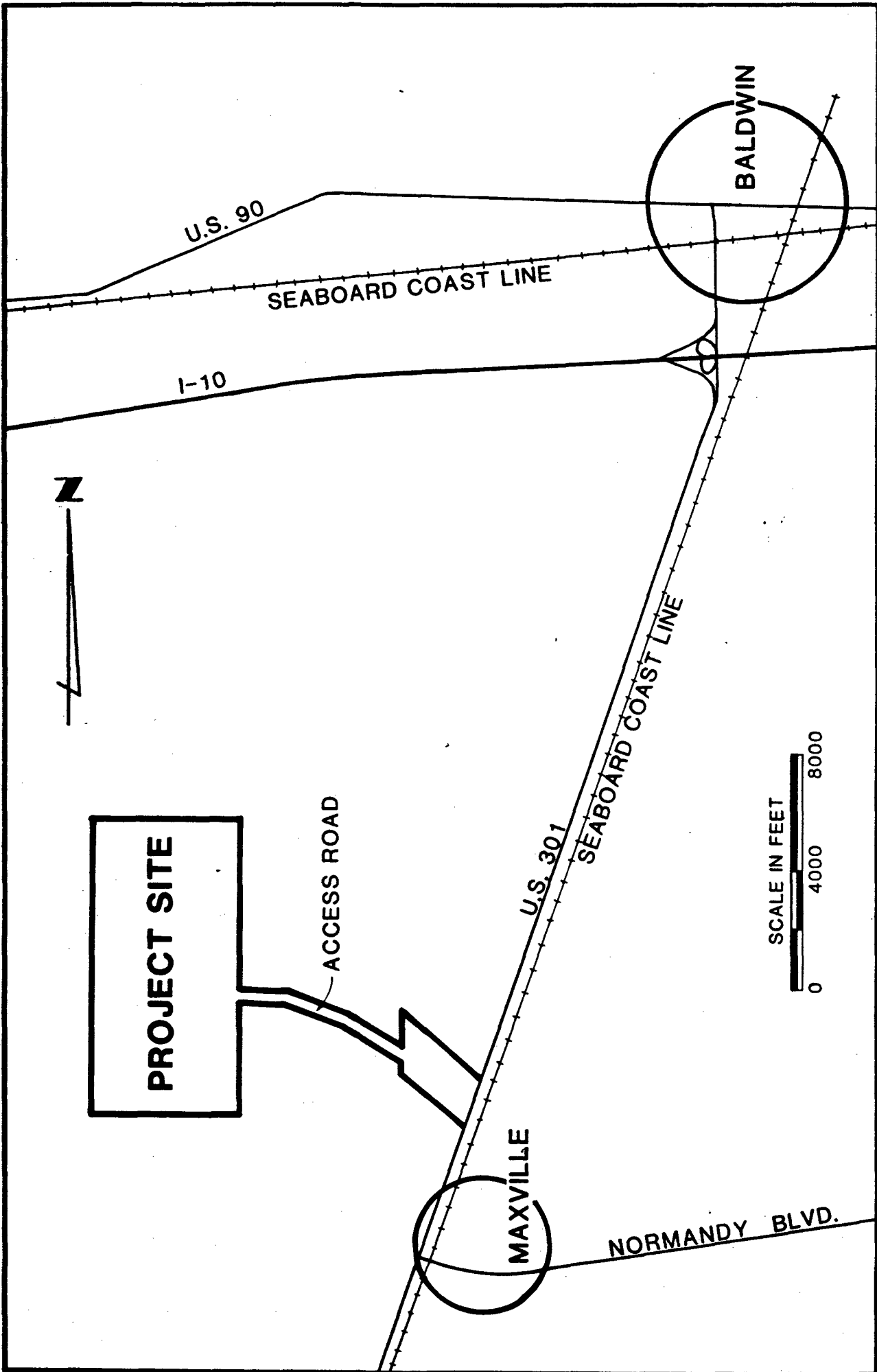
Trail Ridge Landfill
Water Level Data (Page 1 of 2)


Well	1/7/92		1/8/92		1/17/92		1/25/92		1/30/92		2/1/92		2/4/92		Well
	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	Water M. elev. (ft. BTOC)	Water elev. (ft. msf)	
B-1S	#N/A	136.85	6.27	136.85	5.24	137.88	4.49	138.63	4.74	138.38	4.81	138.21	4.97	138.15	B-1S
B-2SR	#N/A	#N/A	#N/A	#N/A	5.09	141.55	4.50	142.14	4.16	142.48	4.26	142.98	4.68	141.96	B-2SR
B-2I	6.78	138.95	6.81	138.92	6.00	139.73	5.58	140.15	5.42	140.31	5.44	140.29	5.67	140.08	B-2I
B-3SR	#N/A	#N/A	#N/A	#N/A	5.17	148.32	4.51	148.98	4.26	149.23	4.27	149.22	4.50	148.99	B-3SR
B-3I	11.77	140.73	11.79	140.71	11.00	141.50	10.55	141.95	10.42	142.08	10.36	142.14	10.54	141.98	B-3I
B-6S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4.34	95.66	3.83	96.07	3.97	96.03	4.18	95.82	B-6S
B-6I	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.18	98.49	#N/A	98.49	0.92	98.75	0.86	98.81	B-6I
B-7SR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4.10	119.19	3.80	119.39	3.99	119.30	B-7SR
B-7I	#N/A	#N/A	1.19	120.34	#N/A	#N/A	#N/A	121.03	1.49	119.71	1.82	119.71	2.08	119.45	B-7I
B-7D	#N/A	#N/A	0.00	121.65	#N/A	#N/A	0.00	121.65	0.00	121.65	0.00	121.65	0.00	121.65	B-7D
B-8S	#N/A	#N/A	6.43	118.90	#N/A	#N/A	4.53	120.80	4.19	121.14	4.42	120.91	4.53	120.80	B-8S
B-8I	#N/A	#N/A	6.80	118.62	#N/A	#N/A	5.43	119.99	5.28	120.14	5.58	119.84	5.67	119.75	B-8I
B-8D	#N/A	#N/A	5.72	119.55	#N/A	#N/A	4.61	120.68	4.55	120.72	4.83	120.44	5.05	120.22	B-8D
B-9S	6.53	141.64	6.63	141.54	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-9S
B-9I	7.86	139.96	8.04	139.78	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-9I
B-10S	#N/A	#N/A	5.16	118.38	#N/A	#N/A	3.83	119.71	3.74	119.80	4.03	119.51	4.11	119.43	B-10S
B-10I	#N/A	#N/A	5.84	117.96	#N/A	#N/A	4.88	118.71	4.56	118.84	4.86	118.54	4.98	118.41	B-10I
B-11SR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-11SR
B-11I	#N/A	#N/A	1.28	119.15	#N/A	#N/A	#N/A	118.58	3.56	118.87	3.59	118.84	4.28	118.14	B-11I
B-12SR	#N/A	#N/A	3.88	120.84	#N/A	#N/A	3.52	121.20	5.41	119.31	5.74	118.98	6.34	118.38	B-12I
B-12I	3.14	121.42	3.17	121.39	#N/A	#N/A	2.60	121.88	3.07	121.49	3.42	121.14	3.80	120.78	B-12D
B-13SR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9.02	117.04	17.00	109.08	20.49	105.57	14.49	111.57	B-13SR
B-13I	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8.80	117.18	16.26	109.72	19.50	106.48	14.56	111.42	B-13I
B-14S	5.09	117.55	5.17	117.57	#N/A	#N/A	4.68	118.08	#N/A	#N/A	3.83	118.91	4.14	118.80	B-14S
B-14I	2.38	119.97	2.38	119.97	#N/A	#N/A	2.08	120.28	#N/A	#N/A	4.34	118.01	4.88	117.47	B-14I
B-14D	1.27	120.88	1.30	120.85	#N/A	#N/A	0.85	121.30	#N/A	#N/A	1.80	120.35	2.23	119.82	B-14D
B-14SR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14SR
B-14IR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14IR
B-14DR	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14DR
B-16S	#N/A	#N/A	#N/A	#N/A	3.25	140.76	2.80	141.21	2.52	141.49	2.87	141.34	2.93	141.08	B-16S
B-17S	#N/A	#N/A	3.93	134.38	3.93	134.38	2.80	135.41	2.41	135.80	2.56	135.73	3.03	135.28	B-17S
B-17I	#N/A	#N/A	#N/A	#N/A	0.93	137.50	0.23	136.20	0.00	138.43	0.00	138.43	0.42	138.01	B-17I
B-17D	#N/A	#N/A	4.78	133.74	4.40	134.12	4.40	134.12	4.30	134.22	4.33	134.19	4.58	133.94	B-17D
B-18S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.86	131.13	2.44	131.65	2.76	131.33	2.84	131.25	B-18S
B-18I	#N/A	#N/A	4.78	122.60	4.78	122.60	2.81	124.57	2.30	125.08	2.47	124.91	2.45	124.83	B-18I
B-19I	#N/A	#N/A	4.95	122.99	4.71	123.23	4.71	123.23	5.38	122.86	5.42	122.82	5.76	122.18	B-19I
B-19D	#N/A	#N/A	3.21	125.02	#N/A	#N/A	4.38	123.85	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-19D
B-20S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-20S
B-21S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-21S
B-22S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	11.82	115.15	11.44	115.53	13.40	113.57	B-22S
B-23S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	9.72	115.82	10.24	115.10	#N/A	#N/A	B-23S
B-24S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-24S
B-25S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-25S
B-25D	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-25D
B-26S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-26S
B-27S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.70	125.72	2.91	125.51	3.42	125.00	B-27S
B-27D	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.41	126.22	2.65	125.98	2.83	125.80	B-27I
B-28S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12.90	120.83	3.73	130.00	3.78	128.69	B-28S
B-29S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.76	135.26	2.81	135.21	3.22	134.80	B-29S
B-29I	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.19	138.89	1.24	138.84	1.67	138.41	B-29I
B-29D	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.00	136.18	1.91	136.27	2.12	136.08	B-29D
B-30S	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.44	139.08	3.25	139.27	3.58	138.96	B-30S
B-31D	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	14.53	141.62	14.28	141.89	14.28	141.89	14.45	141.70	B-31D

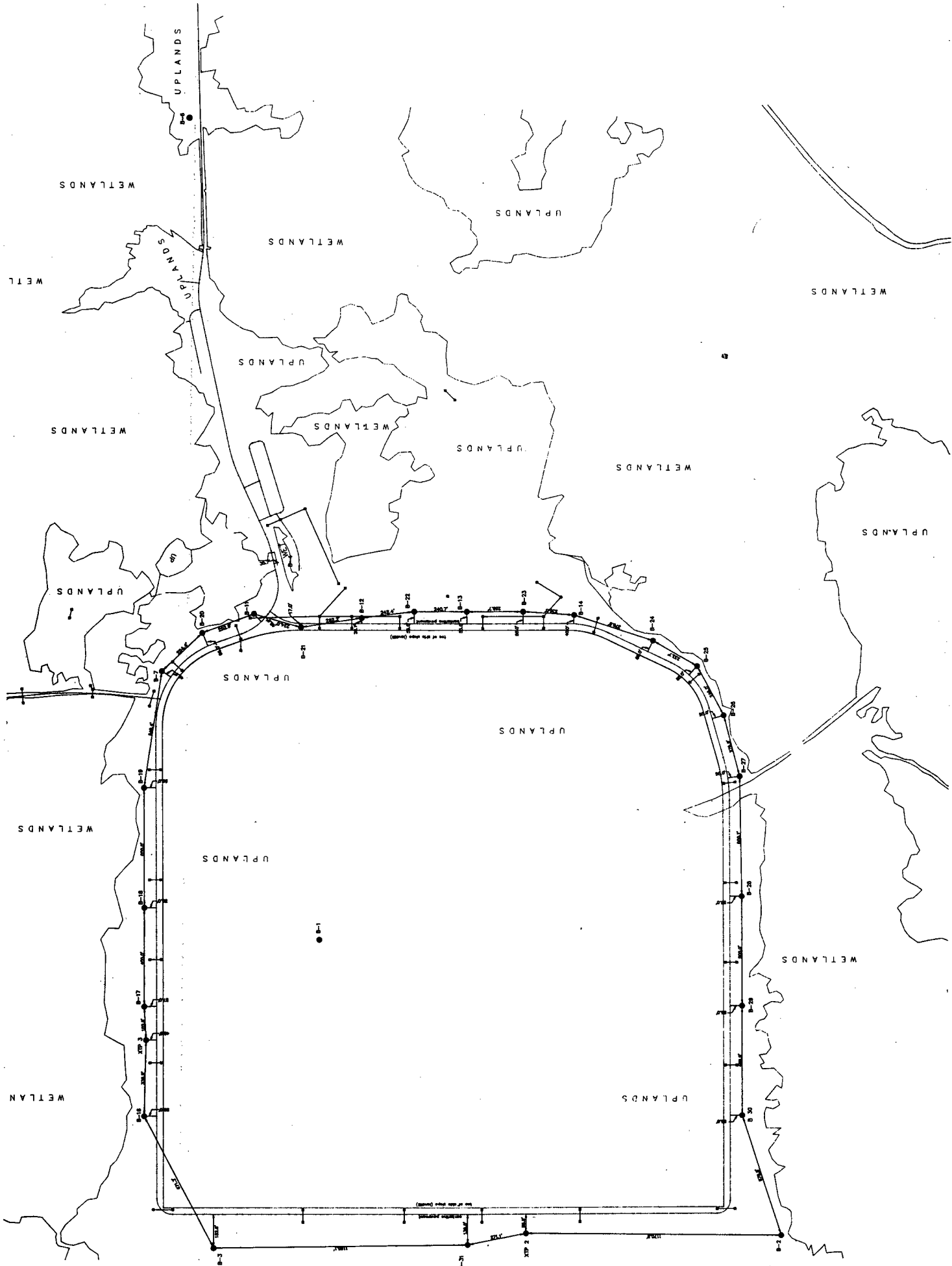
Trail Ridge Landfill
Water Level Data (Page 2 of 2)

Well	Date				Well								
	2/9/92	2/12/92	3/14/92	3/24/92		4/2/92	4/9/92						
Water M. (ft. BTOC)	Water elev. (ft. msl)	Water M. (ft. BTOC)	Water elev. (ft. msl)	Water M. (ft. BTOC)	Water elev. (ft. msl)	Water M. (ft. BTOC)	Water elev. (ft. msl)						
B-1S	5.11	138.01	5.12	138.00	#N/A	5.41	137.71	4.35	138.77	4.45	138.67	B-1S	
B-2SR	4.34	142.30	4.59	142.05	4.53	142.11	4.87	141.67	4.41	142.23	4.84	141.70	B-2SR
B-2I	5.50	140.23	5.65	140.08	5.92	140.17	5.92	139.81	5.50	140.23	5.92	139.81	B-2I
B-3SR	4.25	149.24	4.44	149.05	5.55	147.94	6.21	147.28	5.76	147.73	6.23	147.28	B-3SR
B-3I	10.38	142.12	10.54	141.96	10.54	141.96	10.93	141.57	10.37	142.13	10.80	141.70	B-3I
B-6S	3.84	96.16	4.00	96.00	3.78	96.24	4.24	95.76	3.80	96.20	4.32	95.68	B-6S
B-6I	0.78	98.69	0.78	98.69	0.43	99.24	0.75	96.92	0.51	98.16	0.83	98.74	B-6I
B-7SR	4.17	119.12	4.10	119.19	4.08	119.23	4.31	118.98	4.35	118.94	4.88	118.63	B-7SR
B-7I	2.19	119.34	2.00	119.53	1.33	120.20	1.93	119.60	1.69	119.84	2.41	119.12	B-7I
B-7D	0.00	121.65	0.00	121.65	0.00	121.65	0.00	121.65	0.00	121.65	0.00	121.65	B-7D
B-8S	5.00	120.33	4.83	120.50	3.90	121.43	4.48	120.87	3.84	121.69	4.38	120.95	B-8S
B-8I	5.47	119.95	5.42	120.00	5.41	120.01	5.79	119.63	5.38	120.04	5.32	120.10	B-8I
B-8D	4.80	120.47	4.91	120.36	4.61	120.66	4.98	120.29	4.59	120.68	5.05	120.22	B-8D
B-9S	#N/A	#N/A	#N/A	#N/A	4.95	143.22	5.37	142.80	4.51	143.66	4.88	143.19	B-9S
B-9I	#N/A	#N/A	#N/A	#N/A	6.51	141.31	6.80	140.92	6.77	141.55	6.72	141.10	B-9I
B-10S	3.86	119.68	3.98	119.56	3.80	119.74	4.18	119.36	3.77	118.77	4.20	119.34	B-10S
B-10I	4.76	118.64	4.55	118.85	4.63	118.77	4.97	118.43	4.58	118.92	5.02	118.38	B-10I
B-11SR	#N/A	#N/A	9.81	111.00	8.13	112.88	8.21	112.60	7.40	113.41	7.85	112.96	B-11SR
B-11I	4.42	116.01	4.16	116.27	2.20	118.23	2.91	117.52	2.77	117.86	3.88	118.57	B-11I
B-12SR	9.78	114.85	9.26	115.37	6.58	118.05	6.23	118.40	5.64	118.99	5.81	118.82	B-12SR
B-12I	6.48	118.24	6.03	118.89	5.07	119.65	5.87	118.85	5.70	118.92	6.72	118.00	B-12I
B-12D	4.05	120.51	4.00	120.56	3.60	120.96	3.93	120.63	3.70	120.88	4.24	120.32	B-12D
B-13SR	11.92	114.14	9.98	116.08	9.50	116.56	10.54	115.41	10.85	115.41	11.52	114.54	B-13SR
B-13I	15.17	110.61	15.08	110.90	16.70	109.28	17.18	108.80	17.12	108.88	17.50	108.48	B-13I
B-14S	3.79	118.95	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14S
B-14I	4.87	117.38	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14I
B-14D	2.44	119.71	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-14D
B-14SR	#N/A	#N/A	3.69	122.38	5.25	120.80	7.33	118.72	7.59	118.48	8.08	117.87	B-14SR
B-14IR	#N/A	#N/A	7.88	118.04	7.50	118.42	8.42	117.50	8.27	117.85	9.42	116.50	B-14IR
B-14DR	#N/A	#N/A	7.83	118.04	7.10	118.77	6.00	117.87	7.98	117.91	9.03	116.84	B-14DR
B-16S	2.60	141.41	2.87	141.14	3.91	140.10	4.25	139.76	3.90	140.11	4.17	139.84	B-16S
B-16I	2.61	135.70	3.13	135.18	3.46	134.85	3.61	134.18	3.61	134.18	4.58	133.73	B-16I
B-17I	0.26	138.17	0.41	138.02	0.33	138.10	0.75	137.68	0.28	138.14	0.87	137.76	B-17I
B-17D	#N/A	#N/A	4.44	134.08	4.25	134.27	4.68	133.83	4.24	134.28	4.70	133.82	B-17D
B-18S	2.87	131.22	3.11	130.98	5.30	128.79	6.11	127.88	6.13	127.88	6.42	127.67	B-18S
B-18I	2.87	124.71	2.63	124.75	3.34	124.04	4.05	123.33	4.00	123.38	4.39	122.99	B-18I
B-18S	4.75	123.19	4.83	123.31	4.23	123.71	4.73	123.21	4.48	123.46	5.02	122.92	B-18S
B-19D	5.07	123.16	4.94	123.29	#N/A	#N/A	#N/A	#N/A	4.74	123.49	5.27	122.96	B-19D
B-20S	#N/A	#N/A	#N/A	#N/A	4.10	118.91	5.47	115.54	3.88	117.13	4.51	116.50	B-20S
B-21S	#N/A	#N/A	#N/A	#N/A	7.91	114.93	7.85	114.99	7.49	115.35	8.02	114.82	B-21S
B-22S	12.74	114.23	#N/A	#N/A	9.22	117.75	9.28	117.69	8.88	118.09	10.36	116.61	B-22S
B-23S	#N/A	#N/A	8.08	117.26	9.15	116.19	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	B-23S
B-24S	#N/A	#N/A	4.67	121.37	3.40	122.84	4.11	121.93	3.91	122.13	4.57	121.47	B-24S
B-25S	3.31	121.91	4.47	120.75	3.72	121.50	4.42	120.80	4.00	121.22	4.64	120.58	B-25S
B-25I	#N/A	#N/A	3.05	120.98	2.65	121.38	3.32	120.71	3.07	120.98	3.88	120.15	B-25I
B-25D	#N/A	#N/A	3.62	121.02	3.12	121.52	3.56	121.08	3.56	121.08	4.39	120.25	B-25D
B-26S	3.49	123.06	3.68	122.87	3.71	122.84	4.23	122.32	3.84	122.71	4.42	122.13	B-26S
B-27S	3.24	125.16	3.25	125.17	2.88	125.54	3.30	125.12	2.86	125.56	3.33	125.09	B-27S
B-27I	2.69	125.94	2.63	126.00	2.35	126.29	2.82	125.81	2.47	126.16	3.02	125.61	B-27I
B-27D	3.19	125.69	3.13	125.75	2.77	126.11	3.22	125.66	2.87	126.01	3.42	125.46	B-27D
B-28S	3.50	130.23	3.66	130.07	3.55	130.18	3.93	129.80	3.64	130.08	4.07	129.66	B-28S
B-29S	2.86	135.16	3.11	134.91	3.10	134.92	3.56	134.46	3.07	134.95	3.64	134.38	B-29S
B-29I	1.28	136.82	1.40	136.68	1.27	136.81	1.85	136.43	1.19	136.89	1.59	136.49	B-29I
B-29D	1.50	136.68	1.62	136.56	1.45	136.73	1.80	136.38	1.35	136.83	1.75	136.43	B-29D
B-30S	3.30	139.22	3.55	138.97	3.44	139.08	3.63	138.89	3.19	139.33	3.60	138.82	B-30S
B-31D	14.24	141.91	14.35	141.80	14.21	141.94	14.61	141.54	14.06	142.09	14.48	141.67	B-31D

#N/A - denotes no data available

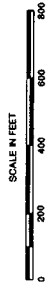


CLIENT/PROJECT	TRAIL RIDGE LANDFILL INC.		 Golder Associates Atlanta, Georgia	TITLE	SITE LOCATION MAP		
	DRAWN	SCA		CHECKED	RP	REVIEWED	RP
DATE	1/12/90	SCALE	AS SHOWN	JOB NO	923-3350	FILE NO	903-3010
						DWG. NO./REV. NO	20
						FIGURE	1



LEGEND

- MONITORING WELL/PIEZOMETER



REV.	DATE	DESCRIPTION	DR BY	APP BY

PROJECT NO. 023-3352.6
PROJECT: TRAIL RIDGE LANDFILL, INC.

SHEET TITLE: MONITORING WELL/PIEZOMETER LOCATION MAP

DATE: 02/11/09
DRAWN BY: JGA
CHECKED BY: JGA
DATE: 02/11/09
APP BY: JGA

SHEET NO. OF SHEETS: 2

 Golder Associates
Atlanta, Georgia

 Waste Management of North America

APPENDIX A
SOIL BORING LOGS

APPENDIX A-1

REPORT OF GEOTECHNICAL EXPLORATION

MAXVILLE SITE, JACKSONVILLE, FLORIDA

BY ELLIS & ASSOCIATES, INC.

OCTOBER 1989

PHASE II HYDROGEOLOGICAL INVESTIGATION



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B1
 Client Waste Management, England, Thims & Mille
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 1 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Boring Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O D Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
0		VERY LOOSE Light Brown to Light Gray Fine SAND with Trace of Roots	[Grid]									
1			[Grid]								4	
2			[Grid]									
3		MEDIUM COMPACT to LOOSE Dark Brown to Light Brown Slightly Silty Fine SAND	[Grid]									
4			[Grid]								17	
5		LOOSE Brown to Light Brown Slightly Silty Fine SAND	[Grid]									
6			[Grid]								8	
7			[Grid]								8	
8		MEDIUM COMPACT Brown Fine SAND	[Grid]									
9			[Grid]								9	
10			[Grid]									
11		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]									
12			[Grid]									
13			[Grid]									
14		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]									
15			[Grid]								17	
16			[Grid]									
17		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]									
18			[Grid]									
19			[Grid]									
20		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]									
21			[Grid]								18	

Remarks: *SAND



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Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B1
 Client Waste Management, England, Thims & Miller
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 2 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Log Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" OD Sampler with 140 lb hammer falling 30"										BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING	
2 0		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]										18	
1			[Grid]											
2			[Grid]											
3		VERY COMPACT Dark Gray Fine SAND	[Grid]										68	
4			[Grid]											
2 5			[Grid]											
6			[Grid]											
7		LOOSE Dark Brown Slightly Silty Fine SAND, Weakly Cemented	[Grid]										5	
8			[Grid]											
9			[Grid]											
3 0			[Grid]											
1			[Grid]											
2		VERY COMPACT Brown Fine to Medium SAND	[Grid]										53	
3			[Grid]											
4			[Grid]											
3 5			[Grid]											
6			[Grid]											
7			[Grid]											
8			[Grid]											
9			[Grid]											
4 0			[Grid]										50/6"	

Remarks:



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Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B1
 Client Waste Management, England, Thims & Mille
 Logging Location See Field Exploration Plan Date 9/28/89 Sheet 3 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Logging Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O D Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
0		VERY COMPACT Brown Fine to Medium SAND	[Grid]								50	6"
1			[Grid]								75	
2			[Grid]									
3			[Grid]									
4			[Grid]									
4.5			[Grid]								75	
5			[Grid]									
6			[Grid]									
7			[Grid]									
8			[Grid]									
9			[Grid]								75	
10			[Grid]									
11			[Grid]									
12			[Grid]									
13			[Grid]									
14			[Grid]									
15			[Grid]								50	6"
16			[Grid]									
17			[Grid]									
18			[Grid]									
19			[Grid]									
20			[Grid]								50	3"

Remarks:



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Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B1
 Client Waste Management, England, Thims & Mill
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 4 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Boring Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

SAMPLER NO	DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb. hammer falling 30"											BLOWS/FT.	
				0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
5	6 0		VERY COMPACT Brown Fine to Medium SAND	[Grid]											50	3"
	1			[Grid]												
	2			[Grid]												
	3		VERY COMPACT Brown Fine to Medium SAND with Some Gravel	[Grid]												
	4			[Grid]												
6	6 5			[Grid]											50	6"
	6			[Grid]												
	7			[Grid]												
	8		VERY COMPACT Gray Slightly Silty Fine to Medium SAND	[Grid]												
	9			[Grid]												
7	7 0			[Grid]											93	
	1			[Grid]												
	2			[Grid]												
	3			[Grid]												
	4			[Grid]												
18	7 5			[Grid]											50	5"
	6			[Grid]												
	7			[Grid]												
	8			[Grid]												
	9			[Grid]												
	8 0			[Grid]											85	

Remarks:



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Order No. 89-1286

LOG OF BORING

Boring No. B1

Project Maxville Site Client Waste Management, England, Thims & Mille
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 5 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
80		VERY COMPACT Gray Slightly Silty Fine to Medium SAND									85	
81												
82												
83												
84												
85												
86												
87												
88												
89												
90					80/8.5"							
91												
92												
93												
94												
95												
96												
97												
98												
99												
100							50/6"					
									83/10"			

Remarks:



LOG OF BORING

Boring No. B1

Project Maxville Site Client Waste Management, England, Thims & Mill
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 6 of 8
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Drill Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Boring Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O D Sampler with 140 lb hammer falling 30"										BLOWS/FT.			
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING			
0															83	
1		VERY COMPACT Gray & Brown Slightly Clayey Fine SAND														
2																
3																
4		VERY COMPACT to COMPACT Grayish Green Slightly Clayey Fine to Medium SAND													79	
5																
6																
7																
8																
9																
10															37	
11																
12																
13		MEDIUM COMPACT Grayish Green Fine SAND with Seams of Grayish Green Clayey Fine SAND														
14																
15																
16																
17																
18																
19		COMPACT to VERY COMPACT Grayish Green Slightly Clayey Fine to Medium SAND													27	
20																
21																
22																
23																
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26																
27																
28																
29																
30																
31																
32																
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marks:



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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B1

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 7 of 8
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" OD Sampler with 140 lb hammer falling 30"											BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
12 0		COMPACT to VERY COMPACT Grayish Green Slightly Clayey Fine to Medium SAND	[Grid]											38	
1			[Grid]												
2			[Grid]												
3			[Grid]												
4			[Grid]												
12 5			[Grid]											58	
6			[Grid]												
7			[Grid]												
8			[Grid]												
9			[Grid]												
13 0		VERY STIFF Bluish Gray Slightly Sandy CLAY	[Grid]											67	
1			[Grid]												
2			[Grid]												
3			[Grid]												
4			[Grid]												
13 5			[Grid]											19	
6			[Grid]												
7			[Grid]												
8			[Grid]												
9			[Grid]												
14 0			[Grid]											16	
			[Grid]												
			[Grid]												
			[Grid]												
			[Grid]												

Remarks:



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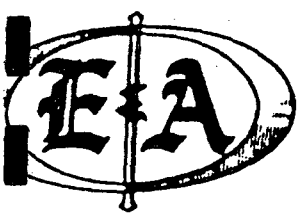
Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B1
 Client Waste Management, England, Thims & Mille
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 8 of 8
 Drill No. _____ Driller B. Moody
 Ground Water Depth 4.2' Time Drilling Date 9/19/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/18/89 Boring Completed 9/19/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
14 0		VERY STIFF Bluish Gray Slightly Sandy CLAY	[Grid]								16	
14 1			[Grid]									
14 2			[Grid]									
14 3			[Grid]									
14 4			[Grid]									
14 5		VERY COMPACT Light Brown Calcareous Silty Fine SAND (Marl)	[Grid]								50/1"	
14 6			[Grid]									
14 7			[Grid]									
14 8			[Grid]									
14 9			[Grid]									
15 0			[Grid]								50/6"	
15 1			[Grid]									
15 2		VERY COMPACT Gray & Light Brown Calcareous Clayey Fine SAND (Marl)	[Grid]									
15 3			[Grid]									
15 4			[Grid]									
15 5		BORING TERMINATED	[Grid]								50/5"	
15 6			[Grid]									
15 7			[Grid]									
15 8			[Grid]									
15 9			[Grid]									
15 0			[Grid]									

Remarks:



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B2

Project Maxville Site Client Waste Management, England, Thims & Miller
Boring Location See Field Exploration Plan Date 9/28/89 Sheet 1 of 4
Drill No. _____ Driller B. Moody
Ground Water Depth 2.3' Time Drilling Date 9/21/89 Length of Casing Set _____ Assistant _____
Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
Log Begun 9/21/89 Boring Completed 9/21/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" OD Sampler with 140 lb hammer falling 30"								BLOWS/FT	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
0		VERY LOOSE to LOOSE Dark Gray Fine SAND with Piece of Wood & Roots									4	
1												
2												
3		MEDIUM COMPACT Brown Slightly Clayey Fine SAND									15	
4												
5												
6		MEDIUM COMPACT Dark Brown Slightly Silty to Silty Fine SAND									14	
7												
8												
9												
10												
11											19	
12												
13												
14												
15												
16											16	
17												
18												
19												
20												
21		COMPACT Dark Brown Silty Fine to Medium SAND (Hardpan)									15	
22												
23												
24												
25												
26											36	
27												
28												
29												
30												

Remarks:



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P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B2

Project Maxville Site Client Waste Management, England, Thims & Mill.
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 2 of 4
 Ground Water Depth 2.3' Time Drilling Date 9/21/89 Drill No. _____ Driller B. Moody
 Rod Size _____ Casing Size _____ Length of Casing Set _____ Assistant _____
 Logging Begun 9/21/89 Boring Completed 9/21/89 Drill Mud _____ Dia. Bit Size _____
 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST											BLOWS/FT.	
			Blows per foot on 2" O.D. Sampler with 140 lb. hammer falling 30"											ON SAMPLER	ON CASING
			0	10	20	30	40	50	60	70	80				
2 0		COMPACT Dark Brown Silty Fine to Medium SAND (Hardpan)	[Grid]											36	
2 1			[Grid]												
2 2			[Grid]												
2 3			[Grid]												
2 4			[Grid]												
2 5			[Grid]											33	
2 6			[Grid]												
2 7			[Grid]												
2 8		COMPACT Light Brown & Gray Fine SAND	[Grid]												
2 9			[Grid]												
3 0			[Grid]											36	
3 1			[Grid]												
3 2			[Grid]												
3 3		MEDIUM COMPACT Brown Slightly Clayey Fine to Medium SAND	[Grid]												
3 4			[Grid]												
3 5			[Grid]											24	
3 6			[Grid]												
3 7			[Grid]												
3 8		MEDIUM COMPACT Tan Fine SAND	[Grid]												
3 9			[Grid]												
4 0			[Grid]											14	

Remarks:



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B2
 Client Waste Management, England, Thims & Miller
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 3 of 4
 Drill No. _____ Driller B. Moody
 Ground Water Depth 2.3' Time Drilling Date 9/21/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Log Begun 9/21/89 Boring Completed _____ Ground Elevation _____ Datum _____

NO.	DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"											BLOWS/FT.	
				0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
1	4 0		MEDIUM COMPACT Tan Fine SAND	[Grid]											14	
	1			[Grid]												
	2			[Grid]												
	3			[Grid]												
	4			[Grid]												
	4 5			[Grid]											18	
	6			[Grid]												
	7			[Grid]												
	8			[Grid]												
	9			[Grid]												
	5 0			[Grid]											29	
	1			[Grid]												
	2			[Grid]												
	3		MEDIUM COMPACT Light Brown Fine to Medium SAND with Trace of Gravel	[Grid]												
	4			[Grid]												
	5 5			[Grid]											26	
	6			[Grid]												
	7			[Grid]												
	8		MEDIUM COMPACT to COMPACT Light Gray Fine SAND	[Grid]												
	9			[Grid]												
	6 0			[Grid]											25	

Remarks:



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B2

Project Maxville Site Client Waste Management, England, Thims & Mill
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 4 of 4
 Drill No. _____ Driller B. Moody
 Ground Water Depth 2.3' Time Drilling Date 9/21/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/21/89 Boring Completed 9/21/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT			
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING	
0		MEDIUM COMPACT to COMPACT Light Gray Fine SAND											25	
1														
2														
3														
4														
5													45	
6		BORING TERMINATED												
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

Remarks:



Ellis & Associates, Inc.

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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B3

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 1 of 3
 Ground Water Depth 3.0' Time Drilling Date 9/20/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Boring Begun 9/20/89 Boring Completed 9/20/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" OD Sampler with 140 lb. hammer falling 30"											BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
0		LOOSE Light Brown Fine SAND	[Grid]											8	
1		LOOSE Dark Brown Fine SAND, *	[Grid]											8	
2		LOOSE Light Brown to Brown Fine SAND	[Grid]											8	
3			[Grid]											9	
4			[Grid]											15	
5			[Grid]											27	
6		MEDIUM COMPACT Dark Brown Slightly Silty Fine SAND	[Grid]												
7			[Grid]												
8			[Grid]												
9		MEDIUM COMPACT to LOOSE Gray to Light Brown Clayey Silty Fine SAND	[Grid]											7	
10			[Grid]												
11			[Grid]												
12			[Grid]												
13			[Grid]												
14			[Grid]												
15			[Grid]												
16			[Grid]												
17			[Grid]												
18			[Grid]												
19			[Grid]												
20			[Grid]											6	

Remarks: ***Weakly Cemented**



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B3

Project Maxville Site Client Waste Management, England, Thims & Miller
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 2 of 3
 Ground Water Depth 3.0' Time Drilling Date 9/20/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/20/89 Boring Completed 9/20/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
2 0		MEDIUM COMPACT to LOOSE Gray to Light Brown Clayey Silty Fine SAND	[Grid]								6	
2 1			[Grid]									
2 2			[Grid]									
2 3		MEIDUM COMPACT Light Gray & Light Brown Slightly Clayey Fine to Medium SAND	[Grid]								18	
2 4			[Grid]									
2 5			[Grid]									
2 6			[Grid]									
2 7			[Grid]									
2 8			[Grid]									
2 9			[Grid]									
3 0			[Grid]								10	
3 1			[Grid]									
3 2		LOOSE to MEDIUM COMPACT Light Brown Slightly Silty Fine SAND	[Grid]									
3 3			[Grid]									
3 4			[Grid]									
3 5			[Grid]								8	
3 6			[Grid]									
3 7			[Grid]									
3 8			[Grid]									
3 9			[Grid]									
4 0			[Grid]								24	

Remarks:



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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B3

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 3 of 3
 Drill No. _____ Driller B. Moody
 Ground Water Depth 3.0' Time Drilling Date 9/20/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Boring Begun 9/20/89 Boring Completed 9/20/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
0		LOOSE to MEDIUM COMPACT Light Brown Slightly Silty Fine SAND									24	
1												
2												
3												
4		MEDIUM COMPACT Light Brown Clayey Fine SAND with Some Gravel									22	
5												
6												
7												
8		MEDIUM COMPACT Light Brown Slightly Clayey Fine SAND									18	
9												
10												
11		LOOSE Light Brown Slightly Silty Fine SAND									8	
12												
13												
14		BORING TERMINATED										
15												
16												
17												
18												
19												
20												

Remarks:



Ellis & Associates, Inc.

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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B4

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 1 of 3
 Ground Water Depth 2.2' Time Drilling Date 9/23/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Boring Begun 9/23/89 Boring Completed 9/23/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O D Sampler with 140 lb hammer falling 30"											BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
0		MEDIUM COMPACT Dark Gray Silty Fine SAND	[Grid]											8	
1			[Grid]												
2			[Grid]												
3		MEDIUM COMPACT to VERY COMPACT Dark Grown Fine SAND	[Grid]											30	
4			[Grid]												
5			[Grid]												
6			[Grid]												
7		STIFF Dark Brown Slightly Silty Sandy CLAY	[Grid]											80	
8			[Grid]												
9			[Grid]												
10			[Grid]												
11		MEDIUM COMPACT Brown Clayey to Very Clayey Fine SAND	[Grid]											41	
12			[Grid]												
13			[Grid]												
14			[Grid]												
15		MEDIUM COMPACT Brown Clayey to Very Clayey Fine SAND	[Grid]											14	
16			[Grid]												
17			[Grid]												
18			[Grid]												
19			[Grid]												
20		[Grid]											13		
		[Grid]													

Remarks:



Ellis & Associates, Inc.

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904-733-0960

Order No. 89-1286

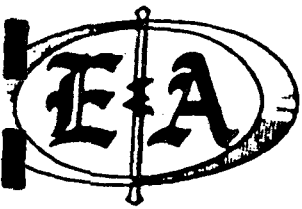
LOG OF BORING

Boring No. B4

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 2 of 3
 Ground Water Depth 2.2' Time Drilling Date 9/23/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Boring Begun 9/23/89 Boring Completed 9/23/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb. hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
2 0		MEDIUM COMPACT Brown Clayey to Very Clayey Fine SAND									13	
2 1												
2 2												
2 3												
2 4												
2 5											11	
2 6												
2 7												
2 8		COMPACT to VERY COMPACT Brown Fine to Medium SAND										
2 9												
3 0											35	
3 1												
3 2												
3 3												
3 4												
3 5											32	
3 6												
3 7												
3 8												
3 9												
4 0											51	

Remarks:



Ellis & Associates, Inc.

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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B4

Project Maxville Site Client Waste Management, England, Thims & Mill
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 3 of 3
 Ground Water Depth 2.2' Time Drilling Date 9/23/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Boring Begun 9/23/89 Boring Completed 9/23/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O D Sampler with 140 lb hammer falling 30"								BLOWS/FT.	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
4 0		COMPACT to VERY COMPACT Brown Fine to Medium SAND	[Grid]								51	
4 1			[Grid]									
4 2			[Grid]									
4 3		COMPACT to MEDIUM COMPACT Dark Brown Silty Fine to Medium SAND	[Grid]								37	
4 4			[Grid]									
4 5			[Grid]									
4 6			[Grid]									
4 7			[Grid]									
4 8			[Grid]									
4 9			[Grid]									
5 0		BORING TERMINATED	[Grid]								19	
5 1			[Grid]									
5 2			[Grid]									
5 3			[Grid]									
5 4			[Grid]									
5 5			[Grid]									
5 6			[Grid]									
5 7			[Grid]									
5 8			[Grid]									
5 9			[Grid]									
5 0			[Grid]									

Remarks:



Ellis & Associates, Inc.

P.O. BOX 8813 • JACKSONVILLE, FLORIDA 32239
904-733-0960

Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B5
 Client Waste Management, England, Thims & Mill
 Log Location See Field Exploration Plan Date 9/28/89 Sheet 1 of 3
 Drill No. _____ Driller C. Moody
 Ground Water Depth 3.5' Time Drilling Date 9/22/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia Bit Size _____
 Log Begun 9/22/89 Boring Completed 9/22/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								BLOWS/FT	
			0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING
0		MEDIUM COMPACT Gray to Brown Fine SAND	[Grid]									
1			[Grid]								16	
2			[Grid]									
3			[Grid]								15	
4			[Grid]									
5			[Grid]								12	
6			[Grid]									
7			[Grid]								16	
8		COMPACT Dark Brown Slightly Silty Fine SAND	[Grid]									
9			[Grid]								32	
10			[Grid]									
11		MEDIUM COMPACT to COMPACT Dark Brown Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]									
12			[Grid]									
13			[Grid]									
14			[Grid]									
15			[Grid]								30	
16			[Grid]									
17			[Grid]									
18			[Grid]									
19			[Grid]									
20			[Grid]								33	

Remarks:



Ellis & Associates, Inc.

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904-733-0960

Order No. 89-1286

LOG OF BORING

Project Maxville Site Boring No. B5
 Client Waste Management, England, Thims & Miller
 Drilling Location See Field Exploration Plan Date 9/28/89 Sheet 2 of 3
 Drill No. _____ Driller C. Moody
 Ground Water Depth 3.5' Time Drilling Date 9/22/89 Length of Casing Set _____ Assistant _____
 Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Logging Begun 9/22/89 Boring Completed 9/22/89 Ground Elevation _____ Datum _____

DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST								BLOWS/FT		
			Blows per foot on 2" O.D. Sampler with 140 lb hammer falling 30"								ON SAMPLER	ON CASING	
			0	10	20	30	40	50	60	70	80		
20		MEDIUM COMPACT to COMPACT Dark Brown Silty Fine SAND, Weakly Cemented (Hardpan)	[Grid]								33		
1		MEDIUM COMPACT to COMPACT Brown & Light Brown Fine to Medium SAND	[Grid]										
2			[Grid]										
3			[Grid]										
4			[Grid]										
25			[Grid]								30		
6			[Grid]										
7			[Grid]										
8			[Grid]										
9			[Grid]										
30			[Grid]								28		
1			[Grid]										
2			[Grid]										
3			[Grid]										
4			[Grid]										
35			[Grid]								29		
6			[Grid]										
7			[Grid]										
8			[Grid]										
9			[Grid]										
40			[Grid]								31		

Remarks:



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904-733-0960

Order No. 89-1286

LOG OF BORING

Boring No. B5

Project Maxville Site Client Waste Management, England, Thims & Miller
 Boring Location See Field Exploration Plan Date 9/28/89 Sheet 3 of 3
 Drill No. _____ Driller C. Moody
 Ground Water Depth 3.5' Time Drilling Date 9/22/89 Length of Casing Set _____ Assistant _____
 Drill Rod Size _____ Casing Size _____ Drill Mud _____ Dia. Bit Size _____
 Boring Begun 9/22/89 Boring Completed 9/22/89 Ground Elevation _____ Datum _____

SAMPLER NO	DEPTH IN FEET	SOIL GRAPH	MATERIAL DESCRIPTION	STANDARD PENETRATION TEST Blows per foot on 2" OD Sampler with 140 lb. hammer falling 30"											BLOWS/FT.	
				0	10	20	30	40	50	60	70	80	ON SAMPLER	ON CASING		
1	0		MEDIUM COMPACT to COMPACT Brown & Light Brown Fine to Medium SAND	[Grid]											31	
	1			[Grid]												
	2			[Grid]												
	3			[Grid]												
	4		COMPACT Brown & Light Brown Fine to Medium SAND with Trace of Gravel	[Grid]											44	
2	5			[Grid]												
	6		COMPACT Brown Fine to Medium SAND with Trace of Gravel	[Grid]												
	7			[Grid]												
	8			[Grid]												
	9			[Grid]												
3	10		BORING TERMINATED	[Grid]											47	
	11			[Grid]												
	12			[Grid]												
	13			[Grid]												
	14			[Grid]												
	15			[Grid]												
	16			[Grid]												
	17			[Grid]												
	18			[Grid]												
	19			[Grid]												
	20			[Grid]												

Remarks:

APPENDIX A-2
PHASE II HYDROGEOLOGICAL INVESTIGATION
SOIL BORING LOGS
BY GOLDBER ASSOCIATES INC.

JULY 1990



Golder Associates Inc.

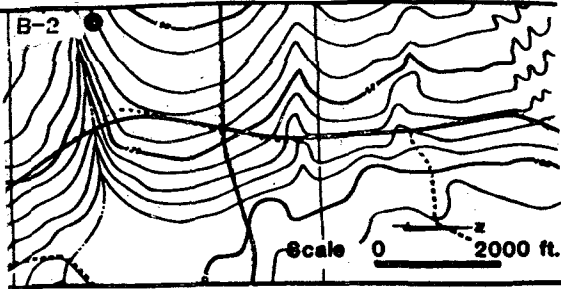
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: MUD ROTARY

BORING NO.

B-21



SAMPLING METHOD: 18 in. SPLIT SPOON

SHEET

1 OF 2

DRILLING

WATER LEVEL

START TIME

FINISH TIME

TIME

1050

1600

DATE

DATE

2-19-90 2-19-90

DATUM MSL ELEVATION 143.8 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: SANDY, FLAT ON ACCESS ROAD SHOULDER

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140LB/30IN

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VALE (TSF)								
0.0			0.00																
2.0	2-2-1 (100%)	X	1 Loose to compact, dark brown, FINE SAND, trace to little silt (SP).																
3.0	2-3-8 (100%)	X	2																
4.0	3-6-5 (100%)	X	0																
5.0	3-6-6 (100%)	X	4																
6.0	3-5-6 (100%)	X	0																
7.0	wh-1-4 (33%)	X	6																
8.0	2-4-8 (83%)	X	7																
9.0	3-6-10 (67%)	X	8																
10.0	3-9-15 (83%)	X	9																
13.50			13.50																
15.0	5-6-6 (83%)	X	10 Compact to dense, dark brown, FINE SAND, trace to little to little clayey silt (SP).																
20.0	6-13-28 (67%)	X	11																
25.0																			
30.0	6-12-28 (50%)	X	12																

DRILLING CONTR LAW ENGINEERING

LOGGED BY John M. Thomas

DATE 3-21-90

CHKD BY KBK

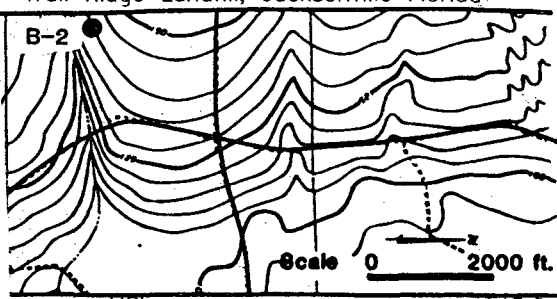
JIM HALLON

SL 11288C



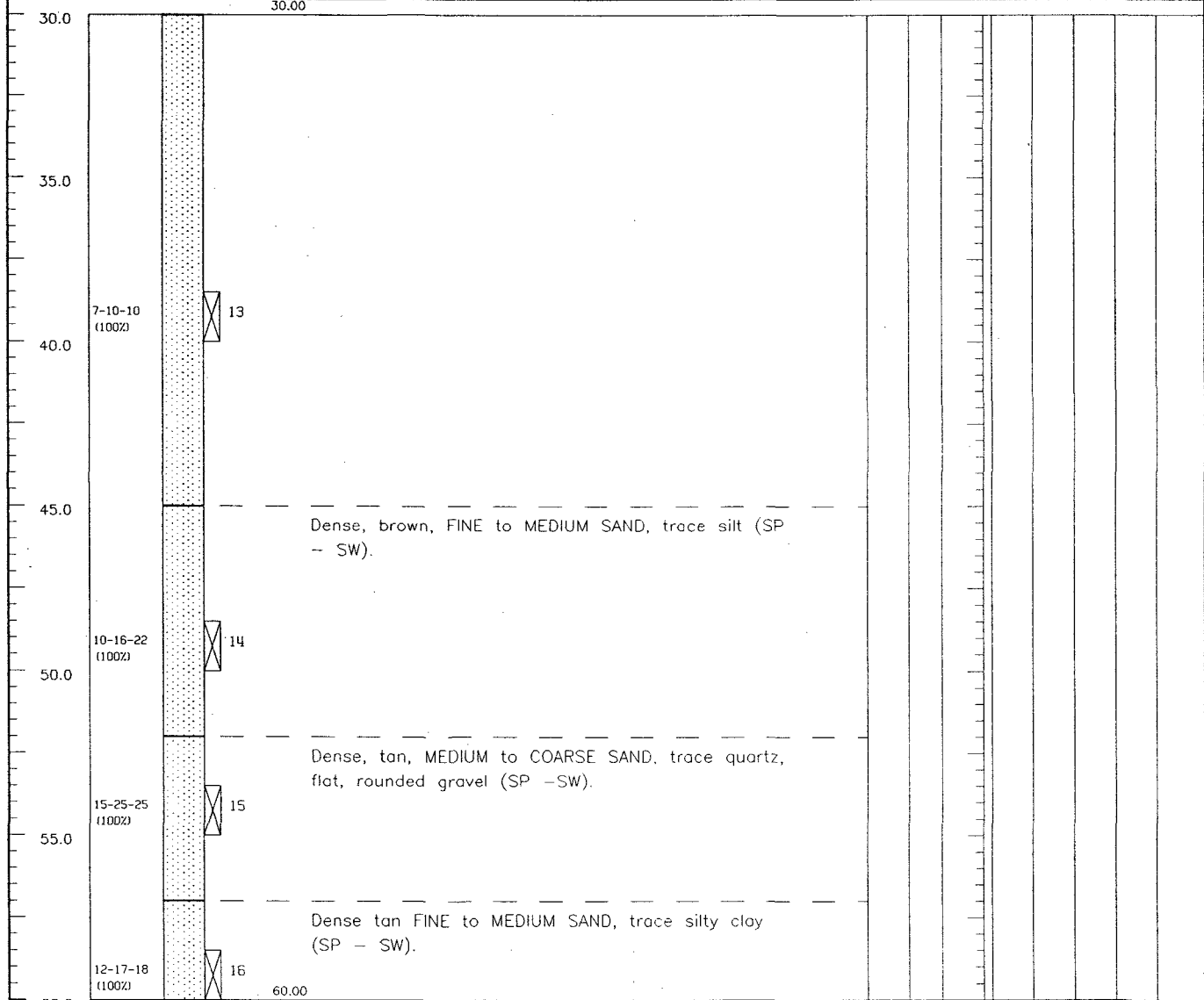
Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida 	DRILLING METHOD: MUD ROTARY SAMPLING METHOD: 18 in. SPLIT SPOON WATER LEVEL TIME DATE CASING DEPTH	BORING NO. B-21 SHEET 2 OF 2 DRILLING START TIME 1050 DATE 2-19-90 FINISH TIME 1600 DATE 2-19-90
---	---	--

DATUM MSL ELEVATION 143.8 ft. DRILL RIG CME 55 ANGLE VERTICAL BEARING SAMPLE HAMMER TORQUE 140LB/30IN	SURFACE CONDITIONS: SANDY, FLAT ON ACCESS ROAD SHOULDER
--	---

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



LAW ENGINEERING
 DRILLING CONTR
 JIM HALLON

SL 11289C

LOGGED BY John M. Thomas
 DATE 5-21-90
 CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: MUD ROTARY

BORING NO.

B-3D

SHEET

1 OF 5

SAMPLING METHOD: 18 in. SPLIT SPOON

DRILLING

START FINISH

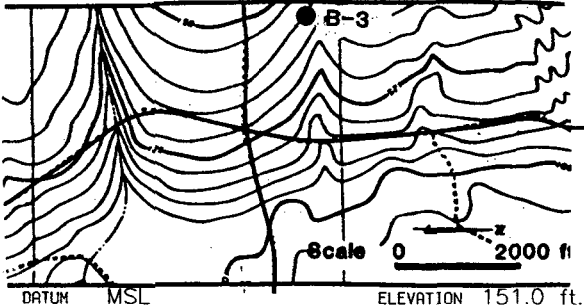
TIME TIME

1445 1600

DATE DATE

2-21-90 2-26-90

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					



DRILL RIG CME 55

SURFACE CONDITIONS: SANDY, FLAT ON ACCESS ROAD SHOULDER

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140LB/30IN

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
0.0			0.00																
1-1-2 (100%)			1 Very loose, dark brown, FINE SAND, trace silt (SP).																
2-2-3 (100%)			2																
1-1-1 (100%)			3																
1-1-2 (100%)			4																
4-8-10 (100%)			5																
6-8-12 (67%)			7.50 6 Loose to compact, tan FINE SAND, little to some clayey silt (SM - SC).																
11-13-16 (50%)			7																
10-12-13 (33%)			8																
5-5-4 (83%)			9																
3-4-4 (100%)			10																
15.0			Soft to loose, light brown, FINE SAND and SILTY CLAY (SC).																
1-3-6 (83%)			11																
20.0																			
1-5-1 (67%)			12																
25.0																			
30.0																			

DRILLING CONTR LAW ENGINEERING

JIM HALLON

SL 11290C

LOGGED BY John M. Thomas

DATE 3-21-90

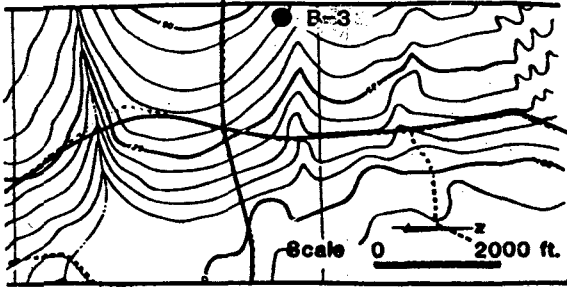
CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida



DATUM MSL ELEVATION 151.0 ft.

DRILLING METHOD: MUD ROTARY

BORING NO.

B-3D

SAMPLING METHOD: 18 in. SPLIT SPOON

SHEET

2 OF 5

DRILLING

WATER LEVEL

START TIME

1445

FINISH TIME

1600

TIME

DATE

DATE

2-21-90 2-26-90

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: SANDY, FLAT ON ACCESS ROAD SHOULDER

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140LB/30IN

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			
30.0			Compact, tan, FINE SAND, trace to little silty clay (SP).											
39.5	10-14-14 (100%)	X	13											
49.5	6-8-10 (83%)	X	14 49.50											
59.5	7-10-15 (63%)	X	15											

LAW ENGINEERING

DRILLING CONTR JIM HALLON

LOGGED BY John M. Thomas

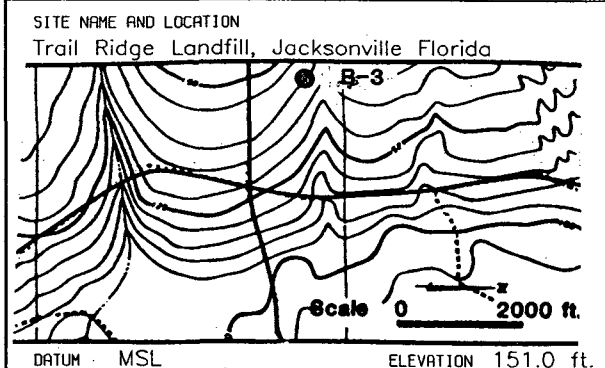
SL 11291C

DATE 3-21-90 CHKD BY KBK



Golder Associates Inc.

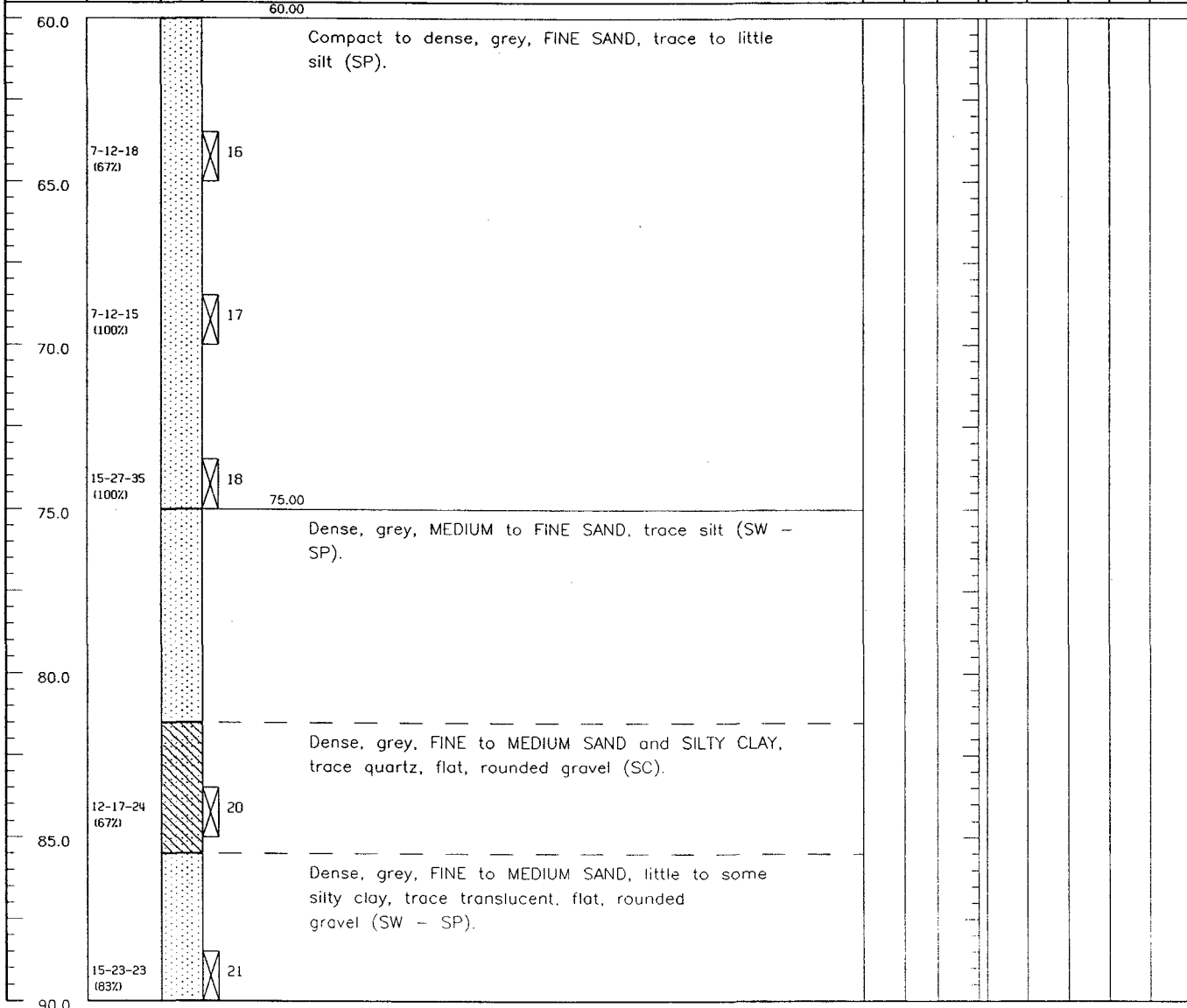
SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary				BORING NO. B-3D	
SAMPLING METHOD: 18 in. Split Spoon				SHEET 3 OF 5	
WATER LEVEL				DRILLING	
TIME				START TIME	FINISH TIME
DATE				2-21-90	2-26-90
CASING DEPTH					

DRILL RIG CME 55	SURFACE CONDITIONS: Flat, Sandy, Boring is on the edge of an access road.
ANGLE Vertical BEARING	
SAMPLE HAMMER TORQUE 140lbs/30" Drop	

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



DRILLING CONTR Low Engineering
Jim Hallon

SL 11292C

LOGGED BY John M. Thomas
DATE 3-21-90 CHKD BY KBK



Golder Associates Inc.

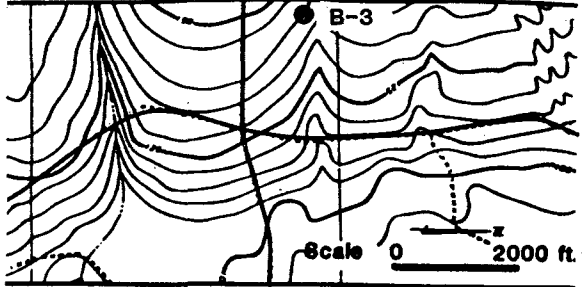
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: MUD ROTARY

BORING NO.

B-3D



SAMPLING METHOD: 18 in. SPLIT SPOON

SHEET
4 OF 5

DRILLING

WATER LEVEL

START TIME

FINISH TIME

TIME

1445 1600

DATE

DATE

2-21-90 2-26-90

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: FLAT, SANDY.

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140LBS/30

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
90.0			90.00																
95.0	19-31-35 (83%)	22																	
100.0	15-27-36 (67%)	23																	
105.0	18-32-40 (67%)	24	103.50 Very dense to compact grey, FINE SAND, trace to little silty clay (SP).																
110.0	12-27-30 (67%)	25																	
115.0	12-24-30 (83%)	26																	
120.0	8-14-16 (67%)	27	120.00																

LAW ENGINEERING

DRILLING CONTR J. HALLON

LOGGED BY John M. Thomas

SL 11293C

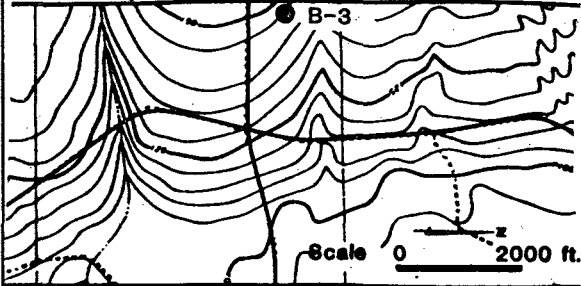
DATE 3-26-90 CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill Jacksonville, Florida



DRILLING METHOD: MUD ROTARY

BORING NO.
B-3D

SAMPLING METHOD: 18 in. SPLIT SPOON

SHEET
5 OF 5

WATER LEVEL

DRILLING

TIME

START TIME
1445

FINISH TIME
1600

DATE

DATE

2-21-90 2-26-90

DATUM MSL ELEVATION 151.0 ft.

CASING DEPTH

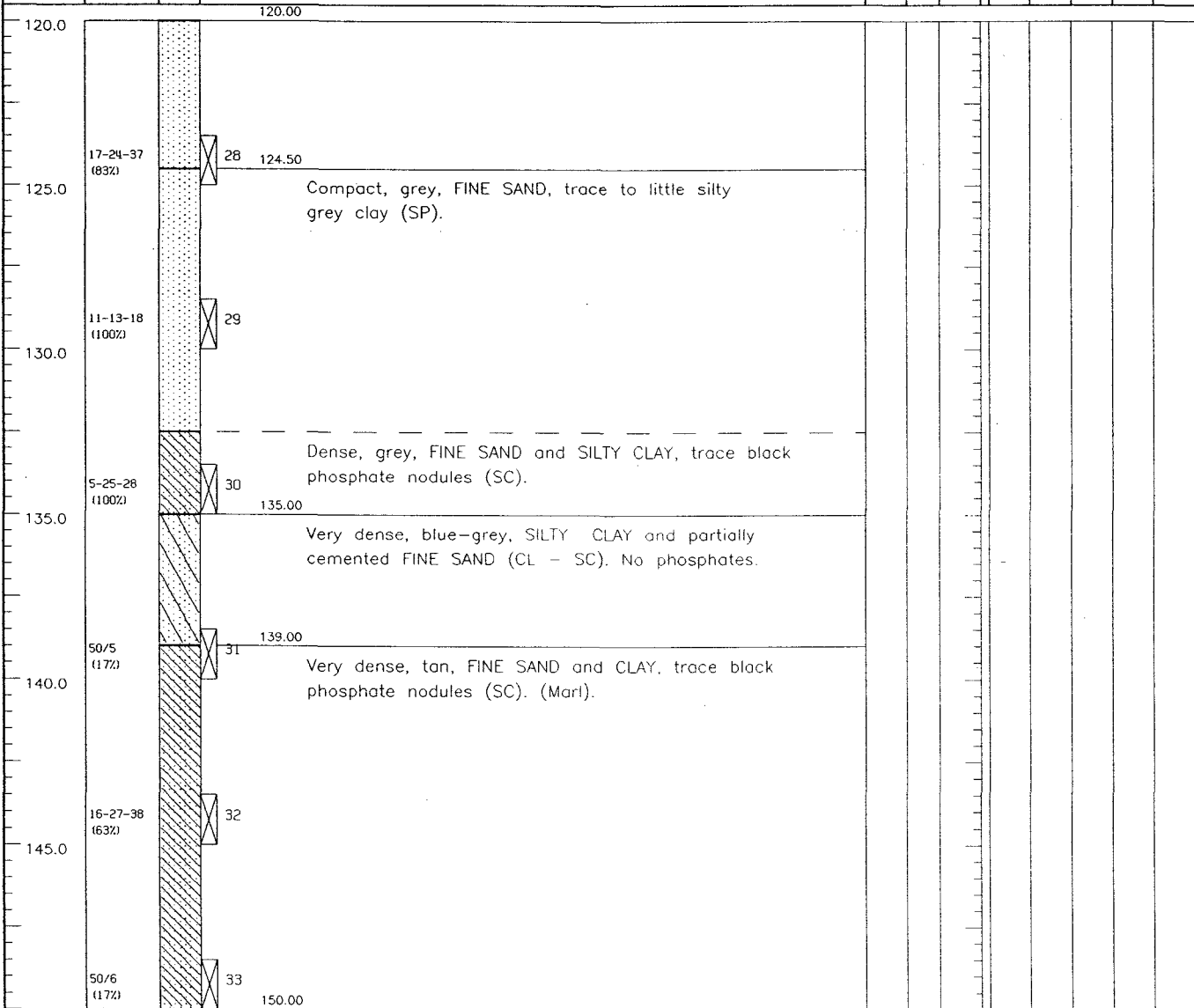
DRILL RIG CME 55

SURFACE CONDITIONS: FLAT, SANDY.

ANGLE VERTICAL BEARING

SAMPLE HAMMER TORQUE 140LBS/30

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



BORING TERMINATED.

LAW ENGINEERING

DRILLING CONTR

J. HALLON

LOGGED BY John M. Thomas

CHKD BY KBK

DATE 3-26-90

SL 11294C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-51

SAMPLING METHOD: 18 in. Split Spoon

SHEET

1 OF 2

DRILLING

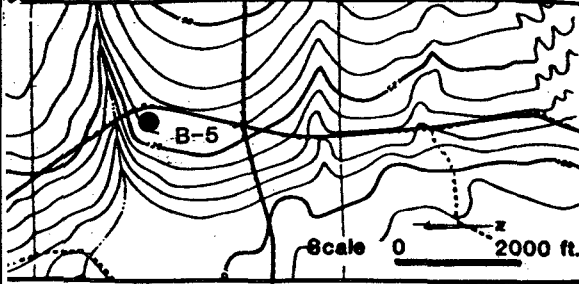
START TIME

FINISH TIME

1250 1150

DATE DATE

2-14-90 2-16-90



DATUM MSL ELEVATION 130.5 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Sandy, flat. Boring is on an access road.

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			
0.0			0.00 Loose to compact, dark brown, FINE SAND, trace silt (SP).											
6.6-10 (67%)		1												
8.7-16 (67%)		2												
8.20-28 (67%)		3	30.00 Compact to dense, grey, FINE SAND, trace silt (SP).											

Low Engineering

DRILLING CONTR

Jim Hallon

LOGGED BY John M. Thomas

DATE 3-21-90

SL 112950

CHKD BY KBK



Golder Associates Inc.

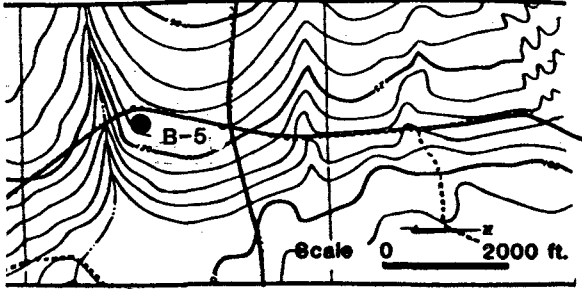
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-5I



SAMPLING METHOD: Split Spoon

SHEET

2 OF 2

DRILLING

START FINISH

TIME TIME

1250 1150

DATE DATE

2-14-90 2-16-90

DATUM MSL ELEVATION 130.5 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Sandy, flat. Boring is on an access road.

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.0			30.00																
30.0 - 40.0			Compact to dense, light grey, FINE SAND, trace silt (SP).																
40.0	10-25-35 (63%)	4																	
45.0 - 50.0			Compact to dense, light brown, FINE to COARSE SAND, trace flat, quartz, rounded gravel, trace silty clay(SP - SW).																
50.0	3-11-20 (67%)	5																	
55.0 - 60.0			Dense, brown, MEDIUM SAND, trace flat, quartz, rounded gravel trace grey silty clay (SP).																
55.0	17-17-20 (63%)	6																	
60.0	9-16-18 (83%)	7																	
60.0			60.00																

BORING TERMINATED.

DRILLING CONTR Low Engineering

Jim Hallon

LOGGED BY John M. Thomas

DATE 3-21-90

CHKD BY KBK

SL 11296C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-5D

SHEET

1 OF 3

SAMPLING METHOD: 18 in. Split Spoon

DRILLING

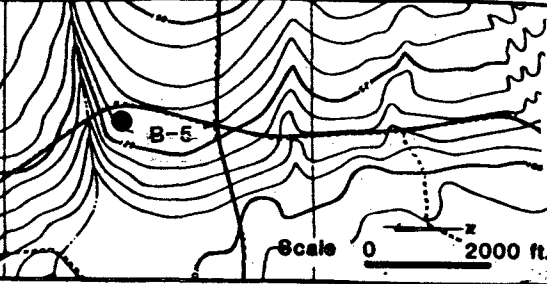
START FINISH

TIME TIME

1250 1150

DATE DATE

2-14-90 2-16-90



DATUM MSL ELEVATION 130.5 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Sandy, flat. Boring is on an access road.

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS								
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)				
60.0			60.00 Mud rotary drilled down to 63.5 ft with a 6 inch drag bit. Drilling mud is bentonite clay and water. See field boring log B-5I for stratigraphic descriptions for 0 - 60 ft.												
65.0	11-18-19 (63%)	X	8 Dense, light brown to grey, FINE to MEDIUM SAND, trace silt, trace flat, quartz, rounded gravel (SP - SW).												
70.0	13-20-32 (60%)	X	9 70.00 Dense, light brown to tan, FINE to MEDIUM SAND, trace silt (SW - SP).												
75.0	7-17-20 (93%)	X	10												
80.0	11-16-20 (33%)	X	11												
85.0	14-22-27 (33%)	X	12												
90.0	8-8-13 (50%)	X	13 90.00												

DRILLING CONTR Low Engineering

Jim Hallon

SL 11344C

LOGGED BY John M. Thomas

DATE 3-1-90 CHKD BY KBK



Golder Associates Inc.

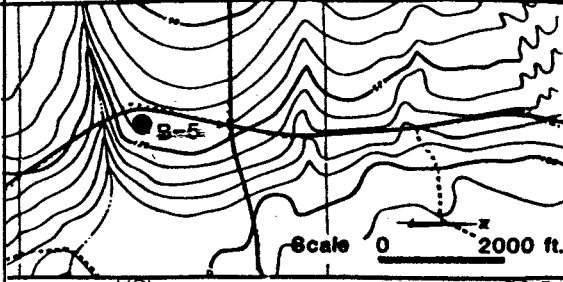
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-5D



SAMPLING METHOD: 18 in. Split Spoon

SHEET

2 OF 3

DRILLING

WATER LEVEL

START TIME

1250

FINISH TIME

1150

TIME

DATE

DATE

2-14-90

2-16-90

DATUM MSL ELEVATION 130.5 ft.

CASING DEPTH

2-14-90

2-16-90

DRILL RIG CME 55

SURFACE CONDITIONS: Sandy, flat. Boring is on an access road.

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
90.0			90.00																
95.0	8-9-11 (67%)		14																
100.0	7-7-13 (83%)		15																
105.0	5-10-12 (67%)		16				103.50												
			Compact, grey, FINE to MEDIUM SAND and SILTY CLAY (SC).																
110.0	16-20-20 (83%)		17																
115.0	50/5 (6%)		18																
			Soft, grey, SILTY CLAY (CL - CH).																
120.0	18-35-50/5 (67%)		19				120.00												
			Stiff to very stiff, grey, SILTY CLAY and FINE SAND, trace to little black phosphate nodules (CL - SC). Weak reaction to HCL. (Marl).																

DRILLING CONTR Low Engineering

Jim Hallon

LOGGED BY John M. Thomas

DATE 3-21-90

CHKD BY KBK

SL 11298C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-5D

SAMPLING METHOD: 18 in. Split Spoon

SHEET

3 OF 3

DRILLING

WATER LEVEL

START

FINISH

TIME

TIME

TIME

DATE

DATE

DATE

CASING DEPTH

2-14-90

2-16-90

DATUM MSL ELEVATION 130.5 ft.

DRILL RIG CME 55

SURFACE CONDITIONS: Sandy, flat. Boring is on an access road.

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lb/30 in drp

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
120.0			120.00 Stiff to very stiff, grey, SILTY CLAY and FINE SAND, trace to little black phosphate nodules (CL -SC). (Marl).																
125.0	27-50/5 (60%)	X	20																
130.0	22-37-50/5 (93%)	X	21																
135.0	20-50/6 (33%)	X	22																
140.0	21-50/6 (35%)	X	23																
145.0	21-50/5 (55%)	X	24																
150.0	46-50/6 (20%)	X	25																

BORING TERMINATED.

Law Engineering

DRILLING CONTR Jim Hallon

LOGGED BY John M. Thomas

DATE 5-21-90

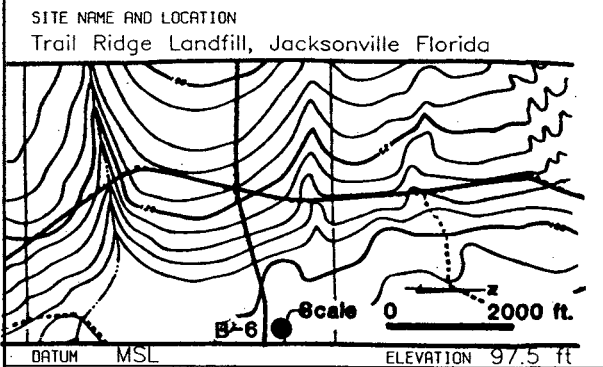
CHKD BY KBK

SL 11299C



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-6D	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 5	
WATER LEVEL		START TIME	FINISH TIME
TIME		1445	1130
DATE		DATE	DATE
CASING DEPTH		3-12-90	3-16-90

DRILL RIG CME 55
 ANGLE Vertical BEARING
 SAMPLE HAMMER TORQUE 140lbs/30" drop

SURFACE CONDITIONS: Flat, sandy

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
0.0			0.00																
2-3-4 (100%)			0 Loose, brown and grey, FINE SAND, little to some silt (SP).																
3-4-6 (100%)			2 3.00																
5-11-13 (56%)			3 Compact to dense, brown, FINE SAND, little to some silty clay (SP).																
11-20-49 (50%)			4																
35-40-35 (44%)			5																
12-15-15 (83%)			6																
5-8-9 (67%)			7																
3-2-3 (56%)			8 12.00																
2-3-3 (67%)			9 Soft, grey, SILTY CLAY, little to some fine sand 13.50 (CI)																
1-2-4 (100%)			10 Dense, white, FINE SAND, trace grey clay (SP).																
4 24-30 (100%)			11																
10-28-30 (67%)			12																
9-24-25 (67%)			13 19.50																
9-12-16 (67%)			14 Compact, white, MEDIUM SAND, little silty clay (SP).																
7-19-31 (83%)			15 22.00																
12-23-30 (56%)			16 Dense, white, FINE SAND, trace silty clay (SP).																
12-19-24 (56%)			17																
13-20-35 (100%)			18																
11-20-26 (100%)			19																
12-23-28 (100%)			20 30.00																
30.0																			

DRILLING CONTR Low Engineering

LOGGED BY John M. Thomas

DATE 3-21-90

CHKD BY KBK

SL 11300C

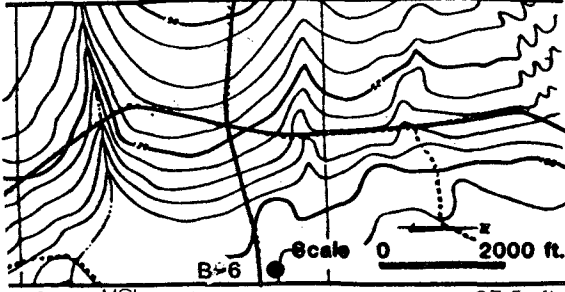
Jim Hallon



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida



DRILLING METHOD: Mud Rotary

BORING NO.

B-6D

SAMPLING METHOD: 18 in. Split Spoon

SHEET

2 OF 5

WATER LEVEL

DRILLING

START TIME

FINISH TIME

TIME

1445

1130

DATE

DATE

CASING DEPTH

3-12-90

3-16-90

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, sandy

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.0			30.00																
30.0	14-18-22 (67%)	[Symbol]	21 Compact, grey, FINE SAND, some to and silty clay (SC).																
	15-15-14 (56%)	[Symbol]	22																
			33.00																
	3-3-4 (83%)	[Symbol]	23 Compact, grey, SILTY CLAY and FINE SAND (CL - SC).																
35.0	3-5-9 (56%)	[Symbol]	24																
			36.00																
	3-12-19 (56%)	[Symbol]	25 Dense, brown, FINE to MEDIUM SAND, little to some clayey silt (SP).																
	9-18-17 (100%)	[Symbol]	26																
			39.00																
40.0	2-2-3 (100%)	[Symbol]	27 Soft, grey, SILTY CLAY and FINE SAND (CL - SC).																
			40.50																
	3-5-10 (100%)	[Symbol]	28 Compact to dense, light brown, MEDIUM to COARSE SAND, trace silty clay, trace flat, quartz, rounded gravel (SW).																
	8-15-30 (100%)	[Symbol]	29																
			45.00																
45.0	8-24-46 (33%)	[Symbol]	30																
			45.00																
	9-33-43 (56%)	[Symbol]	31 Very dense, light grey, MEDIUM to COARSE SAND, trace silty clay (SW-SP).																
	5-26-41 (67%)	[Symbol]	32																
			55.50																
	12-31-43 (100%)	[Symbol]	33																
50.0	9-30-0 (83%)	[Symbol]	34																
			55.50																
	8-24-43 (67%)	[Symbol]	35																
			55.50																
	9-11-12 (100%)	[Symbol]	36																
	7-17-30 (100%)	[Symbol]	37																
55.0			55.50																
	7-17-22 (100%)	[Symbol]	38 Dense to compact, light brown, MEDIUM to COARSE SAND trace silt (SP - SW).																
	4-8-6 (100%)	[Symbol]	39																
			60.00																
60.0	5-6-7 (100%)	[Symbol]	40																

DRILLING CONTR Low Engineering

LOGGED BY John M. Thomas

DATE 3-21-90

Jim Hallon

SL 11301C

CHKD BY KBK



Golder Associates Inc.

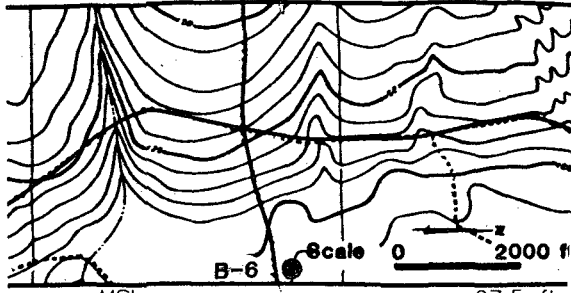
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-6D



SAMPLING METHOD: 18 in. Split Spoon

SHEET
3 OF 5

WATER LEVEL

DRILLING

START TIME FINISH TIME

TIME

1445 1130

DATE

DATE DATE

DATUM MSL ELEVATION 97.5 ft.

CASING DEPTH

3-12-90 3-16-90

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, sandy

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30' drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			
60.0			60.00 Compact to dense, brown and grey, FINE to MEDIUM SAND, trace silty clay (SW).											
64.0	3-4-8 (100%)	X	41											
69.0	11-16-23 (100%)	X	42											
74.0	9-12-50/5 (83%)	X	43 Hard, blue-grey, CLAY, trace to little fine sand (CL -CH).											
79.0	50/4 (30%)	X	44 Very dense, partially cemented, FINE SAND and SILT, trace black phosphate nodules (SM). Hard, blue-grey, SILTY CLAY, little to some black phosphate nodules, trace to some fine sand (CL-CH). Weak reaction to HCL. (Marl).											
84.0	50/4 (33%)	X	45											
89.0	29-20-50/4 (96%)	X	46											

DRILLING CONTR Low Engineering Jim Hollan

LOGGED BY John M. Thomas

DATE 3-21-90 CHKD BY KBIK

SL 11302C



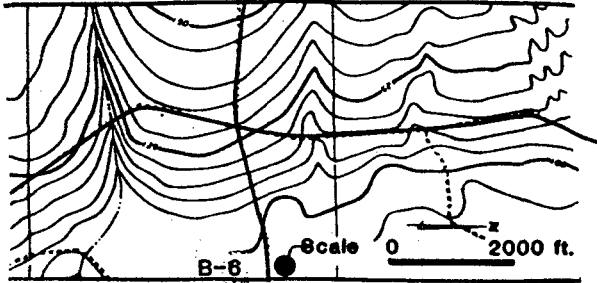
Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.
B-6D



SAMPLING METHOD: 18 in. Split Spoon

SHEET
4 OF 5

WATER LEVEL

DRILLING

TIME

START

FINISH

DATE

TIME

TIME

DATE

DATE

CASING DEPTH

3-12-90

3-16-90

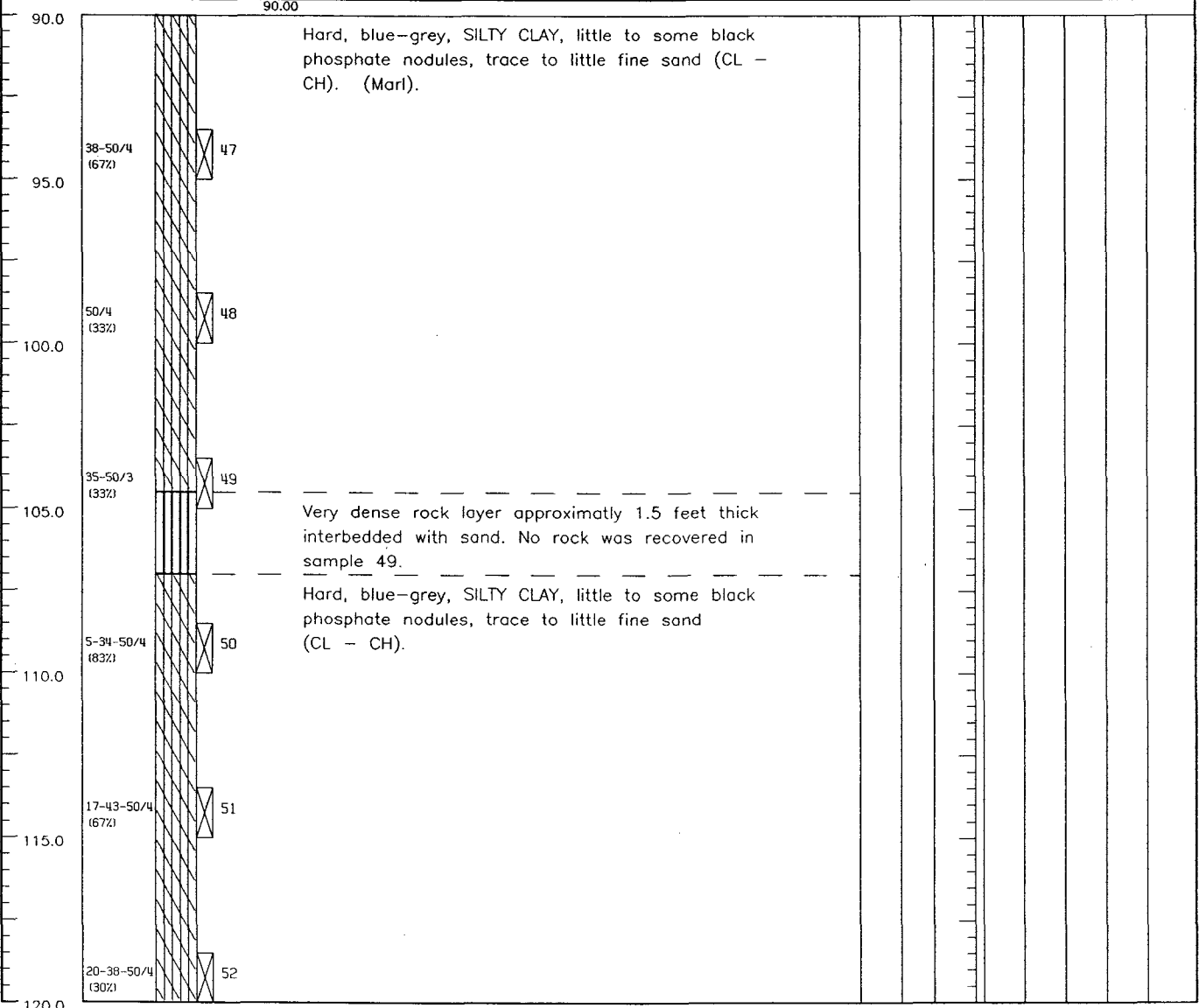
DRILL RIG CME 55

SURFACE CONDITIONS: Flat, sandy

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30' drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



Low Engineering

DRILLING CONTR

Jim Hallon

LOGGED BY John M. Thomas

DATE 3-21-90

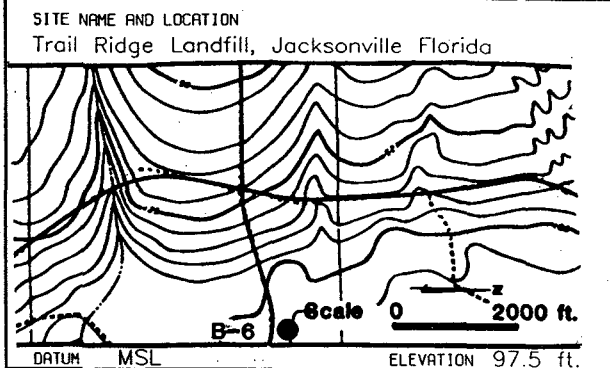
CHKD BY KBK

SL 11353C



Golder Associates Inc.

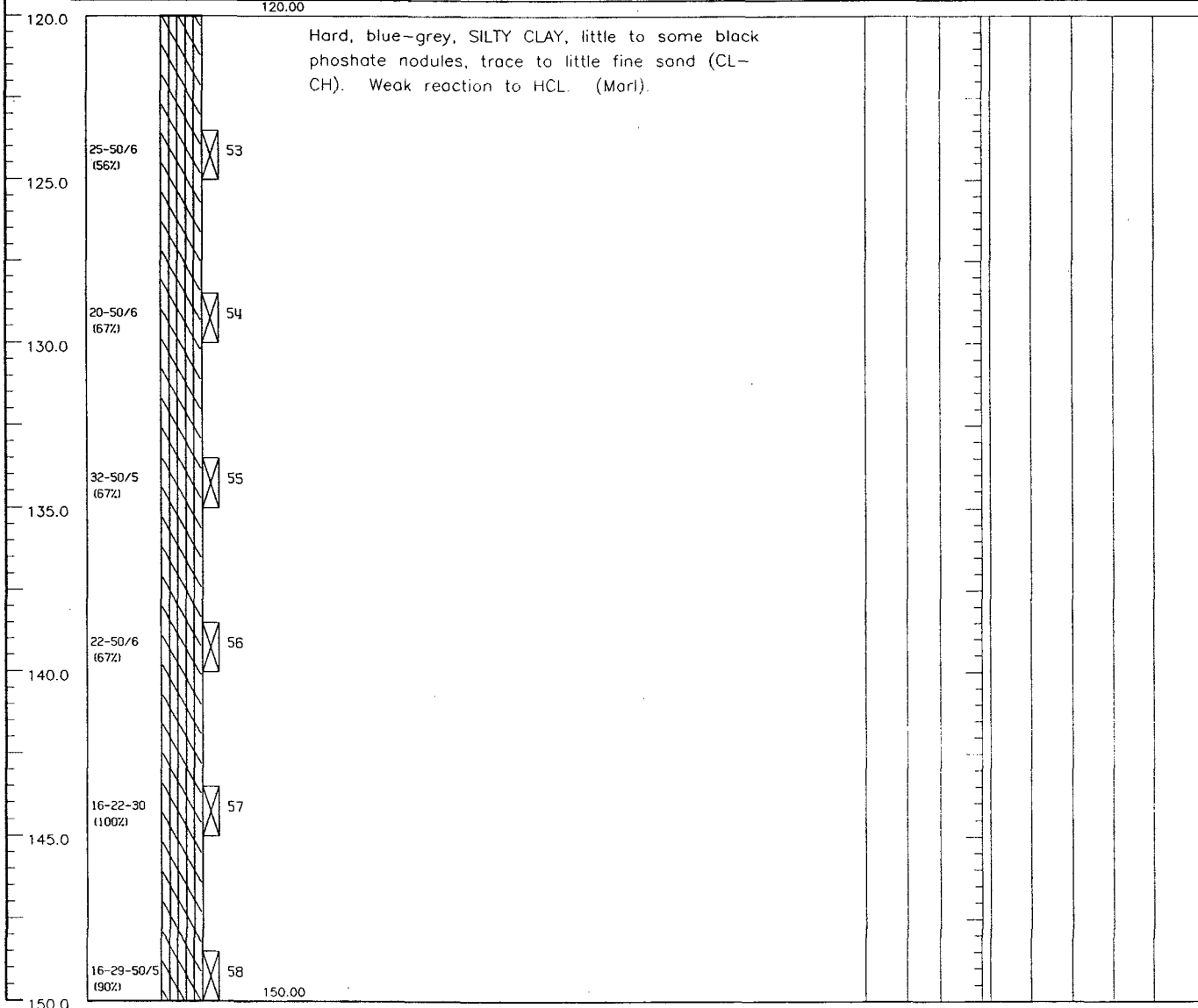
SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-6D	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 5 OF 5	
DRILLING			
WATER LEVEL		START TIME	FINISH TIME
		1445	1130
DATE		DATE	DATE
		3-12-90	3-16-90
CASING DEPTH			

DRILL RIG CME 55	SURFACE CONDITIONS: Flat, sandy
ANGLE Vertical BEARING	
SAMPLE HAMMER TORQUE 140lbs/30" drop	

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



DRILLING CONTR Low Engineering
Jim Hallon

LOGGED BY John M. Thomas
DATE 3-21-90 CHKD BY KBK

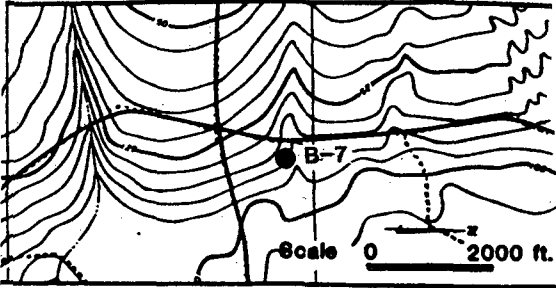
SL 11304C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida



DRILLING METHOD: Mud Rotary

BORING NO.

B-7D

SAMPLING METHOD: 18 in. Spit Spoon

SHEET
1 OF 4

WATER LEVEL

DRILLING

START TIME

1100

FINISH TIME

1420

DATE

CASING DEPTH

3-5-90

3-7-90

DATUM MSL ELEVATION 119.7 ft.

