
Berlin/Petersburg Landfill

**CONSTRUCTION
CERTIFICATION REPORT**

Towns of Berlin and Petersburg, New York

April 1997

Prepared for

**Energy Answers Systems, Inc.
79 North Pearl St.
Albany, NY**

Prepared by

**Smith & Mahoney, P.C.
382 Broadway
Albany, NY**

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1.0 Introduction

The Berlin/Petersburg Landfill (the "Landfill"), located on County Route 37 along the Berlin and Petersburg town line in Rensselaer County, New York, covers approximately eight acres. The Landfill was formerly operated as a solid waste disposal site for the residents of the Towns of Berlin and Petersburg. Energy Answers Corporation (EAC) assumed responsibilities for operation of the Landfill in 1990 and agreed to close it in accordance with the 6 NYCRR Part 360 regulations. EAC landfilled municipal solid waste (MSW) at the Landfill for approximately two years to establish proper closure grades to promote drainage away from the Landfill and to generate revenue to pay for the necessary closure construction.

When final grades were achieved, EAC contracted with A-Ritz Construction Company of Troy, New York (the "Contractor") to perform all earthwork for the closure construction. Smith & Mahoney, P.C. (the "Engineer") provided construction administration services throughout the project including construction management, construction observation, soil moisture and density testing, undisturbed sampling of low permeability barrier soil lifts, data review, and certification. Laboratory soil testing services were provided by Soil & Material Testing, Inc. of Castleton, New York (the "Laboratory"). These services consisted of background and interval-based Quality Control (QC) testing on bulk samples and Quality Assurance (QA) testing on undisturbed Shelby tube samples.

2.0 Landfill Final Cover System

The final cover system for the Landfill consists of a combination of soil and geosynthetic materials to minimize percolation of water into the waste mass. Construction of the final cover system included the following:

- Installation of a 12-inch thick gas venting soil layer
- Installation of a geotextile filter fabric layer
- Installation of an 18-inch thick low permeability barrier soil layer
- Installation of a 24-inch thick barrier protection soil layer
- Installation of a 6-inch thick topsoil layer
- Establishment of a vegetative layer

A description of the construction procedures, QA/QC, and background testing procedures associated with this project is presented in the following sections.

2.1 *Gas Venting Layer*

2.1.1 *Description*

The gas venting layer consists of twelve inches of highly permeable soil material spread and compacted over the entire Landfill and gas vent structures to allow landfill gas to vent through the final cover system. Nine gas venting structures vent the gas passively into the atmosphere. The gas venting structures were constructed with a network of four-inch diameter, slotted, corrugated polyethylene pipes. These pipes were installed in the gas venting soil layer and connected to solid six-inch diameter PVC riser vent pipes. All slotted pipe was wrapped with a filter fabric that allows gas to penetrate, but will not allow soil to pass through and clog the pipes.

2.1.2 *Quality Assurance/Quality Control*

Soil used for the gas venting layer was a sand and gravel mix with a trace of silt. All of the material used for the project came from the Charlie Jones Pit in the Town of Berlin. Approximately 17,000 cubic yards (in-truck) of gas venting material was required for the project. Interval-based QC testing was completed for up to 18,000 cubic yards. Copies of all the quality control testing results are presented in Appendix A.

Grain-size analyses were performed once for every 1,000 cubic yards hauled to the Landfill. All test reports indicated that the gas vent soil contained no particles larger than three inches and an average of 4.7% of the material by weight passed through the #200 sieve, well below the maximum of 10% allowed by 6 NYCRR Part 360. Permeability analyses were performed once for every 5,000 cubic yards hauled to the Landfill. These test results yielded an average permeability value of 1.3×10^{-2} cm/sec, well above the minimum value of 1×10^{-3} cm/sec required by 6 NYCRR Part 360.

Although moisture content analyses every 1,000 cubic yards was indicated as an interval-based QC test in the QA/QC Plan, they were not performed on the samples collected from the borrow pit since there were no moisture content requirements on the gas venting layer soil. 6 NYCRR Part 360 does not require testing for moisture on gas venting layer soil.

2.1.3 *Construction Methods*

The gas venting soil was stripped and loaded into 16-yard dump trucks at the Charlie Jones Pit with a Caterpillar 936 front-end wheel loader. The material was dumped where required at the Landfill and spread in a uniform twelve-inch lift by a John Deere 750 bulldozer. Several grade stakes were set up for the operator to use as a guide for grading.

The soil was tracked in place by the dozer before being compacted by the Ingersoll-Rand SD100F sheepsfoot roller. The material was then compacted with a Hamm smooth-drum vibratory roller to smooth out the top surface of the layer in preparation for the placement of the geotextile filter fabric and the low permeability barrier soil layer.

2.2 *Geotextile Filter Fabric Layer*

2.2.1 *Description*

A geotextile filter fabric was placed directly over the gas venting soil layer throughout the Landfill. Typar 3801 non-woven, polypropylene, 8-ounce per square yard material as manufactured by Exxon Chemical Company was used over the entire Landfill.

2.2.2 *Quality Assurance/Quality Control*

QC for the Filter Fabric Layer consisted of checking the manufacturer's certification that the supplied material met or exceeded the requirements of Part 360 and those in the QA/QC Plan for Apparent Opening Size (AOS). The Typar 3801 fabric exceeded both requirements and was suitable for use as a filter between the low permeability barrier soil and the gas venting layer soil. The verification of the material meeting the requirements of Part 360 and the QA/QC Plan are presented in Appendix B.

QA testing consisted of analyzing a sample of the geotextile for AOS by a certified laboratory. A sample from one of the supplied rolls was cut out and delivered to Plastics Technology, Inc. in Pittsfield, MA for an AOS analysis. The sample met the requirement of 95% of #100 sieve beads passing through the geotextile. A copy of the laboratory AOS result is included with Appendix B.

2.2.3 *Construction Methods*

The material was deployed using the bucket of the Caterpillar 936 loader to carry and roll out the 15-foot wide rolls. Laborers overlapped the rolls an average of 6-inches and secured the fabric into the underlying gas venting soil using metal stakes. The fabric was laid into the anchor trench excavated around the perimeter of the Landfill, and secured with compacted clay in the trench as construction progressed.

2.3 *Low Permeability Barrier Layer*

2.3.1 *Description*

As the primary component of the final cover system, the Low Permeability Barrier Layer serves to minimize the infiltration of rainfall into the Landfill. Construction of the low permeability soil layer was completed over two construction seasons. Most of this layer was completed during the 1993 construction season; however, there was approximately one acre remaining at the beginning of the 1994 season.

A majority of the material used for the construction of the low permeability barrier layer was obtained from the Babcock Pit, located four miles from the project site on Babcock Road in Petersburg, New York. Two soil materials were previously found at the pit and initial samples were taken of each material and analyzed to check their ability to meet the required performance standards. The first material, referred to as "brown clay," was generally found from two to three feet under the overburden soil at the Babcock Pit borrow site. The second material, referred to as "blue clay," was generally found under the brown clay down to an average depth of 15 feet. A Mined Land Use Permit from the New York State Department of Environmental Conservation (DEC) was obtained to excavate material from this pit exclusively for the purpose of capping the Berlin/Petersburg Landfill. This permit was effective only for the 1993 construction period.

As the end of the 1993 construction season grew near, the Contractor estimated the amount of material needed to complete the barrier layer. All clay that could not be spread in 1993 was stockpiled for use during the following construction season. Unfortunately, the amount of clay placed in the stockpile was not enough to complete the barrier layer when construction activities resumed in 1994. Since the permit to operate the Babcock pit had expired, the Contractor found it necessary to import additional clay to the Landfill from another source.

The source selected was the Dunn Pit in Rensselaer, New York. Dump trucks from R.J. Valente Excavating, Inc. delivered brown clay from the Dunn Pit to the Landfill site to complete the job. As with the clay derived from the Babcock Pit, background test data was obtained prior to use of the Dunn Pit material. This information may be found in Appendix C.

2.3.2

Quality Assurance/Quality Control

The QA/QC Plan specified a minimum 18-inch thick, compacted soil layer capable of achieving a maximum remolded coefficient of permeability of 1×10^{-7} cm/sec throughout its entire thickness. In addition, the soil was also required to pass through a 1-inch sieve.

QC procedures conducted throughout the construction included initial background testing and interval-based material conformance testing of the low permeability soil. QA procedures consisted of nuclear moisture/density testing and permeability testing on undisturbed Shelby tube samples.

To pre-qualify the material for use as a low permeability soil, bulk samples of each type of clay soil were obtained and analyzed by the Laboratory for various parameters. Moisture content, Atterberg limits, and particle size analyses were performed to provide the descriptive and physical characteristics of the soil, while a modified proctor curve was generated to establish a moisture-density relationship. Following those initial testing procedures, a series of re-constituted permeability tests were performed to develop a "passing envelope" of moisture and density values within which a maximum coefficient of permeability of 1.0×10^{-7} cm/sec could be expected. A total of five permeability tests were performed in the Laboratory on the two clay soil types from the Babcock Pit and one test on soils from the Dunn Pit. The results of these tests are presented in Table 1.

Table 1: Permeability Test Results

Dry Density (PCF)	Moisture Content (%)	Permeability (cm/sec)	Clay Type	Pit
89.9	29.6	6.5×10^{-8}	Brown	Babcock
97.0	18.2	1.0×10^{-7}	Brown	Babcock
92.4	21.4	9.8×10^{-8}	Blue	Babcock
89.8	21.7	2.1×10^{-7}	Blue	Babcock
93.5	25.0	1.1×10^{-7}	Blue	Babcock
100.4	23.6	1.5×10^{-8}	Brown	Dunn

Based upon the permeability values obtained at these points, a "best fit" line was interpolated to show a range of values which should yield permeabilities of 1.0×10^{-7} cm/sec or less. This line was then used as a pass/fail criterion for the moisture/density testing of the compacted barrier soil lifts. Copies of all background testing for the barrier soil material are presented in Appendix C.