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, sandy

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
0.0			0.00																
2-3-2 (56%)			1 Compact, medium to dark brown, FINE to MEDIUM SAND, trace silt (SW -SM).																
2-5-9 (100%)			2																
3-3-2 (100%)			3																
5.0																			
2-3-4 (100%)			4																
3-4-5 (56%)			5																
2-4-10 (66%)			6																
1-3-8 (66%)			7																
10.0																			
5-9-10 (83%)			8																
4-7-10 (66%)			9																
3-5-9 (66%)			10																
15.0																			
4-8-10 (66%)			11																
10-22-17 (66%)			12																
3-6-9 (67%)			13																
20.0																			
3-9-15 (83%)			14																
13-20-17 (100%)			15																
5-9-14 (100%)			16																
4-13-15 (100%)			17																
8-9-10 (67%)			18																
4-4-4 (83%)			19																
28.50																			
2-2-2 (100%)			20 Stiff, grey, SILTY CLAY, discontinuous weathering																
30.0			30.00 (Cl)																

Low Engineering

DRILLING CONTR

Jim Hallon

SL 11305C

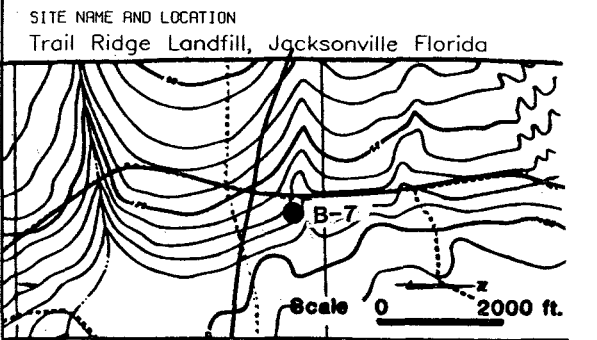
LOGGED BY John M. Thomas

DATE 3-21-90 CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-70	
SAMPLING METHOD: 18 in. Spit Spoon		SHEET 2 OF 4	
DRILLING			
WATER LEVEL		START TIME	FINISH TIME
TIME		1100	1420
DATE		DATE	DATE
CASING DEPTH		3-5-90	3-7-90

DATUM MSL ELEVATION 119.7 ft.
 DRILL RIG CME 55 SURFACE CONDITIONS: Flat, sandy
 ANGLE Vertical BEARING
 SAMPLE HAMMER TORQUE 140lbs/30" drop

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.00																			
2-3-4 (100%)			21 Stiff, grey, CLAY, discontinuous weathering (CL).																
2-3-4 (100%)			22																
3-13-24 (100%)			23 Dense, light grey, and brown, FINE to MEDIUM SAND, trace silty clay, trace black specks (SP - SW).																
13-26-34 (56%)			24																
3-13-24 (46%)			25																
11-22-22 (57%)			26																
13-27-33 (67%)			27 40.00																
15-25-45 (67%)			28 Dense, medium brown to light grey, FINE to MEDIUM SAND, trace silt (SW - SP).																
12-26-35 (67%)			29																
13-25-30 (100%)			30																
17-26-39 (85%)			31																
16-32-39 (67%)			32 48.00																
12-32-40 (33%)			33 Dense, light brown, FINE to COARSE SAND, trace silt (SP - SW).																
17-50/6 (33%)			34																
30 50/6 (30%)			35 52.00																
19-28-28 (30%)			36 Very dense, light brown, FINE to MEDIUM SAND, trace to little, flat, rounded, fine, gravel (SP - SW).																
4-16-38 (66%)			37																
12-38-50 (60%)			38																
15-40-50 (83%)			39																
20-38-40 (67%)			40 60.00																

LOGGED BY John M. Thomas
 DATE 3-21-90
 CHKD BY KBK

DRILLING CONTR Jim Hallon

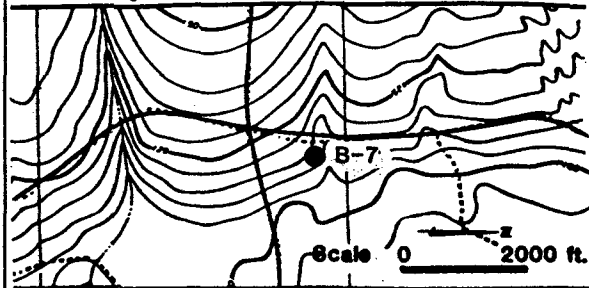
Low Engineering

SL 11306C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-7D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 3 OF 4	
		WATER LEVEL		DRILLING	
DATUM MSL		ELEVATION 119.7 ft.		START TIME 1100	FINISH TIME 1420
DRILL RIG CME 55		SURFACE CONDITIONS: Flat, sandy		DATE 3-5-90	DATE 3-7-90
ANGLE Vertical		BEARING			
SAMPLE HAMMER TORQUE 140lbs/30' drop					

DRILL RIG	CME 55	SURFACE CONDITIONS:	Flat, sandy
ANGLE	Vertical	BEARING	
SAMPLE HAMMER TORQUE	140lbs/30' drop		

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			
60.00			Very dense, light brown to grey, MEDIUM to COARSE SAND, trace to little flat, quartz, rounded gravel (SW - SP).											
65.00	18-35-50 (33%)	41	Very dense, grey, FINE to MEDIUM SAND, trace to little silty clay (SW - SP).											
70.00	37-50/5 (67%)	42												
75.00	17-35-45 (67%)	43												
80.00	12-23-40 (85%)	44												
85.00	11-18-23 (100%)	45	Dense, grey, FINE SAND and SILTY CLAY (SC).											
90.00	3-7-12 (100%)	46												

DRILLING CONTR
Jim Hallon

SL 11307C

LOGGED BY John M. Thomas
DATE 3-21-90
CHKD BY KBK

Low Engineering



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-7D

SHEET

4 OF 4

SAMPLING METHOD: Split Spoon

DRILLING

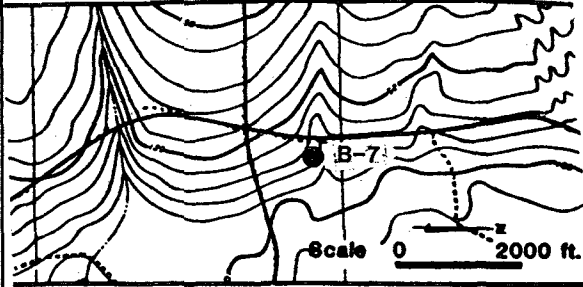
START TIME

FINISH TIME

1100 1420

DATE DATE

3-5-90 3-7-90



DATUM MSL ELEVATION 119.7 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, sandy

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30' drop

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)									
90.0			90.00																	
95.0	3-6-10 (100%)		47																	
100.0	9-16-35 (67%)		48																	
105.0	30-33-32 (57%)		49																	
110.0	30-50/6 (30%)		50																	
115.0	30-41-50/4 (33%)		51																	
115.0			115.00																	
			BORING TERMINATED.																	

Law Engineering

DRILLING CONTR Jim Hallon

LOGGED BY John M. Thomas

DATE 3-21-90

CHKD BY KRB

SL 11308C



Golder Associates Inc.

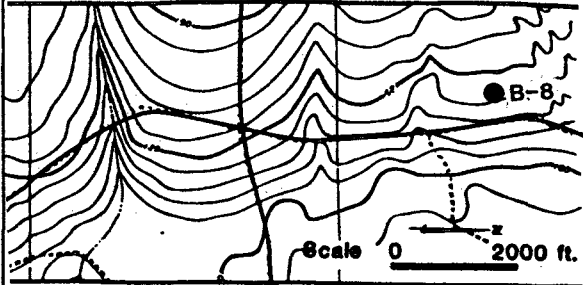
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-81



SAMPLING METHOD: 24 in. Split Spoon

SHEET

1 OF 2

DRILLING

WATER LEVEL

START TIME

FINISH TIME

TIME

1432

0945

DATE

DATE

1-31-90 2-2-90

DATUM MSL ELEVATION 123.2 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
0.0			0.00																
1.0	1-1-2-1 (54%)		1 Loose to compact, grey to dark grey, FINE SAND, trace silt (SP).																
2.0	1-2-1-3 (88%)		2																
3.0	3-4-5-5 (100%)		3																
4.0	4-7-1-10 (95%)		4																
5.0	5-9-12-15 (67%)		5																
6.0	7-7-5-9 (67%)		6																
7.0	3-4-6-7 (54%)		7																
8.0	3-4-6-9 (54%)		8																
9.0	3-6-9-9 (54%)		9																
10.0	6-5-3-4 (96%)		10																
11.0	7-13-14-15 (58%)		11 20.00 Compact, brown, FINE to MEDIUM SAND, trace silt (SP - SW).																
12.0	4-6-6-10 (58%)		12																
13.0	3-3-15-13 (90%)		13																
14.0	3-17-14-9 (46%)		14																
15.0	1-4-5-3 (50%)		15																
30.0			30.00																

Ellis and Associates

DRILLING CONTR

SL 11309C

CHKO BY KBK

DATE 3-26-90

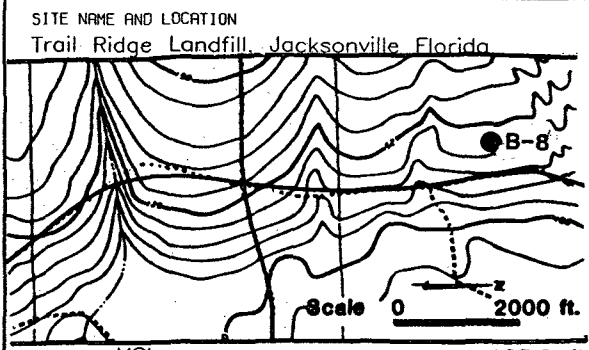
LOGGED BY LEL

Jay



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary	BORING NO. B-81
SAMPLING METHOD: 24 in. Split Spoon	SHEET 2 OF 2
DRILLING	
WATER LEVEL	START TIME 1432
TIME	FINISH TIME 0945
DATE	DATE
CASING DEPTH	1-31-90 2-2-90

DATUM MSL ELEVATION 123.2 ft.	DRILL RIG CME 55	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE Vertical BEARING	SAMPLE HAMMER TORQUE 140lbs/30 in.	

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.00																			
30.00 - 31.00	2-6-18-19 (100%)	X	16 Compact to very dense, brown, FINE to MEDIUM SAND, trace silt (SP - SW).																
31.00 - 32.00	2-8-15-18 (50%)	X	17																
32.00 - 33.00	15-18-20 (54%)	X	18																
33.00 - 34.00	9-13-17-19 (50%)	X	19																
34.00 - 35.00	6-12-19-32 (50%)	X	20																
35.00 - 36.00	7-11-15-17 (50%)	X	21																
36.00 - 37.00	6-13-17-23 (50%)	X	22																
37.00 - 38.00	17-21-29 (50%)	X	23																
38.00 - 39.00	7-15-15-22 (50%)	X	24																
39.00 - 40.00	7-14-20-25 (50%)	X	25																
40.00 - 41.00	17-23-23 (50%)	X	26																
41.00 - 42.00	9-23-42-40 (71%)	X	27																
42.00 - 43.00	9-16-25-30 (58%)	X	28																
43.00 - 44.00			56.00																
44.00 - 45.00	6-16-24-25 (54%)	X	29 Dense, brown, FINE to COARSE SAND, little silty clay (SP - SW).																
45.00 - 46.00			58.00																
46.00 - 47.00	24-19-11 (42%)	X	30 Compact, light grey, FINE to COARSE SAND, trace silty clay (SP - SW).																
47.00 - 48.00			60.00																

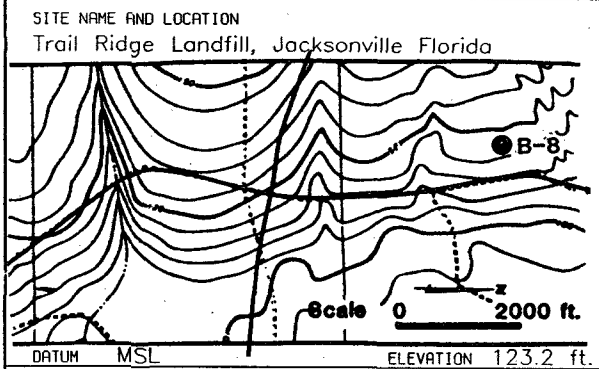
DRILLING CONTR Ellis and Associates
 LOGGED BY LEL
 DATE 3-26-90 CHKD BY KBK
 JAY

5L 11310C



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-8D	
SAMPLING METHOD: 24 in. and 18 in. Split Spoon		SHEET 1 OF 3	
WATER LEVEL		START TIME	FINISH TIME
TIME		1432	0945
DATE		DATE	DATE
CASING DEPTH		1-31-90	2-9-90

DRILL RIG CME-550
 ANGLE Vertical BEARING
 SAMPLE HAMMER TORQUE 140lbs/30 in.

SURFACE CONDITIONS: Flat, Sandy, Forested

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)

60.0	6-16-23-26 (71%)	31	Mud rotary drilled down to 60 ft. See field boring log B-81 for information.															
	5-20-35-48 (50%)	32	Compact, light grey, MEDIUM to FINE SAND, trace silty clay, trace fine gravel (SP - SW)															
65.0	22-34-50 (50%)	33	66.00 Compact, grey, FINE to MEDIUM SAND, trace silt. (SP - SW).															
	12-21-21 (61%)	34																
	13-20-20 (61%)	35																
75.0	19-31-37 (67%)	36																
	16-28-40 (61%)	37																
85.0	4-6-8 (100%)	38	Loose to compact, grey, FINE to MEDIUM SAND, trace clayey silt (SP - SW).															
90.0			90.00															

DRILLING CONTR. Low Engineering

R. Rowdy

SL 1131C

CHKD BY KBK

DATE 3-26-90

LOGGED BY LEL



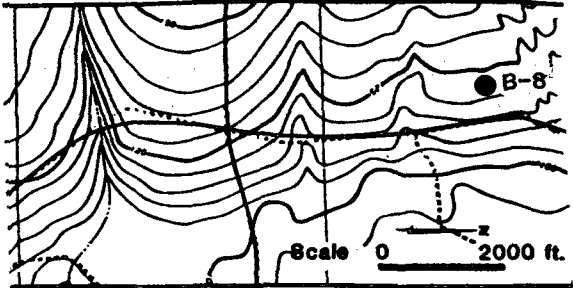
Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.
B-8D



SAMPLING METHOD: 18 in. Split Spoon

SHEET
2 OF 3

WATER LEVEL

DRILLING
START FINISH
TIME TIME

TIME

1432 0945

DATE

DATE DATE

1-31-90 2-2-90

DATUM MSL ELEVATION 123.2 ft.

CASING DEPTH

DRILL RIG CME-550

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
90.0			90.00 Loose to compact, grey, FINE SAND, trace clayey silt (SP).																
95.0	6-8-9 (83%)	39																	
100.0	wh-wh-4 (100%)	40	Stiff, dark grey, SILTY CLAY (CL - CH). Green to grey weathering.																
105.0	6-12-15 (100%)	41	105.00 Very dense, light grey, SHALE or LIMESTONE and black phosphate nodules, trace silty clay.																
110.0	82/5 (100%)	42																	
115.0	25-32-42 (100%)	43	Hard, green-grey, SILTY CLAY, some fine sand, trace to little black phosphate nodules (CL - CH). Weak reaction to HCL. (Marl).																
120.0	20-31-50 (100%)	44	120.00																

DRILLING CONTR Low Engineering R. Rawdy

SL 11312C

LOGGED BY LEL DATE 3-26-90 CHKD BY KBK



Golder Associates Inc.

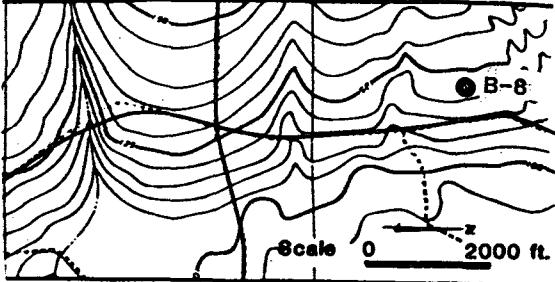
SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-8D



SAMPLING METHOD: 18 in. Split Spoon

SHEET
3 OF 3

DRILLING

WATER LEVEL

START TIME

FINISH TIME

TIME

1432

0945

DATE

DATE

1-31-90 2-2-90

DATUM MSL ELEVATION 123.2 ft.

CASING DEPTH

DRILL RIG CME-550

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
120.0			Hard green-grey SILTY CLAY, some fine sand, trace to little black phosphate nodules (CL). Weak reaction to HCL. (Marl).																
125.0	18-44-19 (83%)	X	45																
130.0	21-44-19/3 (83%)	X	46																
135.0	17-21-36/5 (94%)	X	47																
140.0	23-43-43 (100%)	X	48																
145.0	16-16-25 (100%)	X	49																
150.0	12-21-30 (100%)	X	50																

BORING TERMINATED.

Low Engineering

DRILLING CONTR R. Rowdy

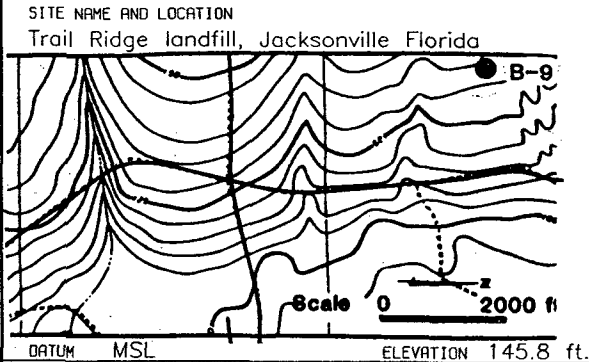
SL 113130

LOGGED BY LEL DATE 3-26-90 CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-91	
SAMPLING METHOD: 24 in. Split Spoon		SHEET 1 OF 3	
WATER LEVEL:		START TIME	FINISH TIME
TIME		1240	1720
DATE		DATE	DATE
CASING DEPTH		1-31-90	2-1-90

DRILL RIG Mobile B-61	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE Vertical BEARING	
SAMPLE HAMMER TORQUE 140lbs/30 in.	

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)

0.0	1-1-5-6 (33%)		1 Loose to dense, light to dark brown, FINE to MEDIUM SAND, trace to some silt (SP - SW).																
	6-6-7-6 (67%)		2																
5.0	3-3-3-3 (67%)		3																
	2-3-5-5 (83%)		4																
	4/12-7/12 (100%)		5																
10.0	2-6-8-10 (75%)		6																
	6-8-17-24 (75%)		7																
15.0	20-24-36 (79%)		8																
	20-24-29 (79%)		9	16.00															
	4-9-12-13 (21%)		10																
20.0	6-12-16-16 (54%)		11																
	13-20-37 (83%)		12																
25.0	5-7-9-5 (25%)		13																
	1-2-1-1 (88%)		14																
	1-1-5-9 (50%)		15																
30.0				30.00															

DRILLING CONTR Ellis and Associates

LOGGED BY John M. Thomas

SL 11314C

DATE 3-23-90 CHKD BY KBK

B. Moody



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-91	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 2 OF 3	
				DRILLING	
WATER LEVEL		START TIME		FINISH TIME	
		1240		1720	
DATE		DATE		DATE	
		1-31-90		2-1-90	
ELEVATION 145.8 ft.		CASING DEPTH			

DRILL RIG: Mobile B-61	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE: Vertical	BEARING:
SAMPLE HAMMER TORQUE: 140lbs/30 in.	

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS									
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)					
30.0	1-5-6-7 (83%)		16 Compact, tan, FINE to MEDIUM SAND, trace to little silty clay (SP - SW).													
	5-5-7-8 (63%)		17													
			34.00													
35.0	5-7-9-11 (50%)		18 Compact, tan, MEDIUM to COARSE SAND, trace silty clay (SW).													
	6-7-7-8 (54%)		19 Compact, tan, FINE to MEDIUM, SAND, trace to little silty clay (SP - SW).													
	6-5-6-8 (67%)		20													
40.0	3-5-9-11 (75%)		21													
	6-6-10-9 (54%)		22													
	3-6-9-15 (58%)		23													
45.0	1-5-6-9 (54%)		24													
	3-5-9-15 (54%)		25													
50.0	4-7-13-16 (67%)		26													
	3-5-18-14 (67%)		27													
55.0	6-8-12-20 (63%)		28													
	6-7-14-28 (54%)		29													
	6-10-20-31 (63%)		30													
60.0			60.00													

DRILLING CONTR Ellis and Associates
B. Moody

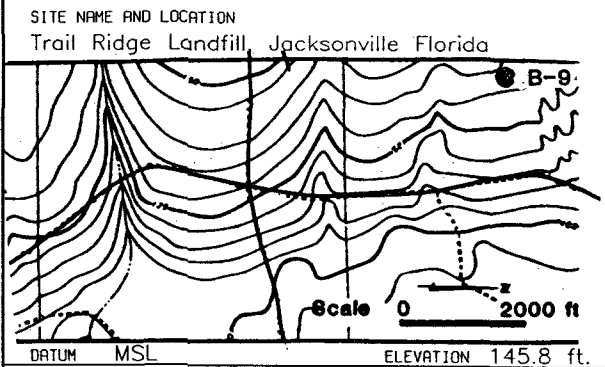
SL 11315C

LOGGED BY John M. Thomas
DATE 3-23-90
CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-91	
SAMPLING METHOD: 24 in. Split Spoon		SHEET 3 OF 3	
WATER LEVEL		START TIME 1240	FINISH TIME 1720
TIME		DATE	DATE
DATE		1-31-90	2-1-90
CASING DEPTH			

DRILL RIG: Mobile B-61	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE: Vertical BEARING	
SAMPLE HAMMER TORQUE: 140lbs/30 in.	

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
60.0	6-13-20-2 (50%)	[Symbol]	31 Dense to very dense, grey, MEDIUM to COARSE SAND trace silt (SP -SW).																
	4-8-18-23 (54%)	[Symbol]	32																
	6-14-24-36 (54%)	[Symbol]	33 Dense to very dense, brown, MEDIUM to COARSE SAND, trace to little silty clay (SP - SW).																
65.0	23-50 (75%)	[Symbol]	34																
	6-12-50 (67%)	[Symbol]	35																
	6-18-35 (50%)	[Symbol]	36																
70.0	7-14-21-27 (50%)	[Symbol]	37																
	20-35-35 (50%)	[Symbol]	38																
75.0	15-30-50 (50%)	[Symbol]	39																
	25-40-40 (50%)	[Symbol]	40																
	15-20-25 (33%)	[Symbol]	41																
80.0	15-22-25 (25%)	[Symbol]	42																
			82.00																
			BORING TERMINATED.																
85.0																			
90.0																			

DRILLING CONTR Ellis and Associates
B. Moody

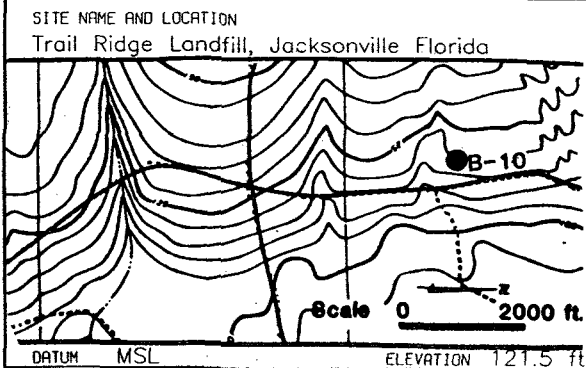
LOGGED BY John M. Thomas
DATE 3-23-90
CHKD BY KBK

SL 11316C



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-101	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 2	
WATER LEVEL		START TIME	FINISH TIME
TIME		1030	0945
DATE		DATE	DATE
CASING DEPTH		3-1-90	3-2-90

DRILL RIG	CME 55
ANGLE	Vertical
BEARING	
SAMPLE HAMMER TORQUE	140lbs/30 in.

SURFACE CONDITIONS: Flat, Sandy, Forested	
---	--

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
0.0			0.00																
1-1-1 (67%)			1 Loose to dense, dark brown to dark grey, FINE SAND, trace to some silt (SP - SM).																
1-2-4 (67%)			2																
7-11-14 (100%)			3																
12-16-20 (56%)			4																
8-12-19 (67%)			5																
1-4-9 (67%)			6																
4-13-18 (87%)			7																
6-11-18 (67%)			8																
3-3-8 (87%)			9																
5-9-12 (100%)			10																
4-6-12 (83%)			11																
5-8-12 (67%)			12																
1-4-5 (67%)			13																
6-9-3 (67%)			14																
4-8-16 (67%)			15																
			22.50																
3-4-4 (67%)			16 Soft, brown to light brown, SILTY CLAY and FINE SAND (CL - SC).																
1-2-3 (89%)			17																
1-8-10 (69%)			18																
3-3-3 (33%)			19																
			28.50																
3-4-2 (67%)			20 Soft, grey, SILTY CLAY (CL -CH).																
			30.00																

DRILLING CONTR Low Engineering

J. Hollon

SL 11317C

CHKD BY KBK

LOGGED BY John M. Thomas

DATE 3-26-90



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-101

SHEET

2 OF 2

SAMPLING METHOD: 18 in. Split Spoon

DRILLING

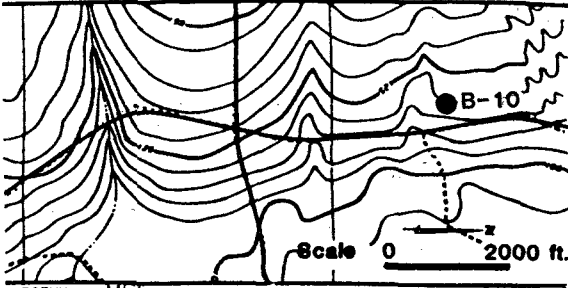
START FINISH

TIME TIME

1030 0945

DATE DATE

3-1-90 3-2-90



DATUM MSL ELEVATION 121.5 ft.

CASING DEPTH

DRILL RIG CME 55

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BERRING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.0			30.00																
30.0	1-3-9 (76%)		21 Compact to very dense, brown to dark brown, FINE SAND, trace to and silty clay (SP - SC).																
	3-6-10 (63%)		22																
	2-4-18 (67%)		23																
35.0	5-5-12 (83%)		24																
	7-8-14 (67%)		25																
	11-31-50/5 (94%)		26																
40.0	16-33-33 (56%)		27																
	9-17-24 (67%)		28																
	8-16-33 (67%)		29																
45.0	12-19-23 (67%)		30																
	11-25-32 (67%)		31																
			46.60																
	12-20-22 (67%)		32 Dense to very dense, grey, FINE to COARSE SAND, little flat quartz, rounded gravel, trace grey silty clay (SW).																
	10-21-34 (67%)		33																
50.0	13-21-34 (67%)		34																
			51.00																
			BORING TERMINATED.																
55.0																			
60.0																			

Low Engineering

DRILLING CONTR

J. Hallon

LOGGED BY John M. Thomas

DATE 3-26-90

CHKD BY KBK

SL 11318C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-11D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 5	
		DRILLING		START TIME 1330	
DATE		DATE		FINISH TIME 1330	
DATE		DATE		FINISH DATE 2-9-90	
DATUM MSL		ELEVATION 118.4 ft.		CASING DEPTH	

DRILL RIG CME 55		SURFACE CONDITIONS: Flat, Sandy, Forested	
ANGLE Vertical		BEARING	
SAMPLE HAMMER TORQUE 140lbs/30 in.			

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS								
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)				
0.0			0.00												
1.1	1-1 (62)		1 Compact, dark brown, FINE SAND, trace silt (SP).												
3.9	3-9 (92)		2												
9.1	9-12 (67)		3												
5.0	5-5 (100)		4												
8.6	8-6 (67)		5												
5.6	5-6 (83)		6												
9.0			9.00												
10.0	1-1 (33)		7 Compact to dense, brown to dark brown, FINE to MEDIUM SAND, trace silt (SP - SW).												
4.9	4-9 (39)		8												
5.1	5-10 (83)		9												
3.8	3-8 (21)		10												
6.9	6-9 (89)		11												
6.1	6-10 (50)		12												
3.6	3-6 (50)		13												
9.1	9-12 (89)		14												
9.2	9-20 (67)		15												
3.1	3-12 (89)		16												
8.9	8-9 (100)		17												
25.0	5-3 (100)		18 26.00												
	2-2 (100)		19 Soft, grey, SILTY CLAY (CL). Some discontinuous weathering.												
	2-1 (100)		20												
30.0			30.00												

DRILLING CONTR J. Hallon
Law Engineering

SL 11319C

LOGGED BY John M. Thomas
DATE 3-23-90
CHKD BY KBK



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-11D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 2 OF 5	
		WATER LEVEL		DRILLING START TIME: 1330 FINISH TIME: 1330	
DATUM: MSL ELEVATION: 118.4 ft.		CASING DEPTH		DATE: 2-6-90 DATE: 2-9-90	

DRILL RIG: CME 55	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE: Vertical	BEARING:
SAMPLE HAMMER TORQUE: 140lbs/30 in.	

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	WANE (TSF)

30.0	2-24-35 (83%)	[Symbol: Dotted pattern]	21 30.50 Dense to compact, brown to light brown, FINE to MEDIUM SAND, trace to little silty clay (SP - SW).																	
	7-23-35 (72%)		22																	
	11-18-22 (50%)		23																	
35.0	10-20-29 (56%)		24																	
	7-24-35 (67%)		25																	
	12-30-37 (50%)		26																	
	12-24-30 (67%)		27																	
40.0	7-7-14 (72%)		28	42.00																
	3-16-28 (50%)	[Symbol: Dotted pattern]	29 Dense, tan, FINE to MEDIUM SAND, trace silt (SP - SW).																	
	12-20-28 (67%)		30																	
45.0	14-28-35 (67%)		31 46.00																	
	6-30-40 (67%)	[Symbol: Dotted pattern]	32 Dense to very dense, grey, FINE to MEDIUM SAND, trace to little silty clay (SP - SW).																	
	20-20-50/3 (83%)		33																	
50.0	35-50/5 (67%)		34																	
	38-50/5 (67%)		35																	
	33-20-9 (44%)	36																		
55.0	8-12-25 (83%)	37 55.00																		
	6-12-25 (100%)	[Symbol: Dotted pattern]	38 56.00 Dense, grey, SILTY CLAY and FINE SAND (SC).																	
	3-17-30 (56%)		39 Very dense, tan, FINE to COARSE SAND, little flat, quartz, rounded gravel, trace silt (SP -SW).																	
60.0	9-22-30 (100%)		40 60.00																	

DRILLING CONTR Low Engineering

LOGGED BY John M. Thomas

DATE 3-23-90

J. HOLLON

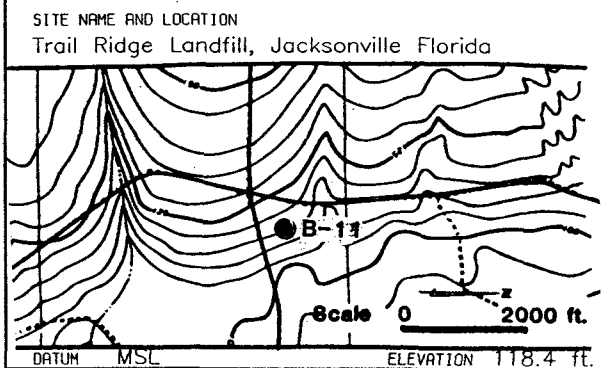
SL 113450

CHUB BY KEIK



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-11D	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 3 OF 5	
WATER LEVEL		START TIME	FINISH TIME
TIME		1330	1330
DATE		DATE	DATE
CASING DEPTH		2-6-90	2-9-90

DRILL RIG CME 55	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE Vertical BEARING	
SAMPLE HAMMER TORQUE 140lbs/30 in.	

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)							
60.0	11-23-35 (100%)	X	41 Very dense, tan, FINE to COARSE SAND, little flat, quartz, rounded gravel, trace silty clay (SP - SW).															
65.0	30-50/6 (100%)	X	42 65.00 Dense to very dense, light brown, MEDIUM to COARSE SAND, trace flat, quartz, rounded gravel, trace clay (SP - SW).															
70.0	40-50/3 (33%)	X	43 Very dense, tan FINE to MEDIUM SAND, trace to little silty clay (SW - SP).															
75.0	26-50/6 (67%)	X	44															
80.0	19-30-39 (67%)	X	45															
85.0	21-50/6 (67%)	X	46 84.00 Very dense, grey FINE to FINE SAND, trace flat translucent gravel with rounded edges, trace grey clay (SW - SP).															
90.0	18-30-38 (33%)	X	47 90.00															

DRILLING CONTR Low Engineering
J. Hallon

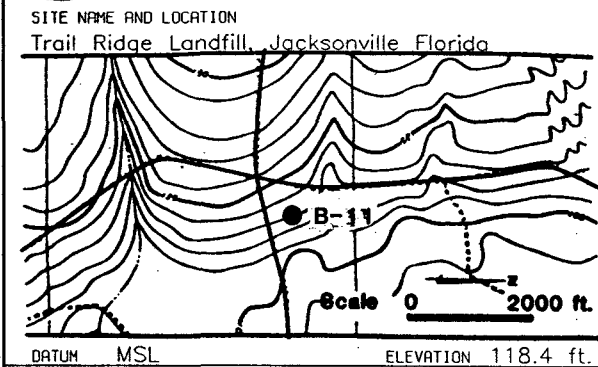
LOGGED BY John M. Thomas
DATE 3-23-90
CHKD BY KBK

SL 11321C



Golder Associates Inc.

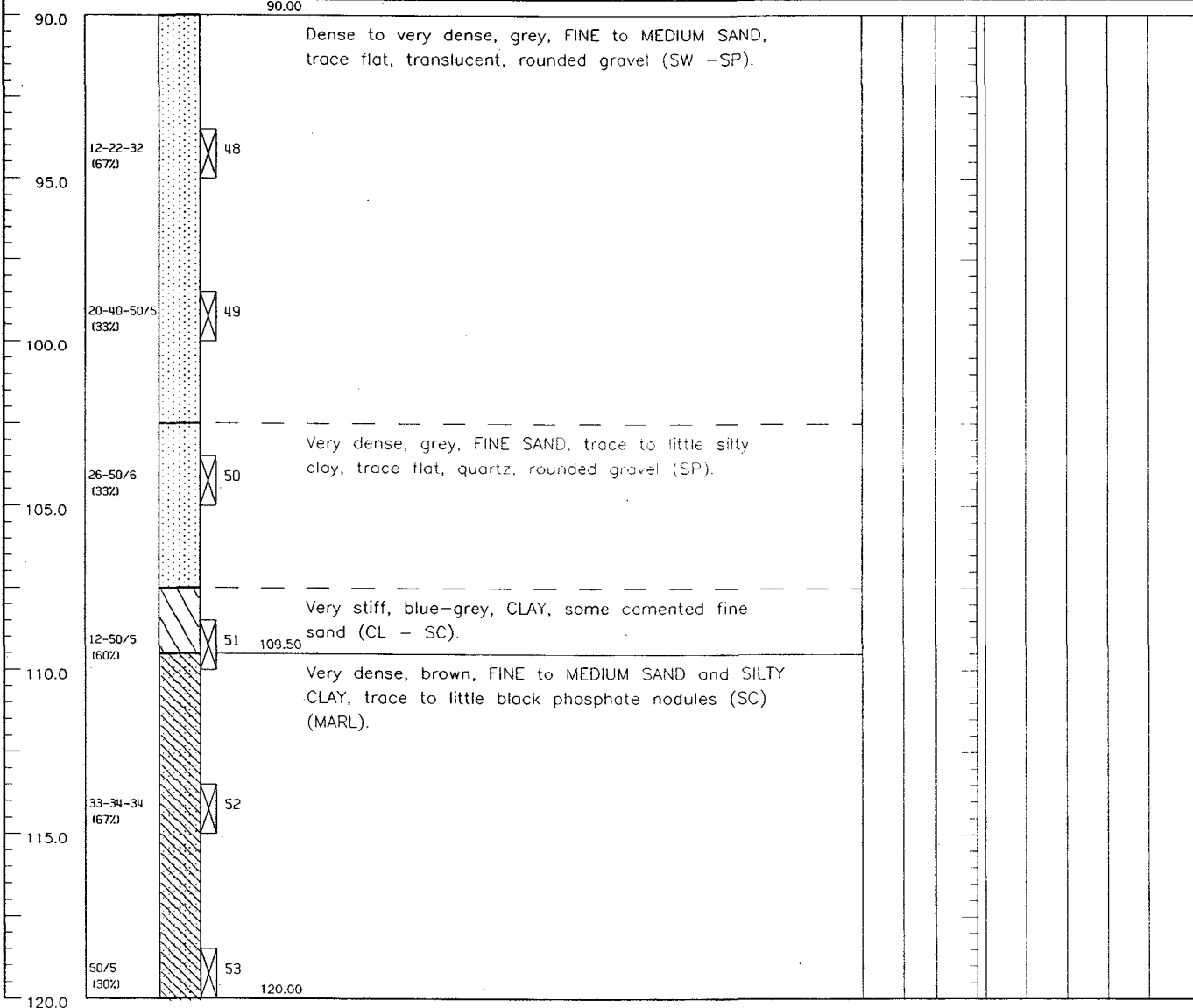
SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-11D	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 4 of 5	
WATER LEVEL		DRILLING	
TIME	DATE	START TIME	FINISH TIME
		1330	1330
DATE		DATE	DATE
		2-6-90	2-9-90
DATUM MSL		ELEVATION 118.4 ft.	
CASING DEPTH			

DRILL RIG CME 55	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE Vertical	BEARING
SAMPLE HAMMER TORQUE 140lbs/30 in.	

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



DRILLING CONTR Low Engineering J. Hallon

LOGGED BY John M. Thomas

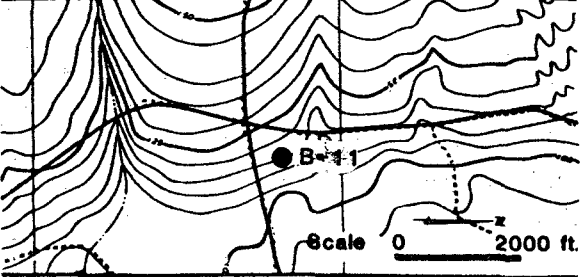
DATE 3-23-90 CHKD BY KBK

SL 11322C



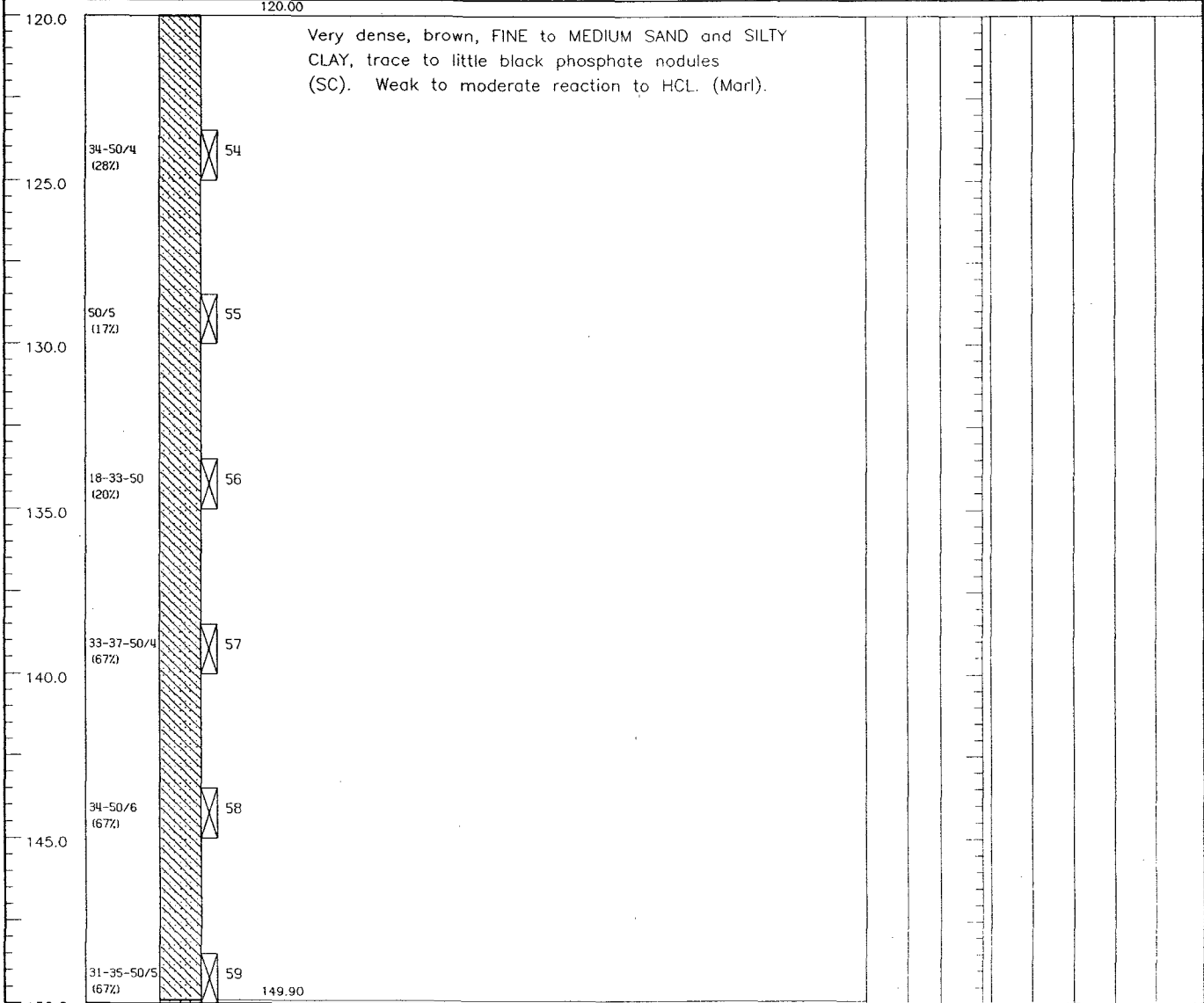
Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-11D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 5 OF 5	
		WATER LEVEL		DRILLING	
DATUM: MSL		ELEVATION: 118.4 ft.		START TIME 1330	FINISH TIME 1330
DRILL RIG: CME 55		SURFACE CONDITIONS: Flat, Sandy, Forested		DATE 2-6-90	DATE 2-9-90
ANGLE: Vertical		BEARING:		CASING DEPTH	
SAMPLE HAMMER TORQUE: 140lbs/30 in.					

DRILL RIG	CME 55	SURFACE CONDITIONS	Flat, Sandy, Forested
ANGLE	Vertical	BEARING	
SAMPLE HAMMER TORQUE	140lbs/30 in.		

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)



DRILLING CONTR Low Engineering
J. Hallon

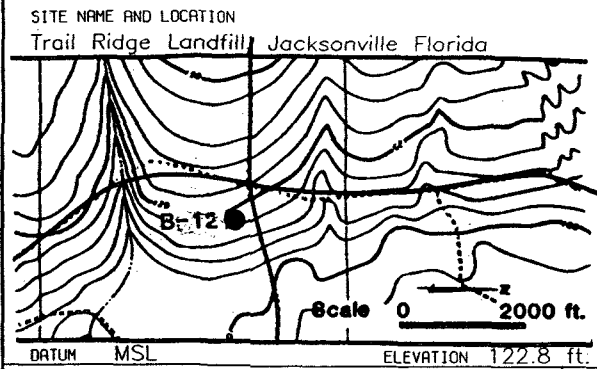
LOGGED BY John M. Thomas
DATE 3-23-90 CHKD BY LKB

SL 113230



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-12D	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 4	
WATER LEVEL		START TIME	FINISH TIME
TIME		1000	1141
DATE		DATE	DATE
CASING DEPTH		3-1-90	3-3-90

DRILL RIG CME-550
 ANGLE Vertical BEARING
 SAMPLE HAMMER TORQUE 140lbs/30 in.

SURFACE CONDITIONS: Flat, Sandy, Forested

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)

0.0	1-1-1 (67%)		1 Very Loose to loose, dark brown, FINE to MEDIUM SAND, trace to little silt (SP - SW).																	
	2-2-3 (83%)		2																	
	2-1-2 (88%)		3																	
5.0	3-3-3 (100%)		4																	
	wh-wh-1 (67%)		5																	
	1-2-2 (56%)		6																	
10.0	2-3-6 (61%)		7	10.50																
	3-5-6 (61%)		8																	
	2-5-5 (72%)		9																	
15.0	3-6-8 (83%)		10																	
	3-5-6 (68%)		11																	
	9-17-11 (83%)		12																	
	3-7-9 (63%)		13																	
20.0	4-9-18 (67%)		14																	
	11-23-28 (83%)		15																	
	9-15-18 (67%)		16																	
25.0	12-12-14 (72%)		17																	
	5-7-8 (56%)		18																	
	4-9-15 (67%)		19	28.50																
30.0	7-14-5 (72%)		20	30.00	Compact to dense, brown to dark brown, FINE to MEDIUM SAND, trace silt (SP - SW).															

DRILLING CONTR R. Rowdy

LOGGED BY LEL

DATE 3-26-90

CHKD BY KBK

SL 11324C

Low Engineering



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-12D

SAMPLING METHOD: 18 in. Split Spoon

SHEET

2 OF 4

DRILLING

START TIME

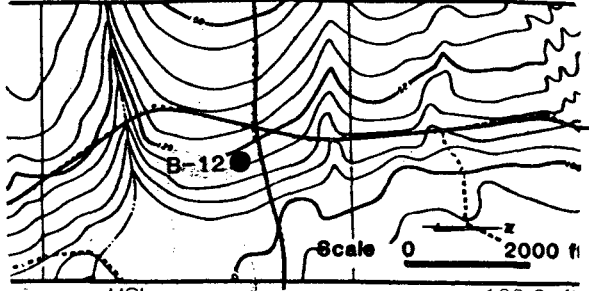
1000

FINISH TIME

1141

DATE

3-1-90



DATUM MSL ELEVATION 122.8 ft.

DRILL RIG CME-550

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.00																			
2-8-12 (56%)			21 Compact to dense, light brown to tan, FINE to MEDIUM SAND, trace silt (SP - SW).																
10-16-18 (67%)			22																
9-8-10 (72%)			23																
3-9-10 (56%)			24																
4-10-12 (56%)			25																
8-16-18 (78%)			26																
39.00																			
2-9-17 (72%)			27 Compact to very dense, light brown, to grey, FINE to MEDIUM SAND, trace silt (SP - SW).																
12-15-17 (67%)			28																
12-25-35 (83%)			29																
10-38-50 (61%)			30																
23-26-31 (61%)			31																
46.00																			
23-26-31 (50%)			32 Compact to very dense, brown to dark grey, FINE to MEDIUM SAND, trace to some silty clay (SW - SC).																
11-15-19 (61%)			33																
4-9-19 (61%)			34																
10-10-12 (78%)			35																
15-24-24 (63%)			36																
4-8-5 (50%)			37																
56.50																			
wh/18 (100%)			38 Very soft, grey, CLAYEY SILT and FINE SAND, little, rounded gravel (ML - SM).																
1-10-12 (72%)			39																
58.00																			
10-21-34 (67%)			40 Compact, brown and grey, FINE to COARSE SAND, trace gravel (SW).																
60.00																			

Low Engineering

DRILLING CONTR

CHKD BY

LOGGED BY

DATE

3-26-90

3L 11346C

R. Rowdy



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Land Fill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-12D

SHEET

3 OF 4

SAMPLING METHOD: 18 in. Split Spoon

DRILLING

WATER LEVEL

START TIME

FINISH TIME

TIME

1000

1141

DATE

DATE

CASING DEPTH

3-1-90

3-3-90

DATUM MSL ELEVATION 122.8 ft.

DRILL RIG CME-550

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			
60.00			Dense to very dense brown and grey. FINE to COARSE SAND, trace rounded gravel, trace silt (SP - SW).											
64.5	16-29-38 (67%)	X	41											
69.0	26-50/6 (67%)	X	42											
73.5	14-22-24 (67%)	X	43											
78.0	12-19-19 (78%)	X	44											
82.5	10-11-20 (61%)	X	45											
87.0	10-18-21 (100%)	X	46											
90.00														

DRILLING CONTR Low Engineering

R. Rowdy

LOGGED BY LEL

DATE 3-26-90

SL 113260

CHKD BY NBS



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.

B-12D

SAMPLING METHOD: 18 in. Split Spoon

SHEET

4 OF 4

DRILLING

START FINISH

TIME TIME

DATE DATE

3-1-90 3-3-90

DATUM MSL ELEVATION 122.8 ft.

CASING DEPTH

DRILL RIG CME-500

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	WANE (TSF)							
90.0			90.00 Dense to very dense, light brown and grey. FINE to MEDIUM SAND, trace clayey silt (SP - SW).															
95.0	7-15-23 (67%)	47																
100.0	10-23-26 (44%)	48																
105.0	21-42-34 (56%)	49																
110.0	16-20-24 (100%)	50	Compact to dense, gray SILTY CLAY and CEMENTED SHELL FRAGMENTS (CL), black phosphate nodules throughout. Moderate reaction to HCL. (Limestone).															
115.0	19-21-25 (89%)	51	115.00															
			BORING TERMINATED.															
120.0																		

Low Engineering

DRILLING CONTR

SL 11327C

CHKD BY KBK

DATE 3-26-90

LOGGED BY LEL

R. Rowdy



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-131	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 2	
		WATER LEVEL		DRILLING START TIME: 1306 FINISH TIME: 1433	
DATUM: MSL ELEVATION: 122.1 ft.		CASING DEPTH		DATE: 3-7-90 DATE: 3-8-90	

DRILL RIG: CME-550	SURFACE CONDITIONS: Flat, Sandy, Forested
ANGLE: Vertical BEARING:	
SAMPLE HAMMER TORQUE: 140lbs/30 in.	

DEPTH IN FEET	BLOWS / 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS								
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)				
0.0			0.00												
1.0	MH-1-4 (44%)	X	1 Very loose to loose, dark brown, FINE SAND, trace clayey silt (SP).												
2.0	2-3-4 (56%)	X	2												
3.0	3-4-4 (67%)	X	3												
4.0	2-1-2 (100%)	X	4												
5.0			6.00												
6.0	MH/14-1 (67%)	X	5 Very loose to compact, brown to dark brown, FINE to MEDIUM SAND, trace to some silt (SW - SM).												
7.0	1-2-3 (67%)	X	6												
8.0	2-3-5 (83%)	X	7												
9.0	5-9-10 (67%)	X	8												
10.0	6-8-7 (94%)	X	9												
11.0	2-2-4 (83%)	X	10												
12.0	3-5-5 (83%)	X	11												
13.0	MH-MH-2 (100%)	X	12												
14.0	1-1-2 (67%)	X	13												
15.0	1-1-5 (78%)	X	14												
16.0	2-7-12 (89%)	X	15												
17.0	1-4-6 (56%)	X	16												
18.0	4-8-8 (76%)	X	17												
19.0	2-3-7 (72%)	X	18												
20.0			27.00												
21.0	5-7-7 (77%)	X	19 Compact, brown, FINE to MEDIUM SAND, trace silt (SP - SW).												
22.0	4-7-7 (56%)	X	20												
23.0			30.00												

DRILLING CONTR Low Engineering
R. Rawdy

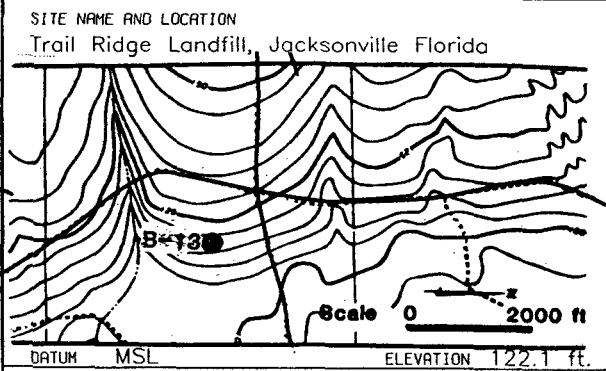
LOGGED BY LEL
DATE 3-26-90
CHKD BY KBK

GL 113280



Golder Associates Inc.

SOIL BOREHOLE LOG



DRILLING METHOD: Mud Rotary		BORING NO. B-131	
SAMPLING METHOD: 18 in. Split Spoon		SHEET 2 OF 2	
WATER LEVEL		START TIME	FINISH TIME
TIME		1306	1433
DATE		DATE	DATE
CASING DEPTH		3-7-90	3-8-90

DRILL RIG CME-550
 ANGLE Vertical BEARING
 SAMPLE HAMMER TORQUE 140lbs/30 in.

SURFACE CONDITIONS: Flat, Sandy, Forested

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)

30.0	1-3-5 (61%)	21	30.00 Compact to dense, light brown, FINE to MEDIUM SAND, trace to little silt (SP).											
	5-13-15 (72%)	22												
	11-16-21 (67%)	23												
35.0	14-19-19 (69%)	24												
	6-12-16 (72%)	25												
	7-12-16 (78%)	26												
40.0	6-16-24 (83%)	27												
	7-12-16 (78%)	28												
	10-10-5 (72%)	29	43.00											
45.0	1-3-7 (61%)	30	Compact to dense, brown to grey, FINE to MEDIUM SAND, trace silt (SP - SW).											
	1-8-16 (56%)	31												
	8-17-22 (72%)	32												
	18-24-24 (61%)	33												
50.0	11-14-20 (67%)	34												
	5-10-13 (67%)	35												
	3-12-17 (78%)	36												
	8-8-11 (50%)	37												
55.0	5-13-6 (78%)	38	56.70											
	8-18-27 (72%)	39	58.00 Stiff, dark brown, SILTY CLAY (CL).											
	11-28-33 (56%)	40	60.00 Dense, light brown, FINE to COARSE SAND, trace to little, rounded, fine gravel (SW).											

BORING TERMINATED.

DRILLING CONTR R. Rowdy

LOGGED BY LEL

DATE 3-26-90 CHKD BY KBK

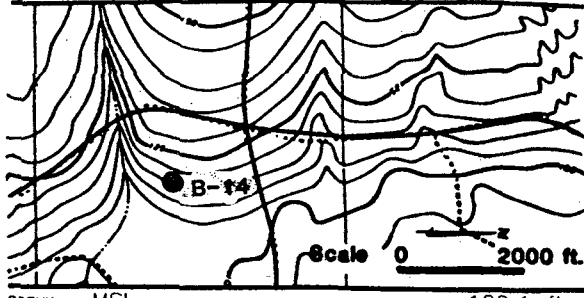
Low Engineering

SL 11329C



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-141	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 of 2	
		WATER LEVEL		DRILLING	
DRILL RIG CME-550		SURFACE CONDITIONS: Flat, Sandy, Forested		START TIME 1333	FINISH TIME 1100
ANGLE Vertical		BEARING		DATE 2-16-90	DATE 2-20-90
SAMPLE HAMMER TORQUE 140lbs/30 in.		CASING DEPTH			

DRILL RIG	CME-550	SURFACE CONDITIONS:	Flat, Sandy, Forested
ANGLE	Vertical	BEARING	
SAMPLE HAMMER TORQUE	140lbs/30 in.		

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)							
0.0			0.00															
1.0	1-1-1 (67%)		1 Very loose to dense, brown, FINE to MEDIUM SAND, trace to some silt (SP - SW).															
1.5	1-2-3 (100%)		2															
2.0	4-7-7 (85%)		3															
5.0	2-2-1 (67%)		4															
6.0	WH-WH-2 (67%)		5															
7.0	WH-2-4 (67%)		6															
10.0	4-8-11 (67%)		7															
11.0	5-9-5 (47%)		8															
12.0	1-2-5 (67%)		9															
13.0	3-4-6 (53%)		10															
14.0	3-4-4 (53%)		11															
15.0	2-10-18 (80%)		12															
16.0	3-10-16 (80%)		13															
17.0	11-17-22 (67%)		14															
18.0	5-24-24 (83%)		15															
19.0	14-15-14 (93%)		16 24.70															
20.0	2-3-5 (83%)		17 Stiff, brown-grey, SILTY CLAY, trace fine sand (CL).															
21.0	5-9-15 (83%)		18 26.00															
22.0	4-12-14 (67%)		19 Compact to dense, brown, FINE to MEDIUM SAND, trace silt (SP - SW).															
23.0	9-13-16 (67%)		20															
30.0			30.00															

LOGGED BY LEL
 DATE 5-25-90
 CHECKED BY KIB
 DRILLING CONTR Low Engineering
 R. Drawdy

SL 11347C



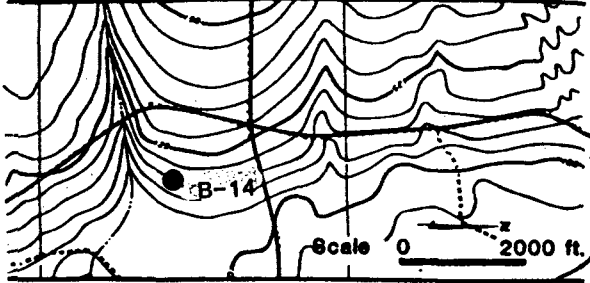
Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION
Trail Ridge Landfill, Jacksonville Florida

DRILLING METHOD: Mud Rotary

BORING NO.
B-141



SAMPLING METHOD: 18 in. Split Spoon

SHEET
2 OF 2

WATER LEVEL

DRILLING
START TIME: 1333
FINISH TIME: 1100

TIME

DATE

DATE

2-16-90 2-20-90

DATUM MSL ELEVATION 120.1 ft.

CASING DEPTH

DRILL RIG CME-550

SURFACE CONDITIONS: Flat, Sandy, Forested

ANGLE Vertical BEARING

SAMPLE HAMMER TORQUE 140lbs/30 in.

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)								
30.0			21 Compact to dense, brown, FINE to MEDIUM SAND, trace silty clay (SP- SW).																
35.0			24 37.50 25 Loose to very dense, tan to light brown, FINE to MEDIUM SAND, trace silt (SP - SW).																
40.0			26																
45.0			27																
			28																
			29																
			30																
			31																
			32																
			33																
			34																
			35																
			36																
			37																
			38																
			39																
			40																
60.0			60.00																

BORING TERMINATED.

Low Engineering
DRILLING CONTR
R. Drowdy

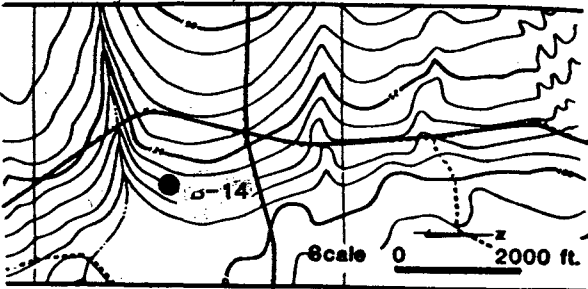
SL 11331C

LOGGED BY LEL
DATE 3-23-90
CHKD BY KBK

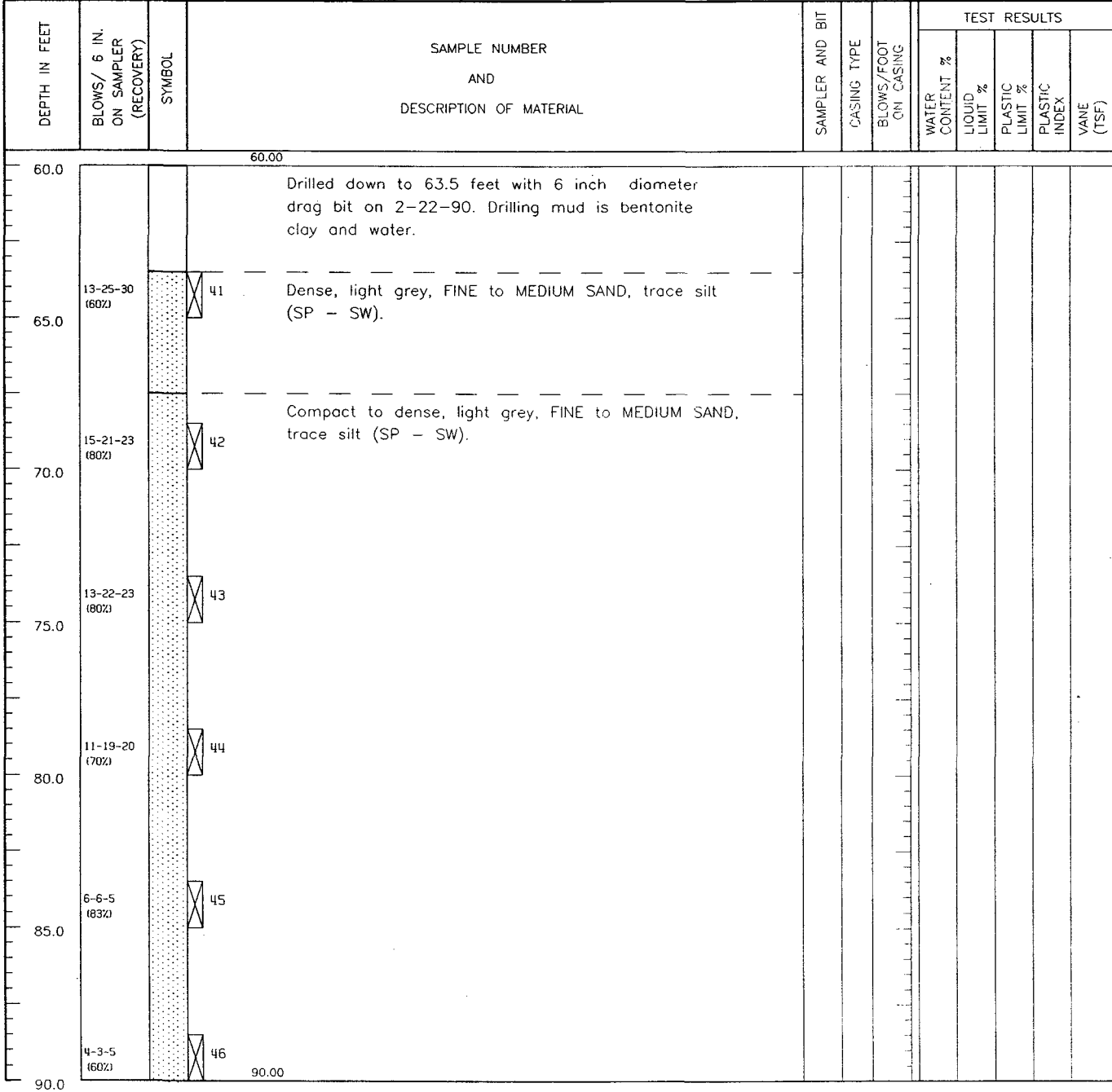


Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-14D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 1 OF 2	
		WATER LEVEL		DRILLING	
DATUM MSL		ELEVATION 120.1 ft.		START TIME 1300	FINISH TIME 1100
DRILL RIG CME-550		SURFACE CONDITIONS: Flat, Sandy, Forested		DATE 2-22-90	DATE 2-27-90
ANGLE Vertical		BEARING		CASING DEPTH	
SAMPLE HAMMER TORQUE 140lbs/30 in.					

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VANE (TSF)			



DRILLING CONTR
R. Drawdy

SL 113920

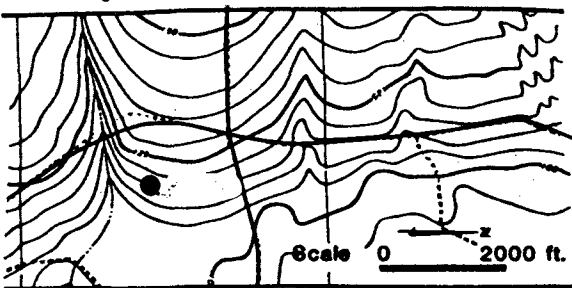
LOGGED BY LEL
DATE 3-23-90
CHKD BY KBK

Law Engineering



Golder Associates Inc.

SOIL BOREHOLE LOG

SITE NAME AND LOCATION Trail Ridge Landfill, Jacksonville Florida		DRILLING METHOD: Mud Rotary		BORING NO. B-14D	
		SAMPLING METHOD: 18 in. Split Spoon		SHEET 2 OF 2	
		WATER LEVEL		DRILLING	
DATUM MSL ELEVATION 120.1 ft.		CASING DEPTH		START TIME 1300	FINISH TIME 1100
DRILL RIG CME-550		SURFACE CONDITIONS: Flat, Sandy, Forested		DATE	DATE
ANGLE Vertical BEARING		SAMPLE HAMMER TORQUE 140lbs/30 in.		2-22-90	2-27-90

DRILL RIG	CME-550	SURFACE CONDITIONS:	Flat, Sandy, Forested
ANGLE	Vertical	BEARING	
SAMPLE HAMMER TORQUE	140lbs/30 in.		

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	PLASTIC INDEX	VALE (TSF)			
90.0			90.00 Compact to very dense, FINE to COARSE SAND, trace silt (SW - SP).											
95.0	7-11-16 (80%)	47												
100.0	15-24-31 (67%)	48												
105.0	5-5-5 (67%)	49	104.00 Soft, dark grey, SILTY CLAY and FINE SAND (CL - SC). Stiff, dark grey, SILTY CLAY (CL).											
110.0	28-18-50/5 (67%)	50	108.50 Very dense, CEMENTED SHELL FRAGMENTS or LIMESTONE. Very dense, grey, FINE to COARSE SAND and FINE to MEDIUM GRAVEL, trace silt (SW). (Marl).											
115.0	16-23-26 (83%)	51	115.00 Very stiff, grey, SILTY CLAY and FINE to MEDIUM SAND (CL - SC). Fragments of black phosphote throughout. Moderate reaction to HCL (Marl).											
120.0			BORING TERMINATED.											

DRILLING CONTR
K. Drowdy

LOGGED BY LEL
DATE 3-23-90

CHD BY LBLK
DATE 3-23-90

Low Engineering
DRILLING CONTR
K. Drowdy
11348C

APPENDIX A-3
PHASE II/PERMIT REQUIREMENT COMPLETION
SOIL BORING LOGS
BY GOLDER ASSOCIATES INC.
MAY 1992



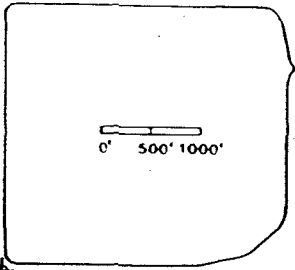
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.
B-2SR



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

START TIME

9:00

DATE

1-09-92

FINISH TIME

9:30

DATE

1-09-92

DATUM: MSL

ELEVATION: 144.1 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OCV (ppmv)							
0			144.10 0.00															
5			SEE BORING LOG B-2S FOR LITHOLOGIC DESCRIPTION.															
10																		
15																		
17.5			126.60 17.50 BORING TERMINATED @17.5 FT BGS.															
20																		
25																		
30																		

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

BGHB

LOGGED BY:

CHK'D BY: JMF

DATE: 4-21-92

DATE:

SL 100422

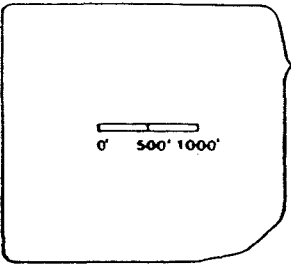


Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE

B-31
B-3SR



DRILLING METHOD:
MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.
B-3SR

SHEET
1 OF 1

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

DRILLING

START TIME	FINISH TIME
16:00	16:45
DATE	DATE
1-08-92	1-08-92

DATUM: MSL ELEVATION: 151.5 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

LAW ENGINEERING
R. DRAWDY
DRILLING CONTR.:
DRILLER:

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)			
0			151.50 0.00											
5			SEE BORING LOG B-3S FOR LITHOLOGIC DESCRIPTION.											
10														
15														
18.0			133.50 18.00 BORING TERMINATED @18.0 FT BGS.											
20														
25														
30														

LOGGED BY: BGHB
DATE: 1-21-92
CHK'D BY: JMF
SL100423



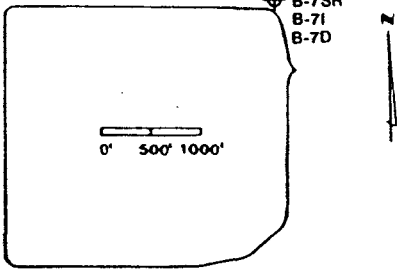
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY AND HOLLOW STEM AUGER

BORING NO. B-7SR



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 1 OF 1

DRILLING

START TIME	FINISH TIME
12:40	13:00
DATE	DATE
1-30-92	1-30-92

DATUM: MSL ELEVATION: 120.6 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)			
0			120.60 0.00											
5			SEE BORING LOG B-7S FOR LITHOLOGIC DESCRIPTION.											
10														
15			104.10 16.50 BORING TERMINATED @16.5 FT BGS.											
20														
25														
30														

LOGGED BY: BGHB

DRILLER: R. DRAWDY

SL 100424

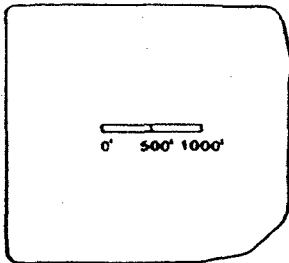
DATE: 4-21-92
CHK'D BY: JMF



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**



B-11I
B-11SR
B-11D

DRILLING METHOD:
MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.
B-11SR

SHEET
1 OF 1

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

DRILLING

START TIME

10:30

DATE

2-12-92

FINISH TIME

11:00

DATE

2-12-92

DATUM: MSL ELEVATION: 118.3 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

LAW ENGINEERING

R. DRAWDY

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)								
0			118.30 0.00																
5			SEE BORING LOG B-11S FOR LITHOLOGIC DESCRIPTION.																
10																			
15																			
20			100.30 18.00 BORING TERMINATED @18.0 FT BGS.																
25																			
30																			

DRILLING CONTR.:

DRILLER:

LOGGED BY: BGHB

CHK'D BY: JMF

DATE: 4-21-92

SL 100425



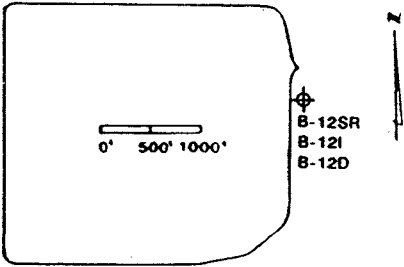
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY AND HOLLOW STEM AUGER

BORING NO. B-12SR



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 1 OF 1

DRILLING

START TIME	FINISH TIME
8:00	9:10
DATE	DATE
1-30-92	1-30-92

DATUM: MSL ELEVATION: 122.9 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)			
0			122.90 0.00											
5			SEE BORING LOG B-12S FOR LITHOLOGIC DESCRIPTION.											
10			NOTE: On 3-6-92, moved over approximately 5 feet and reinstalled the well.											
25			97.90 25.00 BORING TERMINATED @25.0 FT BGS.											
30														

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

SL 100426

BGHB

LOGGED BY:

CHK'D BY: JMF

DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.

B-13R

SHEET

1 OF 2

DRILLING

START TIME

10:45

FINISH TIME

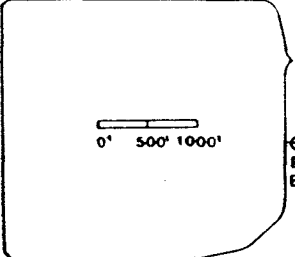
14:00

DATE

1-16-92

DATE

1-17-92



DATUM: MSL

ELEVATION: 123.8 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	CVM (ppmv)									
0	1-1-2 (12/18)	1	Very loose to loose, dark brown to brown, fine SAND, trace to little silt. (SP)																	
	2-2-4 (18/18)	2	@ 2.5' Water table encountered.																	
	3-5-4 (11/18)	3																		
5	1-2-2 (16/18)	4																		
	2-3-5 (18/18)	5																		
	1-2-4 (14/18)	6																		
10	3-6-6 (18/18)	7																		
	6-8-20 (18/18)	8																		
	7-6-7 (18/18)	9																		
	3-4-3 (18/18)	10																		
15	1-2-2 (14/18)	11																		
	3-4-6 (16/18)	12	Firm, tan, SILT, little to some fine sand. (ML)																	
	1-2-3 (16/18)	13																		
20	2-2-2 (16/18)	14																		
	2-2-3 (15/18)	15	Compact to dense, tan, gray and brown, fine SAND, trace to little silt. (SP)																	
	6-9-8 (15/18)	16																		
25	8-15-17 (14/18)	17																		
	11-14-19 (14/18)	18																		
	9-11-14 (14/18)	19																		
30	7-12-17 (11/18)	20																		

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR:

DRILLER:

SL 100427

J.M. FREIRE

CHK'D BY: *[Signature]*

LOGGED BY:

DATE: 4-21-92



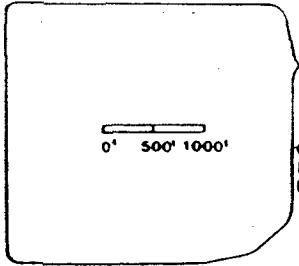
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: 923-3350
WMNA/WELLS/TRAIL RIDGE

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-13R



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 2

DRILLING

START FINISH

TIME TIME
10:45 14:00

DATE DATE
1-16-92 1-17-92

DATUM: MSL ELEVATION: 123.8 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90 BEARING:

Cleared area

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS						
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OCM (ppmv)		
30	9-14-15 (9/18)	21	Compact to dense, tan, gray and brown, fine SAND, trace to little silt. (SP)										
	7-10-14 (10/18)	22											
	8-11-16 (10/18)	23											
35	9-11-14 (8/18)	24											
	8-12-16 (12/18)	25											
	8-10-15 (12/18)	26											
40	9-15-20 (12/18)	27											
	14-23-26 (13/18)	28											
	11-13-15 (10/18)	29											
45	8-14-17 (13/18)	30											
	12-18-18 (13/18)	31											
	8-14-20 (11/18)	32											
	12-18-17 (11/18)	33											
50	8-13-22 (12/18)	34											
	7-5-6 (14/18)	35											
	2-11-11 (14/18)	36											
55	2-7-11 (16/18)	37											
	4-4-3 (14/18)	38											
	8-12-15 (13/18)	39											
60	5-11-14 (13/18)	40											
				63.80	BORING TERMINATED @60.0 FT BGS.								
				60.00									

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR:

DRILLER:

SL 100427

J.M. FRERE

CHK'D BY: [Signature]

LOGGED BY:

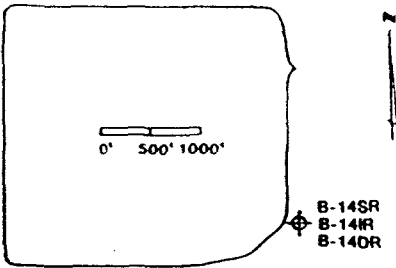
DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-14R

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 4

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	12:30
FINISH TIME	14:50
DATE	
DATE	2-09-92

DATUM: MSL ELEVATION: 123.4 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OMV (ppmv)								
0			123.40 0.00																
			@1.5' Water table encountered.																
4-3-4 (17/18)	1		Samples #1 - wet.																
3-5-7 (13/18)	2		Very loose to compact, dark brown to gray brown, fine SAND, trace to little silt. (SP)																
4-5-8 (15/18)	3																		
4-5-8 (15/18)	4																		
6-7-9 (18/18)	5		Sample #5 - Heavy tannic acid stain, black.																
9-10-14 (13/18)	6																		

LAW ENGINEERING
C. THOMAS
DRILLING CONTR.:
DRILLER:

SL 100428

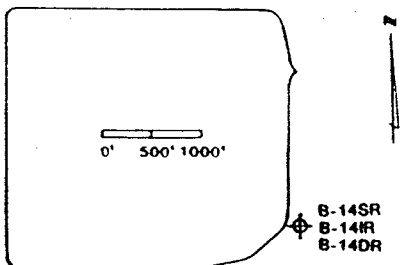
LOGGED BY: BGHB
DATE: 4-21-92
CHK'D BY: JIME



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-14R

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 4

DRILLING	
START	FINISH
TIME	TIME
12:30	14:50
DATE	DATE
2-08-92	2-09-92

DATUM: MSL ELEVATION: 123.4 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)									
30																				
34	8-16-23 (14/18)	7	Compact to very dense, brown to light greenish gray, fine SAND, trace silt. (SP)																	
38	8-14-24 (14/18)	8																		
42	9-15-24 (15/18)	9																		
46	12-29-50 (18/18)	10																		
50	14-20-34 (17/18)	11																		
54	11-29-54 (15/18)	12																		
58																				
60																				

LAW ENGINEERING

C. THOMAS

DRILLING CONTR.:

DRILLER:

SL 100428

BGHB

LOGGED BY:

CHK'D BY: JMF

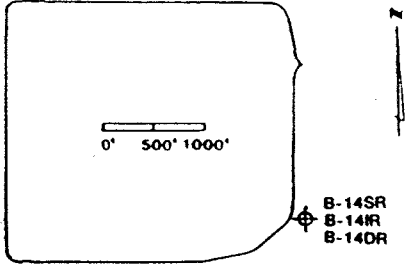
DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-14R

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
3 OF 4

DRILLING	
START	FINISH
TIME	TIME
12:30	14:50
DATE	DATE
2-08-92	2-09-92

DATUM: MSL ELEVATION: 123.4 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	CVM (ppmv)								
60			Very dense, greenish gray to tan, fine to coarse SAND, trace silt. (SW)																
65	20-35-41 (13/18)	13		58.40 65.00															
70	13-22-29 (13/18)	14	Compact to very dense, greenish tan to tan, fine SAND, trace to little silt. (SP)																
75	8-12-17 (14/18)	15																	
80	13-18-24 (13/18)	16																	
85	12-18-21 (13/18)	17																	
90	10-10-14 (17/18)	18																	

DRILLING CONTR.: LAW ENGINEERING

DRILLER: C. THOMAS

LOGGED BY: BGHB

CHK'D BY: JMF

DATE: 4-21-92

SL 100428



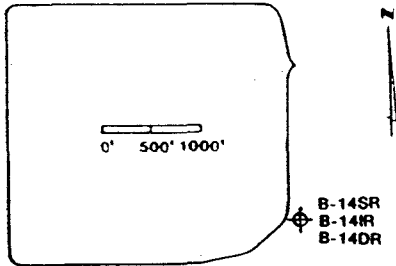
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
 PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-14R



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
 4 OF 4

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
12:30	14:50
DATE	DATE
2-08-92	2-09-92

DATUM: **MSL** ELEVATION: **123.4 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90**

BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS								
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)				
80			Compact to very dense, greenish tan to tan, fine SAND, trace to little silt. (SP)												
95	6-9-16 (16/18)	19													
100	10-18-25 (16/18)	20	23.40 100.00 Soft, grayish blue SILTY CLAY. (CL/CH)												
105	24-35-54 (14/18)	21	19.90 103.50 18.40 105.00 Very dense, grey-green, fine to medium SAND, trace silt. (SW) Very soft, bluish gray, SILTY CLAY, trace fine sand. (CL)												
110	WH-2-4 (0.5/18)	22	12.90 110.50												
115	18-21-21 (12/18)	23	8.40 115.00 (MARL) Dense, tan, fine to medium SAND, some shell fragments, little black phosphate grains. (SW) BORING TERMINATED @115.0 FT BGS.												

DRILLING CONTR.: **LAW ENGINEERING**

DRILLER: **C. THOMAS**

SL 100428

LOGGED BY: **BGHB**

CHK'D BY: **JMF**

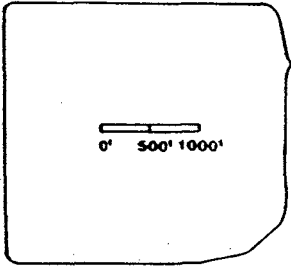
DATE: **4-21-92**



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**
O B-16S



DRILLING METHOD: **MUD ROTARY & HOLLOW STEM AUGER**

BORING NO. **B-16**

SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS**

SHEET **1 OF 1**

DRILLING

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

START TIME	11:00	FINISH TIME	15:45
DATE	1-10-92	DATE	1-10-92

DATUM: **MSL** ELEVATION: **141.7 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90**

BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)							
0	1-1-1 (18/18)	1	141.70 0.00 Very loose to loose, dark gray, tan, brown, and black, fine SAND, little to some silt, root fibers. (SP/SM)															
	1-1-2 (14/18)	2																
	2-2-2 (15/18)	3	@ 2.9' Water table encountered.															
5	2-3-3 (18/18)	4																
	2-2-3 (18/18)	5																
	1-1-2 (18/18)	6																
10	4-11-12 (18/18)	7	132.20 9.50 Compact, tan, fine SAND and Clayey Silt. (SM-ML)															
	6-11-11 (18/18)	8																
	8-8-10 (18/18)	9																
	8-12-18 (18/18)	10																
15	4-5-6 (18/18)	11	126.70 15.00 Firm, tan, SILTY CLAY. (CL)															
	4-12-15 (18/18)	12	124.70 17.00 123.70 18.00 Compact, tan to white, fine to medium SAND, trace silt. (SW)															
			BORING TERMINATED @18.0 FT BGS.															
20																		
25																		
30																		

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

SL 100429

BGHB

CHK'D BY: *JMF*

LOGGED BY:

DATE: *4-21-92*



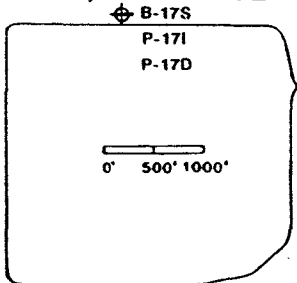
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY

BORING NO. B-17



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 2 OF 5

DRILLING

START TIME: 15:30
FINISH TIME: 16:30
DATE: 1-09-92
DATE: 1-14-92

DATUM: MSL ELEVATION: 136.2 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS: Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)									
30	9-10-11 (15/18)	21	106.20 30.00																	
	6-9-10 (14/18)	22	Compact to dense, dark brown to brown, fine SAND, trace to some silt. (SP/SM)																	
	9-10-17 (15/18)	23																		
35	24-17-16 (15/18)	24																		
	9-11-16 (16/18)	25																		
	9-12-13 (16/18)	26																		
	8-12-13 (14/18)	27																		
	6-12-13 (14/18)	28																		
	9-13-13 (13/18)	29																		
	9-10-10 (14/18)	30																		
45	8-7-7 (17/18)	31	91.20 45.00																	
	5-8-10 (18/18)	32	Compact, dark brown, brown, black and tan, fine to medium to coarse SAND, little silt, trace fine gravel. (SW)																	
	9-10-9 (16/18)	33																		
50	5-8-9 (15/18)	34																		
	5-8-12 (15/18)	35	85.20 51.00																	
	5-12-20 (18/18)	36	Compact to dense, tan and gray, fine to medium to coarse SAND, trace to and fine gravel, trace silt. (SW)																	
	6-14-24 (12/18)	37																		
55	8-16-14 (14/18)	38	80.20 56.00																	
	4-9-5 (15/18)	39	Compact to dense, tan to gray, fine SAND, trace to little silt. (SP)																	
	4-5-6 (16/18)	40																		
60																				

LAW ENGINEERING

J. HOLLAN

DRILLING CONTRA:

DRILLER:

SL 100430

J.M. FRERE

Frere

CHK'D BY:

4-21-92

LOGGED BY:

DATE:



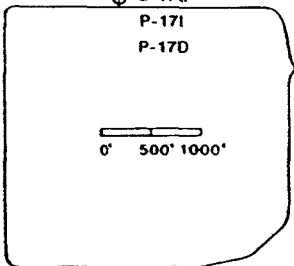
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY

BORING NO. B-17



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 3 OF 5

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
15:30	16:30
DATE	DATE
1-09-92	1-14-92

DATUM: MSL ELEVATION: 136.2 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS: Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVUM (ppmv)								
60																			
64	4-7-8 (14/18)	41	Compact to dense, tan to gray, fine SAND, trace to little silt. (SP)																
69	5-7-9 (16/18)	42																	
74	19-22-19 (12/18)	43																	
79	16-30-34 (16/18)	44					57.70 78.50												
84	17-33-35 (14/18)	45	Compact to very dense, grayish green to green, fine to medium SAND, trace to little silt. (SW)																
89	20-29-30 (10/18)	46																	

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR:

DRILLER:

SL 100430

J.M. FRERE

CHK'D BY:

LOGGED BY:

DATE:

4-21-92



Golder Associates

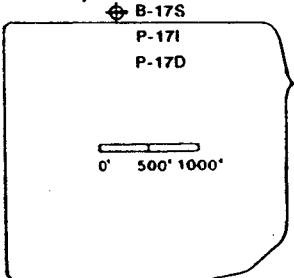
SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**

PROJECT NO.: **923-3350**

DRILLING METHOD: **MUD ROTARY**

BORING NO. **B-17**



SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS**

SHEET **4 OF 5**

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
15:30	16:30
DATE	DATE
1-09-92	1-14-92

DATUM: **MSL** ELEVATION: **136.2 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)								
80																			
95	20-30-34 (12/18)	47	Compact to very dense, grayish green to green, fine to medium SAND, trace to little silt. (SW)																
100	9-13-20 (16/18)	48																	
105	8-12-20 (18/18)	49																	
110	5-11-12 (15/18)	50																	
115	8-11-15 (18/18)	51																	
120	6-10-16 (15/18)	52																	

DRILLING CONTR.: **LAW ENGINEERING**
DRILLER: **J. HOLLAN**

LOGGED BY: **J.M. FRERE**
DATE: **4-21-92**
CHK'D BY: **[Signature]**

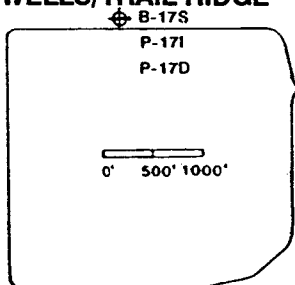
SL 100430



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-17

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
5 OF 5

DRILLING

START TIME	FINISH TIME
15:30	16:30
DATE	DATE
1-09-92	1-14-92

DATUM: MSL ELEVATION: 136.2 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	CVM (ppmv)							
120			Compact to very dense, grayish green to green, fine to medium SAND, trace to little silt. (SW)															
125	8-13-22 (16/18)	53																
			8.70 127.50															
130	7-17-25 (18/18)	54	Stiff, dark bluish gray, SILTY CLAY, trace fine sand. (CL)															
			4.70 131.50															
135	25-33-28 (15/18)	55	(MARL) Very dense, tan, fine to medium SAND, some shell fragments, little black phosphate nodules. (SW)															
140	21-31-34 (18/18)	56																
			-3.80 140.00															
			BORING TERMINATED @140.0 FT BGS.															

DRILLING CONTR.: LAW ENGINEERING

J. HOLLAN

DRILLER:

SL 100430

J.M. FRERE

CHK'D BY: *[Signature]*

LOGGED BY:

DATE:

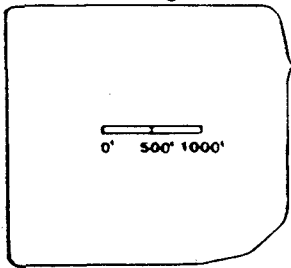
4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE
O B-18S



DRILLING METHOD:
MUD ROTARY & HOLLOW STEM AUGER

BORING NO.
B-18

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
15:55	11:20
DATE	DATE
1-16-92	1-17-92

DATUM: MSL ELEVATION: 131.1 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVMS (ppmv)								
0	<1-1-2 (8/18)	1	131.10 0.00																
	2-5-8 (18/18)	2	@ 1.75' Water table encountered.																
	5-5-6 (18/18)	3	Very loose to compact, dark brown, grayish brown and brown, fine SAND, trace to little silt. (SP)																
5	<1-3-3 (17/18)	4																	
	1-4-5 (17/18)	5																	
	3-27-14 (17/18)	6																	
	6-11-13 (18/18)	7																	
10	1-5-13 (18/18)	8	119.60 11.50																
	7-10-11 (18/18)	9	Compact, black, fine SAND, little to some silt, heavy tannic acid stains. (SM)																
	5-9-11 (18/18)	10																	
15	5-6-6 (18/18)	11		114.60 16.50															
			BORING TERMINATED @16.5 FT BGS.																
20																			
25																			
30																			

LAW ENGINEERING

F. DRAWDY

DRILLING CONTR:

DRILLER:

SL 100431

BGHB

CHK'D BY: JMF

LOGGED BY:

DATE: 4-21-92



Golder Associates

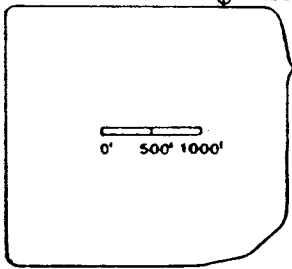
SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**

PROJECT NO.: **923-3350**

DRILLING METHOD: **MUD ROTARY**

BORING NO. **B-19**



⊕ B-19S, I.D

SAMPLING METHOD: **1 1/2" SPLIT-SPOON SAMPLERS**

SHEET **1 OF 5**

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
8:30	11:00
DATE	DATE
1-11-92	1-15-92

DATUM: **MSL** ELEVATION: **125.5 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)			
0	2-5-12 (15/18)	1	Loose to compact, dark brown to dark gray, fine SAND, trace to little silt. (SP)											
	7-8-15 (13/18)	2												
	7-10-10 (18/18)	3	@4.1' Water table encountered.											
5	3-3-3 (18/18)	4												
	2-3-5 (18/18)	5												
	2-3-5 (18/18)	6												
10	4-5-5 (16/18)	7												
	4-5-5 (16/18)	8												
	3-5-6 (12/18)	9												
	4-5-6 (14/18)	10												
15	4-7-9 (15/18)	11												
	5-8-11 (16/18)	12												
	4-9-11 (18/18)	13	107.50 18.00 Compact, dark brown, fine to medium SAND, trace to little silt. (SW)											
20	6-7-11 (16/18)	14	105.50 20.00											
	5-6-10 (16/18)	15												
	7-16-31 (16/18)	16	Loose to dense, dark brown to black, fine SAND, little silt, tannic acid staining from 23'-27'. (SP)											
25	15-16-13 (18/18)	17												
	2-3-2 (18/18)	18												
	2-4-3 (18/18)	19												
	2-15-25 (16/18)	20												
30														

DRILLING CONTR.: _____

DRILLER: **F. DRAWDY**

LOGGED BY: **BGHB**

CHK'D BY: **JMF**

DATE: **4-21-92**

DATE: _____

SL 100432



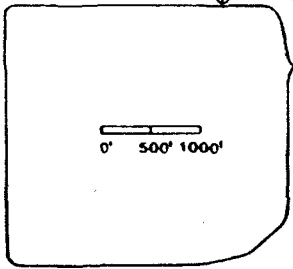
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-19



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 5

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
8:30	11:00
DATE	DATE
1-11-92	1-15-92

DATUM: **MSL** ELEVATION: **125.5 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

LAW ENGINEERING
R. DRAWDY
DRILLING CONTR.:
DRILLER:

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)								
30	14-22-22 (18/18)	21	Loose to dense, dark brown to black, fine SAND, little silt. (SP) 0.5 ft Silty Clay layer @33.0 ft.																
	12-18-13 (18/18)	22																	
	8-13-16 (18/18)	23																	
	10-15-23 (18/18)	24																	
	10-22-29 (18/18)	25																	
	7-15-33 (18/18)	26																	
	13-30-40 (14/18)	27	Dense to very dense, gray, tan, and brown, fine SAND, trace silt. (SP)																
	16-27-42 (15/18)	28																	
	18-25-31 (16/18)	29																	
	8-22-33 (16/18)	30																	
	9-18-26 (12/18)	31																	
	12-22-26 (14/18)	32																	
	12-18-29 (14/18)	33																	
	14-21-25 (13/18)	34																	
	10-20-27 (15/18)	35																	
	11-20-34 (16/18)	36	Dense to very dense, light brown to gray, medium to coarse SAND, little to some fine gravel. (SW)																
	15-33-50+ (16/18)	37																	
	19-23-30 (16/18)	38																	
	12-21-37 (16/18)	39	0.5' thick fine sand layer @56.5 ft.																
	24-36-40 (13/18)	40																	

LOGGED BY: BGHB
DATE: 4-21-92
CHK'D BY: JMF

SL 100432



Golder Associates

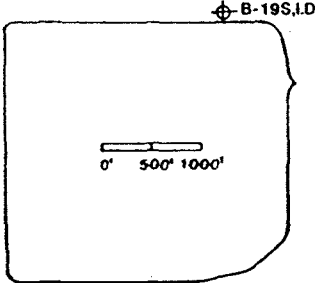
SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE

PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY

BORING NO. B-19



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 3 OF 5

DRILLING

START TIME	FINISH TIME
8:30	11:00
DATE	DATE
1-11-92	1-15-92

DATUM: MSL ELEVATION: 125.5 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90

BEARING:

Cleared area

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OCM (ppmv)			
65	16-25-29 (13/18)	41	Dense to very dense, gray to tan, fine SAND, trace to little medium sand, trace silt. (SP)											
70	14-18-24 (14/18)	42												
75	11-20-27 (13/18)	43												
80	10-18-23 (13/18)	44												
85	10-15-17 (17/18)	45												
90	10-20-27 (17/18)	46												
			37.00 88.50											

DRILLING CONTR.: LAW ENGINEERING

DRILLER: R. DRAWDY

LOGGED BY: BGHB

DATE: 4-21-92

CHK'D BY: JMF

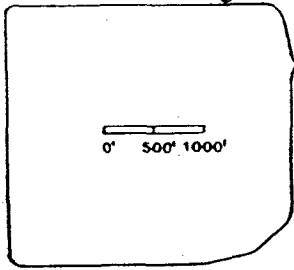
SL 100432



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-19

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
4 OF 5

DRILLING

START TIME	FINISH TIME
8:30	11:00
DATE	DATE
1-11-92	1-15-92

DATUM: MSL ELEVATION: 125.5 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

LAW ENGINEERING
R. DRAWDY
DRILLING CONTR'G:
DRILLER:

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)			
90			Very loose to compact, green, fine SAND, little to and silt. (SM)											
95	7-8-9 (17/18)	47												
100	2-3-3 (18/18)	48												
105	WOH (18/18)	49												
110	3-5-6 (18/18)	50	16.00 109.50											
			Compact, green to dark gray, fine to medium SAND, trace fine gravel with interbedded silty clay. (SW)											
			13.00 112.50											
	12-13-15 (16/18)	51	11.50 114.00											
			Firm, gray to green, SILTY CLAY and fine SAND. (CL/SC)											
115			(MARL) Compact to very dense, tan, partially cemented SHELL FRAGMENTS, some fine to medium sand, trace silt, trace to little phosphate nodules. (SW)											
120	9-14-21 (16/18)	52	NOTE: Soil samples grading to less cemented with depth.											

SL 100432

LOGGED BY: BGHB
DATE: 4-21-92
CHK'D BY: JMF



Golder Associates

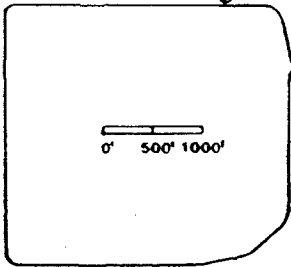
SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**

PROJECT NO.: **923-3350**

DRILLING METHOD: **MUD ROTARY**

BORING NO. **B-19**



SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS**

SHEET **5 OF 5**

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
8:30	11:00
DATE	DATE
1-11-92	1-15-92

DATUM: **MSL** ELEVATION: **125.5 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS											
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OCV (ppmv)							
120			Compact to very dense, partially cemented SHELL FRAGMENTS and fine SANDS, trace to little phosphate nodules. (SW)															
125	32-50/6" (9/12)		53 1.00 124.50 BORING TERMINATED @124.5 FT BGS.															
130																		
135																		
140																		
145																		
150																		

LAW ENGINEERING
R. DRAWDY
DRILLING CONTR.:
DRILLER:

LOGGED BY: BGHB
DATE: 4-21-92
CHK'D BY: JMF

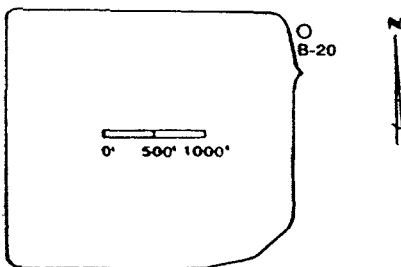
SL 100432



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**



DRILLING METHOD: **MUD ROTARY & HOLLOW STEM AUGER**

BORING NO. **B-20**

SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS**

SHEET **1 OF 1**

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
14:00	15:30
DATE	DATE
2-14-92	2-14-92

DATUM: **MSL** ELEVATION: **118.9 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)									
0	1-2-2 (13/18)	1																		
	1-2-4 (14/18)	2	@ 1.7' Water table encountered.																	
	3-5-7 (16/18)	3																		
5	1-2-2 (15/18)	4																		
	2-6-10 (16/18)	5	Very loose to compact, dark brown, fine SAND, trace to little silt. (SP)																	
	3-11-14 (17/18)	6																		
10	7-9-11 (18/18)	7																		
	3-8-10 (17/18)	8																		
	8-9-11 (16/18)	9																		
15	4-8-14 (17/18)	10																		
	8-15-18 (18/18)	11	Sample #11 - Tannic acid staining.																	
	6-17-26 (18/18)	12																		
20			BORING TERMINATED @18.0 FT BGS.																	
25																				
30																				

DRILLING CONTR.: **LAW ENGINEERING**
DRILLER: **R. DRAWDY**

LOGGED BY: **BGHB**
DATE: **2-21-92**
CHK'D BY: **JMF**

SL 100433



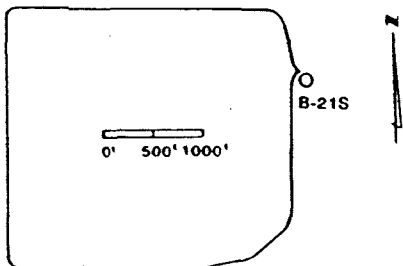
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SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE

DRILLING METHOD:
 MUD ROTARY & HOLLOW STEM AUGER

BORING NO.
B-21



SAMPLING METHOD:
 18" SPLIT-SPOON SAMPLERS

SHEET
 1 OF 1

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
10:00	13:15
DATE	DATE
3-04-92	3-04-92

DATUM: MSL ELEVATION: 121.0 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
 Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	CVM (ppmv)									
0	2-3-5 (13/18)	1																		
	3-10-13 (14/18)	2	Loose to compact, dark brown, fine SAND, trace to little silt. (SP)																	
	7-7-5 (15/18)	3																		
5	2-3-3 (16/18)	4																		
	1-2-1 (16/18)	5	@ 6.9' Water table encountered.																	
	1-2-3 (13/18)	6																		
10	2-5-7 (12/18)	7																		
	4-7-11 (14/18)	8																		
	7-10-13 (14/18)	9																		
	7-13-17 (15/18)	10																		
15	16-21-23 (18/18)	11	Sample #11 - Tannic acid staining.																	
	6-10-10 (17/18)	12																		
20			BORING TERMINATED @18.0 FT BGS.																	
25																				
30																				

DRILLING CONTR.: LAW ENGINEERING

DRAWN BY: F. DRAWDY

SL 100434

LOGGED BY: BGHB
 DATE: 4-21-92
 CHK'D BY: JMF



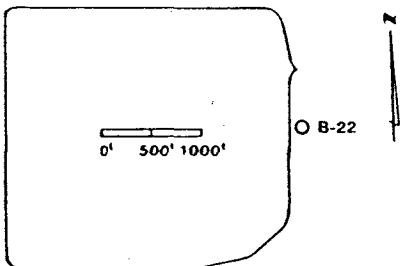
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
HOLLOW STEM AUGERS

BORING NO.
B-22R



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

WATER LEVEL

START TIME: 9:45
FINISH TIME: 13:00

TIME

DATE

CASING DEPTH

DATE: 2-14-92
DATE: 2-14-92

DATUM: MSL ELEVATION: 124.5 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)								
0			124.50 0.00																
2-3-3 (18/18)	1		Loose to compact, dark brown to brown, fine SAND, trace to little silt. (SP)																
5-7-11 (14/18)	2																		
8-10-12 (15/18)	3																		
5-9-16 (14/18)	4																		
99.50 25.00			BORING TERMINATED @25.0 FT BGS.																

DRILLING CONTR.: LAW ENGINEERING
DRILLER: R. DRAWDY

SL 100435

LOGGED BY: BGHB
DATE: 4-21-92
CHK'D BY: JMF



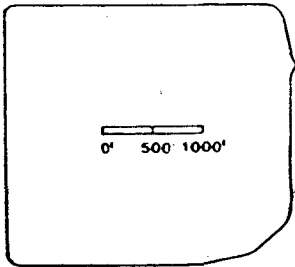
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY & HOLLOW STEM AUGER

BORING NO.
B-23



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

START TIME	FINISH TIME
10:20	13:45
DATE	DATE
1-29-92	1-29-92

DATUM: MSL ELEVATION: 122.5 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DRILLING CONTR.: LAW ENGINEERING
DRILLER: R. DRAWDY

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)								
0			122.50 0.00																
1	WOH-1 (18/18)	1																	
2	1-4-7 (18/18)	2	Loose to compact, dark brown to brown and black, fine SAND, trace to little silt. (SP)																
3	3-7-7 (18/18)	3																	
4	7-8-9 (18/18)	4																	
5	8-9-11 (18/18)	5	Sample #5 - wet																
6	3-5-9 (18/18)	6																	
7	6-7-9 (18/18)	7																	
8	6-7-8 (18/18)	8																	
9	5-5-6 (18/18)	9																	
10	4-4-3 (17/18)	10																	
11	3-3-3 (18/18)	11																	
12	1-1-3 (17/18)	12	106.00 16.50																
13	1-3-7 (18/18)	13	Loose, dark brown to brown, very fine to fine SAND, some to and silt. (SM/ML)																
14	7-8-12 (17/18)	14	103.00 19.50																
15	6-6-5 (17/18)	15	Compact, tan and light brown, fine SAND, little to some silt. (SM)																
16	2-4-6 (14/18)	16																	
17	9-12-16 (17/18)	17																	
25			97.00 25.50																
			BORING TERMINATED @25.5 FT BGS.																

LOGGED BY: BGHB
DATE: 1-21-92
CHK'D BY: JMF

SL 100436



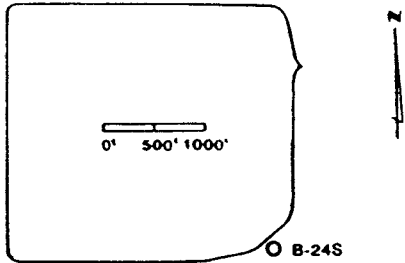
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.
B-24



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
15:30	9:05
DATE	DATE
2-07-92	2-08-92

DATUM: **MSL** ELEVATION: **122.2 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area.

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)									
0	1-1-2 (17/18)	1	@0.5' Water table encountered.																	
	1-4-6 (17/18)	2																		
	3-5-5 (18/18)	3	Sample #1 - wet.																	
5	3-3-4 (18/18)	4																		
	WH-1-1 (18/18)	5	Very loose to compact, dark brown to brown and black, fine SAND, trace to little silt. (SP)																	
	2-3-3 (18/18)	6																		
	3-6-10 (17/18)	7																		
	3-9-9 (18/18)	8																		
	3-9-9 (18/18)	9																		
	3-5-7 (18/18)	10																		
15	7-10-13 (18/18)	11																		
			105.70 16.50 BORING TERMINATED @16.5 FT BGS.																	
20																				
25																				
30																				

DRILLING CONTR.: **LAW ENGINEERING**
DRILLER: **C. THOMAS**

SL 100437

LOGGED BY: **BGHB**
DATE: **4-21-92**
CHK'D BY: **IME**



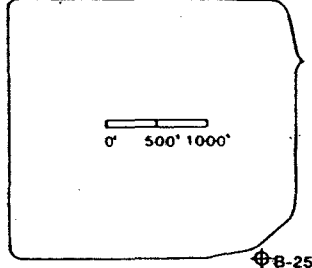
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD: **MUD ROTARY**

BORING NO. **B-25**



SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS**

SHEET **2 OF 4**

DRILLING			
START TIME	FINISH TIME	START DATE	FINISH DATE
13:00	17:00	2-04-92	2-08-92
WATER LEVEL	TIME	DATE	CASING DEPTH

DATUM: **MSL** ELEVATION: **122.1 FT.**

DRILL RIG: **CME-55**
ANGLE: **-90** BEARING:
SAMPLE HAMMER TORQUE: **140 FT.-LBS**

SURFACE CONDITIONS: **Cleared area**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS					
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVUM (ppmv)	

30	7-10-19 (16/18)	21	Compact to very dense, grayish green, grayish brown, and brown, fine SAND, trace silt. (SP)																	
	12-25-24 (17/18)	22																		
	8-11-13 (16/18)	23																		
35	13-23-24 (18/18)	24																		
	7-14-21 (18/18)	25																		
	14-25-27 (16/18)	26																		
40	10-20-24 (18/18)	27																		
	6-14-15 (10/18)	28																		
	7-14-21 (14/18)	29																		
	6-11-14 (14/18)	30																		
45	8-12-18 (16/18)	31																		
	4-14-22 (16/18)	32																		
	6-14-14 (16/18)	33																		
50	4-11-22 (16/18)	34	Compact to dense, tan to gray, fine to medium SAND, trace fine gravel, trace silt. (SW)																	
	7-11-9 (16/18)	35																		
	7-12-16 (16/18)	36																		
55	6-9-16 (16/18)	37																		
	3-12-15 (16/18)	38																		
	4-12-24 (16/18)	39																		
60	12-17-30 (16/18)	40																		

DRILLING CONTRACTOR: **LAW ENGINEERING**

DRILLER: **J. HOLLAN**

LOGGED BY: **J.M. FRERE**

CHK'D BY: **[Signature]**

DATE: **4-21-92**

SL 100438



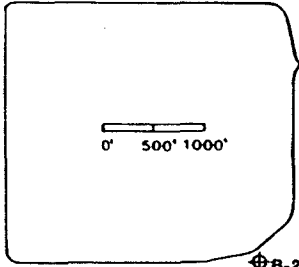
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY

BORING NO. B-25



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 3 OF 4

DRILLING

WATER LEVEL

START TIME

TIME

FINISH TIME

DATE

13:00

17:00

CASING DEPTH

DATE

DATUM: MSL

ELEVATION: 122.1 FT.

2-04-92

2-08-92

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90

BEARING:

Cleared area

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)									
60																				
63	13-19-26 (14/18)	41	Compact to dense, tan to gray, fine to medium SAND, trace fine gravel, trace silt. (SW)																	
68	8-12-12 (14/18)	42																		
73	8-16-17 (14/18)	43																		
74			48.60 73.50																	
78	3-5-12 (16/18)	44	Compact to dense, light yellow to light tan, fine SAND, trace silt. (SP)																	
83	8-11-13 (16/18)	45																		
88	6-12-14 (16/18)	46																		
90																				

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR.: J. HOLLAN

DRILLER: J. HOLLAN

SL 100438

J.M. FRERE

CHK'D BY: J.M. Frere

LOGGED BY: J.M. Frere

DATE: 4-21-92



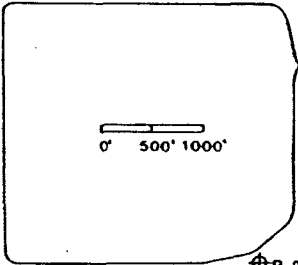
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-25



SAMPLING METHOD:
18" SPLUT-SPOON SAMPLERS

SHEET
4 OF 4

DRILLING

START TIME	FINISH TIME
13:00	17:00
DATE	DATE
2-04-92	2-08-92

DATUM: MSL ELEVATION: 122.1 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVMS (ppmv)								
90			Compact to dense, light yellow to light tan, fine SAND, trace silt. (SP)																
95	10-12-18 (16/18)	47																	
100	14-25-40 (14/18)	48	Dense to very dense, tan to grayish green, fine to medium SAND, trace silt. (SW)																
105	14-24-24 (14/18)	49																	
110	11-19-24 (16/18)	50	Firm, bluish gray, SILTY CLAY, little fine sand. (CL)																
115			MARL - Dense, gray to tan, partially cemented, fine SAND, some shell fragments, little to some black phosphate grains. (SP)																
120			BORING TERMINATED @110.0 FT BGS.																

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR.:

DRILLER:

SL 100438

J.M. FRERE

CHK'D BY: *[Signature]*

LOGGED BY:

DATE: 4-21-92



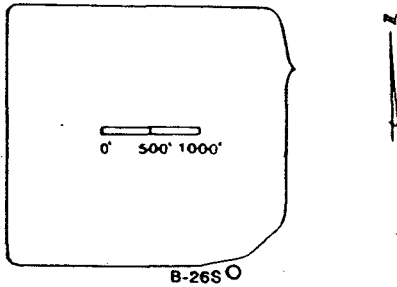
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: **923-3350**
WMNA/WELLS/TRAIL RIDGE

DRILLING METHOD:
MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.
B-26



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 1

DRILLING

START FINISH

TIME TIME
8:45 11:00

DATE DATE

2-07-92 2-07-92

DATUM: MSL ELEVATION: 124.4 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

ANGLE: -90 BEARING:

Cleared area

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)			
0	WF-1-3 (10/18)	1	124.40 0.00											
1	1-2-7 (18/18)	2	Loose to compact, dark brown to brown and black, fine SAND, trace to little silt. (SP)											
2	9-11-18 (17/18)	3												
3	6-13-24 (18/18)	4												
4	1-2-5 (14/18)	5												
5	4-7-9 (18/18)	6												
6	4-6-7 (17/18)	7												
7	2-6-7 (17/18)	8												
8	3-6-8 (16/18)	9												
9	5-8-10 (16/18)	10												
10	6-8-9 (18/18)	11												
11				107.90 16.50										
			BORING TERMINATED @16.5 FT BGS.											

LAW ENGINEERING

C. THOMAS

DRILLING CONTR.:

DRILLER:

SL 100439

BGHB

LOGGED BY:

CHK'D BY: JMF

DATE: 4-21-92



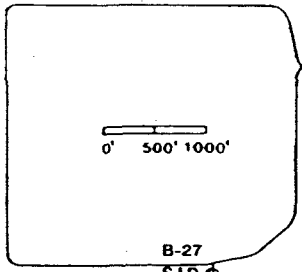
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-27



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 4

DRILLING

START TIME	FINISH TIME
8:30	14:30
DATE	DATE
1-29-92	1-31-92

DATUM: **MSL** ELEVATION: **126.5 FT.**

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS										
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	LIQUID LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)					
0			126.50 0.00														
1	1-1-1 (13/18)	Very loose to compact, dark brown to brown and black, fine SAND, trace to little silt. (SP)														
2	2-2-3 (15/18)	.....														
3	1-2-3 (13/18)	.....														
4	1-2-1 (13/18)	.....														
5	1-1-2 (12/18)	.....														
6	1-2-3 (12/18)	.....														
7	1-3-4 (12/18)	.....														
8	2-8-9 (16/18)	.....														
9	2-3-4 (14/18)	.....														
10	3-4-7 (12/18)	.....														
11	3-6-11 (12/18)	.....														
12	2-8-9 (11/18)	.....														
13	2-7-9 (14/18)	.....														
14	3-4-8 (14/18)	.....														
15	3-6-10 (13/18)	.....														
16	4-7-10 (13/18)	.....														
17	4-8-11 (14/18)	.....														
18	3-9-11 (12/18)	.....														
19	4-8-9 (10/18)	.....														
20	3-4-8 (12/18)	.....														
30			96.50 30.00														

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR.:

DRILLER:

SL 100440

LOGGED BY: JMF/BGHB

CHK'D BY: Wentz

DATE: 4-21-92



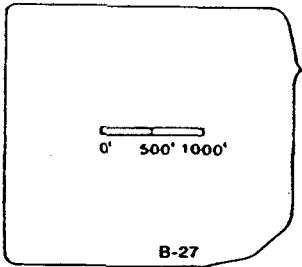
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-27



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 4

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	8:30	FINISH TIME	14:30
START DATE	1-29-92	FINISH DATE	1-31-92

DATUM: **MSL** S.I.D. ELEVATION: **126.5 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90**

BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)			
30	7-7-8 (12/18)	21	96.50 30.00											
	7-11-12 (12/18)	22	Compact to dense, tan to gray, fine SAND, trace to some silt. (SP/SM)											
	8-9-13 (13/18)	23												
35	7-11-17 (12/18)	24												
	8-11-14 (12/18)	25												
	6-9-15 (12/18)	26												
40	7-13-17 (12/18)	27												
	8-14-18 (13/18)	28												
	9-15-16 (12/18)	29												
45	4-2-12 (13/18)	30												
	7-16-22 (13/18)	31												
	15-21-25 (13/18)	32												
50	9-11-16 (12/18)	33												
	6-11-12 (10/18)	34												
	9-14-16 (12/18)	35												
	6-9-15 (11/18)	36												
55	5-13-21 (13/18)	37												
	8-12-17 (12/18)	38	71.00 55.50											
	3-10-12 (11/18)	39	Compact to dense, tan to light gray, fine to medium SAND, trace silt. (SW)											
60	6-11-17 (13/18)	40												

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR.:

DRILLER:

SL 100440

JMF/BGHB

CHK'D BY: *BGHB*

LOGGED BY:

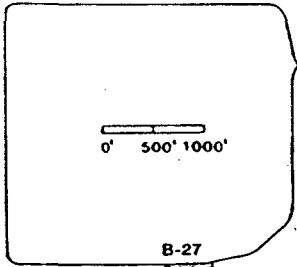
DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-27

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
3 OF 4

WATER LEVEL

TIME

DATE

CASING DEPTH

DRILLING

START TIME

8:30

FINISH TIME

1-29-92

DATE

DATUM: **MSL** ELEVATION: **126.5 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR.:

DRILLER:

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)									
60																				
63	8-10-12 (16/18)	41	Compact to dense, tan to light gray, fine to medium SAND, trace silt. (SW)																	
68	9-15-15 (12/18)	42																		
73	9-14-19 (14/18)	43																		
75							51.50													
75							75.00													
80	10-16-21 (14/18)	44																		
85	8-10-16 (14/18)	45	Compact to dense, grayish tan, fine SAND, trace to little silt. (SP)																	
88	8-11-17 (14/18)	46																		
90																				

LOGGED BY: **JMF/BGHB**

CHK'D BY: *[Signature]*

DATE: **4-21-92**

SL 100440



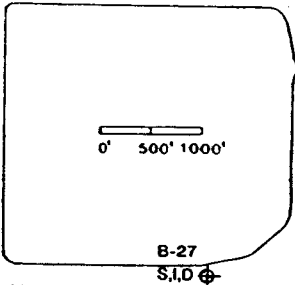
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: WMNA/WELLS/TRAIL RIDGE
PROJECT NO.: 923-3350

DRILLING METHOD: MUD ROTARY

BORING NO. B-27



SAMPLING METHOD: 18" SPLIT-SPOON SAMPLERS

SHEET 4 OF 4

DRILLING

WATER LEVEL

START TIME

TIME

8:30

DATE

FINISH TIME

14:30

DATE

1-29-92

1-31-92

DATUM: MSL ELEVATION: 126.5 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS: Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/8 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS														
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)										
90	9-9-10 (15/18)	47	Compact to dense, grayish tan, fine SAND, trace to little silt. (SP)																		
95	6-7-8 (18/18)	48																			
100	10-17-21 (16/18)	49																			
105	WH-WH-4 (18/18)	50	Soft, bluish gray, CLAY, little fine sand, sand content decreases with depth to trace @110'. (CL)																		
110			MARL Very dense, light gray, fine SAND and Silty Clay, calcareous. (SC)																		
115	52/2" (2/18)	51	BORING TERMINATED @113.7 FT BGS.																		
120																					

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR:

DRILLER:

SL 100440

LOGGED BY: JMF/BGHB

CHK'D BY: BJB

DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE** PROJECT NO.: **923-3350**

DRILLING METHOD: **MUD ROTARY** BORING NO. **B-28**

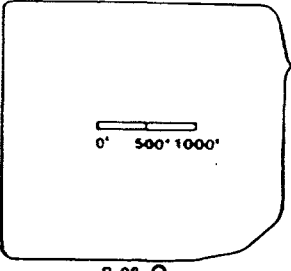
SAMPLING METHOD: **18" SPLIT-SPOON SAMPLERS** SHEET **1 OF 2**

DATUM: **MSL** ELEVATION: **131.4 FT.**

DRILL RIG: **CME-55** SURFACE CONDITIONS: **Cleared area**

ANGLE: **-90** BEARING: _____

SAMPLE HAMMER TORQUE: **140 FT.-LBS**



DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS						
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVIM (ppmv)		
0	WOH (13/18)	:	1 0.00										
1-2-2 (16/18)	:		2										
1-1-1 (16/18)	:		3										
1-2-3 (18/18)	:		4										
1-2-4 (18/18)	:		5										
3-5-10 (18/18)	:		6										
2-4-6 (14/18)	:		7										
7-9-7 (16/18)	:		8										
2-2-3 (16/18)	:		9										
4-8-13 (18/18)	:		10										
18-20-15 (18/18)	:		11										
4-8-9 (16/18)	:		12										
4-6-10 (16/18)	:		13										
4-10-11 (16/18)	:		14										
7-10-14 (16/18)	:		15										
4-6-8 (16/18)	:		16										
2-5-10 (18/18)	:		17										
3-5-9 (16/18)	:		18 105.90 25.50										
3-5-8 (16/18)	:		19										
2-8-13 (18/18)	:		20										

LOGGED BY: J.M. FRERE
 DATE: 4-21-92
 CHK'D BY: JHB
 DRILLING CONTR'L: LAW ENGINEERING
 DRILLER: J. HOLLAN

SL 100441



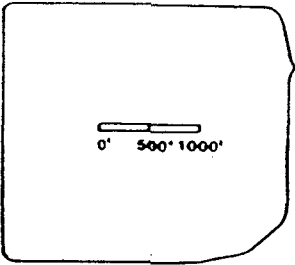
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-28



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 2

DRILLING

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

START TIME	FINISH TIME
16:30	16:00
DATE	DATE
1-21-92	1-22-92

DATUM: MSL **B-28** ELEVATION: 131.4 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

LAW ENGINEERING

J. HOLLAN

DRILLING CONTR:

DRILLER:

SL 100441

J.M. FRERE

CHK'D BY: *[Signature]*

DATE: 4-21-92

LOGGED BY:

DATE:

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVUM (ppmv)			
30	6-12-13 (16/18)	21	Compact to dense, tan to gray to greenish gray, fine SAND, trace to little silt. (SP)											
	9-14-17 (18/18)	22												
	11-18-17 (14/18)	23												
35	10-14-16 (14/18)	24												
	11-17-20 (13/18)	25												
	7-13-18 (14/18)	26	Compact to dense, tan to gray, fine to coarse SAND, trace fine gravel, trace silt. (SW)											
40	8-13-17 (13/18)	27												
	9-11-15 (16/18)	28												
	9-13-16 (16/18)	29	Loose to compact, tan, very fine SAND, trace silt. (SP)											
	9-14-17 (16/18)	30												
45	8-13-20 (14/18)	31												
	9-14-10 (12/18)	32												
	2-3-2 (18/18)	33												
50	1-2-2 (13/18)	34												
	3-7-10 (13/18)	35												
	3-5-7 (14/18)	36												
55	3-4-4 (16/18)	37												
	4-10-12 (16/18)	38												
	5-13-16 (16/18)	39												
	9-11-16 (18/18)	40												
60														

71.40 BORING TERMINATED @60.0 FT BGS.
60.00



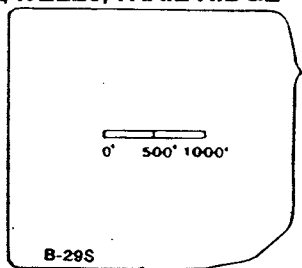
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-29



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 4

DRILLING

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

START	FINISH
TIME	TIME
16:20	11:30
DATE	DATE
1-20-92	1-25-92

DATUM: MSL ELEVATION: 135.4 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS														
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OWM (ppmv)										
0	WOH (18/18)	1	135.40 0.00 @0.2' Water table encountered.																		
1-2-3 (18/18)	2		Very loose to loose, dark brown to black, fine SAND, trace to some silt. (SP/SM)																		
2-3-3 (17/18)	3																				
1-1-1 (18/18)	4																				
1-1-3 (14/18)	5		128.40 7.00																		
4-23-50/3" (13/18)	6		Compact to very dense, black to dark brown, fine SAND, trace to little silt. (SP)																		
16-30-21 (15/18)	7																				
8-14-17 (16/18)	8																				
8-13-22 (16/18)	9																				
7-8-9 (13/18)	10		121.40 14.00																		
6-14-16 (16/18)	11		Compact to dense, black to dark brown, fine SAND, trace to some silt. (SP/SM)																		
14-17-19 (16/18)	12																				
4-4-6 (15/18)	13																				
4-4-5 (16/18)	14																				
3-7-8 (16/18)	15																				
4-8-15 (18/18)	16																				
9-18-22 (17/18)	17																				
5-10-15 (17/18)	18																				
15-19-23 (18/18)	19																				
10-20-30 (18/18)	20																				

DRILLING CONTR.: LAW ENGINEERING

DRILLER: R. DRAWDY

LOGGED BY: BGHB

CHK'D BY: JMF

DATE: 4-21-92

SL 100442



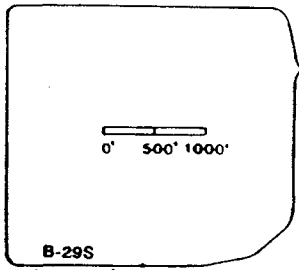
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION PROJECT NO.: 923-3350
WMNA/WELLS/TRAIL RIDGE

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-29



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
2 OF 4

DRILLING

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

START TIME	FINISH TIME
16:20	11:30
DATE	DATE
1-20-92	1-25-92

DATUM: MSL ELEVATION: 135.4 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS				
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OWM (ppmv)
30	10-17-30 (17/18)	21	Compact to dense, black to dark brown, fine SAND, trace to some silt, tannic acid staining. (SP/SM)								
	15-12-13 (18/18)	22									
	7-8-5 (18/18)	23	Very loose to compact, tan, very fine SAND, trace to little silt. (SP)								
	1-1-2 (18/18)	24									
	1-1-2 (18/18)	25									
	3-2-1 (18/18)	26									
	4-7-10 (17/18)	27									
	6-7-6 (17/18)	28									
	3-5-4 (17/18)	29									
	3-5-4 (18/18)	30									
	2-2-2 (17/18)	31									
	2-2-2 (17/18)	32									
	2-2-1 (17/18)	33									
	1-1-1 (18/18)	34									
	1-2-2 (16/18)	35									
	1-2-1 (15/18)	36	Compact, tan to grayish tan, fine to coarse SAND, trace silt. (SW)								
	4-5-6 (16/18)	37									
	5-6-7 (16/18)	38									
	13-15-20 (17/18)	39									
	7-10-11 (15/18)	40									

DRILLING CONTR.: LAW ENGINEERING

DRILLER: R. DRAWDY

SL 100442

LOGGED BY: BGHB

CHK'D BY: JIM

DATE: 4-21-92

LOGGED BY:

DATE:



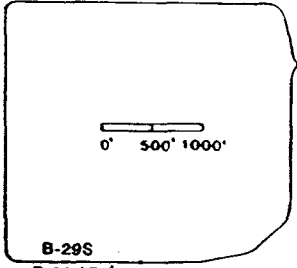
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-29



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
3 OF 4

DRILLING

WATER LEVEL						START TIME	FINISH TIME
TIME						16:20	11:30
DATE						DATE	DATE
CASING DEPTH						1-20-92	1-25-92

DATUM: MSL ELEVATION: 135.4 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVH (ppmv)								
60																			
63-64	3-5-10 (12/18)	41	Compact, tan to grayish tan, fine to coarse SAND, trace silt. (SW)																
68-69	5-4-8 (15/18)	42																	
73-74	9-11-14 (16/18)	43																	
79-80	11-15-17 (15/18)	44					55.90	79.50											
84-85	10-15-17 (14/18)	45	Compact to dense, grayish white, fine SAND, trace silt. (SP)																
89-90	11-17-23 (12/18)	46																	

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

BGHB

LOGGED BY:

CHK'D BY:

SL 100442

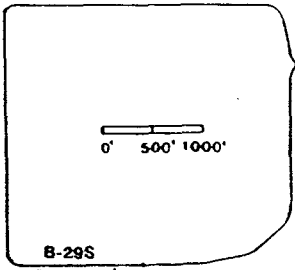
DATE: 4-21-92



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**



DRILLING METHOD:
MUD ROTARY

BORING NO.
B-29

SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
4 OF 4

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
16:20	11:30
DATE	DATE
1-20-92	1-25-92

DATUM: MSL ELEVATION: 135.4 FT.

DRILL RIG: CME-55
ANGLE: -90 BEARING:
SAMPLE HAMMER TORQUE: 140 FT.-LBS

SURFACE CONDITIONS:
Cleared area

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)									
90																				
95	10-15-18 (16/18)	47	Compact to dense, grayish white, fine SAND, trace silt. (SP)																	
100	2-6-12 (16/18)	48																		
105	9-9-11 (18/18)	49																		
110	9-12-32 (18/18)	50	25.90 109.50																	
			Stiff, black to dark gray, SILTY CLAY, trace to little fine sand. (CL)																	
115	14-15-19 (18/18)	51	20.40 115.00																	
			MARL Very dense, tan, fine to medium SAND with shell fragments, little to some black phosphate nodules, little silt. (SM)																	
120	25-40-27 (18/18)	52	15.40 120.00																	
			BORING TERMINATED @120.0 FT BGS.																	

DRILLING CONTR.: LAW ENGINEERING

R. DRAWDY

DRILLER:

SL 100442

LOGGED BY: BGHB

CHK'D BY: JMF

DATE: 4-21-92

LOGGED BY:

DATE:



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

PROJECT NO.: **923-3350**

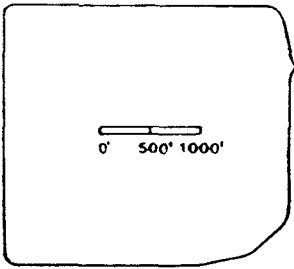
DRILLING METHOD:

MUD ROTARY AND HOLLOW STEM AUGER

BORING NO.

B-30

WMNA/WELLS/TRAIL RIDGE



SAMPLING METHOD:

18" SPLIT-SPOON SAMPLERS

SHEET

1 OF 1

DRILLING

START FINISH

TIME TIME

15:15 10:15

DATE DATE

1-27-92 1-28-92

DATUM: MSL **B-30S O**

ELEVATION: 140.2 FT.

CASING DEPTH

DRILL RIG: CME-55

SURFACE CONDITIONS:

Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)								
0			140.20 0.00																
	WOH-1 (18/18)	1	@ 0.85' Water table encountered.																
	1-4-6 (18/18)	2																	
	3-5-5 (18/18)	3	Very loose to compact, dark brown to dark gray, fine SAND, trace to little silt. (SP)																
5	2-3-5 (18/18)	4																	
	2-3-4 (17/18)	5																	
	1-2-3 (11/18)	6																	
10	3-5-7 (16/18)	7	130.20 10.00																
	6-9-12 (16/18)	8																	
	5-9-12 (17/18)	9	Compact, black, dark brown to brown, fine SAND, little to some silt, tannic acid staining from 10' to 15.5'. (SP/SM)																
	7-5-8 (16/18)	10																	
15	7-6-8 (16/18)	11	123.70 16.50																
			BORING TERMINATED @16.5 FT BGS.																
20																			
25																			
30																			

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

SL 100443

BGHB

CHK'D BY: *JMK*

LOGGED BY:

DATE: 4-21-92



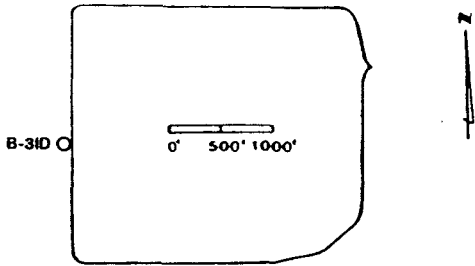
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
 PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-31



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
1 OF 5

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
13:45	17:15
DATE	DATE
1-07-92	1-09-92

DATUM: **MSL** ELEVATION: **154.0 FT.**

DRILL RIG: **CME-55**

SURFACE CONDITIONS:
Cleared area

ANGLE: **-90** BEARING:

SAMPLE HAMMER TORQUE: **140 FT.-LBS**

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS														
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVN (ppmv)										
0	1-1-2 (12/18)	1	Very loose to loose, tan to gray, fine SAND, trace to little silt. (SP)																		
	2-3-3 (14/18)	2																			
	3-2-2 (12/18)	3	Samples #3 and #4 - wet @4.85' Water table encountered.																		
5	2-2-2 (12/18)	4																			
	3-3-5 (18/18)	5																			
	3-3-4 (18/18)	6																			
	2-5-5 (14/18)	7	Loose to compact, dark brown to black, fine SAND, little to some silt, organic. (SM)																		
10	2-3-4 (14/18)	8																			
	6-11-14 (14/18)	9																			
	8-12-12 (14/18)	10																			
15	8-9-13 (18/18)	11																			
	9-13-18 (18/18)	12																			
	12-17-17 (15/18)	13	Loose to dense, brown, fine SAND, little silt. (SP)																		
20	10-9-9 (18/18)	14																			
	5-3-4 (14/18)	15																			
	2-2-4 (13/18)	16																			
	4-4-4 (13/18)	17																			
25	6-8-8 (18/18)	18																			
	3-3-5 (18/18)	19	Loose to compact, tan, fine SAND, some to and silt. (SM-ML)																		
	3-5-6 (18/18)	20																			
30																					

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR.:

DRILLER:

SL 100444

BHGB/JMF

CHK'D BY: *JMF*

LOGGED BY:

DATE: *4-21-92*



Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION

WMNA/WELLS/TRAIL RIDGE

PROJECT NO.: 923-3350

DRILLING METHOD:
MUD ROTARY

BORING NO.

B-31

SHEET

2 OF 5

DRILLING

START TIME

13:45

FINISH TIME

17:15

DATE

1-07-92

DATE

1-09-92

SAMPLING METHOD:

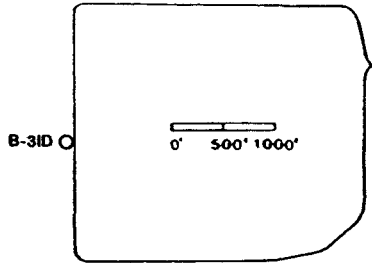
18" SPLIT-SPOON SAMPLERS

WATER LEVEL

TIME

DATE

CASING DEPTH



DATUM: MSL

ELEVATION: 154.0 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:

Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS													
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVM (ppmv)									
30	5-6-11 (18/18)	21																		
	4-5-5 (18/18)	22	Loose to compact, brown to dark brown, fine SAND, some to and clayey silt. (SM-ML)																	
	4-9-8 (18/18)	23																		
35	4-4-5 (18/18)	24																		
	4-5-8 (18/18)	25																		
	4-3-4 (18/18)	26					116.50	37.50												
40	2-2-6 (15/18)	27	Loose to compact, tan, fine SAND, little to some silt. (SM)																	
	4-8-8 (18/18)	28																		
	4-3-2 (18/18)	29					111.50	42.50												
45	2-2-2 (18/18)	30																		
	4-9-12 (18/18)	31																		
	7-10-12 (12/18)	32																		
	6-6-7 (18/18)	33	Loose to dense, greenish gray to tan, fine SAND, trace silt. (SP)																	
50	4-9-14 (14/18)	34																		
	3-8-12 (12/18)	35																		
	9-18-27 (15/18)	36																		
55	11-21-25 (15/18)	37																		
	14-17-17 (16/18)	38																		
	14-18-20 (16/18)	39																		
	13-20-26 (15/18)	40																		
60	15-20-20 (7/18)																			

LAW ENGINEERING

R. DRAWDY

DRILLING CONTR:

DRILLER:

SL 100444

BHGB/JMF

CHK'D BY: JMF

DATE: 1-21-92

LOGGED BY:

DATE:



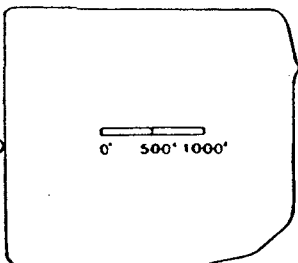
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-31



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
3 OF 5

DRILLING

START TIME	FINISH TIME
13:45	17:15
DATE	DATE
1-07-92	1-09-92

DATUM: MSL ELEVATION: 154.0 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS							
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OCM (ppmv)			
60	15-20-20 (7/18)	41	Loose to dense, greenish gray to tan, fine SAND, trace silt. (SP)											
65	14-17-17 (16/18)	42												
70	12-15-15 (18/18)	43												
75	14-16-16 (16/18)	44												
80	17-26-34 (16/18)	45		70.50 83.50										
85	15-27-34 (12/18)	46		Dense to very dense, light to dark gray, fine to medium SAND, trace silt. (SW)										

DRILLING CONTR.: LAW ENGINEERING

DRILLER: R. DRAWDY

LOGGED BY: BHGB/JMF

DATE: 4-21-92

CHK'D BY: JMF

SL 100444



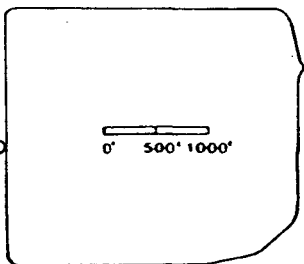
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-31



SAMPLING METHOD:
18" SPLIT-SPOON SAMPLERS

SHEET
4 OF 5

DRILLING

START	FINISH
TIME	TIME
13:45	17:15
DATE	DATE
1-07-92	1-09-92

DATUM: MSL ELEVATION: 154.0 FT.

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90

BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/ 6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	OVIM (ppmv)								
90																			
95	22-34-49 (19/18)	47	Dense to very dense, light to dark gray, fine to medium SAND, trace silt. (SW)																
100	17-21-24 (12/18)	48																	
105	13-17-24 (14/18)	49																	
110	29-42-48 (14/18)	50																	
115	17-24-35 (12/18)	51	39.50 114.50																
120	14-22-34 (16/18)	52	Compact to very dense, greenish gray, fine SAND, trace silt. (SP)																

DRILLING CONTR.: LAW ENGINEERING

DRILLER: R. DRAWDY

SL 100444

LOGGED BY: BHGB/JMF
DATE: 4-21-92
CHK'D BY: JMF



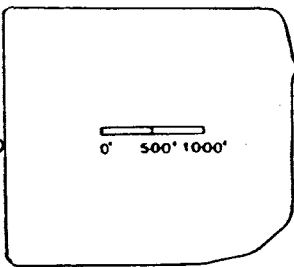
Golder Associates

SOIL BOREHOLE LOG

SITE NAME AND LOCATION: **WMNA/WELLS/TRAIL RIDGE**
PROJECT NO.: **923-3350**

DRILLING METHOD:
MUD ROTARY

BORING NO.
B-31



SAMPLING METHOD:
16" SPLIT-SPOON SAMPLERS

SHEET
5 OF 5

DRILLING

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

START TIME	FINISH TIME
13:45	17:15
DATE	DATE
1-07-92	1-09-92

DATUM: MSL ELEVATION: 154.0 FT.

DRILL RIG: CME-55

SURFACE CONDITIONS:
Cleared area

ANGLE: -90 BEARING:

SAMPLE HAMMER TORQUE: 140 FT.-LBS

DEPTH IN FEET	BLOWS/6 IN. ON SAMPLER (RECOVERY)	SYMBOL	SAMPLE NUMBER AND DESCRIPTION OF MATERIAL	SAMPLER AND BIT	CASING TYPE	BLOWS/FOOT ON CASING	TEST RESULTS												
							WATER CONTENT %	LIQUID LIMIT %	PLASTIC LIMIT %	SPECIFIC GRAVITY	CVM (ppmv)								
120	10-12-15 (15/18)	53	Compact to very dense, greenish gray, fine SAND, trace silt. (SP)																
125			27.00 127.00																
130	24-24-15 (18/18)	54	Dense, green to black, fine SAND, trace silt, trace phosphate nodules. (SP)																
			24.50 129.50																
			Stiff, black SILTY CLAY. (CL)																
			22.50 131.50																
135	26-50+ (12/12)	55	MARL Very dense, gray, black, and tan, fine SAND with shell fragments, trace silt, trace phosphate nodules. (SM)																
			19.50 134.50																
			BORING TERMINATED @134.5 FT BGS.																

DRILLING CONTR: LAW ENGINEERING

DRILLER: F. DRAWDY

SL 100444

LOGGED BY: BHGB/JMF

CHK'D BY: JME

DATE: 4-21-92

APPENDIX B
WELL CONSTRUCTION LOGS

APPENDIX B-1

MONITORING WELL CONSTRUCTION LOGS

JULY 1990

Well No. B-2S

Boring No. X-Ref: B-2I

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 17913.34 Elevation Ground Level 143.8 FT-MSL

E: 17712.53 Top of Casing 143.98 FT-MSL

Drilling Summary:

Total Depth 15.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.18'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/21/90	0955	2/21/90	1020
Geophys. Logging:				
Casing:	2/21/90	1040	2/21/90	1105
2" PVC (C1, S1)				
Filter Placement:	2/21/90	1040	2/21/90	1105
Cementing:	2/21/90	1040	2/21/90	1105
Development:	3/21/90	1322	3/21/90	1502

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>9.7' - 15.0'</u>	<u>S1</u>	<u>- - -</u>
<u>+2.18' - 9.7'</u>	<u>C1</u>	<u>- - -</u>
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40
PVC Pipe
C2 _____
Screen: S1 2" ID Flush - threaded SCH 40
PVC Pipe with 0.010" slot size
S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
7.7' - 15.0'
Grout Seal: Bentonite
75 lbs Bentonite / 50 gals Water
0.0' - 6.2'
Bentonite Seal: Bentonite Pellets
6.2' - 7.7'

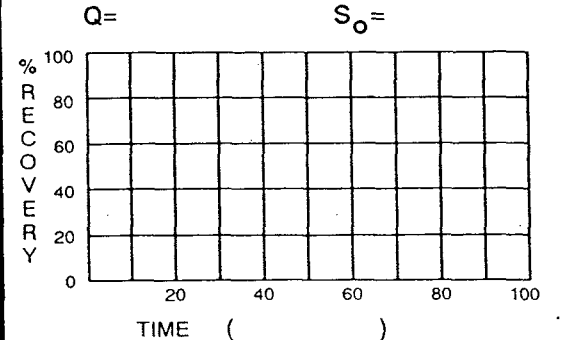
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 500 Gals
Condition of H₂O after development: MC
Method of Development: Pump

Stabilization Test Data:

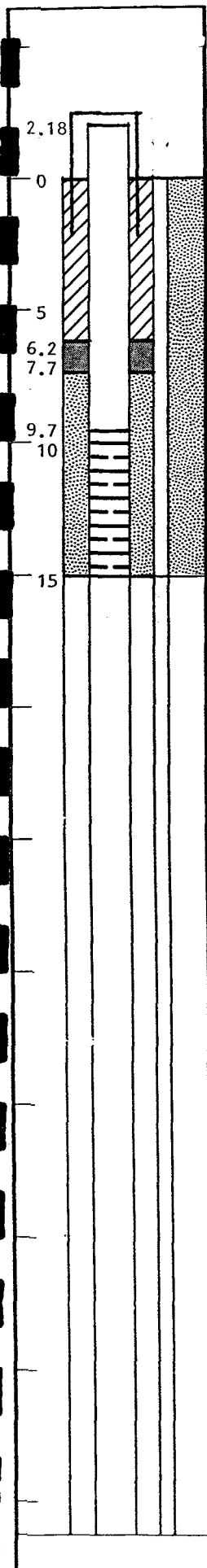
Time	pH	Spec. Cond.	Temp (°C)
<u>1326</u>	<u>4.98</u>	<u>65</u>	<u>23.8</u>
<u>1417</u>	<u>4.18</u>	<u>50</u>	<u>21.1</u>
<u>1446</u>	<u>4.12</u>	<u>35</u>	<u>20.8</u>
<u>1502</u>	<u>4.12</u>	<u>35</u>	<u>20.7</u>

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FL

WC 5786

SUPERVISED BY J. Thomas

DATE 2/21/90

Well No. B-21

Boring No. X-Ref: B-21

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 17913.34 Elevation Ground Level 143.8 FT-MSL
E: 17712.53 Top of Casing 143.69 FT-MSL

Drilling Summary:

Total Depth 59.8'
Borehole Diameter 6"
Casing Stick-up Height: 1.89'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/19/90	1050	2/19/90	1600
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/20/90	1030	2/20/90	1140
Filter Placement:	2/20/90	1030	2/20/90	1140
Cementing:	2/20/90	1030	2/20/90	1140
Development:	3/19/90	1242	3/19/90	1348
	3/21/90	0900	3/21/90	1150

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
54.3' - 59.8'	S1	-
+1.89' - 54.3'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 640 Gals
Condition of water after development: MC
Method of Development: Pump

Stabilization Test Data:

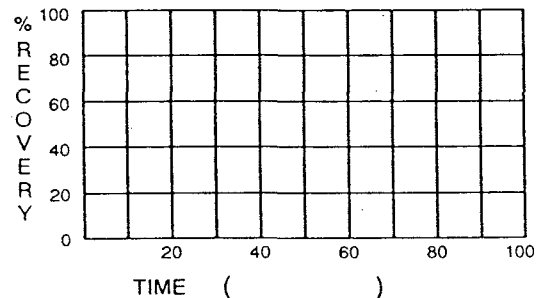
DATA TAKEN FROM 3/21/90

Time	pH	Spec. Cond.	Temp (°C)
0929	5.47	72	21.5
1047	4.85	57	22.1
1110	4.89	55	22.3
1140	4.80	55	21.9
1150	4.80	55	22.1

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2 _____
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2 _____

Recovery Data: SEE DATA ATTACHED

Q= S_o=



Filter Pack: SILICA SAND
Washed, dried, sized 20/30
52.3' - 59.8'
Grout Seal: Bentonite
130 lbs Bentonite / 90 gals Water
0.0' - 47.5'
Bentonite Seal: Bentonite Pellets
47.5' - 52.3'

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.

SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FL

WC 5787

SUPERVISED BY J. Thomas

DATE 2/20/90

Well No. B-3S
 Boring No. X-Ref: B-3D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20516.69 Elevation Ground Level 151.0 FT-MSL
E: 17656.38 Top of Casing 152.49 FT-MSL

Drilling Summary:

Total Depth 11.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 1.49'
 Driller Jim Hallon
 Rig CME 55
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>5.7' - 11.0'</u>	<u>S1</u>	<u> - </u>
<u>+1.49' - 5.7'</u>	<u>C1</u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>

Casing: C1 2" ID Flush - threaded SCH 40
PVC Pipe
 C2
 Screen: S1 2" ID Flush - threaded SCH 40
PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
5.0' - 11.0'
 Grout Seal: Bentonite
60 lbs Bentonite / 40 gals Water
0.0' - 5.0'
 Bentonite Seal: Bentonite Pellets
3.0' - 5.0'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	<u>3/3/90</u>	<u>1030</u>	<u>3/3/90</u>	<u>1055</u>
Geophys. Logging:				
Casing:	<u>3/3/90</u>	<u>1100</u>	<u>3/3/90</u>	<u>1125</u>
<u>2" PVC</u>				
Filter Placement:	<u>3/3/90</u>	<u>1100</u>	<u>3/3/90</u>	<u>1125</u>
Cementing:	<u>3/3/90</u>	<u>1100</u>	<u>3/3/90</u>	<u>1125</u>
Development:	<u>3/26/90</u>	<u>0848</u>	<u>3/26/90</u>	<u>1012</u>

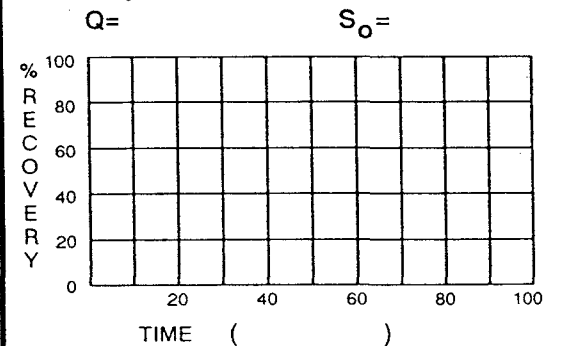
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 210 gals
 Condition of H₂O after development: T
 Method of Development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
<u>0850</u>	<u>4.84</u>	<u>33</u>	<u>20.7</u>
<u>0919</u>	<u>4.67</u>	<u>23.5</u>	<u>21.6</u>
<u>0946</u>	<u>4.32</u>	<u>21.5</u>	<u>21.0</u>
<u>1006</u>	<u>4.42</u>	<u>21.0</u>	<u>22.1</u>
<u>1012</u>	<u>-</u>	<u>20.5</u>	<u>-</u>

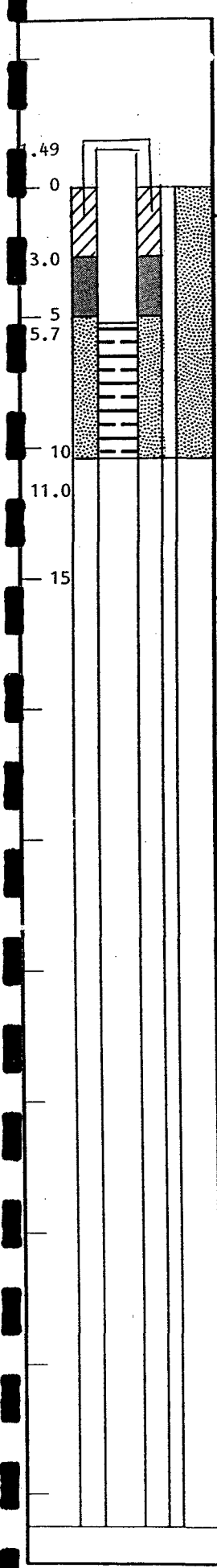
Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.

Note: pH meter not working; therefore no pH or temperature readings available.



SITE NAME TRAIL RIDGE LANDFILL
 LOCATION JACKSONVILLE, FL

WC 5788

SUPERVISED BY J. Thomas

DATE 3/3/90

Well No. B-31
 Boring No. X-Ref: B-3D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20516.69 Elevation Ground Level 151.0 FT-MSL
E: 17656.38 Top of Casing 151.86 FT-MSL

Drilling Summary:
 Total Depth 60.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 0.86'
 Driller Jim Hallon

 Rig CME 55
 Bit(s) Drag Bit

 Drilling Fluid Bentonite Mud

 Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/21/90	1445	2/26/90	1600
Geophys. Logging:				
Casing:	2/28/90	0915	2/28/90	1100
2" PVC				
(C1, S1)				
Filter Placement:	2/28/90	0915	2/28/90	1100
Cementing:	2/28/90	0915	2/28/90	1100
Development:	3/24/90	1220	3/24/90	1723

Well Design & Specifications
 Basis: Geologic Log X Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

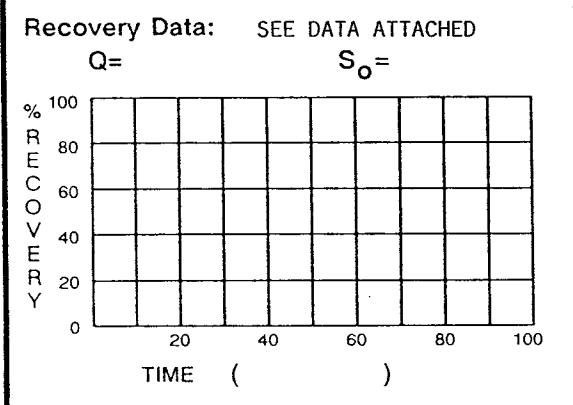
Depth	String(s)	Elevation
54.7' - 60.0'	S1	-
+0.86' - 54.7'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:
 Volume of Well: 0.85 cu ft
 Gallons Removed: 606 gals
 Condition of H₂O after development: MC
 Method of Development: Pump

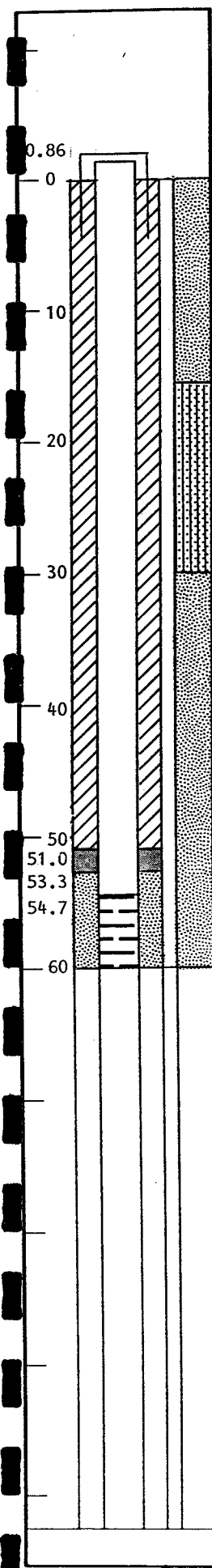
Casing: C1 2" ID Fluh - threaded SCH 40
PVC Pipe
 C2 _____
 Screen: S1 2" ID Flush - threaded SCH 40
PVC Pipe with 0.010" slot size
 S2 _____
 Filter Pack: SILICA SAND
Washed, dried, sized 20/30
53.3' - 60.0'
 Grout Seal: Bentonite
85 lbs Bentonite / 75 gals Water
0.0' - 51.0'
 Bentonite Seal: Bentonite Pellets
51.0' - 53.3'

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1346	5.44	87	26.3
1458	4.88	33	24.8
1615	4.55	28	24.3
1706	4.55	28	24.8
1723	4.55	29	24.8



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
 Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 SUPervised BY J. Thomas DATE 2/28/90
 WC 5789

Well No. B-51
Boring No. X-Ref: B-51

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 18322.15 Elevation Ground Level 130.5 FT-MSL
E: 19691.70 Top of Casing 132.27 FT-MSL

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6"
Casing Stick-up Height: 1.77'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/13/90	1300	2/13/90	1545
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/13/90	1600	2/13/90	1620
Filter Placement:	2/13/90	1600	2/13/90	1620
Cementing:	2/13/90	1600	2/13/90	1620
Development:	3/16/90	1205	3/16/90	1510

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>54.5' - 60.0'</u>	<u>S1</u>	<u> - </u>
<u>+1.77' - 54.5'</u>	<u>C1</u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
53.5' - 60.0'

Grout Seal: Bentonite
113 lbs Bentonite / 75 gals Water
0.0' - 50.5'

Bentonite Seal: Bentonite Pellets
50.5' - 53.5'

Well Development:

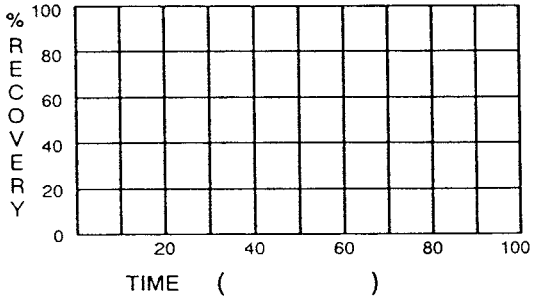
Volume of Well: 0.85 cu ft
Gallons Removed: 740 gals
Condition of H₂O after development: MC
Method of Development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1206	5.31	29	22.8
1350	5.30	27.5	24.8
1448	5.29	27	24.7
1501	5.13	27	23.1
1510	5.14	27.5	23.9

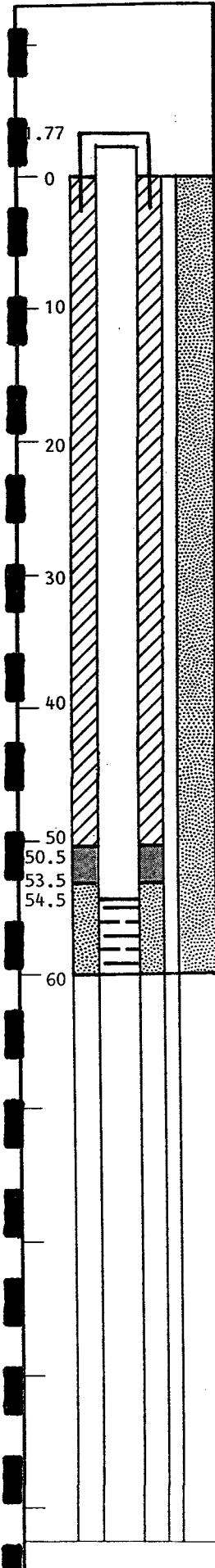
Recovery Data: SEE DATA ATTACHED

Q= S₀=



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.



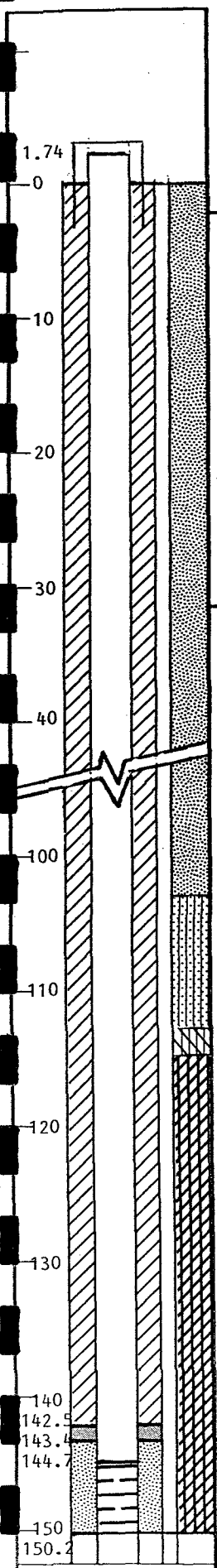
SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FL
WC 5790
SUPERVISED BY J. Thomas
DATE 2/13/90

Well No. B-5D

Boring No. X-Ref: B-51, B-5D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 18322.15 E: 19691.70
Elevation Ground Level 130.5 FT-MSL
Top of Casing 132.24 FT-MSL



Drilling Summary:
Total Depth 150.25'
Borehole Diameter 6"
Casing Stick-up Height: 1.74'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/14/90	1250	2/16/90	1150
Geophys. Logging:				
Casing: 1 1/2" PVC (C1, S1)	2/16/90	1215	2/16/90	1330
Filter Placement:	2/16/90	1215	2/16/90	1330
Cementing:	2/16/90	1215	2/16/90	1330
Development:	3/29/90	1335	3/29/90	1407

Well Design & Specifications
Basis: Geologic Log Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
144.75' - 150.25'	S1	-
+1.74' - 144.75'	C1	-
-	-	-
-	-	-

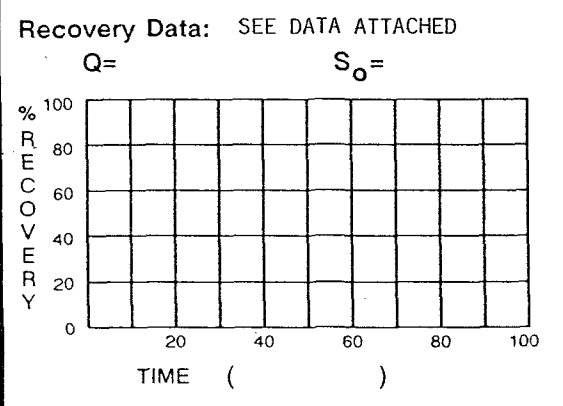
Well Development:
Volume of Well: 0.95 cu ft
Gallons Removed: 25 gals
Condition of H₂O after development: MC
Method of Development: Nitrogen

Casing: C1 1 1/2" ID Flush - threaded SCH 40 PVC Pipe
C2 _____
Screen: S1 1 1/2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
143.45' - 150.25'
Grout Seal: Bentonite
300 lbs Bentonite / 200 gals Water
0.0' - 142.50'
Bentonite Seal: Bentonite Pellets
142.50' - 143.45'

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1342	7.87	420	22.5
1352	8.17	440	22.3
1358	8.19	420	22.3
1402	8.13	420	22.6
1407	8.10	440	22.6



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.

SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FL

WC 5791

SUPERVISED BY J. Thomas
DATE 3/16/90

Well No. B-6S

Boring No. X-Ref: B-6D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20621.72 Elevation Ground Level 97.5 FT-MSL
E: 22833.05 Top of Casing 99.97 FT-MSL

Drilling Summary:

Total Depth 28.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.47'
 Driller Jim Hallon

Rig CME 55
 Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/17/90	1115	3/17/90	1145
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/17/90	1210	3/17/90	1250
Filter Placement:	3/17/90	1210	3/17/90	1250
Cementing:	3/17/90	1210	3/17/90	1250
Development:	3/22/90	1503	3/22/90	1645

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.7' - 28.0'	S1	-
+2.47' - 17.7'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
15.5' - 28.0'

Grout Seal: Bentonite
75 lbs Bentonite / 50 gals Water
0.0' - 12.5'

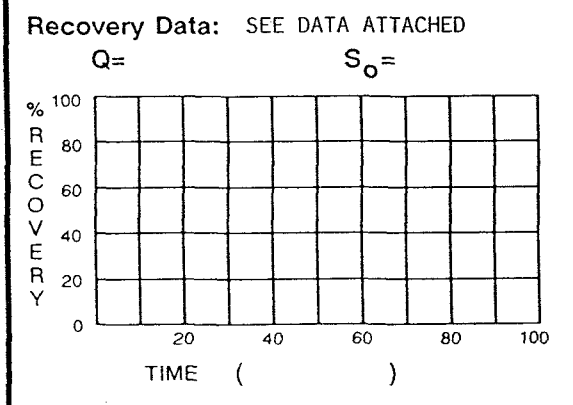
Bentonite Seal: Bentonite Pellets
12.5' - 15.5'

Well Development:

Volume of Well: 1.7 cu ft
 Gallons Removed: 25 gals
 Condition of H₂O after development: C
 Method of Development: Pump

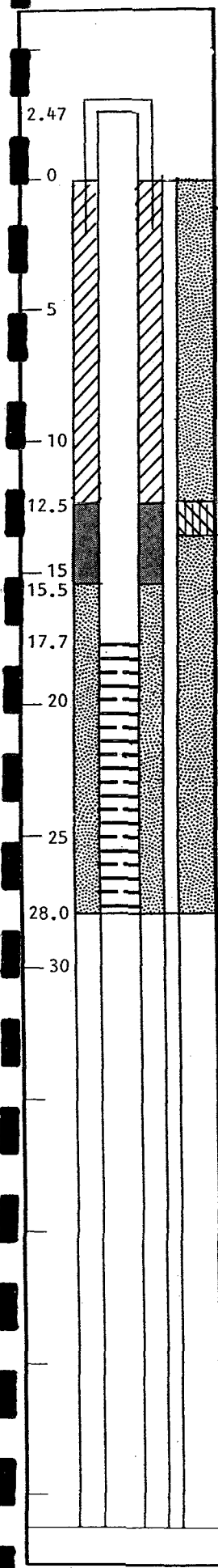
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1513	6.08	120	22.7
1600	5.69	61	21.5
1630	5.61	38	21.3
1645	5.61	38	20.9



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear

Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDELL LOCATION JACKSONVILLE, FL

WC 5792

SUPERVISED BY J. Thomas DATE 3/17/90

Well No. B-61
 Boring No. X-Ref: B-6D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20621.72 Elevation Ground Level 97.5 FT-MSL
E: 22833.05 Top of Casing 99.67 FT-MSL

Drilling Summary:

Total Depth 57.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.17'
 Driller Jim Hallon
 Rig CME 55
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/16/90	1330	3/16/90	1450
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/16/90	0915	3/16/90	1015
Filter Placement:	3/16/90	0915	3/16/90	1015
Cementing:	3/16/90	0915	3/16/90	1015
Development:	3/22/90	0905	3/22/90	1415

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
51.7' - 57.0'	S1	-
+2.17' - 51.7'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:

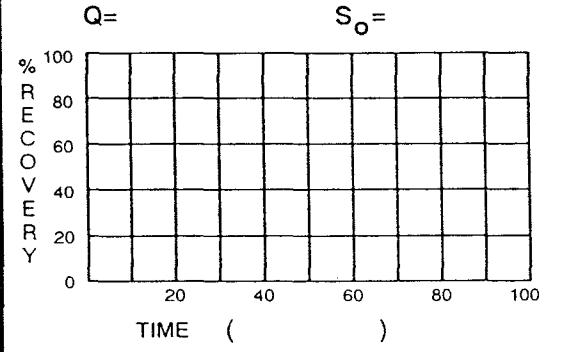
Volume of Well: 0.85 cu ft
 Gallons Removed: 960 gals
 Condition of H₂O after development: C
 Method of Development: Pump

Stabilization Test Data:

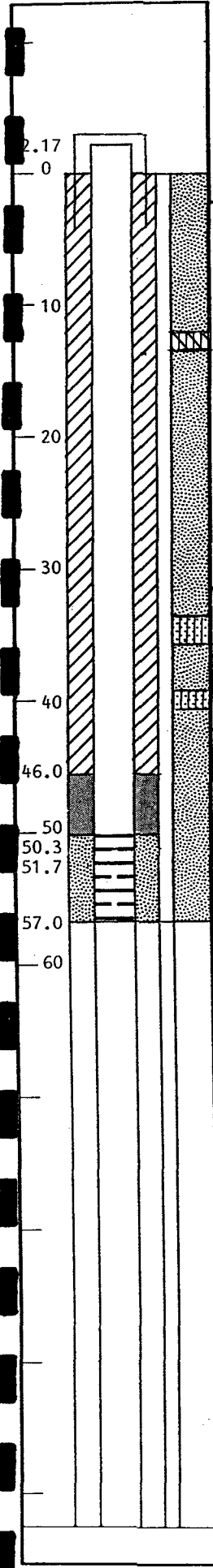
Time	pH	Spec. Cond.	Temp (°C)
0931	6.08	115	22.8
1021	5.96	82	23.9
1051	5.90	80	22.8
1323	5.83	81	23.2
1415	5.84	72	23.0

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2 _____
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2 _____
 Filter Pack: SILICA SAND
Washed, dried, sized 20/30
50.3' - 57.0'
 Grout Seal: Bentonite
105 lbs Bentonite / 70 gals Water
0.0' - 46.0'
 Bentonite Seal: Bentonite Pellets
46.0' - 50.3'

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
 Units for Specific Conductivity are umho/cm.

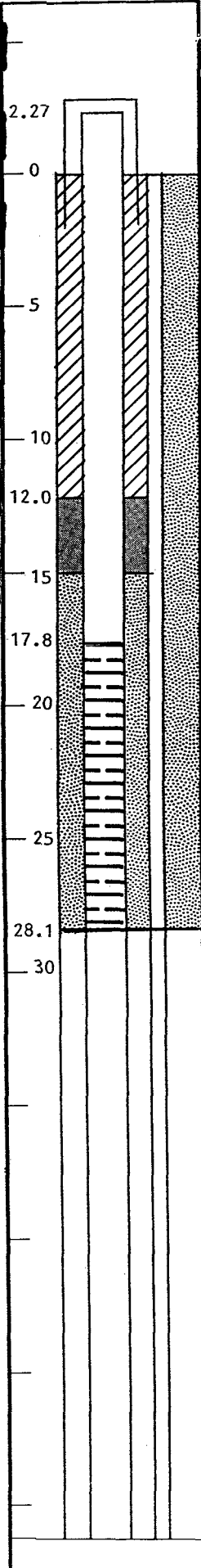


SITE NAME TRAIL RIDGE LANDELL LOCATION JACKSONVILLE, FL
 WC 5793
 SUPERVISED BY J. Thomas DATE 3/16/90

Well No. B-7S
 Boring No. X-Ref: B-7D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20752.48 Elevation Ground Level 119.7 FT-MSL
E: 20290.24 Top of Casing 121.97 FT-MSL



Drilling Summary:

Total Depth 28.1'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.27'
 Driller Jim Hallon

Rig CME 55
 Bit(s) Drag Bit

Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/8/90	1515	3/8/90	1545
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/8/90	1515	3/8/90	1545
Filter Placement:	3/8/90	1515	3/8/90	1545
Cementing:	3/8/90	1515	3/8/90	1545
Development:	3/28/90	0738	3/28/90	0807

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.8' - 28.1'	S1	-
+2.27' - 17.8'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush- threaded SCH 40 PVC Pipe
 C2 _____

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
15.0' - 28.1'

Grout Seal: Bentonite
110 lbs Bentonite / 70 gals Water
0.0' - 12.0'

Bentonite Seal: Bentonite Pellets
12.0' - 15.0'

Well Development:

Volume of Well: 1.7 cu ft
 Gallons Removed: 290 gals
 Condition of H₂O after development: MC
 Method of Development: Nitrogen

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
0742	5.83	115	19.2
0748	5.89	38	19.2
0756	5.64	32	19.1
0759	5.35	32	19.2
0807	5.63	32	19.2

Recovery Data: SEE DATA ATTACHED

Q= S₀=

% RECOVERY

TIME ()

Comments: MT = Moderately Turbid; I = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.

SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 SUPERVISED BY J. Thomas DATE 3/8/90
 WC 5794

Well No. B-71

Boring No. X-Ref: B-7D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20752.48 E: 20290.24 Elevation Ground Level 119.7 FT-MSL
Top of Casing 121.52 FT-MSL

Drilling Summary:

Total Depth 63.3'
Borehole Diameter 6"
Casing Stick-up Height: 1.82'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>58.0' - 63.3'</u>	<u>S1</u>	<u> </u>
<u>+1.82' - 58.0'</u>	<u>C1</u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
56.8' - 63.3'

Grout Seal: Bentonite
100 lbs Bentonite / 70 gals Water
0.0' - 51.8'

Bentonite Seal: Bentonite Pellets
51.8' - 56.8'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	<u>3/8/90</u>	<u>1330</u>	<u>3/8/90</u>	<u>1535</u>
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	<u>3/8/90</u>	<u>1300</u>	<u>3/8/90</u>	<u>1345</u>
Filter Placement:	<u>3/8/90</u>	<u>1300</u>	<u>3/8/90</u>	<u>1345</u>
Cementing:	<u>3/8/90</u>	<u>1300</u>	<u>3/8/90</u>	<u>1345</u>
Development:	<u>3/27/90</u>	<u>1644</u>	<u>3/27/90</u>	<u>1721</u>

Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 350 gals
Condition of H₂O after development: C
Method of Development: Nitrogen

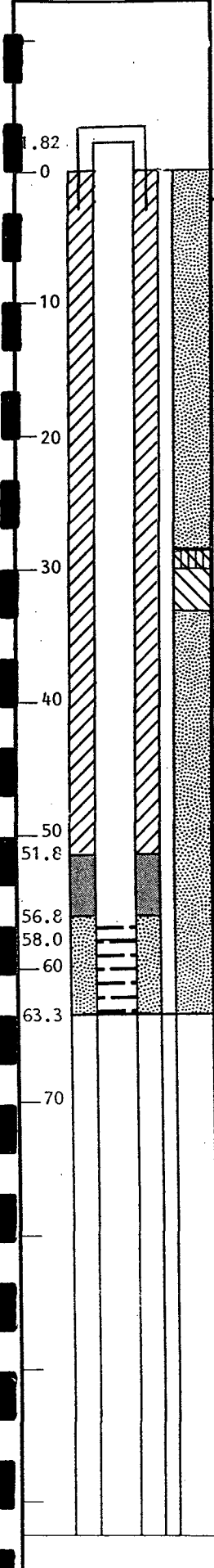
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
<u>1715</u>	<u>5.91</u>	<u>35</u>	<u>20.3</u>
<u>1718</u>	<u>5.64</u>	<u>34.5</u>	<u>20.2</u>
<u>1721</u>	<u>5.61</u>	<u>35</u>	<u>20.0</u>

Recovery Data: SEE DATA ATTACHED

Q= S₀=

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL

SUPERVISED BY J. Thomas DATE 3/8/90

WC 5795

Well No. B-8S

Boring No. X-Ref: B-8I

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22533.78
E: 10600.78

Elevation Ground Level 123.2 FT-MSL
Top of Casing 125.33 FT-MSL

Drilling Summary:

Total Depth 15.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.13'
Driller Robbie Drawdy

Rig CME 550 ATV
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/8/90	1330	2/8/90	1400
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/8/90	1400	2/8/90	1500
Filter Placement:	2/8/90	1400	2/8/90	1500
Cementing:	2/8/90	1400	2/8/90	1500
Development:	3/27/90	0905	3/27/90	1007

Well Design & Specifications

Basis: Geologic Log Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
9.7' - 15.0'	S1	-
+2.13' - 9.7'	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2 _____
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
8.0' - 15.0'
Grout Seal: Bentonite
30 lbs Bentonite / 20 gals Water
0.0' - 6.0'
Bentonite Seal: Bentonite Pellets
6.0' - 8.0'

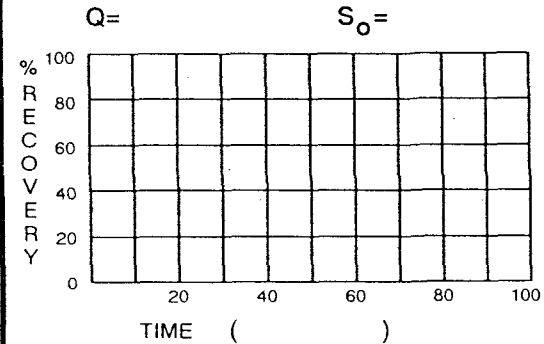
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 248 gals
Condition of H₂O after development: MC
Method of Development: Pump

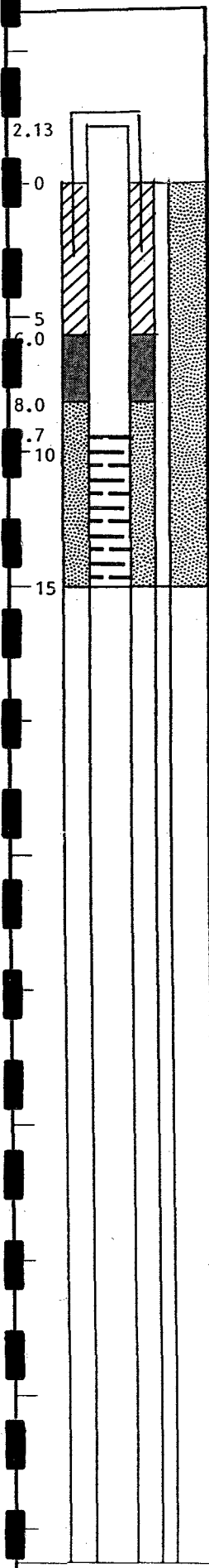
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
0918	-	112	-
0928	-	88	-
0940	-	68	-
0955	-	60	-
1007	-	60	-

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.
Note: pH meter not working; therefore no pH or temperature readings available.



SITE NAME TRAIL RIDGE LANDELL LOCATION JACKSONVILLE, FL
 SUPERVISED BY L. Lozier DATE 2/8/90
 WC 5797

Well No. B-81

Boring No. X-Ref: B-81

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22533.78
E: 19609.78

Elevation Ground Level 123.2 FT-MSL
Top of Casing 125.42 FT-MSL

Drilling Summary:

Total Depth 60.7'
Borehole Diameter 6"
Casing Stick-up Height: 2.22'
Driller Jay Ellis and Associates drilled B-81; Robbie Drawdy Law Engineering installed well B-81
Rig CME 45 / CME 550. ATV
Bit(s) Drag Bit
Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1/31/90	1432	2/2/90	0945
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/8/90	1100	2/8/90	1300
Filter Placement:	2/8/90	1100	2/8/90	1300
Cementing:	2/8/90	1100	2/8/90	1300
Development:	2/26/90	1230	2/26/90	1500
	2/27/90	0740	2/27/90	0855

Well Design & Specifications

Basis: Geologic Log Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
55.0' - 60.5'	S1	-
+2.22' - 55.0'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:

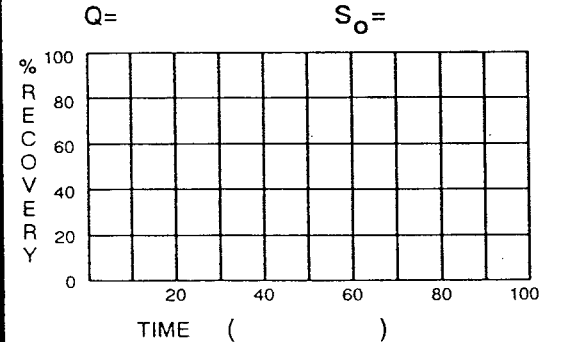
Volume of Well: 0.85 cu ft
Gallons Removed: 1125 gals
Condition of H₂O after development: MC
Method of development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1500	-	-	-
0830	-	30	-
0843	-	28	-
0850	-	27	-
0855	-	27	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Recovery Data: SEE DATA ATTACHED

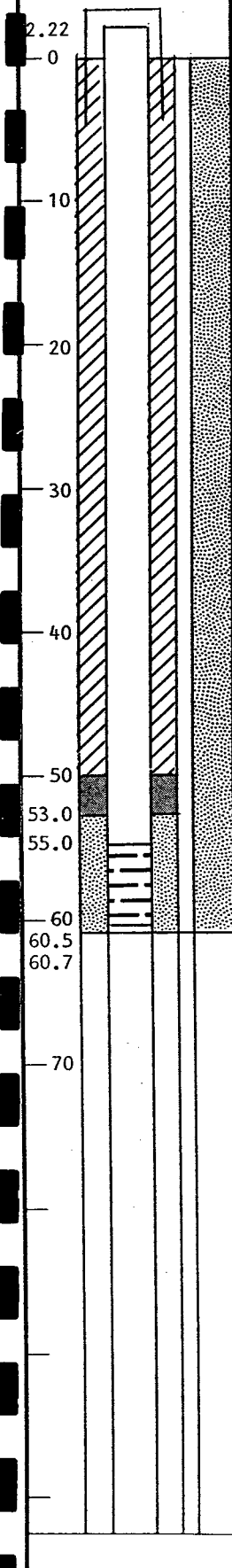


Filter Pack: SILICA SAND
Washed, dried, sized 20/30

Grout Seal: Bentonite
100 lbs Bentonite / 60 gals Water

Bentonite Seal: Bentonite Pellets

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.
Note: pH meter not working; therefore no pH or temperature readings available.



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FL
WC 5798
SUPERVISED BY L. Lozier
DATE 2/8/90

Well No. B-8D

Boring No. X-Ref: B-81, B-8D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22533.79
E: 19609.78

Elevation Ground Level 123.2 FT-MSL
Top of Casing 125.27 FT-MSL

Drilling Summary:

Total Depth 113.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.07'
Driller Robbie Drawdy

Rig CME 550 ATV
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/9/90	1011	2/3/90	1420
Geophys. Logging:				
Casing: 1 1/2" PVC (C1, S1)	2/14/90	1025	2/14/90	1249
Filter Placement:	2/14/90	1025	2/14/90	1249
Cementing:	2/14/90	1025	2/14/90	1249
Development:	3/29/90	1439	3/29/90	1506

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
107.5' - 113.0'	S1	-
+2.07' - 107.5'	C1	-
-	-	-
-	-	-
-	-	-

Well Development:

Volume of Well: 0.95 cu ft
Gallons Removed: 12 gals
Condition of H₂O after development: T
Method of development: Nitrogen

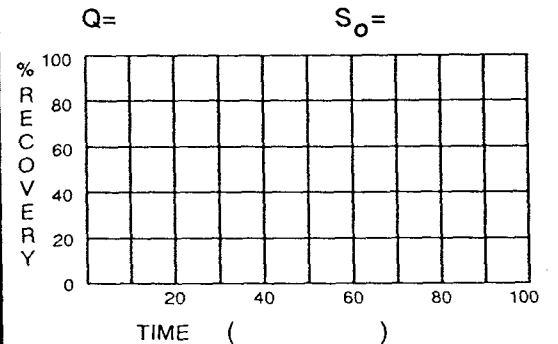
Casing: C1 1 1/2" ID Flush - threaded SCH 40 PVC Pipe
C2
Screen: S1 1 1/2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Stabilization Test Data:

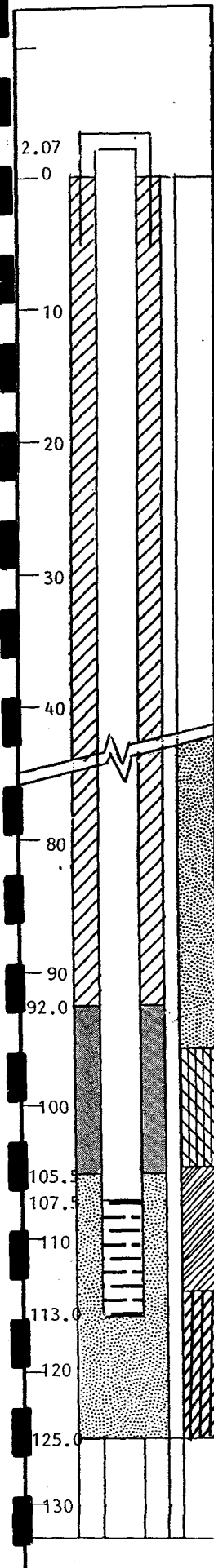
Time	pH	Spec. Cond.	Temp (°C)
1446	7.46	425	21.3
1451	8.04	450	21.4
1456	8.30	450	21.7
1501	8.32	450	21.7
1506	8.31	425	21.1

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
105.5' - 125.0'
Grout Seal: Bentonite
300 lbs Bentonite / 200 gals Water
0.0' - 92.0'
Bentonite Seal: Bentonite Pellets
92.0' - 105.5'

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FL

WC 5799

SUPERVISED BY L. Lozier
DATE 2/14/90

Well No. B-95

Boring No. X-Ref: B-91

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22221.20
 E: 17635.66

Elevation Ground Level 145.8 FT-MSL
 Top of Casing 148.17 FT-MSL

Drilling Summary:

Total Depth 15.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.37'
Driller Robbie Drawdy

Rig CME 550 ATV
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
9.7' - 15.0'	S1	- -
+2.37' - 9.7'	C1	- -
-	-	- -
-	-	- -
-	-	- -

Casing: C1 2" ID Flush - threaded SCH 40
 PVC Pipe
C2
Screen: S1 2" ID Flush - threaded SCH 40
 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
 Washed, dried, sized 20/30
 8.0' - 15.0'
Grout Seal: Bentonite
 25 lbs Bentonite / 15 gals Water
 0.0' - 5.6'
Bentonite Seal: Bentonite Pellets
 5.6' - 8.0'

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
 Units for Specific Conductivity are umho/cm.
 Note: pH meter not working; therefore no pH or temperature readings
 available.

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/7/90	1115	2/7/90	1200
Geophys. Logging:				
Casing:	2/7/90	1200	2/7/90	1340
2" PVC (C1, S1)				
Filter Placement:	2/7/90	1200	2/7/90	1340
Cementing:	2/7/90	1200	2/7/90	1340
Development:	3/26/90	1050	3/26/90	1246

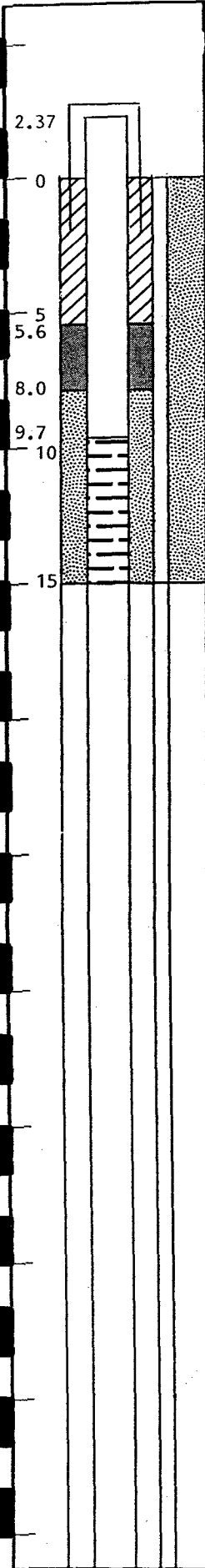
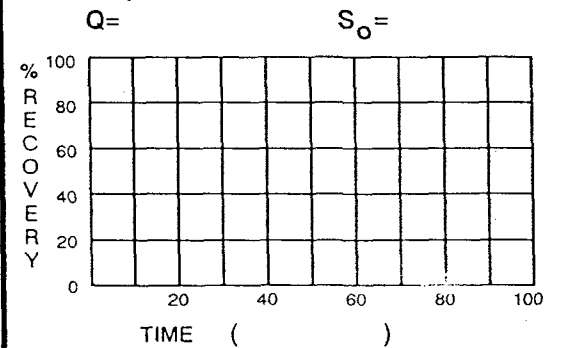
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 290 gals
Condition of H₂O after development: MC
Method of Development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1056	-	28	-
1246	-	23	-

Recovery Data: SEE DATA ATTACHED



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FL
WC 5800
SUPERVISED BY L. Lozier
DATE 2/7/90

Well No. B-91
 Boring No. X-Ref: B-91

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22221.20 Elevation Ground Level 145.8 FT-MSL
E: 17635.66 Top of Casing 147.82 FT-MSL

Drilling Summary:

Total Depth 60.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.02'
 Driller Bill Moody
 Rig Mobile
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>54.5' - 60.0'</u>	<u>S1</u>	<u>-</u>
<u>+2.02' - 54.5'</u>	<u>C1</u>	<u>-</u>
<u>-</u>	<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>	<u>-</u>
<u>-</u>	<u>-</u>	<u>-</u>

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
48.7' - 60.0'
 Grout Seal: Bentonite
300 lbs Bentonite / 200 gals Water
0.0' - 46.3'
 Bentonite Seal: Bentonite Pellets
46.3' - 48.7'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	<u>1/31/90</u>	<u>1240</u>	<u>2/1/90</u>	<u>1720</u>
Geophys. Logging:				
Casing: 2" PVC (C1,S1)	<u>2/5/90</u>	<u>0900</u>	<u>2/5/90</u>	<u>1530</u>
Filter Placement:	<u>2/5/90</u>	<u>0900</u>	<u>2/5/90</u>	<u>1530</u>
Cementing:	<u>2/5/90</u>	<u>0900</u>	<u>2/5/90</u>	<u>1530</u>
Development:	<u>3/29/90</u>	<u>0800</u>	<u>3/29/90</u>	<u>0903</u>

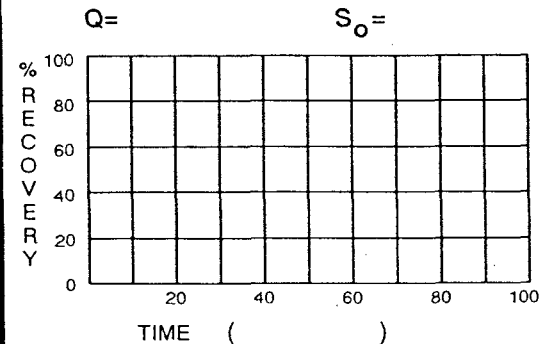
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 30 gals
 Condition of H₂O after development: MC
 Method of Development: Pump

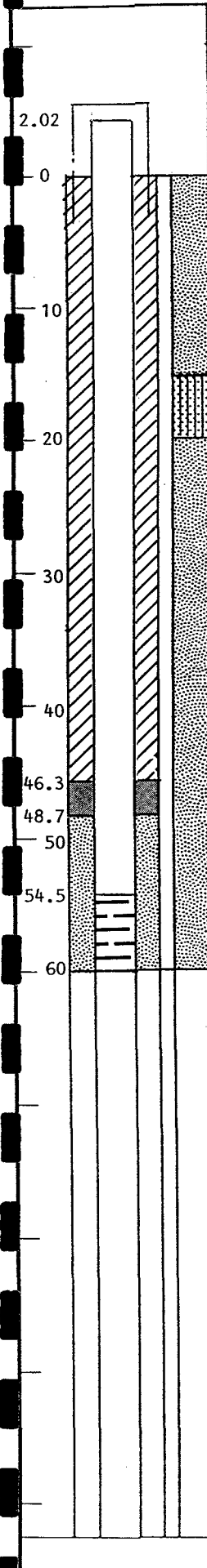
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
<u>0825</u>	<u>6.91</u>	<u>200</u>	<u>20.7</u>
<u>0847</u>	<u>6.95</u>	<u>180</u>	<u>20.9</u>
<u>0858</u>	<u>7.00</u>	<u>185</u>	<u>20.9</u>
<u>0903</u>	<u>7.29</u>	<u>180</u>	<u>20.9</u>

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 WC 5801
 SUPERVISED BY J. Thomas DATE 2/5/90

Well No. B-10S

Boring No. X-Ref: B-10I

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22061.24 E: 19773.17 Elevation Ground Level 121.5 FT-MSL
Top of Casing 123.54 FT-MSL

Drilling Summary:

Total Depth 22.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.04'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/2/90	1250	3/2/90	1320
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/2/90	1405	3/2/90	1430
Filter Placement:	3/2/90	1405	3/2/90	1430
Cementing:	3/2/90	1405	3/2/90	1430
Development:	3/28/90	0724	3/28/90	0922

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.7' - 22.0'	S1	-
+2.04' - 16.7'	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2 _____
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
15.5' - 22.0'
Grout Seal: Bentonite
130 lbs Bentonite / 100 gals Water
0.0' - 13.5'
Bentonite Seal: Bentonite Pellets
13.5' - 15.5'

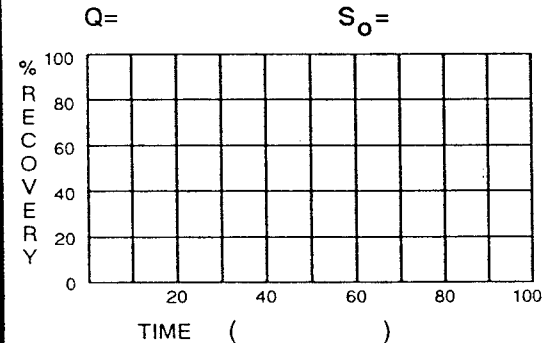
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 590 gals
Condition of H₂O after development: T
Method of Development: Pump

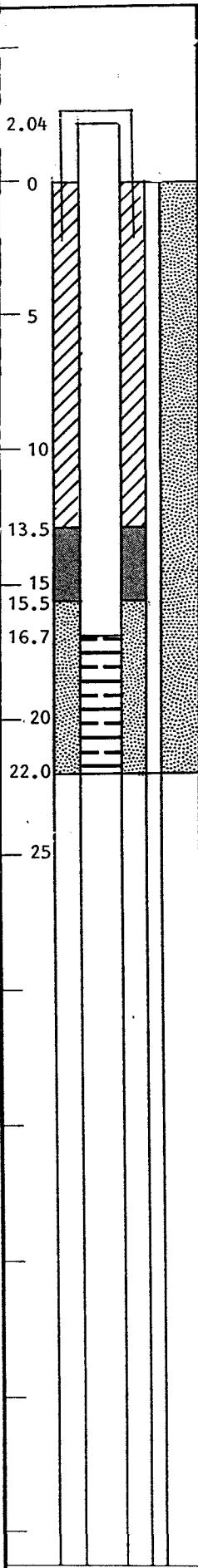
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
0729	5.10	32	19.8
0922	4.85	31	20.5

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
SUPERVISED BY J. Thomas DATE 3/2/90
WC 5802

Well No. B-101

Boring No. X-Ref: B-101

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 22061.24 Elevation Ground Level 121.5 FT-MSL
E: 19773.17 Top of Casing 123.40 FT-MSL

Drilling Summary:
 Total Depth 52.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 1.90'
 Driller Jim Hallon
 Rig CME 55
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>46.5' - 52.0'</u>	<u>S1</u>	<u> - </u>
<u>+1.90 - 46.5'</u>	<u>C1</u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>
<u> - </u>	<u> </u>	<u> - </u>

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
45.0' - 52.0'

Grout Seal: Bentonite
80 lbs Bentonite / 60 gals Water
0.0' - 42.0'

Bentonite Seal: Bentonite Pellets
42.0' - 45.0'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	<u>3/1/90</u>	<u>1030</u>	<u>3/2/90</u>	<u>0945</u>
Geophys. Logging:				
Casing:	<u>3/2/90</u>	<u>1045</u>	<u>3/2/90</u>	<u>1130</u>
<u>2" PVC</u>				
<u>(C1, S1)</u>				
Filter Placement:	<u>3/2/90</u>	<u>1045</u>	<u>3/2/90</u>	<u>1130</u>
Cementing:	<u>3/2/90</u>	<u>1045</u>	<u>3/2/90</u>	<u>1130</u>
Development:	<u>3/27/90</u>	<u>1102</u>	<u>3/27/90</u>	<u>1238</u>

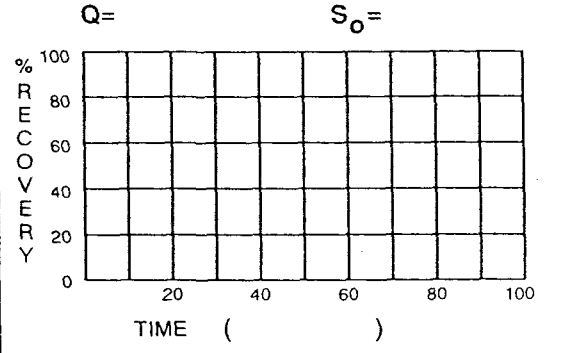
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 384 gals
 Condition of H₂O after development: T
 Method of Development: Pump

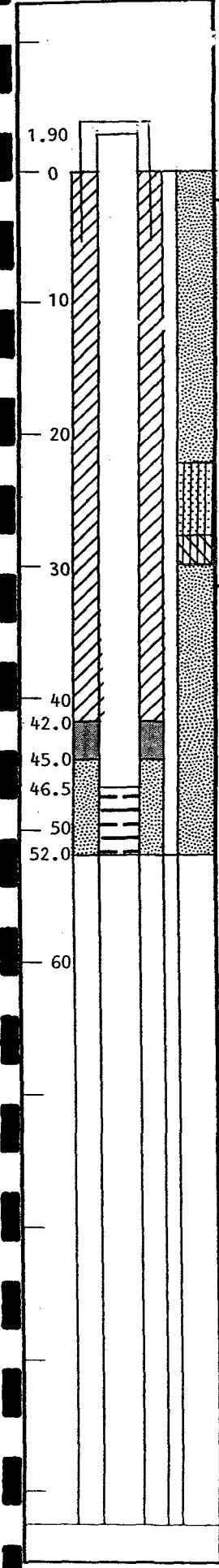
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)
<u>1123</u>	<u>-</u>	<u>30</u>	<u>-</u>
<u>1155</u>	<u>-</u>	<u>29</u>	<u>-</u>
<u>1212</u>	<u>-</u>	<u>29</u>	<u>-</u>
<u>1230</u>	<u>-</u>	<u>29</u>	<u>-</u>
<u>1238</u>	<u>-</u>	<u>29</u>	<u>-</u>

Recovery Data: SEE DATA ATTACHED



Comments: MI = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
 Units for Specific Conductivity are uhmo/cm.
 Note: pH meter not working; therefore no pH or temperature readings available.