As material was delivered to the project site, material properties were monitored via laboratory testing of bulk samples taken from the Babcock Pit. These samples were taken

from the pit at intervals prescribed by NYCRR Part 360-2.13(j)(3)(i), and in accordance with the QA/QC Plan. The required testing included one moisture content test and one Atterberg limits test done for every 1,000 cubic yards hauled to the Landfill; one grain-size analysis for every 2,500 cubic yards; and one moisture-density relationship and permeability test for every 5,000 cubic yards. Approximately 25,000 cubic yards (in-truck) of low permeability barrier soil were needed to complete the low permeability barrier soil layers. Interval-based QC test were completed for up to 23,000 cubic yards. Copies of these test results are presented in Appendix D.

After removing approximately 5,000 cubic yards of brown clay from the Babcock Pit, the brown clay material showed signs of increased silt content and decreased plasticity. Due to these characteristics, the brown clay was not used for the remainder of the project. All further material removed from the Babcock Pit was the blue clay.

As placement of the low permeability barrier soil progressed over the geotextile filter fabric, moisture-density tests on the compacted soil were performed with a Troxler Model 3440 Nuclear Moisture-Density Gauge. These tests were performed at a minimum frequency of nine tests per acre per lift. Test results were compared to the predetermined moisture-density-permeability envelope for each soil type to determine acceptability of the tests. Since the material was typically placed at its natural moisture content, the moisture-density testing indicated the amount of compactive effort required to yield adequate soil permeability values. Whenever the moisture-density values were plotted outside the boundary of the passing envelope, the Contractor was required to rework the soil until acceptable test results were obtained. The results of all field moisture-density tests are contained in Appendix D.

Due to the fact that hydrogen is present in the soil in other forms than water, the moisture content values determined by the Troxler gauge can vary. Therefore, a moisture offset value was determined periodically as the placement of the low permeability barrier soil progressed. The offset values were calculated using the average moisture content value of five moisture contents determined with the Troxler gauge in the field and the average of five true moisture contents determined in the Laboratory after oven-drying soil samples taken from directly under the gauge in the field tests. The calculated value was then entered into the gauge and subsequent moisture content determinations with the gauge in the field more precisely reflect the true moisture content. This process was repeated weekly during the construction until the field moisture contents very closely resembled oven-dry moisture content determinations.

Upon completion of the moisture-density testing and verification of acceptable results in the passing envelope, permeability testing was performed to measure the actual hydraulic conductivity of the soil. Undisturbed Shelby tube samples were taken at a frequency of one

tube per acre per lift and tested for permeability at the Laboratory. Typically two tubes were pushed at the same location, one for testing, and the other as a backup in the event the first is disturbed. If the initial tube sample was acceptable for testing, the alternate sample was discarded. Although the soil was placed in two compacted nine-inch lifts, testing for permeability was typically performed at the bottom of the nine-inch Shelby tube samples for the first lift, and at the interface and top of the thirteen-inch Shelby tube sample for the second lift.

Permeability tests using a flexible wall permeameter, in accordance with ASTM D-5084, were performed to obtain the permeability values. In addition, moisture content and dry density analyses were performed to monitor the consistency of the soil.

Although the QA/QC Plan indicated that Atterberg limits and grain-size analyses would be performed on the material from the Shelby tube samples, these tests were not performed since they were performed on the material at 1,000 cubic yard intervals as part of the interval-based quality control testing program. Material not meeting the Atterberg limit or grain-size requirements during interval-based testing was not permitted for use in the low permeability barrier layer.

Additional QA/QC data collected as the project progressed typically enabled modification of the conservatively established pass/fail envelope. This modification normally allowed the passing envelope to expand. However, as QA test results were compared to the initial envelope, all results plotted inside the passing area and it was not necessary to expand the passing envelopes for the two barrier soil types. The results of the permeability QA tests were plotted on the passing envelopes which are contained in Appendix E.

The test results showed that the construction equipment and procedures employed by the Contractor could consistently achieve the required barrier soil permeability. One permeability test, however, failed to achieve the required permeability with a value of 1.8×10^{-7} cm/sec. Upon review of the Shelby tube log, the presence of brown, silty streaks was noted, which most likely caused the permeability value to rise slightly above the 1.0×10^{-7} cm/sec maximum value. As a result, the Contractor was ordered not to excavate nor load any additional brown clay containing silty streaks and was required to rework the area surrounding the location of the failed permeability sample by tracking with the dozer, compacting with the sheepsfoot roller, and finally compacting with the smooth-drum roller. The reworked area was tested for moisture and density and yielded favorable results. Subsequent retesting for permeability yielded an acceptable permeability value of 2.9×10^{-8} cm/sec. Results of all QA permeability tests are summarized in Table 2 and copies of the Laboratory permeability results are presented in Appendix D.

Table 2
Summary of Barrier Layer Permeability Testing - Lift 1

Area	Shelby Tube No.	Permeability (cm/sec)	Remarks
Acre 1	1A	3.2×10^{-8}	
Acre 2	3A	7.5×10^{-8}	
Acre 3	4A	5.3×10^{-8}	
Acre 4	5A	1.8×10^{-7}	Silty streaks noted in sample Retest of 5A
Acre 4	6A	2.9×10^{-8}	
Acre 5	10A	5.6×10^{-8}	
Acre 6	12A	5.3×10^{-8}	
Acre 7	13A	4.6×10^{-8}	
Acre 8			

Summary of Barrier Layer Permeability Testing - Lift 2

Area	Shelby Tube No.	Permeability (cm/sec)	Remarks
Acre 1	7A	6.8×10^{-8}	
Acre 2	8A	2.8×10^{-8}	
Acre 3	9A	4.6×10^{-8}	
Acre 4	11A	3.7×10^{-8}	
Acre 5	14A	4.1×10^{-8}	
Acre 6	15A	3.0×10^{-8}	
Acre 7			
Acre 8			

Summary of Barrier Layer Permeability Testing - Lift 3

Area	Shelby Tube No.	Permeability (cm/sec)	Remarks
Acre 1	7A'	1.0×10^{-7}	' Denotes top part of sample
Acre 2	8A'	2.2×10^{-8}	
Acre 3	9B'	9.3×10^{-8}	9A' was disturbed
Acre 4	11A'	4.8×10^{-8}	
Acre 5	14A'	3.6×10^{-8}	
Acre 6	15A'	2.7×10^{-8}	
Acre 7			
Acre 8			

2.3.3 *Construction Methods*

A John Deere 750 bulldozer was used to strip and stockpile overburden soil at the Babcock Pit. As it became exposed, the clay was removed from the pit and loaded into 16 cubic yard dump trucks using a Caterpillar 225 excavator. The dump trucks delivered the clay to the Landfill, where it was spread into the low permeability barrier layer according to the plans and specifications.

Following the completion of the gas venting layer installation, the geotextile filter fabric was deployed over the area to be covered with the first lift of barrier soil. The barrier soil was initially dumped directly on the fabric and then over compacted barrier soil as the project progressed. The soil was spread in a nine-inch lift initially by a John Deere 850 bulldozer and later in the project by a Caterpillar D6H bulldozer. The soil was tracked by the dozer after spreading to ensure a uniform lift thickness.

Compaction of the nine-inch soil lift was achieved by an Ingersoll-Rand SD100F Sheepsfoot vibratory roller which kneaded the soil as well as provided compaction deep into the soil lift. Several passes were made with this roller and additional passes were made with a Hamm smooth-drum vibratory roller to seal the top surface of the lift. Visual observation of the sheepsfoot compactive effort showed that adequate re-molding of the material was achieved and provided increased confidence that the required performance standard had been met. This was confirmed upon review of field compaction test data and Laboratory permeability test data.

Therefore, due to the Contractor's ability to achieve adequate compaction and permeability values with the above-mentioned equipment and placement procedures, it became evident that the most effective method to place the material was in two 9-inch lifts. While 6 NYCRR Part 360 requires the installation of barrier soil in six-inch compacted lifts, a variance to this requirement was obtained by the Engineer via a letter from DEC dated September 27, 1993. The letter states that the placement of the barrier soil in two 9-inch lifts is acceptable, provided that permeability testing is done on samples from the bottom of the first lift, the interface between the two lifts, and at the top of the second lift. A copy of this letter is included in Appendix C.

2.4 *Barrier Protection Layer*

2.4.1 *Description*

Upon successful installation and acceptance of the 18-inch compacted low permeability barrier soil layer, a barrier protection layer was installed to protect the barrier layer from

desiccation cracking, frost action, and root penetration, as well as to resist erosion. This barrier protection layer was constructed with twenty-four inches of compacted soil in two twelve-inch lifts.

2.4.2 *Quality Assurance/Quality Control*

The source for this material was the Charlie Jones Pit. This source was chosen due to its availability, consistency, and close proximity to the Landfill. The material used for this layer consisted of a sand and gravel mix with a trace of silt. An initial grain-size analysis was performed to evaluate its suitability for use on the project. All material passed through the three-inch sieve in accordance with the QA/QC Plan. A copy of the grain-size analysis is presented in Appendix F.