SITE NAME TRAIL RIDGE LANDFILL
 LOCATION JACKSONVILLE, FL
 WC 5803
 SUPERVISED BY J. Thomas
 DATE 3/2/90

Well No. B-11S

Boring No. X-Ref: B-11D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20330.54
E: 20552.52

Elevation Ground Level 118.4 FT-MSL
Top of Casing 120.27 FT-MSL

Drilling Summary:

Total Depth 15.0'
Borehole Diameter 6"
Casing Stick-up Height: 1.87'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/12/90	0925	2/12/90	1120
Geophys. Logging:				
Casing: (C1, S1)	2/12/90	1120	2/12/90	1200
Filter Placement:	2/12/90	1120	2/12/90	1200
Cementing:	2/12/90	1120	2/12/90	1200
Development:	3/29/90	1029	2/12/90	1035

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
9.5' - 15.0'	S1	-
+1.87' - 9.5'	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
8.5' - 15.0'
Grout Seal: Bentonite
100 lbs Bentonite / 50 gals Water
0.0' - 6.5'
Bentonite Seal: Bentonite Pellets
6.5' - 8.5'

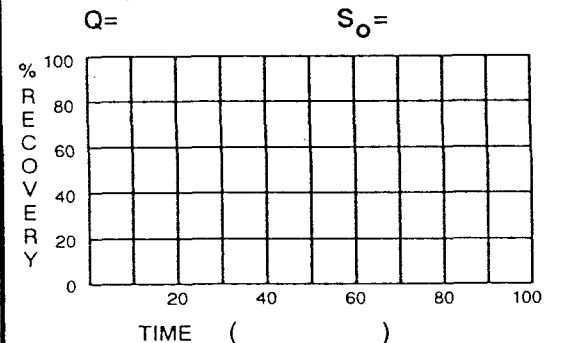
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 36 gals
Condition of H₂O after development: MC
Method of Development: Nitrogen

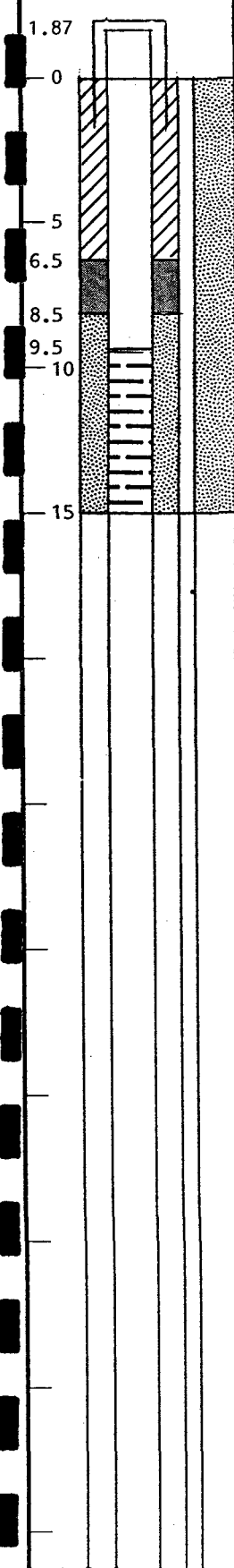
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1032	5.40	35	20.3
1035	5.39	35	20.1

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
SUPERVISED BY J. Thomas DATE 2/12/90
WC 5804

Well No. B-111

Boring No. X-Ref: B-11D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 20330.54
E: 20552.52

Elevation Ground Level 118.4 FT-MSL
Top of Casing 120.39 FT-MSL

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6"
Casing Stick-up Height: 1.99'
Driller Jim Hallon

Rig CME 55
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/12/90	1400	2/12/90	1515
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/12/90	1536	2/12/90	1630
Filter Placement:	2/12/90	1536	2/12/90	1630
Cementing:	2/12/90	1536	2/12/90	1630
Development:	3/29/90	1010	3/29/90	1026

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
54.5' - 60.0'	S1	-
+1.99' - 54.5'	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
C2
Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
53.5' - 60.0'
Grout Seal: Bentonite
100 lbs Bentonite / 80 gals Water
0.0' - 48.5'
Bentonite Seal: Bentonite Pellets
48.5' - 53.5'

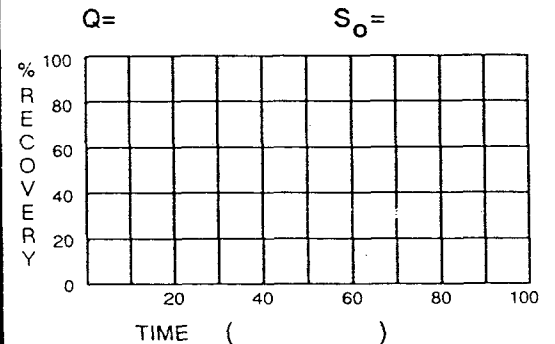
Well Development:

Volume of Well: 0.85 cu ft
Gallons Removed: 80 gals
Condition of H₂O after development: C
Method of Development: Nitrogen

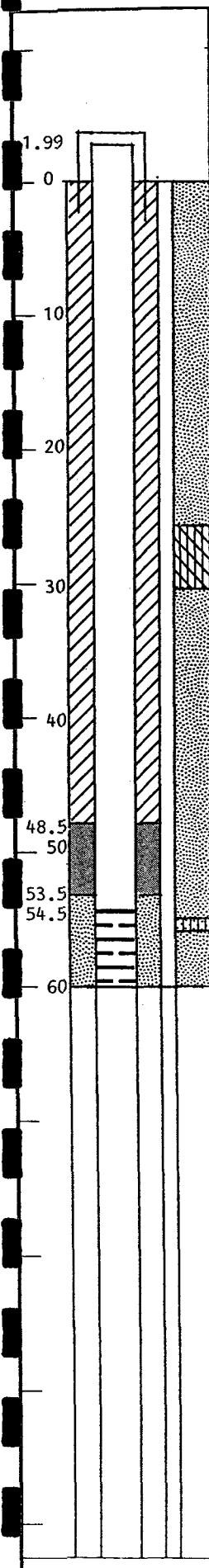
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1018	5.92	24	21.5
1020	5.77	23	21.5
1024	5.77	23	21.1
1026	5.70	23	21.1

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FL

WC 5805

SUPERVISED BY J. Thomas

DATE 2/12/90

Well No. B-11D

Boring No. X-Ref: B-11D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 30330.54
E: 20552.52

Elevation Ground Level 118.4 FT-MSL
Top of Casing 120.46 FT-MSL

Drilling Summary:

Total Depth 150.0'
Borehole Diameter 6"
Casing Stick-up Height: 2.06'
Driller Jim Hallon
Rig CME 55
Bit(s) Drag Bit
Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/6/90	1330	2/9/90	1330
Geophys. Logging:				
Casing: 1 1/2" PVC (C1, S1)	2/9/90	1415	2/9/90	1530
Filter Placement:	2/9/90	1415	2/9/90	1530
Cementing:	2/9/90	1415	2/9/90	1530
Development:	3/29/90	1055	3/29/90	1138

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
144.6' - 150.0'	S1	- - -
+2.06' - 144.6'	C1	- - -
-	-	-
-	-	-
-	-	-

Well Development:

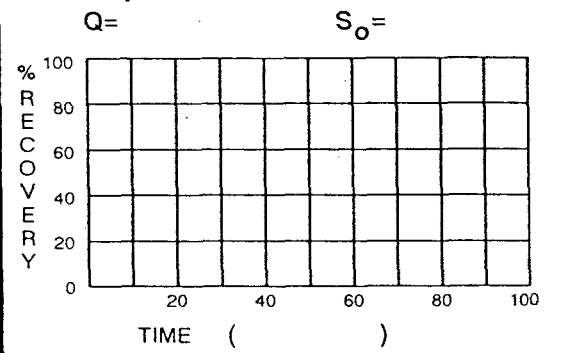
Volume of Well: 0.95 cu ft
Gallons Removed: 45 gals
Condition of H₂O after development: C
Method of Development: Nitrogen

Stabilization Test Data:

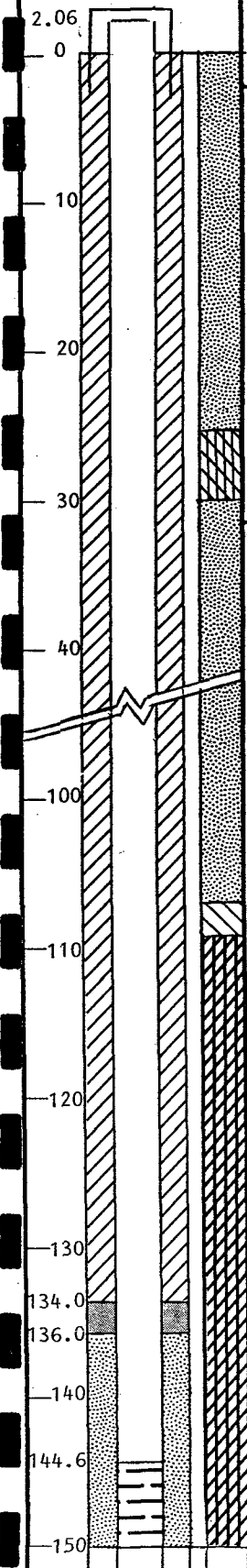
Time	pH	Spec. Cond.	Temp (°C)
1102	8.33	750	22.5
1109	8.17	500	22.2
1116	8.21	500	21.6
1130	7.91	490	21.9
1138	8.08	500	21.9

Casing: C1 1 1/2" ID Flush - threaded SCH 40
PVC Pipe
C2
Screen: S1 1 1/2" ID Flush - threaded SCH 40
PVC Pipe with 0.010" slot size
S2
Filter Pack: SILICA SAND
Washed, dried, sized 20/30
136.0' - 150.0'
Grout Seal: Bentonite
250 lbs Bentonite / 200 gals Water
0.0' - 134.0'
Bentonite Seal: Bentonite Pellets
134.0' - 136.0'

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FL

WC 5806

SUPERVISED BY J. Thomas
DATE 2/9/90

Well No. B-12S

Boring No. X-Ref: B-12D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 19835.91
 E: 20536.13

Elevation Ground Level 122.8 FT-MSL
Top of Casing 124.79 FT-MSL

Drilling Summary:

Total Depth 15.0'
Borehole Diameter 6"
Casing Stick-up Height: 1.99'
Driller Robbie Drawdy

Rig CME 550 ATV
Bit(s) Drag Bit

Drilling Fluid Bentonite Mud
Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/6/90	1300	3/6/90	1331
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/6/90	1336	3/6/90	1440
Filter Placement:	3/6/90	1336	3/6/90	1440
Cementing:	3/6/90	1336	3/6/90	1440
Development:	3/12/90	1600	3/12/90	1835

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
4.7' - 15.0'	S1	- - -
+1.99' - 4.7'	C1	- - -
- - -	- - -	- - -
- - -	- - -	- - -
- - -	- - -	- - -

Casing: C1 2" ID Flush - threaded SCH 40
 PVC Pipe
C2
Screen: S1 2" ID Flush - threaded SCH 40
 PVC Pipe with 0.010" slot size
S2

Filter Pack: SILICA SAND
 Washed, dried, sized 20/30
 4.0' - 15.0'
Grout Seal: Bentonite
 8 lbs Bentonite / 5 gals Water
 0.0' - 2.0'
Bentonite Seal: Bentonite Pellets
 2.0' - 4.0'

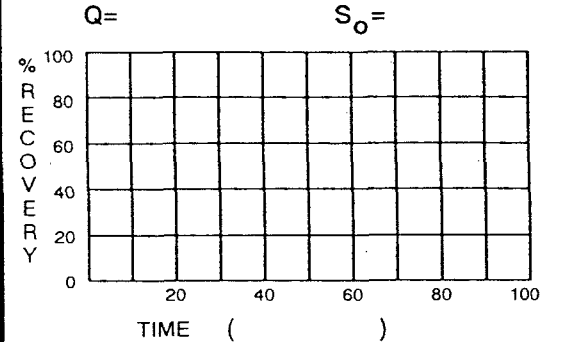
Well Development:

Volume of Well: 1.7 cu ft
Gallons Removed: 1356 gals
Condition of H₂O after development: C
Method of Development: Pump

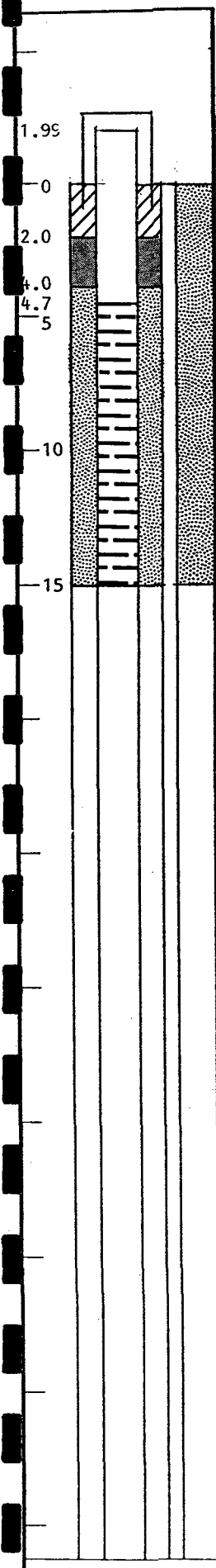
Stabilization Test Data:

Time	p H	Spec. Cond.	Temp (°C)
1600	4.49	42	20.7
1745	4.65	42	19.9
1800	4.67	42	19.7
1820	4.48	42	19.8
1835	4.49	42	19.4

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
 Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FL
WC 5807
SUPERVISED BY L. Lozier
DATE 3/6/90

Well No. B-121
 Boring No. X-Ref: B-12D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 19835.91 Elevation Ground Level 122.8 FT-MSL
E: 20536.13 Top of Casing 124.7 FT-MSL

Drilling Summary:

Total Depth 69.6'
 Borehole Diameter 6"
 Casing Stick-up Height: 1.90'
 Driller Robbie Drawdy

Rig CME 550 ATV
 Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/5/90	1245	3/5/90	1519
Geophys. Logging:				
Casing: 2" PVC (C1,S1)	3/6/90	1024	3/6/90	1130
Filter Placement:	3/6/90	1024	3/6/90	1130
Cementing:	3/6/90	1024	3/6/90	1130
Development:	3/9/90	1330	3/9/90	1600
	3/11/90	0900	3/11/90	1145

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
64.1' - 69.6'	S1	-
+1.90' - 64.1'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 1500 gals
 Condition of H₂O after development: C
 Method of Development: Pump

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

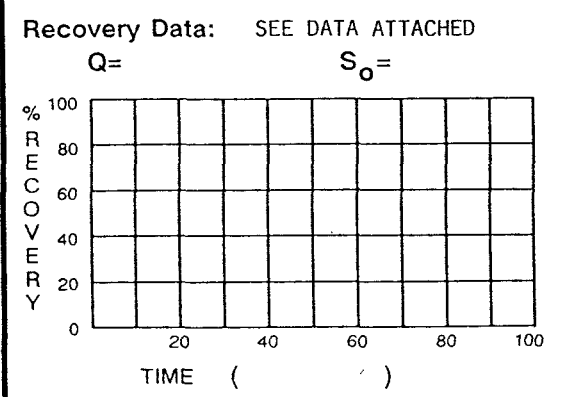
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1330	5.16	45	24.3
1430	5.23	38	23.1
1600	4.99	33	22.0
0900	5.43	33	21.9
1145	5.81	33	23.3

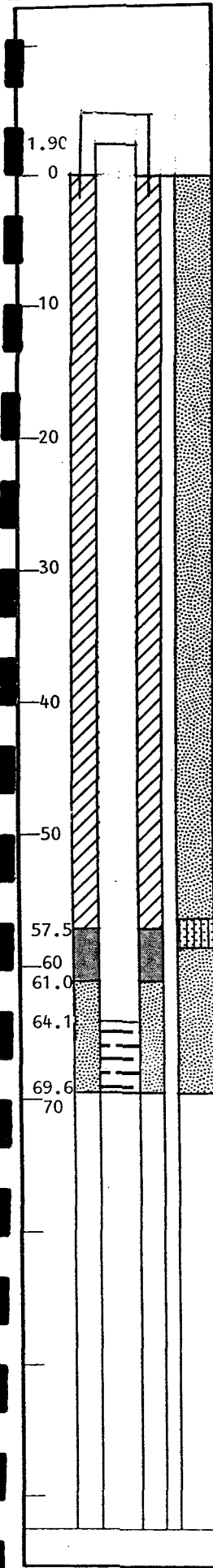
Filter Pack: SILICA SAND
Washed, dried, sized 20/30
61.0' - 69.6'

Grout Seal: Bentonite
275 lbs Bentonite / 175 gals Water
0.0' - 57.5'

Bentonite Seal: Bentonite Pellets
57.5' - 61.0'



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 WC 5808
 SUPERVISED BY L. Lozier DATE 3/6/90

Well No. B-12D

Boring No. X-Ref: B-12D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 19835.91
E: 20536.13

Elevation Ground Level 122.8 FT-MSL
Top of Casing 124.78 FT-MSL

Drilling Summary:

Total Depth 112.75'
 Borehole Diameter 6"
 Casing Stick-up Height: 1.98'
 Driller Robbie Drawdy

Rig CME 550 ATV
 Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/1/90	1000	3/3/90	1141
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/5/90	1020	3/5/90	1230
Filter Placement:	3/5/90	1020	3/5/90	1230
Cementing:	3/5/90	1020	3/5/90	1230
Development:	3/11/90	1222	3/11/90	1655

Well Design & Specifications

Basis: Geologic Log Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
107.45' - 112.75'	S1	-
+1.98' - 107.45'	C1	-
-	-	-
-	-	-
-	-	-

Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 1092 gals
 Condition of H₂O after development: C
 Method of Development: Pump

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2 _____

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2 _____

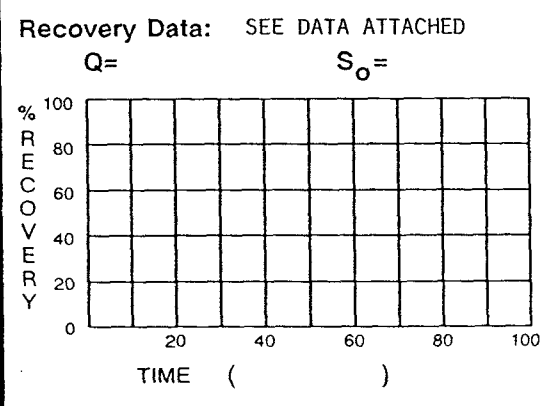
Filter Pack: SILICA SAND
Washed, dried, sized 20/30
105.0' - 112.75'

Grout Seal: Bentonite
450 lbs Bentonite / 275 gals Water
0.0' - 102.5'

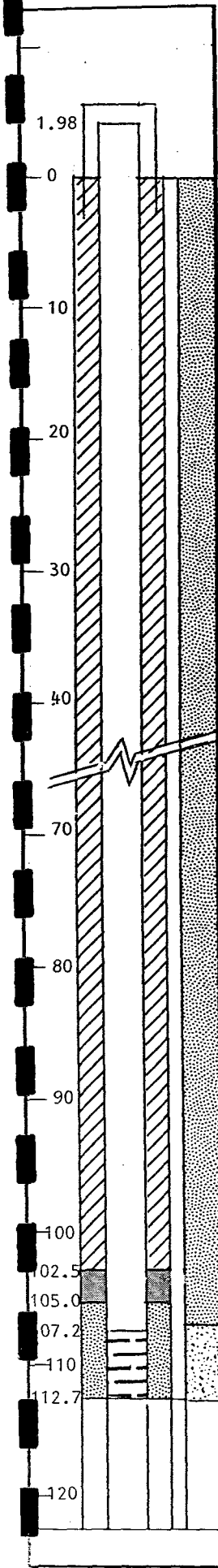
Bentonite Seal: Bentonite Pellets
102.5' - 105.0'

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1222	7.55	440	25.0
1250	7.28	380	25.0
1548	7.18	350	23.2
1620	7.09	350	23.3
1655	7.08	360	22.9



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are in umho/cm.



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FL

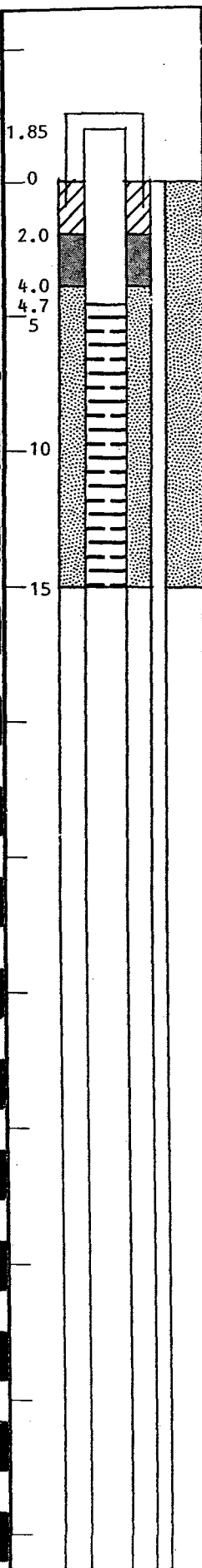
WC **5809**

SUPERVISED BY L. Lozier
DATE 3/5/90

Well No. B-13S
 Boring No. X-Ref: B-13I

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 19354.78 Elevation Ground Level 122.1 FT-MSL
E: 20672.23 Top of Casing 123.95 FT-MSL



Drilling Summary:

Total Depth 14.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 1.85'
 Driller Robbie Drawdy
 Rig CME 550 ATV
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	8/12/90	1200	8/12/90	1300
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	8/12/90	1300	8/12/90	1320
Filter Placement:	8/12/90	1300	8/12/90	1320
Cementing:	8/12/90	1300	8/12/90	1320
Development:	8/28/90	1238	8/28/90	1243

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
4.7' - 15.0'	S1	-
+1.85' - 4.7'	C1	-
-	-	-
-	-	-
-	-	-

Well Development:

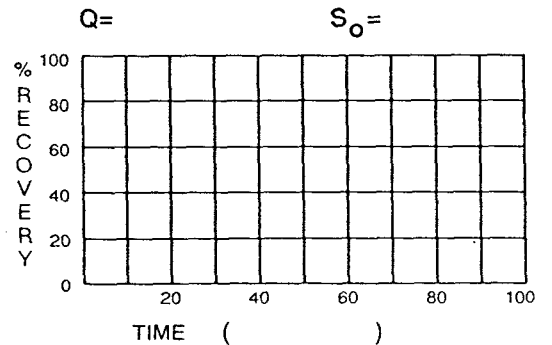
Volume of Well: 1.7 cu ft
 Gallons Removed: 576 gals
 Condition of H₂O after development: MC
 Method of Development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1238	4.52	45	20.5
1240	4.37	44	20.3
1243	4.45	44	20.3

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Recovery Data: SEE DATA ATTACHED



Filter Pack: SILICA SAND
Washed, dried, sized 20/30
4.0' - 15.0'
 Grout Seal: Bentonite
8 lbs Bentonite / 5 gals Water
0.0' - 2.0'
 Bentonite Seal: Bentonite Pellets
2.0' - 4.0'

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.

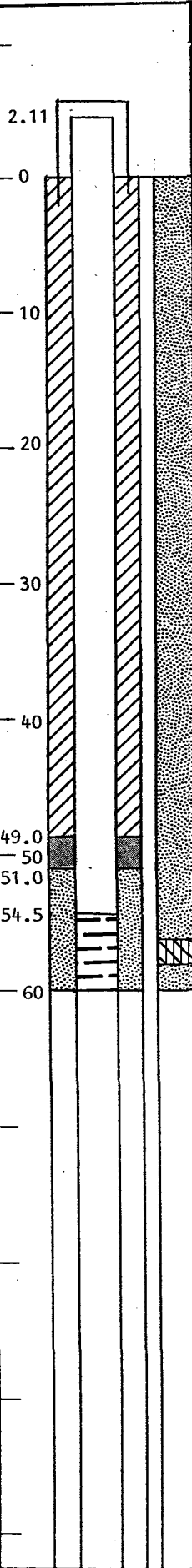
SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, EL
 SUPervised BY L. Lozier DATE 3/12/90
 WC 5810

Well No. B-131

Boring No. X-Ref: B-131

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 19354.78 E: 20672.23
Elevation Ground Level 122.1 FT-MSL
Top of Casing 124.21 FT-MSL



Drilling Summary:

Total Depth 60.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.11'
 Driller Robbie Drawdy
 Rig CME 550 ATV
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
54.5' - 60.0'	S1	-
+2.11' - 54.5'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2 _____
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2 _____

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
51.0' - 60.0'
 Grout Seal: Bentonite
350 lbs Bentonite / 200 gals Water
0.0' - 49.0'
 Bentonite Seal: Bentonite Pellets
49.0' - 51.0'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3/7/90	1306	3/8/90	1433
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	3/12/90	1020	3/12/90	1105
Filter Placement:	3/12/90	1020	3/12/90	1105
Cementing:	3/12/90	1020	3/12/90	1105
Development:	3/28/90	0836	3/28/90	0900

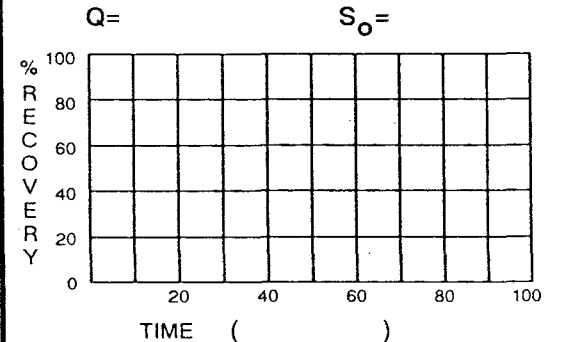
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 240 gals
 Condition of H₂O after development: MC
 Method of Development: Pump

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
0840	4.13	39	19.9
0845	5.57	33	19.8
0850	5.56	32	20.0
0855	5.56	31	19.9
0900	5.54	31	20.1

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units of Specific Conductivity are umho/cm.

SITE NAME TRAIL RIDGE LANDFILL
 LOCATION JACKSONVILLE, FL

WC 5811

SUPERVISED BY L. Lozier

DATE 3/12/90

Well No. B-14S

Boring No. X-Ref: B-14I

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 18852.27 E: 20699.74 Elevation Ground Level 120.1 FT-MSL
 Top of Casing 122.74 FT-MSL

Drilling Summary:

Total Depth 15.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.64'
 Driller Robbie Drawdy
 Rig CME 550 ATV
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/16/90	1030	2/16/90	1130
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/16/90	1236	2/16/90	1310
Filter Placement:	2/16/90	1236	2/16/90	1310
Cementing:	2/16/90	1236	2/16/90	1310
Development:	3/28/90	1353	3/28/90	1455

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
9.7' - 15.0'	S1	-
+2.64' - 9.7'	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
8.0' - 15.0'
 Grout Seal: Bentonite
25 lbs Bentonite / 15 gals Water
0.0' - 6.0'
 Bentonite Seal: Bentonite Pellets
6.0' - 8.0'

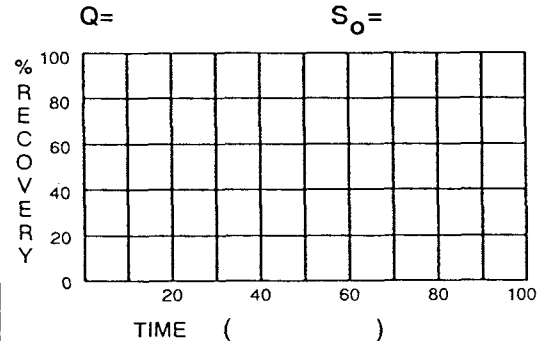
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 212 gals
 Condition of H₂O after development: MC
 Method of Development: Pump

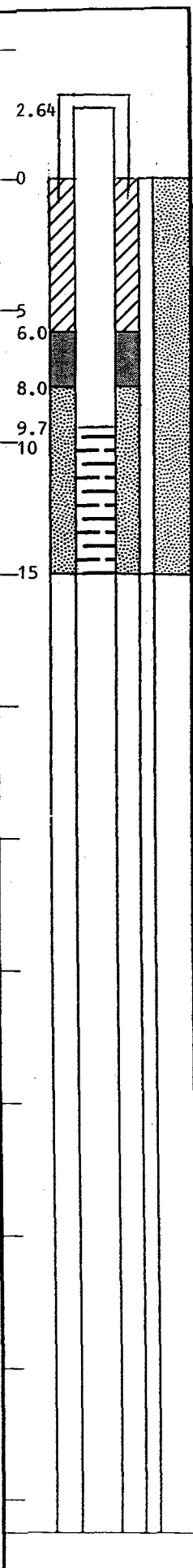
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1359	5.19	47	21.2
1403	5.05	47	20.9
1445	4.79	42	21.7
1451	4.76	41	20.7
1455	4.70	41	21.1

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 SUPervised BY L. Lozier DATE 2/16/90
WC 5812

Well No. B-141

Boring No. X-Ref: B-141

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 18852.27
E: 20699.74

Elevation Ground Level 120.1 FT-MSL
Top of Casing 122.35 FT-MSL

Drilling Summary:

Total Depth 60.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.25'
 Driller Robbie Drawdy

Rig CME 550 ATV
 Bit(s) Drag Bit

Drilling Fluid Bentonite Mud

Protective Casing 4" Aluminum (Anodized)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2/16/90	1333	2/16/90	1100
Geophys. Logging:				
Casing: 2" PVC (C1, S1)	2/20/90	1336	2/20/90	1445
Filter Placement:	2/20/90	1336	2/20/90	1445
Cementing:	2/20/90	1336	2/20/90	1445
Development:	3/28/90	1327	3/28/90	1337

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
54.5' - 60.0'	S1	-
+2.25' - 54.5'	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 200 gals
 Condition of H₂O after development: MC
 Method of Development: Nitrogen

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2

Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
53.2' - 60.0'

Grout Seal: Bentonite
105 lbs Bentonite / 65 gals Water
0.0' - 51.0'

Bentonite Seal: Bentonite Pellets
51.0' - 53.2'

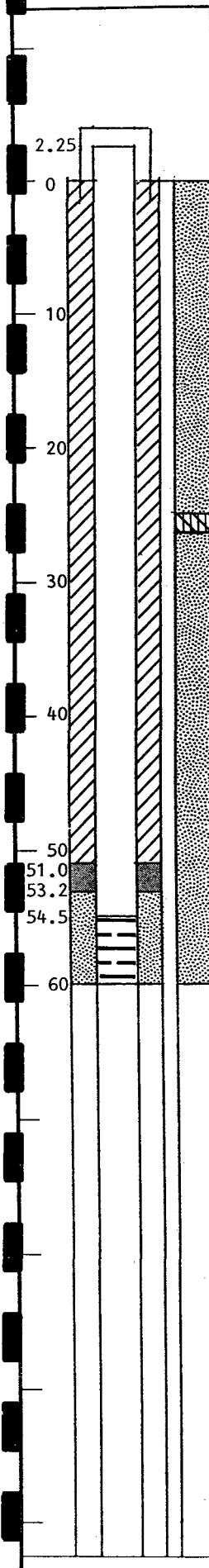
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
1330	5.54	30	20.7
1332	5.54	31	20.4
1337	5.57	31	20.4

Recovery Data: SEE DATA ATTACHED

Q = S₀ =

Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 WC 5813
 SUPERVISED BY L. Lozier DATE 2/20/90

Well No. B-14D
 Boring No. X-Ref: B-141, B-14D

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: N: 18852.27 Elevation Ground Level 120.1 FT-MSL
E: 20699.74 Top of Casing 122.15 FT-MSL

Drilling Summary:

Total Depth 112.0'
 Borehole Diameter 6"
 Casing Stick-up Height: 2.05'
 Driller Robbie Drawdy
 Rig CME 550 ATV
 Bit(s) Drag Bit
 Drilling Fluid Bentonite Mud
 Protective Casing 4" Aluminum (Anodized)

Well Design & Specifications

Basis: Geologic Log X Geophysical Log
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
<u>106.7' - 112.0'</u>	<u>S1</u>	<u> </u>
<u>+2.05' - 106.7'</u>	<u>C1</u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>

Casing: C1 2" ID Flush - threaded SCH 40 PVC Pipe
 C2
 Screen: S1 2" ID Flush - threaded SCH 40 PVC Pipe with 0.010" slot size
 S2

Filter Pack: SILICA SAND
Washed, dried, sized 20/30
105.0' - 112.0'
 Grout Seal: Bentonite
350 lbs Bentonite / 230 gals Water
0.0' - 102.8'
 Bentonite Seal: Bentonite Pellets
102.8' - 105.0'

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	<u>2/22/90</u>	<u>1240</u>	<u>2/27/90</u>	<u>0940</u>
Geophys. Logging:				
Casing:	<u>2/28/90</u>	<u>0905</u>	<u>2/28/90</u>	<u>1130</u>
<u>2" PVC (C1, S1)</u>				
Filter Placement:	<u>2/28/90</u>	<u>0905</u>	<u>2/28/90</u>	<u>1130</u>
Cementing:	<u>2/28/90</u>	<u>0905</u>	<u>2/28/90</u>	<u>1130</u>
Development:	<u>3/28/90</u>	<u>1157</u>	<u>3/28/90</u>	<u>1225</u>

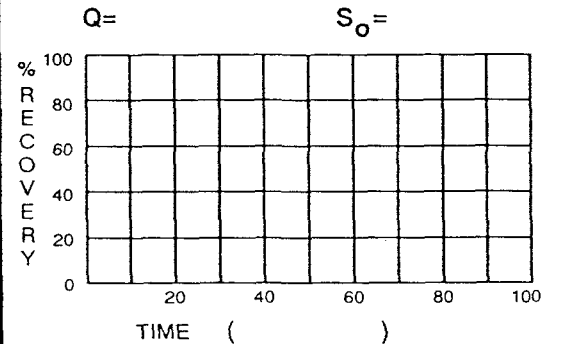
Well Development:

Volume of Well: 0.85 cu ft
 Gallons Removed: 316 gals
 Condition of H₂O after development: MC
 Method of Development: Nitrogen

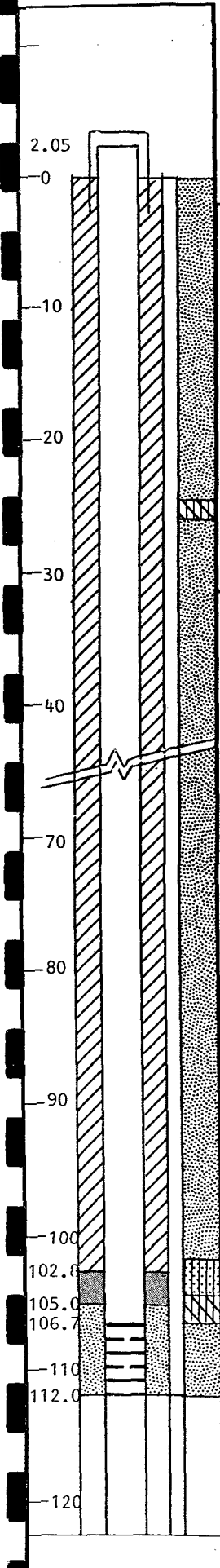
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (°C)
<u>1202</u>	<u>7.44</u>	<u>440</u>	<u>21.1</u>
<u>1208</u>	<u>7.47</u>	<u>435</u>	<u>20.9</u>
<u>1213</u>	<u>7.50</u>	<u>420</u>	<u>20.9</u>
<u>1219</u>	<u>7.49</u>	<u>420</u>	<u>20.9</u>
<u>1225</u>	<u>7.47</u>	<u>420</u>	<u>20.9</u>

Recovery Data: SEE DATA ATTACHED



Comments: MT = Moderately Turbid; T = Turbid; MC = Moderately Clear; C = Clear
Units for Specific Conductivity are umho/cm.



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FL
 WC 5814
 SUPERVISED BY L. Lozier DATE 2/28/90

APPENDIX B-2

PHASE II/PERMIT REQUIREMENT COMPLETION
MONITORING WELL CONSTRUCTION LOGS



Waste Management, Inc.

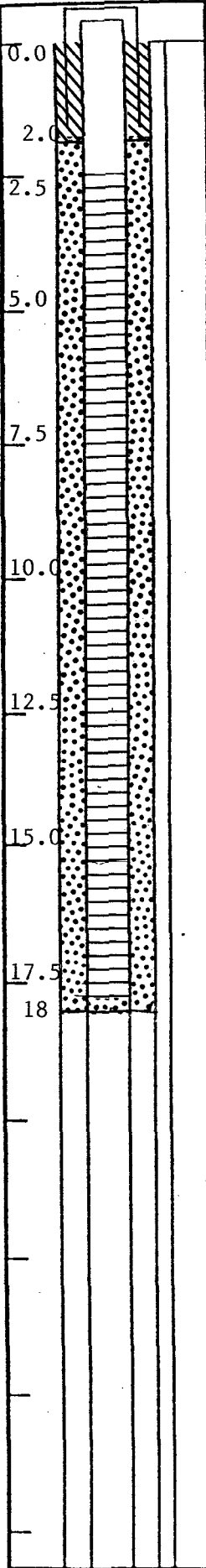
Well No. B-2SR

Boring No. X-Ref: B-2S

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level 144.1'

Top of Casing 146.64'



Drilling Summary:

Total Depth 18.0'
 Borehole Diameter 10 1/4"
 Casing Stick-up Height: 2.54'
 Driller J. HOLLAN

Rig CME-55
 Bit(s) 6 1/4" I.D. AUGERS

Drilling Fluid N/A

Protective Casing _____

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.5 - 2.5	S1	-
2.5 - +2.54	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH THREADED, SCH40 PVC

C2 _____

Screen: S1 2" DIA. FLUSH THREADED, 0.010" SLOTTED, PVC

S2 _____

Filter Pack: 20/30 SILICA SAND, (18.0-2.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE POWDER (NATURALGEL) (2.0-0.0)

Comments: _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1/9/92	930	1/9/92	1000
Geophys. Logging:				
Casing:				
Filter Placement:	1-9-92	1000	1-9-92	1045
Cementing:	1-9-92	1000	1-9-92	1045
Development:				

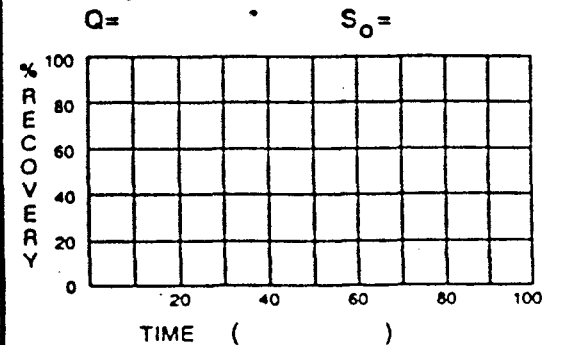
Well Development:

SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



SITE NAME TRAIL RIDGE LANDELL
 LOCATION JACKSONVILLE, FLORIDA
 SUPERVISED BY J. FRERE
 DATE 1-9-92



Waste Management, Inc.

Well No. B-3S-R

Boring No. X-Ref: B-3S

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 18.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.8'
Driller J. HOLLAN

Rig CHE-55
Bit(s) 1/4 I.D. HOLLOW STEM AUGERS

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-8-92	1600	1-8-92	1645
Geophys. Logging:				
Casing:				
Filter Placement:	1-8-92	1645	1-8-92	1730
Cementing:	1-8-92	1645	1-8-92	1730
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
18.0 - 3.0	S1	-
3.0 - +2.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA, 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (18.0-2.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE POWDER (NATURALGEL) (2.5-0.0)

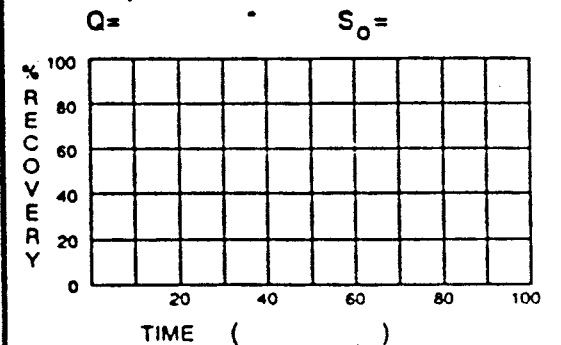
Well Development:

SEE WELL DEVELOPMENT FORMS

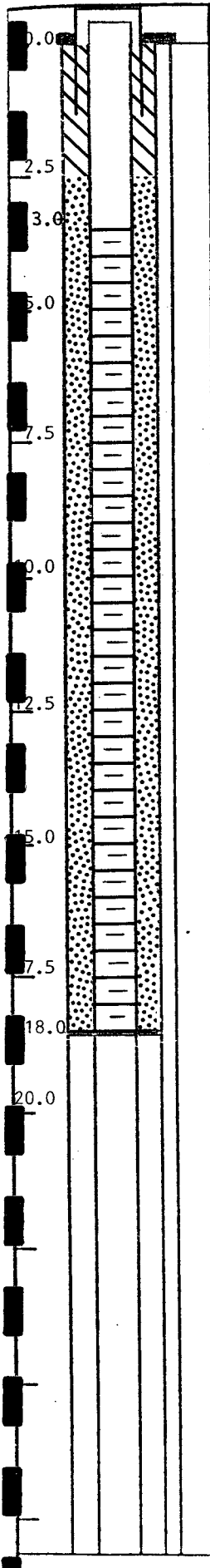
Stabilization Test Data:

Time	pH	Soec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-08-92



Waste Management, Inc.

Well No. B-7S-R

Boring No. X-Ref: B-7

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'

Borehole Diameter 10 1/4"

Casing Stick-up Height: 3.5'

Driller R. DRAWDY

Rig CME-55

Bit(s) 6 1/2" I.D. HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-30-92	1240	1-30-92	1300
Geophys. Logging:				
Casing:				
Filter Placement:	1-30-92	1305	1-30-92	1330
Cementing:	1-30-92	1305	1-30-92	1330
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____

Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	
1.5 - +3.5	C1	
-		
-		
-		
-		

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL) POWDER (1.0-0.0)

Well Development:

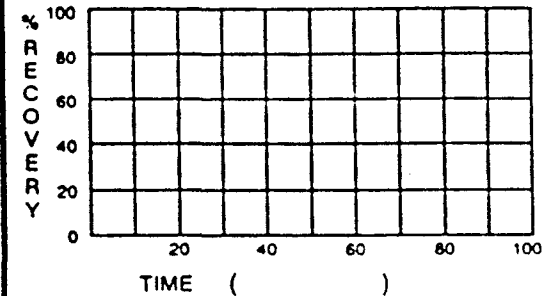
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



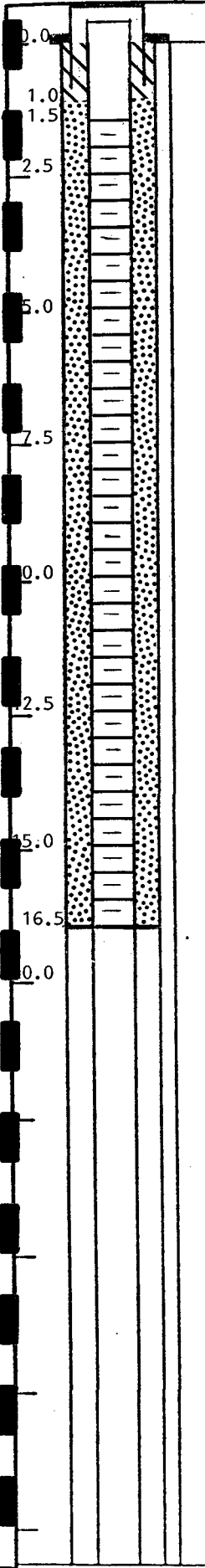
Comments: _____

SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE

DATE 01-30-92





Well No. B-11S-R

Boring No. X-Ref: B-11

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 18.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.3'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6 1/4" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-12-92	1025	2-12-92	1045
Geophys. Logging:				
Casing:				
Filter Placement:	2-12-92	1045	2-12-92	1110
Cementing:	2-12-92	1045	2-12-92	1110
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
18.0 - 3.0	S1	-
3.0 - +2.3	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (18.0-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURAL GEL) POWDER (1.0-0.0)

Well Development:

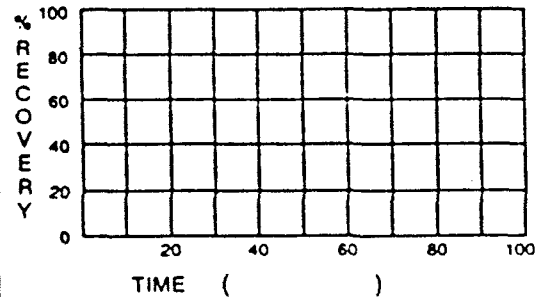
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

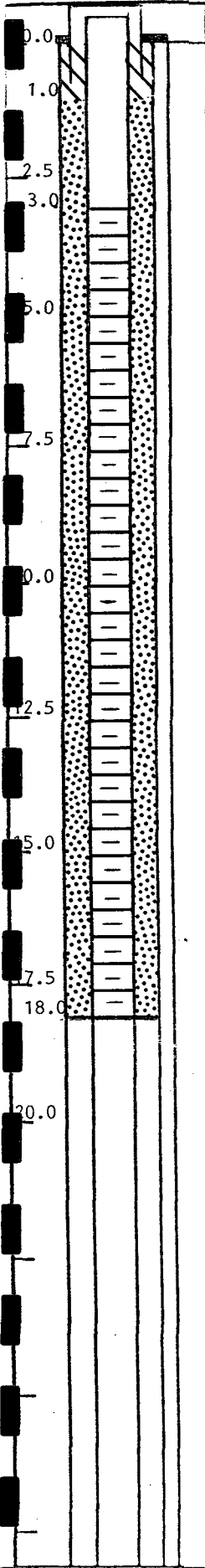
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
 LOCATION JACKSONVILLE, FLORIDA
 SUPERVISED BY B. BROWNE
 DATE 02-12-92



Waste Management, Inc.

Well No. B-12S-R

Boring No. X-Ref: B-12

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 25.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.4'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6 1/4" I.B HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-30-92	0800	1-30-92	0910
Geophys. Logging:				
Casing:				
Filter Placement:	1-30-92	0915	1-30-92	1000
Cementing:	1-30-92	0915	1-30-92	1000
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
25.0 - 10.0	S1	-
10.0 - +2.4	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (25.0-8.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(5.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(8.0-5.0)

Well Development:

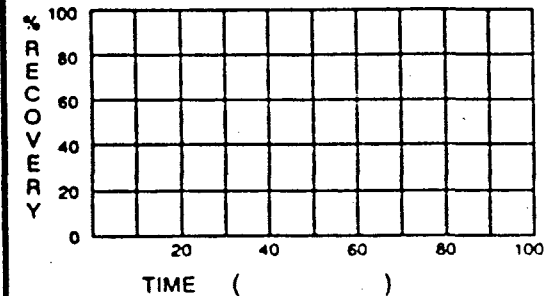
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

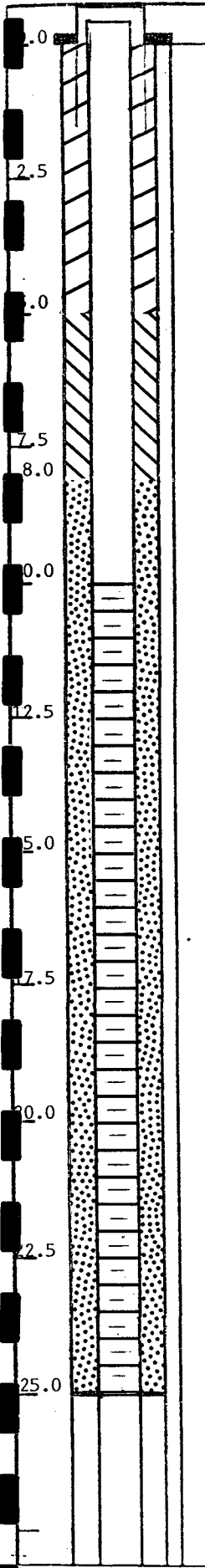
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE

DATE 01-30-92



Waste Management, Inc.

Well No. B-13S-R

Boring No. X-Ref: B-13

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 25.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.6'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-20-92	0830	1-20-92	1645
Geophys. Logging:				
Casing:				
Filter Placement:	1-20-92	1645	1-20-92	1730
Cementing:	1-20-92	1645	1-20-92	1730
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
24.6 - 9.6	S1	-
9.6 - +2.6	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC
C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC
S2 _____

Filter Pack: 30/40 SILICA SAND (24.6-8.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(5.5-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(8.0-5.5)

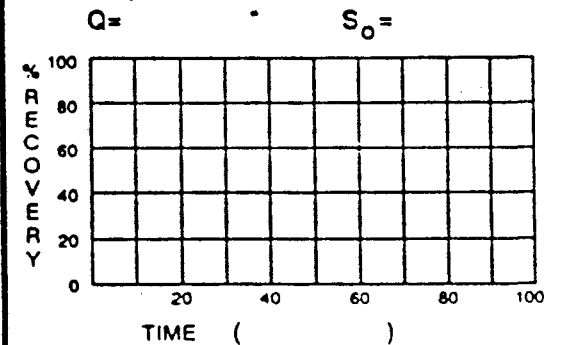
Well Development:

SEE WELL DEVELOPMENT FORM

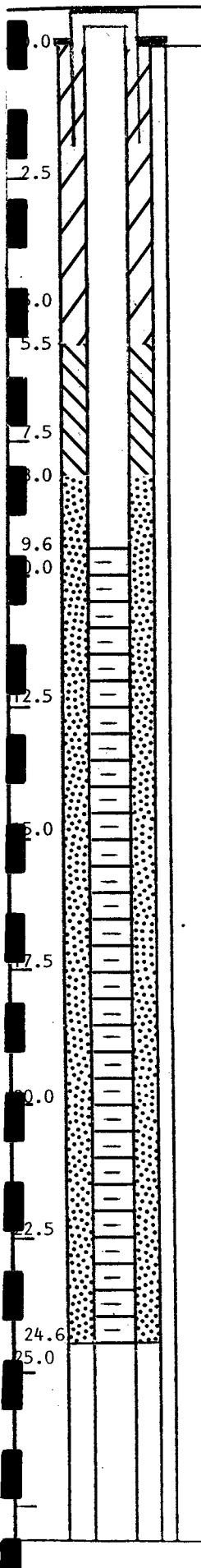
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDELLI

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE

DATE 01-20-92



Waste Management, Inc.

Well No. B-131-R

Boring No. X-Ref: B-13

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.5'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-16-92	1045	1-17-92	1400
Geophys. Logging:				
Casing:				
Filter Placement:	1-17-92	1400	1-17-92	1500
Cementing:	1-17-92	1400	1-17-92	1500
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
58.6 - 53.6	S1	
53.6 - +2.5	C1	
-		
-		
-		
-		

Casing: C1 2" DIA., FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (58.6-51.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(48.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(51.0-48.0)

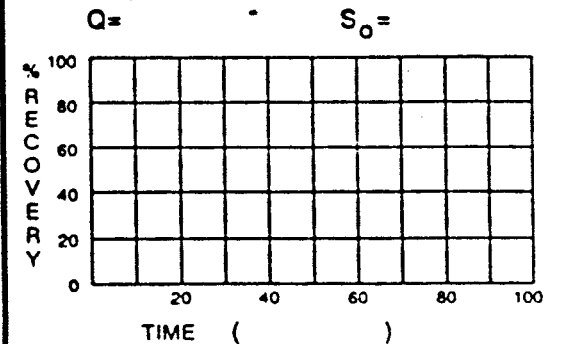
Well Development:

SEE WELL DEVELOPMENT FORM

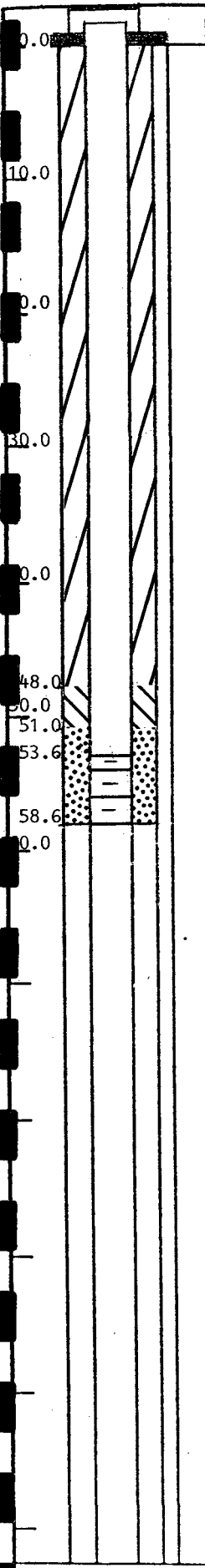
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-17-92



Waste Management, Inc.

Well No. B-14S-R

Boring No. X-Ref: B-14

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.50'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-11-92	1235	2-11-92	1250
Geophys. Logging:				
Casing:				
Filter Placement:	2-11-92	1255	2-11-92	1310
Cementing:	2-11-92	1255	2-11-92	1310
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL) POWDER (1.0-0.0)

Well Development:

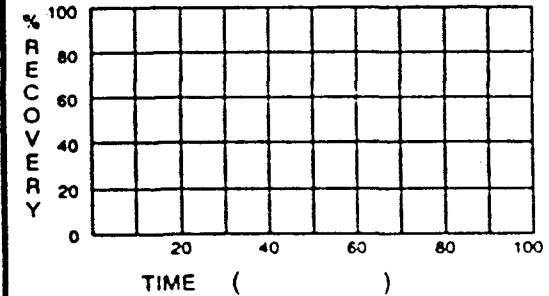
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

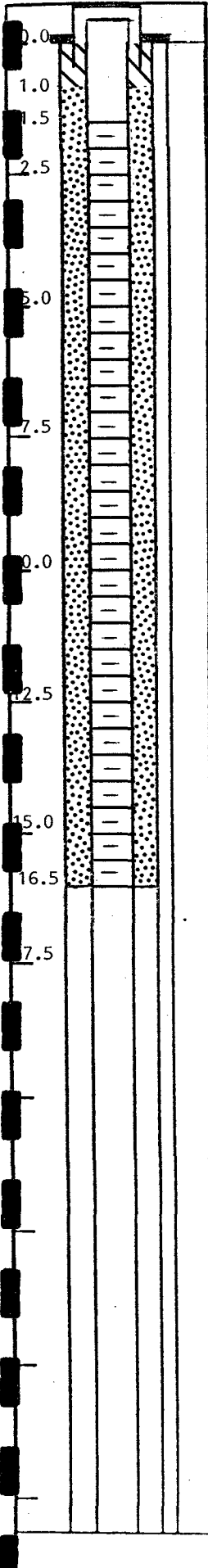
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 02-11-92



Waste Management, Inc.

Well No. B-141-R

Boring No. X-Ref: B-14

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.50'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-10-92	1400	2-10-92	1610
Geophys. Logging:				
Casing:				
Filter Placement:	2-10-92	1630	2-10-92	1700
Cementing:				
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
60.0 - 55.0	S1	-
55.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (60.0-53.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY (50.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS (53.0-50.0)

Well Development:

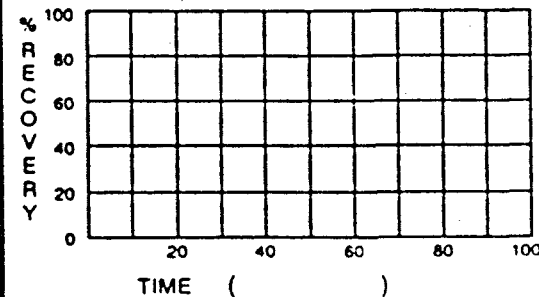
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

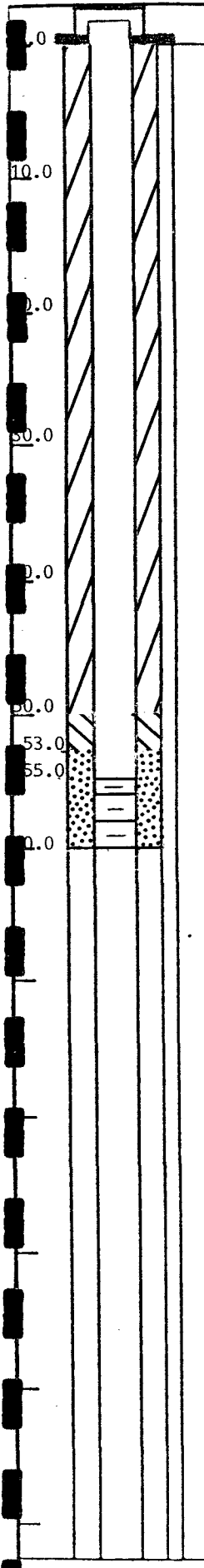
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 02-10-92



Waste Management, Inc.

Well No. B-14D-R

Boring No. X-Ref: B-14

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____

Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 115.0'
 Borehole Diameter 6.0"
 Casing Stick-up Height: 2.50'
 Driller C. THOMAS

Rig CME-55
 Bit(s) 3" MUD ROTARY
6" MUD ROTARY
 Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-8-92	1230	2-10-92	1030
Geophys. Logging:				
Casing:				
Filter Placement:	2-10-92	1240	2-10-92	1345
Cementing:	2-10-92	1240	2-10-92	1345
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
106.0 - 101.0	S1	-
101.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (106.0-99.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(96.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(99.0-96.0)

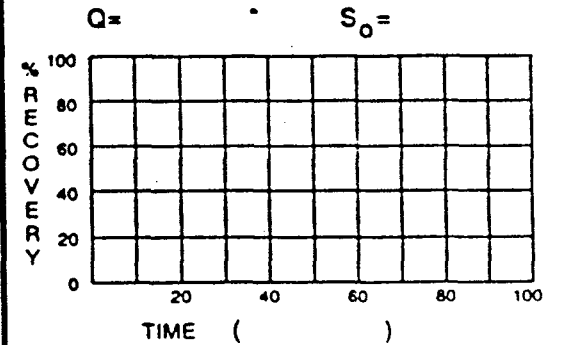
Well Development:

SEE WELL DEVELOPMENT FORM

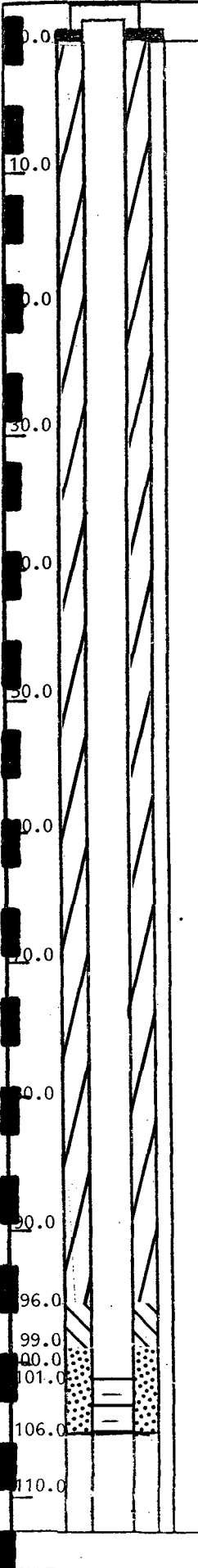
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
 LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
 DATE 02-10-92



Waste Management, Inc.

Well No. B-16S

Boring No. X-Ref: B-16

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 18.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.9'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" HUD ROTARY
6 1/4" I. D HOLLOW STEM AUGER
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-10-92	1100	1-10-92	1430
Geophys. Logging:				
Casing:				
Filter Placement:	1-10-92	1445	1-10-92	1530
Cementing:	1-10-92	1445	1-10-92	1530
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.5 - 2.5	S1	-
2.5 - +2.9	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (17.5-2.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL)
POWDER (2.0-0.0)

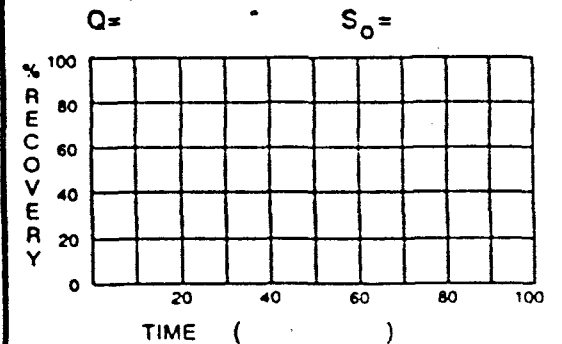
Well Development:

SEE WELL DEVELOPMENT FORM

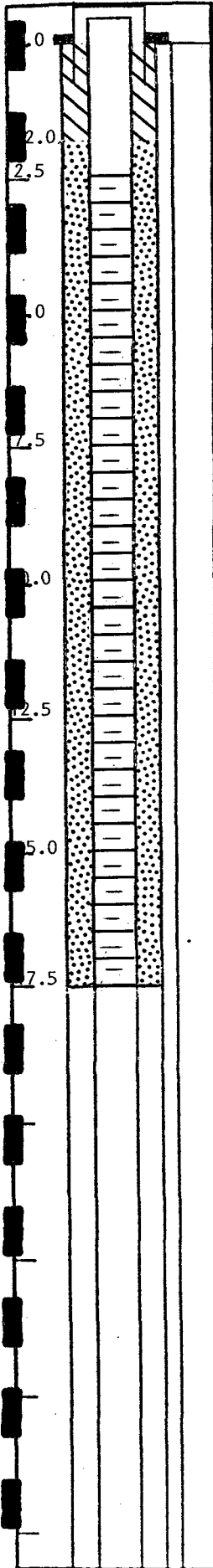
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-10-92



Waste Management, Inc.

Well No. B-17S

Boring No. X-Ref: B-17

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.3'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6 1/2" I.D. HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-15-92	1500	1-15-92	1600
Geophys. Logging:				
Casing:				
Filter Placement:	1-15-92	1600	1-15-92	1715
Cementing:	1-15-92	1600	1-15-92	1715
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.1 - 1.1	S1	-
1.1 - +2.3	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (16.5-0.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL)
POWDER (0.5-0.0)

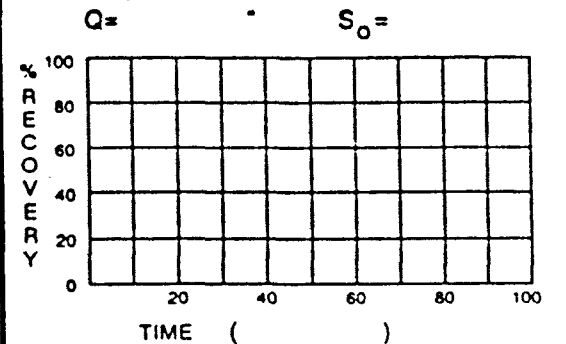
Well Development:

SEE WELL DEVELOPMENT FORM

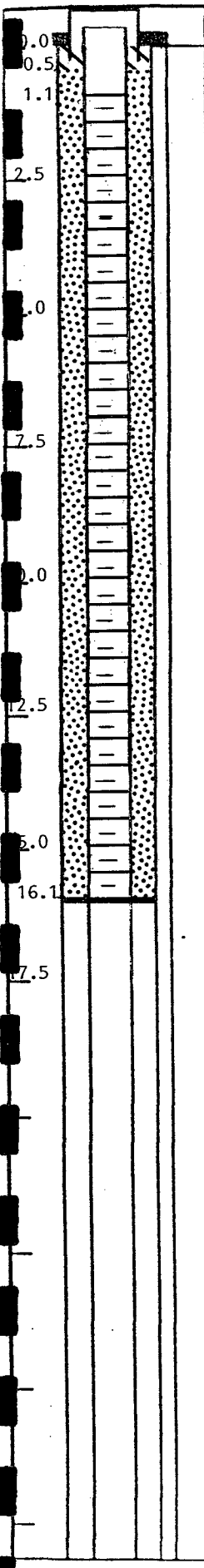
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-15-92



Waste Management, Inc.

Well No. P-171

Boring No. X-Ref: B-17

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____
Top of Casing _____

Drilling Summary:

Total Depth 58.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.8'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-9-92	1530	1-11-92	1200
Geophys. Logging:				
Casing:				
Filter Placement:	1-11-92	1300	1-11-92	1400
Cementing:	1-11-92	1300	1-11-92	1400
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
57.9 - 52.9	S1	-
52.9 - +2.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC
C2 _____
Screen: S1 2" DIA., 0.010" SLOTTED PVC
S2 _____

Filter Pack: 20/30 SILICA SAND (58.0-51.0)
Grout Seal: BENTONITE (NATURALGEL) SLURRY (48.0-0.0)
Bentonite Seal: 1/2" BENTONITE PELLETS (51.0-48.0)

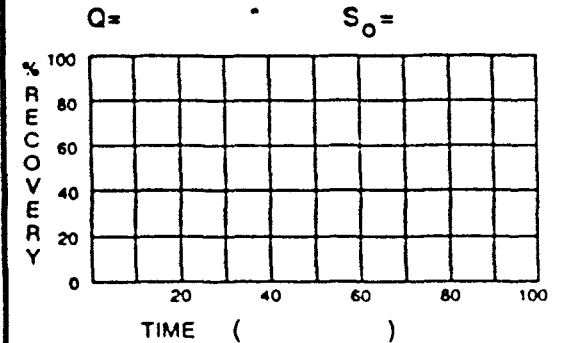
Well Development:

SEE WELL DEVELOPMENT FORM

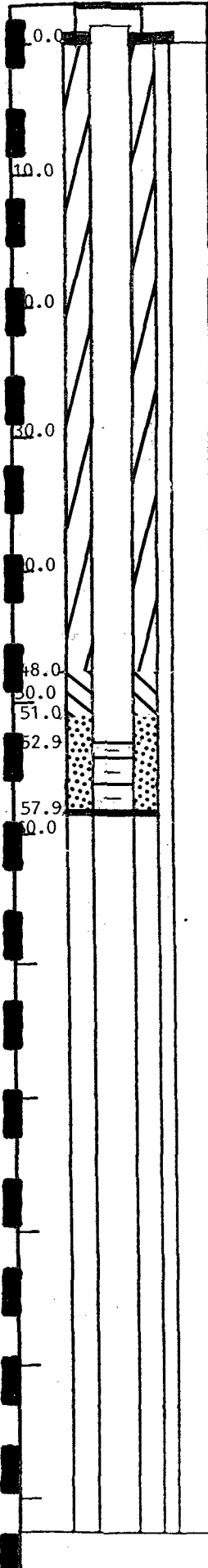
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL LOCATION JACKSONVILLE, FLORIDA
SUPERVISED BY J. FRERE DATE 01-11-92



Waste Management, Inc.

Well No. P-17D

Boring No. X-Ref: B-17

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 127.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.4'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-11-92	1500	1-15-92	1000
Geophys. Logging:				
Casing:				
Filter Placement:	1-15-92	1000	1-15-92	1100
Cementing:	1-15-92	1000	1-15-92	1100
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
124.8 - 119.8	S1	-
119.8 - +2.4	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (126.0-118.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(115.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(118.0-115.0)

Well Development:

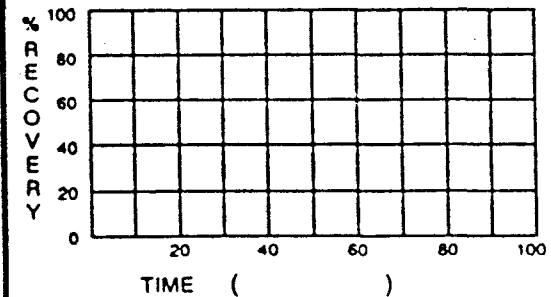
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

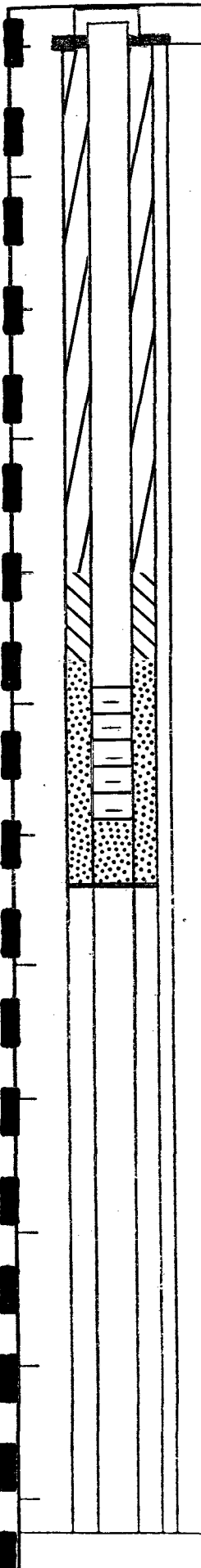
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S_o= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE

DATE 01-15-92



Waste Management, Inc.

Well No. B-18S

Boring No. X-Ref: B-18

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
 Borehole Diameter 10 1/4"
 Casing Stick-up Height: 2.5'
 Driller R. DRAWDY

Rig CME-55
 Bit(s) 4" FLIGHT AUGER
6 1/2" I.D. HOLLOW STEM AUGER
 Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-20-92	0900	1-20-92	1000
Geophys. Logging:				
Casing:				
Filter Placement:	1-20-92	1010	1-20-92	1030
Cementing:	1-20-92	1010	1-20-92	1030
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.5	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL) POWDER
(1.0-0.0)

Well Development:

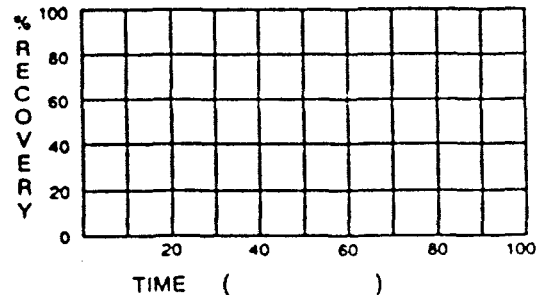
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

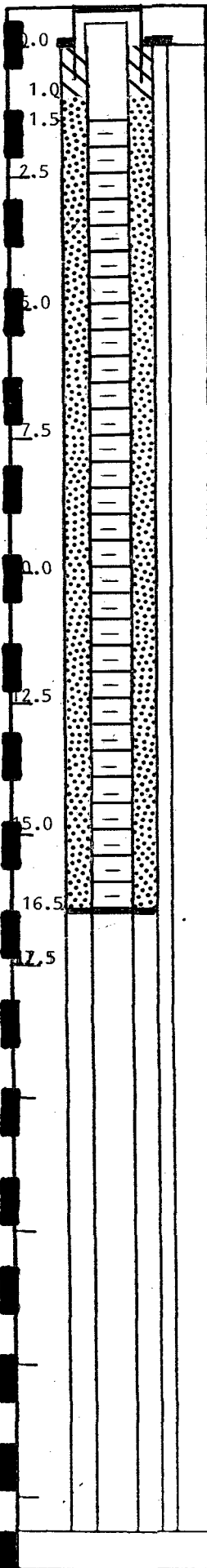
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE

DATE 01-20-92



Waste Management, Inc.

Well No. B-195

Boring No. X-Ref: B-19

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 18.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.1'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-16-92	1055	1-16-92	1115
Geophys. Logging:				
Casing:				
Filter Placement:	1-16-92	1115	1-16-92	1130
Cementing:	1-16-92	1115	1-16-92	1130
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
18.0 - 3.0	S1	-
3.0 - +2.1	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (18.0-1.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL) POWDER (1.5-0.0)

Well Development:

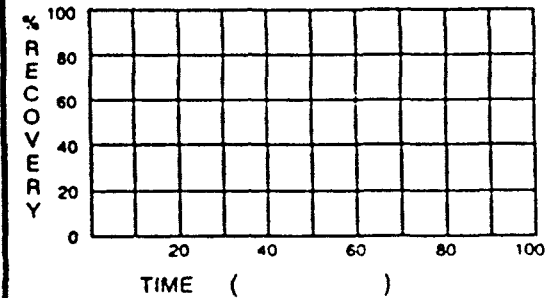
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

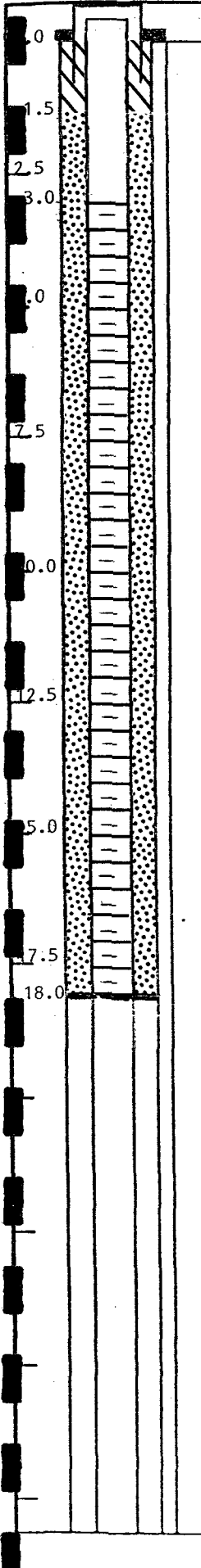
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-16-92



Waste Management, Inc.

Well No. B-191

Boring No. X-Ref: B-19

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 58.5'
Borehole Diameter 6.0"
Casing Stick-up Height: 3.8'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6" MUD ROTARY
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-11-92	0830	1-13-92	1030
Geophys. Logging:				
Casing:				
Filter Placement:	1-13-92	1100	1-13-92	1130
Cementing:	1-13-92	1100	1-13-92	1130
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
56.5 - 51.5	S1	-
51.5 - +3.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (56.5-50.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(47.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(50.0-47.0)

Well Development:

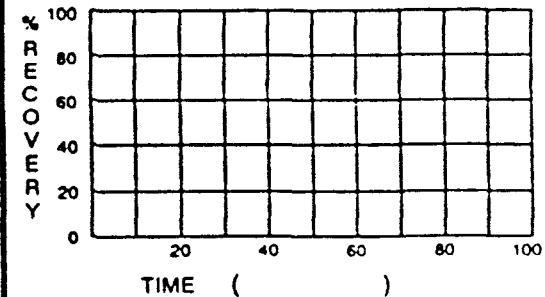
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

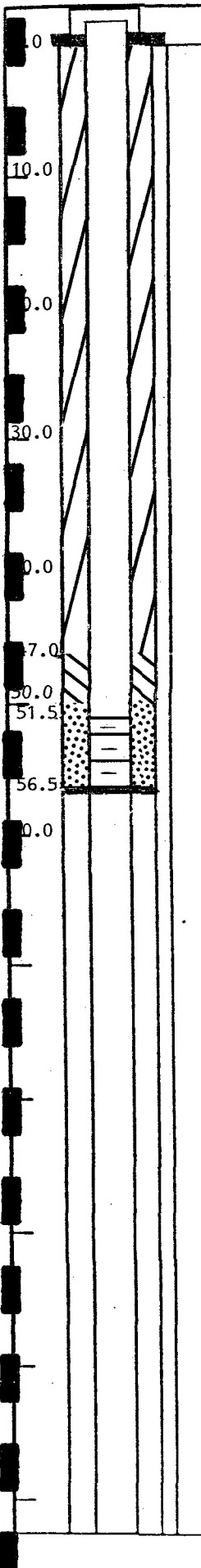
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S_o = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE

DATE 01-13-92



Waste Management, Inc.

Well No. B-19D

Boring No. X-Ref: B-19

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 124.5'
Borehole Diameter 6.0"
Casing Stick-up Height: +2.8'
Driller: R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6" MUD ROTARY
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-11-92	0830	1-15-92	1100
Geophys. Logging:				
Casing:				
Filter Placement:	1-15-92	1310	1-15-92	1420
Cementing:	1-15-92	1310	1-15-92	1420
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
109.0 - 104.0	S1	- -
104.0 - +2.8	C1	- -
-	-	- -
-	-	- -
-	-	- -

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (109.0-102.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(99.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(102.0-99.0)

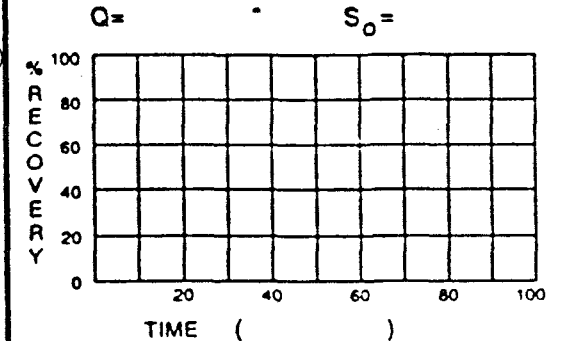
Well Development:

SEE WELL DEVELOPMENT FORM

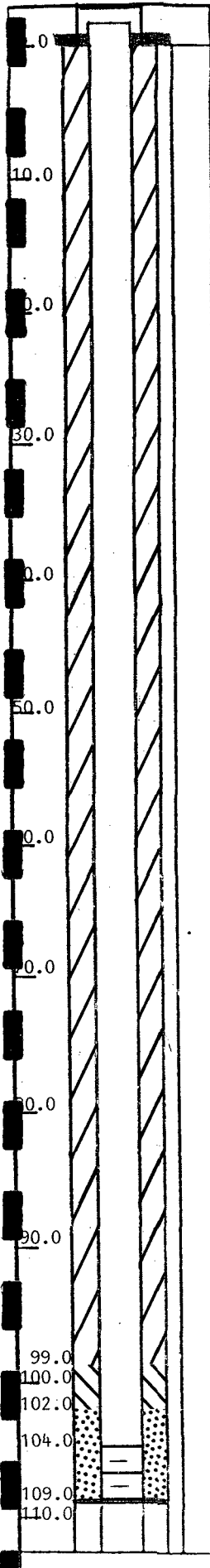
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-15-92



Waste Management, Inc.

Well No. B-20S

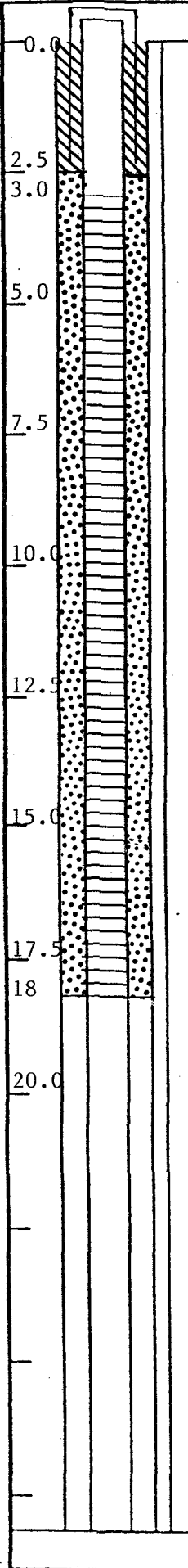
Boring No. X-Ref: B-20

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____

Elevation Ground Level 118.9'

Top of Casing 121.01'



Drilling Summary:

Total Depth 18.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.1'
Drifter R. DRAWDY

Rig CME-55
Bit(s) 6 1/2" I.D. HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
18.0 - 3.0	S1	- -
3.0 - +2.1	C1	- -
-	-	- -
-	-	- -
-	-	- -

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA, 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (18.0-2.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE POWDER (NATURAL GEL)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-14-92	1400	2-14-92	1545
Geophys. Logging:				
Casing:				
Filter Placement:	2-14-92	1545	2-14-92	1630
Cementing:	2-14-92	1545	2-14-92	1630
Development:				

Well Development:

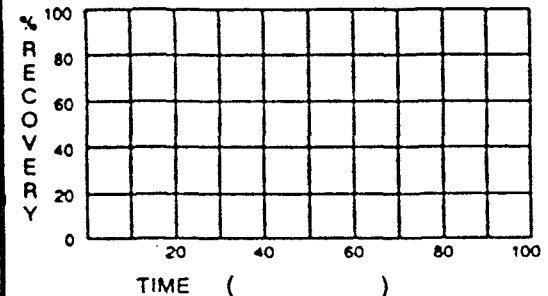
SEE WELL DEVELOPMENT FORMS

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments:

SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 2-14-92



Waste Management, Inc.

Well No. B-21s

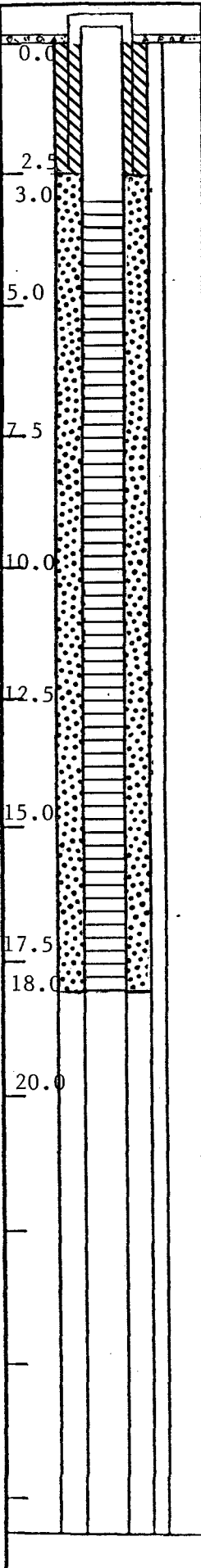
Boring No. X-Ref: B-21

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____

Elevation Ground Level 121.0'

Top of Casing 122.84'



Drilling Summary:

Total Depth 18.0'
 Borehole Diameter 10 1/4"
 Casing Stick-up Height: 1.8'
 Driller R. DRAWDY

Rig CME-55
 Bit(s) 6 1/2" I.D. HOLLOW STEM AUGERS

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	3-4-92	1000	3-4-92	1315
Geophys. Logging:				
Casing:				
Filter Placement:	3-4-92	1315	3-4-92	1345
Cementing:	3-4-92	1315	3-4-92	1345
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
18.0 - 3.0	S1	-
3.0 - +1.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
 SCH 40 PVC

C2 _____

Screen: S1 2" DIA. 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (18.0-2.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE POWDER (NATURALGEL)

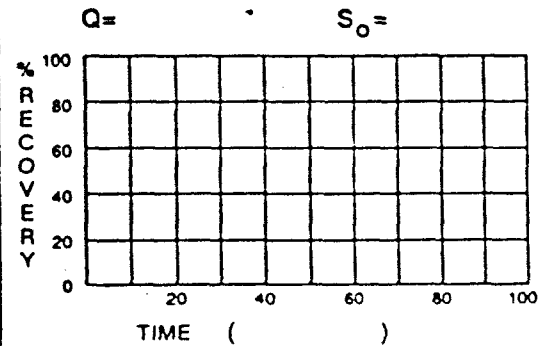
Well Development:

SEE WELL DEVELOPMENT FORMS

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____

SITE NAME TRAIL RIDGE LANDELL
 JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
 DATE 03-4-92



Waste Management, Inc.

Well No. B-22S

Boring No. X-Ref: B-22

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 25.0'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.6'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-27-92	1245	1-27-92	1700
Geophys. Logging:				
Casing:				
Filter Placement:	1-27-92	1700	1-27-92	1700
Cementing:	1-28-92	0800	1-28-92	0900
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
22.4 - 7.4	S1	-
7.4 - +2.6	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (23.0-5.5)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(3.5-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(5.5-3.5)

Well Development:

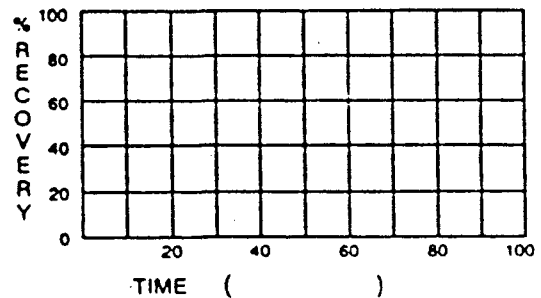
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

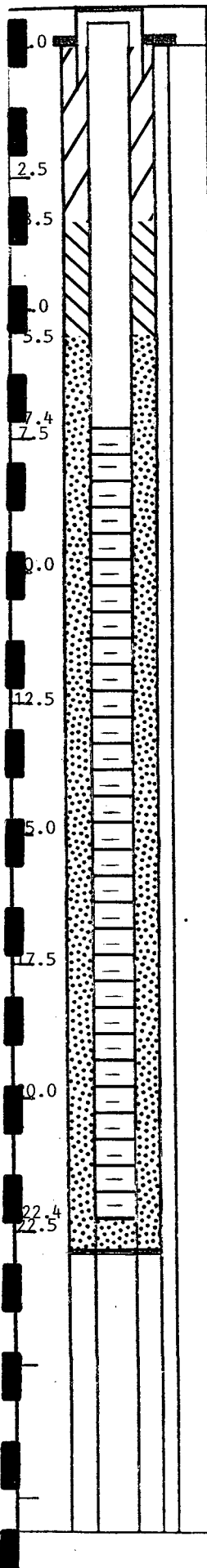
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FREIRE
DATE 01-28-92



Waste Management, Inc.

Well No. B-22S-R

Boring No. X-Ref: B-22

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 25.0'
Borehole Diameter 10 1/4'
Casing Stick-up Height: 2.50'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6 1/4" I.D HOLLOW STEM AUGER
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
25.0 - 10.0	S1	-
10.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (25.0-8.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(5.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(8.0-5.0)

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-14-92	1000	2-14-92	1330
Geophys. Logging:				
Casing:				
Filter Placement:	2-14-92	1330	2-14-92	1405
Cementing:	2-14-92	1330	2-14-92	1405
Development:				

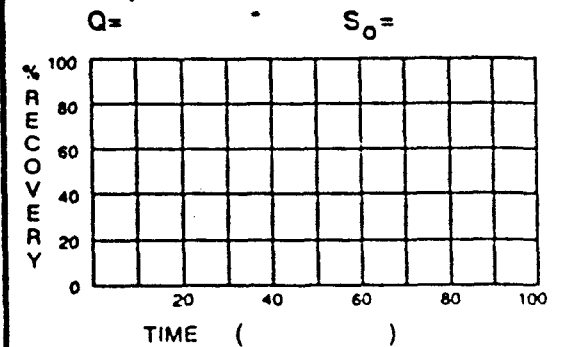
Well Development:

SEE WELL DEVELOPMENT FORM

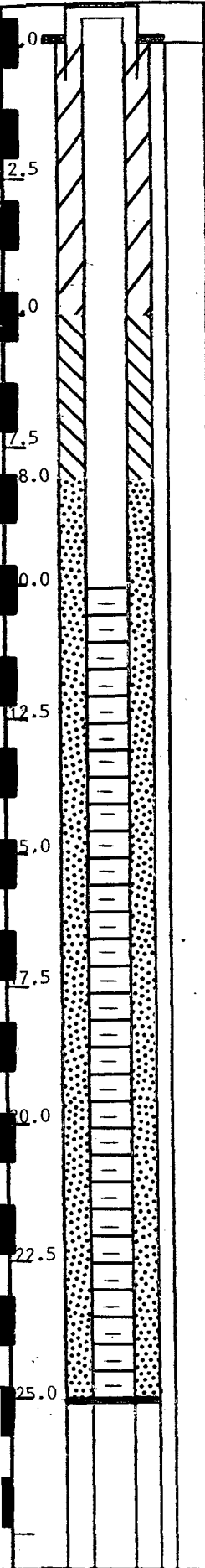
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY E. BROWNE
DATE 02-14-92



Waste Management, Inc.

Well No. B-23S

Boring No. X-Ref: B-23

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 25.5'
Borehole Diameter 10 1/2"
Casing Stick-up Height: 2.50'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6 1/2" I.D HOLLOW STEM AUGER
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-29-92	1020	1-29-92	1420
Geophys. Logging:				
Casing:				
Filter Placement:	1-29-92	1420	1-29-92	1500
Cementing:	1-29-92	1420	1-29-92	1500
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
25.0 - 10.0	S1	-
10.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (25.0-8.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(8.0-0.0)

Bentonite Seal: N/A

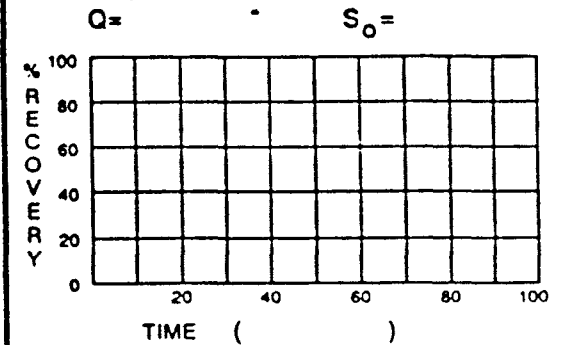
Well Development:

SEE WELL DEVELOPMENT FORM

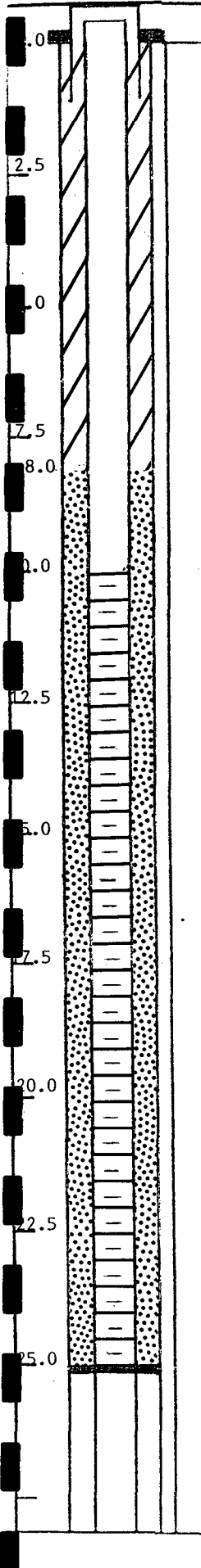
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA
SUPERVISED BY B. BROWNE
DATE 01-29-92



Waste Management, Inc.

Well No. B-24S

Boring No. X-Ref: B-24

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/2"
Casing Stick-up Height: 2.50'
Driller C. THOMAS

Rig CME-55
Bit(s) 3" MUD ROTARY
6 1/2" I.D HOLLOW STEM AUGER
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-7-92	1530	2-8-92	0905
Geophys. Logging:				
Casing:				
Filter Placement:	2-8-92	0905	2-8-92	0925
Cementing:	2-8-92	0905	2-8-92	0925
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.5	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL) POWDER
(1.0-0.0)

Well Development:

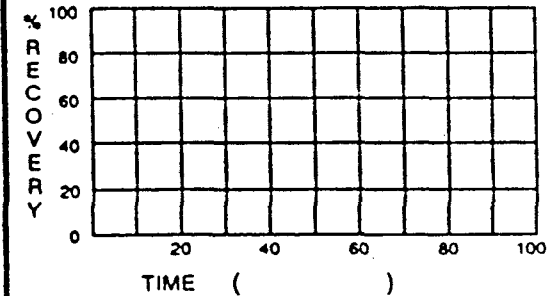
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

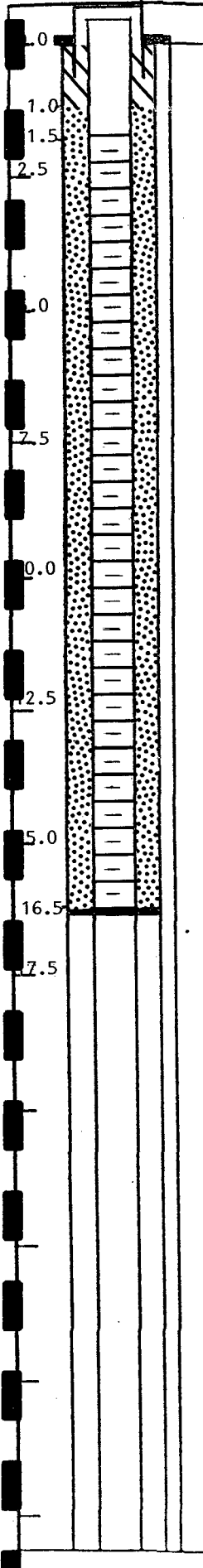
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 02-08-92



Waste Management, Inc.

Well No. B-25S

Boring No. X-Ref: B-25

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 17.2'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.30'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-10-92	1400	2-10-92	1500
Geophys. Logging:				
Casing:				
Filter Placement:	2-10-92	1500	2-10-92	1600
Cementing:	2-10-92	1500	2-10-92	1600
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.2 - 2.2	S1	- -
2.2 - +2.3	C1	- -
-		- -
-		- -
-		- -

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA. 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (17.2-1.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE SLURRY (NATURAL GEL AND QUICKGEL) (1.5-0.0)

Well Development:

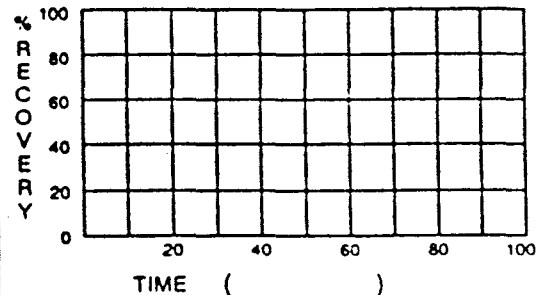
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

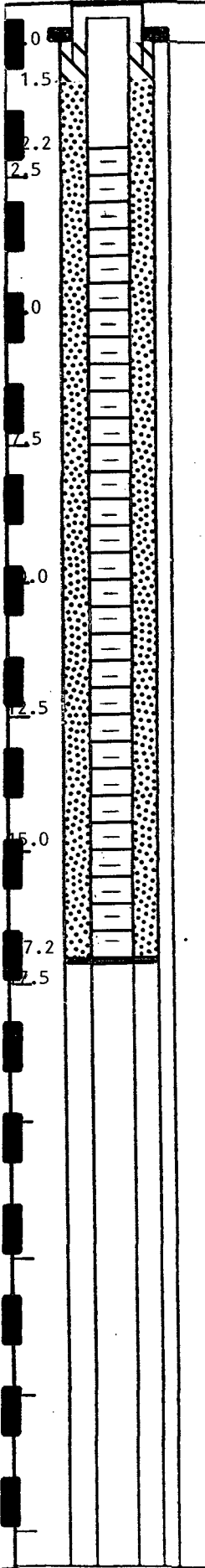
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE

DATE 02-10-92



Waste Management, Inc.

Well No. B-251

Boring No. X-Ref: B-25

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.1'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-4-92	1300	2-7-92	1200
Geophys. Logging:				
Casing:				
Filter Placement:	2-7-92	1230	2-7-92	1400
Cementing:	2-7-92	1230	2-7-92	1400
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
58.3 - 53.3	S1	-
53.3 - +2.1	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (58.5-51.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(48.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(51.0-48.0)

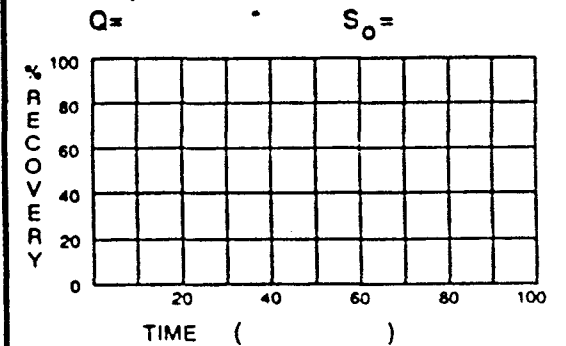
Well Development:

SEE WELL DEVELOPMENT FORMS

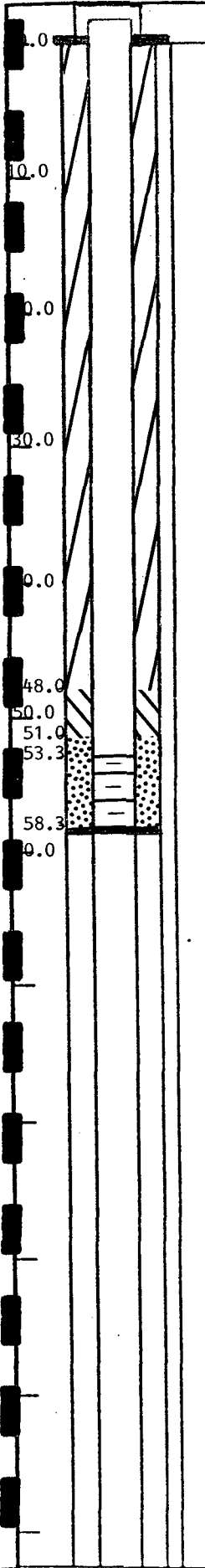
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 02-07-92



Waste Management, Inc.

Well No. B-25D

Boring No. X-Ref: B-25

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 106.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.5'
Driller J. HOLLAN

Rig CHE-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURAL GEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-9-92	1000	2-9-92	1500
Geophys. Logging:				
Casing:				
Filter Placement:	2-9-92	1500	2-9-92	1700
Cementing:	2-9-92	1500	2-9-92	1700
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
106.0 - 101.0	S1	-
101.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (106.0-99.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY (96.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS (99.0-96.0)

Well Development:

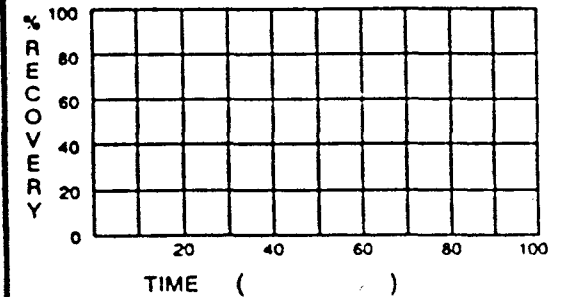
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

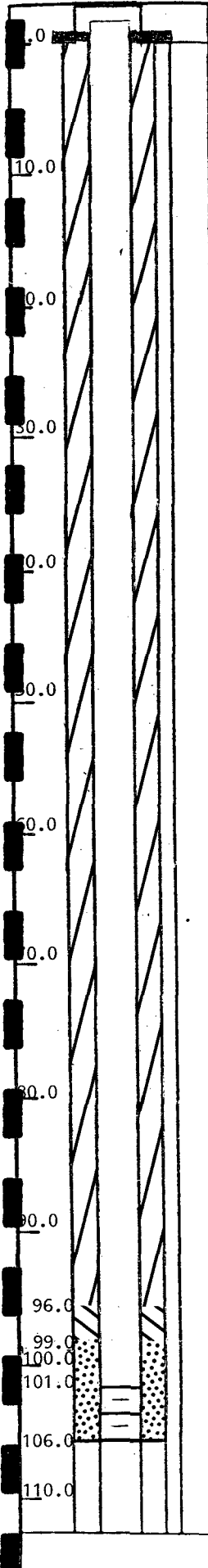
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
 LOCATION JACKSONVILLE, FLORIDA
 SUPERVISED BY J. FRERE
 DATE 02-09-92



Waste Management, Inc.

Well No. B-26S

Boring No. X-Ref: B-26

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.2'
Driller C. THOMAS

Rig CME-55
Bit(s) 3" MUD ROTARY
6 1/2" I.D HOLLOW STEM AUGER
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	2-7-92	0800	2-7-92	1100
Geophys. Logging:				
Casing:				
Filter Placement:	2-7-92	1100	2-7-92	1125
Cementing:	2-7-92	1100	2-7-92	1125
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.2	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5 -1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL)
POWDER (1.5-0.0)

Well Development:

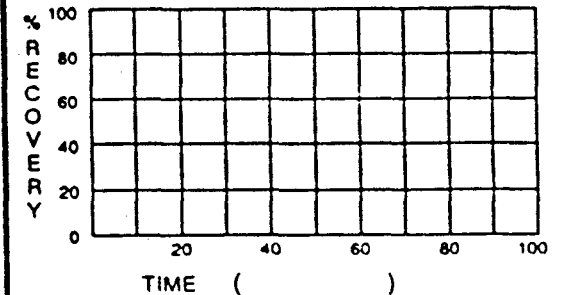
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

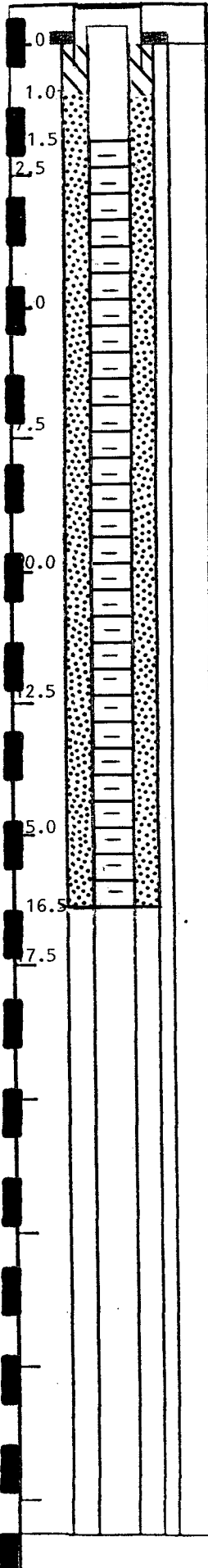
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 02-07-92



Waste Management, Inc.

Well No. B-27S

Boring No. X-Ref: B-27

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/2"
Casing Stick-up Height: 2.6'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6 1/2" I.D. HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-30-92	1230	1-30-92	1445
Geophys. Logging:				
Casing:				
Filter Placement:	1-30-92	1445	1-30-92	1545
Cementing:	1-30-92	1445	1-30-92	1545
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.3 - 1.3	S1	-
1.3 - +2.6	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURAL GEL) POWDER (1.0-0.0)

Well Development:

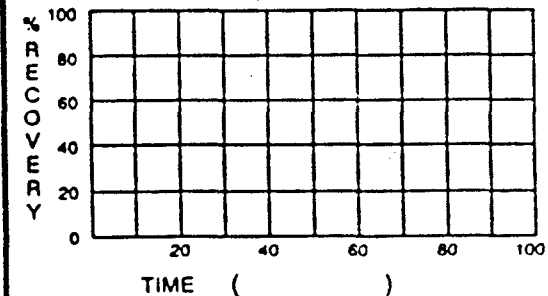
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

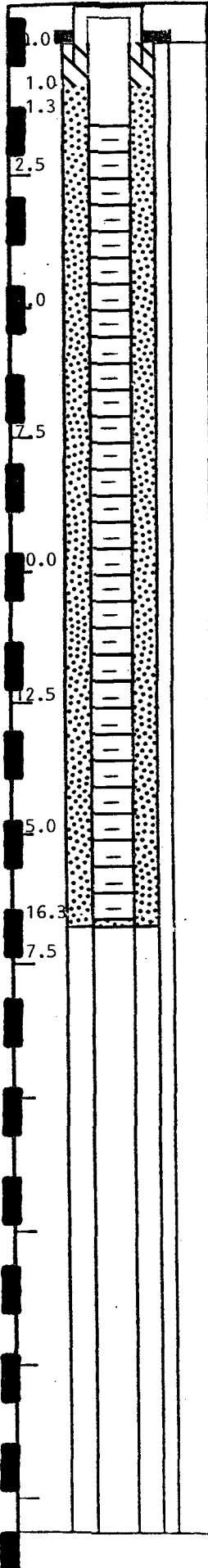
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S_o = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-30-92



Waste Management, Inc.

Well No. B-271

Boring No. X-Ref: B-27

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 60.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.1'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-29-92	0900	1-30-92	1100
Geophys. Logging:				
Casing:				
Filter Placement:	1-30-92	1100	1-30-92	1200
Cementing:	1-30-92	1100	1-30-92	1200
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
60.1 - 55.1	S1	-
55.1 - +2.1	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010' SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (60.0-53.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(50.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(53.0-50.0)

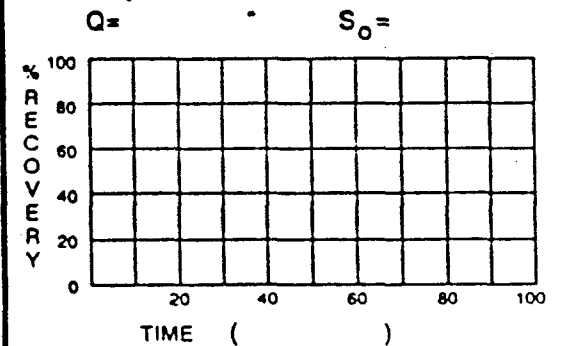
Well Development:

SEE WELL DEVELOPMENT FORM

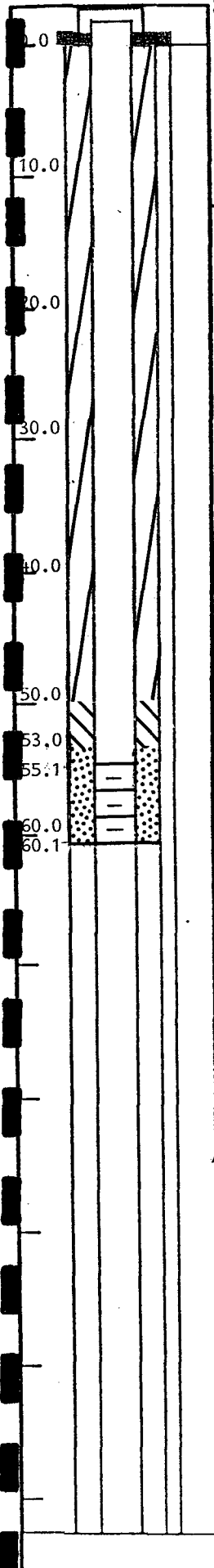
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-30-92



Waste Management, Inc.

Well No. B-27D

Boring No. X-Ref: B-27

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 115.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.8'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6" MUD ROTARY
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-31-92	0815	2-3-92	1315
Geophys. Logging:				
Casing:				
Filter Placement:	2-3-92	1345	2-3-92	1445
Cementing:	2-3-92	1345	2-3-92	1445
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
107.0 - 102.0	S1	-
102.0 - +2.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (108.0-100.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(97.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(100.00-97.0)

Well Development:

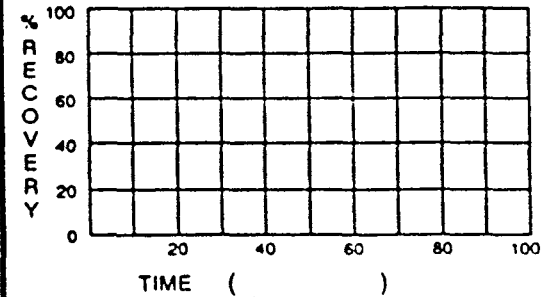
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

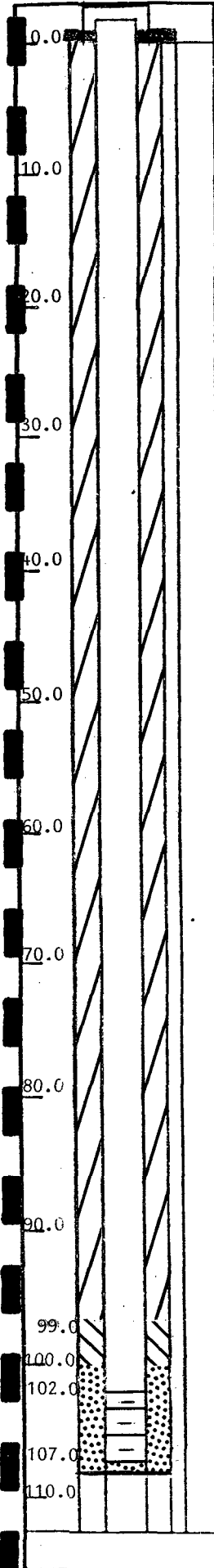
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



Comments: _____



SITE NAME TRAIL RIDGE LANDELL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 02-03-92



Waste Management, Inc.

Well No. B-28S

Boring No. X-Ref: B-28

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 29.5'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.7'
Driller J. HOLLAN

Rig CME-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURAL GEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-21-92	1630	1-22-92	1530
Geophys. Logging:				
Casing:				
Filter Placement:	1-24-92	1315	1-24-92	1400
Cementing:	1-24-92	1315	1-24-92	1400
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
17.0 - 2.0		-
2.0 - +2.7		-
-		-
-		-
-		-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (25.0-1.5)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURAL GEL) POWDER (1.5-0.0)

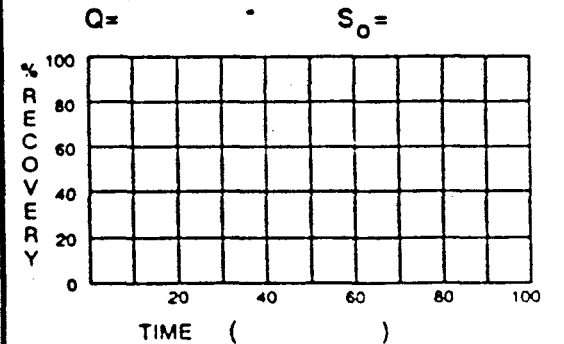
Well Development:

SEE WELL DEVELOPMENT FORM

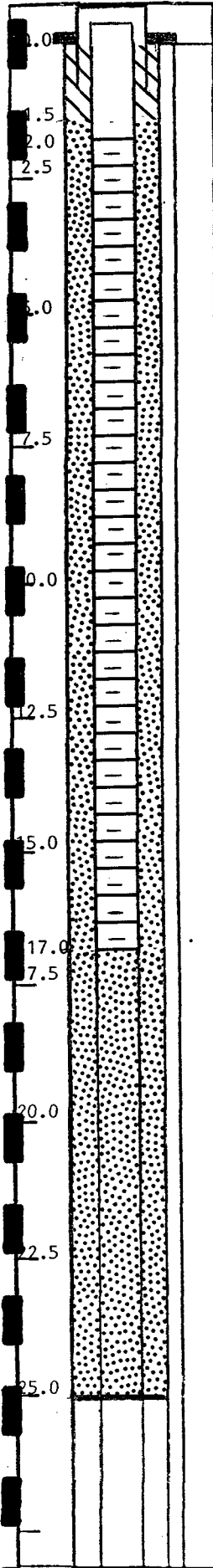
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY J. FRERE
DATE 01-24-92



Waste Management, Inc.

Well No. B-29S

Boring No. X-Ref: B-29

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'
Borehole Diameter 10 1/4"
Casing Stick-up Height: 2.8'
Driller R. DRAWDY

Rig CME-55
Bit(s) 6 1/2" I.D HOLLOW STEM AUGER

Drilling Fluid N/A

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-27-92	1050	1-27-92	1120
Geophys. Logging:				
Casing:				
Filter Placement:	1-27-92	1120	1-27-92	1145
Cementing:	1-27-92	1120	1-27-92	1145
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.8	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL)
POWDER (1.0-0.0)

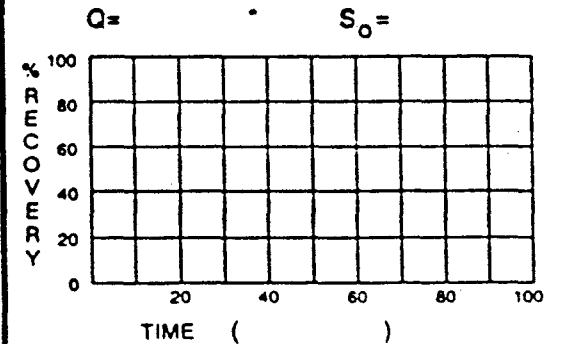
Well Development:

SEE WELL DEVELOPMENT FORM

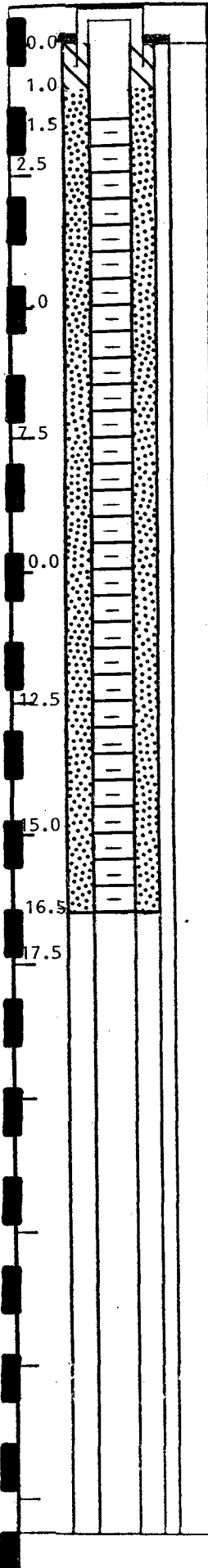
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-27-92



Waste Management, Inc.

Well No. B-291

Boring No. X-Ref: B-29

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____

Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 60.0'
 Borehole Diameter 6.0"
 Casing Stick-up Height: 2.5'
 Driller R. DRAWDY

Rig CME-55
 Bit(s) 3" MUD ROTARY
6" MUD ROTARY
 Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-20-92	1620	1-22-92	1135
Geophys. Logging:				
Casing:				
Filter Placement:	1-22-92	1330	1-22-92	1425
Cementing:	1-22-92	1330	1-22-92	1425
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
 Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
60.0 - 55.0	S1	-
55.0 - +2.5	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC
 C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC
 S2 _____

Filter Pack: 20/30 SILICA SAND (60.0-53.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(50.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(53.0-50.0)

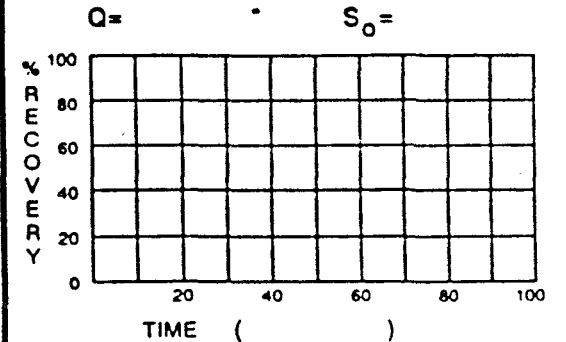
Well Development:

SEE WELL DEVELOPMENT FORM

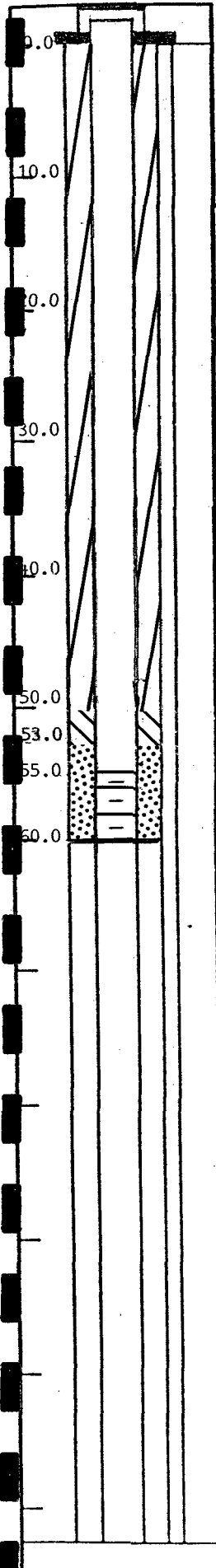
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments:



SITE NAME TRAIL RIDGE LANDELL
 LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
 DATE 01-22-92



Well No. B-29D

Boring No. X-Ref: B-29

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 120.0'
Borehole Diameter 6.0"
Casing Stick-up Height: 2.9'
Driller R. DRAWDY

Rig CME-55
Bit(s) 3" MUD ROTARY
6" MUD ROTARY
Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-22-92	1500	1-25-92	1130
Geophys. Logging:				
Casing:				
Filter Placement:	1-25-92	1300	1-25-92	1400
Cementing:	1-25-92	1300	1-25-92	1400
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
109.0 - 104.0	S1	- - -
104.0 - +2.9'	C1	- - -
-	-	- - -
-	-	- - -
-	-	- - -

Casing: C1 2" DIA. FLUSH-THREADED
SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (110.0-102.0)

Grout Seal: BENTONITE (NATURALGEL) SLURRY
(99.0-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS
(102.0-99.0)

Well Development:

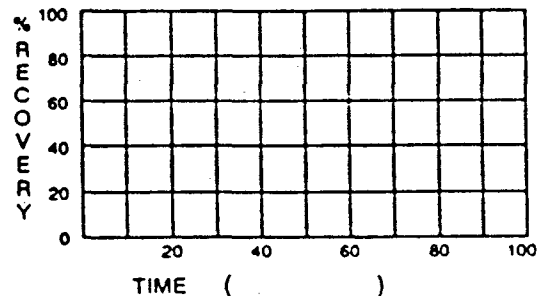
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q= _____ S₀= _____



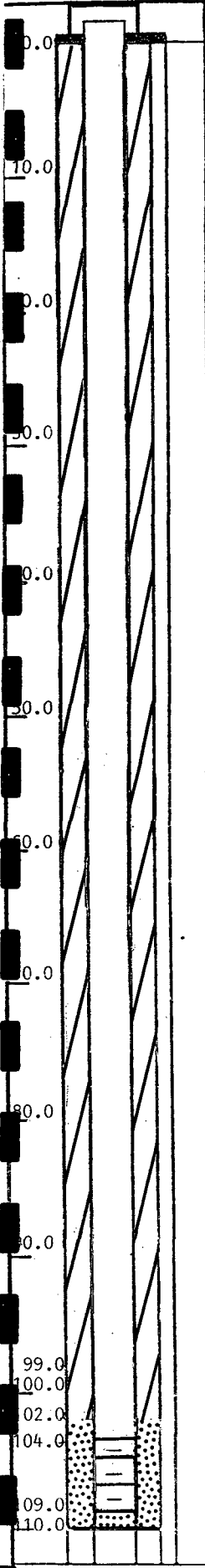
Comments: _____

SITE NAME TRAIL RIDGE LANDELL

LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE

DATE 01-25-92





Waste Management, Inc.

Well No. B-30S

Boring No. X-Ref: B-30

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 16.5'

Borehole Diameter 10 1/2"

Casing Stick-up Height: 2.7'

Driller R. DRAWDY

Rig CME-55

Bit(s) 3" MUD ROTARY

6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-28-92	0930	1-28-92	1015
Geophys. Logging:				
Casing:				
Filter Placement:	1-28-92	1015	1-28-92	1045
Cementing:	1-28-92	1015	1-28-92	1045
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____

Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
16.5 - 1.5	S1	-
1.5 - +2.7	C1	-
-	-	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED

SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 30/40 SILICA SAND (16.5-1.0)

Grout Seal: N/A

Bentonite Seal: BENTONITE (NATURALGEL)

POWDER (1.0-0.0)

Well Development:

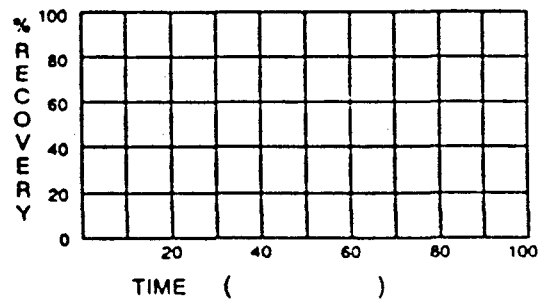
SEE WELL DEVELOPMENT FORM

Stabilization Test Data:

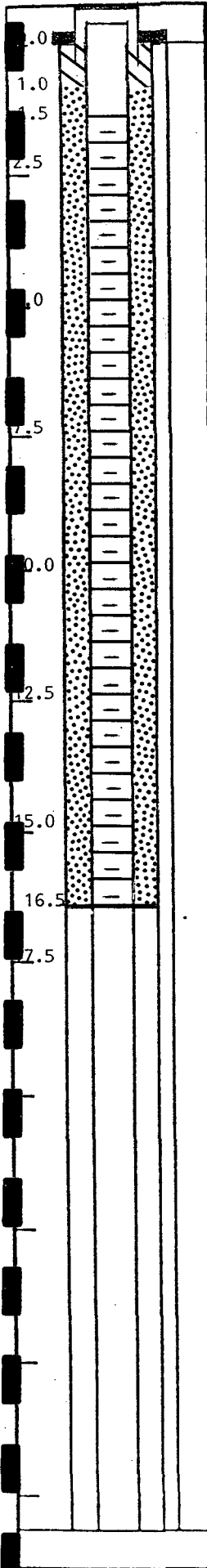
Time	pH	Spec. Cond.	Temp (C)

Recovery Data:

Q = _____ S₀ = _____



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-28-92



Waste Management, Inc.

Well No. B-31D

Boring No. X-Ref: B-31

MONITOR WELL CONSTRUCTION SUMMARY

Survey Coords: _____ Elevation Ground Level _____

Top of Casing _____

Drilling Summary:

Total Depth 134.5'
Borehole Diameter 6.0"
Casing Stick-up Height: 1.9'
Driller R. DRAWDY

Rig CMF-55
Bit(s) 6" MUD ROTARY

Drilling Fluid BENTONITE (NATURALGEL) SLURRY

Protective Casing _____

Construction Time Log:

Task	Start		Finish	
	Date	Time	Date	Time
Drilling	1-7-92	1345	1-9-92	1600
Geophys. Logging:				
Casing:				
Filter Placement:	1-9-92	1600	1-9-92	1715
Cementing:	1-9-92	1600	1-9-92	1715
Development:				

Well Design & Specifications

Basis: Geologic Log _____ Geophysical Log _____
Casing String (s): C = Casing S = Screen.

Depth	String(s)	Elevation
129.5 - 124.5	S1	-
124.5 - +1.9	C1	-
-	-	-
-	-	-
-	-	-

Casing: C1 2" DIA. FLUSH-THREADED SCH 40 PVC

C2 _____

Screen: S1 2" DIA., 0.010" SLOTTED PVC

S2 _____

Filter Pack: 20/30 SILICA SAND (129.5-122.5)

Grout Seal: BENTONITE (NATURALGEL) SLURRY (119.5-0.0)

Bentonite Seal: 1/2" BENTONITE PELLETS (122.5-119.5)

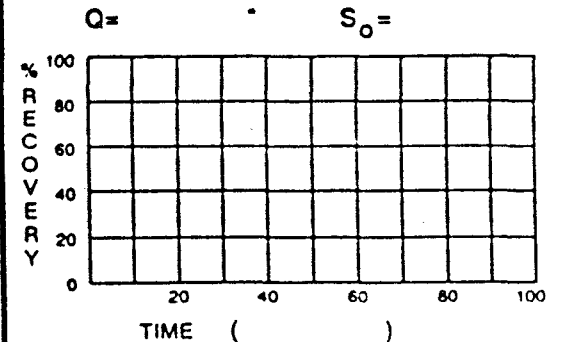
Well Development:

SEE WELL DEVELOPMENT FORM

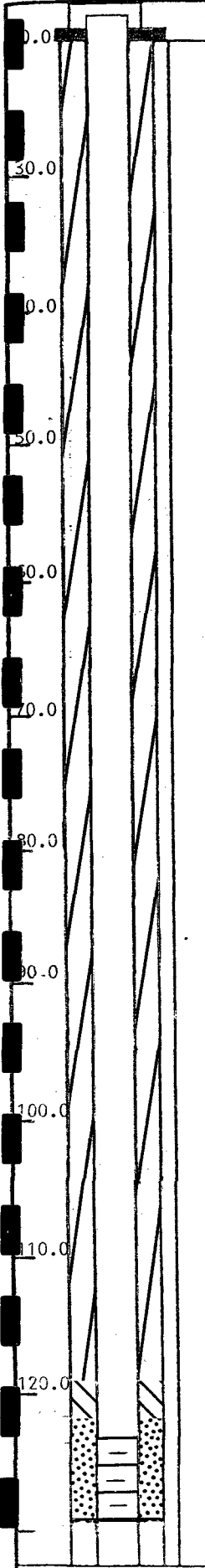
Stabilization Test Data:

Time	pH	Spec. Cond.	Temp (C)

Recovery Data:



Comments: _____



SITE NAME TRAIL RIDGE LANDFILL
LOCATION JACKSONVILLE, FLORIDA

SUPERVISED BY B. BROWNE
DATE 01-09-92

APPENDIX B-3

WELL CONSTRUCTION INFORMATION

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-1S
LATITUDE/LONGITUDE	Y 2143484.97 X 326191.56
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	143.12
ELEVATION AT LAND SURFACE (FT.MSL)	140.7
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	15.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-2S-R
LATITUDE/LONGITUDE	Y 2141385.08 X 324825.96
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	146.64
ELEVATION AT LAND SURFACE (FT.MSL)	144.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	17.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-21
LATITUDE/LONGITUDE	Y 2141383.31 X 324811.77
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	145.69
ELEVATION AT LAND SURFACE (FT.MSL)	143.8
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	59.8'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-3S-R
LATITUDE/LONGITUDE	Y 2143945.04 X 324771.66
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	153.48
ELEVATION AT LAND SURFACE (FT.MSL)	151.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	18.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-3I
LATITUDE/LONGITUDE	Y 2143972.59 X 324788.45
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	152.86
ELEVATION AT LAND SURFACE (FT.MSL)	151.0
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-6S
LATITUDE/LONGITUDE	Y 2144037.98 X 329967.56
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	99.97
ELEVATION AT LAND SURFACE (FT.MSL)	97.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	28.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-6I
LATITUDE/LONGITUDE	Y 2144042.65 X 329967.38
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	99.67
ELEVATION AT LAND SURFACE (FT.MSL)	97.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-7S-R
LATITUDE/LONGITUDE	Y 2144200.78 X 327417.58
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	123.29
ELEVATION AT LAND SURFACE (FT.MSL)	120.6
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-71
LATITUDE/LONGITUDE	Y 2144195.61 X 327425.14
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	121.52
ELEVATION AT LAND SURFACE (FT.MSL)	119.7
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	63.3'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-7D
LATITUDE/LONGITUDE	Y 2144200.59 X 327424.47
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	121.63
ELEVATION AT LAND SURFACE (FT.MSL)	119.7
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	114.7'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-11S-R
LATITUDE/LONGITUDE	Y 2143755.32 X 327703.68
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	120.81
ELEVATION AT LAND SURFACE (FT.MSL)	118.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	18.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-11I
LATITUDE/LONGITUDE	Y 2143758.91 X 327696.72
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	120.39
ELEVATION AT LAND SURFACE (FT.MSL)	118.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-12S-R
LATITUDE/LONGITUDE	Y 2143281.06 X 327662.25
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	124.63
ELEVATION AT LAND SURFACE (FT.MSL)	122.9
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	25.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-12I
LATITUDE/LONGITUDE	Y 2143273.26 X 327663.85
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	124.72
ELEVATION AT LAND SURFACE (FT.MSL)	122.9
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	69.6'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-12D
LATITUDE/LONGITUDE	Y 2143277.78 X 327665.18
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	124.78
ELEVATION AT LAND SURFACE (FT.MSL)	122.9
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	112.8'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-13S-R
LATITUDE/LONGITUDE	Y 2142807.57 X 327687.97
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	126.06
ELEVATION AT LAND SURFACE (FT.MSL)	124.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	24.6'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-13I-R
LATITUDE/LONGITUDE	Y 2142802.08 X 327686.70
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	125.98
ELEVATION AT LAND SURFACE (FT.MSL)	124.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	58.6'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-14S
LATITUDE/LONGITUDE	Y 2142295.16 X 327666.93
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	126.05
ELEVATION AT LAND SURFACE (FT.MSL)	123.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-14I
LATITUDE/LONGITUDE	Y 2142305.88 X 327667.66
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	125.92
ELEVATION AT LAND SURFACE (FT.MSL)	123.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-14D
LATITUDE/LONGITUDE	Y 2142300.45 X 327667.62
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	125.87
ELEVATION AT LAND SURFACE (FT.MSL)	123.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	106.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-16S
LATITUDE/LONGITUDE	Y 2144299.23 X 325394.62
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	144.01
ELEVATION AT LAND SURFACE (FT.MSL)	141.7
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	17.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-17S
LATITUDE/LONGITUDE	Y 2144295.29 X 325905.68
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.31
ELEVATION AT LAND SURFACE (FT.MSL)	136.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.1'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-171
LATITUDE/LONGITUDE	Y 2144294.74 X 325892.95
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.43
ELEVATION AT LAND SURFACE (FT.MSL)	136.2
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	57.9'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-17D
LATITUDE/LONGITUDE	Y 2144294.68 X 325898.87
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.52
ELEVATION AT LAND SURFACE (FT.MSL)	136.0
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	124.8'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-18S
LATITUDE/LONGITUDE	Y 2144288.56 X 326332.65
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	134.09
ELEVATION AT LAND SURFACE (FT.MSL)	131.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-19S
LATITUDE/LONGITUDE	Y 2144284.38 X 326888.42
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	127.38
ELEVATION AT LAND SURFACE (FT.MSL)	125.7
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	18.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-19I
LATITUDE/LONGITUDE	Y 2144283.60 X 326893.45
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	127.94
ELEVATION AT LAND SURFACE (FT.MSL)	125.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	56.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-19D
LATITUDE/LONGITUDE	Y 2144283.27 X 326898.35
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	128.23
ELEVATION AT LAND SURFACE (FT.MSL)	125.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	109.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-20S
LATITUDE/LONGITUDE	Y 2144012.47 X 327607.93
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	121.01
ELEVATION AT LAND SURFACE (FT.MSL)	118.9
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	18.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-21S
LATITUDE/LONGITUDE	Y 2143556.32 X 327620.57
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	122.84
ELEVATION AT LAND SURFACE (FT.MSL)	121.0
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	18.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-22S-R
LATITUDE/LONGITUDE	Y 2143035.78 X 327689.95
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	126.97
ELEVATION AT LAND SURFACE (FT.MSL)	124.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	25.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-23S
LATITUDE/LONGITUDE	Y 2142535.46 X 327698.46
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	125.34
ELEVATION AT LAND SURFACE (FT.MSL)	122.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	25.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-24S
LATITUDE/LONGITUDE	Y 2141946.66 X 327543.28
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	126.04
ELEVATION AT LAND SURFACE (FT.MSL)	122.2
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-25S
LATITUDE/LONGITUDE	Y 2141739.69 X 327427.62
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	125.22
ELEVATION AT LAND SURFACE (FT.MSL)	122.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	17.2'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-25I
LATITUDE/LONGITUDE	Y 2141745.83 X 327442.38
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	124.03
ELEVATION AT LAND SURFACE (FT.MSL)	122.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	58.3'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-25D
LATITUDE/LONGITUDE	Y 2141744.46 X 327435.33
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	124.64
ELEVATION AT LAND SURFACE (FT.MSL)	122.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	106.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-26S
LATITUDE/LONGITUDE	Y 2141622.78 X 327201.29
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	126.55
ELEVATION AT LAND SURFACE (FT.MSL)	124.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-27S
LATITUDE/LONGITUDE	Y 2141563.57 X 326939.44
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	128.42
ELEVATION AT LAND SURFACE (FT.MSL)	126.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.3'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-271
LATITUDE/LONGITUDE	Y 2141567.11 X 326945.24
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	128.63
ELEVATION AT LAND SURFACE (FT.MSL)	126.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.1'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-27D
LATITUDE/LONGITUDE	Y 2141559.56 X 326932.31
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	128.88
ELEVATION AT LAND SURFACE (FT.MSL)	126.1
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	107.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-28S
LATITUDE/LONGITUDE	Y 2141546.46 X 326362.93
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	133.73
ELEVATION AT LAND SURFACE (FT.MSL)	131.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	17.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-29S
LATITUDE/LONGITUDE	Y 2141554.36 X 325866.04
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.02
ELEVATION AT LAND SURFACE (FT.MSL)	135.5
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-29I
LATITUDE/LONGITUDE	Y 2141553.54 X 325871.43
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.08
ELEVATION AT LAND SURFACE (FT.MSL)	135.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	60.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-29D
LATITUDE/LONGITUDE	Y 2141555.03 X 325876.40
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	138.18
ELEVATION AT LAND SURFACE (FT.MSL)	135.4
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	109.0'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-30S
LATITUDE/LONGITUDE	Y 2141545.63 X 325358.61
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	142.52
ELEVATION AT LAND SURFACE (FT.MSL)	140.2
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	16.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

WELL INFORMATION SHEET DUVAL COUNTY, FLORIDA	
WELL IDENTIFICATION	B-31D
LATITUDE/LONGITUDE	Y 2142821.94 X 324793.77
AQUIFER MONITORED	UPPER SURFICIAL SAND
SCREEN TYPE AND SLOT SIZE	#10 JOHNSON MACHINE SLOTTED
ELEVATION AT TOP OF RISER (FT.MSL)	156.15
ELEVATION AT LAND SURFACE (FT.MSL)	154.0
LITHOLOGIC LOG	YES
TOTAL WELL DEPTH	122.5'
RISER DIAMETER AND TYPE	2" PVC
PROTECTIVE CASING DIAMETER	6"
PROTECTIVE CASING TYPE	ALUMINUM - LOCKING
SJRWMD WELL CONSTRUCTION PERMIT NUMBER	N/A

APPENDIX C
SOIL LABORATORY TEST DATA

SUMMARY OF SOIL DATA

Boring No.	Sample No.	Sample Depth	Soil Classification	Natural Moisture %	Atterberg Limits			Grain Size Distribution			Compaction			Unit Weight PCF		Additional Tests Conducted (See Notes)
					L.L.	P.L.	P.I.	I.	% Finer No. 4 Sieve	% Finer No. 200 Sieve	Specific Gravity	Maximum Dry Density	Optimum Moisture Content	Wet	Dry	
B17-D	53	123.5'-125'	SP-SM	.	.	.	.	100.00	5.29	.	.	.	.	.	.	.
B19-D	49 & 50	103.5'-110'	SP-SM	.	.	.	.	99.45	6.36	.	.	.	.	.	.	.
B31-D	54	128.5'-130'	SP-SM	.	.	.	.	98.59	9.24	.	.	.	.	.	.	.
B17-I	36	52.5'-54'	SP	.	.	.	.	88.16	3.06	.	.	.	.	.	.	.
B19-I	36-38	52.5'-57'	SP-SM	.	.	.	.	99.42	6.27	.	.	.	.	.	.	.
B29-I	39 & 40	56'-60'	SP	.	.	.	.	100.00	4.29	.	.	.	.	.	.	.
B16-S	2-6, 7-10	1.5'-15'	SM	.	.	.	.	100.00	12.45	.	.	.	.	.	.	.
B17-S	4-7, 8-11	4.5'-10.5'	SP-SM	.	.	.	.	100.00	5.07	.	.	.	.	.	.	.
B18-S	3-5, 6-8, 9-11	3'-16.5'	SP	.	.	.	.	100.00	4.54	.	.	.	.	.	.	.
B22-S	10-12	13.5'-18'	SM	.	.	.	.	100.00	15.31	.	.	.	.	.	.	.
B27-S	2-11	1.5'-16.5'	SP-SM	.	.	.	.	100.00	5.86	.	.	.	.	.	.	.
B28-S	2-8, 9-10	1.5'-15'	SP	.	.	.	.	100.00	3.72	.	.	.	.	.	.	.
B29-S	2-11	1.5'-16.5'	SP	.	.	.	.	100.00	3.64	.	.	.	.	.	.	.

NOTES:

- T = TRIAXIAL TEST
- U = UNCONFINED COMPRESSION TEST
- C = CONSOLIDATION TEST
- DS = DIRECT SHEAR TEST

ABBREVIATIONS:

- LIQUID LIMIT (LL)
- PLASTIC LIMIT (PL)
- PLASTICITY INDEX (PI)
- LIQUIDITY INDEX (I)

JOB NUMBER: 923-3350.2

JOB NAME: WMNA/TR-WELLS/FL

COMPILED BY: TT
 CHECKED BY: MLS
 REVIEWED BY: 

GOLDER ASSOCIATES INC.

SUMMARY OF SOIL DATA

Boring No.	Sample No.	Sample Depth	Soil Classification	Natural Moisture %	Atterberg Limits				Grain Size Distribution			Compaction			Unit Weight PCF		Additional Tests Conducted (See Notes)
					L.L.	P.L.	P.I.	I.	% Finer No. 4 Sieve	% Finer No. 200 Sieve	Specific Gravity	Maximum Dry Density	Optimum Moisture Content	Wet	Dry		
B14DR	21	103.5'-105'	SP-SM	-	-	-	-	-	100.00	6.60	-	-	-	-	-	-	-
B14JR	12	58.5'-60'	SP-SM	-	-	-	-	-	100.00	7.17	-	-	-	-	-	-	-
B14SR	1-3	3.5'-15'	SP	-	-	-	-	-	100.00	4.71	-	-	-	-	-	-	-
B23S	8-10	10.5'-15'	SP-SM	-	-	-	-	-	100.00	5.21	-	-	-	-	-	-	-
B23S	11-13	15'-19.5'	SM	-	-	-	-	-	100.00	18.91	-	-	-	-	-	-	-
B23S	14-17	19.5'-25'	SP-SM	-	-	-	-	-	100.00	10.57	-	-	-	-	-	-	-
B24S	1-6	0'-9'	SP-SM	-	-	-	-	-	100.00	5.62	-	-	-	-	-	-	-
B24S	7	9'-10.5'	SP	-	-	-	-	-	100.00	3.67	-	-	-	-	-	-	-
B24S	8-11	10.5'-16.5'	SP-SM	-	-	-	-	-	100.00	5.24	-	-	-	-	-	-	-
B25D	49	103.5'-105'	SP-SM	-	-	-	-	-	100.00	5.85	-	-	-	-	-	-	-
B26S	1-6	0'-9'	SP-SM	-	-	-	-	-	100.00	7.12	-	-	-	-	-	-	-
B26S	7-8	9'-12'	SP-SM	-	-	-	-	-	100.00	5.30	-	-	-	-	-	-	-
B26S	9	12'-13.5'	SP	-	-	-	-	-	100.00	2.40	-	-	-	-	-	-	-
B27D	49	103.5'-105'	SP-SM	-	-	-	-	-	100.00	5.34	-	-	-	-	-	-	-
P29D	49	103.5'-105'	SP-SM	-	-	-	-	-	100.00	5.48	-	-	-	-	-	-	-
P29I	37-38	54'-57'	SP-SM	-	-	-	-	-	100.00	6.87	-	-	-	-	-	-	-

NOTES:

- T = TRIAXIAL TEST
- U = UNCONFINED COMPRESSION TEST
- C = CONSOLIDATION TEST
- DS = DIRECT SHEAR TEST
- Perme = PERMEABILITY TEST

ABBREVIATIONS:

- LIQUID LIMIT (LL)
- PLASTIC LIMIT (PL)
- PLASTICITY INDEX (PI)
- LIQUIDITY INDEX (I)

JOB NUMBER: 923-3350

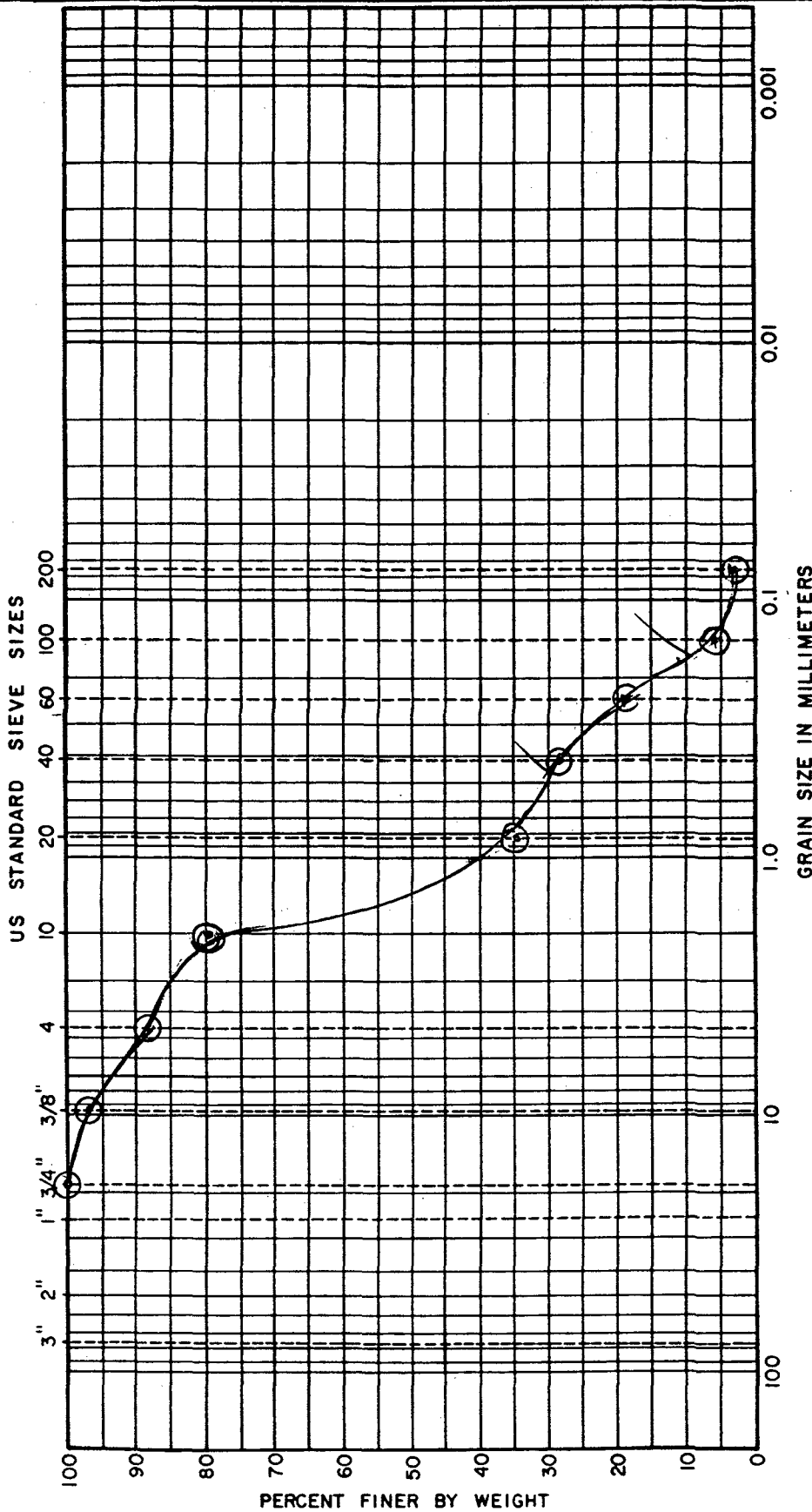
JOB NAME: WMNA/TR-WELLS/FL

COMPILED BY: TT
 CHECKED BY: MLS
 REVIEWED BY: *[Signature]*

GOLDER ASSOCIATES INC.

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B17I	52.5-54	-	-	-	-	Grey (C-F SAND, little fine gravel, trace silt (SP))
36						$D_{60} = 1.40$ $D_{10} = .18$ $D_{30} = .46$ $D_{60}/D_{10} = 7.78$ $(D_{30})^2 / (D_{10} \times D_{60}) = .89$ SP * NOT ENOUGH SAMPLE AVAILABLE TO COMPLY WITH ASTM ~ 1000 gms needed

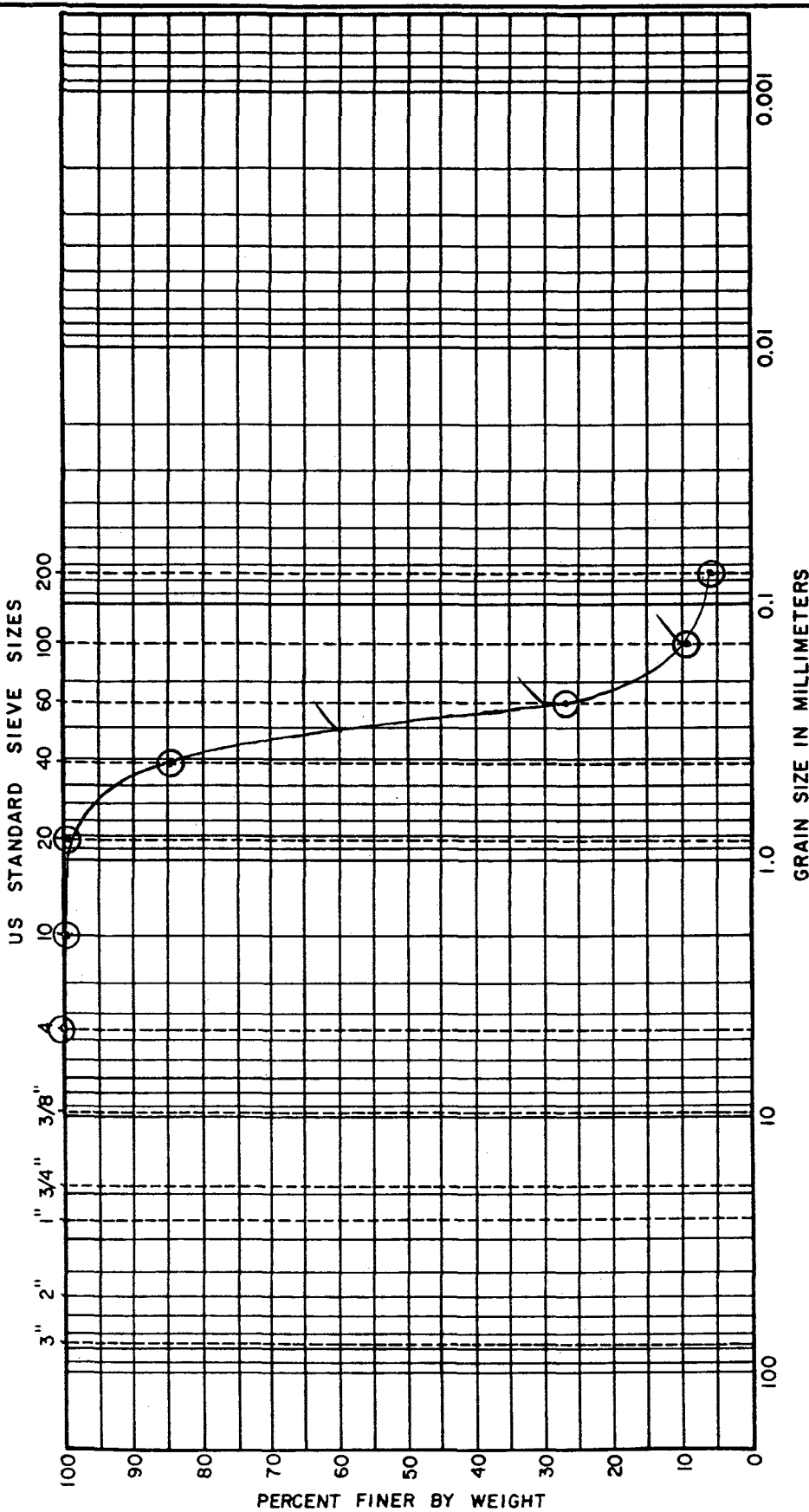
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn TT
 Checked [Signature]
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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	w_n	w_L	w_p	I_p	DESCRIPTION OR CLASSIFICATION
B275	1.5-16.5	—	—	—	—	Dark Brown, M-F SAND, little silt (SP-SM)
2 → 11						$D_{60} = .31$ $D_{10} = .15$ $D_{30} = .26$ $D_{60}/D_{10} = 2.07$ SP

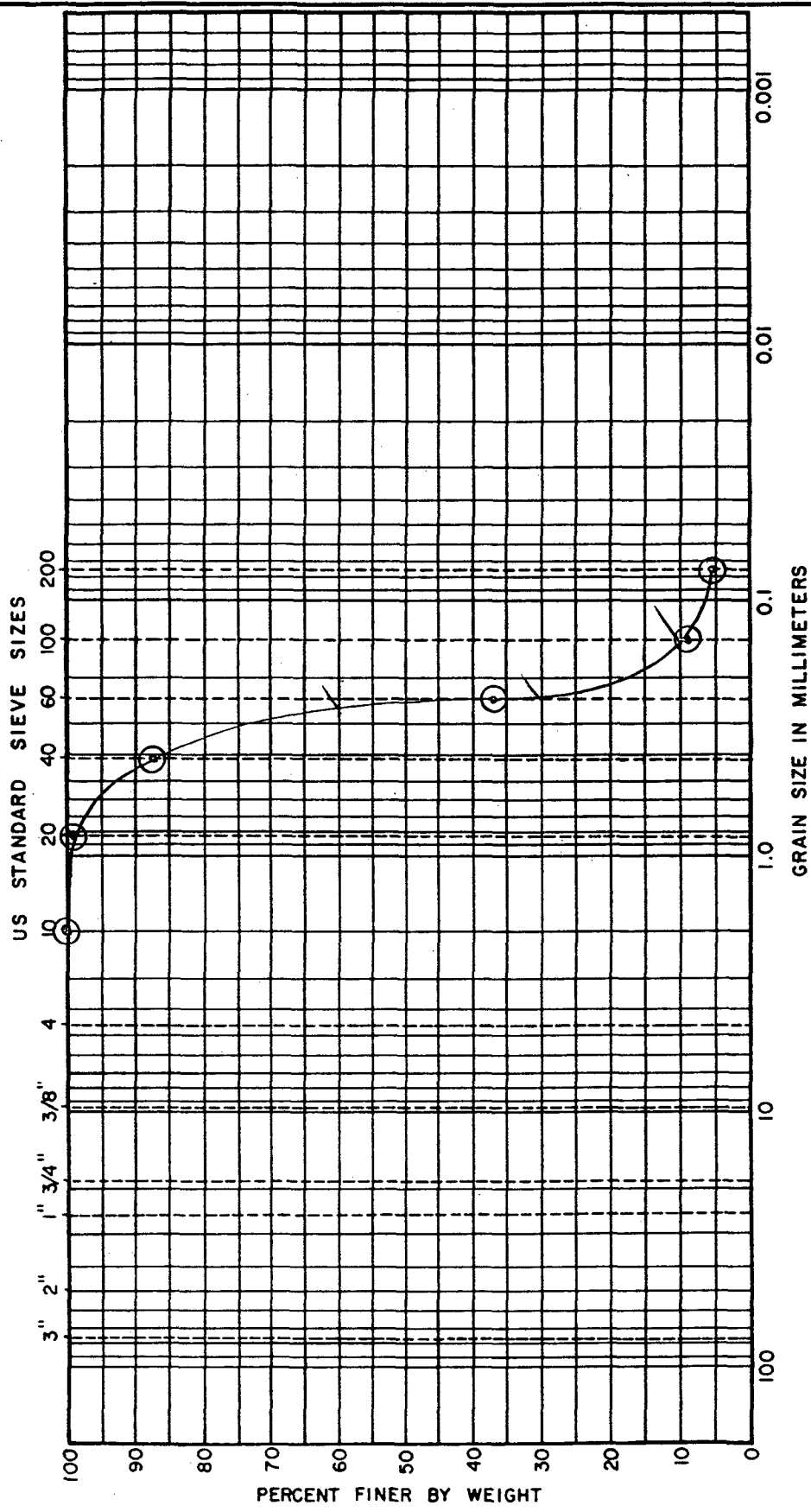
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

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 Reviewed BGP

GRAIN SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV OR DEPTH	GRAVEL			SAND			FINES			DESCRIPTION OR CLASSIFICATION
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES			
B175	4.5-10.5 ✓										Dark Brown, M-F SAND, little silt (SP-SM) $D_{60} = .27$ $D_{10} = .15$ $D_{30} = .25$ $D_{60}/D_{10} = 1.8$ SP
4 → 7											
8 → 11											

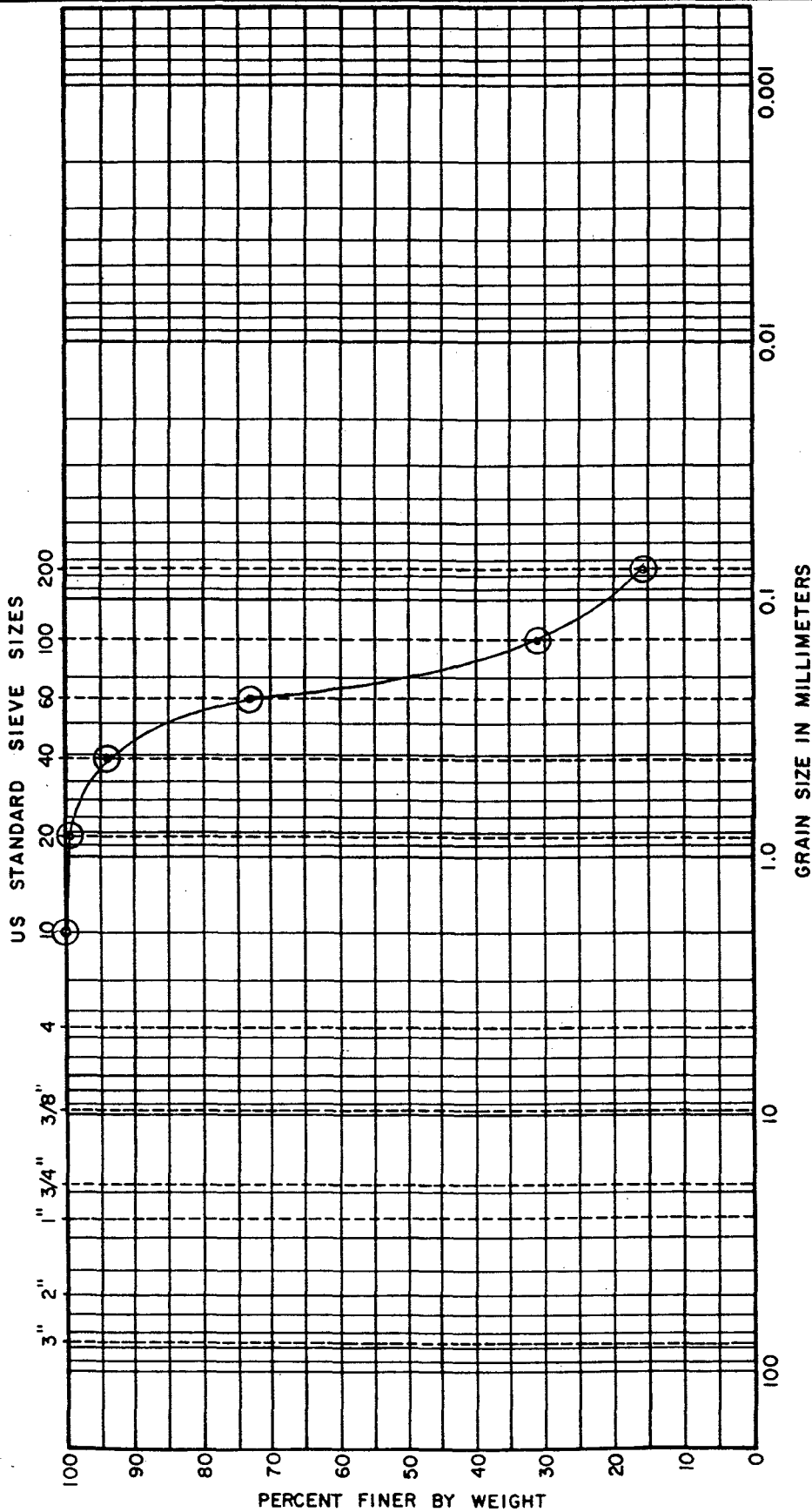
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn TT
 Checked M
 Reviewed BP

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B225 10 → 12	13.5 - 13	—	—	—	—	Dark Brown, M-F SAND, some silt. (SM)

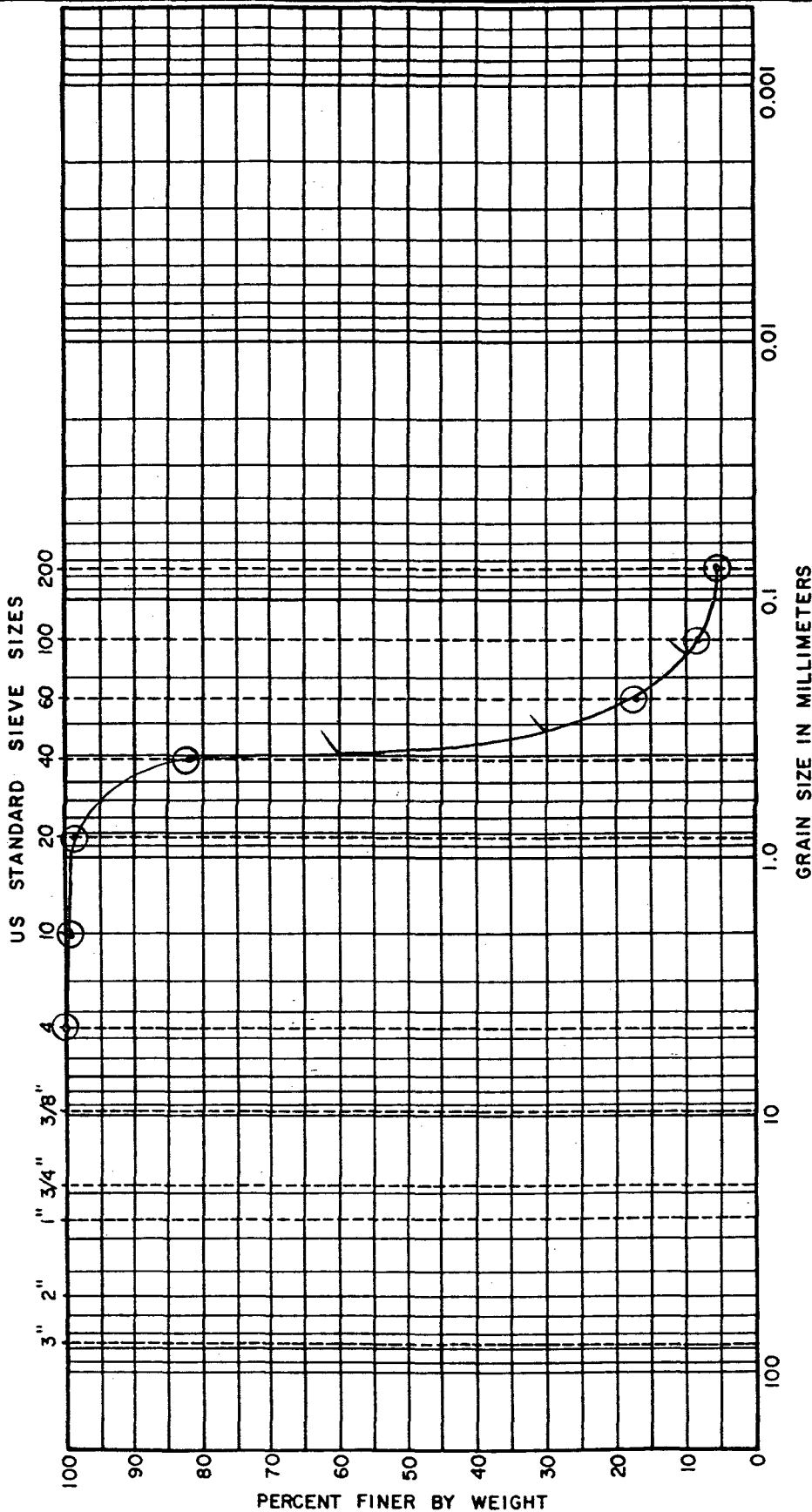
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

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 Reviewed BP

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV OR DEPTH	DESCRIPTION OR CLASSIFICATION				
		w_n	w_L	w_p	I_p	
B17 D	123.5-125	-	-	-	-	Grey, M-F SAND, little silt (SP-SM)
53						$D_{60} = .40$ $D_{10} = .17$ $D_{30} = .32$ $D_{60}/D_{10} = 2.35$ SP

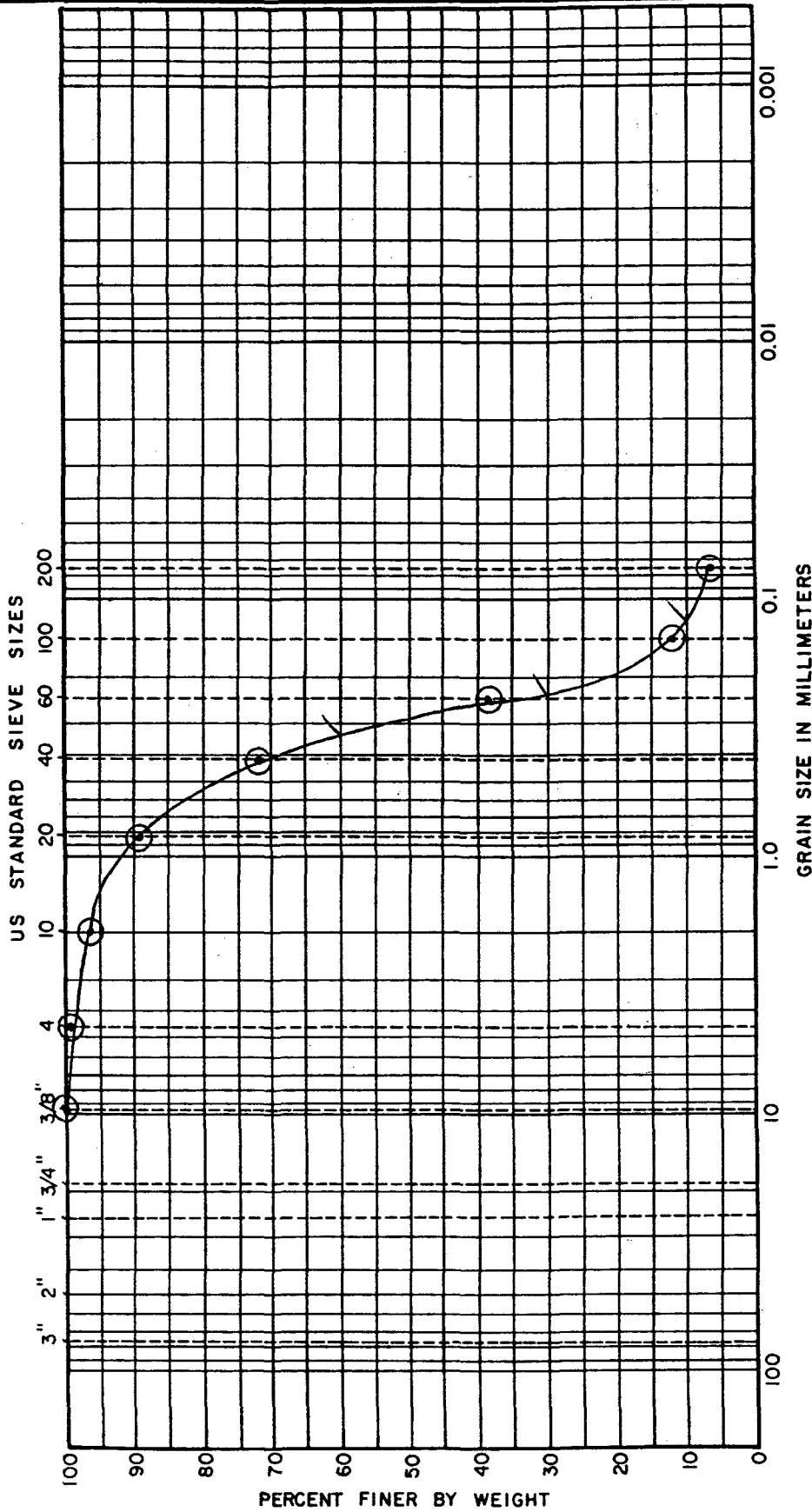
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Golder Associates

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 Reviewed Boyd

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B19 I 36 → 38	52.5-57	—	—	—	—	Grey, C-F SAND, little silt, trace fine gravel (SP-SM) $D_{60} = .34$ $D_{10} = .13$ $D_{30} = .24$ $D_{60}/D_{10} = 2.62$ SP

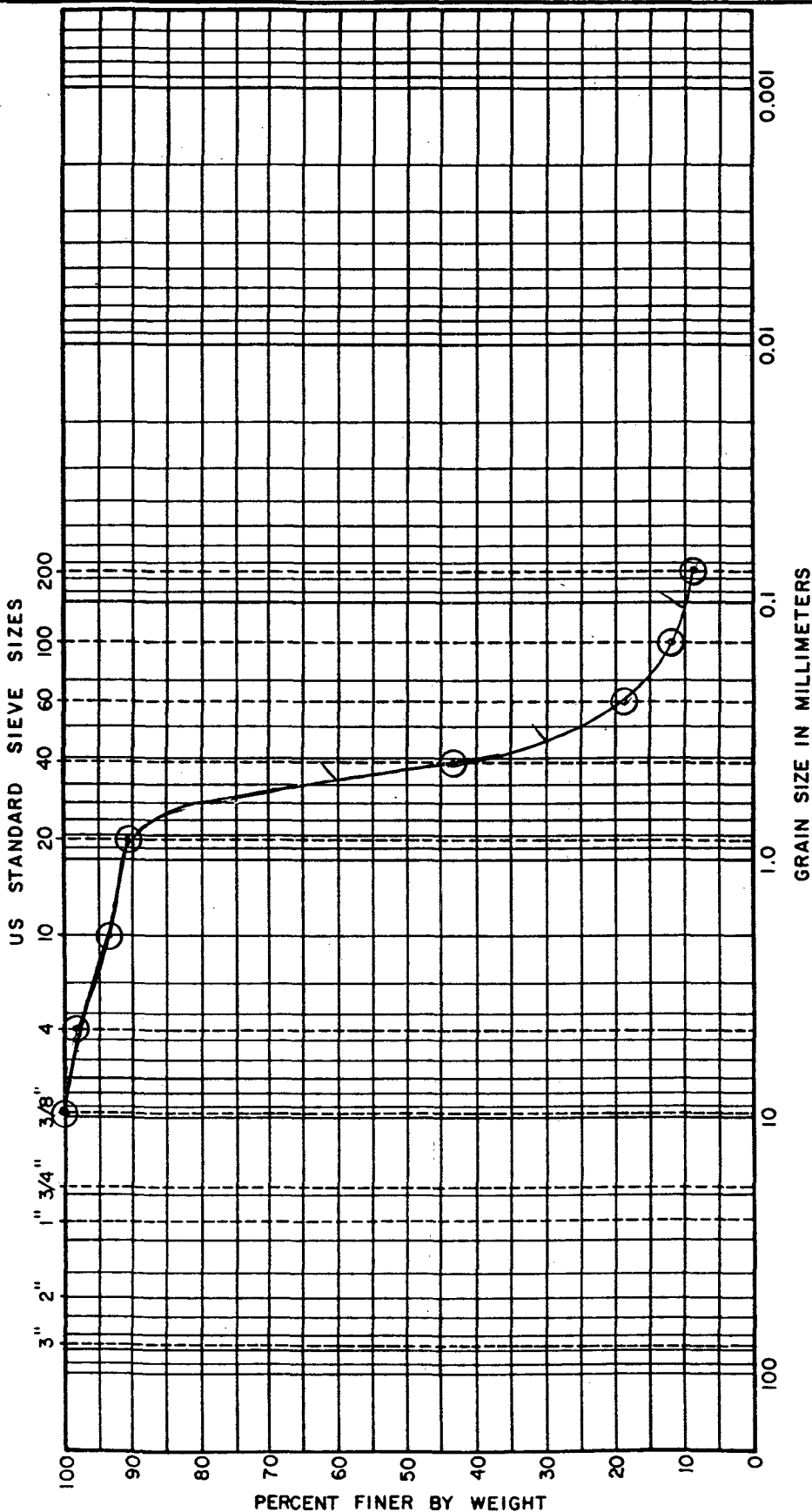
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 Job No. 923-3350.2/

Golder Associates

Drawn TT
 Checked TT
 Reviewed [Signature]

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B31D	128.5-130	-	-	-	-	Grey, C-F SAND, little silt, trace fine gravel (SP-SM)
54						$D_{60} = .48$ $D_{10} = .11$ $D_{30} = .35$ $D_{60}/D_{10} = 4.36$ SP

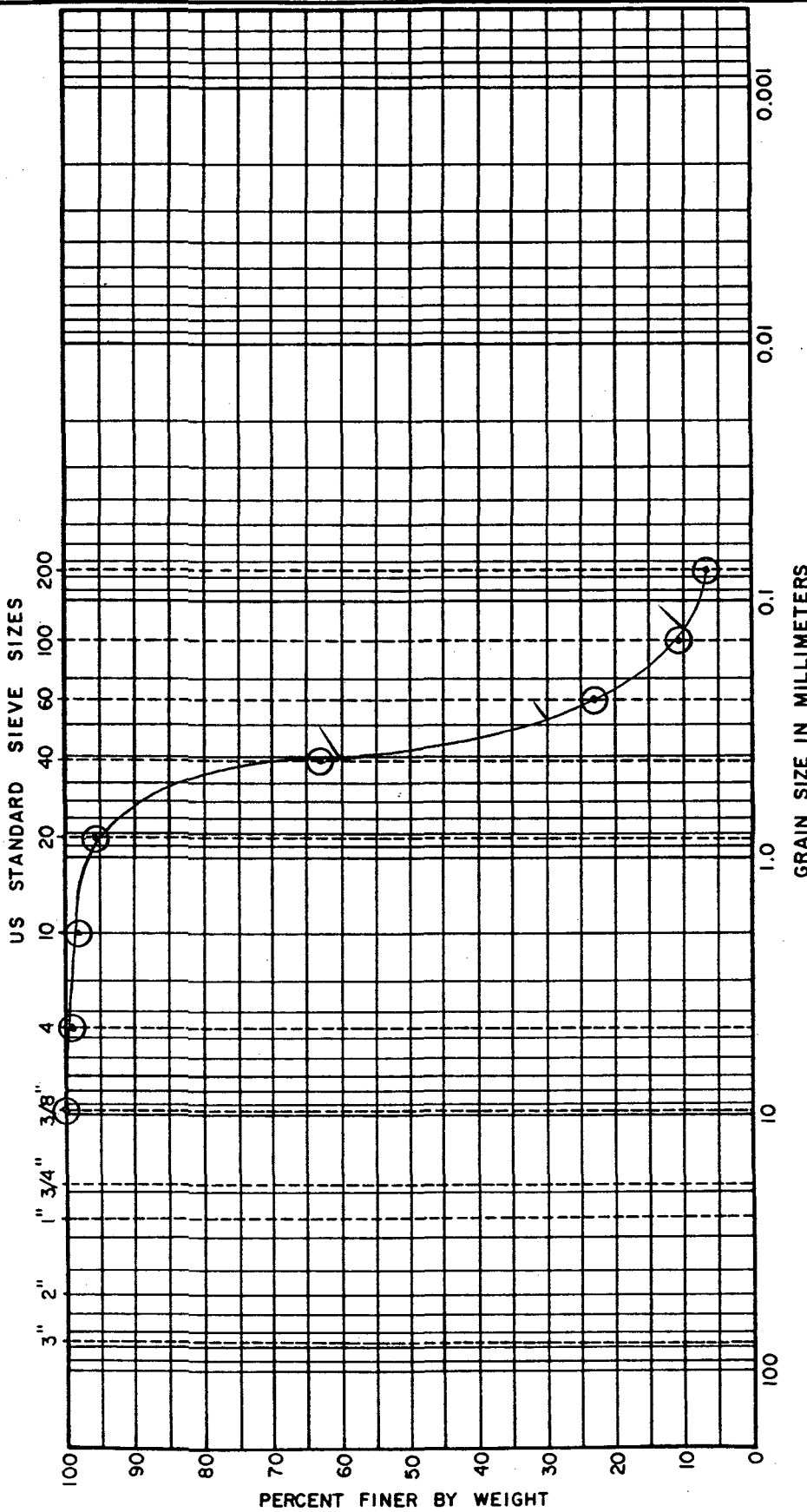
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn TT
 Checked M
 Reviewed BoP

GRAIN SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	GRAVEL			SAND			FINES		DESCRIPTION OR CLASSIFICATION
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES		
B19D 49450	103.5-110									Dark Grey, C-F sand, little silt (SP-SM) $D_{60} = .40$ $D_{10} = .13$ $D_{30} = .29$ $D_{60}/D_{10} = 3.08$ SP

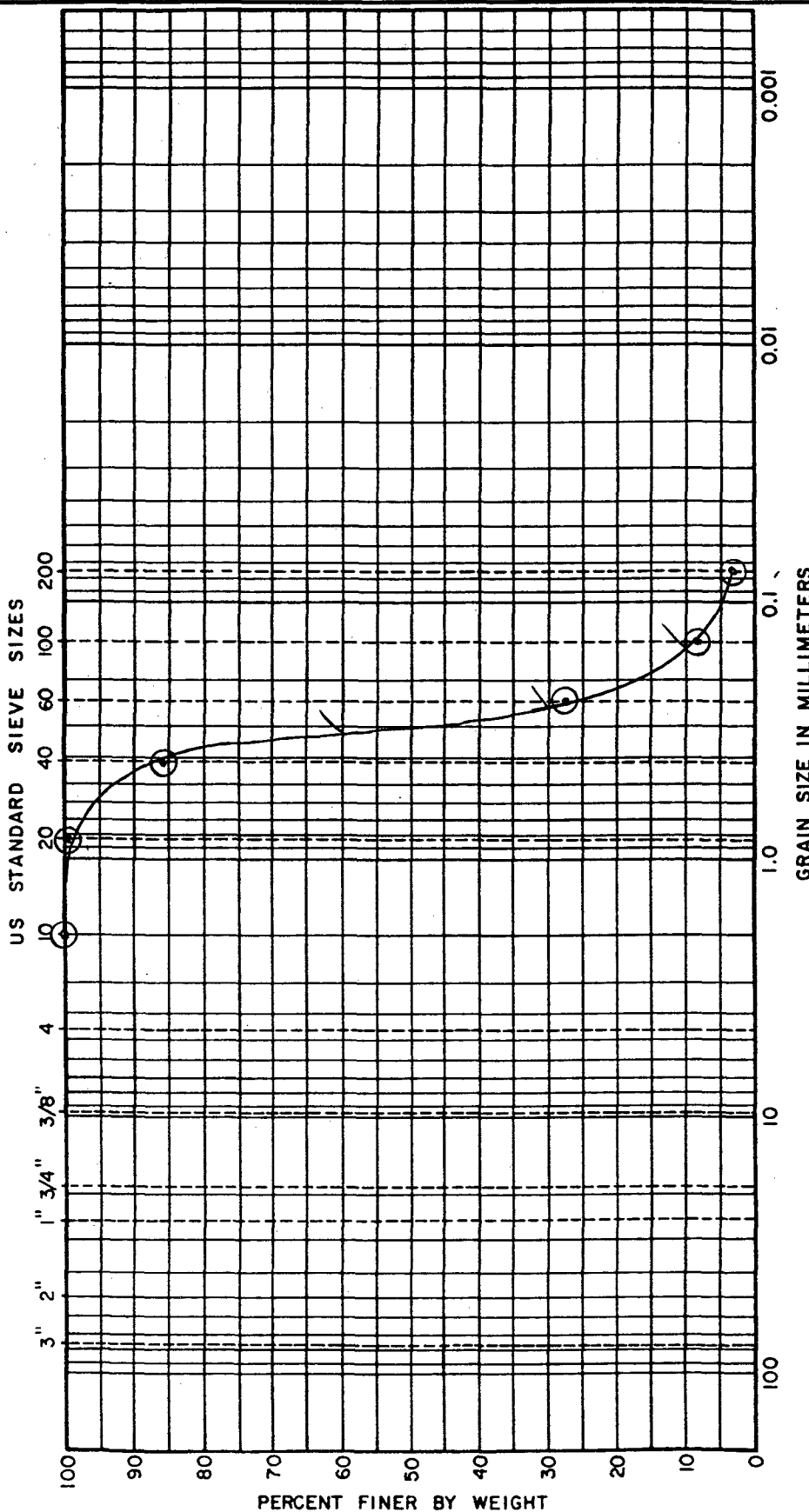
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn T
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GRAIN SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	SAND			FINES		DESCRIPTION OR CLASSIFICATION
						COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES	
B28S 2 → B 9 + 10	1.5-15 /	—	—	—	—						Dark Brown, M-F SAND, trace silt (SP) D ₆₀ = .32 D ₃₀ = .26 D ₁₀ = .16 D ₆₀ /D ₁₀ = 2.0 SP

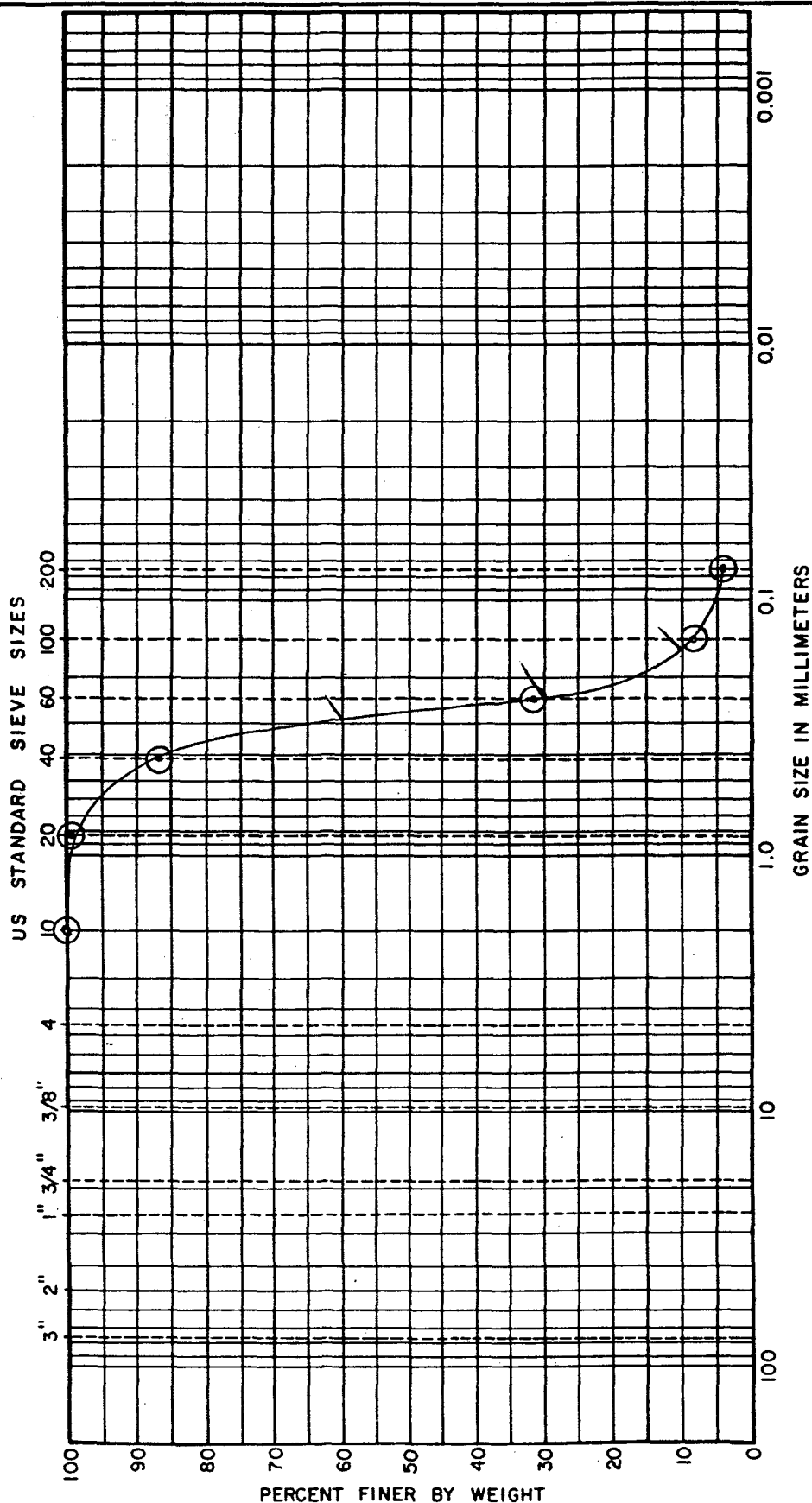
Date 2/17/92
Job No. 923-3350.2

Golder Associates

Drawn TT
Checked M
Reviewed [Signature]

GRAIN SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	SAND				FINES		DESCRIPTION OR CLASSIFICATION
		COARSE	FINE	MEDIUM	FINE	SILT SIZES	CLAY SIZES	
B1B5 3 → 5, 6 → 8, 9 → 11	3-16.5	—	—	—	—	—	—	Dark Brown, M-F SAND, trace silt (SP) $D_{60} = .29$ $D_{10} = .25$ $D_{30} = .17$ $D_{60}/D_{10} = 1.71$ SP

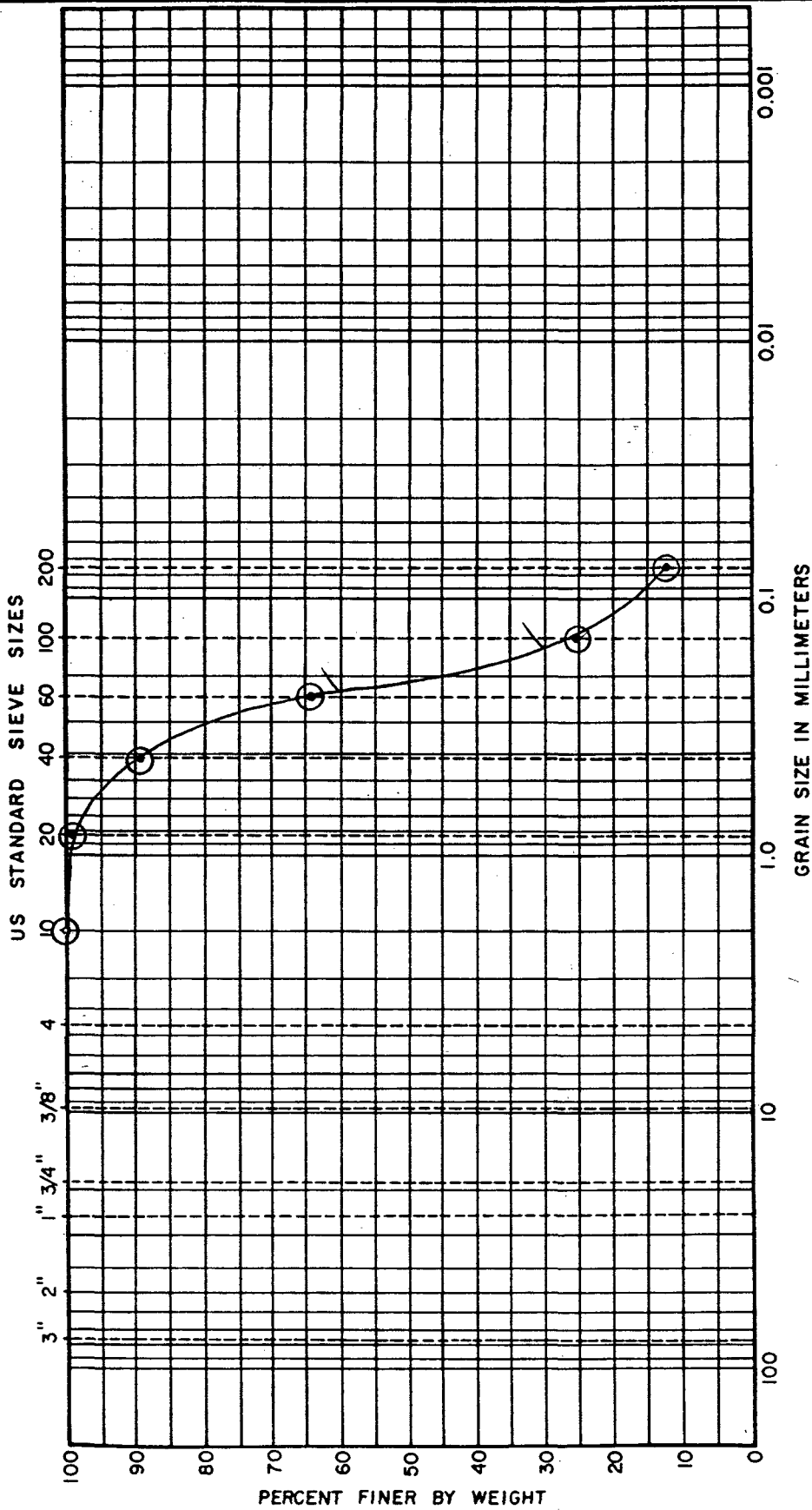
Date 2/17/92
 Job No. 723-3350.2

Golder Associates

Drawn TT
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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
						B16S 2 → 6 7 → 10.