QC procedures performed during placement of the barrier protection soil consisted of grain-size analyses at 5,000 cubic yard intervals and visual observations to verify the results of the grain-size analyses. A laboratory compaction test (Proctor test) was performed on this material to gauge the Contractor's effort of compaction in the two barrier protection soil lifts. Although not required by the QA/QC Plan, several density tests were performed with the Troxler Model 3440 Nuclear Testing Gauge to determine the level of compactive effort by the Contractor. Any areas which did not come reasonably close to 90% of the Proctor density were reworked until a satisfactory level of compaction was achieved. The results of the density testing on the barrier protection soil are contained in Appendix F.

2.4.3 *Construction Methods*

The barrier protection soil was stripped at the borrow pit by the 936 loader and loaded into 16-yard dump trucks. The trucks hauled the material to the Landfill and dumped at the location indicated by the bulldozer operator. The soil was then spread by the bulldozer and graded into twelve inch lifts. Grade stakes were set by laborers for the bulldozer operator to use as a guide while grading. Compaction of this material was achieved with the sheepsfoot roller initially, and then by the smooth-drum roller to level off the top surface of the lift.

2.5 *Topsoil Layer*

2.5.1 *Description*

The Topsoil Layer provides an organic soil base for supporting vegetation on the closed Landfill. Composted sewage sludge from Schenectady, NY was used as the primary material for the Topsoil Layer.

2.5.2 *Quality Assurance/Quality Control*

Samples of the compost material and the upper portion of the Barrier Protection Layer were sent to the Laboratory for QC testing of particle size, pH, and organic content. The results of the testing are included in Appendix G. QA is determined by the ability of the Topsoil Layer to support growth (see Vegetative Layer, below).

2.5.3 *Construction Methods*

Compost was delivered to the Landfill and placed in an on-site stockpile for spreading across the Landfill. The compost was spread over the Landfill to a depth of 6 to 7 inches, then mechanically disced into the upper 3 to 4 inches of the Barrier Protection Layer. The final layer was a mixed zone between 3 and 4 inches thick.

2.6 *Vegetative Layer*

2.6.1 *Description*

The Vegetative Layer provides a cover of grass across the Landfill to aid in reducing potential soil erosion and to provide an aesthetically pleasing appearance for the closed Landfill. The area was seeded and mulched to promote rapid and controlled growth of the vegetative layer.

2.6.2 *Quality Assurance/Quality Control*

QC was provided by requiring the seed vendor to provide a sample of the seeds for approval prior to seeding the Landfill. The Schedule of Grass Seed Requirements for the Landfill included a mixture of Creeping Red Fescue, Perennial Rye Grass, and Crown Vetch. QA was provided by field checking for 95% coverage of areas seeded after one full growing season.

2.6.3 *Construction Methods*

After preparation of the Topsoil Layer, the seed mixture was applied to the Landfill via a process of Hydroseeding with a mixture of water, seed, and fertilizer. An anti-erosion mulch consisting of seed-free hay or threshed straw free of weed seeds was then placed over the seeded areas.

The Landfill was seeded in November 1995. By October 1996, the vegetation was well established.

2.7 *Drainage Features*

Promoting the effective runoff of stormwater from the Landfill is the primary purpose of the closure system. In order to effectively promote runoff and to divert up-slope runoff from entering the waste mass in the Landfill, several notable drainage features were incorporated into the Landfill closure.

2.7.1 *Intermittent Stream Diversion*

A small intermittent stream flows onto the Landfill area from the south and, if not diverted, would tend to flow into and under the Landfill. To correct this situation a culvert, consisting of a 36-inch diameter pipe was laid from the stream's inlet to the Landfill area along the southern side of the toe of the Landfill slope. This culvert discharges to a man-made swale on the southwestern side of the Landfill, which ultimately rejoins the stream's natural drainage channel to the west of the Landfill. This culvert was installed with the perimeter trench above the Low Permeability Soil Layer. The culvert was covered by the rip-rap material used to line the perimeter trench (see below).

2.7.2 *Perimeter Trench*

Runoff from the Landfill flows down the slopes of the Landfill into a perimeter trench at the toe of the slope. The perimeter trench is lined at its base with clay from the Low Permeability Soil Layer and is filled with rip-rap consisting of gravel and cobbles. The trench promotes the drainage of the runoff water around the Landfill to a discharge point on the western side of the Landfill.

2.7.3 *Drainage Culverts and Discharge*

At the western side of the Landfill, runoff from the Perimeter Trenches flows into a pair of 18-inch culverts that pass beneath the perimeter roadway and discharge the stormwater runoff to the natural swale below the Landfill.

During construction a single drainage culvert had been installed. This design resulted in a failure of a portion of the downslope soils that formed the lower end of the toe of the slope. The failed area was repaired during the 1996 construction season by excavating the soils that had been eroded and installing a drainage blanket. The drainage blanket included a filter fabric placed into the excavated area that was then filled with stone.

The single culvert pipe beneath the perimeter road was replaced by two pipes at different locations.

2.8 *As-built Survey*

Appendix J contains copies of both the Final Grading Plan from the Closure Plan and an as-built Surface Topographic Survey of the Landfill after completion of all closure activities described in this report.

3.0 *Conclusion*

A comprehensive construction observation and QA/QC testing program was employed during the construction of the final cover system, as reflected by the documentation presented in this report. To the best of our knowledge, information, and belief, the workmanship and materials used in the closure construction for the Berlin/Petersburg Landfill substantially complies with the approved plans, specifications, and QA/QC Plan. Any known deviations are of a minor extent and in no way compromise the integrity of the final cover system. A copy of the Quality Assurance/Quality Control Plan is included in this report as Appendix H.

APPENDIX A

Gas Venting Layer Quality Control Test Results

Quality Control Testing Summary
Gas Venting Soil

Sheet 1 of 2

Project: Berlin - Petersburg

Contractor: A - Ritz

Client: EAC

Material Source: Charlie Jones Pit

S&M Job #: 4110900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	% Passing #200 Sieve ²	Comments
0 - 1000	GV 10	7-19-93	2.7	A Proctor Test (ASTM D-1557) was performed on this sample.
1000 - 2000	GV 11	7-19-93	1.0	
2000 - 3000	GV 12	7-19-93	2.7	
3000 - 4000	GV 13	7-19-93	2.6	Proctor Test performed on this sample.
4000 - 5000	GV 14	8-5-93	5.7	
5000 - 6000	GV 15	8-5-93	3.5	
6000 - 7000	GV 16	8-5-93	5.0	
7000 - 8000	GV 17	8-5-93	5.2	
8000 - 9000	GV 18	8-6-93	4.6	
9000 - 10000	GV 19	8-6-93	4.7	
10000 - 11000	GV 20	8-11-93	8.5	
11000 - 12000	GV 21	8-11-93	3.6	
12000 - 13000	GV 22	8-17-93	5.3	
13000 - 14000	GV 23	8-17-93	8.5	
14000 - 15000	GV 24	8-18-93	4.8	Proctor Test performed on this sample.
15000 - 16000	GV 25	8-18-93	3.9	Proctor Test performed on this sample.
16000 - 17000	GV 26	8-28-93	4.4	
17000 - 18000	GV 27	8-28-93	7.2	

Notes: Truck

¹ In-Place Measure

² Test Method ASTM D-422

Avg. - 4.7

Quality Control Testing Summary

Sheet 2 of 2

Project: Berlin - Petersburg Gas Venting Soil

Contractor: A - Ritz

Client: EAC

Material Source: Charlie Jones Pit

S&M Job #: 411 0900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	Moisture/Density Relationship ²		Permeability ³ (cm/sec)	Comments
			Optimum Moisture Content (%)	Dry Density (PCF)		
0-5000	GV10	7-19-93/ 7-28-93	5.3	145.2	1.7×10^{-2}	
5000-10000	GV13	7-19-93/ 7-28-93	3.9	142.9	2.1×10^{-2}	
10000-15000	GV24	8-18-93/ 8-31-93	5.0	145.1	1.2×10^{-2}	
15000-20000	GV25	8-18-93/ 8-31-93	5.0	144.7	1.4×10^{-2}	

Notes: Truck

- ¹ In-Place Measure
- ² Test Method ASTM D-1557
- ³ Test Method ASTM D-5084

SOIL & MATERIAL TESTING, INC.
WASHED GRAIN SIZE ANALYSIS SUMMARY SHEET - GAS VENTING

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349 DATE: 8/16/93
 CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT
MAURICE CROMIER

SAMPLE ID		GV 10	GV 11	GV 12	GV 13	GV 14	GV 15	GV 16	GV 17
DATE RECEIVED		7/19/93	7/19/93	7/19/93	7/19/93	8/5/93	8/5/93	8/5/93	8/5/93
SOURCE		SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY
	LAYER	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING
P A S S I V E	3-INCH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2-INCH	100.0	96.0	100.0	100.0	100.0	100.0	100.0	100.0
	1-INCH	92.6	93.1	86.1	90.7	100.0	100.0	98.1	97.5
	1/2-INCH	85.6	80.9	67.3	71.5	89.0	87.3	90.6	84.7
	1/4-INCH	71.0	63.8	42.2	48.8	76.8	70.4	85.3	82.4
	NO. 10	49.1	30.5	22.1	30.2	59.7	45.5	57.0	55.2
	NO. 40	20.9	6.3	10.0	12.7	30.7	15.9	24.7	25.4
	NO. 200	2.7	1.0	2.7	2.6	5.7	3.5	5.0	5.2

REMARKS: _____

SOIL & MATERIAL TESTING, INC.
WASHED GRAIN SIZE ANALYSIS SUMMARY SHEET - GAS VENTING

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349 DATE: 8/31/93
 CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT
MAURICE CROMIER