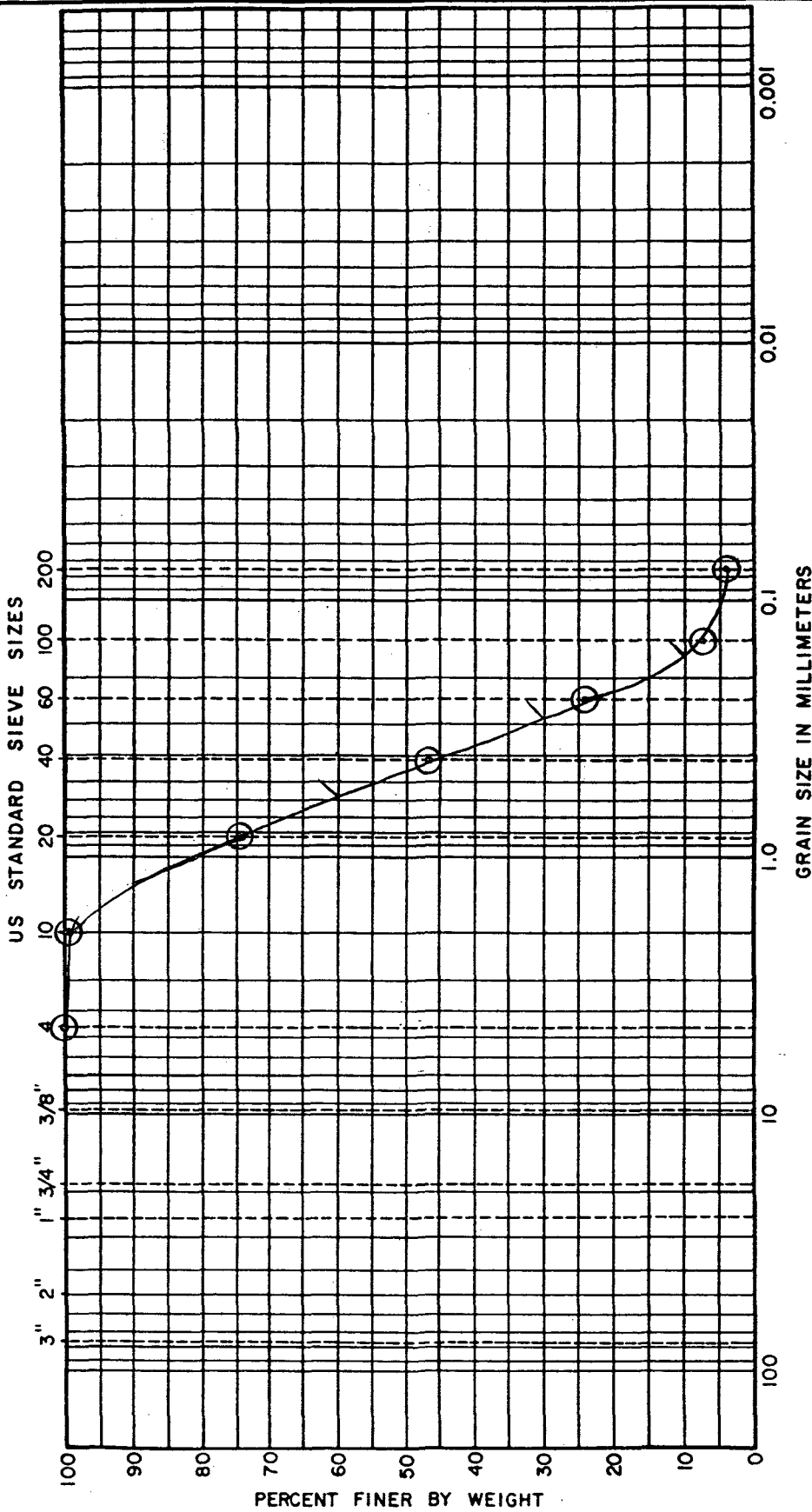
Date 2/17/92
Job No. 923-3350.2

Golder Associates

Drawn TT
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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES		
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES	

BORING NO.	ELEV. OR DEPTH	w_n	w_L	w_p	I_p	DESCRIPTION OR CLASSIFICATION
B29 I, 39440	56'-60'	—	—	—	—	Tan, M-F SAND, trace silt (SP) $D_{60} = .59$ $D_{10} = .17$ $D_{30} = .29$ $D_{60}/D_{10} = 3.47$ SP

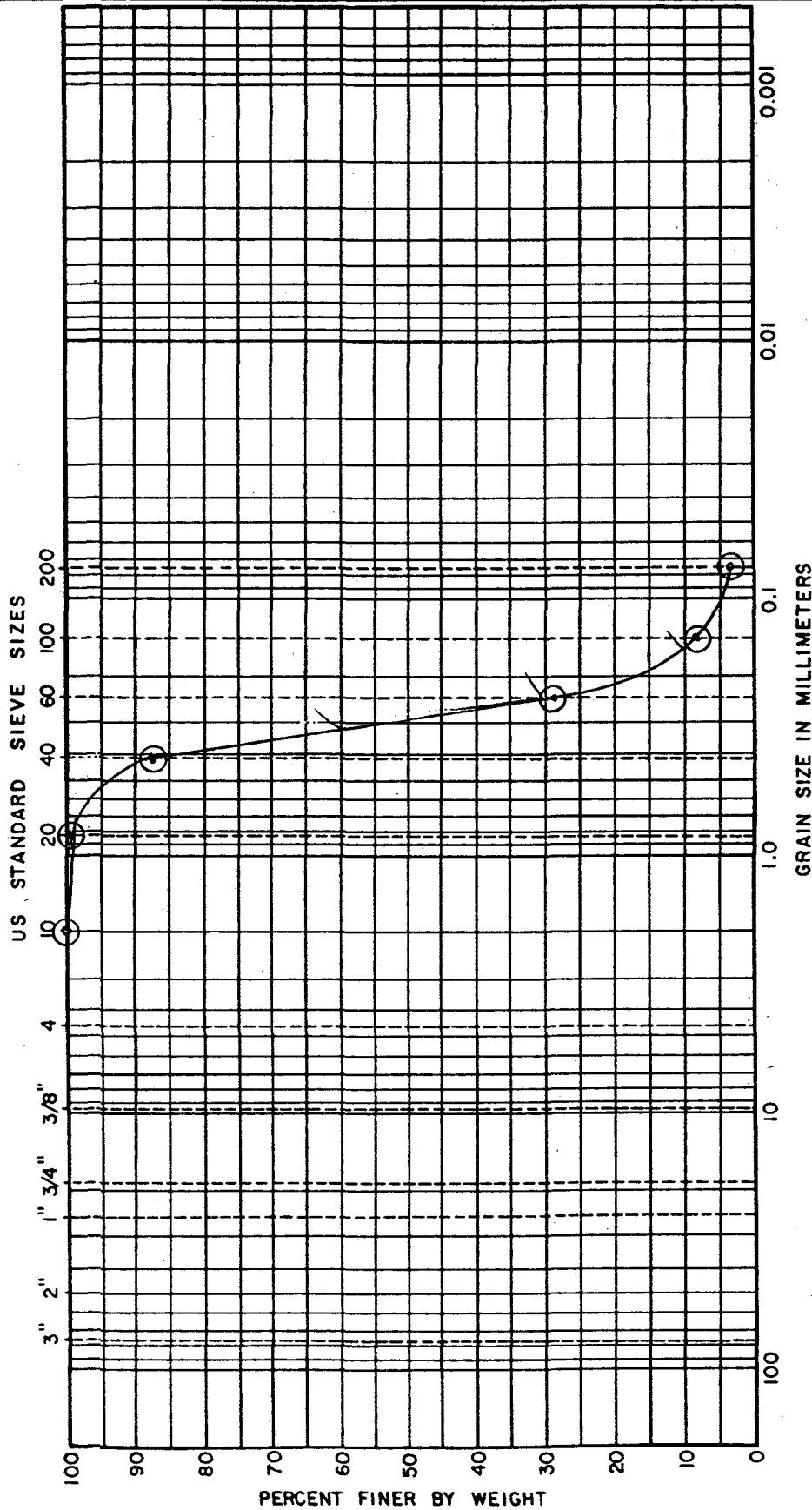
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn TT
 Checked M
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GRAIN SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	GRAVEL			SAND			FINES			DESCRIPTION OR CLASSIFICATION
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES			
B29S 2 → 11	1.5 - 16.5'	-	-	-	-	-	-	-	-	-	Brown, M-F SAND, trace silt (SP) $D_{60} = .37$ $D_{30} = .25$ $D_{10} = .17$ $D_{60}/D_{10} = 1.88$

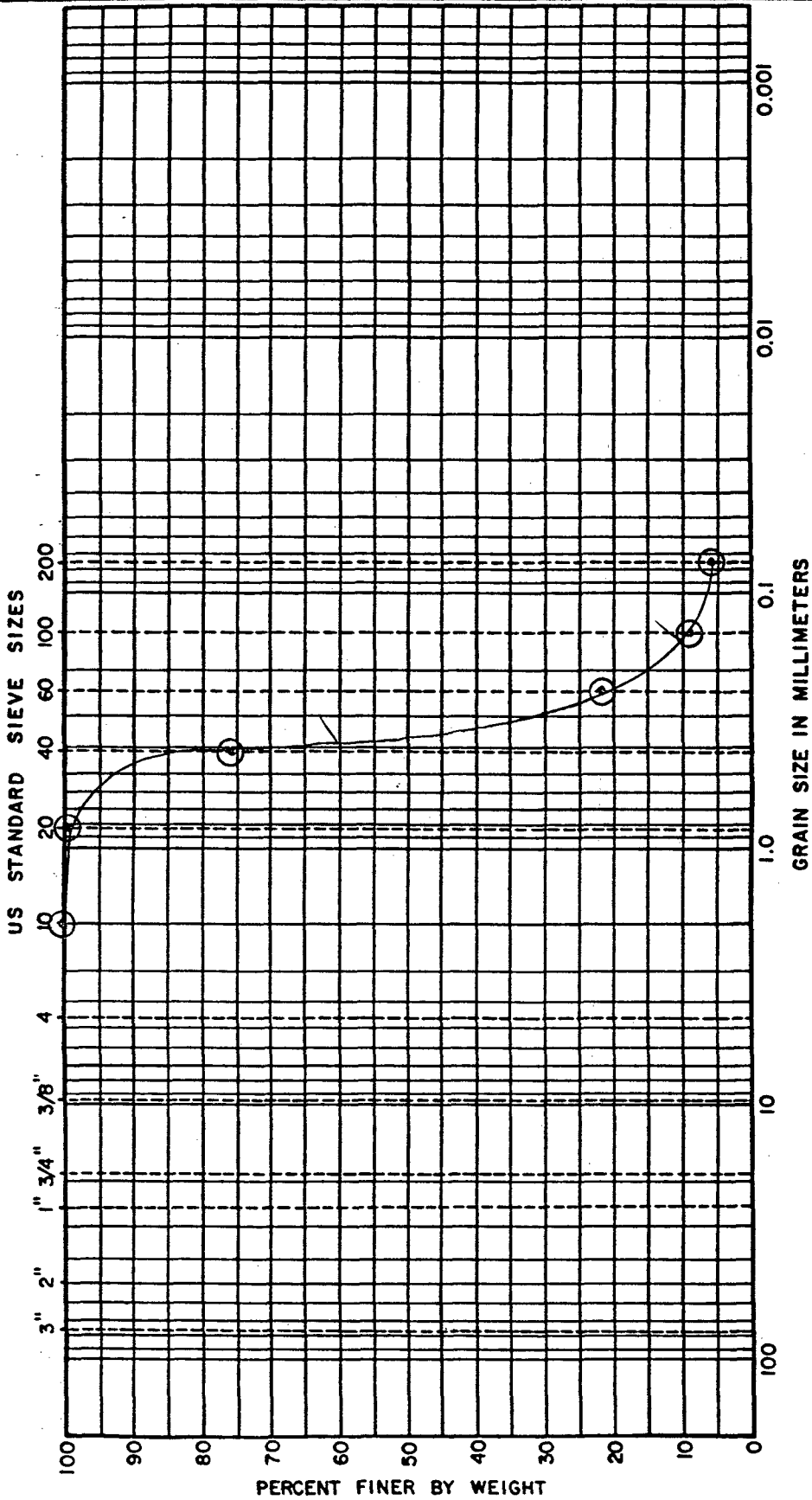
Date 2/17/92
 Job No. 923-3350.2

Golder Associates

Drawn TT
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 Reviewed [Signature]

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B245 SA 1-6	0'-9'	-	-	-	-	Dark Brown, M-F SAND, little silt (SP-SM) D ₆₀ = .39 D ₁₀ = .16 D ₆₀ /D ₁₀ = 2.44 ✓

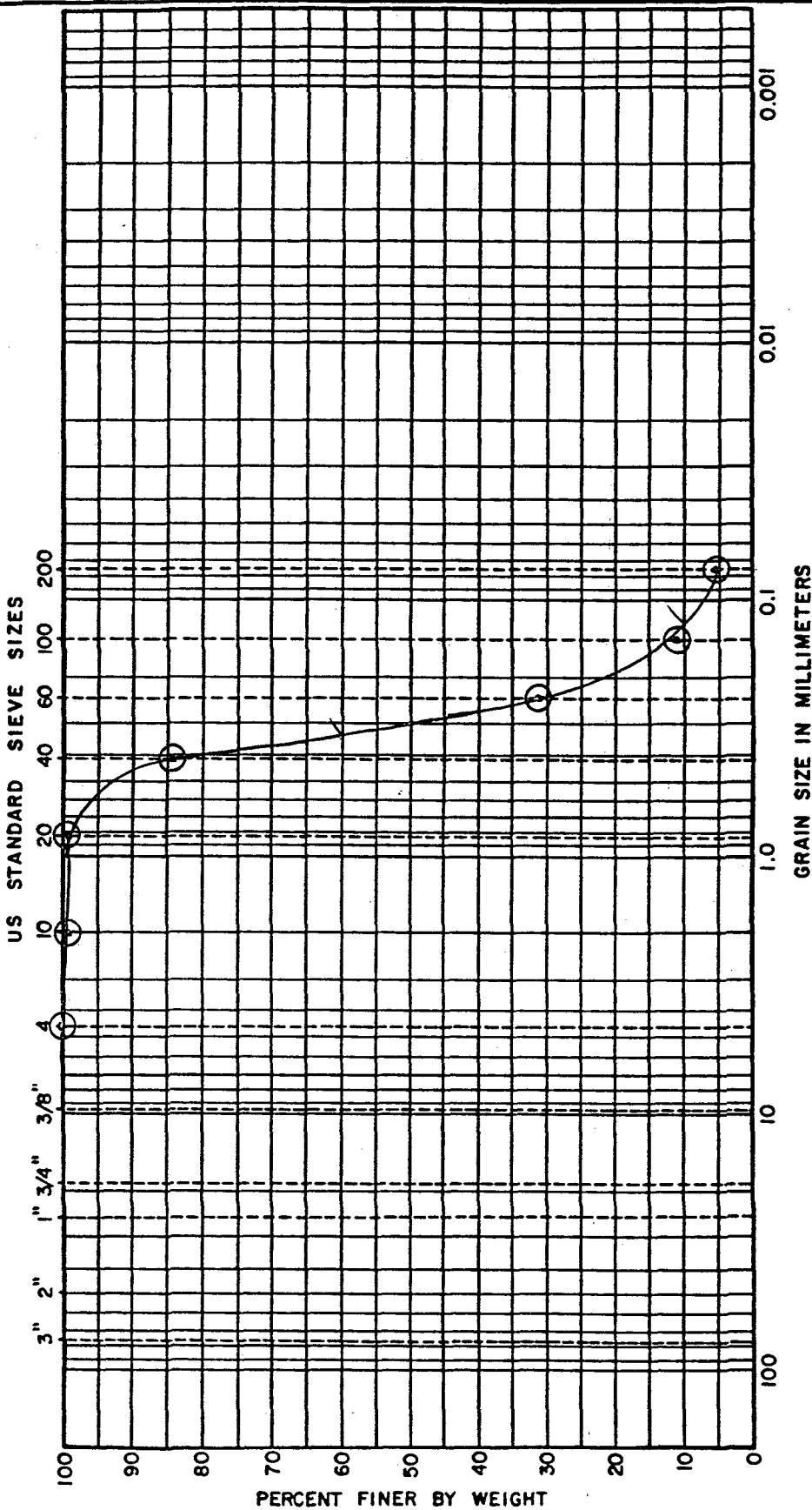
Date 2/27/92
Job No. 923-3350

Golder Associates

Drawn TT
Checked M
Reviewed Bond

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES		DESCRIPTION OR CLASSIFICATION
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES	
BORING NO. B23S 8-10	ELEV. OR DEPTH 10.5-15		W _n	W _L	W _p	I _p	Dark Brown, M-F SAND, little silt (SP-SM) D ₆₀ = .34 ✓ D ₆₀ /D ₁₀ = 2.62 ✓ D ₁₀ = .13 ✓	

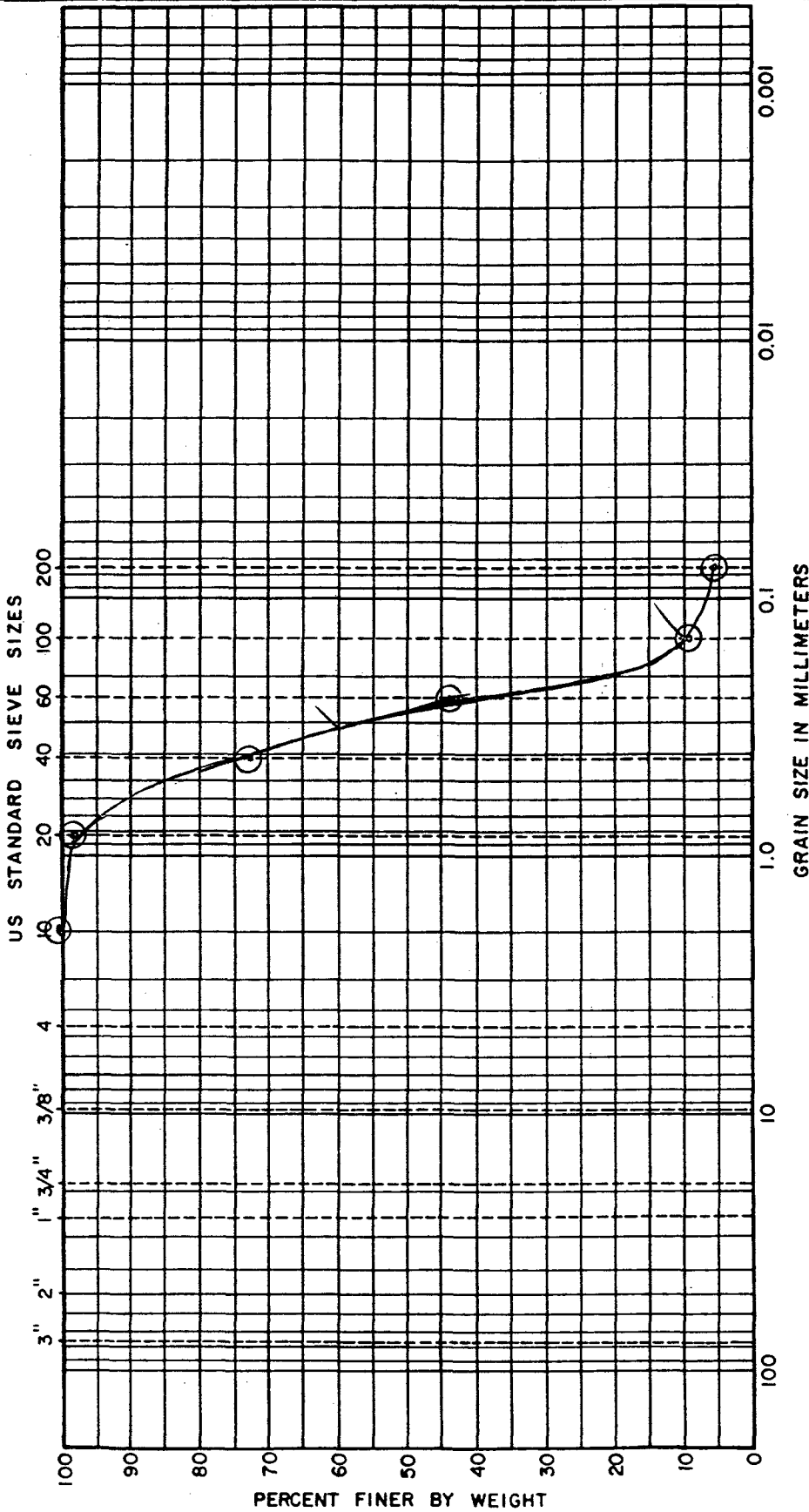
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn TT
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 Reviewed Boyd

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
P29D	103.5-105	-	-	-	-	Grey, M-F SAND, little silt (SP-SM) $D_{60} = .32$ $D_{10} = .15$ $D_{60}/D_{10} = 2.13$ ✓
49						

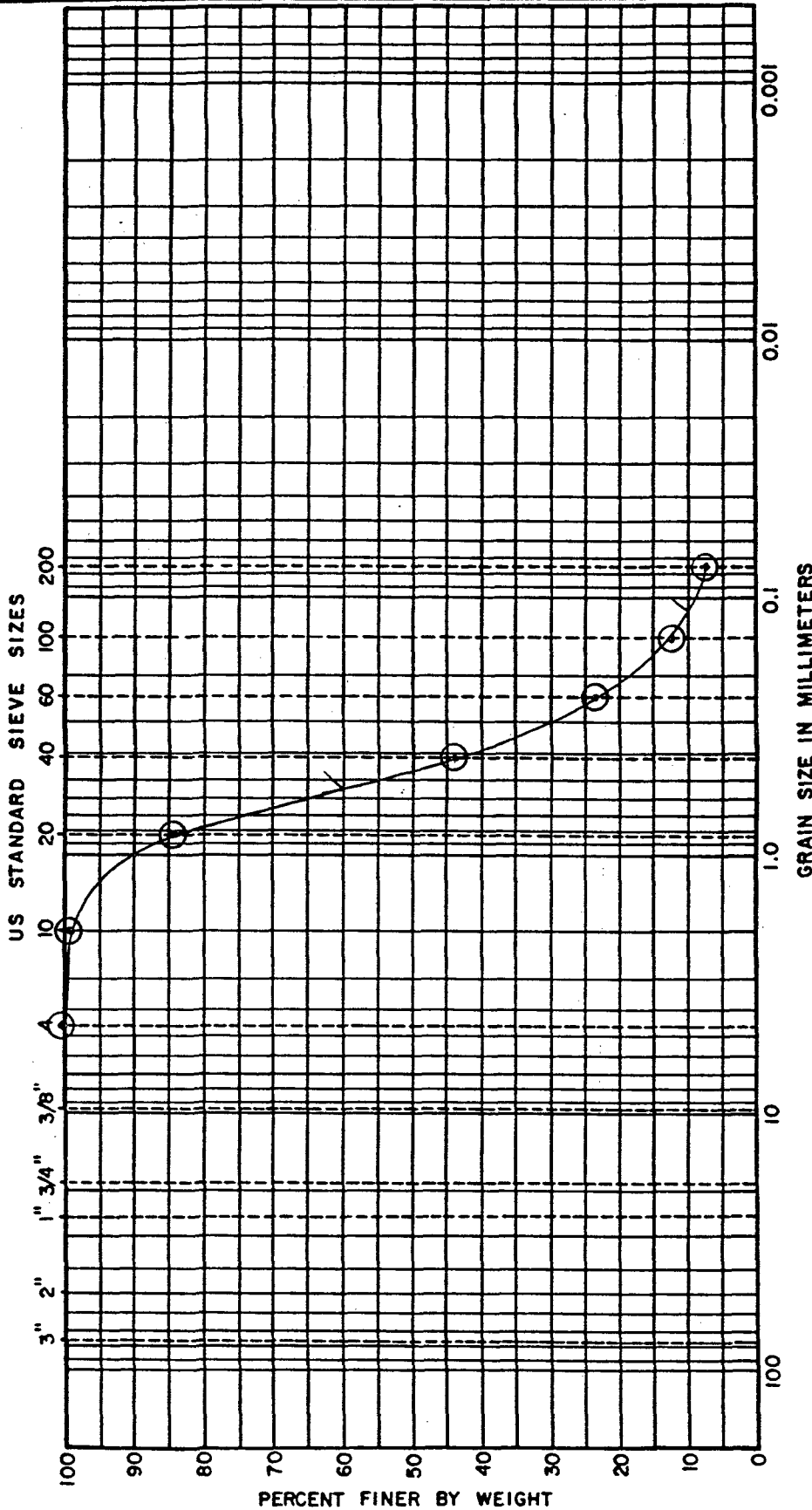
Date 2/27/92
 Job No. 923-3350

Golder Associates

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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES		GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES		

BORING NO.	ELEV OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B14 IR #12	58.5-60	---	---	---	---	Tan, M-F SAND, little silt (SP-SM) D ₆₀ = .55 D ₁₀ = .12 D ₆₀ /D ₁₀ = 4.58 ✓

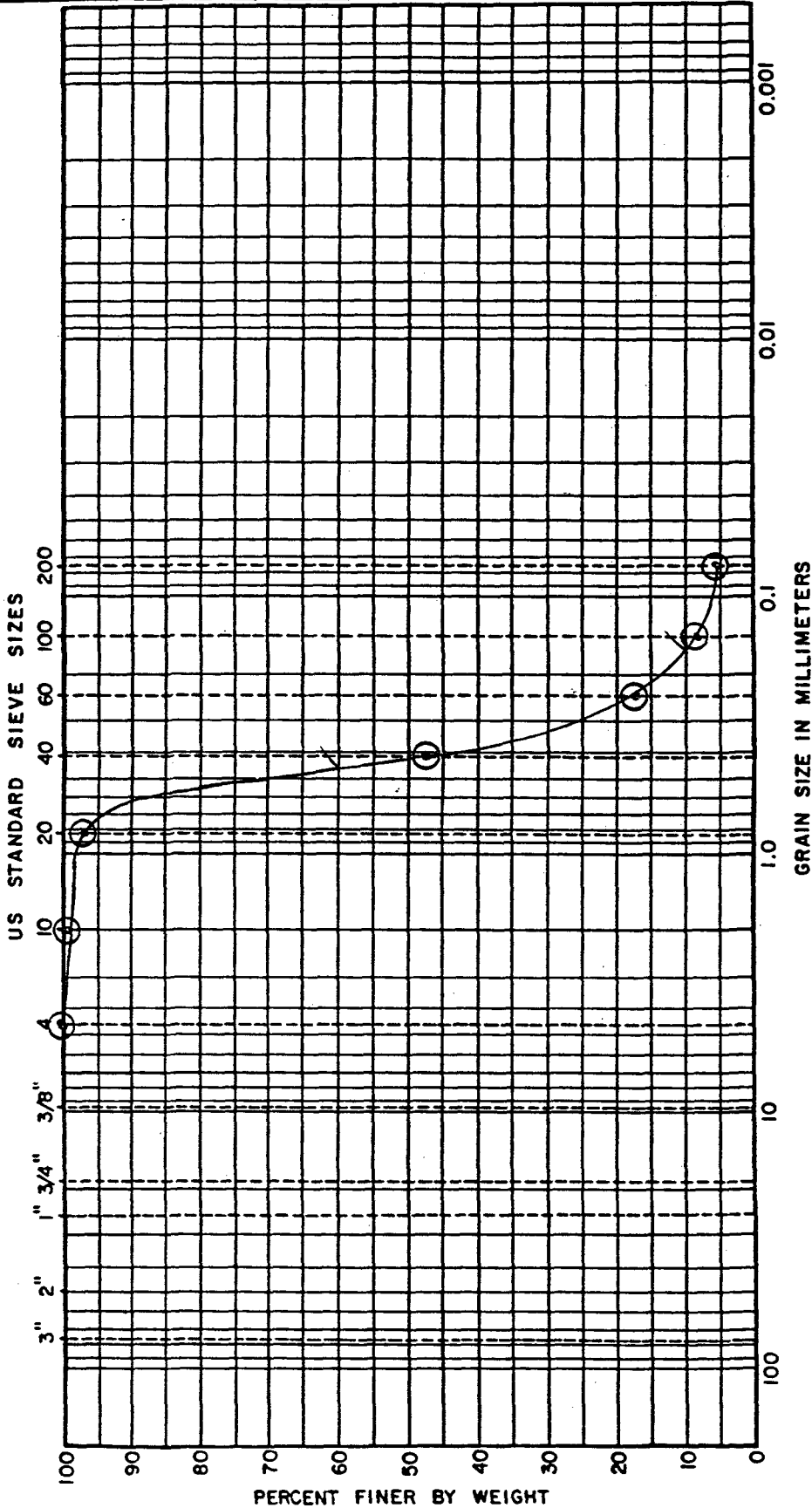
Date 2/27/92
Job No. 923-3350

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GRAI.. SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B27D #49	103.5 - 105	—	—	—	—	Grey, M-F SAND, little silt (SP-SM) D ₆₀ = .47 D ₁₀ = .17 D ₆₀ /D ₁₀ = 2.76

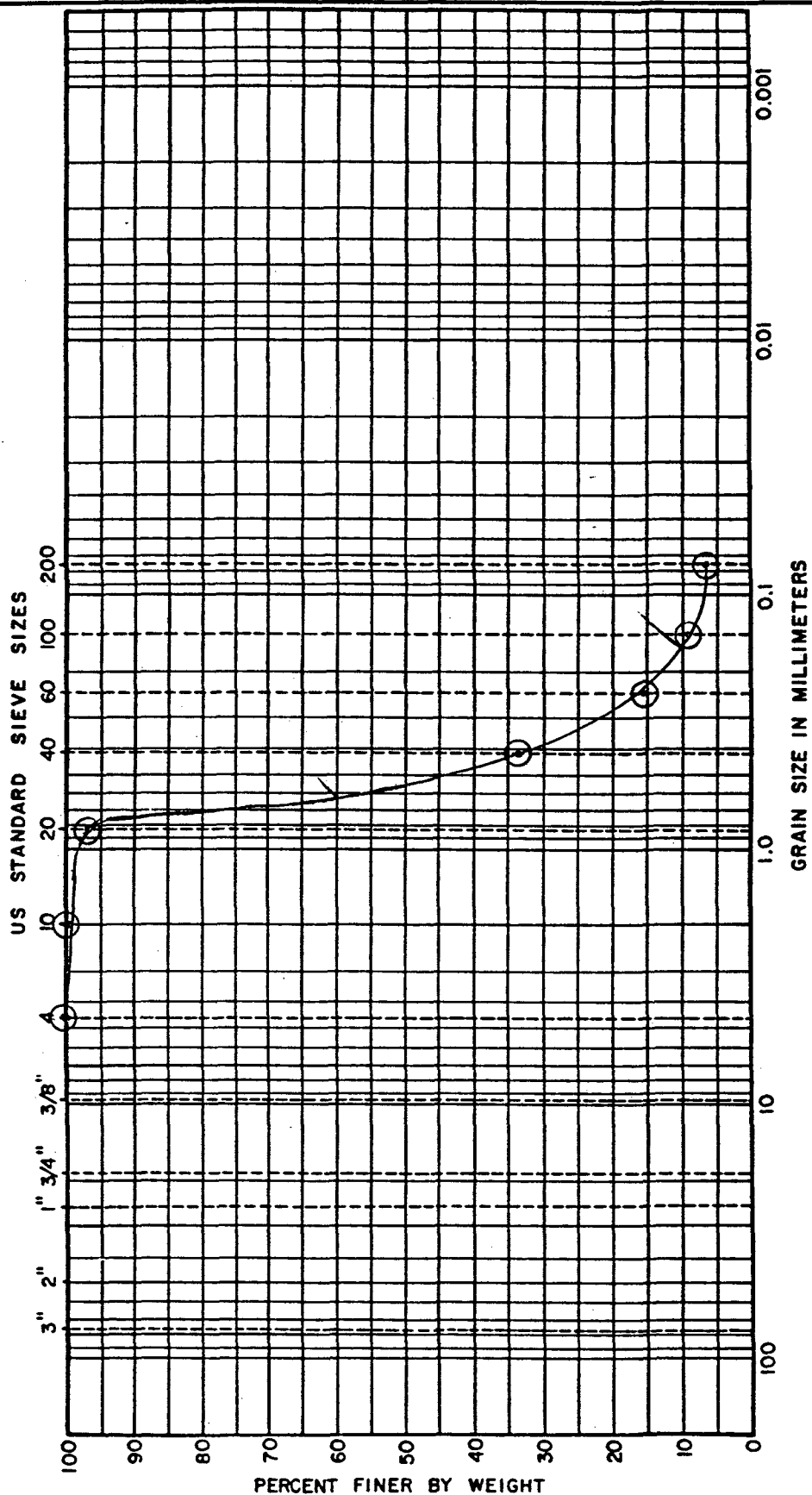
Date 2/27/92
Job No. 923-3350

Golder Associates

Drawn TF
Checked M
Reviewed BoD

GRAI. SIZE DISTRIBUTION

FIGURE



COBBLES		GRAVEL		SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES		

BORING NO.	ELEV. OR DEPTH	w _n	w _L	w _p	I _p	DESCRIPTION OR CLASSIFICATION
B14DK #21	103.5-105	—	—	—	—	Grey, M-F SAND, little silt (SP-SM) D ₆₀ = .63 D ₁₀ = .17 D ₆₀ /D ₁₀ = 3.71 ✓

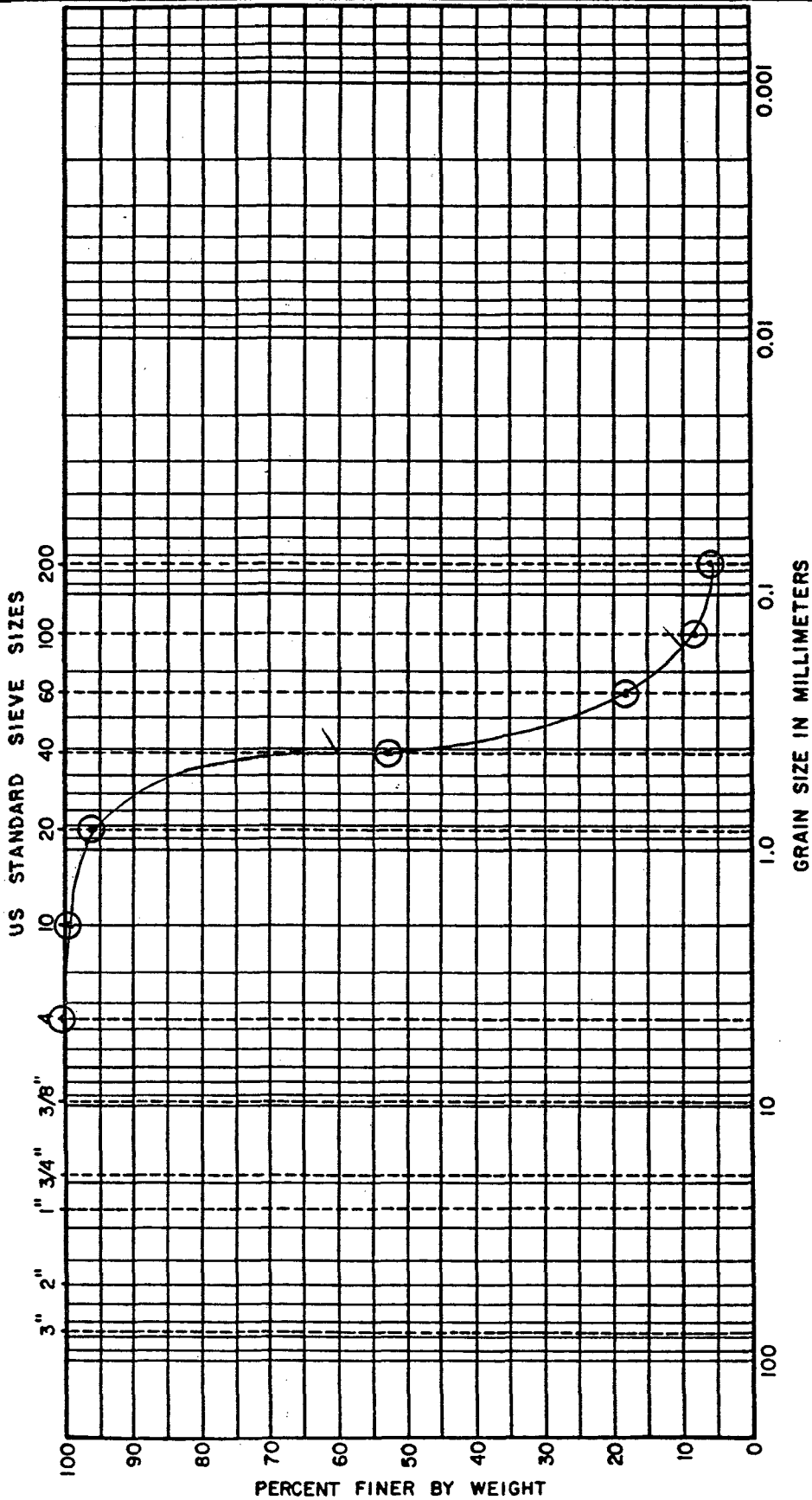
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn TT
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 Reviewed BoD

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B25D #49	103.5-105	—	—	—	—	Grey, M-F SAND, little silt (SP-SM) $D_{60} = .42$ $D_{10} = .17$ $D_{60}/D_{10} = 2.47$

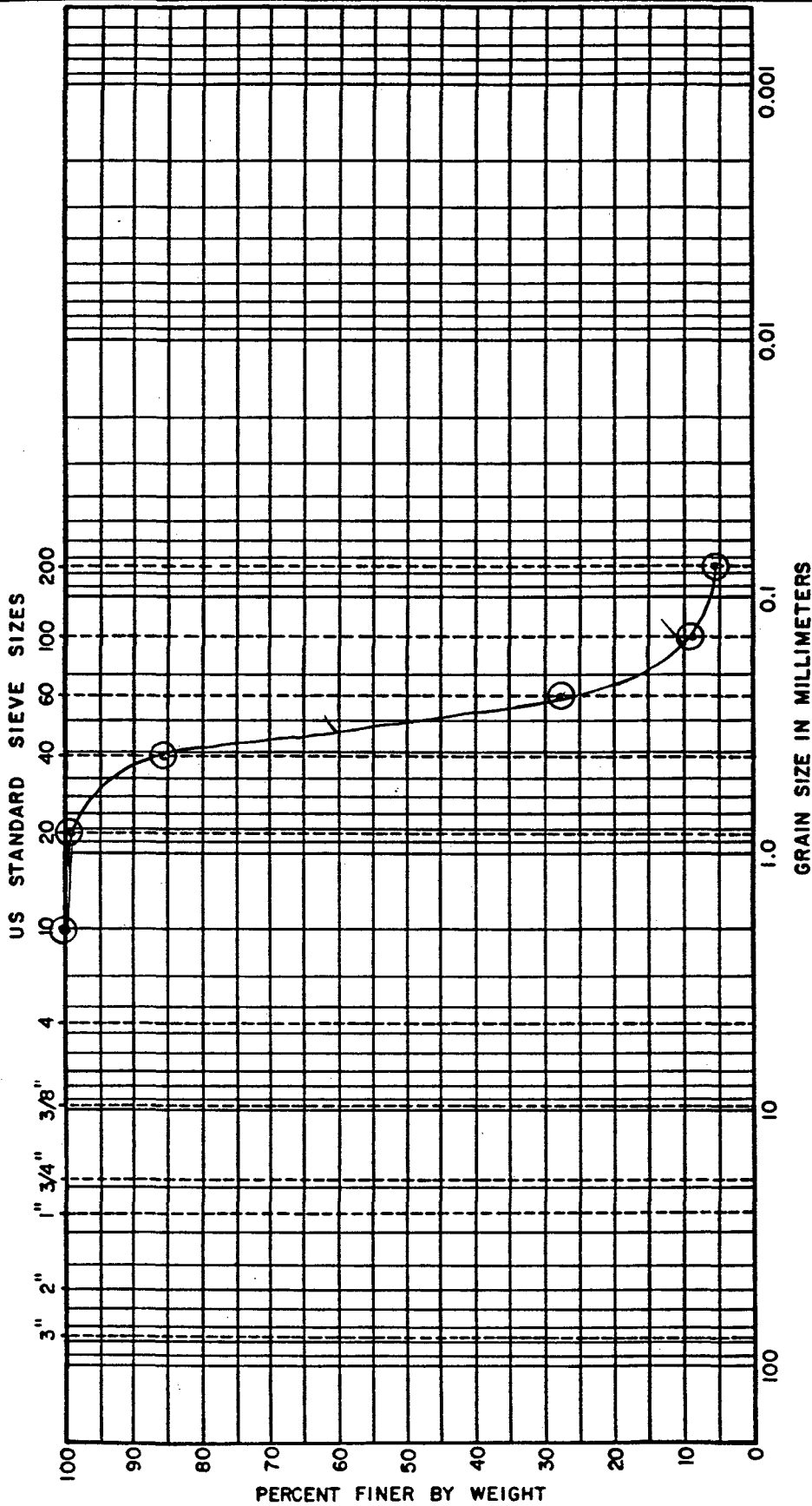
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn TT
 Checked M
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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B265	9-12	-	-	-	-	Dark Brown, M-F SAND, little silt (SP-SM)
7-8						D ₁₀₀ = .34 D ₅₀ /D ₁₀ = 2.13 ✓ D ₁₀ = .16

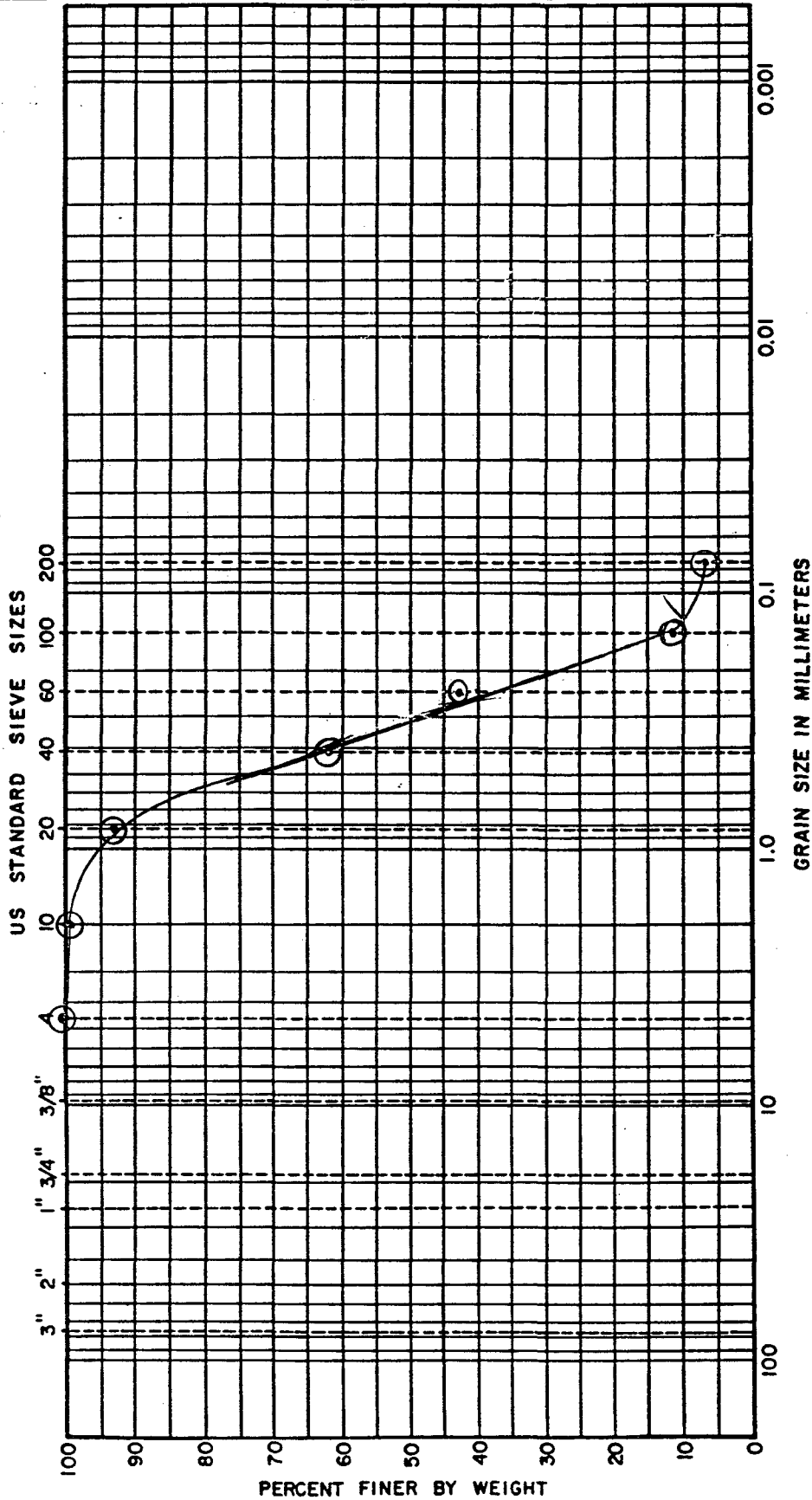
Date 2/27/92
 Job No. 923-3350

Golder Associates

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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
9291 SA 37, 38	54'-57'	-	-	-	-	Tan, M-F SAND, little silt (SP-SM) D ₆₀ = .39 D ₁₀₀ /D ₁₀ = 3 D ₁₀ = .13

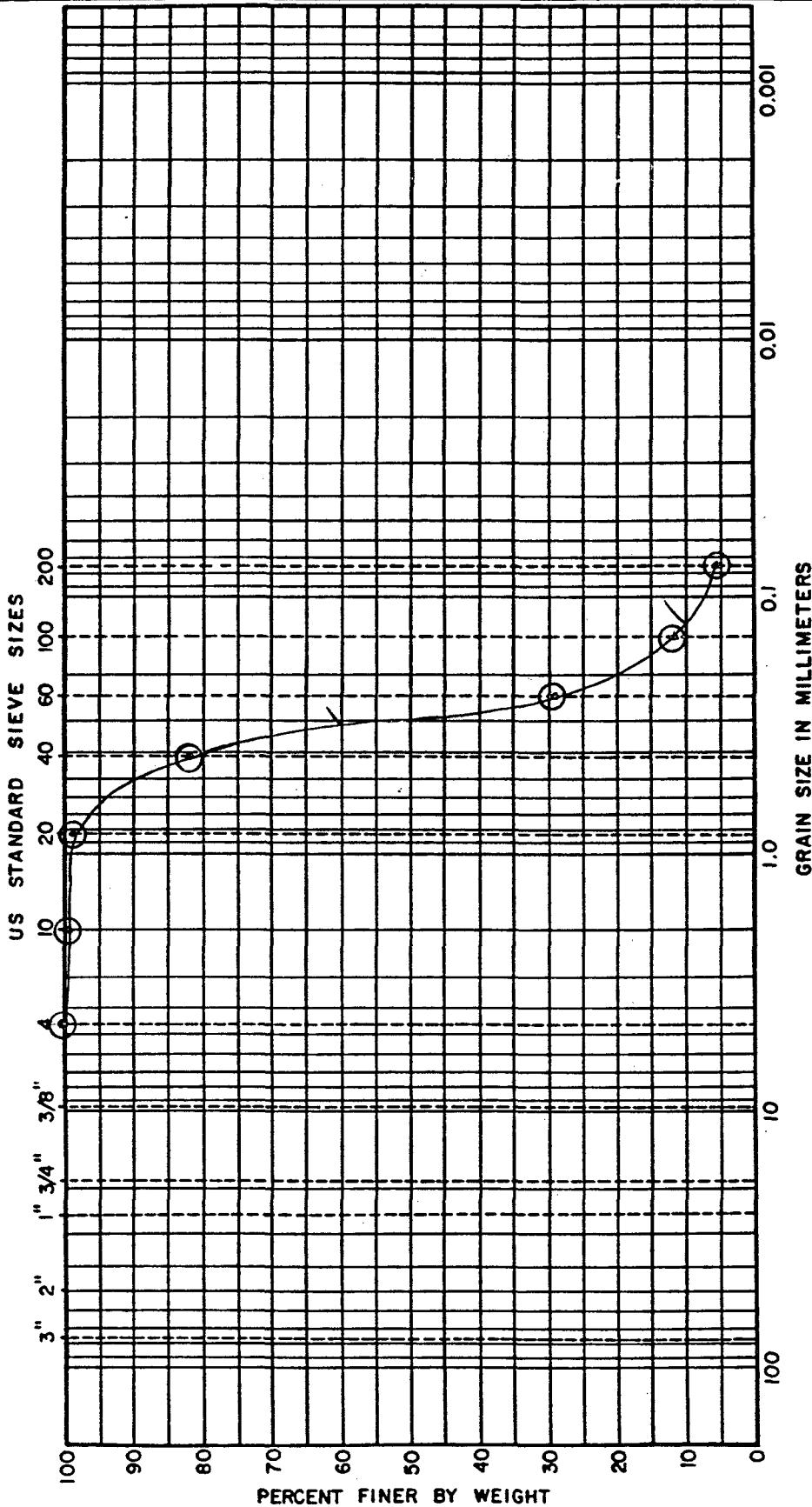
Date 2/27/92
Job No. 923-335

Golder Associates

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Reviewed BO

GRAIL. SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	GRAVEL			SAND			FINES			DESCRIPTION OR CLASSIFICATION
		COARSE	FINE	COARSE	MEDIUM	Wp	Ip	COARSE	SILT SIZES	CLAY SIZES	
B245 8-11	10.5'-16.5	-	-	-	-	-	-	-	-	-	Dark Brown, M-F SAND, little silt (SP-SM) $D_{60} = 0.32$ $D_{10} = .13$

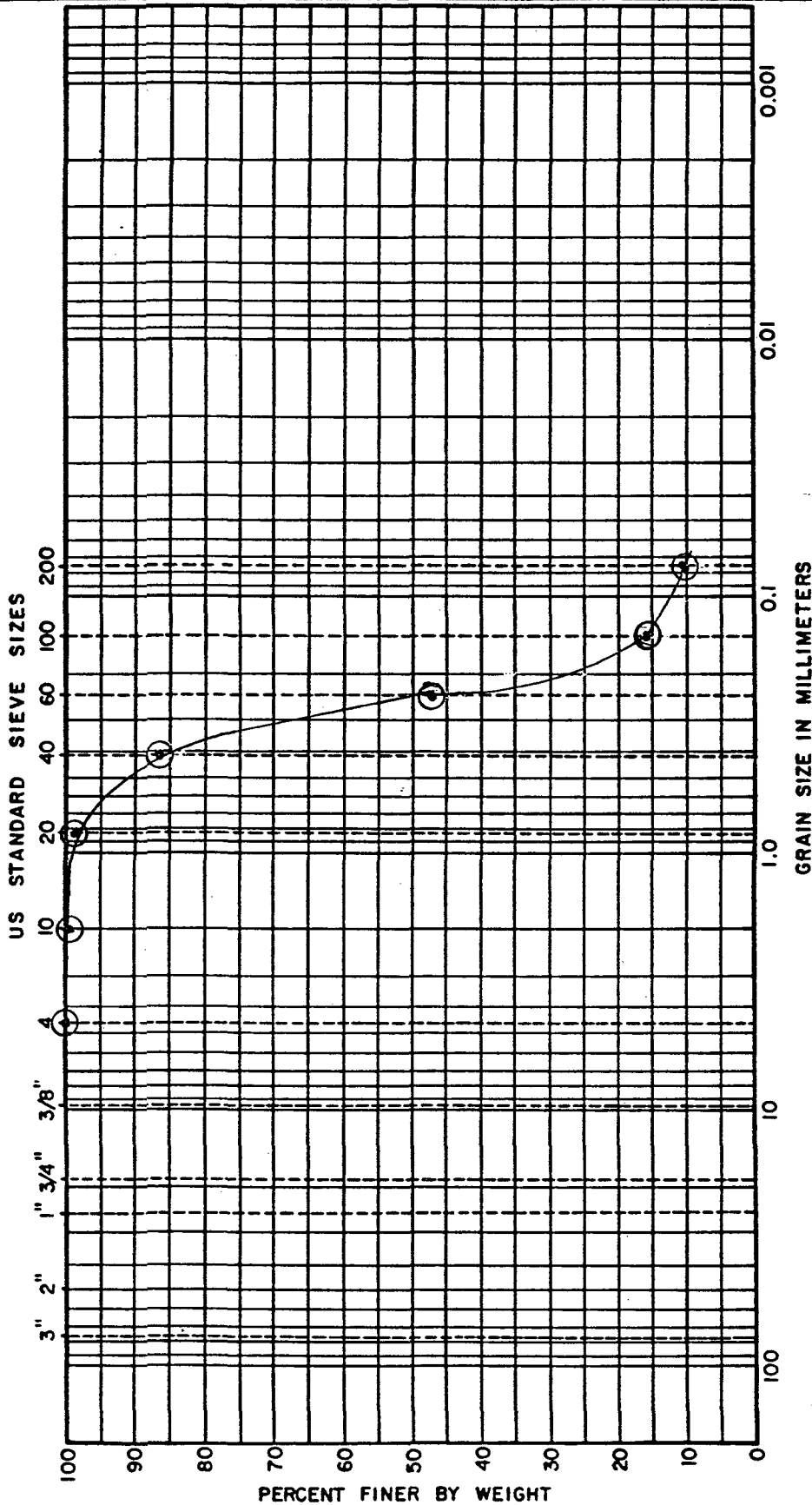
Date 2/27/92
Job No. 923-3350

Golder Associates

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GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES		GRAVEL			SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B235 14-17	19.5-2.5	—	—	—	—	Brown, M-F SAND, little silt (SP-SM) $D_{60} = .28$ $D_{10} = .075$ $D_{60}/D_{10} = 3.86$ ✓ 3.73

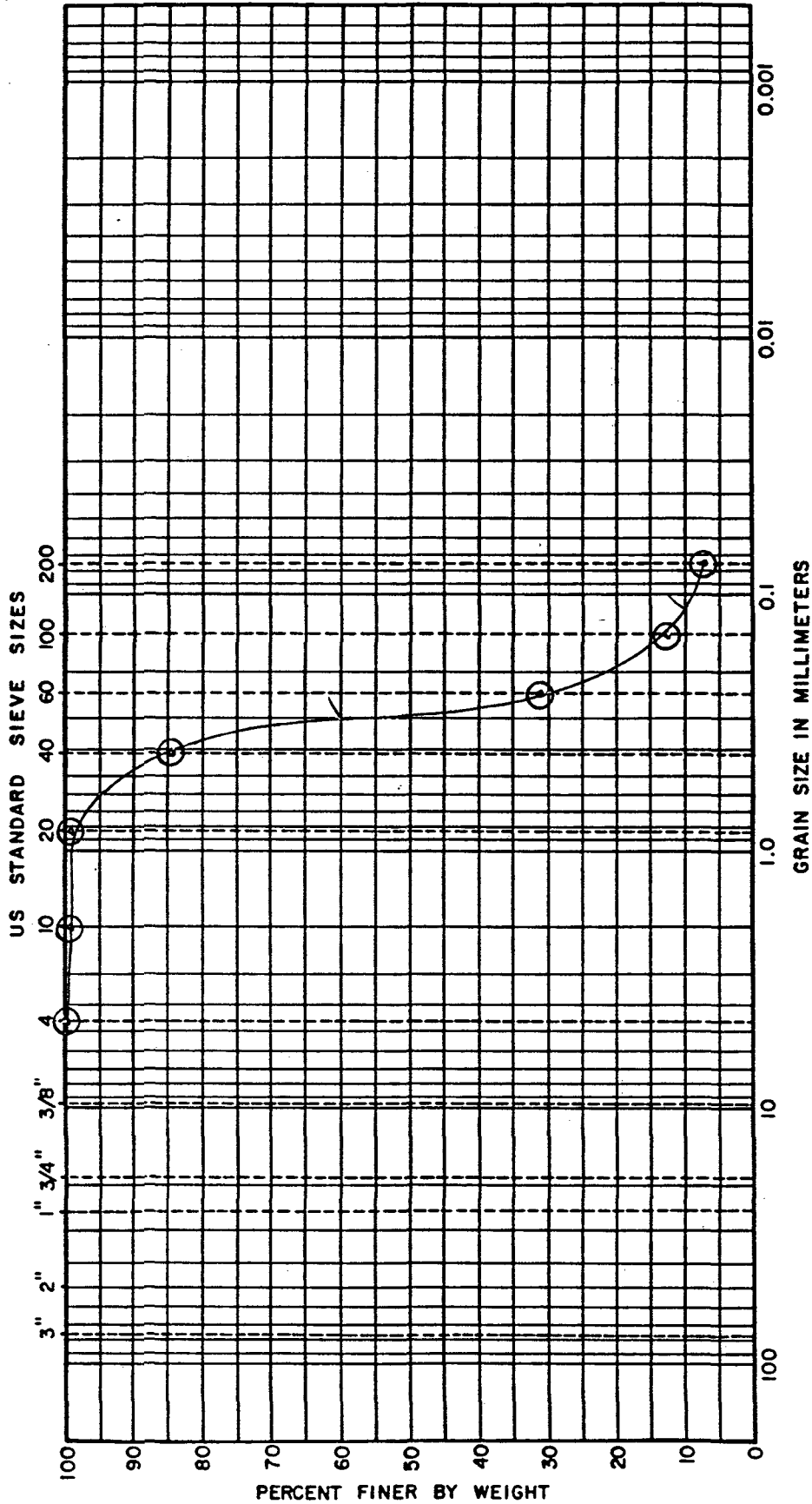
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn TT
 Checked M
 Reviewed BOP

GRAI. SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B26S	0-9	-	-	-	-	Dark Brown, M-F SAND, little silt (SP-SM)
1-6						$D_{60} = .30$ $D_{10} = .12$ $D_{60}/D_{10} = 2.5$ ✓

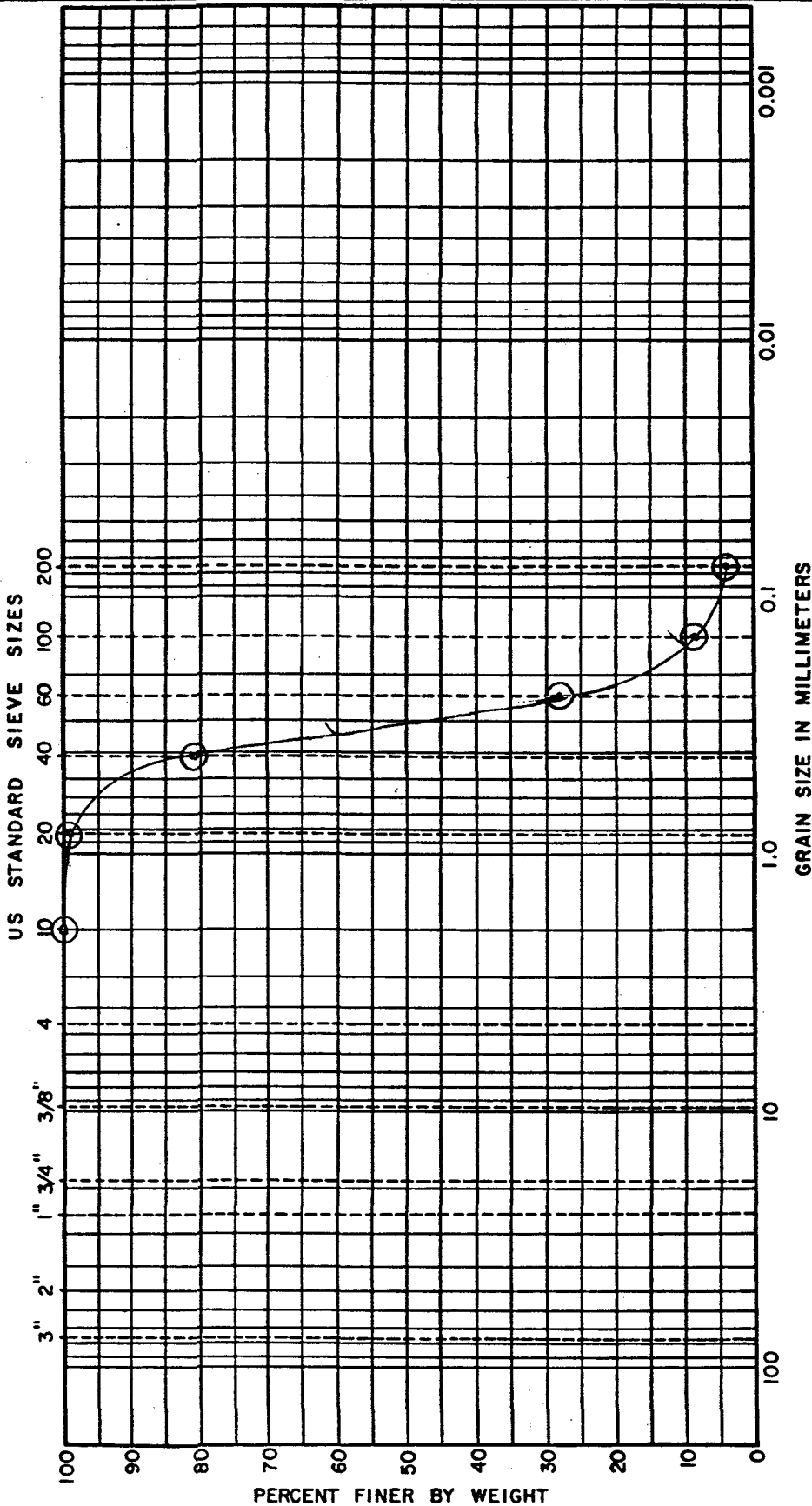
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn T
 Checked M
 Reviewed BoD

GRAI. SIZE DISTRIBUTION

FIGURE



BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	SAND			FINES		DESCRIPTION OR CLASSIFICATION	
						COARSE	FINE	COARSE	MEDIUM	FINE		SILT SIZES
B14 SR SA1-3	3.5-15	-	-	-	-							Grey, M-F SAND, trace silt (SP) $D_{60} = 0.35$ $D_{10} = 0.16$ $D_{60}/D_{10} = 2.19$

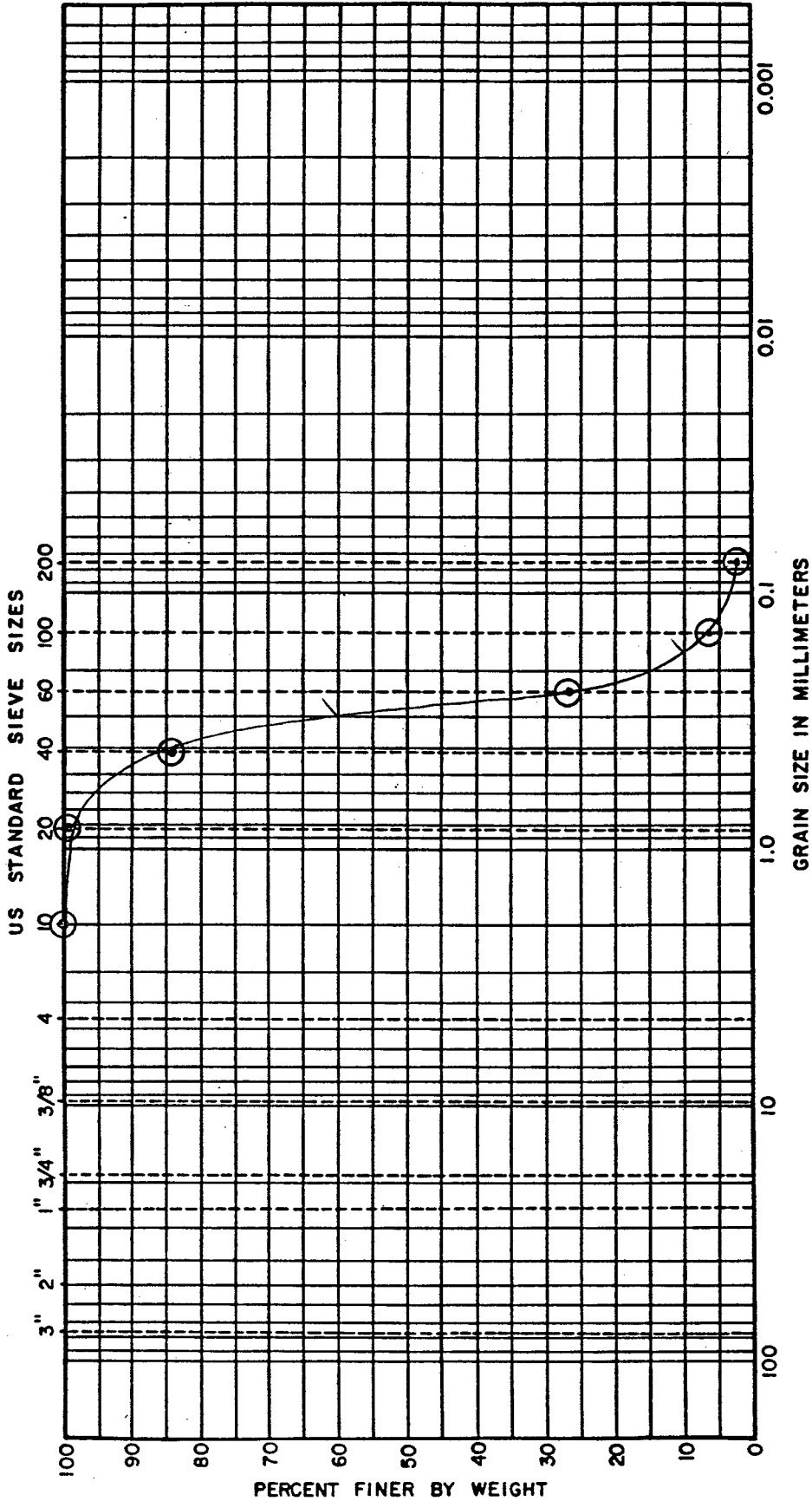
Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn TT
 Checked M
 Reviewed BOND

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES	GRAVEL		SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B265 #9	12-13.5	-	-	-	-	Dark Brown, M-F SAND, trace silt (SP) $D_{60} = .03$ $D_{10} = .175$ $D_{60}/D_{10} = 1.71$

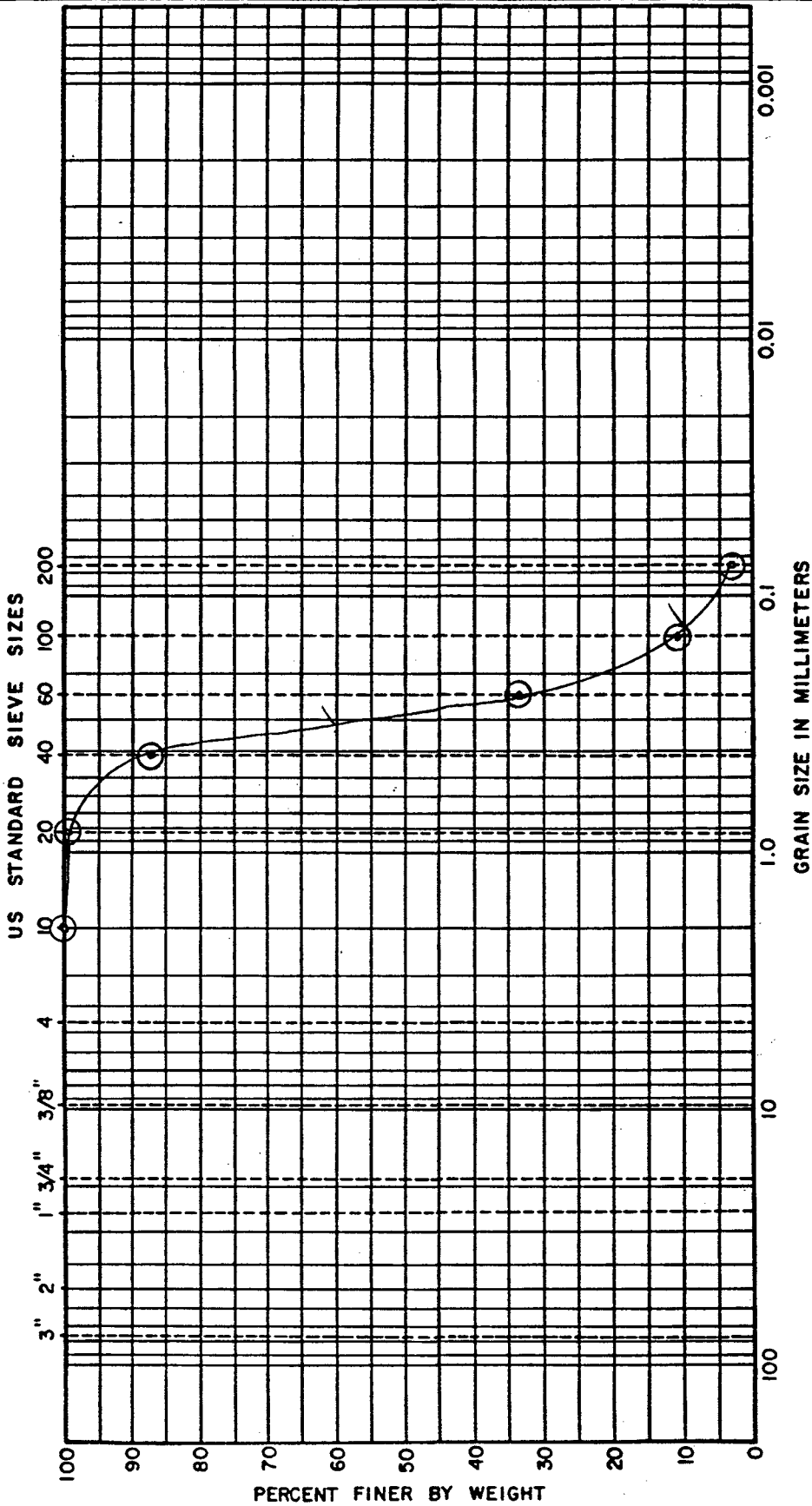
Date 2/27/42
 Job No. 923-3350

Golder Associates

Drawn TT
 Checked M
 Reviewed BoD

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES		GRAVEL			SAND			FINES	
COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES			

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B245 #7	9-10.5	—	—	—	—	Dark Brown, M-F SAND, trace silt (SP) D ₆₀ = .31 ✓ D ₁₀ = .14 ✓ D ₆₀ /D ₁₀ = 2.21 ✓

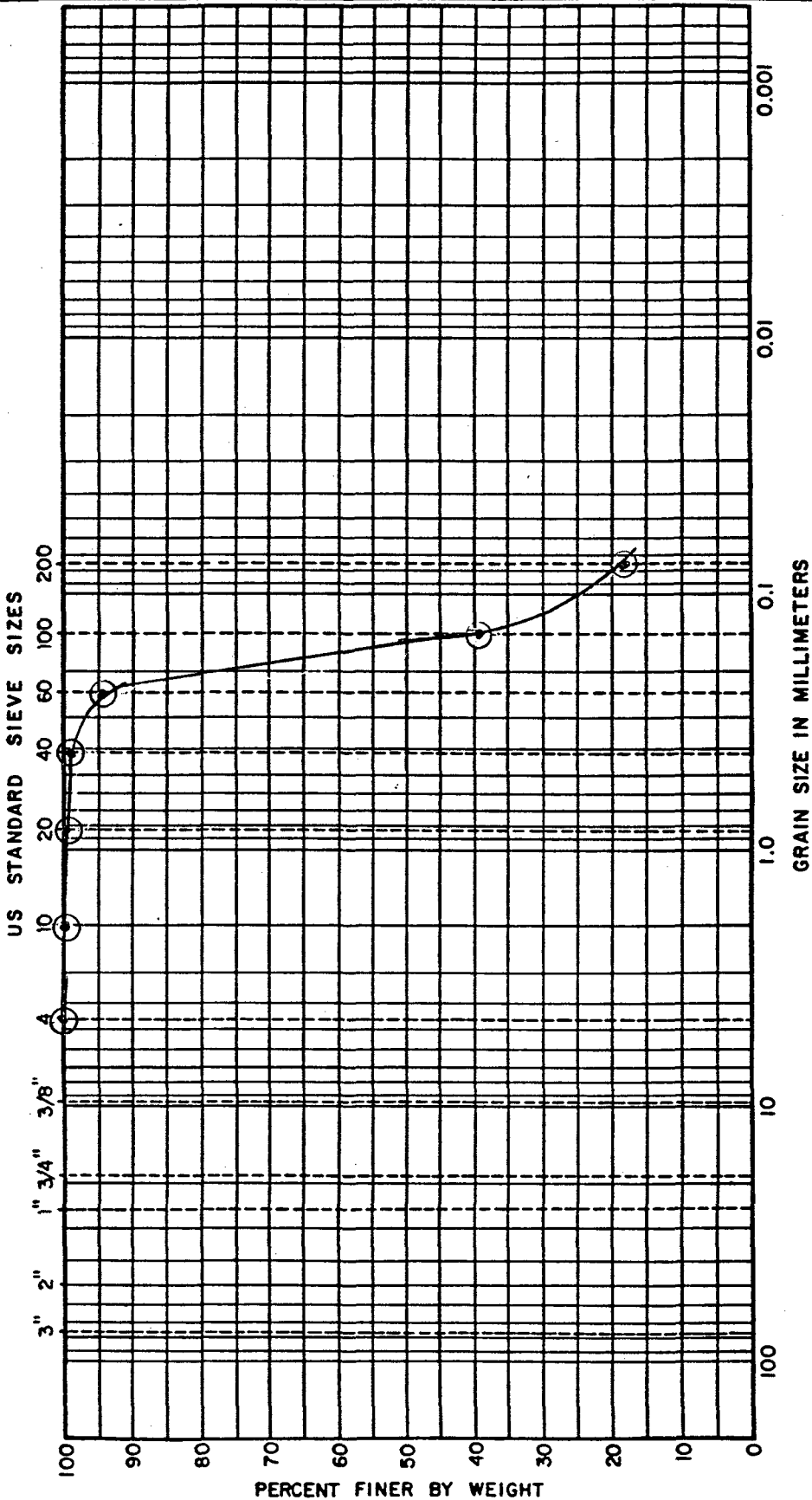
Date 2/27/92
Job No. 923-3350

Golder Associates

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Checked M
Reviewed Boat

GRAIN SIZE DISTRIBUTION

FIGURE



COBBLES		GRAVEL			SAND			FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	COARSE	SILT SIZES	CLAY SIZES	

BORING NO.	ELEV. OR DEPTH	W _n	W _L	W _p	I _p	DESCRIPTION OR CLASSIFICATION
B235 11-13	15-19.5	-	-	-	-	Dark Brown, fine sand, some silt (SM)

Date 2/27/92
 Job No. 923-3350

Golder Associates

Drawn π
 Checked M
 Reviewed BSP

APPENDIX D

WELL DEVELOPMENT FORMS

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-2S-R
DEVELOPED BY CAW **DATE OF INSTALLATION** _____ **SHEET** 1 OF 1
STARTED DEVEL. 01-16-92 / 0905 **COMPLETED DEVEL.** 01-16-92 / 1115
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 5.93' / 01-15-92 / 1430 **AFTER DEVEL** 5.24' / 01-16-92 / 1115
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 20.3' **AFTER DEVEL** 20.3' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.36 **STANDING WELL VOLUME** 15.1 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-16-92/0950	100	39	14.8	5.14		MOD. TURBID
01-16-92/1000	125	41	19.9	4.81		"
01-16-92/1010	150	30	19.4	4.74		"
01-16-92/1020	175	41	19.4	4.76		"
01-16-92/1030	200	40	19.2	4.80		"
01-16-92/1040	225	40	19.3	4.74		"
	225	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME	<u>WMNA/TR-WELLS/FLA</u>	JOB NO.	<u>923-3350</u>	WELL NO.	<u>B-3S-R</u>
DEVELOPED BY	<u>CAW</u>	DATE OF INSTALLATION		SHEET	<u>1 OF 1</u>
STARTED DEVEL.	<u>01-16-92 / 1430</u>	COMPLETED DEVEL.	<u>01-17-92 / 1045</u>		
	DATE TIME		DATE TIME		
W.L. BEFORE DEVEL.	<u>5.25' / 01-16-92 / 1135</u>	AFTER DEVEL	<u>5.36' / 01-17-92 / 1045</u>		
	DEPTH / DATE / TIME		DEPTH / DATE / TIME		
WELL DEPTH: BEFORE DEVEL.	<u>20.1'</u>	AFTER DEVEL	<u>20.1'</u>	WELL DIA	<u>2"</u> in.
STANDING WATER COLUMN (FT.)	<u>11.96</u>	STANDING WELL VOLUME	<u>14.6</u>		gal.
SCREEN LENGTH	<u>15'</u>	DRILLING WATER LOSS	<u>N/A</u>		gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-17-92/0930	100	30	21.3	5.96		SLIGHTLY TURBID
01-17-92/0950	125	28	21.4	5.57		"
01-17-92/1010	150	25	21.5	5.55		"
01-17-92/1030	175	23	21.3	5.56		"
	175	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-7S-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 01.30-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-31-92 / 0955 **COMPLETED DEVEL.** 01-31-92 / 1200
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.76' / 01-31-92 / 0955 **AFTER DEVEL** 4.04' / 01-31-92 / 1200
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 20.14' **AFTER DEVEL** 20.14' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.63 **STANDING WELL VOLUME** 15.5 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-31-92/1130	650	55	19.1	4.80		MOD. TURBID
01-31-92/1133	680	52	19.0	4.60		SLIGHTLY TURBID
01-31-92/1136	710	55	19.2	4.58		"
01-31-92/1139	740	55	19.0	4.59		"
	740	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA JOB NO. 923-3350 WELL NO. B-11S-R
 DEVELOPED BY CAW DATE OF INSTALLATION 02-12-92 SHEET 1 OF 1
 STARTED DEVEL. 02-12-92 / 1230 COMPLETED DEVEL. 02-12-92 / 1402
DATE TIME
 W.L. BEFORE DEVEL. 9.81' / 02-12-92 / 1230 AFTER DEVEL. 10.27' / 02-12-92 / 1402
DEPTH / DATE / TIME
 WELL DEPTH: BEFORE DEVEL. 20.08' AFTER DEVEL. 20.08' WELL DIA. 2" in.
 STANDING WATER COLUMN (FT.) 7.48 STANDING WELL VOLUME 9.2 gal.
 SCREEN LENGTH 15' DRILLING WATER LOSS N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-12-92/1330	500	30	21.3	4.44		SLIGHTLY TURBID
02-12-92/1335	550	30	21.4	4.45		"
02-12-92/1340	600	30	21.8	4.46		"
02-12-92/1350	700	30	21.8	4.46		"
	700	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-12S-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-30-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-31-92 / 1245 **COMPLETED DEVEL.** 01-31-92 / 1515
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 7.00' / 01-31-92 / 1215 **AFTER DEVEL** 9.92' / 01-31-92 / 1515
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 27.15' **AFTER DEVEL** 27.15' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 14.82 **STANDING WELL VOLUME** 18.1 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-31-92/1410	270	65	24.6	4.64		MOD. TURBID
01-31-92/1420	300	60	24.1	4.76		"
01-31-92/1430	330	60	24.1	4.71		"
01-31-92/1440	360	60	24.3	4.69		"
	360	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-13S-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-20-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-22-92 / 1105 **COMPLETED DEVEL.** 01-22-92 / 1345
DATE TIME DATE TIME
W.L. BEFORE DEVEL. / / **AFTER DEVEL** 6.88' / 01-22-92 / 1345
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 27.19' **AFTER DEVEL** 27.19' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 17.71 **STANDING WELL VOLUME** 21.7 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-22-92/1310	500	39	22.8	5.50		MOD. TURBID
01-22-92/1315	520	35	22.4	5.49		"
01-22-92/1320	540	35	23.4	5.57		"
01-22-92/1325	560	35	23.2	5.52		"
	560	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-131-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-17-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-21-92 / 1540 **COMPLETED DEVEL.** 01-27-92 / 1500
DATE TIME DATE TIME
W.L. BEFORE DEVEL. / / **AFTER DEVEL** 9.68' / 01-27-92 / 1500
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 58.53' **AFTER DEVEL** 58.53' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 46.39 **STANDING WELL VOLUME** 56.8 gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-21-92/1650	200	49	22.2	5.26		TURBID
01-21-92/1700	225	40	22.0	5.18		"
01-21-92/1710	250	40	22.0	5.23		"
01-21-92/1720	275	40	21.8	5.29		"
01-22-92/1000	600	29	21.5	5.26		"
01-22-92/1010	625	29	21.7	5.25		"
01-22-92/1020	650	30	21.9	5.21		"
01-22-92/1030	675	29	22.4	5.23		"
01-27-92/1350	1005	45	22.7	5.19		"
01-27-92/1400	1035	41	22.7	5.06		"
01-27-92/1410	1065	40	23.2	5.01		"
01-27-92/1420	1095	39	22.6	5.04		"
	1095	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-14S-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 02-11-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-11-92 / 1600 **COMPLETED DEVEL.** 02-12-92 / 1000
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.67' / 02-11-92 / 1600 **AFTER DEVEL** 3.69' / 02-12-92 / 1000
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 18.93' **AFTER DEVEL** 18.93' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.74 **STANDING WELL VOLUME** 15.6 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-12-92/0900	1200	-	17.6	4.29		MOD. TURBID
02-12-92/0910	1300	50	17.6	4.29		"
02-12-92/0920	1400	65	18.2	4.31		SLIGHTLY TURBID
02-12-92/0930	1500	50	18.3	4.31		"
02-12-92/0940	1600	50	18.2	4.30		"
02-12-92/0950	1650	50	18.3	4.31		"
	1650	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-14D-R
DEVELOPED BY CAW **DATE OF INSTALLATION** 02-10-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-11-92 / 1320 **COMPLETED DEVEL.** 02-11-92 / 1430
DATE TIME DATE TIME
W.L. BEFORE DEVEL. / / **AFTER DEVEL** 8.44' / 02-11-92 / 1540
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 108.03' **AFTER DEVEL** 108.03' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) **STANDING WELL VOLUME** gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-11-92/1345	100	168	19.9	6.72		SLIGHTLY TURBID
02-11-92/1352	125	150	20.2	6.65		"
02-11-92/1356	135	142	20.3	6.63		"
02-11-92/1401	150	159	20.0	6.70		"
02-11-92/1408	175	145	20.1	6.75		"
02-11-92/1416	200	150	20.3	6.75		"
02-11-92/1422	225	141	20.2	6.76		"
	225	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-17S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-17-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-17-92 / 1145 **COMPLETED DEVEL.** 01-17-92 / 1345
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.60' / 01-17-92 / 1145 **AFTER DEVEL** 3.93' / 01-17-92 / 1345
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 18.11' **AFTER DEVEL** 18.11' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 11.93 **STANDING WELL VOLUME** 14.6 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-17-92/1245	150	21	21.1	5.91		TURBID
01-17-92/11255	175	20	21.5	5.80		"
01-17-92/1305	200	20	21.7	5.82		"
01-17-92/1315	225	20	21.4	5.16		MOD. TURBID
01-17-92/1325	250	20	21.0	5.28		"
01-17-92/1335	275	22	21.2	5.27		"
01-17-92/1345	300	21	21.2	5.26		"
	300	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-17D
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-15-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-09-92 / 1000 **COMPLETED DEVEL.** 02-09-92 / 1235
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 4.33' / 02-08-92 / 1112 **AFTER DEVEL** 4.62' / 02-10-92 / 1205
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 130.34' **AFTER DEVEL** 130.34' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) _____ **STANDING WELL VOLUME** _____ gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-09-92/1150	100	120	20.2	6.19		SLIGHTLY TURBID
02-09-92/1158	110	125	21.3	6.24		"
02-09-92/1205	130	112	20.4	6.28		"
02-09-92/1222	175	98	20.4	6.30		"
02-09-92/1230	185	100	20.6	6.31		"
02-09-92/1235	195	99	20.1	6.28		"
	195	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-18S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-20-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-20-92 / 1320 **COMPLETED DEVEL.** 01-27-92 / 1130
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.14' / 01-20-92 / 1320 **AFTER DEVEL** 3.42' / 01-27-92 / 1130
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 19.08' **AFTER DEVEL** 19.08' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 13.21 **STANDING WELL VOLUME** 16.2 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-20-92/1400	400	40	20.4	4.53		TURBID
01-20-92/1403	430	33	20.1	4.44		"
01-20-92/1406	460	38	20.2	4.45		"
01-20-92/1409	490	35	20.0	4.42		"
01-20-92/1412	510	35	19.8	4.44		"
01-27-92/1112	1010	45	19.9	4.20		"
01-27-92/1115	1040	45	19.5	4.15		MOD. TURBID
01-27-92/1118	1070	45	19.5	4.15		"
01-27-92/1121	1100	45	19.4	4.15		"
	1100	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-19S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-16-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-20-92 / 1525 **COMPLETED DEVEL.** 01-20-92 / 1645
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 2.77' / 01-20-92 / 1500 **AFTER DEVEL** 3.78' / 01-20-92 / 1645
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 20.19' **AFTER DEVEL** 20.19' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 14.34 **STANDING WELL VOLUME** 17.6 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-20-92/1540	150	40	19.8	4.54		MOD. TURBID
01-20-92/1543	180	40	19.3	4.54		"
01-20-92/1546	210	39	19.4	4.54		"
01-20-92/1549	240	39	19.8	4.51		"
01-20-92/1552	270	39	19.6	4.41		TURBID
01-20-92/1612	470	40	19.7	4.58		"
01-20-92/1617	520	40	19.4	4.50		"
01-20-92/1622	570	41	19.4	4.51		MOD. TURBID
01-20-92/1627	620	40	19.6	4.46		"
01-20-92/1632	670	40	19.5	4.50		"
	670	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-191
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-13-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-20-92 / 1730 **COMPLETED DEVEL.** 01-21-92 / 1015
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 4.95' / 01-17-92 / 1630 **AFTER DEVEL.** 5.11' / 01-21-92 / 1015
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 60.34' **AFTER DEVEL.** 60.34' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 51.41 **STANDING WELL VOLUME** 62.9 gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-21-92/0900	250	30	18.8	5.41		SLIGHTLY TURBID
01-21-92/0905	275	29	19.5	5.31		"
01-21-92/0910	300	29	19.0	5.27		"
01-21-92/0915	325	27	19.4	5.24		"
01-21-92/0920	350	28	19.8	5.22		"
01-21-92/0930	400	25	19.8	5.18		"
01-21-92/0940	450	30	19.5	5.24		"
	450	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-19D
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-15-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-29-92 / 1135 **COMPLETED DEVEL.** 02-05-92 / 1410
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 4.98' / 01-29-92 / 1135 **AFTER DEVEL** 5.04' / 02-06-92 / 0735
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 112.95' **AFTER DEVEL** 112.95' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) _____ **STANDING WELL VOLUME** _____ gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-31-92/0855	50	300	18.5	7.63		TURBID
01-31-92/0900	52	280	19.1	7.98		"
01-31-92/0903	54	270	19.2	8.04		"
02-05-92/1020	65	375	19.3	7.84		"
02-05-92/1040	75	310	19.2	7.97		"
02-05-92/1050	80	280	19.6	7.95		"
02-05-92/1100	85	270	19.9	7.92		MOD. TURBID
02-05-92/1345	90	260	20.4	7.69		SLIGHTLY TURBID
02-05-92/1355	100	260	20.5	7.86		"
02-05-92/1405	105	270	20.6	7.92		"
02-05-92/1040	110	260	20.5	7.98		"
	110	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-21S
DEVELOPED BY JMF/BGHB **DATE OF INSTALLATION** 03-4-92 **SHEET** 1 OF 1
STARTED DEVEL. 03-6-92 / 1205 **COMPLETED DEVEL.** 03-6-92 / 1425
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 8.67' / 03-6-92 / 1200 **AFTER DEVEL.** / / /
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 18.00' **AFTER DEVEL.** 18.00' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 11.3 **STANDING WELL VOLUME** 13.8 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
03-6-92/1410	980	44	20.6	4.62		MOD. TURBIDITY
03-6-92/1415	1020	45	20.3	4.63		"
03-6-92/1420	1060	45	20.5	4.65		"
03-6-92/1425	1100	45	20.5	4.62		"
1100		= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-22S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-28-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-29-92 / 0820 **COMPLETED DEVEL.** 01-29-92 / 1110
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 9.74' / 01-29-92 / 0745 **AFTER DEVEL.** 12.90' / 01-29-92 / 1110
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 24.55' **AFTER DEVEL.** 24.55' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 9.05' **STANDING WELL VOLUME** 11.1 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-29-92/1000	200	80	23.1	5.12		TURBID
01-29-92/1010	220	60	23.6	5.02		"
01-29-92/1020	240	60	24.0	5.07		"
01-29-92/1030	260	60	23.3	4.70		"
01-29-92/1040	280	60	23.6	4.96		MOD. TURBID
01-29-92/1050	300	55	23.7	5.07		"
	300	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-22S-R
DEVELOPED BY JMF **DATE OF INSTALLATION** 02-14-92 **SHEET** 1 OF 1
STARTED DEVEL. 03-06-92 / 1020 **COMPLETED DEVEL.** 03-06-92 / 1330
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 9.68' / 03-06-92 / 1015 **AFTER DEVEL.** 12.76' / 03-06-92 / 1332
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 25.0' **AFTER DEVEL.** 25.0' **WELL DIA.** 2" in.
STANDING WATER COLUMN (FT.) 15.3' **STANDING WELL VOLUME** 18.1 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
03-06-92/1030	50	80	23.1	5.12		TURBID
03-06-92/1045	125	71	23.0	5.02		"
03-06-92/1115	275	64	22.9	4.78		"
03-06-92/1245	825	60	22.3	4.59		"
03-06-92/1330	950	61	22.6	4.58		MOD. TURBID
	950	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-24S
DEVELOPED BY JMF **DATE OF INSTALLATION** 02-08-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-08-92 / 1150 **COMPLETED DEVEL.** 02-08-92 / 1505
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 4.36' / 02-08-92 / 1133 **AFTER DEVEL** 4.67' / 02-09-92 / 1420
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 16.5' **AFTER DEVEL** 16.5' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 7.97 **STANDING WELL VOLUME** 9.8 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-08-92/1425	875	50	19.1	4.19		
02-08-92/1445	975	50	19.1	4.17		
02-08-92/1505	1075	50	18.9	4.19		
	1075	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-25I
DEVELOPED BY CAW **DATE OF INSTALLATION** 02-07-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-10-92 / 0825 **COMPLETED DEVEL.** 02-10-92 / 1110
DATE TIME DATE TIME
W.L. BEFORE DEVEL. / / **AFTER DEVEL** 3.91' / 02-10-92 / 1130
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 60.08' **AFTER DEVEL** 60.08' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 54.09' **STANDING WELL VOLUME** 66.2 gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-10-92/1005	1000	51	19.4	6.01		TURBID
02-10-92/1015	1100	49	20.0	5.85		"
02-10-92/1030	1250	46	20.0	5.74		"
02-10-92/1045	1400	45	20.4	5.75		"
02-10-92/1100	1550	45	20.2	5.70		"
02-10-92/1110	1650	45	20.0	5.73		"
	1650	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-26S
DEVELOPED BY CAW **DATE OF INSTALLATION** 02-07-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-07-92 / 1420 **COMPLETED DEVEL.** 02-08-92 / 1002
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 4.99' / 02-07-92 / 1400 **AFTER DEVEL** 3.35' / 02-08-92 / 1125
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL 18.42' **AFTER DEVEL** 18.42' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.83' **STANDING WELL VOLUME** 15.7 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-07-92/1630	910	-	18.3	4.56		TURBID
02-07-92/1640	980	-	18.4	4.33		"
02-08-92/0950	2000	52	17.5	4.21		MOD. TURBID
02-08-92/0953	2024	49	17.8	4.26		SLIGHTLY
02-08-92/0956	2048	50	18.1	4.28		"
02-08-92/0959	2072	50	18.1	4.28		"
02-08-92/1002	2096	50	18.2	4.31		"
	2096	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-27S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-30-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-01-92 / 1000 **COMPLETED DEVEL.** 02-01-92 / 1210
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 2.91' / 02-01-92 / 0825 **AFTER DEVEL.** 5.17' / 02-01-92 / 1210
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 18.55' **AFTER DEVEL.** 18.55' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 10.75' **STANDING WELL VOLUME** 13.2 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-01-92/1145	525	45	21.2	4.97		MOD. TURBID
02-01-92/1150	550	45	21.7	4.90		"
02-01-92/1155	575	45	21.4	4.92		"
02-01-92/1200	600	45	21.4	4.92		"
	600	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-27D
DEVELOPED BY CAW **DATE OF INSTALLATION** 02-03-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-05-92 / 1510 **COMPLETED DEVEL.** 02-06-92 / 0855
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 2.67' / 02-05-92 / 1510 **AFTER DEVEL** 3.35' / 02-06-92 / 0905
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 111.24' **AFTER DEVEL** 111.24' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) _____ **STANDING WELL VOLUME** _____ gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-06-92/0823	130	282	19.6	7.10		MOD. TURBID
02-06-92/0825	135	270	19.9	7.00		"
02-06-92/0827	140	260	19.9	7.00		SLIGHTLY TURBID
02-06-92/0829	160	220	19.8	7.03		"
02-06-92/0830	165	225	19.7	6.90		"
02-06-92/0835	195	195	19.8	6.72		"
02-06-92/0842	215	160	19.9	6.90		MOD. TURBID
02-06-92/0850	235	150	19.5	6.91		SLIGHTLY TURBID
02-06-92/0855	260	150	19.4	6.97		"
	260	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-28S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-24-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-28-92 / 1105 **COMPLETED DEVEL.** 01-28-92 / 1235
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.22' / 01-28-92 / 1030 **AFTER DEVEL** 4.13' / 01-28-92 / 1225
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 19.75' **AFTER DEVEL** 19.75' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.95 **STANDING WELL VOLUME** 15.9 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-28-92/1205	420	-	20.0	5.77		TURBID
01-28-92/1210	455	-	20.1	5.55		MOD. TURBID
01-28-92/1215	490	-	20.1	5.56		"
01-28-92/1220	525	-	20.2	5.52		"
	525	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES: SPEC. COND. METER WAS NOT FUNCTIONING PROPERLY

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-29I
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-22-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-04-92 / 1500 **COMPLETED DEVEL.** 02-05-92 / 1215
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 1.67' / 02-04-92 / 0910 **AFTER DEVEL** 1.69' / 02-05-92 / 1220
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 63.0' **AFTER DEVEL** 63.0' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 58.81 **STANDING WELL VOLUME** 72.0 gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-05-92/1147	1070	40	20.3	5.74		SLIGHTLY TURBID
02-05-92/1150	1100	38	21.4	5.39		"
02-05-92/1153	1130	35	21.6	5.27		"
02-05-92/1156	1160	35	21.5	5.25		"
02-05-92/1159	1190	32	21.7	5.20		"
02-05-92/1215	1350	30	22.0	5.22		"
	1350	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-29D
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-25-92 **SHEET** 1 OF 1
STARTED DEVEL. 02-06-92 / 1530 **COMPLETED DEVEL.** 02-07-92 / 0926
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 2.08' / 02-06-92 / 1530 **AFTER DEVEL** 1.50' / 02-09-92 / 1536
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 112.19' **AFTER DEVEL** 112.19' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) _____ **STANDING WELL VOLUME** _____ gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
02-06-92/1611	50	150	18.8	6.85		MOD. TURBID
02-06-92/1618	60	145	19.0	6.79		"
02-06-92/1624	70	139	19.3	6.73		"
02-06-92/1630	80	130	19.5	6.64		SLIGHTLY TURBID
02-06-92/1642	90	135	19.5	6.58		"
02-07-92/0836	105	120	19.3	6.42		MOD. TURBID
02-07-92/0846	120	110	19.0	6.58		SLIGHTLY TURBID
02-07-92/0854	135	102	19.2	6.62		"
02-07-92/0915	170	100	19.2	6.42		"
02-07-92/0922	180	100	19.4	6.34		"
02-07-92/0926	185	101	19.2	6.38		"
	185	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-30S
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-28-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-30-92 / 1300 **COMPLETED DEVEL.** 01-30-92 / 1620
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 3.04' / 01-30-92 / 1300 **AFTER DEVEL** 3.44' / 01-30-92 / 1620
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 19.0' **AFTER DEVEL** 19.0' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) 12.84 **STANDING WELL VOLUME** 15.7 gal.
SCREEN LENGTH 15' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-30-92/1535	600	50	20.0	4.68		TURBID
01-30-92/1540	625	45	19.8	4.41		"
01-30-92/1545	650	45	20.0	4.34		"
01-30-92/1550	675	45	20.3	4.22		MOD. TURBID
01-30-92/1600	725	45	21.3	4.34		"
01-30-92/1610	775	45	20.3	4.27		"
01-30-92/1620	825	45	20.3	4.26		"
	825	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: CENTRIFUGAL PUMP

NOTES:

WELL DEVELOPMENT FIELD RECORD

JOB NAME WMNA/TR-WELLS/FLA **JOB NO.** 923-3350 **WELL NO.** B-31D
DEVELOPED BY CAW **DATE OF INSTALLATION** 01-09-92 **SHEET** 1 OF 1
STARTED DEVEL. 01-27-92 / 1510 **COMPLETED DEVEL.** 01-28-92 / 0925
DATE TIME DATE TIME
W.L. BEFORE DEVEL. 13.58' / 01-27-92 / 1510 **AFTER DEVEL** 15.00' / 01-28-92 / 1000
DEPTH / DATE / TIME DEPTH / DATE / TIME
WELL DEPTH: BEFORE DEVEL. 133.33' **AFTER DEVEL** 133.33' **WELL DIA** 2" in.
STANDING WATER COLUMN (FT.) _____ **STANDING WELL VOLUME** _____ gal.
SCREEN LENGTH 5' **DRILLING WATER LOSS** N/A gal.

DATE/TIME	VOLUME REMOVED (GALS)	FIELD PARAMETERS				REMARKS
		SPEC. COND. (umhos/cm)	TEMP (C)	pH (s.u.)	OTHER	
01-27-92/1735	50	340	20.7	6.96		SLIGHTLY TURBID
01-27-92/1800	60	340	20.4	7.06		"
01-28-92/0805	70	400	19.6	7.02		MOD. TURBID
01-28-92/0838	80	350	19.6	7.14		"
01-28-92/0900	90	340	19.7	7.12		SLIGHTLY TURBID
01-28-92/0925	100	340	19.7	7.12		"
	100	= TOTAL VOLUME REMOVED (gal.)				