SAMPLE ID		GV 18	GV 19	GV 20	GV 21	GV 22	GV 23	GV 24	GV 25
DATE RECEIVED		8/6/93	8/6/93	8/11/93	8/11/93	8/17/93	8/17/93	8/18/93	8/18/93
SOURCE		SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY
	LAYER	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING	GAS VENTING
P A S S I N G S I E V E	3-INCH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2-INCH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	1-INCH	92.2	91.1	93.5	100.0	94.5	98.2	94.7	96.5
	1/2-INCH	79.2	78.2	78.5	88.5	86.4	91.0	80.4	84.7
	1/4-INCH	63.9	64.8	64.9	75.7	71.9	77.5	63.7	66.0
	NO. 10	41.6	45.0	46.4	51.0	47.5	52.5	41.2	44.6
	NO. 40	20.6	21.5	29.5	11.8	19.8	17.9	16.5	17.5
	NO. 200	4.6	4.7	8.5	3.6	5.3	8.5	4.8	3.9

REMARKS: _____

SOIL & MATERIAL TESTING, INC.
WASHED GRAIN SIZE ANALYSIS SUMMARY SHEET - GAS VENTING

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349 DATE: 8/31/93

CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT
MAURICE CROMIER

SAMPLE ID		GV 26	GV 27						
DATE RECEIVED		8/28/93	8/28/93						
SOURCE		SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY						
	LAYER	GAS VENTING	GAS VENTING						
P A S S I N G S I E V E	3-INCH	100.0	100.0						
	2-INCH	100.0	100.0						
	1-INCH	94.5	93.4						
	1/2-INCH	79.5	80.8						
	1/4-INCH	58.4	65.8						
	NO. 10	32.4	48.9						
	NO. 40	11.3	24.9						
	NO. 200	4.4	7.2						

REMARKS: _____

SOIL & MATERIAL TESTING, INC.

57 SOUTH MAIN STREET * CASTLETON, NEW YORK 12033

* PHONES *
CASTLETON OFFICE (518) 732-7205
BINGHAMTON OFFICE (807) 722-7582

S.M.T. JOB NO. 79349
TEST DATE 7/28/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Sand & Gravel, Trace Silt

MATERIAL MARK GV-10

UNIFIED CLASSIFICATION

SOURCE OF MATERIAL Gas Venting Sample 10 - Received 7/19/93

NATURAL WATER CONTENT

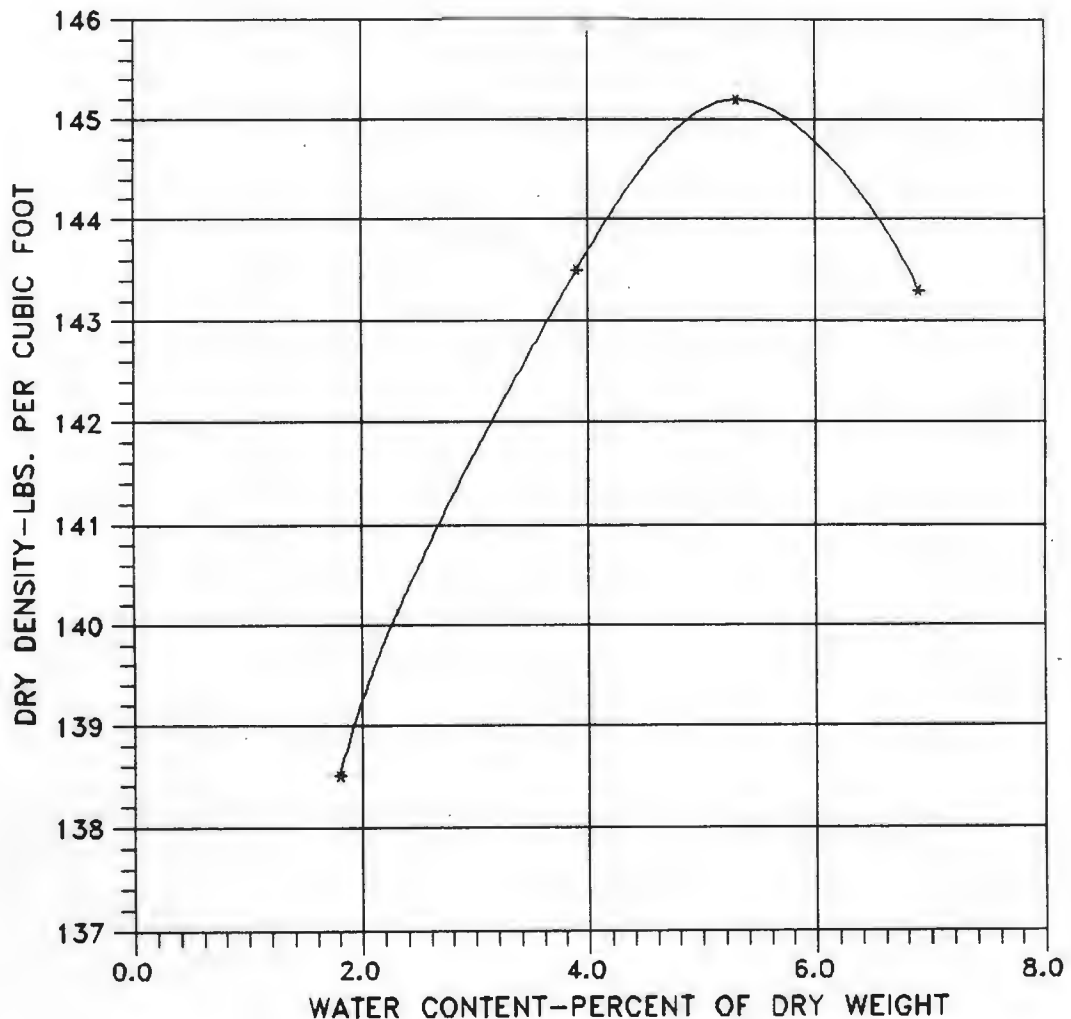
LIQUID LIMIT

PLASTIC LIMIT

PLASTICITY INDEX

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 145.2 PCF
OPTIMUM WATER CONTENT 5.3 %



SMT - QA/QC

SOIL & MATERIAL TESTING, INC.

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S.M.T. JOB NO. 79349
TEST DATE 7/28/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Sand & Gravel, Trace Silt

MATERIAL MARK GV-13

UNIFIED CLASSIFICATION

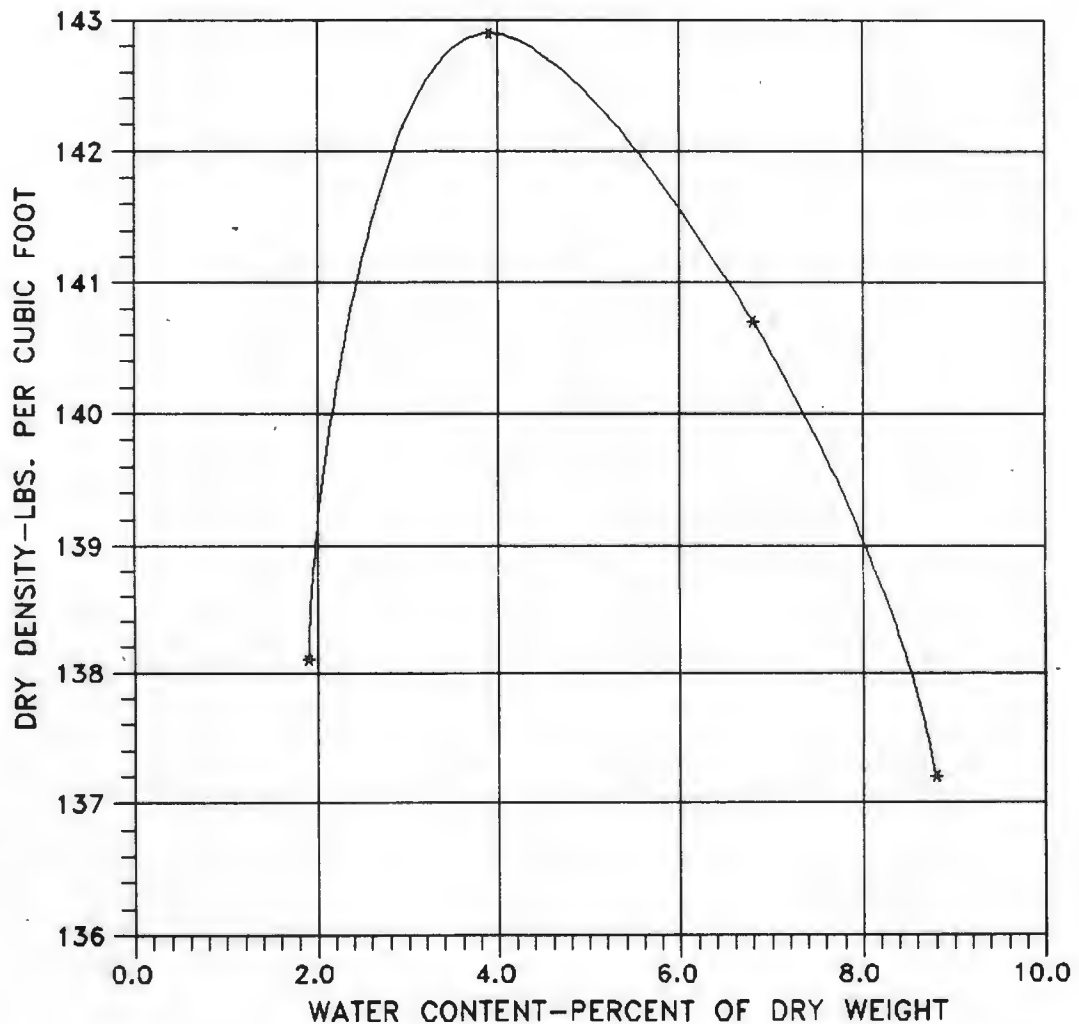
SOURCE OF MATERIAL Gas Venting Sample 13 - Received 7/19/93