DEVELOPMENT METHOD: COMPRESSED NITROGEN

NOTES:

APPENDIX E

HYDRAULIC CONDUCTIVITY TEST DATA

RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-11SR

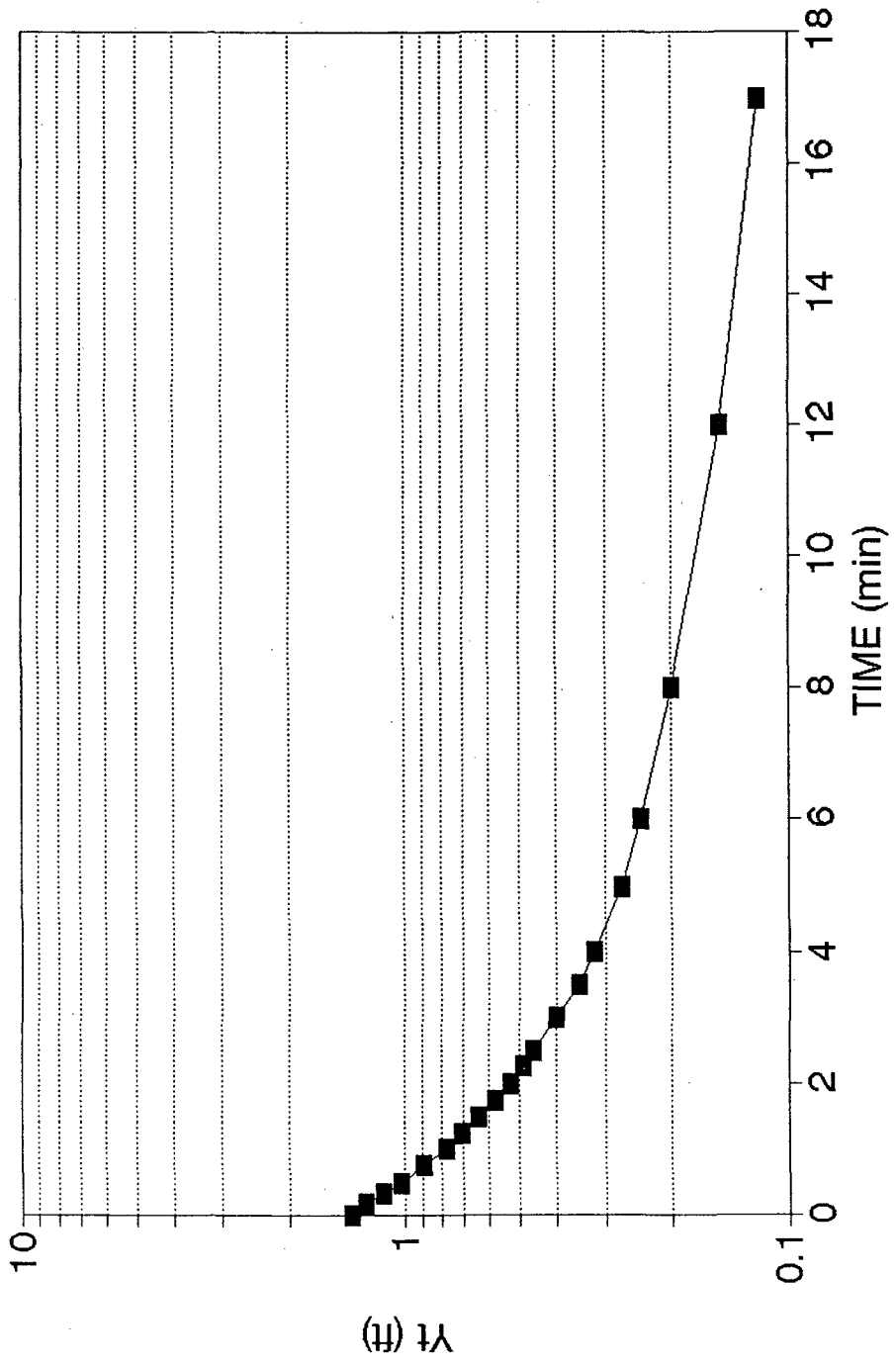
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	100.30	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	112.48	Yo (FT)=	1.02
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	112.48	Yt (FT)=	0.53
BOTTOM OF SCREEN ELEVATION (FT)=	100.30	t (min)=	1.50

A=	2.6	B=	0.5	C=	2.1	Le/Rw= 29.70731	EFFECTIVE RADIUS OF CASING (FT)=	0.24
							ln(Ro/rw)=	2.531388

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.27E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	9.70	-1.370	1.000	0.0000	1.37
0	10	0.167	9.59	-1.260	0.920	-0.0364	1.26
0	20	0.333	9.46	-1.130	0.825	-0.0836	1.13
0	30	0.500	9.35	-1.020	0.745	-0.1281	1.02
0	45	0.750	9.22	-0.890	0.650	-0.1873	0.89
1	0	1.000	9.11	-0.780	0.569	-0.2446	0.78
1	15	1.250	9.04	-0.710	0.518	-0.2855	0.71
1	30	1.500	8.97	-0.640	0.467	-0.3305	0.64
1	45	1.750	8.91	-0.580	0.423	-0.3733	0.58
2	0	2.000	8.86	-0.530	0.387	-0.4124	0.53
2	15	2.250	8.82	-0.490	0.358	-0.4465	0.49
2	30	2.500	8.79	-0.460	0.336	-0.4740	0.46
3	0	3.000	8.73	-0.400	0.292	-0.5347	0.40
3	30	3.500	8.68	-0.350	0.255	-0.5927	0.35
4	0	4.000	8.65	-0.320	0.234	-0.6316	0.32
5	0	5.000	8.60	-0.270	0.197	-0.7054	0.27
6	0	6.000	8.57	-0.240	0.175	-0.7565	0.24
8	0	8.000	8.53	-0.200	0.146	-0.8357	0.20
12	0	12.000	8.48	-0.150	0.109	-0.9606	0.15
17	0	17.000	8.45	-0.120	0.088	-1.0575	0.12

RISING HEAD TEST
B-11SR



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-13SR

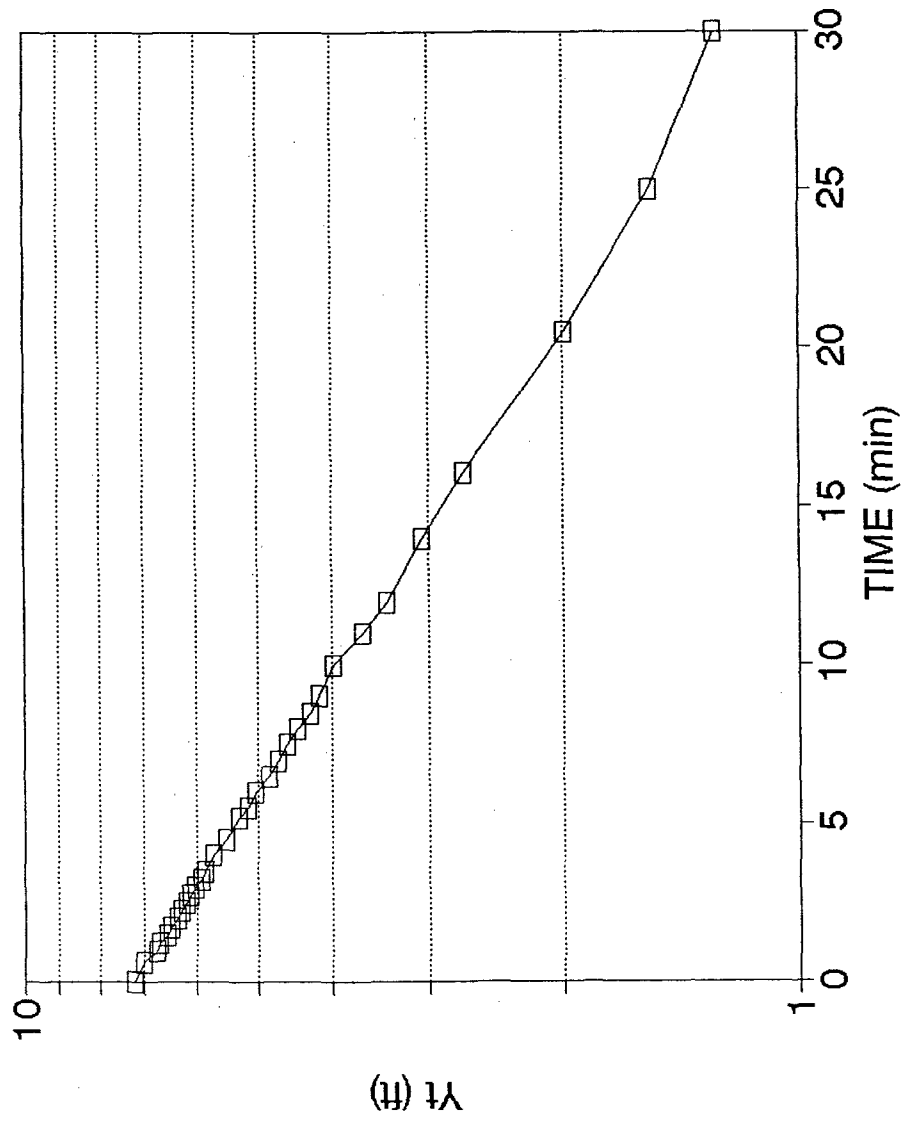
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	99.50	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	115.89	Y _o (FT)=	6.76
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	115.89	Y _t (FT)=	5.69
BOTTOM OF SCREEN ELEVATION (FT)=	99.50	t (min)=	3.00

A=	2.6	B=	0.5	Le/Rw=	39.97560	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.850831

 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.40E-04 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H _o)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	17.37	-7.200	1.000	0.0000	7.20
0	40	0.667	17.18	-7.010	0.974	-0.0116	7.01
1	0	1.000	16.93	-6.760	0.939	-0.0274	6.76
1	15	1.250	16.86	-6.690	0.929	-0.0319	6.69
1	30	1.500	16.71	-6.540	0.908	-0.0418	6.54
1	45	1.750	16.64	-6.470	0.899	-0.0464	6.47
2	0	2.000	16.53	-6.360	0.883	-0.0539	6.36
2	15	2.250	16.44	-6.270	0.871	-0.0601	6.27
2	30	2.500	16.35	-6.180	0.858	-0.0663	6.18
2	45	2.750	16.27	-6.100	0.847	-0.0720	6.10
3	0	3.000	16.19	-6.020	0.836	-0.0777	6.02
3	15	3.250	16.09	-5.920	0.822	-0.0850	5.92
3	30	3.500	16.01	-5.840	0.811	-0.0909	5.84
4	0	4.000	15.86	-5.690	0.790	-0.1022	5.69
4	30	4.500	15.67	-5.500	0.764	-0.1170	5.50
5	10	5.167	15.47	-5.300	0.736	-0.1331	5.30
5	30	5.500	15.33	-5.160	0.717	-0.1447	5.16
6	0	6.000	15.20	-5.030	0.699	-0.1558	5.03
6	30	6.500	15.01	-4.840	0.672	-0.1725	4.84
7	0	7.000	14.88	-4.710	0.654	-0.1843	4.71
7	30	7.500	14.75	-4.580	0.636	-0.1965	4.58
8	0	8.000	14.60	-4.430	0.615	-0.2109	4.43
8	30	8.500	14.45	-4.280	0.594	-0.2259	4.28
9	0	9.000	14.32	-4.150	0.576	-0.2393	4.15
10	0	10.000	14.16	-3.990	0.554	-0.2564	3.99
11	0	11.000	13.83	-3.660	0.508	-0.2939	3.66
12	0	12.000	13.57	-3.400	0.472	-0.3259	3.40
14	0	14.000	13.23	-3.060	0.425	-0.3716	3.06
16	0	16.000	12.87	-2.700	0.375	-0.4260	2.70
20	30	20.500	12.16	-1.990	0.276	-0.5585	1.99
25	0	25.000	11.72	-1.550	0.215	-0.6670	1.55
30	0	30.000	11.45	-1.280	0.178	-0.7501	1.28

RISING HEAD TEST
B-13SR



RISING HEAD TEST

WELL B-13IR

STATIC WATER DEPTH = 16.38 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 53.20 FEET BELOW TOC
 BOTTOM OF SANDPACK = 58.60 FEET BELOW TOC

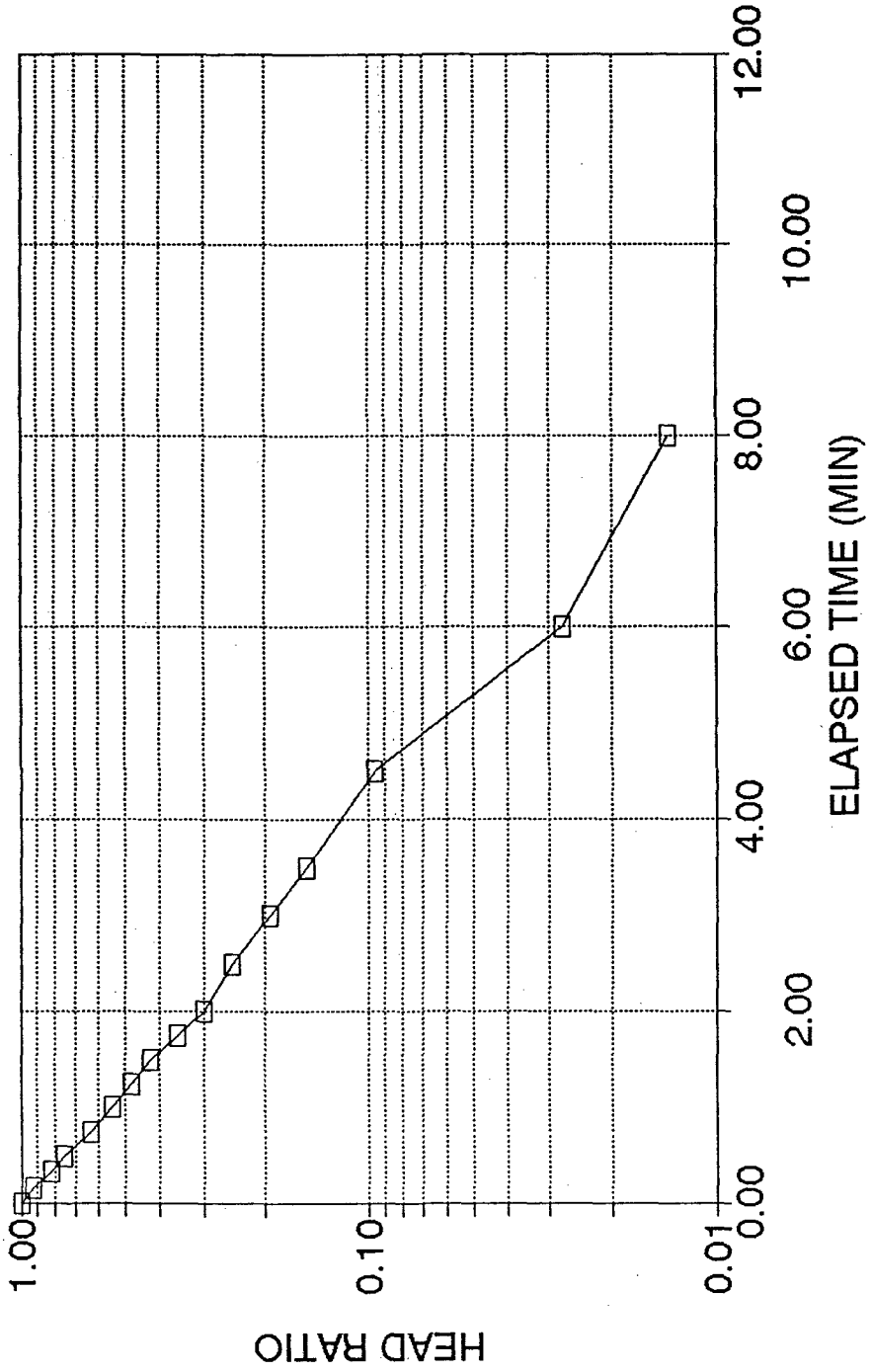
HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	17.11	-0.73	1.000	0.0000
		10	0.1667	17.05	-0.67	0.918	-0.0372
		20	0.3333	16.98	-0.60	0.822	-0.0852
		30	0.5000	16.93	-0.55	0.753	-0.1230
		45	0.7500	16.84	-0.46	0.630	-0.2006
1	0		1.0000	16.78	-0.40	0.548	-0.2613
1	15		1.2500	16.73	-0.35	0.479	-0.3193
1	30		1.5000	16.69	-0.31	0.425	-0.3720
1	45		1.7500	16.64	-0.26	0.356	-0.4483
2	0		2.0000	16.60	-0.22	0.301	-0.5209
2	30		2.5000	16.56	-0.18	0.247	-0.6081
3	0		3.0000	16.52	-0.14	0.192	-0.7172
3	30		3.5000	16.49	-0.11	0.151	-0.8219
4	30		4.5000	16.45	-0.07	0.096	-1.0182
6	0		6.0000	16.40	-0.02	0.027	-1.5623
8	0		8.0000	16.39	-0.01	0.014	-1.8633
12	0		12.0000	16.38	0.00	0.000	ERR

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 5.55E-04 CM/SEC

RISING HEAD TEST

B-131R



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER = B-14SR

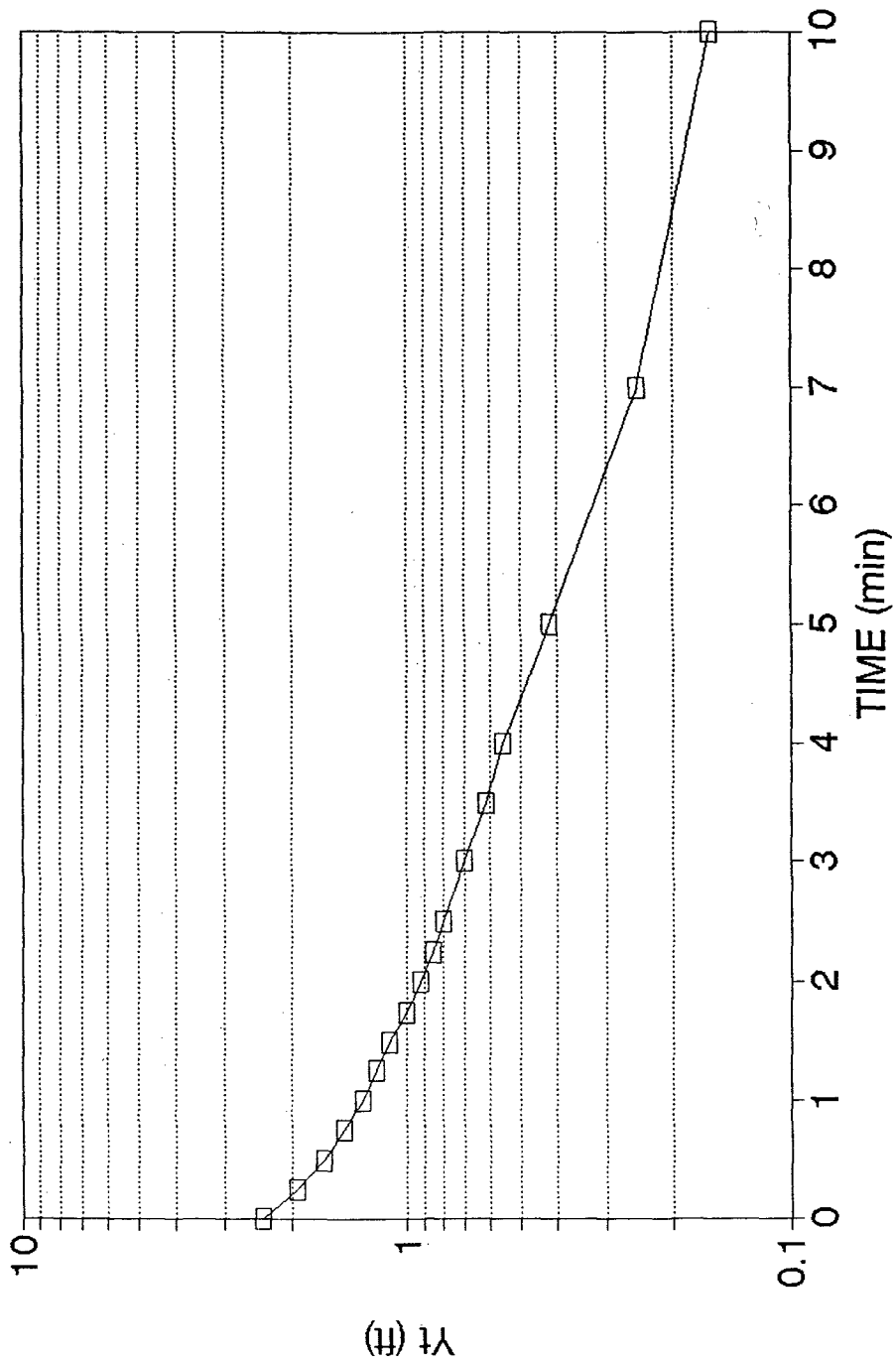
ESTIMATED FILTER PACK POROSITY	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	106.90	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	122.35	Y ₀ (FT)=	1.02
TOP OF SATURATED FILTER PACK ELEVATION (FT)	122.35	Y _i (FT)=	0.53
BOTTOM OF SCREEN ELEVATION (FT)	106.90	t (min)=	1.50

A=	2.6	B=	0.5	Le/Rw=	37.682926829	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.7868764512

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.10E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	6.08	-2.380	1.000	0.0000	2.38
0	15	0.250	5.65	-1.950	0.819	-0.0865	1.95
0	30	0.500	5.35	-1.650	0.693	-0.1591	1.65
0	45	0.750	5.17	-1.470	0.618	-0.2093	1.47
1	0	1.000	5.00	-1.300	0.546	-0.2626	1.30
1	15	1.250	4.90	-1.200	0.504	-0.2974	1.20
1	30	1.500	4.81	-1.110	0.466	-0.3313	1.11
1	45	1.750	4.70	-1.000	0.420	-0.3766	1.00
2	0	2.000	4.62	-0.920	0.387	-0.4128	0.92
2	15	2.250	4.55	-0.850	0.357	-0.4472	0.85
2	30	2.500	4.50	-0.800	0.336	-0.4735	0.80
3	0	3.000	4.40	-0.700	0.294	-0.5315	0.70
3	30	3.500	4.32	-0.620	0.261	-0.5842	0.62
4	0	4.000	4.26	-0.560	0.235	-0.6284	0.56
5	0	5.000	4.12	-0.420	0.176	-0.7533	0.42
7	0	7.000	3.95	-0.250	0.105	-0.9786	0.25
10	0	10.000	3.86	-0.160	0.067	-1.1725	0.16

RISING HEAD TEST
B-14SR



APRIL 1992

923-3350

RISING HEAD TEST

WELL B-14IR

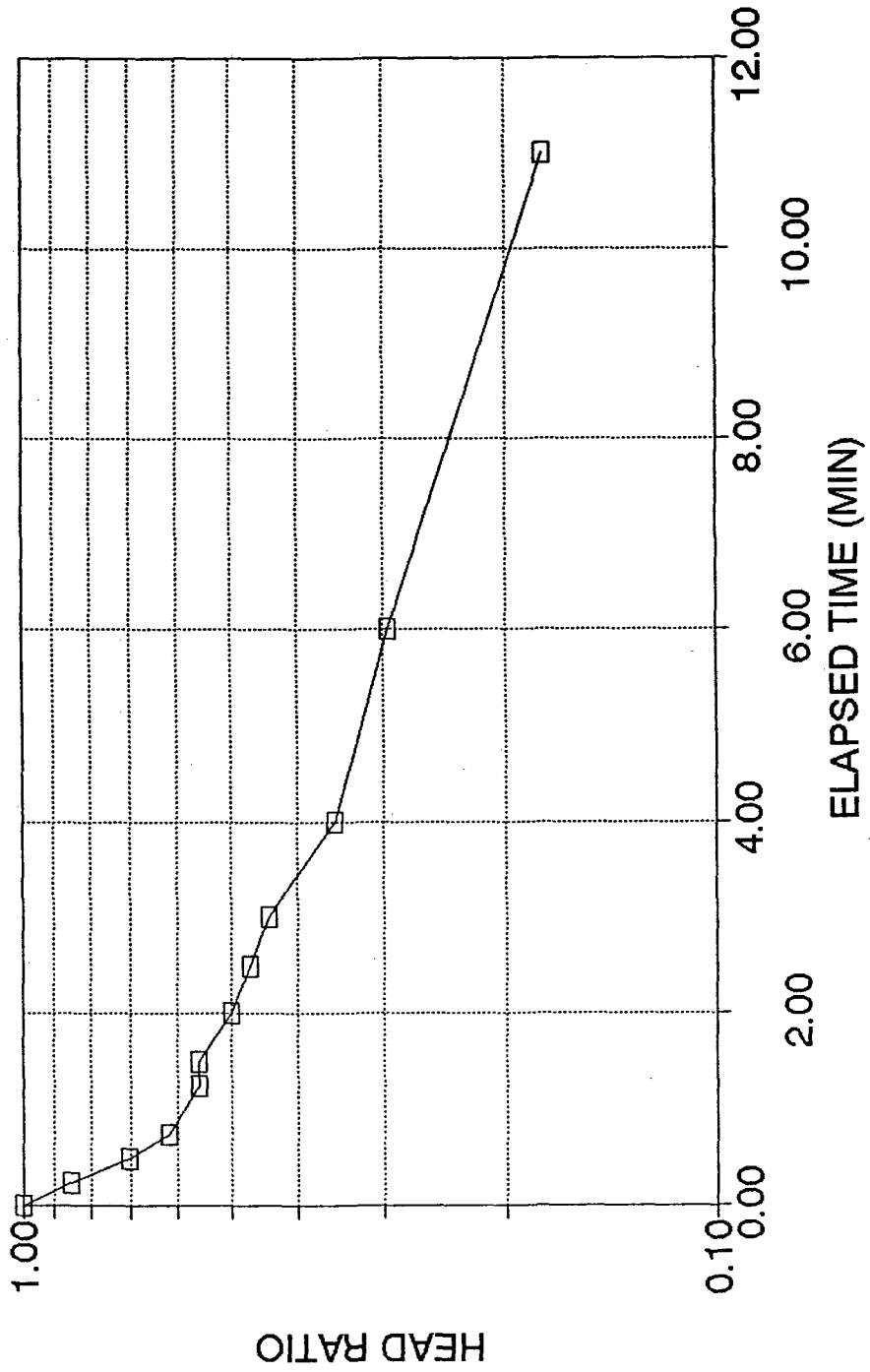
STATIC WATER DEPTH = 7.91 FEET BELOW TOC
STANDPIPE DIAMETER = 2.00 INCHES
SANDPACK DIAMETER = 6.000 INCHES
TOP OF SATURATED SAND = 53.50 FEET BELOW TOC
BOTTOM OF SANDPACK = 62.50 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO
		0	0.0000	8.25	-0.34	1.000	0.0000
		15	0.2500	8.20	-0.29	0.853	-0.0691
		30	0.5000	8.15	-0.24	0.706	-0.1513
		45	0.7500	8.12	-0.21	0.618	* -0.2093
	1	15	1.2500	8.10	-0.19	0.559	-0.2527
	1	30	1.5000	8.10	-0.19	0.559	-0.2527
	2	0	2.0000	8.08	-0.17	0.500	-0.3010
	2	30	2.5000	8.07	-0.16	0.471	-0.3274
	3	0	3.0000	8.06	-0.15	0.441	-0.3554
	4	0	4.0000	8.03	-0.12	0.353	* -0.4523
	6	0	6.0000	8.01	-0.10	0.294	-0.5315
	11	0	11.0000	7.97	-0.06	0.176	-0.7533

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 1.21E-04 CM/SEC

RISING HEAD TEST B-14IR



RISING HEAD TEST

WELL B-14DR

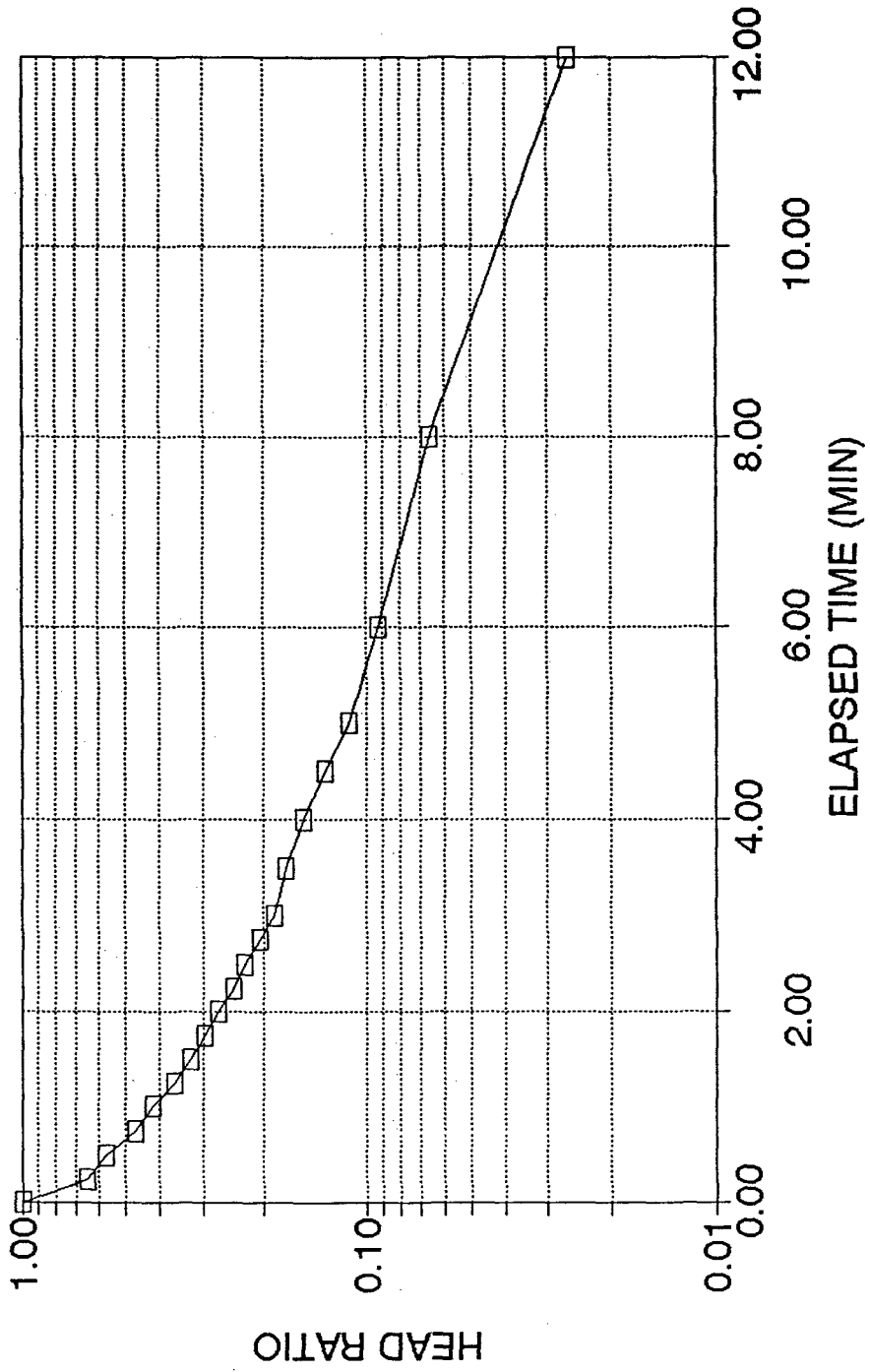
STATIC WATER DEPTH = 7.67 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 101.50 FEET BELOW TOC
 BOTTOM OF SANDPACK = 108.50 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	9.18	-1.51	1.000	0.0000
		15	0.2500	8.64	-0.97	0.642	-0.1922
		30	0.5000	8.53	-0.86	0.570	-0.2445
		45	0.7500	8.38	-0.71	0.470	-0.3277
1	0		1.0000	8.30	-0.63	0.417	-0.3796
1	15		1.2500	8.22	-0.55	0.364	-0.4386
1	30		1.5000	8.16	-0.49	0.325	-0.4888
1	45		1.7500	8.12	-0.45	0.298	-0.5258
2	0		2.0000	8.08	-0.41	0.272	-0.5662
2	15		2.2500	8.04	-0.37	0.245	-0.6108
2	30		2.5000	8.01	-0.34	0.225	-0.6475
2	45		2.7500	7.98	-0.31	0.205	-0.6876
3	0		3.0000	7.95	-0.28	0.185	-0.7318
3	30		3.5000	7.93	-0.26	0.172	-0.7640
4	0		4.0000	7.90	-0.23	0.152	-0.8172
4	30		4.5000	7.87	-0.20	0.132	-0.8779
5	0		5.0000	7.84	-0.17	0.113	-0.9485
6	0		6.0000	7.81	-0.14	0.093	-1.0328
8	0		8.0000	7.77	-0.10	0.066	-1.1790
12	0		12.0000	7.71	-0.04	0.026	-1.5769

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

$K = 3.45E-04$ CM/SEC

RISING HEAD TEST B-14DR



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-17S

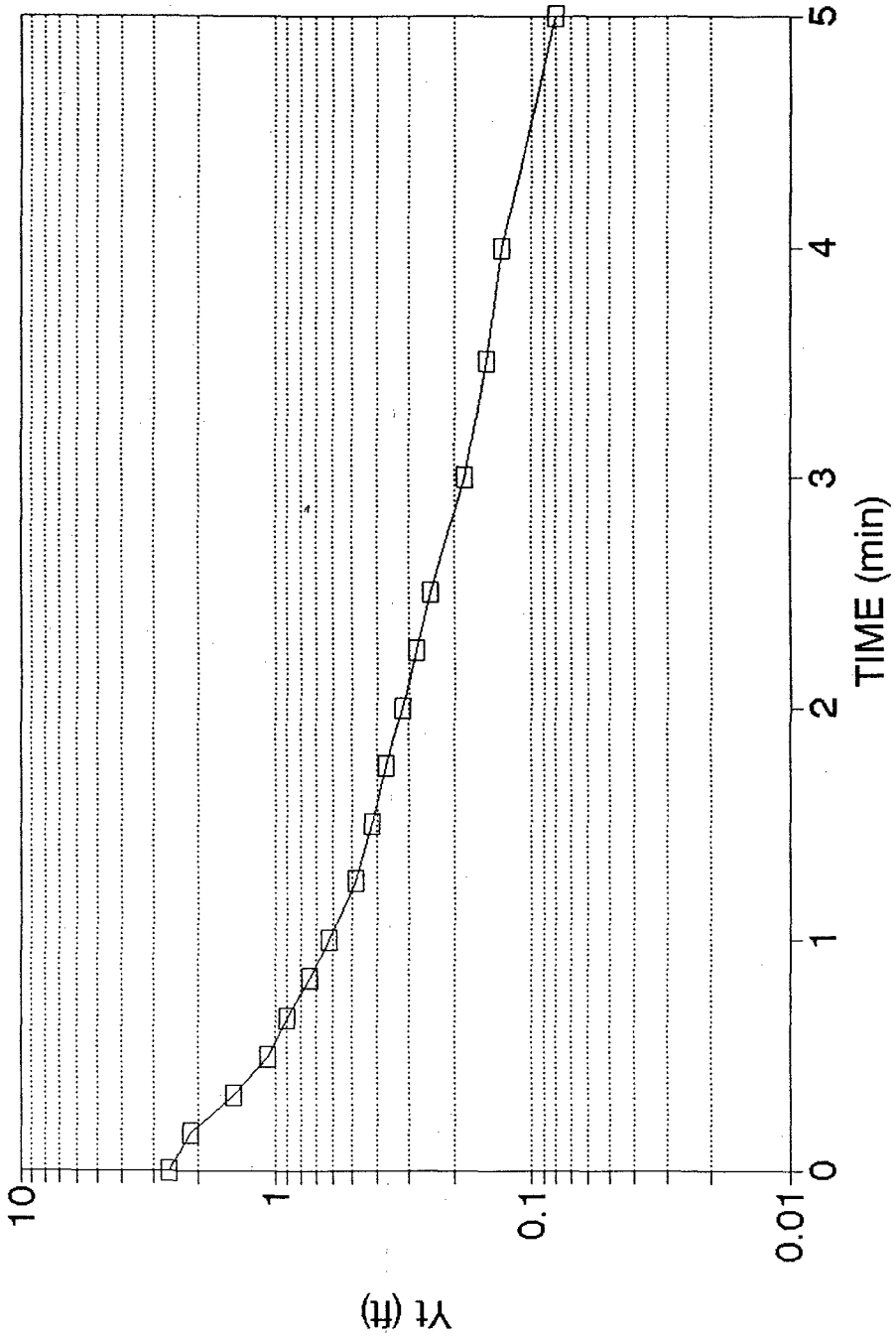
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	120.00	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	135.21	Yo (FT)=	1.07
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	135.21	Yt (FT)=	0.42
BOTTOM OF SCREEN ELEVATION (FT)=	120.00	t (min)=	1.00

A=	2.6	B=	0.5	Le/Rw=	37.09756	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.113216

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.82E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME	DEPTH TO WATER	HEAD	HEAD RATIO	LOG HEAD RATIO	DRAWDOWN
HR-MIN	SEC	(MIN)	(FEET)	(FEET)	(H/Ho)	RATIO	(FEET)
0	0	0.000	5.73	-2.630	1.000	0.0000	2.63
0	10	0.167	5.26	-2.160	0.821	-0.0855	2.16
0	20	0.333	4.56	-1.460	0.555	-0.2556	1.46
0	30	0.500	4.17	-1.070	0.407	-0.3906	1.07
0	40	0.667	4.00	-0.900	0.342	-0.4657	0.90
0	50	0.833	3.84	-0.740	0.281	-0.5507	0.74
1	0	1.000	3.72	-0.620	0.236	-0.6276	0.62
1	15	1.250	3.59	-0.490	0.186	-0.7298	0.49
1	30	1.500	3.52	-0.420	0.160	-0.7967	0.42
1	45	1.750	3.47	-0.370	0.141	-0.8518	0.37
2	0	2.000	3.42	-0.320	0.122	-0.9148	0.32
2	15	2.250	3.38	-0.280	0.106	-0.9728	0.28
2	30	2.500	3.35	-0.250	0.095	-1.0220	0.25
3	0	3.000	3.28	-0.180	0.068	-1.1647	0.18
3	30	3.500	3.25	-0.150	0.057	-1.2439	0.15
4	0	4.000	3.23	-0.130	0.049	-1.3060	0.13
5	0	5.000	3.18	-0.080	0.030	-1.5169	0.08

RISING HEAD TEST
B-17S



RISING HEAD TEST

PIEZOMETER P-171

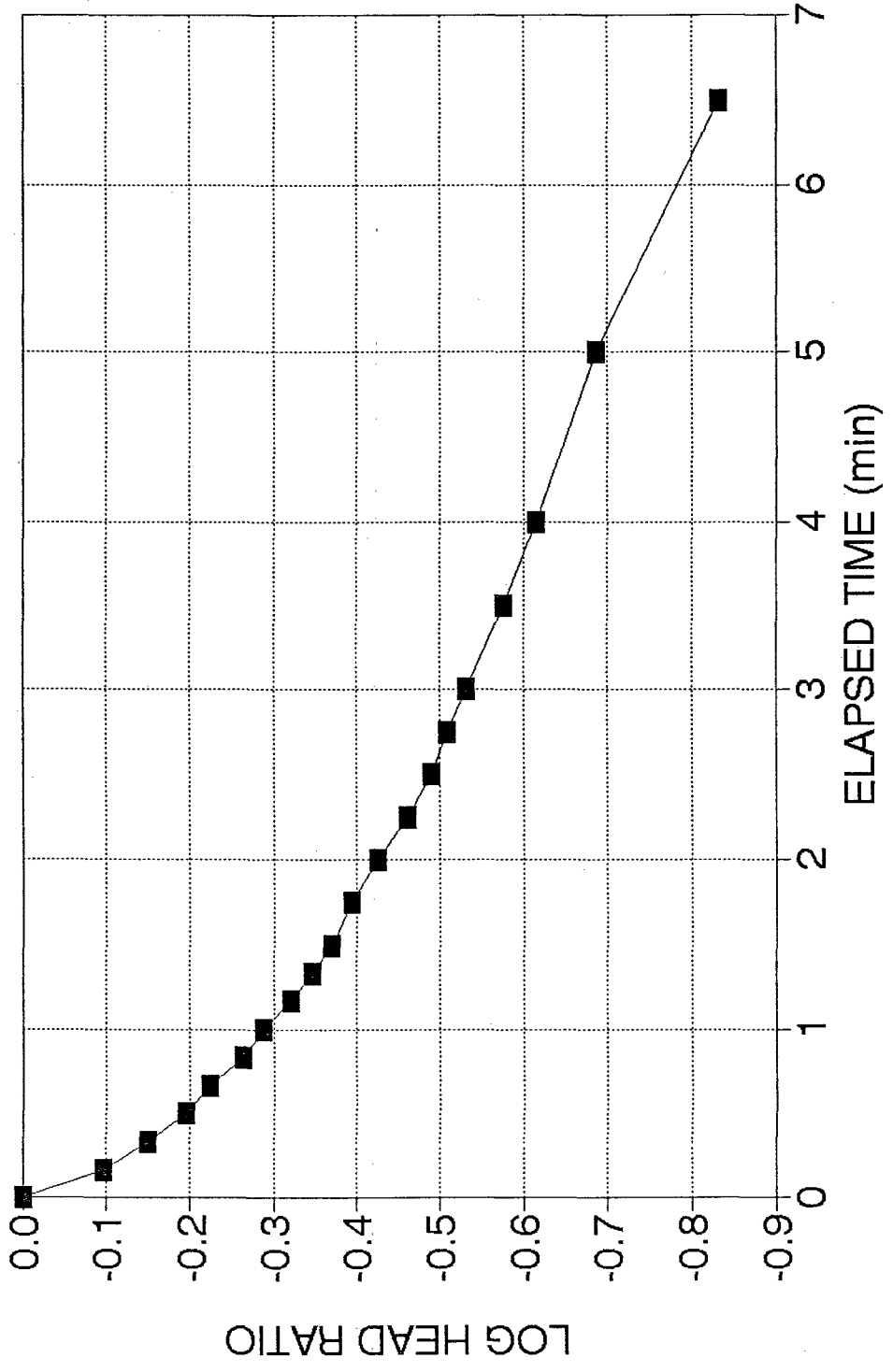
STATIC WATER DEPTH = 0.27 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 51.00 FEET BELOW TOC
 BOTTOM OF SANDPACK = 58.00 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	1.63	-1.36	1.000	0.0000
		10	0.1667	1.36	-1.09	0.801	* -0.0961
		20	0.3333	1.23	-0.96	0.709	-0.1495
		30	0.5000	1.14	-0.87	0.640	* -0.1940
		40	0.6667	1.08	-0.81	0.596	-0.2251
		50	0.8333	1.01	-0.74	0.544	-0.2643
1	0		1.0000	0.97	-0.70	0.515	-0.2884
1	10		1.1667	0.92	-0.65	0.478	-0.3206
1	20		1.3333	0.88	-0.61	0.449	-0.3482
1	30		1.5000	0.85	-0.58	0.426	-0.3701
1	45		1.7500	0.82	-0.55	0.404	-0.3932
2	0		2.0000	0.78	-0.51	0.375	-0.4260
2	15		2.2500	0.74	-0.47	0.346	-0.4614
2	30		2.5000	0.71	-0.44	0.324	-0.4901
2	45		2.7500	0.69	-0.42	0.309	-0.5103
3	0		3.0000	0.67	-0.40	0.294	-0.5315
3	30		3.5000	0.63	-0.36	0.265	-0.5772
4	0		4.0000	0.60	-0.33	0.243	-0.6150
5	0		5.0000	0.55	-0.28	0.206	-0.6864
6	30		6.5000	0.47	-0.20	0.147	-0.8325

 * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
 WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 5.68E-04 CM/SEC

RISING HEAD TEST WELL 171



RISING HEAD TEST

PIEZOMETE P-17D

STATIC WATER DEPTH = 4.20 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 118.00 FEET BELOW TOC
 BOTTOM OF SANDPACK = 125.00 FEET BELOW TOC

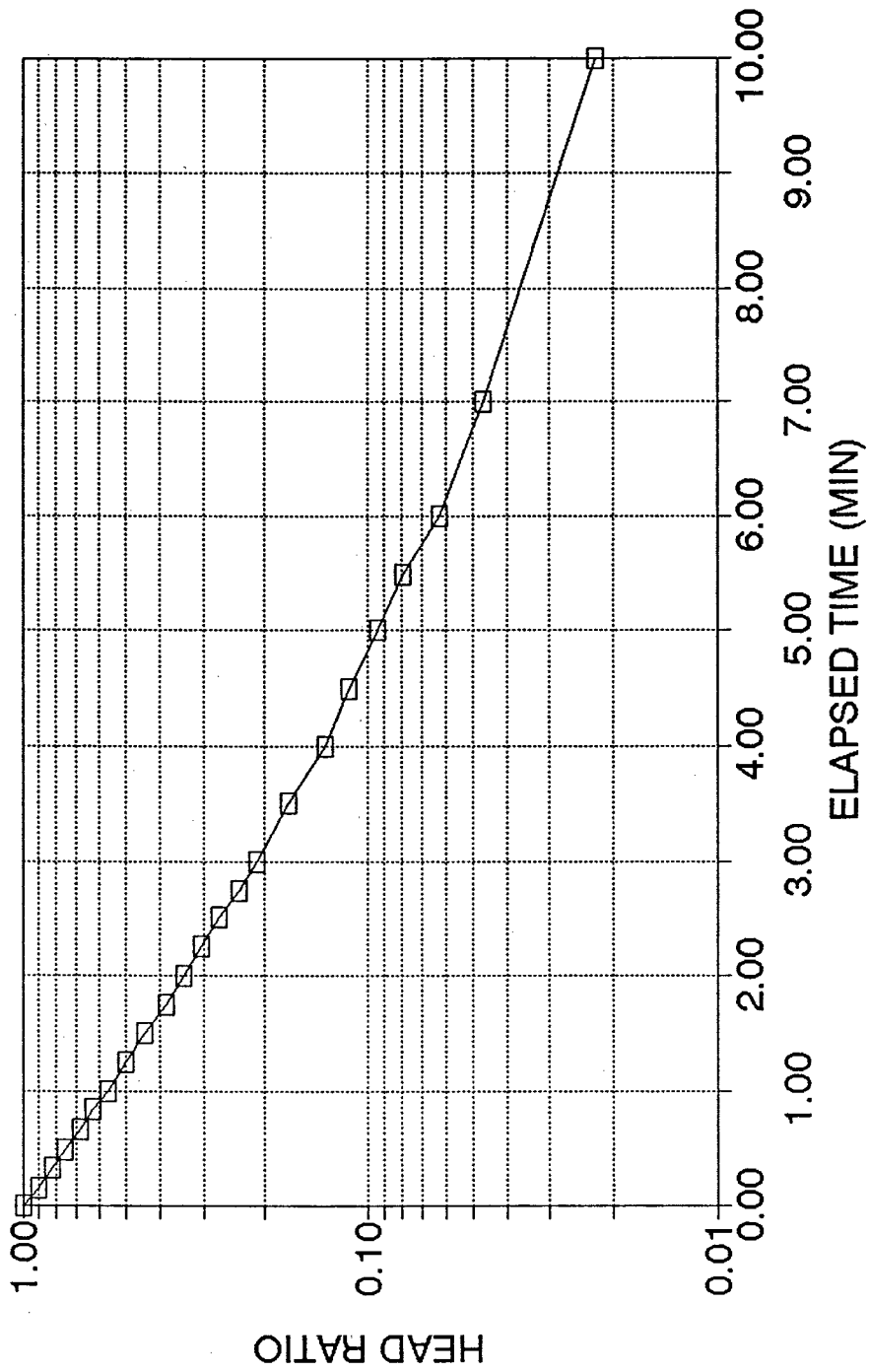
HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	8.23	-4.03	1.000	0.0000
		10	0.1667	7.83	-3.63	0.901	-0.0454
		20	0.3333	7.50	-3.30	0.819	-0.0868
		30	0.5000	7.21	-3.01	0.747	-0.1267
		40	0.6667	6.94	-2.74	0.680	-0.1676
		50	0.8333	6.71	-2.51	0.623	-0.2056
1	0		1.0000	6.48	-2.28	0.566	-0.2474
1	15		1.2500	6.22	-2.02	0.501	-0.3000
1	30		1.5000	5.99	-1.79	0.444	-0.3525
1	45		1.7500	5.76	-1.56	0.387	-0.4122
2	0		2.0000	5.58	-1.38	0.342	-0.4654
2	15		2.2500	5.42	-1.22	0.303	-0.5189
2	30		2.5000	5.29	-1.09	0.270	-0.5679
2	45		2.7500	5.15	-0.95	0.236	-0.6276
3	0		3.0000	5.05	-0.85	0.211	-0.6759
3	30		3.5000	4.89	-0.69	0.171	-0.7665
4	0		4.0000	4.74	-0.54	0.134	-0.8729
4	30		4.5000	4.66	-0.46	0.114	-0.9425
5	0		5.0000	4.58	-0.38	0.094	-1.0255
5	30		5.5000	4.52	-0.32	0.079	-1.1002
6	0		6.0000	4.45	-0.25	0.062	-1.2074
7	0		7.0000	4.39	-0.19	0.047	-1.3266
10	0		10.0000	4.29	-0.09	0.022	-1.6511

 * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 4.40E-04 CM/SEC

RISING HEAD TEST

P-17D



RISING HEAD TEST
TRAIL RIDGE LANDFILL
JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
WELL/PIEZOMETER NUMBER B-18S

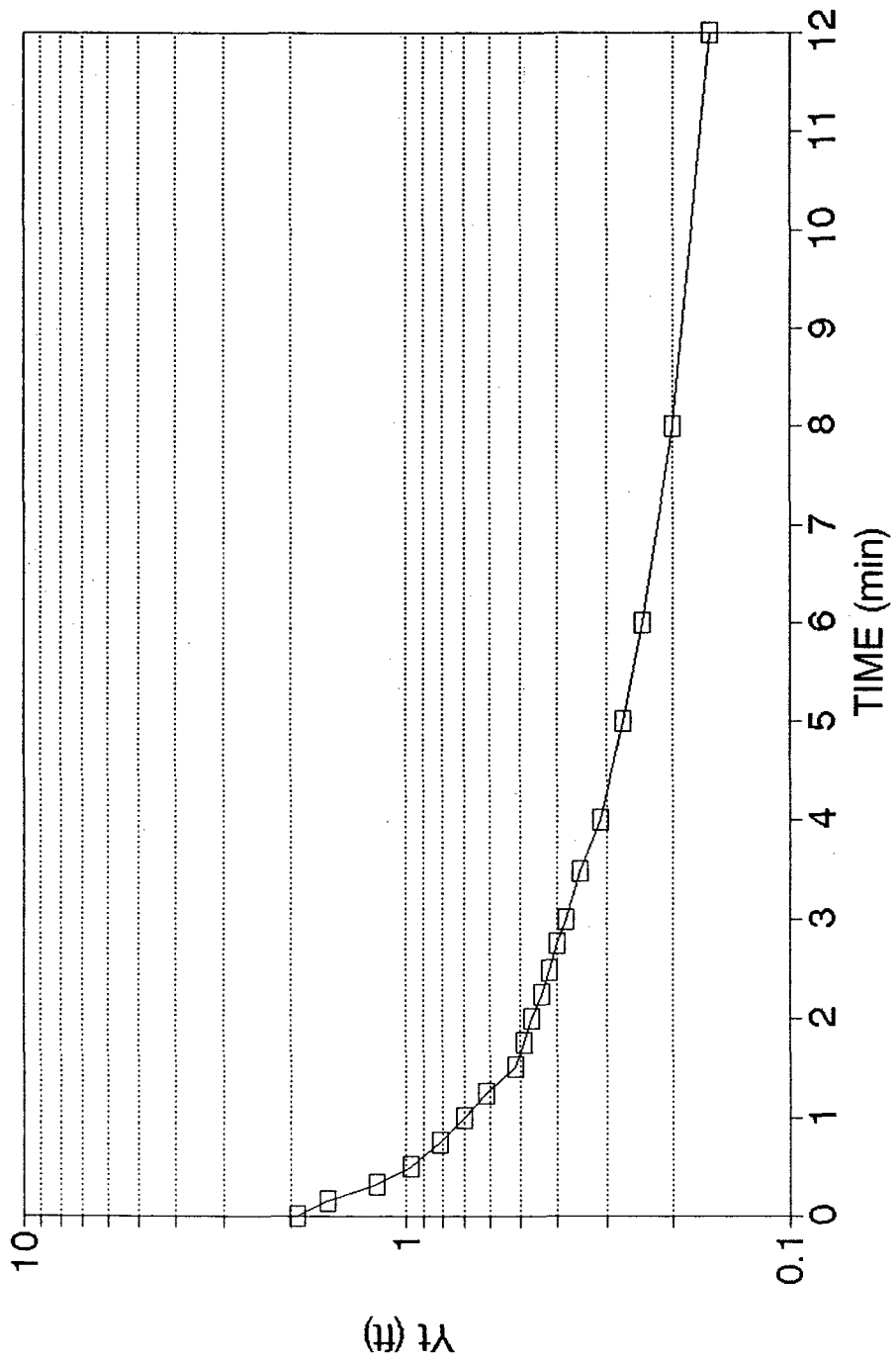
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	114.60	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	131.22	Y _o (FT)=	0.97
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	131.22	Y _t (FT)=	0.47
BOTTOM OF SCREEN ELEVATION (FT)=	114.60	t (min)=	1.50

A=	2.6	B=	0.5	C=	2.1	L _o /R _w =	40.53658	EFFECTIVE RADIUS OF CASING (FT)=	0.24
								ln(R _e /r _w)=	2.865943

*
* HYDRAULIC CONDUCTIVITY (CM/S) = 1.17E-03 *
*

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H _o)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	4.80	-1.930	1.000	0.0000	1.93
0	10	0.167	4.47	-1.600	0.829	-0.0814	1.60
0	20	0.333	4.05	-1.180	0.611	-0.2137	1.18
0	30	0.500	3.84	-0.970	0.503	-0.2988	0.97
0	45	0.750	3.68	-0.810	0.420	-0.3771	0.81
1	0	1.000	3.57	-0.700	0.363	-0.4405	0.70
1	15	1.250	3.49	-0.620	0.321	-0.4932	0.62
1	30	1.500	3.39	-0.520	0.269	-0.5696	0.52
1	45	1.750	3.36	-0.490	0.254	-0.5954	0.49
2	0	2.000	3.34	-0.470	0.244	-0.6135	0.47
2	15	2.250	3.31	-0.440	0.228	-0.6421	0.44
2	30	2.500	3.29	-0.420	0.218	-0.6623	0.42
2	45	2.750	3.27	-0.400	0.207	-0.6835	0.40
3	0	3.000	3.25	-0.380	0.197	-0.7058	0.38
3	30	3.500	3.22	-0.350	0.181	-0.7415	0.35
4	0	4.000	3.18	-0.310	0.161	-0.7942	0.31
5	0	5.000	3.14	-0.270	0.140	-0.8542	0.27
6	0	6.000	3.11	-0.240	0.124	-0.9053	0.24
8	0	8.000	3.07	-0.200	0.104	-0.9845	0.20
12	0	12.000	3.03	-0.160	0.083	-1.0814	0.16

RISING HEAD TEST
B-18S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-19S

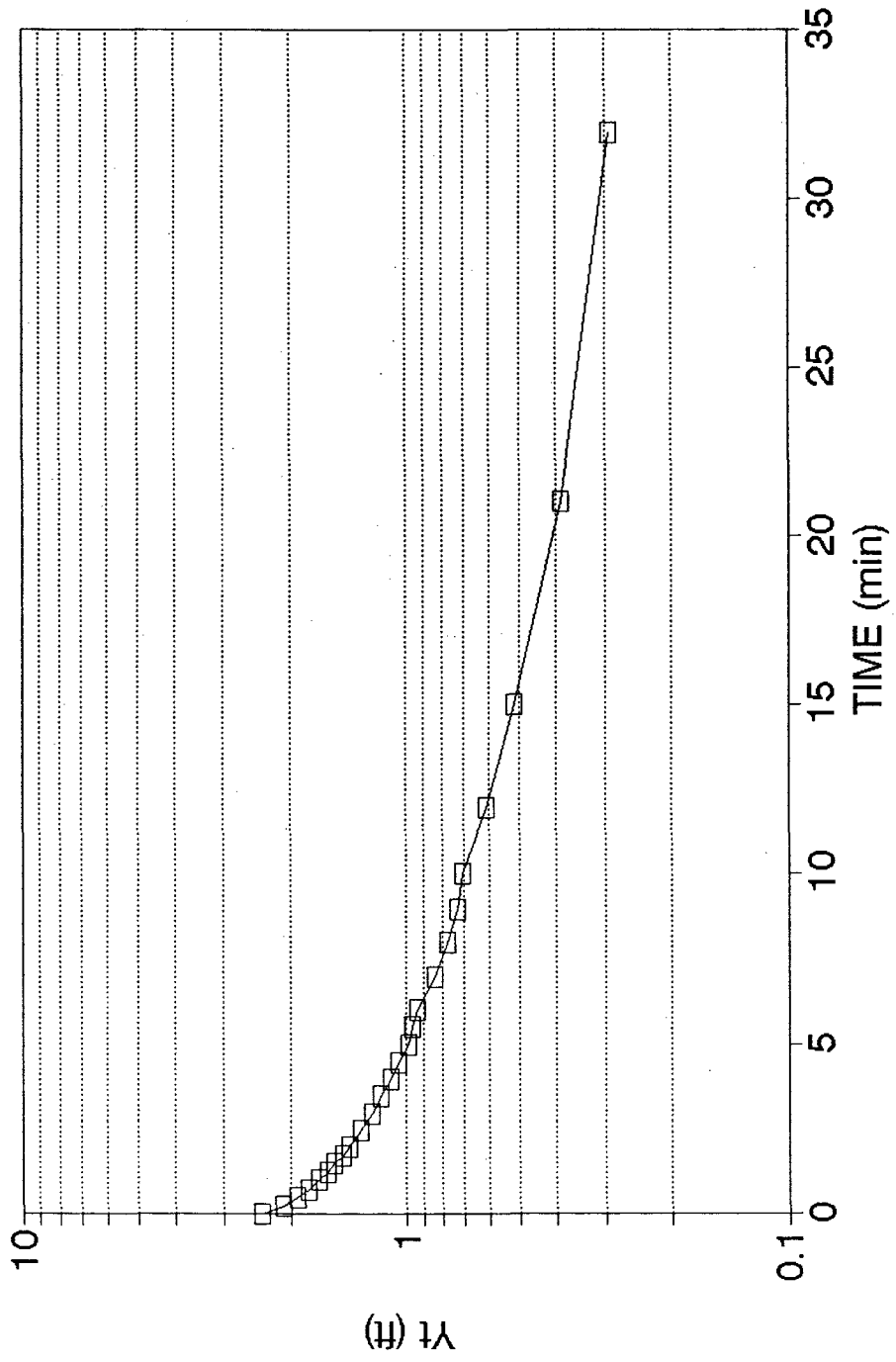
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	107.70	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	124.77	Yo (FT)=	1.54
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	124.77	Yt (FT)=	1.09
BOTTOM OF SCREEN ELEVATION (FT)=	107.70	t (min)=	2.50

A=	2.6	B=	0.5	C=	2.1	Le/Rw=	41.63414	EFFECTIVE RADIUS OF CASING (FT)=	0.24
						ln(Ro/rw)=	2.894935		

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 3.29E-04 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	5.00	-2.390	1.000	0.0000	2.39
0	15	0.250	4.70	-2.090	0.874	-0.0583	2.09
0	30	0.500	4.53	-1.920	0.803	-0.0951	1.92
0	45	0.750	4.40	-1.790	0.749	-0.1255	1.79
1	0	1.000	4.31	-1.700	0.711	-0.1479	1.70
1	15	1.250	4.22	-1.610	0.674	-0.1716	1.61
1	30	1.500	4.15	-1.540	0.644	-0.1909	1.54
1	45	1.750	4.08	-1.470	0.615	-0.2111	1.47
2	0	2.000	4.02	-1.410	0.590	-0.2292	1.41
2	30	2.500	3.92	-1.310	0.548	-0.2611	1.31
3	0	3.000	3.84	-1.230	0.515	-0.2885	1.23
3	30	3.500	3.77	-1.160	0.485	-0.3139	1.16
4	0	4.000	3.70	-1.090	0.456	-0.3410	1.09
4	30	4.500	3.65	-1.040	0.435	-0.3614	1.04
5	0	5.000	3.60	-0.990	0.414	-0.3828	0.99
5	30	5.500	3.57	-0.960	0.402	-0.3961	0.96
6	0	6.000	3.54	-0.930	0.389	-0.4099	0.93
7	0	7.000	3.45	-0.840	0.351	-0.4541	0.84
8	0	8.000	3.39	-0.780	0.326	-0.4863	0.78
9	0	9.000	3.34	-0.730	0.305	-0.5151	0.73
10	0	10.000	3.32	-0.710	0.297	-0.5271	0.71
12	0	12.000	3.22	-0.610	0.255	-0.5931	0.61
15	0	15.000	3.13	-0.520	0.218	-0.6624	0.52
21	0	21.000	3.00	-0.390	0.163	-0.7873	0.39
32	0	32.000	2.90	-0.290	0.121	-0.9160	0.29

RISING HEAD TEST
B-19S



APRIL 1992

923-3350

RISING HEAD TEST

WELL B-19I

STATIC WATER DEPTH = 4.61 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 52.40 FEET BELOW TOC
 BOTTOM OF SANDPACK = 58.90 FEET BELOW TOC

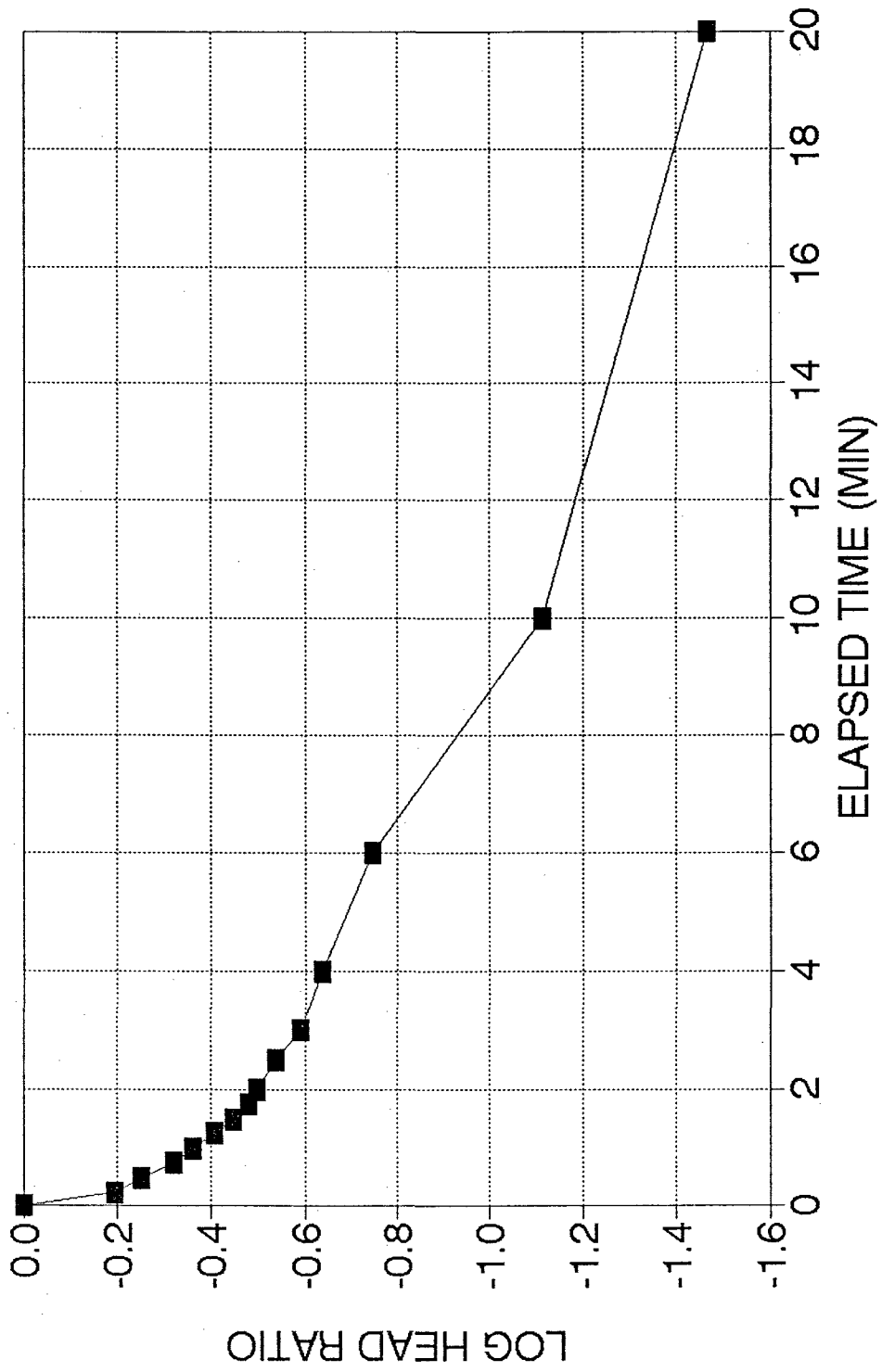
HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	5.78	-1.17	1.000	0.0000
		15	0.2500	5.36	-0.75	0.641	-0.1931
		30	0.5000	5.27	-0.66	0.564	-0.2486
		45	0.7500	5.17	-0.56	0.479	-0.3200
	1	0	1.0000	5.12	-0.51	0.436	* -0.3606
	1	15	1.2500	5.07	-0.46	0.393	-0.4054
	1	30	1.5000	5.03	-0.42	0.359	-0.4449
	1	45	1.7500	5.00	-0.39	0.333	-0.4771
	2	0	2.0000	4.98	-0.37	0.316	-0.5000
	2	30	2.5000	4.95	-0.34	0.291	-0.5367
	3	0	3.0000	4.91	-0.30	0.256	* -0.5911
	4	0	4.0000	4.88	-0.27	0.231	-0.6368
	6	0	6.0000	4.82	-0.21	0.179	-0.7460
	10	0	10.0000	4.70	-0.09	0.077	-1.1139
	20	0	20.0000	4.65	-0.04	0.034	-1.4661

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
 WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 2.35E-04 CM/SEC

RISING HEAD TEST

WELL 19I



RISING HEAD TEST

WELL B-19D

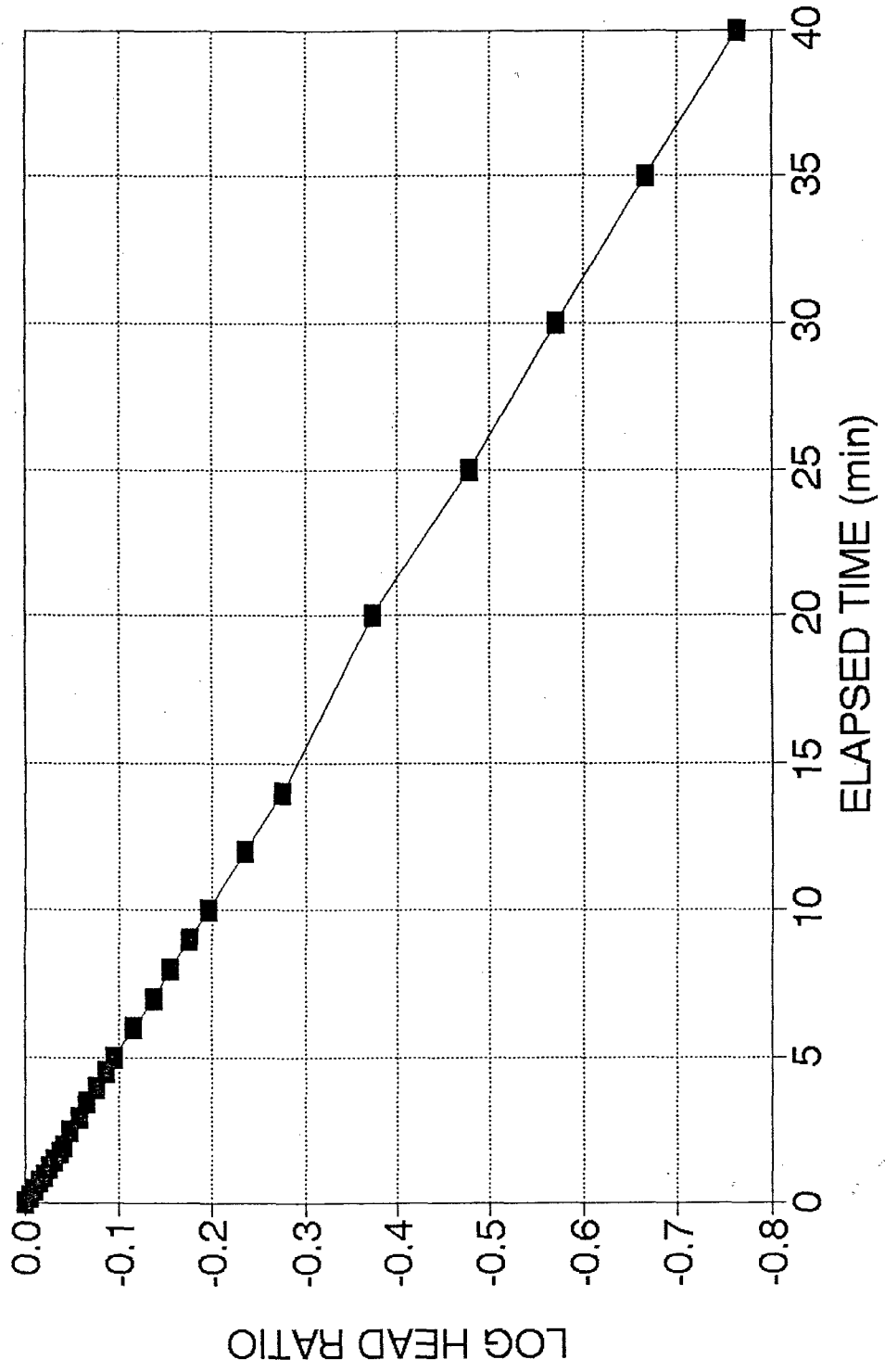
STATIC WATER DEPTH = 4.88 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 104.70 FEET BELOW TOC
 BOTTOM OF SANDPACK = 111.70 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	22.24	-17.36	1.000	0.0000
		15	0.2500	22.03	-17.15	0.988	-0.0053
		30	0.5000	21.82	-16.94	0.976	-0.0106
		45	0.7500	21.65	-16.77	0.966	-0.0150
1	0	0	1.0000	21.41	-16.53	0.952	* -0.0213
1	15	0	1.2500	21.26	-16.38	0.944	-0.0252
1	30	0	1.5000	21.03	-16.15	0.930	-0.0314
1	45	0	1.7500	20.82	-15.94	0.918	-0.0371
2	0	0	2.0000	20.69	-15.81	0.911	-0.0406
2	30	0	2.5000	20.48	-15.60	0.899	-0.0464
3	0	0	3.0000	20.12	-15.24	0.878	* -0.0566
3	30	0	3.5000	19.81	-14.93	0.860	-0.0655
4	0	0	4.0000	19.48	-14.60	0.841	-0.0752
4	30	0	4.5000	19.14	-14.26	0.821	-0.0854
5	0	0	5.0000	18.82	-13.94	0.803	-0.0953
6	0	0	6.0000	18.19	-13.31	0.767	-0.1154
7	0	0	7.0000	17.55	-12.67	0.730	-0.1368
8	0	0	8.0000	17.01	-12.13	0.699	-0.1557
9	0	0	9.0000	16.49	-11.61	0.669	-0.1747
10	0	0	10.0000	15.95	-11.07	0.638	-0.1954
12	0	0	12.0000	15.00	-10.12	0.583	-0.2344
14	0	0	14.0000	14.09	-9.21	0.531	-0.2753
20	0	0	20.0000	12.24	-7.36	0.424	-0.3727
25	0	0	25.0000	10.66	-5.78	0.333	-0.4776
30	0	0	30.0000	9.55	-4.67	0.269	-0.5702
35	0	0	35.0000	8.62	-3.74	0.215	-0.6667
40	0	0	40.0000	7.88	-3.00	0.173	-0.7624

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
 WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 3.41E-05 CM/SEC

RISING HEAD TEST WELL 19D



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-20S

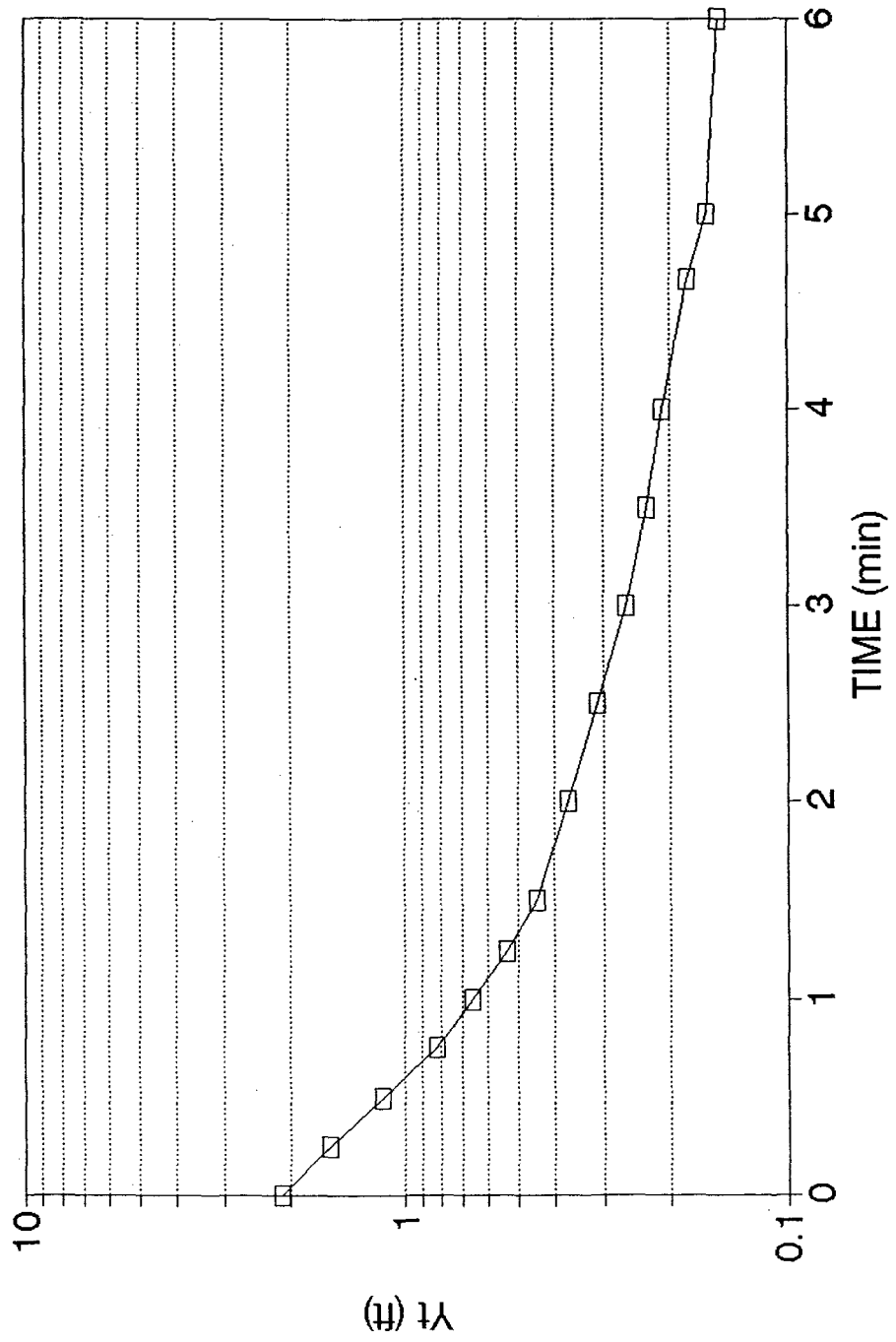
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	100.90	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	117.12	Yo (FT)=	0.45
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	117.12	Yt (FT)=	0.21
BOTTOM OF SCREEN ELEVATION (FT)=	100.90	t (min)=	2.50

A=	2.6	B=	0.5	Le/Rw=	39.56097	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.839530

 * HYDRAULIC CONDUCTIVITY (CM/S) = 7.49E-04 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	6.01	-2.120	1.000	0.0000	2.12
0	15	0.250	5.46	-1.570	0.741	-0.1304	1.57
0	30	0.500	5.03	-1.140	0.538	-0.2694	1.14
0	45	0.750	4.71	-0.820	0.387	-0.4125	0.82
1	0	1.000	4.55	-0.660	0.311	-0.5068	0.66
1	15	1.250	4.43	-0.540	0.255	-0.5939	0.54
1	30	1.500	4.34	-0.450	0.212	-0.6731	0.45
2	0	2.000	4.26	-0.370	0.175	-0.7581	0.37
2	30	2.500	4.20	-0.310	0.146	-0.8350	0.31
3	0	3.000	4.15	-0.260	0.123	-0.9114	0.26
3	30	3.500	4.12	-0.230	0.108	-0.9646	0.23
4	0	4.000	4.10	-0.210	0.099	-1.0041	0.21
4	40	4.667	4.07	-0.180	0.085	-1.0711	0.18
5	0	5.000	4.05	-0.160	0.075	-1.1222	0.16
6	0	6.000	4.04	-0.150	0.071	-1.1502	0.15

RISING HEAD TEST
B-20S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-21S

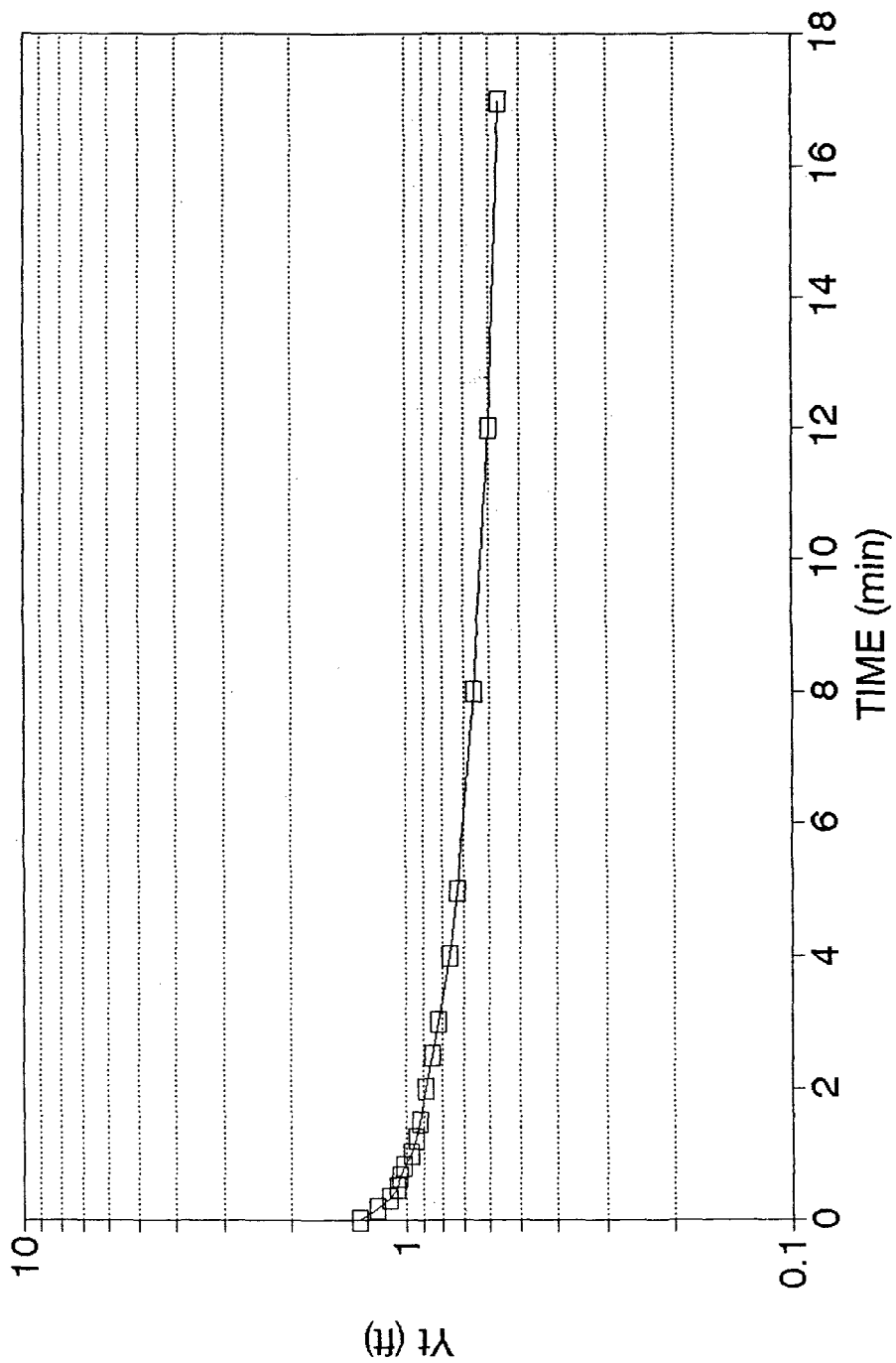
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	103.00	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	114.17	Y ₀ (FT)=	0.97
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	114.17	Y _t (FT)=	0.76
BOTTOM OF SCREEN ELEVATION (FT)=	103.00	t (min)=	3.00

A=	2.6	B=	0.5	Le/Rw=	27.24390	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(R _e /r _w)=	2.439454

 * HYDRAULIC CONDUCTIVITY (CM/S) = 2.49E-04 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	9.99	-1.320	1.000	0.0000	1.32
0	10	0.167	9.86	-1.190	0.902	-0.0450	1.19
0	20	0.333	9.77	-1.100	0.833	-0.0792	1.10
0	30	0.500	9.72	-1.050	0.795	-0.0994	1.05
0	40	0.667	9.70	-1.030	0.780	-0.1077	1.03
0	50	0.833	9.68	-1.010	0.765	-0.1163	1.01
1	0	1.000	9.64	-0.970	0.735	-0.1338	0.97
1	15	1.250	9.61	-0.940	0.712	-0.1474	0.94
1	30	1.500	9.59	-0.920	0.697	-0.1568	0.92
2	0	2.000	9.55	-0.880	0.667	-0.1761	0.88
2	30	2.500	9.52	-0.850	0.644	-0.1912	0.85
3	0	3.000	9.49	-0.820	0.621	-0.2068	0.82
4	0	4.000	9.43	-0.760	0.576	-0.2398	0.76
5	0	5.000	9.40	-0.730	0.553	-0.2573	0.73
8	0	8.000	9.33	-0.660	0.500	-0.3010	0.66
12	0	12.000	9.27	-0.600	0.455	-0.3424	0.60
17	0	17.000	9.24	-0.570	0.432	-0.3647	0.57

RISING HEAD TEST
B-21S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-22SR

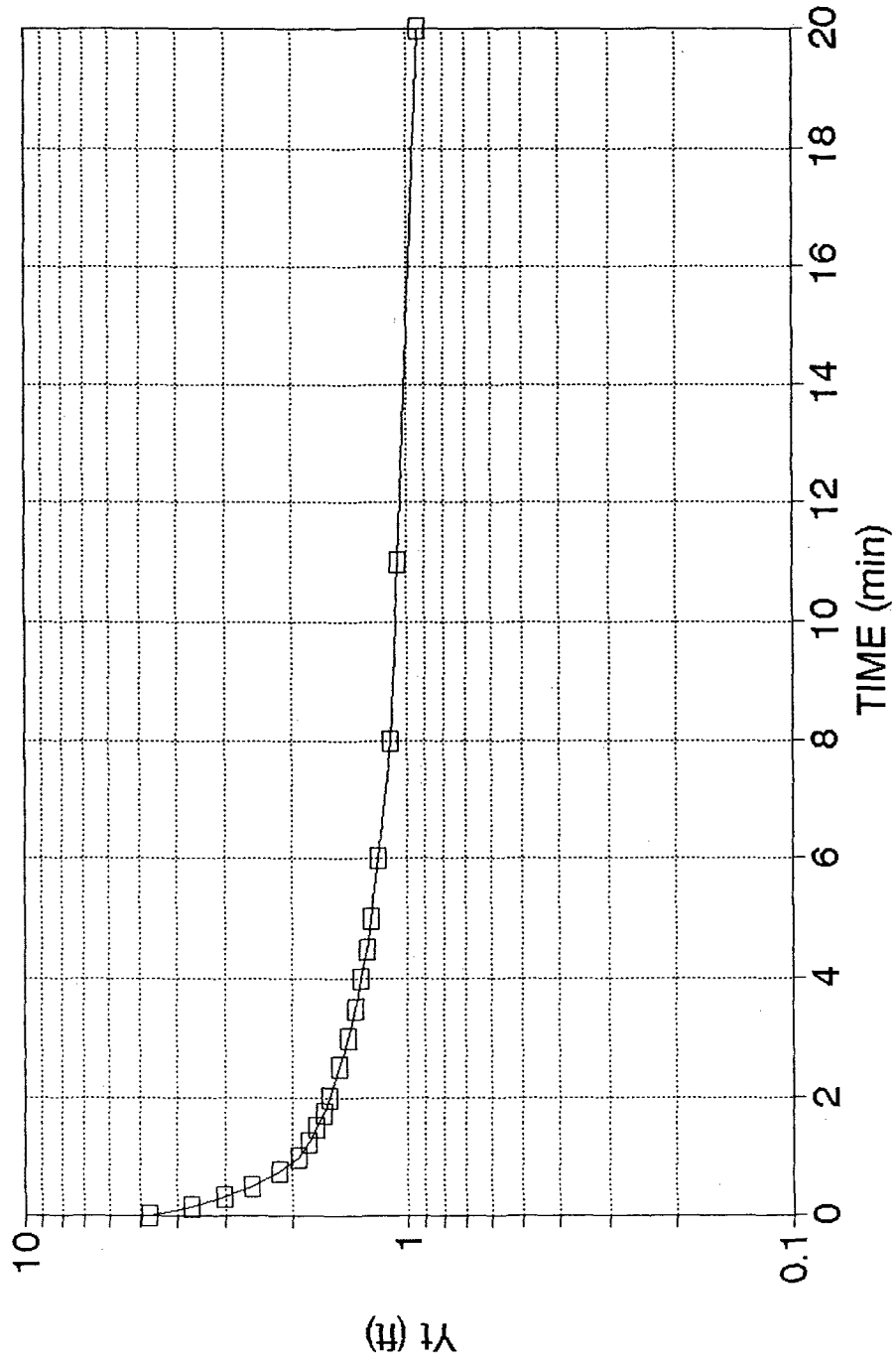
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	99.50	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	117.29	Yo (FT)=	1.93
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	117.29	Yt (FT)=	1.38
BOTTOM OF SCREEN ELEVATION (FT)=	99.50	t (min)=	2.50

A=	2.6	B=	0.5	Le/Rw=	43.39024	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.939818

.....
 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 3.25E-04 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	14.41	-4.730	1.000	0.0000	4.73
0	10	0.167	13.36	-3.680	0.778	-0.1090	3.68
0	20	0.333	12.69	-3.010	0.636	-0.1963	3.01
0	30	0.500	12.23	-2.550	0.539	-0.2683	2.55
0	45	0.750	11.83	-2.150	0.455	-0.3424	2.15
1	0	1.000	11.61	-1.930	0.408	-0.3893	1.93
1	15	1.250	11.48	-1.800	0.381	-0.4196	1.80
1	30	1.500	11.40	-1.720	0.364	-0.4393	1.72
1	45	1.750	11.33	-1.650	0.349	-0.4574	1.65
2	0	2.000	11.29	-1.610	0.340	-0.4680	1.61
2	30	2.500	11.18	-1.500	0.317	-0.4988	1.50
3	0	3.000	11.10	-1.420	0.300	-0.5226	1.42
3	30	3.500	11.04	-1.360	0.288	-0.5413	1.36
4	0	4.000	11.00	-1.320	0.279	-0.5543	1.32
4	30	4.500	10.96	-1.280	0.271	-0.5677	1.28
5	0	5.000	10.92	-1.240	0.262	-0.5814	1.24
6	0	6.000	10.86	-1.180	0.249	-0.6030	1.18
8	0	8.000	10.78	-1.100	0.233	-0.6335	1.10
11	0	11.000	10.73	-1.050	0.222	-0.6537	1.05
20	0	20.000	10.61	-0.930	0.197	-0.7064	0.93

RISING HEAD TEST
B-22SR



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-23S

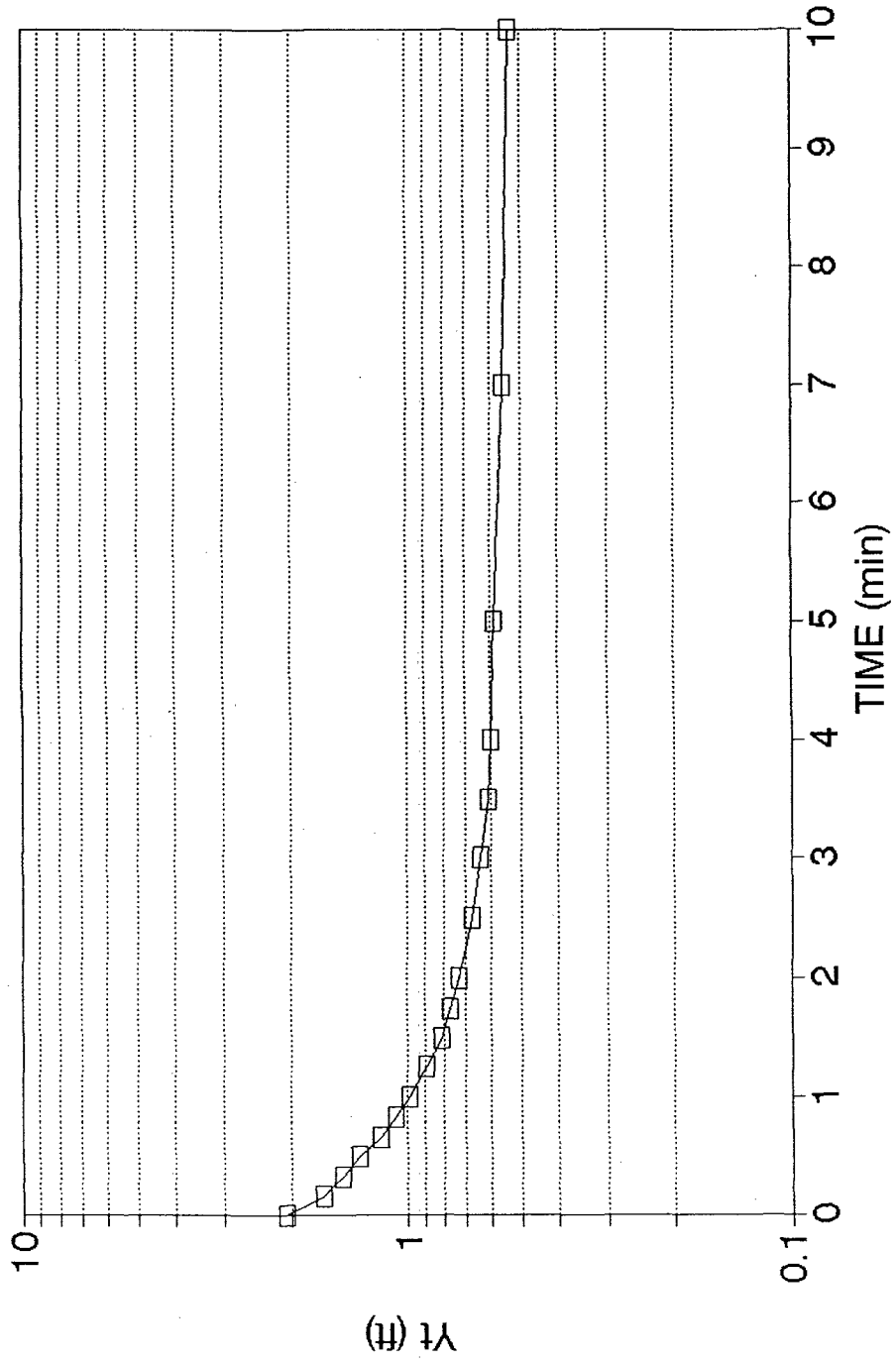
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	97.50	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	117.34	Y ₀ (FT)=	1.65
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	117.34	Y _t (FT)=	0.81
BOTTOM OF SCREEN ELEVATION (FT)=	97.50	t (min)=	1.33

A=	2.6	B=	0.5	C=	2.1	Le/Rw= 48.39024	EFFECTIVE RADIUS OF CASING (FT)=	0.24
							ln(Re/rw)=	3.058537

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.16E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	10.05	-2.050	1.000	0.0000	2.05
0	10	0.167	9.65	-1.650	0.805	-0.0943	1.65
0	20	0.333	9.48	-1.480	0.722	-0.1415	1.48
0	30	0.500	9.33	-1.330	0.649	-0.1879	1.33
0	40	0.667	9.17	-1.170	0.571	-0.2436	1.17
0	50	0.833	9.07	-1.070	0.522	-0.2824	1.07
1	0	1.000	8.99	-0.990	0.483	-0.3161	0.99
1	15	1.250	8.89	-0.890	0.434	-0.3624	0.89
1	30	1.500	8.81	-0.810	0.395	-0.4033	0.81
1	45	1.750	8.77	-0.770	0.376	-0.4253	0.77
2	0	2.000	8.73	-0.730	0.356	-0.4484	0.73
2	30	2.500	8.68	-0.680	0.332	-0.4792	0.68
3	0	3.000	8.64	-0.640	0.312	-0.5056	0.64
3	30	3.500	8.61	-0.610	0.298	-0.5264	0.61
4	0	4.000	8.60	-0.600	0.293	-0.5336	0.60
5	0	5.000	8.59	-0.590	0.288	-0.5409	0.59
7	0	7.000	8.56	-0.560	0.273	-0.5636	0.56
10	0	10.000	8.54	-0.540	0.263	-0.5794	0.54

RISING HEAD TEST
B-23S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-24S

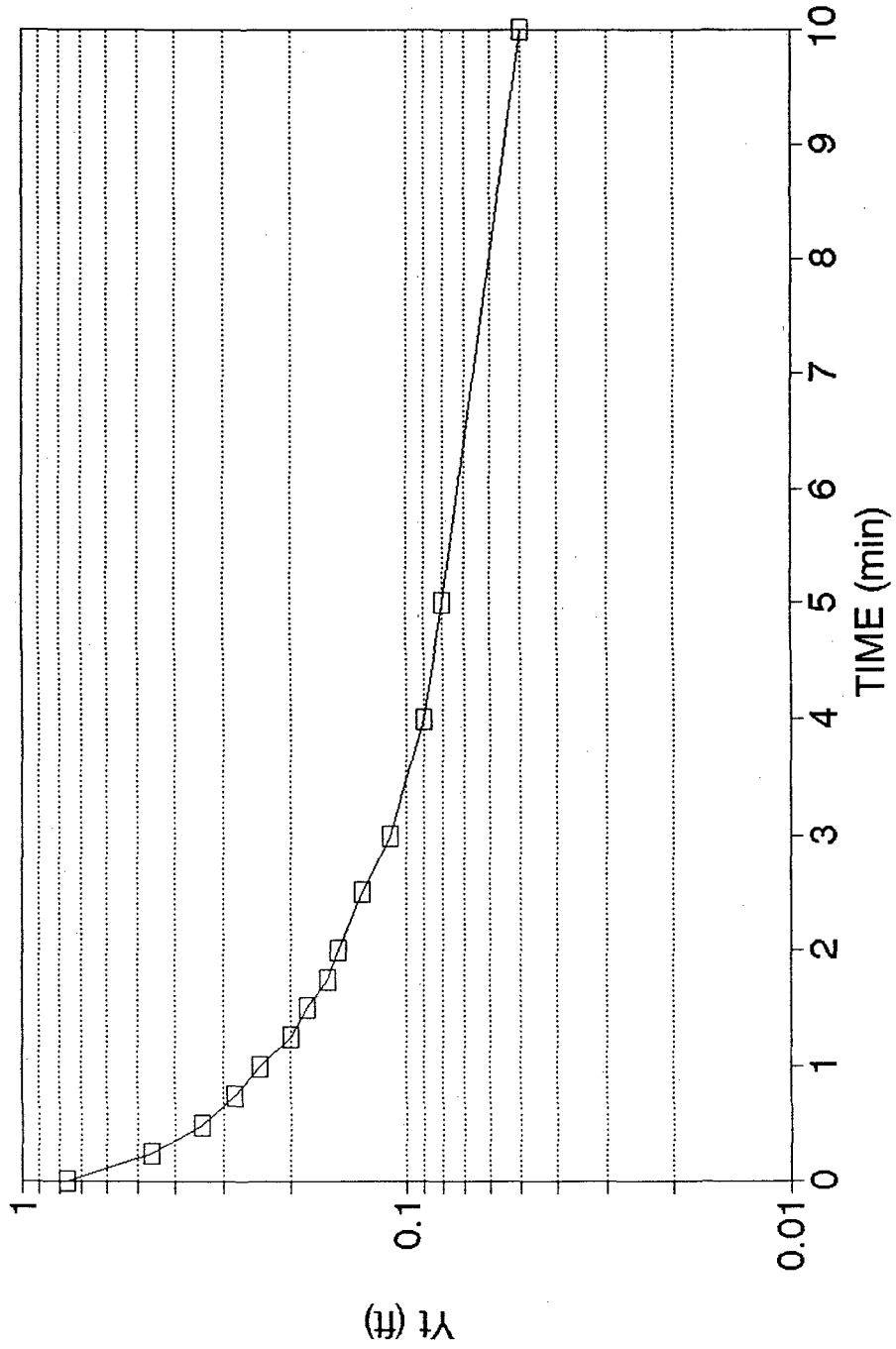
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	105.70	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	121.25	Yo (FT)=	0.46
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	121.25	Yt (FT)=	0.18
BOTTOM OF SCREEN ELEVATION (FT)=	105.70	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	37.92682	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Ro/rw)=	2.793854

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.89E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	5.55	-0.760	1.000	0.0000	0.76
0	15	0.250	5.25	-0.460	0.605	-0.2181	0.46
0	30	0.500	5.13	-0.340	0.447	-0.3493	0.34
0	45	0.750	5.07	-0.280	0.368	-0.4337	0.28
1	0	1.000	5.03	-0.240	0.316	-0.5006	0.24
1	15	1.250	4.99	-0.200	0.263	-0.5798	0.2
1	30	1.500	4.97	-0.180	0.237	-0.6255	0.18
1	45	1.750	4.95	-0.160	0.211	-0.6767	0.16
2	0	2.000	4.94	-0.150	0.197	-0.7047	0.15
2	30	2.500	4.92	-0.130	0.171	-0.7669	0.13
3	0	3.000	4.90	-0.110	0.145	-0.8394	0.11
4	0	4.000	4.88	-0.090	0.118	-0.9266	0.09
5	0	5.000	4.87	-0.080	0.105	-0.9777	0.08
10	0	10.000	4.84	-0.050	0.066	-1.1818	0.05

RISING HEAD TEST B-24S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-25S

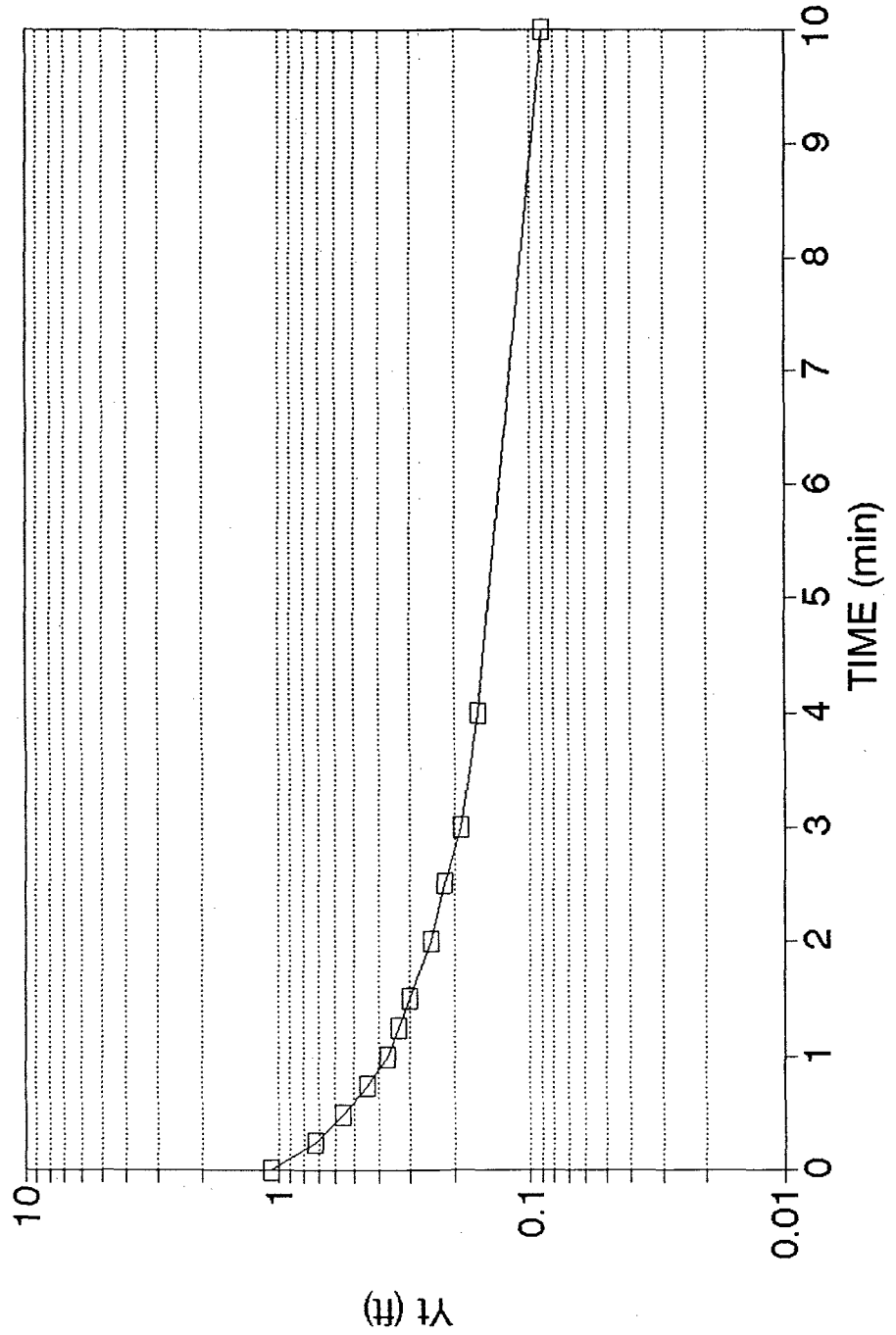
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	104.90	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	120.69	Y ₀ (FT)=	0.44
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	120.69	Y _t (FT)=	0.25
BOTTOM OF SCREEN ELEVATION (FT)=	104.90	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	38.51219	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.810428