NATURAL WATER CONTENT

LIQUID LIMIT PLASTIC LIMIT PLASTICITY INDEX

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 142.9 PCF
OPTIMUM WATER CONTENT 3.9 %



SMT - QA/QC

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BINGHAMTON OFFICE (807) 722-7582

S.M.T. JOB NO. 79348
TEST DATE 8/31/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Sand & Gravel, Trace Silt

MATERIAL MARK GV-24 UNIFIED CLASSIFICATION

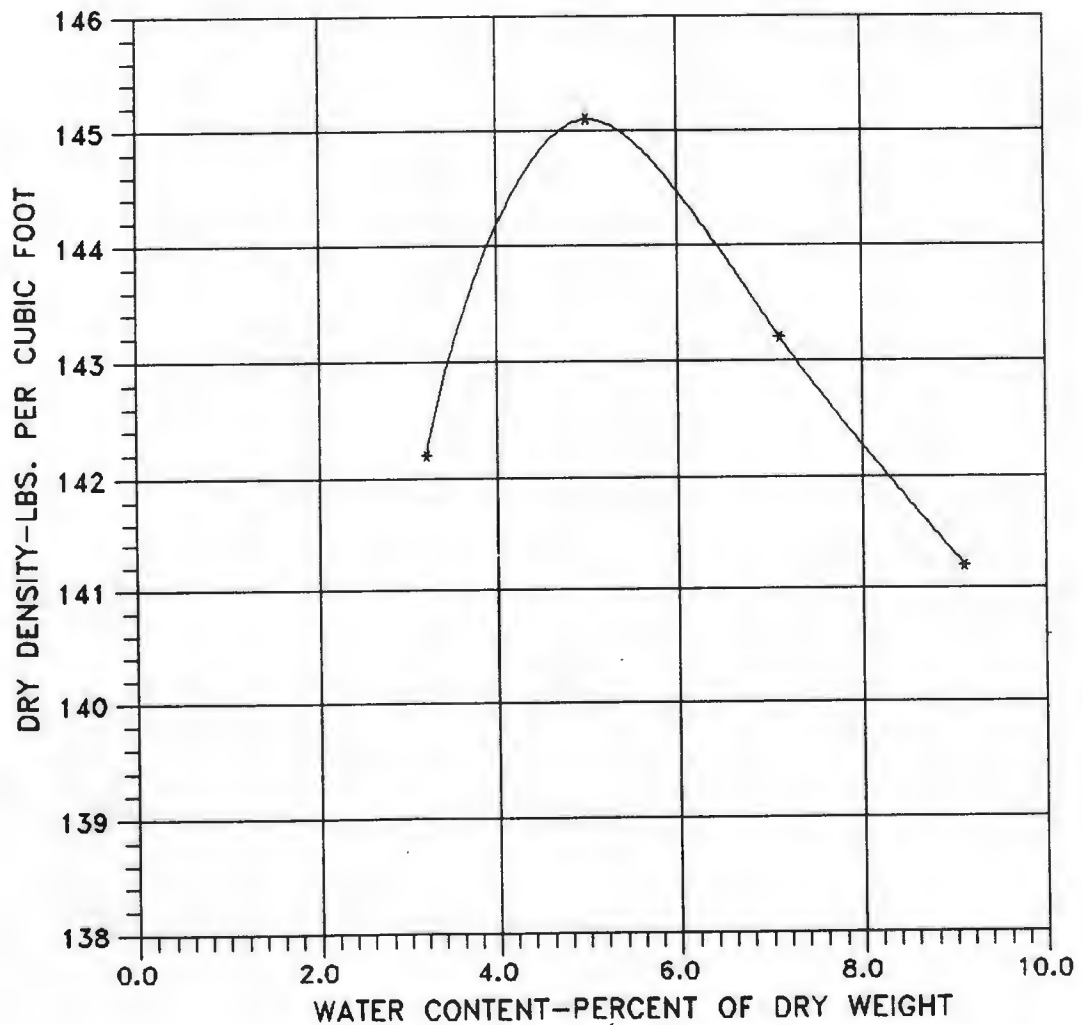
SOURCE OF MATERIAL Gas Venting Sample 24 - Received 8/18/93

NATURAL WATER CONTENT

LIQUID LIMIT PLASTIC LIMIT PLASTICITY INDEX

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 145.1 PCF
OPTIMUM WATER CONTENT 5.0 %



SMT - QA/QC

SOIL & MATERIAL TESTING, INC.

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CASTLETON OFFICE (518) 732-7205
BINGHAMTON OFFICE (607) 722-7582

S.M.T. JOB NO. 79348
TEST DATE 8/31/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Sand & Gravel, Trace Silt

MATERIAL MARK GV-25 UNIFIED CLASSIFICATION

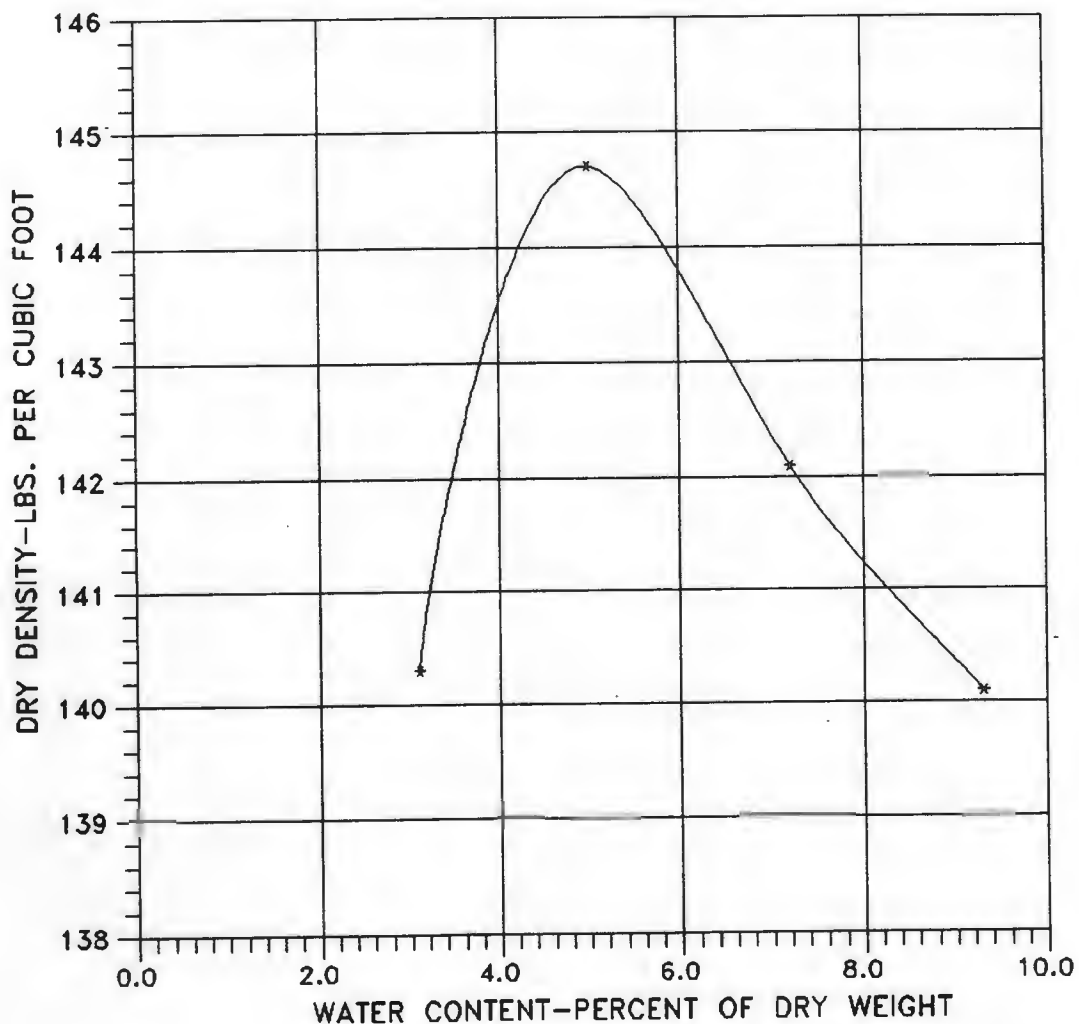
SOURCE OF MATERIAL Gas Venting Sample 25 - Received 8/18/93

NATURAL WATER CONTENT

LIQUID LIMIT PLASTIC LIMIT PLASTICITY INDEX

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 144.7 PCF
OPTIMUM WATER CONTENT 5.0 %



SMT - QA/QC



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Pittsfield

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AUG -6 1993

August 4, 1993

SMITH & MAHONEY, P.C.

Mr. Maurice Cromier
Smith & Mahoney, P.C.
540 Broadway
Albany, New York 12201

SMT 79349

Re: Berlin Petersberg Landfill Project

Gentlemen:

Listed below are the Constant Head Permeability results on the sample submitted for testing on 7/19/93.