 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.13E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	5.60	-1.070	1.000	0.0000	1.07
0	15	0.250	5.25	-0.720	0.673	-0.1721	0.72
0	30	0.500	5.09	-0.560	0.523	-0.2812	0.56
0	45	0.750	4.97	-0.440	0.411	-0.3859	0.44
1	0	1.000	4.90	-0.370	0.346	-0.4612	0.37
1	15	1.250	4.86	-0.330	0.308	-0.5109	0.33
1	30	1.500	4.83	-0.300	0.280	-0.5523	0.3
2	0	2.000	4.78	-0.250	0.234	-0.6314	0.25
2	30	2.500	4.75	-0.220	0.206	-0.6870	0.22
3	0	3.000	4.72	-0.190	0.178	-0.7506	0.19
4	0	4.000	4.69	-0.160	0.150	-0.8253	0.16
10	0	10.000	4.62	-0.090	0.084	-1.0751	0.09

RISING HEAD TEST B-25S



APRIL 1992

923-3350

RISING HEAD TEST

WELL B-25I

STATIC WATER DEPTH = 2.94 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 52.90 FEET BELOW TOC
 BOTTOM OF SANDPACK = 60.20 FEET BELOW TOC

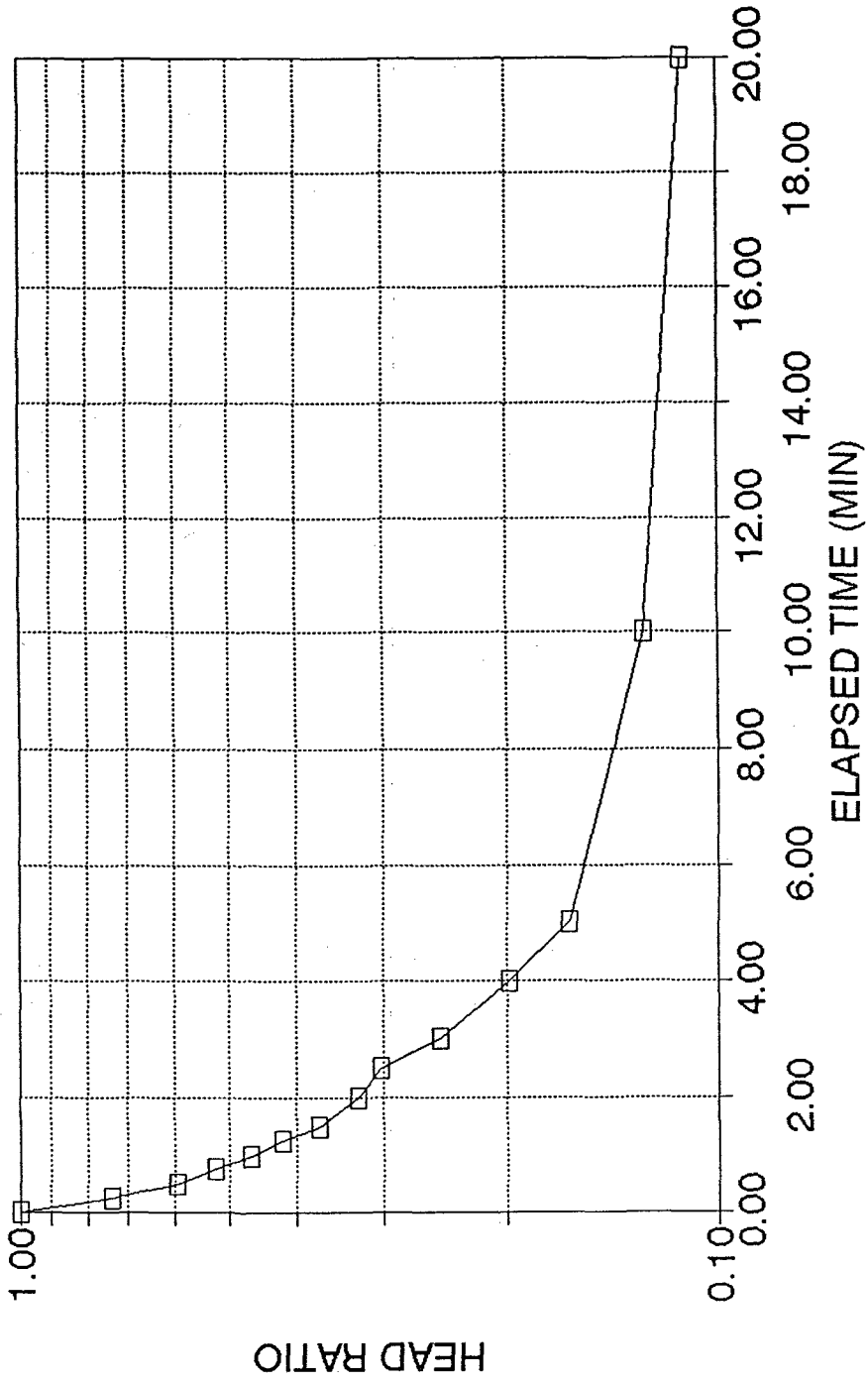
HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO
		0	0.0000	4.09	-2.58	1.000	0.0000
		15	0.2500	3.88	-1.90	0.736	-0.1329
		30	0.5000	3.79	-1.53	0.593	-0.2269
		45	0.7500	3.75	-1.35	0.523	-0.2813
1	0		1.0000	3.70	-1.20	0.465	-0.3324
1	15		1.2500	3.67	-1.08	0.419	-0.3782
1	30		1.5000	3.64	-0.96	0.372	-0.4293
2	0		2.0000	3.58	-0.84	0.326	-0.4873
2	30		2.5000	3.56	-0.78	0.302	-0.5195
3	0		3.0000	3.52	-0.64	0.248	-0.6054
4	0		4.0000	3.47	-0.51	0.198	-0.7040
5	0		5.0000	3.43	-0.42	0.163	-0.7884
10	0		10.0000	3.29	-0.33	0.128	-0.8931
20	0		20.0000	3.18	-0.29	0.112	-0.9492

 * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 2.67E-04 CM/SEC

RISING HEAD TEST

B-25I



RISING HEAD TEST

WELL B-25D

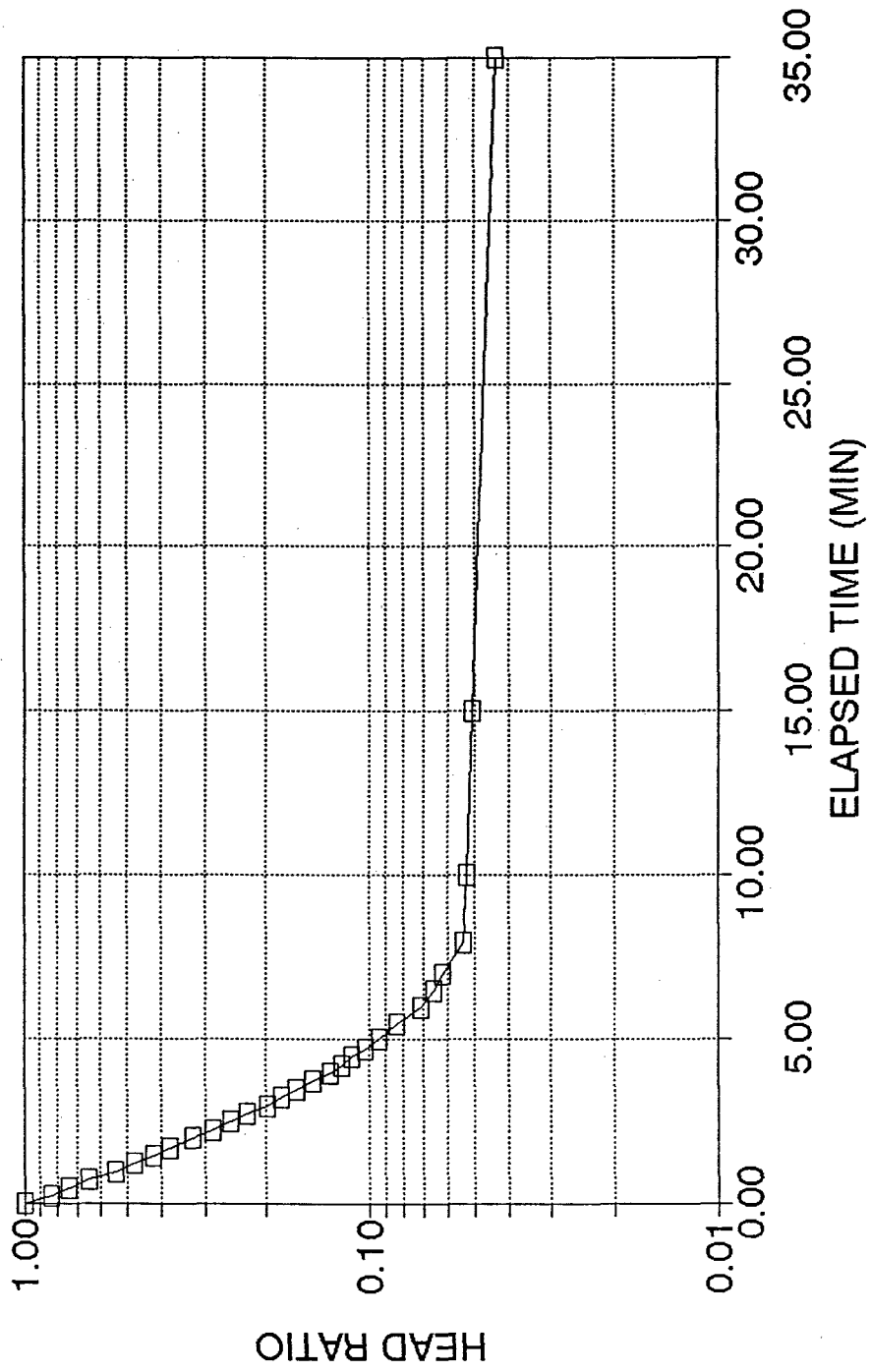
STATIC WATER DEPTH = 3.58 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 101.50 FEET BELOW TOC
 BOTTOM OF SANDPACK = 108.50 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	9.10	-5.52	1.000	0.0000
		15	0.2500	8.18	-4.60	0.833	-0.0792
		30	0.5000	7.67	-4.09	0.741	-0.1302
		45	0.7500	7.13	-3.55	0.643	-0.1917
1	0		1.0000	6.58	-3.00	0.543	-0.2648
1	15		1.2500	6.20	-2.62	0.475	-0.3236
1	30		1.5000	5.92	-2.34	0.424	-0.3727
1	45		1.7500	5.66	-2.08	0.377	-0.4239
2	0		2.0000	5.38	-1.80	0.326	-0.4867
2	15		2.2500	5.16	-1.58	0.286	-0.5433
2	30		2.5000	4.98	-1.40	0.254	-0.5958
2	45		2.7500	4.83	-1.25	0.226	-0.6450
3	0		3.0000	4.68	-1.10	0.199	-0.7005
3	15		3.2500	4.58	-1.00	0.181	-0.7419
3	30		3.5000	4.48	-0.90	0.163	-0.7877
3	45		3.7500	4.39	-0.81	0.147	-0.8335
4	0		4.0000	4.3	-0.72	0.130	-0.8846
4	15		4.2500	4.25	-0.67	0.121	-0.9159
4	30		4.5000	4.2	-0.62	0.112	-0.9495
4	45		4.7500	4.15	-0.57	0.103	-0.9861
5	0		5.0000	4.1	-0.52	0.094	-1.0259
5	30		5.5000	4.04	-0.46	0.083	-1.0792
6	0		6.0000	3.97	-0.39	0.071	-1.1509
6	30		6.5000	3.94	-0.36	0.065	-1.1856
7	0		7.0000	3.92	-0.34	0.062	-1.2105
8	0		8.0000	3.88	-0.30	0.054	-1.2648
10	0		10.0000	3.87	-0.29	0.053	-1.2795
15	0		15.0000	3.86	-0.28	0.051	-1.2948
35	0		35.0000	3.82	-0.24	0.043	-1.3617

 * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 4.38E-04 CM/SEC

RISING HEAD TEST B-25D



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-26S

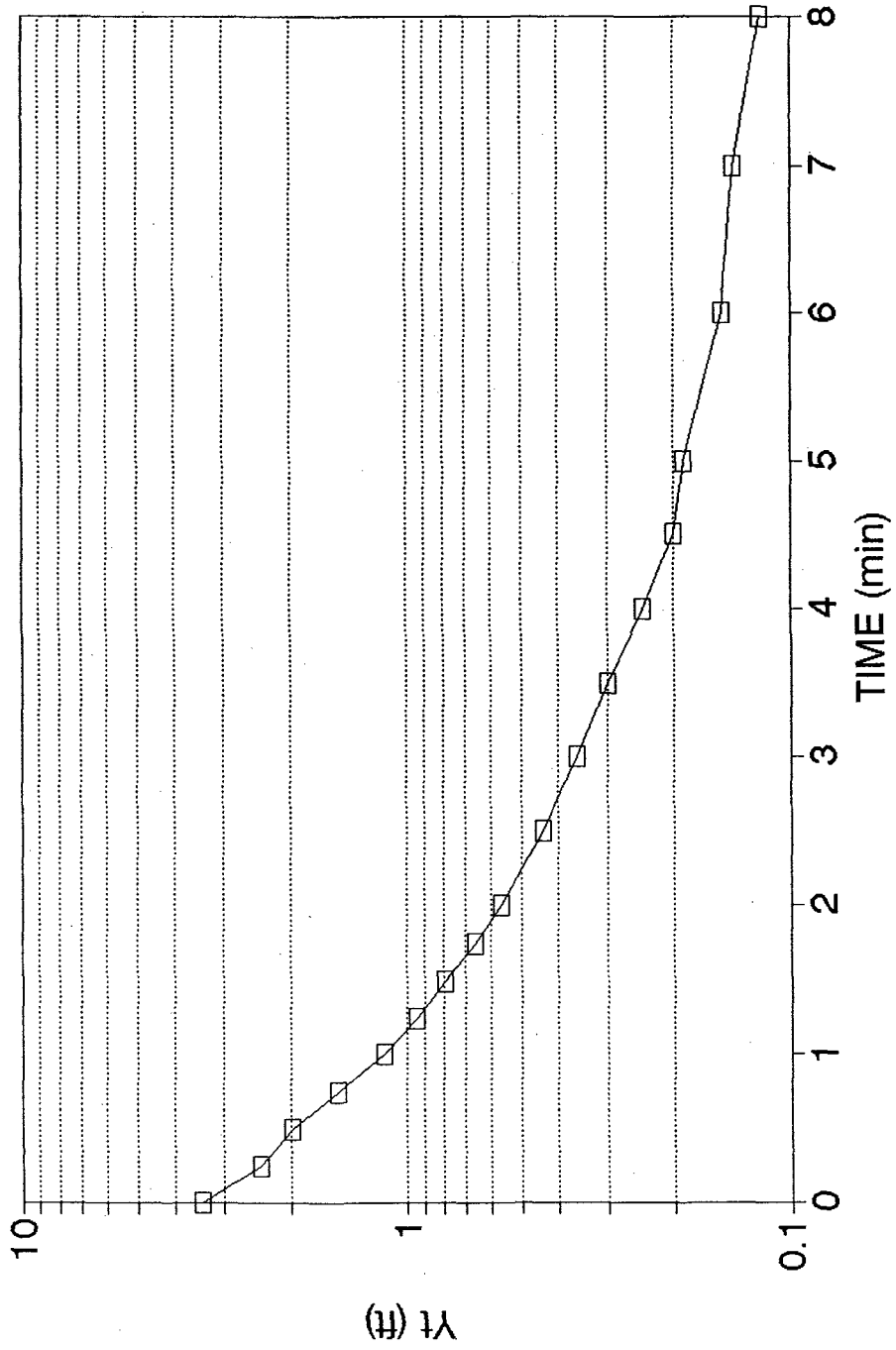
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	107.90	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	122.80	Yo (FT)=	1.51
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	122.80	Yt (FT)=	0.44
BOTTOM OF SCREEN ELEVATION (FT)=	107.90	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	36.34146	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Re/rw)=	2.747709

 * HYDRAULIC CONDUCTIVITY (CM/S) = 2.55E-03 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	7.16	-3.410	1.000	0.0000	3.41
0	15	0.250	6.15	-2.400	0.704	-0.1525	2.40
0	30	0.500	5.73	-1.980	0.581	-0.2361	1.98
0	45	0.750	5.26	-1.510	0.443	-0.3538	1.51
1	0	1.000	4.89	-1.140	0.334	-0.4758	1.14
1	15	1.250	4.69	-0.940	0.276	-0.5596	0.94
1	30	1.500	4.54	-0.790	0.232	-0.6351	0.79
1	45	1.750	4.41	-0.660	0.194	-0.7132	0.66
2	0	2.000	4.32	-0.570	0.167	-0.7769	0.57
2	30	2.500	4.19	-0.440	0.129	-0.8893	0.44
3	0	3.000	4.11	-0.360	0.106	-0.9765	0.36
3	30	3.500	4.05	-0.300	0.088	-1.0556	0.30
4	0	4.000	3.99	-0.240	0.070	-1.1525	0.24
4	30	4.500	3.95	-0.200	0.059	-1.2317	0.20
5	0	5.000	3.94	-0.190	0.056	-1.2540	0.19
6	0	6.000	3.90	-0.150	0.044	-1.3567	0.15
7	0	7.000	3.89	-0.140	0.041	-1.3866	0.14
8	0	8.000	3.87	-0.120	0.035	-1.4536	0.12

RISING HEAD TEST B-26S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-27S

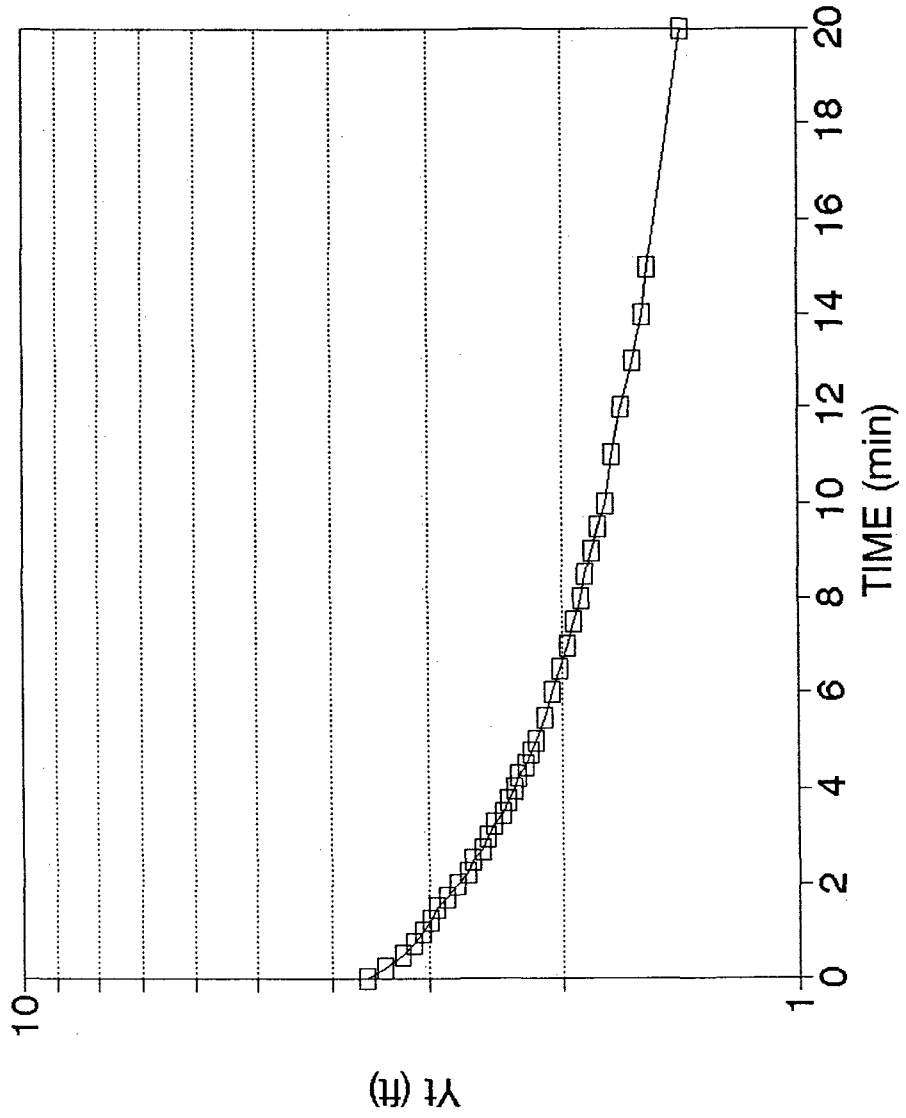
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	110.10	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	125.00	Yo (FT)=	2.63
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	125.00	Yt (FT)=	2.40
BOTTOM OF SCREEN ELEVATION (FT)=	110.10	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	36.34146	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Ro/rw)=	2.747709

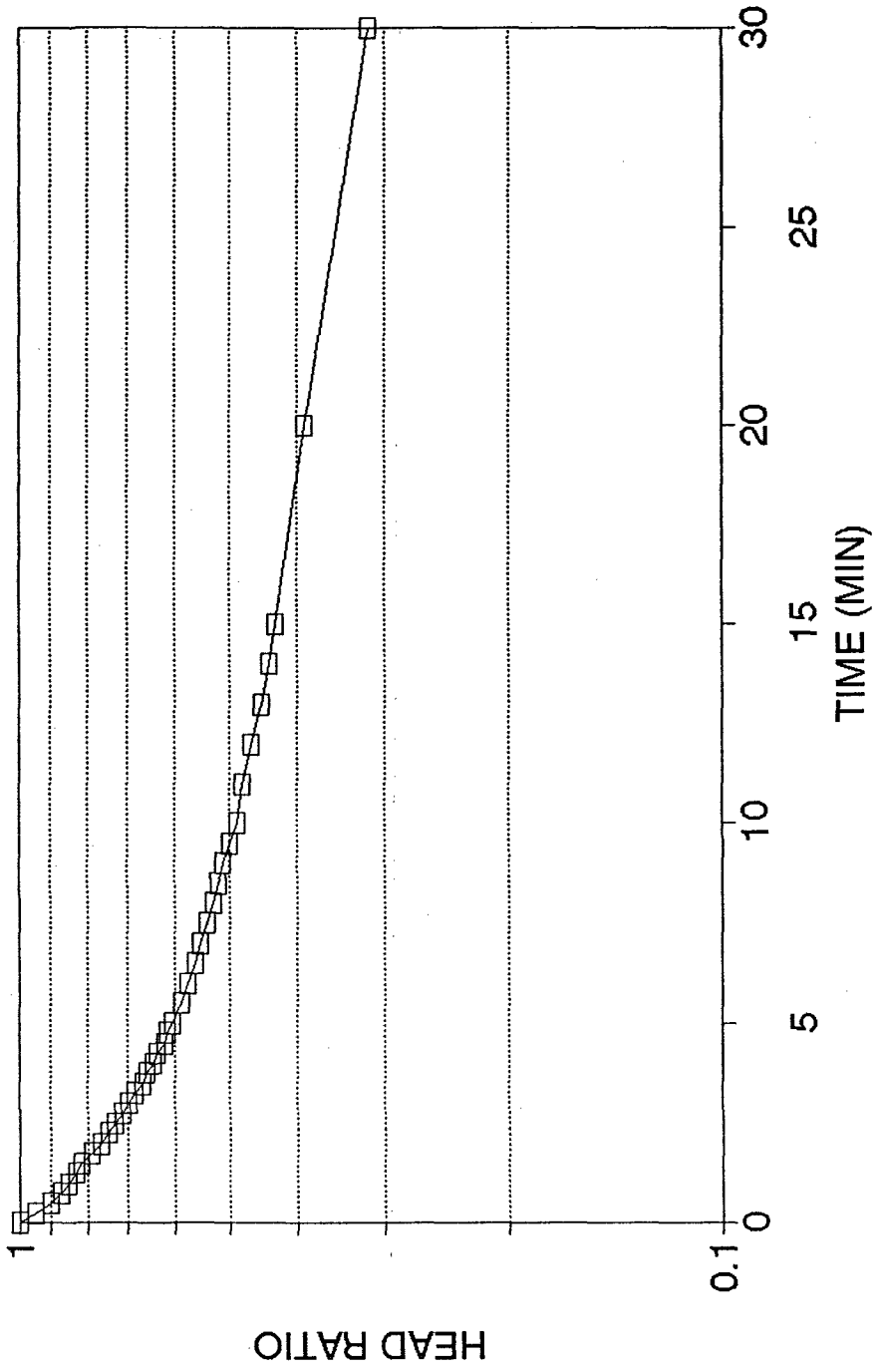
 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.89E-04 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	6.90	-3.600	1.000	0.0000	3.6
0	15	0.250	6.72	-3.420	0.950	-0.0223	3.42
0	30	0.500	6.54	-3.240	0.900	-0.0458	3.24
0	45	0.750	6.44	-3.140	0.872	-0.0594	3.14
1	0	1.000	6.35	-3.050	0.847	-0.0720	3.05
1	15	1.250	6.28	-2.980	0.828	-0.0821	2.98
1	30	1.500	6.23	-2.930	0.814	-0.0894	2.93
1	45	1.750	6.14	-2.840	0.789	-0.1030	2.84
2	0	2.000	6.05	-2.750	0.764	-0.1170	2.75
2	15	2.250	5.98	-2.680	0.744	-0.1282	2.68
2	30	2.500	5.93	-2.630	0.731	-0.1363	2.63
2	45	2.750	5.86	-2.560	0.711	-0.1481	2.56
3	0	3.000	5.81	-2.510	0.697	-0.1566	2.51
3	15	3.250	5.76	-2.460	0.683	-0.1654	2.46
3	30	3.500	5.70	-2.400	0.667	-0.1761	2.4
3	45	3.750	5.66	-2.360	0.656	-0.1834	2.36
4	0	4.000	5.62	-2.320	0.644	-0.1908	2.32
4	15	4.250	5.59	-2.290	0.636	-0.1965	2.29
4	30	4.500	5.54	-2.240	0.622	-0.2061	2.24
4	45	4.750	5.51	-2.210	0.614	-0.2119	2.21
5	0	5.000	5.48	-2.180	0.606	-0.2178	2.18
5	30	5.500	5.42	-2.120	0.589	-0.2300	2.12
6	0	6.000	5.37	-2.070	0.575	-0.2403	2.07
6	30	6.500	5.32	-2.020	0.561	-0.2510	2.02
7	0	7.000	5.28	-1.980	0.550	-0.2596	1.98
7	30	7.500	5.24	-1.940	0.539	-0.2685	1.94
8	0	8.000	5.20	-1.900	0.528	-0.2775	1.9
8	30	8.500	5.17	-1.870	0.519	-0.2845	1.87
9	0	9.000	5.14	-1.840	0.511	-0.2915	1.84
9	30	9.500	5.10	-1.800	0.500	-0.3010	1.8
10	0	10.000	5.06	-1.760	0.489	-0.3108	1.76
11	0	11.000	5.03	-1.730	0.481	-0.3183	1.73
12	0	12.000	4.98	-1.680	0.467	-0.3310	1.68
13	0	13.000	4.92	-1.620	0.450	-0.3468	1.62
14	0	14.000	4.88	-1.580	0.439	-0.3576	1.58
15	0	15.000	4.85	-1.550	0.431	-0.3660	1.55
20	0	20.000	4.71	-1.410	0.392	-0.4071	1.41
30	0	30.000	4.44	-1.140	0.317	-0.4994	1.14

RISING HEAD TEST
B-27S



RISING HEAD TEST B-27S



RISING HEAD TEST

WELL B-271

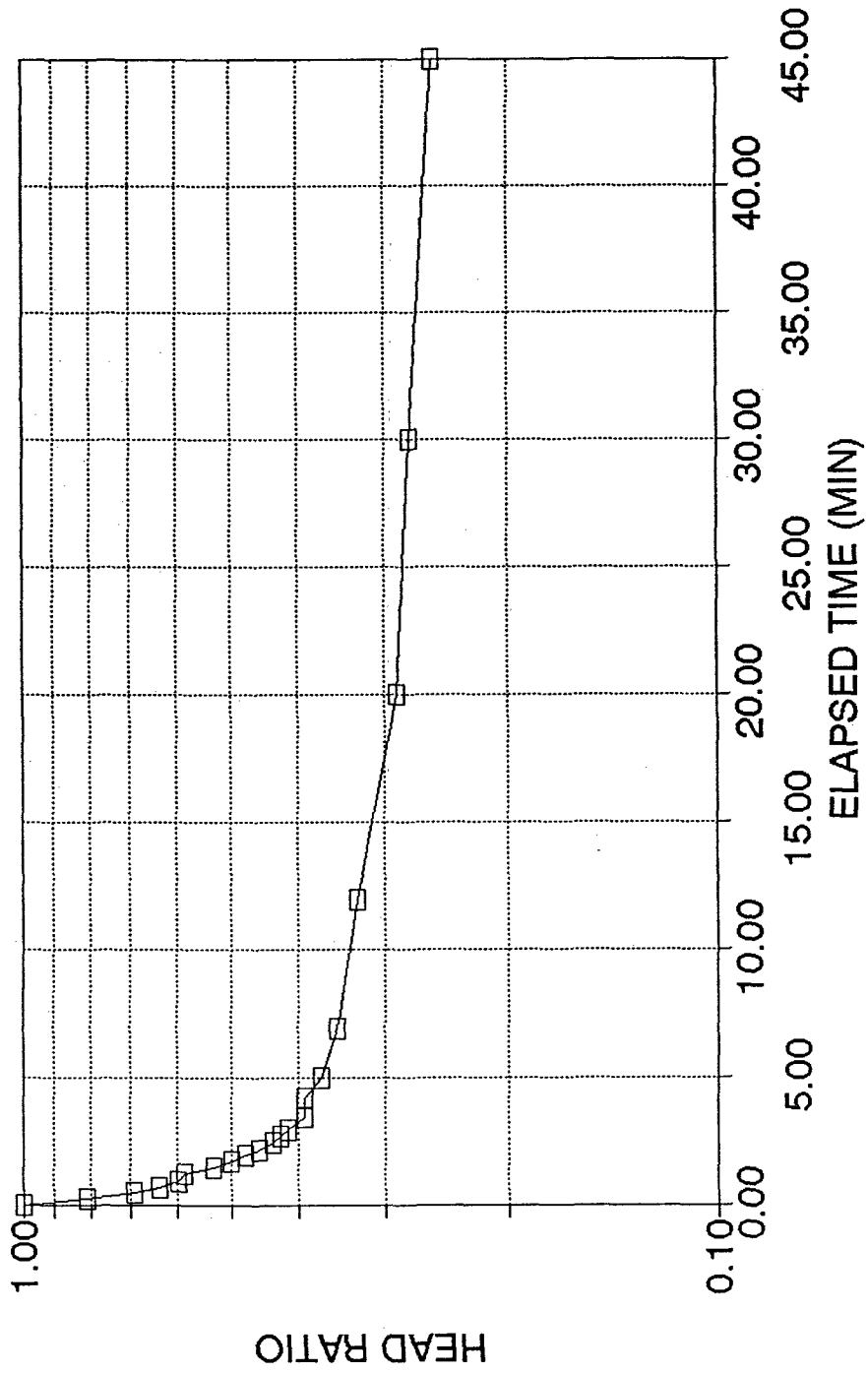
STATIC WATER DEPTH= 2.61 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 55.10 FEET BELOW TOC
 BOTTOM OF SANDPACK = 62.20 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO
		0	0.0000	3.55	-0.94	1.000	0.0000
		15	0.2500	3.37	-0.76	0.809	* -0.0923
		30	0.5000	3.26	-0.65	0.691	-0.1602
		45	0.7500	3.21	-0.60	0.638	-0.1950
	1	0	1.0000	3.17	-0.56	0.596	-0.2249
	1	15	1.2500	3.16	-0.55	0.585	-0.2328
	1	30	1.5000	3.11	-0.50	0.532	-0.2742
	1	45	1.7500	3.08	-0.47	0.500	* -0.3010
	2	0	2.0000	3.06	-0.45	0.479	-0.3199
	2	15	2.2500	3.04	-0.43	0.457	-0.3397
	2	30	2.5000	3.02	-0.41	0.436	-0.3603
	2	45	2.7500	3.01	-0.40	0.426	-0.3711
	3	0	3.0000	3	-0.39	0.415	-0.3821
	3	30	3.5000	2.98	-0.37	0.394	-0.4049
	4	15	4.2500	2.98	-0.37	0.394	-0.4049
	5	0	5.0000	2.96	-0.35	0.372	-0.4291
	7	0	7.0000	2.94	-0.33	0.351	-0.4546
	12	0	12.0000	2.92	-0.31	0.330	-0.4818
	20	0	20.0000	2.88	-0.27	0.287	-0.5418
	30	0	30.0000	2.87	-0.26	0.277	-0.5582
	45	0	45.0000	2.85	-0.24	0.255	-0.5929

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

$$K = 2.66E-04 \text{ CM/SEC}$$

RISING HEAD TEST B-271



RISING HEAD TEST

WELL B-27D

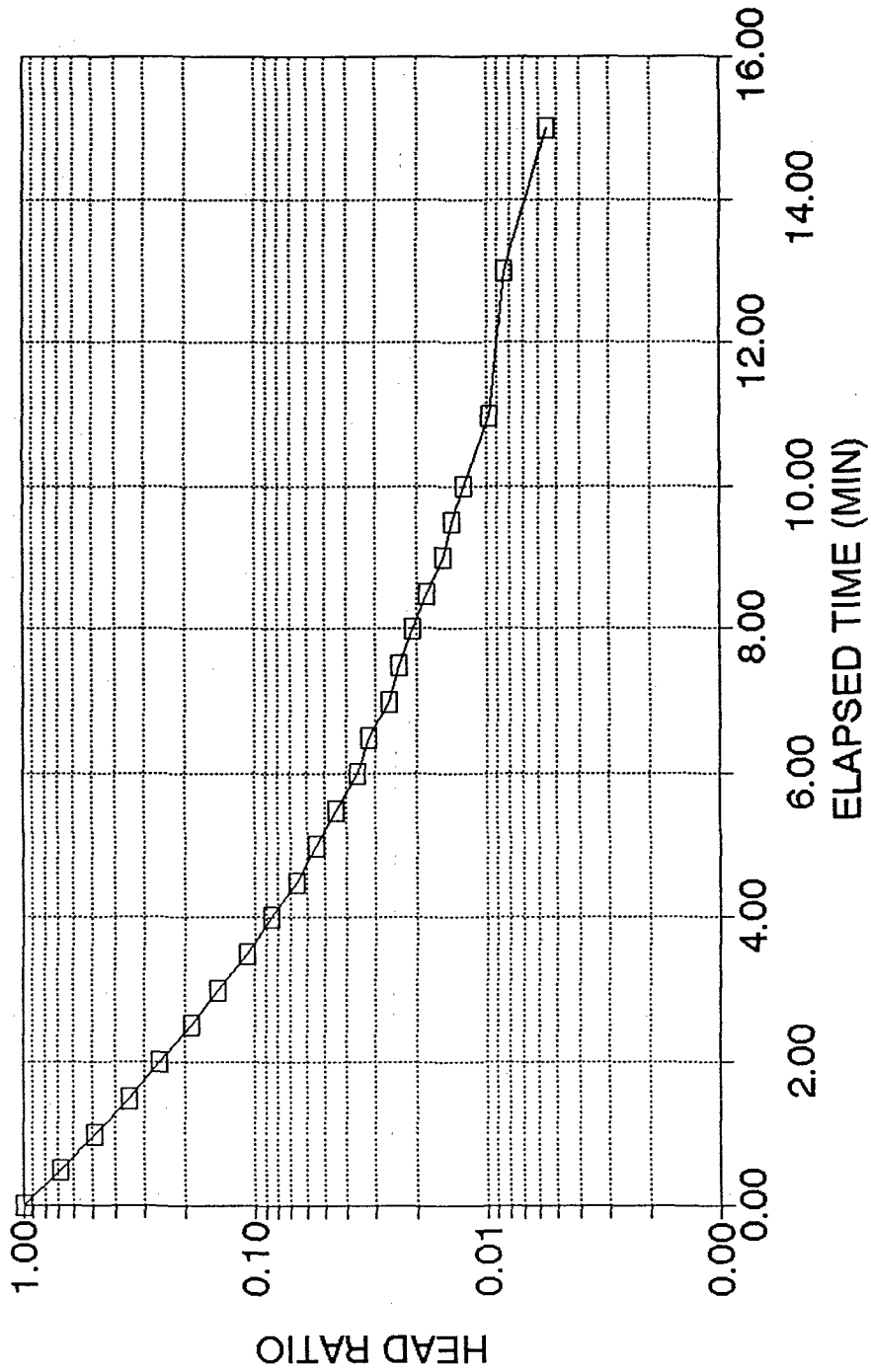
STATIC WATER DEPTH= 3.07 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 102.80 FEET BELOW TOC
 BOTTOM OF SANDPACK = 109.80 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	10.27	-7.20	1.000	0.0000
		30	0.5000	8.06	-4.99	0.693	-0.1592
1	0	0	1.0000	6.58	-3.51	0.488	-0.3120
1	30	0	1.5000	5.59	-2.52	0.350	-0.4559
2	0	0	2.0000	4.92	-1.85	0.257	-0.5902
2	30	0	2.5000	4.43	-1.36	0.189	-0.7238
3	0	0	3.0000	4.10	-1.03	0.143	-0.8445
3	30	0	3.5000	3.85	-0.78	0.108	-0.9652
4	0	0	4.0000	3.68	-0.61	0.085	-1.0720
4	30	0	4.5000	3.55	-0.48	0.067	-1.1761
5	0	0	5.0000	3.46	-0.39	0.054	-1.2663
5	30	0	5.5000	3.39	-0.32	0.044	-1.3522
6	0	0	6.0000	3.33	-0.26	0.036	-1.4424
6	30	0	6.5000	3.30	-0.23	0.032	-1.4956
7	0	0	7.0000	3.26	-0.19	0.026	-1.5786
7	30	0	7.5000	3.24	-0.17	0.024	-1.6269
8	0	0	8.0000	3.22	-0.15	0.021	-1.6812
8	30	0	8.5000	3.20	-0.13	0.018	-1.7434
9	0	0	9.0000	3.18	-0.11	0.015	-1.8159
9	30	0	9.5000	3.17	-0.10	0.014	-1.8573
10	0	0	10.0000	3.16	-0.09	0.013	-1.9031
11	0	0	11.0000	3.14	-0.07	0.010	-2.0122
13	0	0	13.0000	3.13	-0.06	0.008	-2.0792
15	0	0	15.0000	3.11	-0.04	0.006	-2.2553

 * INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 4.61E-04 CM/SEC

RISING HEAD TEST B-27D



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-28S

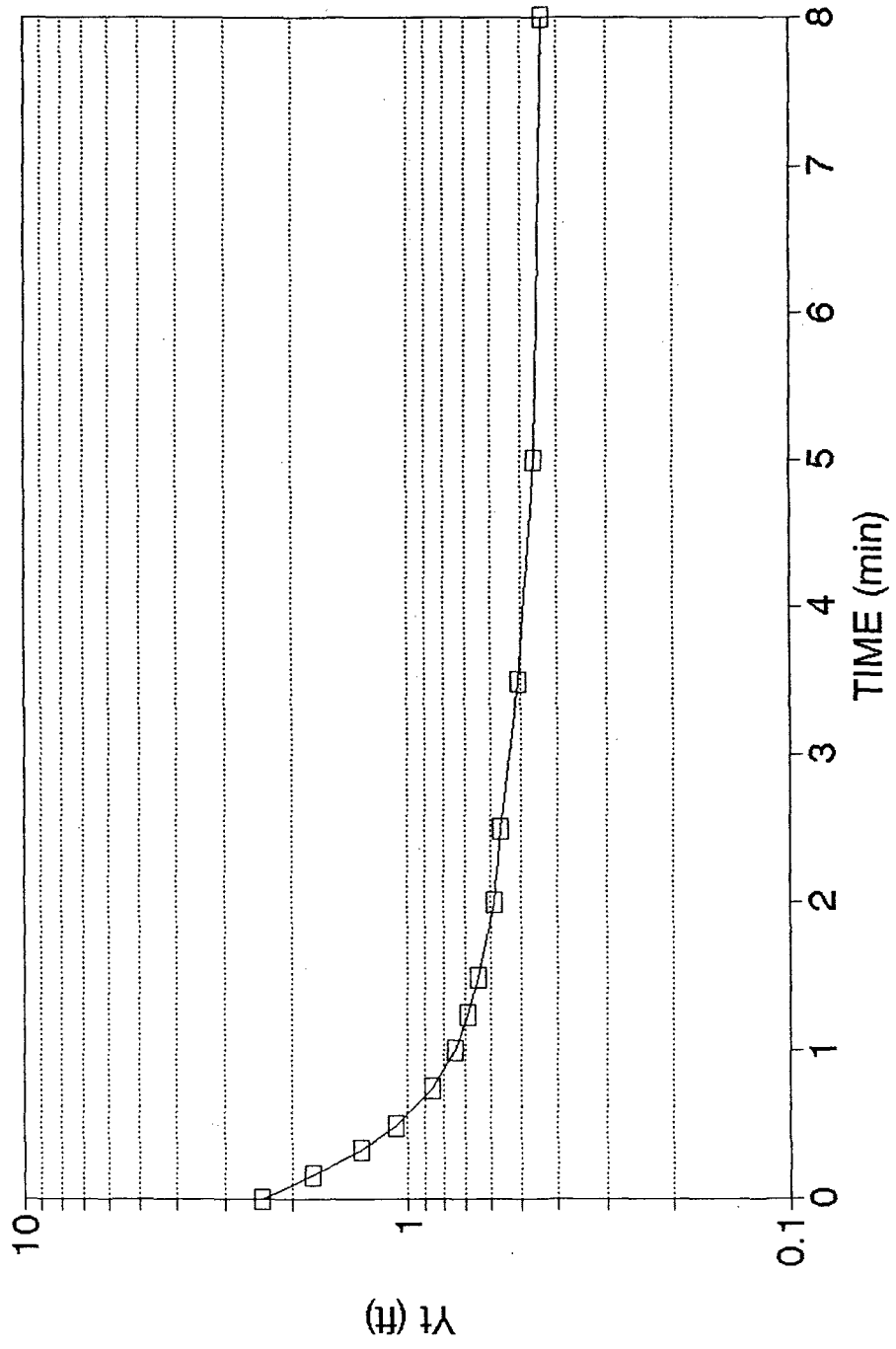
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	114.40	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	130.60	Y ₀ (FT)=	0.86
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	130.60	Y _t (FT)=	0.59
BOTTOM OF SCREEN ELEVATION (FT)=	114.40	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	39.51219	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(R _e /r _w)=	2.838193

 * HYDRAULIC CONDUCTIVITY (CM/S) = 7.41E-04 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/H ₀)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	5.53	-2.400	1.000	0.0000	2.40
0	10	0.167	4.90	-1.770	0.738	-0.1322	1.77
0	20	0.333	4.45	-1.320	0.550	-0.2596	1.32
0	30	0.500	4.20	-1.070	0.446	-0.3508	1.07
0	45	0.750	3.99	-0.860	0.358	-0.4457	0.86
1	0	1.000	3.88	-0.750	0.312	-0.5051	0.75
1	15	1.250	3.82	-0.690	0.287	-0.5414	0.69
1	30	1.500	3.78	-0.650	0.271	-0.5673	0.65
2	0	2.000	3.72	-0.590	0.246	-0.6094	0.59
2	30	2.500	3.70	-0.570	0.238	-0.6243	0.57
3	30	3.500	3.64	-0.510	0.213	-0.6726	0.51
5	0	5.000	3.59	-0.460	0.192	-0.7175	0.46
8	0	8.000	3.57	-0.440	0.183	-0.7368	0.44

RISING HEAD TEST
B-28S



RISING HEAD TEST
 TRAIL RIDGE LANDFILL
 JACKSONVILLE, FLORIDA

BOUWER AND RICE ANALYSIS
 WELL/PIEZOMETER NUMBER B-29S

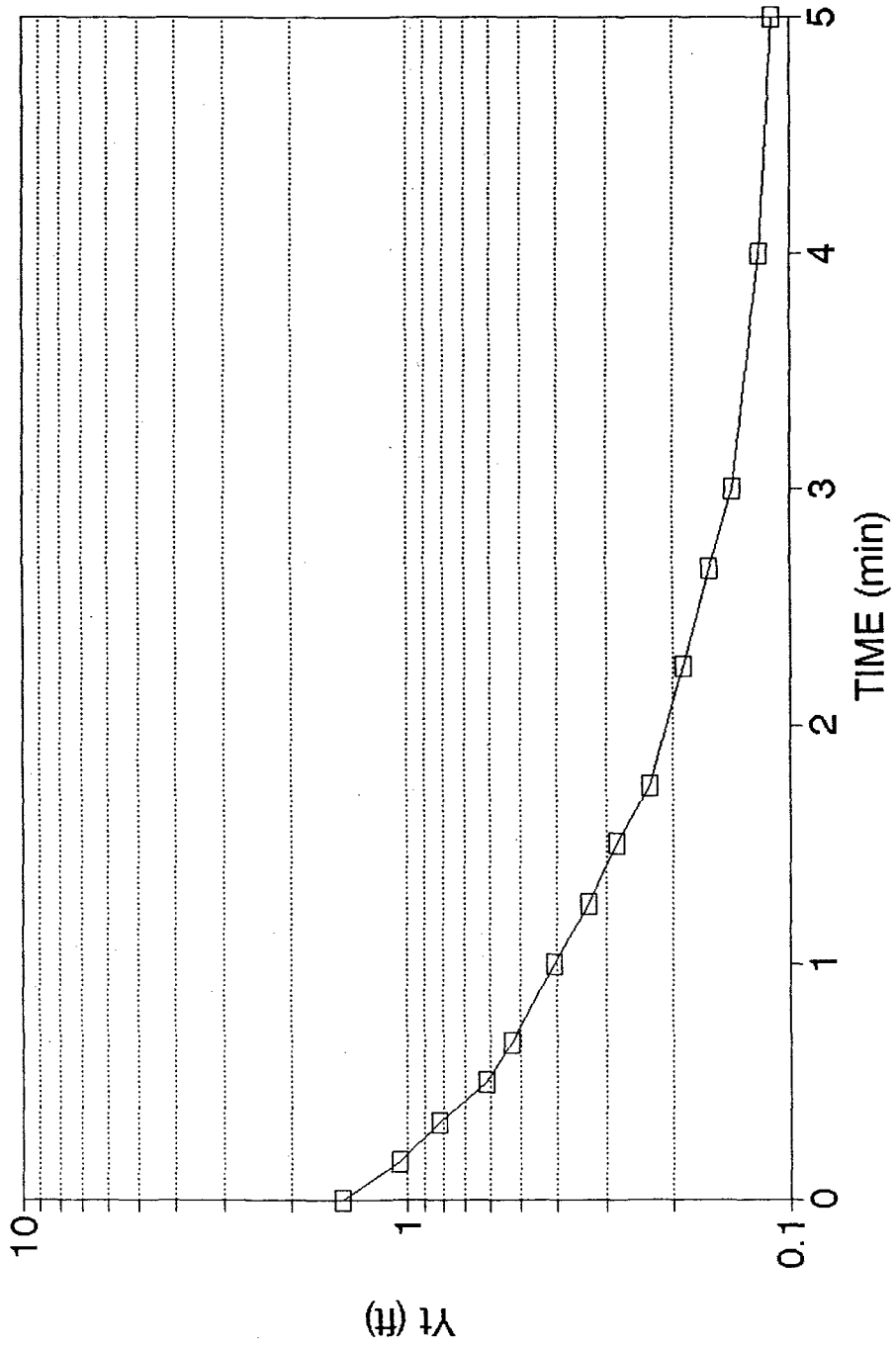
ESTIMATED FILTER PACK POROSITY=	0.30	RADIUS OF FILTER PACK (FT)=	0.41
BOTTOM OF SYSTEM ELEVATION [MSL] (FT)=	119.00	RADIUS OF RISER PIPE (FT)=	0.08
STATIC WATER LEVEL ELEVATION [MSL] (FT)=	135.22	Yo (FT)=	0.62
TOP OF SATURATED FILTER PACK ELEVATION (FT)=	135.22	Yt (FT)=	0.23
BOTTOM OF SCREEN ELEVATION (FT)=	119.00	t (min)=	1.25

A=	2.6	B=	0.5	Le/Rw=	39.56097	EFFECTIVE RADIUS OF CASING (FT)=	0.24
				C=	2.1	ln(Ro/rw)=	2.839530

.....
 *
 * HYDRAULIC CONDUCTIVITY (CM/S) = 1.95E-03 *
 *

24 HOUR CLOCK		ELAPSED TIME (MIN)	DEPTH TO WATER (FEET)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO	DRAWDOWN (FEET)
HR-MIN	SEC						
0	0	0.000	4.28	-1.480	1.000	0.0000	1.48
0	10	0.167	3.84	-1.040	0.703	-0.1532	1.04
0	20	0.333	3.62	-0.820	0.554	-0.2564	0.82
0	30	0.500	3.42	-0.620	0.419	-0.3779	0.62
0	40	0.667	3.33	-0.530	0.358	-0.4460	0.53
1	0	1.000	3.21	-0.410	0.277	-0.5575	0.41
1	15	1.250	3.13	-0.330	0.223	-0.6517	0.33
1	30	1.500	3.08	-0.280	0.189	-0.7231	0.28
1	45	1.750	3.03	-0.230	0.155	-0.8085	0.23
2	15	2.250	2.99	-0.190	0.128	-0.8915	0.19
2	40	2.667	2.96	-0.160	0.108	-0.9661	0.16
3	0	3.000	2.94	-0.140	0.095	-1.0241	0.14
4	0	4.000	2.92	-0.120	0.081	-1.0911	0.12
5	0	5.000	2.91	-0.110	0.074	-1.1289	0.11

RISING HEAD TEST
B-29S



APRIL 1992

923-3350

RISING HEAD TEST

PIEZOMETER P-29I

STATIC WATER DEPTH = 1.10 FEET BELOW TOC
STANDPIPE DIAMETER = 2.00 INCHES
SANDPACK DIAMETER = 6.000 INCHES
TOP OF SATURATED SAND = 53.00 FEET BELOW TOC
BOTTOM OF SANDPACK = 60.00 FEET BELOW TOC

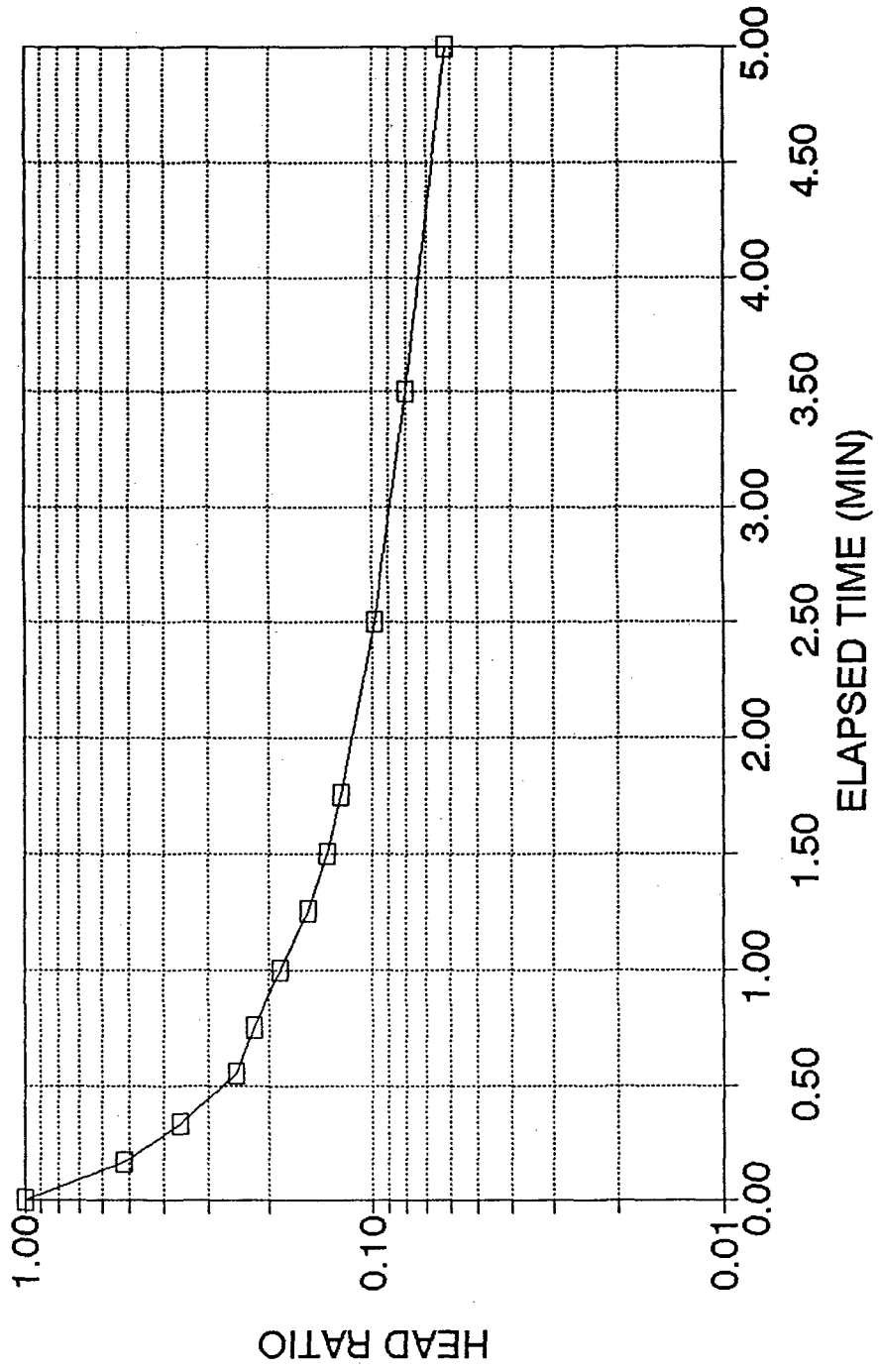
HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	2.72	-1.62	1.000	0.0000
		10	0.1667	1.95	-0.85	0.525 *	-0.2801
		20	0.3333	1.68	-0.58	0.358	-0.4461
		33	0.5500	1.50	-0.40	0.247 *	-0.6075
		45	0.7500	1.46	-0.36	0.222	-0.6532
	1	0	1.0000	1.40	-0.30	0.185	-0.7324
	1	15	1.2500	1.35	-0.25	0.154	-0.8116
	1	30	1.5000	1.32	-0.22	0.136	-0.8671
	1	45	1.7500	1.30	-0.20	0.123	-0.9085
	2	30	2.5000	1.26	-0.16	0.099	-1.0054
	3	30	3.5000	1.23	-0.13	0.080	-1.0956
	5	0	5.0000	1.20	-0.10	0.062	-1.2095

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 1.65E-03 CM/SEC

RISING HEAD TEST

P-29I



RISING HEAD TEST

PIEZOMETER P-29D

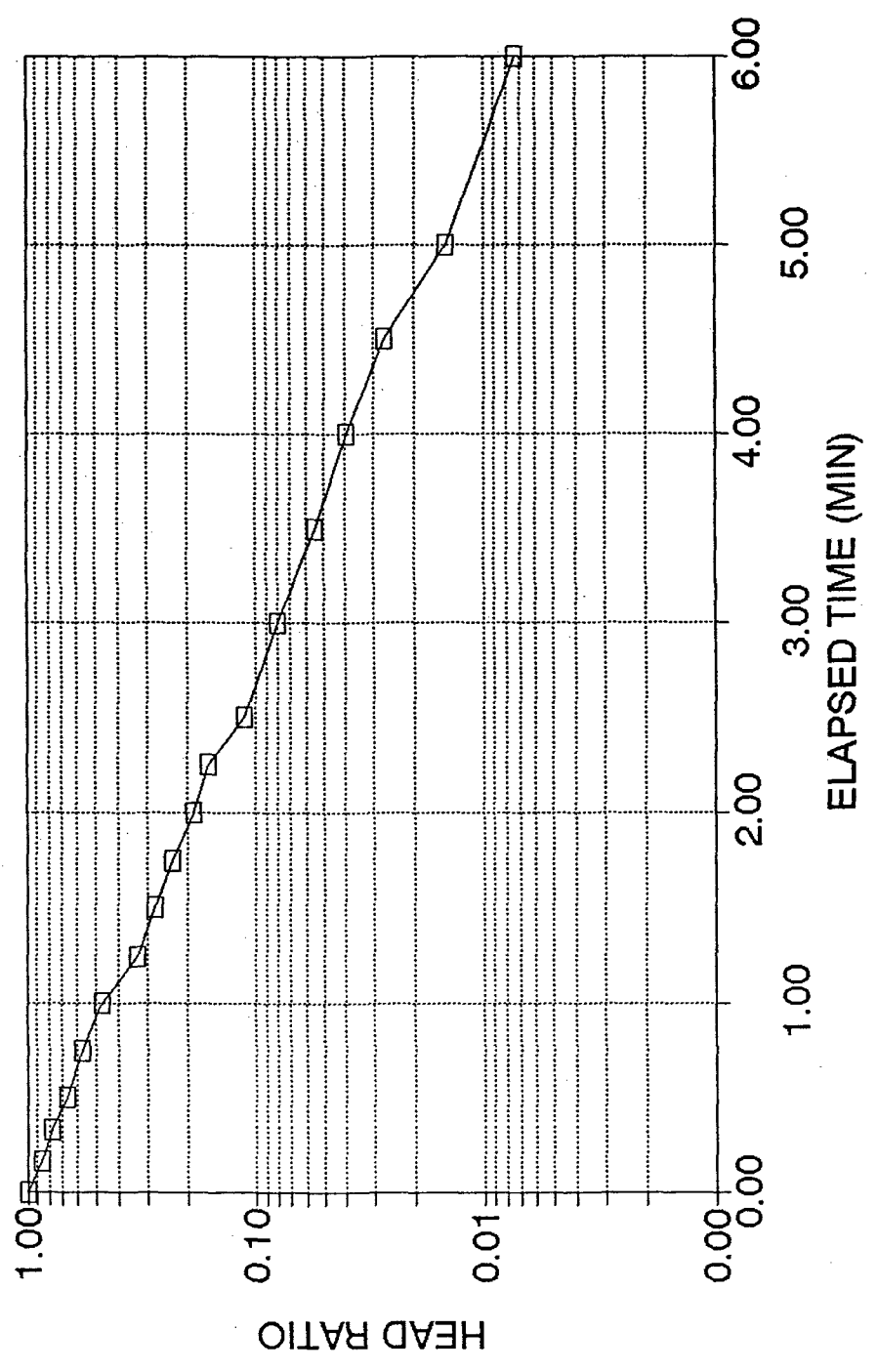
STATIC WATER DEPTH = 1.34 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 102.00 FEET BELOW TOC
 BOTTOM OF SANDPACK = 109.00 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	6.85	-5.51	1.000	0.0000
		10	0.1667	6.11	-4.77	0.866	-0.0626
		20	0.3333	5.65	-4.31	0.782	* -0.1067
		30	0.5000	5.05	-3.71	0.673	-0.1718
		45	0.7500	4.50	-3.16	0.574	-0.2415
1	0		1.0000	3.96	-2.62	0.475	-0.3229
1	15		1.2500	3.15	-1.81	0.328	-0.4835
1	30		1.5000	2.87	-1.53	0.278	-0.5565
1	45		1.7500	2.62	-1.28	0.232	* -0.6339
2	0		2.0000	2.38	-1.04	0.189	-0.7241
2	15		2.2500	2.23	-0.89	0.162	-0.7918
2	30		2.5000	1.96	-0.62	0.113	-0.9488
3	0		3.0000	1.78	-0.44	0.080	-1.0977
3	30		3.5000	1.64	-0.30	0.054	-1.2640
4	0		4.0000	1.56	-0.22	0.040	-1.3987
4	30		4.5000	1.49	-0.15	0.027	-1.5651
5	0		5.0000	1.42	-0.08	0.015	-1.8381
6	0		6.0000	1.38	-0.04	0.007	-2.1391

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS
 WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 7.20E-04 CM/SEC

RISING HEAD TEST P-29D



APRIL 1992

923-3350

RISING HEAD TEST

WELL B-31D

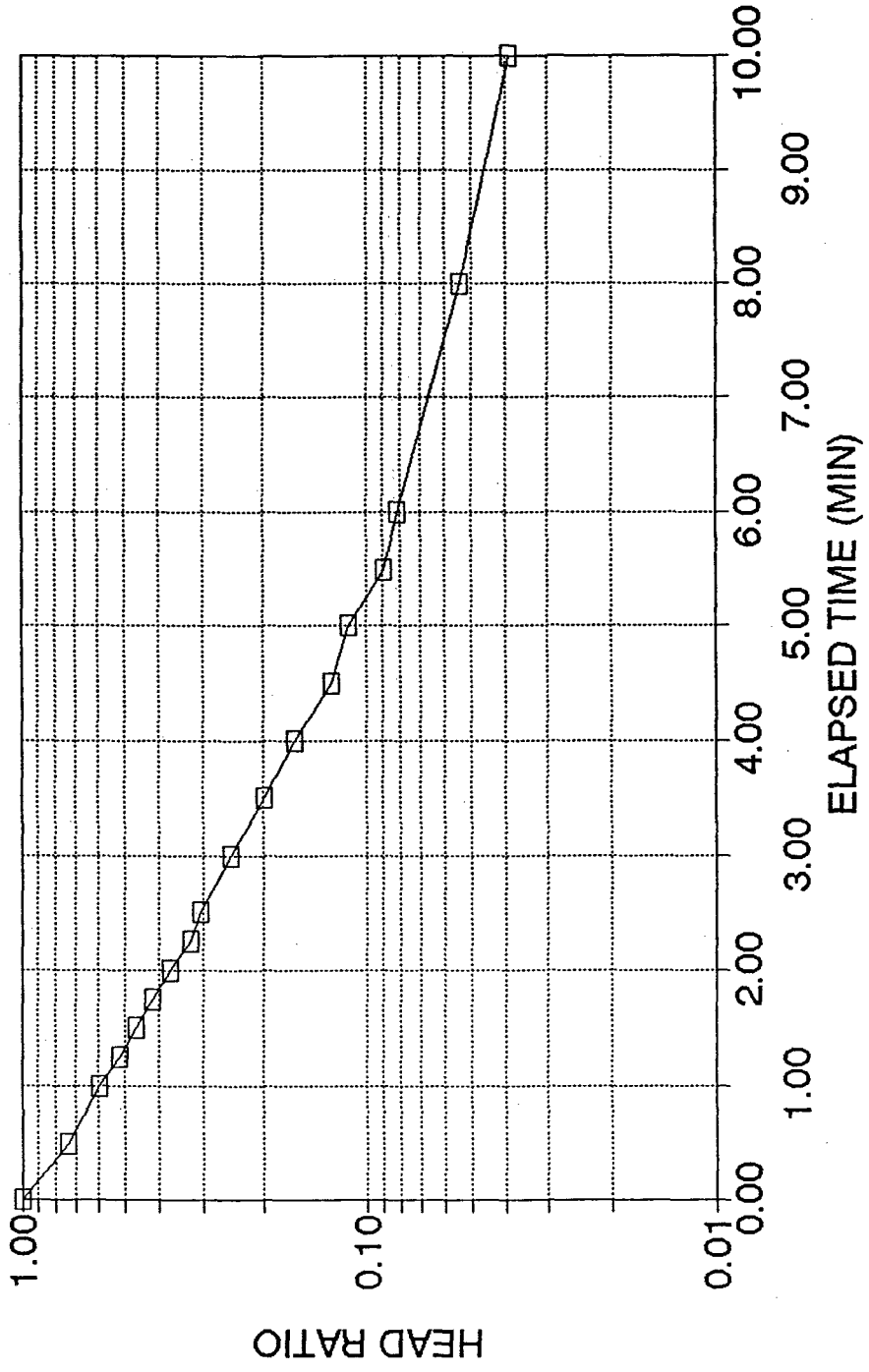
STATIC WATER DEPTH = 14.15 FEET BELOW TOC
 STANDPIPE DIAMETER = 2.00 INCHES
 SANDPACK DIAMETER = 6.000 INCHES
 TOP OF SATURATED SAND = 124.70 FEET BELOW TOC
 BOTTOM OF SANDPACK = 131.70 FEET BELOW TOC

HOUR	MIN	SEC	ELAPSED TIME (MIN)	DEPTH TO WATER (FT TOC)	HEAD (FEET)	HEAD RATIO (H/Ho)	LOG HEAD RATIO
		0	0.0000	16.73	-2.58	1.000	0.0000
		30	0.5000	16.05	-1.90	0.736	-0.1329
	1	0	1.0000	15.68	-1.53	0.593	-0.2269
	1	15	1.2500	15.50	-1.35	0.523	-0.2813
	1	30	1.5000	15.35	-1.20	0.465	-0.3324
	1	45	1.7500	15.23	-1.08	0.419	-0.3782
	2	0	2.0000	15.11	-0.96	0.372	-0.4293
	2	15	2.2500	14.99	-0.84	0.326	-0.4873
	2	30	2.5000	14.93	-0.78	0.302	-0.5195
	3	0	3.0000	14.79	-0.64	0.248	-0.6054
	3	30	3.5000	14.66	-0.51	0.198	-0.7040
	4	0	4.0000	14.57	-0.42	0.163	-0.7884
	4	30	4.5000	14.48	-0.33	0.128	-0.8931
	5	0	5.0000	14.44	-0.29	0.112	-0.9492
	5	30	5.5000	14.38	-0.23	0.089	-1.0499
	6	0	6.0000	14.36	-0.21	0.081	-1.0894
	8	0	8.0000	14.29	-0.14	0.054	-1.2655
	10	0	10.0000	14.25	-0.10	0.039	-1.4116

* INDICATES THE BEST FIT LINE PASSES THROUGH THESE POINTS WHICH ARE USED TO CALCULATE HYDRAULIC CONDUCTIVITY

K= 3.62E-04 CM/SEC

RISING HEAD TEST B-31D



APPENDIX F

WELL LOCATION MAP AND SURVEY COORDINATES



Sunshine State
Surveyors, inc.

TRAIL RIDGE LANDFILL MONITORING WELLS
LOCAL GRID AND STATE PLANE COORDINATES

WELL	LOCAL GRID		STATE PLANE	
	NORTHING	EASTING	Y	X
B-1	9249.82	11254.00	2143484.97	326191.56
B-2-SR	7138.66	9906.21	2141385.08	324825.96
B-2-I	7136.77	9892.03	2141383.31	324811.77
B-3-SR	9698.01	9830.30	2143945.04	324771.66
B-3-I	9725.69	9846.86	2143972.59	324788.45
B-6-S	9835.05	15025.22	2144037.98	329967.56
B-6-I	9839.72	15025.00	2144042.65	329967.38
B-7-SR	9976.23	12473.94	2144200.78	327417.58
B-7-I	9971.15	12481.52	2144195.61	327425.14
B-7-D	9976.10	12480.83	2144200.59	327424.47
B-11-SR	9533.20	12763.80	2143755.32	327703.68
B-11-I	9536.74	12756.82	2143758.91	327696.72
B-12-SR	9058.61	12726.40	2143281.06	327662.25
B-12-I	9050.83	12728.07	2143273.26	327663.85
B-12-D	9055.36	12729.36	2143277.78	327665.18
B-13-SR	8585.35	12756.14	2142807.57	327687.97
B-13-IR	8579.86	12754.91	2142802.08	327686.70
B-14-S	8072.77	12739.43	2142295.16	327666.93
B-14-I	8083.50	12740.07	2142305.88	327667.66
B-14-D	8078.08	12740.08	2142300.45	327667.62
B-16-S	10057.47	10450.25	2144299.23	325394.62
B-17-S	10057.87	10961.31	2144295.29	325905.68
B-17-I	10057.21	10948.59	2144294.74	325892.95
B-17-D	10057.21	10954.51	2144294.68	325898.87
B-18-S	10054.78	11388.33	2144288.56	326332.65
B-19-S	10054.93	11943.97	2144284.38	326888.42
B-19-I	10054.59	11949.14	2144283.60	326893.45
B-19-D	10054.31	11954.04	2144283.27	326898.35
B-20-S	9789.54	12665.88	2144012.47	327607.93
B-21-S	9333.51	12682.39	2143556.32	327620.57
B-22-SR	8813.57	12756.18	2143035.78	327689.95
B-23-S	8313.33	12768.92	2142535.46	327698.46
B-24-S	7723.23	12618.73	2141946.66	327543.28
B-25-S	7515.28	12504.83	2141739.69	327427.62
B-25-I	7521.55	12519.54	2141745.83	327442.38

TRAIL RIDGE LANDFILL MONITORING WELLS
LOCAL GRID AND STATE PLANE COORDINATES

WELL	LOCAL GRID		STATE PLANE	
	NORTHING	EASTING	Y	X
B-25-D	7520.12	12512.49	2141744.46	327435.33
B-26-S	7396.46	12279.48	2141622.78	327201.29
B-27-S	7335.02	12018.15	2141563.57	326939.44
B-27-I	7338.62	12023.92	2141567.11	326945.24
B-27-D	7330.95	12011.05	2141559.56	326932.31
B-28-S	7313.02	11441.80	2141546.46	326362.93
B-29-S	7316.72	10944.85	2141554.36	325866.04
B-29-I	7315.95	10950.24	2141553.54	325871.43
B-29-D	7317.48	10955.20	2141555.03	325876.40
B-30-S	7303.70	10437.49	2141545.63	325358.61
B-31-D	8575.17	9861.89	2142821.94	324793.77

APPENDIX G
WELL ABANDONMENT REPORTS

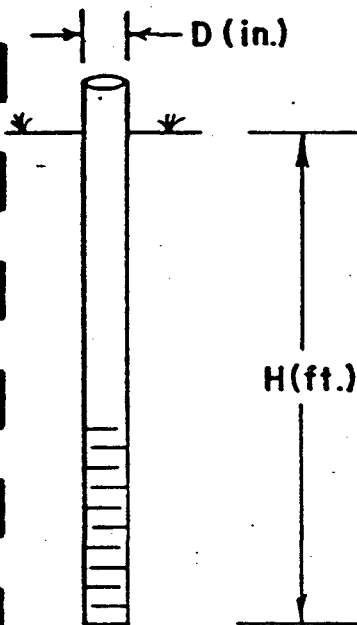
WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-wells/FL</u>	WELL <u>B-2S</u>
JOB NUMBER <u>923-3350</u>	DATE <u>3-9-92</u>
GOLDER INSPECTOR <u>JMF</u>	GROUTER <u>LAW ENG.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>15</u> ft.	MEASURED DEPTH (H) <u>17.2</u> ft.
DEPTH TO WATER <u>6.8</u>	CASING STICKUP <u>2.2</u> ft.
CASING TYPE <u>PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5</u> ft.	

GROUT VOLUME



COMPUTED VOLUME	
REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4}$	= _____ ft. ³
ACTUAL VOLUME	
BENTONITE PELLETS	<u>N/A</u> ft. ³
VOLUME OF WATER ADDED	<u>N/A</u> gals.
GROUT VOLUME	<u>0.3</u> ft. ³
GROUT SETTLEMENT	<u>N/A</u> in.
TOTAL SEAL VOLUME ADDED	<u>0.3</u> ft. ³

COMMENTS

Removed protective cover and cut off pvc riser
0.5 ft RGS. Grouted well with bentonite slurry
and a cement plug from 1.0-surface

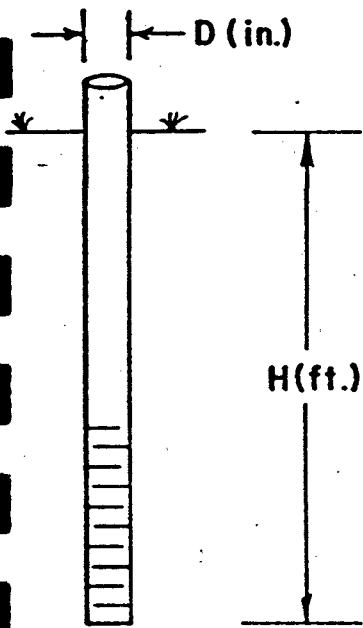
WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Well/s</u>	WELL <u>B-35</u>
JOB NUMBER <u>923-3350</u>	DATE <u>3-9-92</u>
GOLDER INSPECTOR <u>J. Freere</u>	GROUTER <u>Law Eng.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>10</u> ft.	MEASURED DEPTH (H) <u>11.5</u> ft.
DEPTH TO WATER <u>5.1</u>	CASING STICKUP <u>1.5</u> ft.
CASING TYPE <u>PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5 ft</u>	

GROUT VOLUME



COMPUTED VOLUME

$$\text{REQUIRED VOLUME} = \frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.2} \text{ ft.}^3$$

ACTUAL VOLUME

BENTONITE PELLETS	<u>N/A</u>	ft. ³
VOLUME OF WATER ADDED	<u>N/A</u>	gals.
GROUT VOLUME	<u>0.3</u>	ft. ³
GROUT SETTLEMENT	<u>N/A</u>	in.
TOTAL SEAL VOLUME ADDED	<u>0.3</u>	ft. ³

COMMENTS

Removed protective cover and cut off PVC well riser 0.5 ft BOS. Grouted well with bentonite slurry and a 1 ft plug of cement at the surface.

WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Well/PL</u>	WELL <u>B-75</u>
JOB NUMBER <u>923-3350</u>	DATE <u>3-8-92</u>
GOLDER INSPECTOR <u>BGAB</u>	GROUTER <u>Law Eng.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>28.1</u> ft.	MEASURED DEPTH (H) <u>30.4</u> ft.
DEPTH TO WATER <u>3.80</u>	CASING STICKUP <u>2.3</u> ft.
CASING TYPE <u>PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>10.0</u>	

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.6} \text{ ft.}^3$
	ACTUAL VOLUME
	BENTONITE PELLETS <u>N/A</u> ft. ³ VOLUME OF WATER ADDED <u>N/A</u> gals. GROUT VOLUME <u>0.7</u> ft. ³ GROUT SETTLEMENT <u>N/A</u> in. TOTAL SEAL VOLUME ADDED <u>0.7</u> ft. ³

COMMENTS

Removed protective cover and cut off PVC well riser 0.5 ft RGS. Grouted well with bentonite slurry and placed a 1 foot cement plug at the surface.

WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Wells/FL</u>	WELL <u>B-55</u>
JOB NUMBER <u>923-3350</u>	DATE <u>2-11-92</u>
GOLDER INSPECTOR <u>J. Freere</u>	GROUTER <u>LAW ENG.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>15</u> ft.	MEASURED DEPTH (H) <u>15</u> ft.
DEPTH TO WATER <u>4.09</u>	CASING STICKUP <u>1.8</u> ft.
CASING TYPE <u>2" ϕ PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) _____	

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{\hspace{2cm}} \text{ ft.}^3$
	ACTUAL VOLUME
BENTONITE PELLETS _____ ft.^3 VOLUME OF WATER ADDED _____ gals. GROUT VOLUME <u>8</u> ft.^3 GROUT SETTLEMENT _____ in. TOTAL SEAL VOLUME ADDED _____ ft.^3	

COMMENTS

Overdrilled B-55 with a 10-inch diameter roller bit to 15 ft BGS. Grouted borehole with bentonite cement (365 gal).

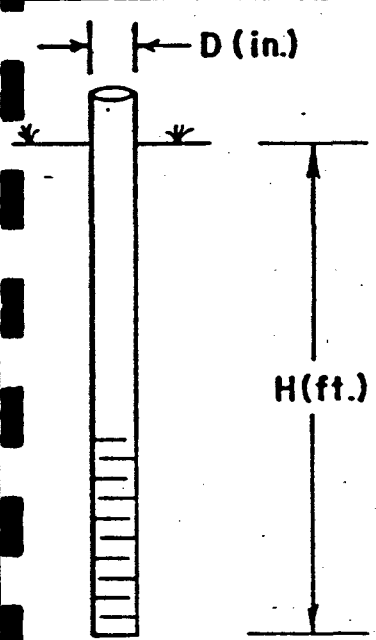
WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Wells/FL</u>	WELL <u>B-5I</u>
JOB NUMBER <u>923-3350</u>	DATE <u>2-11-92</u>
GOLDER INSPECTOR <u>J. Freere</u>	GROUTER <u>LAW ENG</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>60</u> ft.	MEASURED DEPTH (H) <u>60</u> ft.
DEPTH TO WATER <u>6.25</u>	CASING STICKUP <u>2.5</u> ft.
CASING TYPE <u>2" φ PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5</u>	

GROUT VOLUME



COMPUTED VOLUME	
REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4}$	<u>32.72</u> ft. ³
ACTUAL VOLUME	
BENTONITE PELLETS _____	ft. ³
VOLUME OF WATER ADDED _____	gals.
GROUT VOLUME <u>33</u>	ft. ³
GROUT SETTLEMENT _____	in.
TOTAL SEAL VOLUME ADDED _____	ft. ³

COMMENTS

Overdrilled B-5I to 60 ft BES with 10-inch diameter roller bit. Grouted with bentonite cement (250 gal)

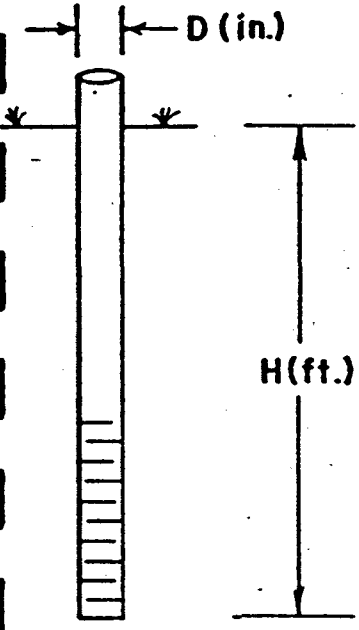
WELL DECOMMISSIONING FORM

PROJECT <u>WMAA/TR-Wells/FL</u>	WELL <u>B-5D</u>
JOB NUMBER <u>923-3350</u>	DATE <u>2-12-92</u>
GOLDER INSPECTOR <u>J. Freese</u>	GROUTER <u>Law Eng.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>149</u> ft.	MEASURED DEPTH (H) <u>150</u> ft.
DEPTH TO WATER <u>8.48</u>	CASING STICKUP <u>1.8</u> ft.
CASING TYPE <u>2" d PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5.0'</u>	

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{29.45 \text{ ft.}^3}$
	ACTUAL VOLUME
BENTONITE PELLETS _____ ft.^3 VOLUME OF WATER ADDED _____ gals. GROUT VOLUME <u>30</u> ft.^3 GROUT SETTLEMENT _____ in. TOTAL SEAL VOLUME ADDED _____ ft.^3	

COMMENTS

Overdrilled B-5D to 150 ft BGS with a 6-inch rotary bit. Grouted borehole with approximately 225 gals.

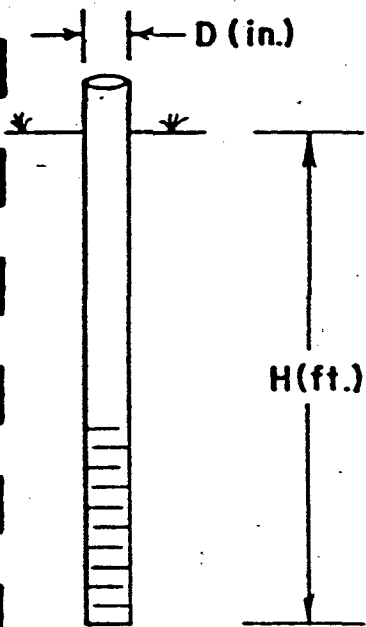
WELL DECOMMISSIONING FORM

PROJECT WMWA/TR-Well/FL WELL B-115
 JOB NUMBER 973-3350 DATE 2-12-92
 GOLDER INSPECTOR BGAB GROUTER LAW Eng.

WELL INFORMATION

DESIGNED WELL DEPTH 15.0 ft. MEASURED DEPTH (H) 14.9 ft.
 DEPTH TO WATER 8.2 CASING STICKUP 1.9 ft.
 CASING TYPE PVC INSIDE CASING DIA. (D) 2.0 in.
 SCREEN LENGTH (L) 5.0 ft.

GROUT VOLUME



COMPUTED VOLUME

$$\text{REQUIRED VOLUME} = \frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.3} \text{ ft.}^3$$

ACTUAL VOLUME

BENTONITE PELLETS N/A ft.³
 VOLUME OF WATER ADDED N/A gals.
 GROUT VOLUME 0.3 ft.³
 GROUT SETTLEMENT N/A in.
 TOTAL SEAL VOLUME ADDED 0.3 ft.³

COMMENTS

Removed protective cover and cut off PVC well riser at 0.5 ft BGS. Grouted well with bentonite slurry and placed 1 foot plug of cement at surface.

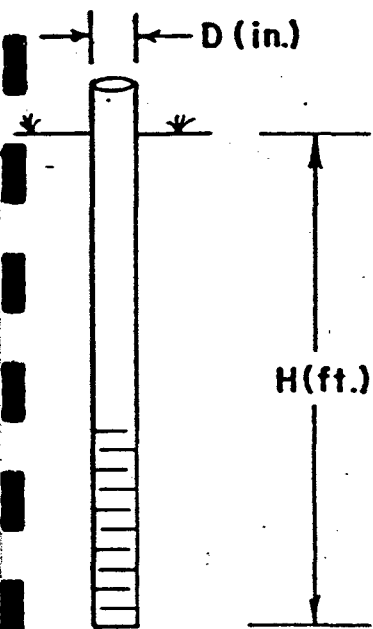
WELL DECOMMISSIONING FORM

PROJECT WMNA/TR-Well/FL WELL B-11D
 JOB NUMBER 923-3350 DATE 2-14-92
 GOLDER INSPECTOR BGAB GROUTER Law Eng

WELL INFORMATION

DESIGNED WELL DEPTH 150 ft. MEASURED DEPTH (H) 152.1 ft.
 DEPTH TO WATER TOC CASING STICKUP 2.1 ft.
 CASING TYPE PVC INSIDE CASING DIA. (D) 1.25 in.
 SCREEN LENGTH (L) 5.0

GROUT VOLUME



COMPUTED VOLUME	
REQUIRED VOLUME =	$\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{3.27} \text{ ft.}^3$
ACTUAL VOLUME	
BENTONITE PELLETS	<u>N/A</u> ft. ³
VOLUME OF WATER ADDED	<u>N/A</u> gals.
GROUT VOLUME	<u>3.0</u> ft. ³
GROUT SETTLEMENT	<u>N/A</u> in.
TOTAL SEAL VOLUME ADDED	<u>3.0</u> ft. ³

COMMENTS

Removed protective cover and tremie
 grouted well from the bottom up. cut well riser
 off at 0.5 ft. BGS. Placed 2 ft plug of
 cement at surface.

WELL DECOMMISSIONING FORM

PROJECT WMWA/TR-Wells/FL WELL B-129
 JOB NUMBER 923-3350 DATE 2-13-92
 GOLDER INSPECTOR BGNB GROUTER Law Eng.

WELL INFORMATION

DESIGNED WELL DEPTH 15 ft. MEASURED DEPTH (H) 17 ft.
 DEPTH TO WATER 5.8 CASING STICKUP 2 ft.
 CASING TYPE PVC INSIDE CASING DIA. (D) 2.0 in.
 SCREEN LENGTH (L) 10.0

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.3} \text{ ft.}^3$
	ACTUAL VOLUME
	BENTONITE PELLETS <u>N/A</u> ft. ³ VOLUME OF WATER ADDED <u>N/A</u> gals. GROUT VOLUME <u>0.3</u> ft. ³ GROUT SETTLEMENT <u>N/A</u> in. TOTAL SEAL VOLUME ADDED <u>0.3</u> ft. ³

COMMENTS

Removed protective cover and cut off well riser 0.5 ft B&S. Grouted well with bentonite slurry to 0.1 ft B&S and set 1st plug of cement at surface.

WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Wells/FL</u>	WELL <u>B-13S</u>
JOB NUMBER <u>923-3350</u>	DATE <u>1-25-92</u>
GOLDER INSPECTOR <u>J. FRERE</u>	GROUTER <u>LAW ENG.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>15</u> ft.	MEASURED DEPTH (H) <u>15</u> ft.
DEPTH TO WATER <u>5.03</u>	CASING STICKUP <u>2.5</u> ft.
CASING TYPE <u>2" ϕ PVC</u>	INSIDE CASING DIA. (D) <u>2</u> in.
SCREEN LENGTH (L) <u>10</u>	

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4}$ = _____ ft. ³
	ACTUAL VOLUME
	BENTONITE PELLETS _____ ft. ³ VOLUME OF WATER ADDED _____ gals. GROUT VOLUME <u>8</u> ft. ³ GROUT SETTLEMENT _____ in. TOTAL SEAL VOLUME ADDED _____ ft. ³

COMMENTS

Over drilled with 10-inch diameter roller bit to 15 feet BGS. Grouted borehole with 65 gallons of bentonite slurry

WELL DECOMMISSIONING FORM

PROJECT WMNA/TR-Well/FL WELL B-13I
 JOB NUMBER 923-3350.2 DATE 1-25-92
 GOLDER INSPECTOR J. Freese GROUTER LAW ENGINEERING

WELL INFORMATION

DESIGNED WELL DEPTH 60 ft. MEASURED DEPTH (H) 60 ft.
 DEPTH TO WATER 4.27 CASING STICKUP 2.5 ft.
 CASING TYPE 2" ϕ PVC INSIDE CASING DIA. (D) 2.0 in.
 SCREEN LENGTH (L) 5

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4}$ = _____ ft. ³
	ACTUAL VOLUME
	BENTONITE PELLETS _____ ft. ³ VOLUME OF WATER ADDED _____ gals. GROUT VOLUME <u>33</u> ft. ³ GROUT SETTLEMENT _____ in. TOTAL SEAL VOLUME ADDED _____ ft. ³

COMMENTS

Overdrilled B-13I to 60 feet and grouted
hole with about 250 gal of bentonite slurry

WELL DECOMMISSIONING FORM

PROJECT WMNA/TR-Wells/FL WELL B-145
 JOB NUMBER 923-3350 DATE 2-13-92
 GOLDER INSPECTOR BGB GROUTER LAW Eng.

WELL INFORMATION

DESIGNED WELL DEPTH 15 ft. MEASURED DEPTH (H) 17.6 ft.
 DEPTH TO WATER 5.1 CASING STICKUP 2.6 ft.
 CASING TYPE PVC INSIDE CASING DIA. (D) 2.0 in.
 SCREEN LENGTH (L) 5.0

GROUT VOLUME

	COMPUTED VOLUME
	$\text{REQUIRED VOLUME} = \frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.3} \text{ ft.}^3$
	ACTUAL VOLUME
	BENTONITE PELLETS <u>N/A</u> ft. ³ VOLUME OF WATER ADDED <u>N/A</u> gals. GROUT VOLUME <u>0.3</u> ft. ³ GROUT SETTLEMENT <u>N/A</u> in. TOTAL SEAL VOLUME ADDED <u>0.3</u> ft. ³

COMMENTS

Removed protective cover and cut well riser
 off at 0.5 ft BGS. Grouted well with bentonite
 slurry and set 10 ft plug of cement @ surface

WELL DECOMMISSIONING FORM

PROJECT <u>WANA/TR-Well/FL</u>	WELL <u>B-14I</u>
JOB NUMBER <u>923-3350</u>	DATE <u>2-13-97</u>
GOLDER INSPECTOR <u>BCAB</u>	GROUTER <u>LAW Eng.</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>60</u> ft.	MEASURED DEPTH (H) <u>62.3</u> ft.
DEPTH TO WATER <u>4.8</u>	CASING STICKUP <u>2.3</u> ft.
CASING TYPE <u>PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5.0</u>	

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{1.3} \text{ ft.}^3$
	ACTUAL VOLUME
	BENTONITE PELLETS <u>N/A</u> ft. ³ VOLUME OF WATER ADDED <u>N/A</u> gals. GROUT VOLUME <u>1.4</u> ft. ³ GROUT SETTLEMENT <u>N/A</u> in. TOTAL SEAL VOLUME ADDED <u>N/A</u> ft. ³

COMMENTS

See B-145 comments

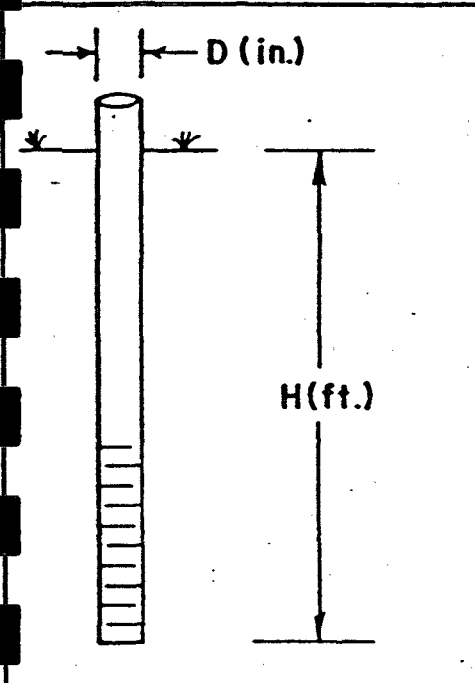
WELL DECOMMISSIONING FORM

PROJECT <u>WMNA/TR-Wells/FL</u>	WELL <u>B-14D</u>
JOB NUMBER <u>923-3350</u>	DATE <u>7-13-92</u>
GOLDER INSPECTOR <u>PGHB</u>	GROUTER <u>LAW Eng</u>

WELL INFORMATION

DESIGNED WELL DEPTH <u>112.0</u> ft.	MEASURED DEPTH (H) <u>114</u> ft.
DEPTH TO WATER <u>2.2</u>	CASING STICKUP <u>2.0</u> ft.
CASING TYPE <u>PVC</u>	INSIDE CASING DIA. (D) <u>2.0</u> in.
SCREEN LENGTH (L) <u>5.0 ft</u>	

GROUT VOLUME



COMPUTED VOLUME	
REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4}$	<u>24</u> ft. ³
ACTUAL VOLUME	
BENTONITE PELLETS	<u>N/A</u> ft. ³
VOLUME OF WATER ADDED	<u>N/A</u> gals.
GROUT VOLUME	<u>2.5</u> ft. ³
GROUT SETTLEMENT	<u>N/A</u> in.
TOTAL SEAL VOLUME ADDED	<u>2.5</u> ft. ³

COMMENTS

See B-145 comments

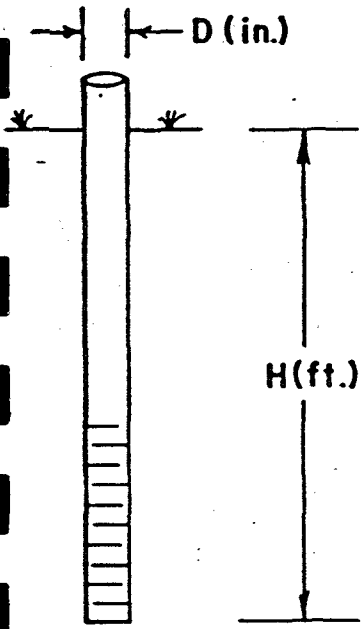
WELL DECOMMISSIONING FORM

PROJECT _____ WELL _____
 JOB NUMBER _____ DATE _____
 GOLDER INSPECTOR _____ GROUTER _____

WELL INFORMATION

DESIGNED WELL DEPTH _____ ft. MEASURED DEPTH (H) _____ ft.
 DEPTH TO WATER _____ CASING STICKUP _____ ft.
 CASING TYPE _____ INSIDE CASING DIA. (D) _____ in.
 SCREEN LENGTH (L) _____

GROUT VOLUME



COMPUTED VOLUME

$$\text{REQUIRED VOLUME} = \frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \text{_____ ft.}^3$$

ACTUAL VOLUME

BENTONITE PELLETS _____ ft.³
 VOLUME OF WATER ADDED _____ gals.
 GROUT VOLUME _____ ft.³
 GROUT SETTLEMENT _____ in.
 TOTAL SEAL VOLUME ADDED _____ ft.³

COMMENTS

WELL DECOMMISSIONING FORM

PROJECT WMNA/WELLS/TRAIL RIDGE **WELL** B-4
JOB NUMBER 923-3350 **DATE** JANUARY, 1992
GOLDER INSPECTOR _____ **GROUTER** LAW ENGINEERING

WELL INFORMATION

DESIGNED WELL DEPTH 15 ft. **MEASURED DEPTH (H)** 15 ft.
DEPTH TO WATER 1.72' BGS **CASING STICKUP** 2.5 ft.
CASING TYPE SCH 40 PVC **INSIDE CASING DIA. (D)** 2 in.
SCREEN LENGTH (L) 5.3'

GROUT VOLUME

	COMPUTED VOLUME
	REQUIRED VOLUME = $\frac{D^2 \text{ (in.)} \times H \text{ (ft.)}}{183.4} = \underline{0.33} \text{ ft.}^3$
	ACTUAL VOLUME
	BENTONITE PELLETS _____ ft.³ VOLUME OF WATER ADDED _____ gals. GROUT VOLUME _____ ft.³ GROUT SETTLEMENT _____ in. TOTAL SEAL VOLUME ADDED _____ ft.³

COMMENTS