Material ID: Gas Venting Material

Source: Delivered to SMT-Borrowed

Sample ID: GV-10

Description of Soil: Sand and Gravel, Trace Silt

Test Procedure: ASTM D-2434 Permeability of Granular Soils

Method Prepared: ASTM D 1557 - (Modified Proctor)

Condition: Remolded to Dry Density : 130.9 pcf
(90.2% Compaction & 7.5% moisture)

Oversize Material (+1"): 7.4% (Not used)

Results: Coefficient of Permeability, $k = 1.7 \times 10^{-2}$ cm/sec

If you have any questions regarding these tests results, do not hesitate to contact us.

Sincerely,

Lizette Lehrer
Vice President-Field & Laboratory Services

LL



SOIL & MATERIAL TESTING, INC.

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(413) 499-5338

August 4, 1993

Mr. Maurice Cromier
Smith & Mahoney, P.C.
540 Broadway
Albany, New York 12201

SMT 79349

Re: Berlin Petersberg Landfill Project

Gentlemen:

Listed below are the Constant Head Permeability results on the sample submitted for testing on 7/19/93.

Material ID: Gas Venting Material

Source: Delivered to SMT-Borrowed

Sample ID: GV-13

Description of Soil: Sand and Gravel, Trace Silt

Test Procedure: ASTM D-2434 Permeability of Granular Soils

Method Prepared: ASTM D 1557 - (Modified Proctor)

Condition: Remolded to Dry Density : 130.6 pcf
(92.6% Compaction & 7.0% moisture)

Oversize Material (+1"): 7.4% (Not used)

Results: Coefficient of Permeability, $k = 2.1 \times 10^{-2}$ cm/sec

If you have any questions regarding these tests results, do not hesitate to contact us.

Sincerely,

Lizette Lehrer
Vice President-Field & Laboratory Services

LL



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August 31, 1993

Mr. Maurice Cromier
Smith & Mahoney, P.C.
540 Broadway
Albany, N.Y. 12201

SMT 79349

Re: Berlin Petersberg Landfill

Gentlemen:

Listed below are the Constant Head Permeability results on the sample submitted for testing on 8/18/93.

Material ID: Gas Venting Material

Source: Delivered to SMT - Borrow from Jones Pit

Sample Id: GV-24

Description of Sample: Sand and Gravel, Trace Silt

Test Procedure: ASTM D-2434 Permeability of Granular Soils

Method Prepared: ASTM D 1557 (Modified Proctor)

Condition: Remolded to Dry Density : 129.9 pcf (89.5% Compaction)

Oversize Material (+1"): 5.3% not used

Results: Coefficient of Permeability, $k = 1.2 \times 10^{-2}$ cm/sec

If you have any questions regarding these tests results, do not hesitate to contact us.

Sincerely,

Ronald E. Vaughn
President

REV/km



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August 31, 1993

Mr. Maurice Cromier
Smith & Mahoney, P.C.
540 Broadway
Albany, N.Y. 12201

SMT 79349

Re: Berlin Petersberg Landfill

Gentlemen:

Listed below are the Constant Head Permeability results on the sample submitted for testing on 8/18/93.

Material ID: Gas Venting Material

Source: Delivered to SMT - Borrow from Jones Pit

Sample Id: GV-25

Description of Sample: Sand and Gravel, Trace Silt

Test Procedure: ASTM D-2434 Permeability of Granular Soils

Method Prepared: ASTM D 1557 (Modified Proctor)

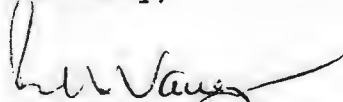
Condition: Remolded to Dry Density : 130.8 pcf (90.4% Compaction)

Oversize Material (+1"): 3.5% not used

Results: Coefficient of Permeability, $k = 1.4 \times 10^{-2}$ cm/sec

If you have any questions regarding these tests results, do not hesitate to contact us.

Sincerely,


Ronald E. Vaughn
President

REV/km

APPENDIX B

Geotextile Filter Fabric Quality Control Results

Geotextile Filter Fabric used was Typar 3801

Part 360 2.13 (c)(2)(i) requires:

$$K_{\text{filter}} > 10 K_{\text{soil}}$$

$$K_{\text{soil}} = \text{overlying soil permeability} \\ = 1.0 \times 10^{-7} \text{ cm/sec, max.}$$

$$K_f = 0.01 > 10 (1.0 \times 10^{-7})$$

$$K_{\text{filter}} = \text{geotextile permeability} \\ = 0.01 \text{ cm/sec} \\ (\text{from Typar spec. sheet})$$

$$0.01 > 0.000001 \quad (\text{OK})$$

Part 360 2.13 (c)(2)(ii) requires:

$$O_{95} (\text{geotextile}) < (2-3) d_{85} (\text{soil})$$

$$O_{95} = 0.07 < 2 (0.064)$$

$$0.07 < 0.128 \quad (\text{OK})$$

$$O_{95} = 0.07 < 3 (0.064)$$

$$0.07 < 0.192 \quad (\text{OK})$$

$$O_{95} (\text{geotextile}) = \text{Apparent}$$

Opening Size of geotextile

$$O_{95} = 0.07 \text{ mm} \\ (\text{from Typar spec. sheet})$$

$$d_{85} (\text{soil}) = 0.064 \text{ mm}$$

(from grain-size analysis of sample LPB-18).

Typar 3801 exceeds Part 360 2.13 requirements.

Apparent Opening Size (AOS) analysis must conform to the following criteria:

$$\frac{O_{95}(\text{geotextile})}{d_{85}(\text{soil})} \leq 2 \quad \text{and}$$

$$\frac{O_{95}(\text{geotextile})}{d_{15}(\text{soil})} \geq 2.$$

O_{95} = AOS of geotextile at which 95% of the soil will pass

O_{95} = 0.07 mm (from Typar spec. sheet for 3801).

d_{85} = 0.064 mm (from grain-size analysis of low permeability barrier soil sample LPB-18)

d_{15} = 0.0006 mm (from grain-size of LPB-18)

$$\frac{O_{95}(\text{geotextile})}{d_{85}(\text{soil})} = \frac{0.07 \text{ mm}}{0.064 \text{ mm}} = 1.09 \leq 2 \quad \text{OK}$$

$$\frac{O_{95}(\text{geotextile})}{d_{15}(\text{soil})} = \frac{0.07 \text{ mm}}{0.0006 \text{ mm}} = 117 \geq 2 \quad \text{OK}$$

The AOS of Typar 3801 meets the criteria for the QC Testing, and is suitable for use.

TYPAR® SPUNBONDED GEOTEXTILES

EXXON
CHEMICAL

Exxon Chemical's full line of Typar geotextiles provides a nonwoven permeable separator for roads, drainage systems, erosion control applications, and in landfill drainage systems. Typar geotextiles offer a fast, economical and proven alternative to more traditional construction methods. Tough and durable, Typar geotextiles are thermally spunbonded from polypropylene to make a high-quality, uniform fabric for today's market.

Typar 3201, 3301 – Lightweight geotextiles designed for drainage structures and lightweight separation applications where permeability is a primary function and strength is not critical.

Typar 3341, 3401 – General-use, durable, nonwoven geotextiles where separation and drainage are primary functions. Typar 3401 satisfies Task Force 25 requirements for protected drainage, erosion control applications, and medium survivability separation applications.

Typar 3601, 3801 – High-strength, nonwoven geotextiles designed to meet demanding separation requirements. These rugged, heavy-duty fabrics add a margin of safety to your design. Typar 3601 satisfies Task Force 25 requirements for protected drainage, erosion control applications, and medium survivability separation applications. Typar 3801 meets Task Force 25 requirements for high survivability separation applications.

SPECIFICATIONS – Minimum Average Roll Values

PROPERTIES	TEST METHOD	3201	3301	3341	3401	3601	3801
Grab Tensile Strength (lbs)	ASTM D 4632-86	60	120	120	130	200	300
Elongation (%)	ASTM D 4632-86	60	60	60	60	60	60
Trapezoid Tear (lbs)	ASTM D 4533-85	25	30	40	60	75	85
Puncture (lbs)	ASTM D 4833-88	18	25	30	40	60	90
Mullen Burst (psi)	ASTM D 3786-87	65	90	90	140	210	250
Ultra-Violet Stability (strength retained %)	ASTM D 4355-84 (xenon arc) 500 hours exposure	70*	70*	70	80	90	90
✱ Apparent Opening Size CW02215 (U.S. sieve no. equivalent) (mm)	ASTM D 4751-87	30	50	60	70	140	200
	ASTM D 4751-87	.59	.30	.25	.21	.10	.07
Permeability Coefficient-k (cm/sec)	ASTM D 4491-85 Falling Head	.03	.02	.02	.01	.01	.01
Permittivity (Sec-1)	ASTM D 4491-85	.5	.3	.3	.1	.1	.1
Vertical Water Flow Rate (GPM/ft ²) (typical)	ASTM D 4491-85 Falling Head (8 to 2 cm)	235	200	100	85	60	25

* 150 hours exposure, xenon arc method.

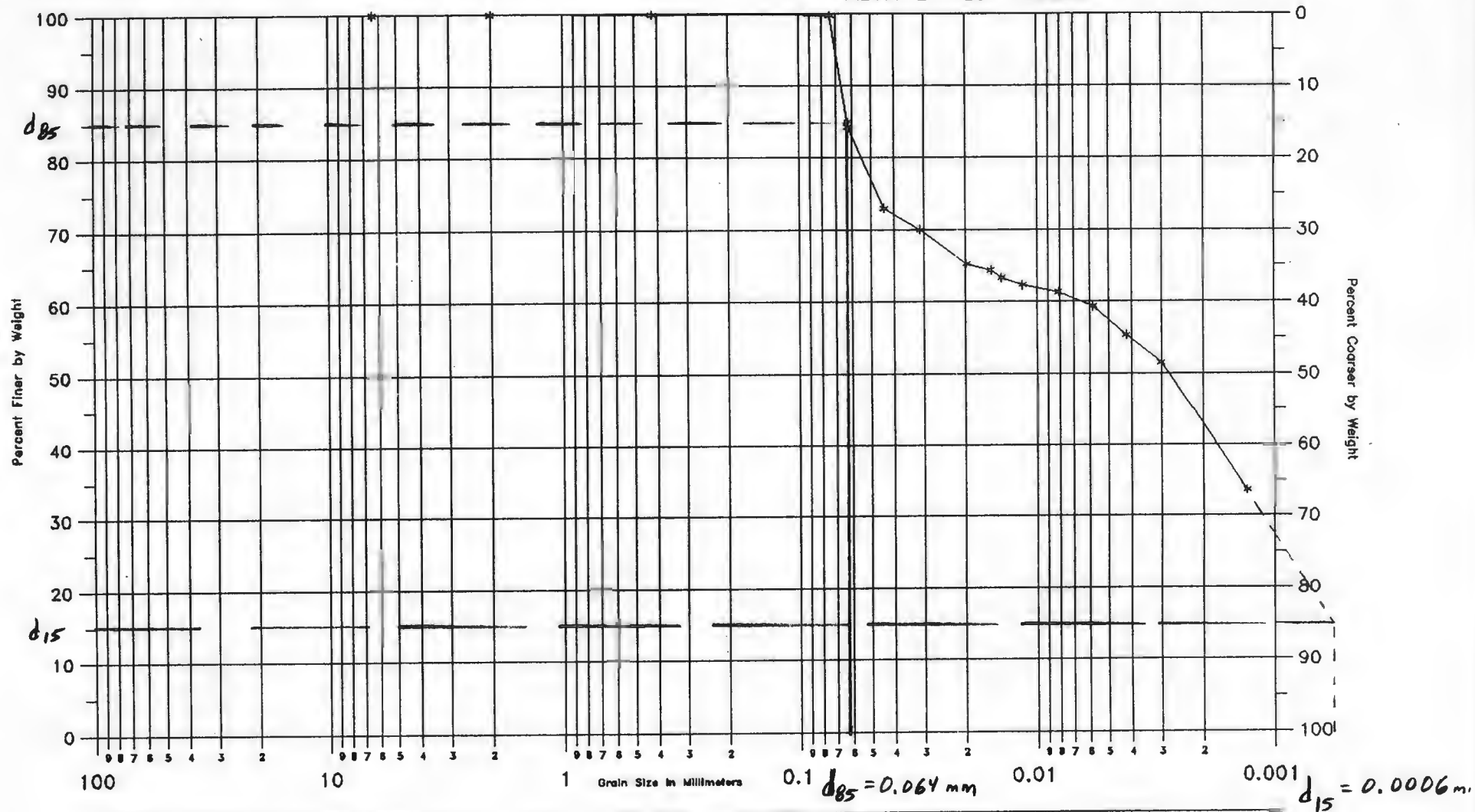
PACKAGING – ROLL	3201*	3301*	3341	3401	3601	3801
Width (in)	151	187	151	151/197	151/187	151/187
Length (ft)	600	300	300	300	300	300
Area (yd ²)	839	519	419	419/547	419/519	419/519
Weight (lbs)	58	108	97	113/148	165/205	215/265
Diameter (in)	12	8	8	9	10	12

*Also available in 36", 48", and 75" widths (same length).

**POLYMERS
GROUP**

SOIL & MATERIAL TESTING, INC.
57 S. MAIN STREET
CASTLETON, NY 12033

ASTM D-422 HYDROMETER



PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 12/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-18
Date Received: 10/06/93
Source: Sampled by Smith & Mahoney
18,000 cyd.
Natural Moisture Content: 35.9%
LL=47 PL=25 PI=22
Classification: Lean Clay, CL

APPENDIX C

Low Permeability Barrier Soil Layer Background Test Results

Quality Control Testing Summary
Low Permeability Barrier Soil

Sheet ___ of ___

Project: Berlin - Petersburg

Contractor: A - Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	% Passing #200 Sieve ²	% Passing 0.005mm Sieve ²	Comments
	1	6-12-91/ 6-21-91	99.9		Brown Clay
	2	6-12-91/ 6-21-91	99.3		Brown Clay
	3	6-12-91/ 6-21-91	99.2		Blue Clay
	LPB-1	8-24-93/ 9-7-93	91.0	59.0	Brown Clay
	GS-1	5-6-91/ 5-28-91	99.0	64.0	Blue Clay
	D-1	8-24-92	89.3		Brown Clay

Notes:

- ¹ In-Place Measure
- ² Test Method ASTM D-422



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SMITH & MAHONEY, P.C.

June 21, 1991

Smith & Mahoney, P.C.
Attn: Eric Dykstra
79 North Pearl Street
Albany, New York 12207

Re: Berlin/Petersburg Landfill #4110900

SMT 78052

Gentlemen:

Listed below are the results of the laboratory testing on samples from the above referenced project. These samples were delivered to our office by Smith & Mahoney on 6/12/91.

Sample ID:	Brown Clay	Brown Clay	Gray Clay (Blue)
TP:	6	6	6
GS:	1	2	3

Test: ASTM C 117: Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing.

Sieve	% Passing	% Passing	% Passing
#40	100.0	100.0	100.0
#200	99.9	99.3	99.2

Test: ASTM D 4318: Liquid Limit, Plastic Limit, and Plasticity Index of Soil.

Liquid Limit:	46	43	41
Plastic Limit:	31	23	24
Plasticity Index:	15	20	17

Test: ASTM D 2487: Classification of Soils for Engineering Purposes.

Classification: silt, ML lean clay, CL lean clay, CL

Test: ASTM D 2216: Laboratory Determination of Water Content of soil, Rock, and Soil-Aggregate Mixtures.

Water Content:	21.6%	26.9%	37.9%
----------------	-------	-------	-------



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Office Telephone
Binghamton (607) 722-1582
Kingston (914) 366-4471
Pittsfield (413) 445-7766

HYDRAULIC CONDUCTIVITY TEST DATA

RECEIVED 001 3 1 1991

Project Name: Berlin-Petersburg Landfill

Client: Smith & Mahoney, P.C.
79 North Pearl Street
Albany, New York 12207

SMT Project No. 78227

Sample Description: (olive) Gray clay sampled by client. GC-1
Remolded to +90 percent density.

Date received: 9/20/91
Date Reported: 10/29/91

Date Tested: 10/21/91
Reviewed By: REV REV

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 7.55 cm
Diameter = 7.21 cm
Moisture Content = 21.4%
Dry Density = 92.4 pcf
% Compaction = 91.5%

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.8 psi
Pressure Gradient = 1.5 psi
Permeant Liquid: Tap Water

Final Specimen Properties

Length = 7.51 cm
Diameter = 7.20 cm
Moisture Content = 25.6%
Dry Density = 93.7 pcf

Remarks:

Hydraulic Conductivity: $k = 9.8 \times 10^{-8}$ cm/sec

Thom Kury
SOIL & MATERIAL TESTING, INC.



SOIL & MATERIAL TESTING, INC.

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
LPB-3 (Babcock Pit, Blue)
Laboratory Remolded

Date Received: 8/27/93
Date Reported: 9/3/93

Date Tested: 8/31/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 7.43 cm
Diameter = 7.24 cm
Moisture Content = 21.7%
Dry Density = 89.8 pcf
% Compaction = 88.9%

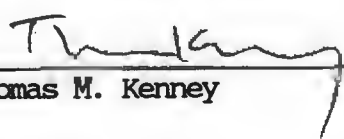
Test Conditions

Back Pressure = 85.0 psi
Cell Pressure = 90.0 psi
Hydraulic Gradient = 20
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 2.1 \times 10^{-7}$ cm/sec

SOIL & MATERIAL TESTING, INC.


Thomas M. Kenney



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Fax (518) 732-4516

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Kingston
Pittsfield
Telephone
(607) 722-1582
(914) 336-4471
(413) 499-5338

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
LPB-3 (Babcock Pit, Blue)
Laboratory Remolded
Specimen #2

Date Received: 8/27/93
Date Reported: 9/3/93

Date Tested: 9/1/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 11.78 cm
Diameter = 7.21 cm
Moisture Content = 25.0%
Dry Density = 93.5 pcf
% Compaction = 92.5%

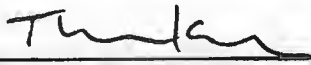
Test Conditions

Back Pressure = 75.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 20
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 1.1 \times 10^{-7}$ cm/sec

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S.M.T. Job No. 78227

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(607) 722-1582 BINGHAMTON

Test Date 10/9/91

LABORATORY COMPACTION REPORT

Job Name and Location Berlin-Petersburg Landfill

Architect or Engineer Smith & Mahoney, P.C.

Contractor _____

A. Description of Soil: Grey clay (Blue)

Material Mark GC-1 Unified Classification _____ AASHO Classification _____

Source of Material Received 9/20/91

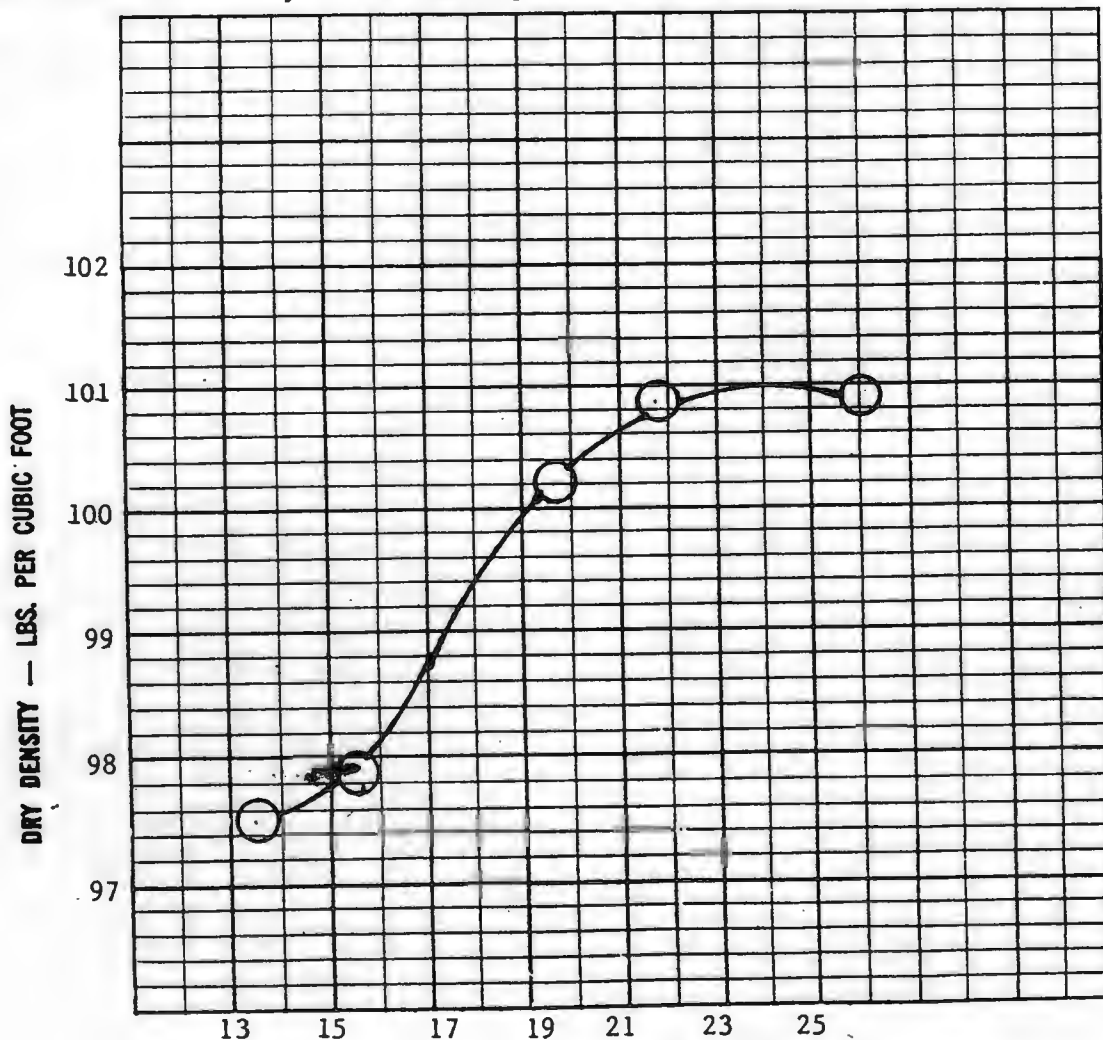
Natural Water Content 38.1 % Natural Dry Density _____ PCF Specific Gravity _____

Liquid Limit 47 % Plastic Limit 33 % Plasticity Index 14

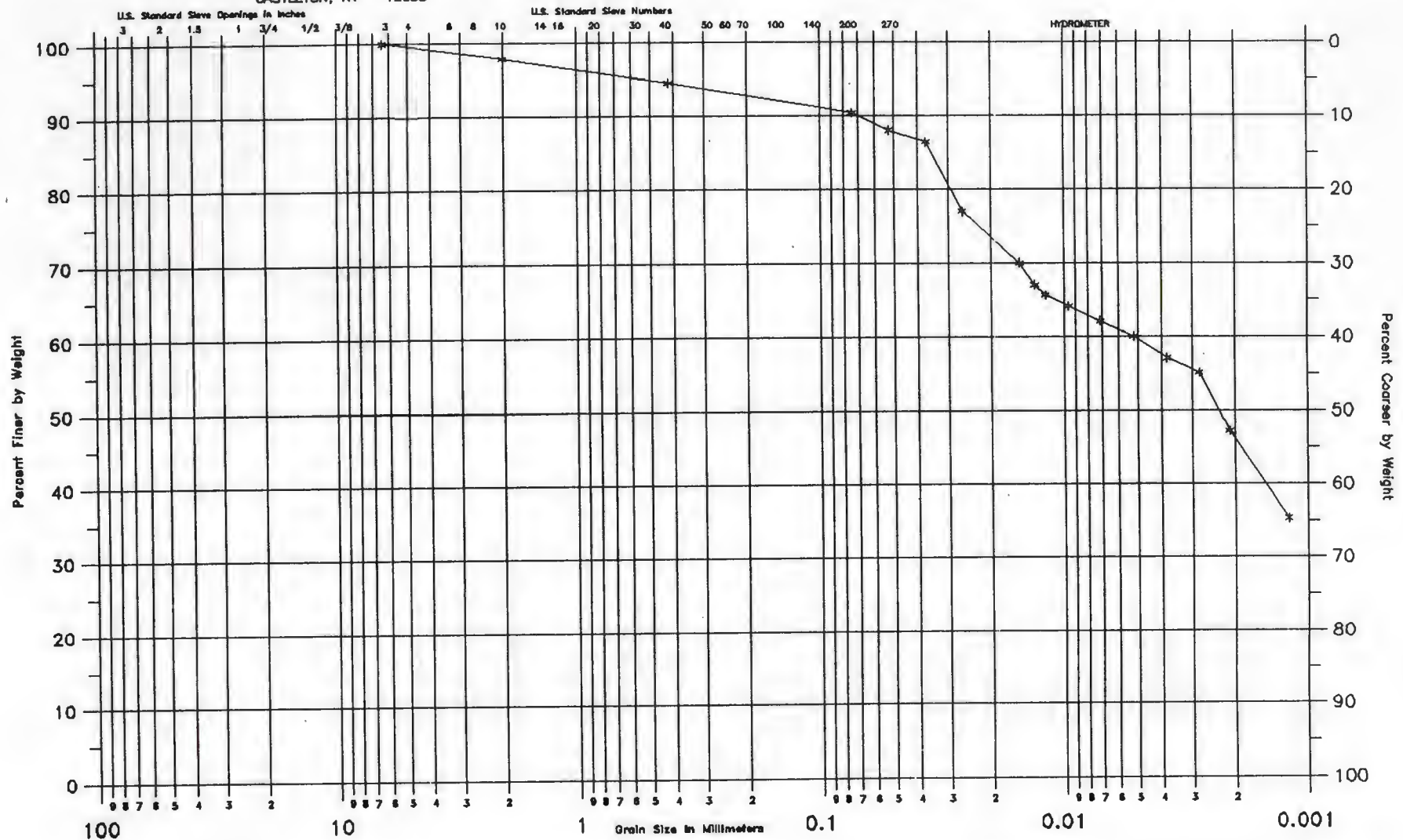
B. Test Procedure Used: ASTM D 1557 (Modified)

C. Test Results: Maximum Dry Density 101.0 PCF Optimum Water Content 24.1 %

D. Washed Grain Size Analysis: % Passing #200 = 99.3%



ASTM D-422



PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date : 9/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-1
Date Received: 8/24/93
Source: Sampled by Smith & Mahoney
1000 cyd.
Natural Moisture Content: 27.1%
LL=43 PL=25 PI=18
Classification: Lean Clay, CL



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(914) 366-4471

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: Berlin-Petersburg Landfill
Client: Smith & Mahoney, P.C.
79 North Pearl Street
Albany, New York 12207
SMT Project No. 78227
Sample Description: Brown clay sampled by client.
Remolded to 90 percent density.

Date received: 9/91
Date Reported: 10/8/91

Date Tested: 10/2/91
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

<u>Initial Specimen</u> <u>Properties</u>	<u>Test</u> <u>Conditions</u>	<u>Final Specimen</u> <u>Properties</u>
Length = 8.20 cm	Back Pressure = 65.0 psi	Length = 8.19 cm
Diameter = 7.16 cm	Cell Pressure = 70.5 psi	Diameter = 7.15 cm
Moisture Content = 29.6%	Pressure Gradient = 3.0 psi	Moisture Content = 32.3%
Dry Density = 89.9 pcf	Permeant Liquid: Tap Water	Dry Density = 90.1 pcf

Remarks:

Hydraulic Conductivity: $k = 6.5 \times 10^{-8}$ cm/sec @ 89.9% compaction


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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Brown Silty CLAY
LPB-1 (Babcock Pit, Brown)
Laboratory Remolded 90%

Date Received: 8/25/93
Date Reported: 9/2/93

Date Tested: 8/31/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 12.50 cm
Diameter = 7.23 cm
Moisture Content = 18.2%
Dry Density = 97.0 pcf
% Compaction = 90.1%

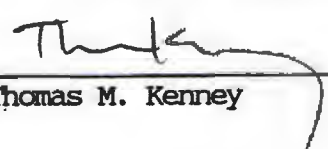
Test Conditions

Back Pressure = 83.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 20
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 1.0 \times 10^{-7}$ cm/sec

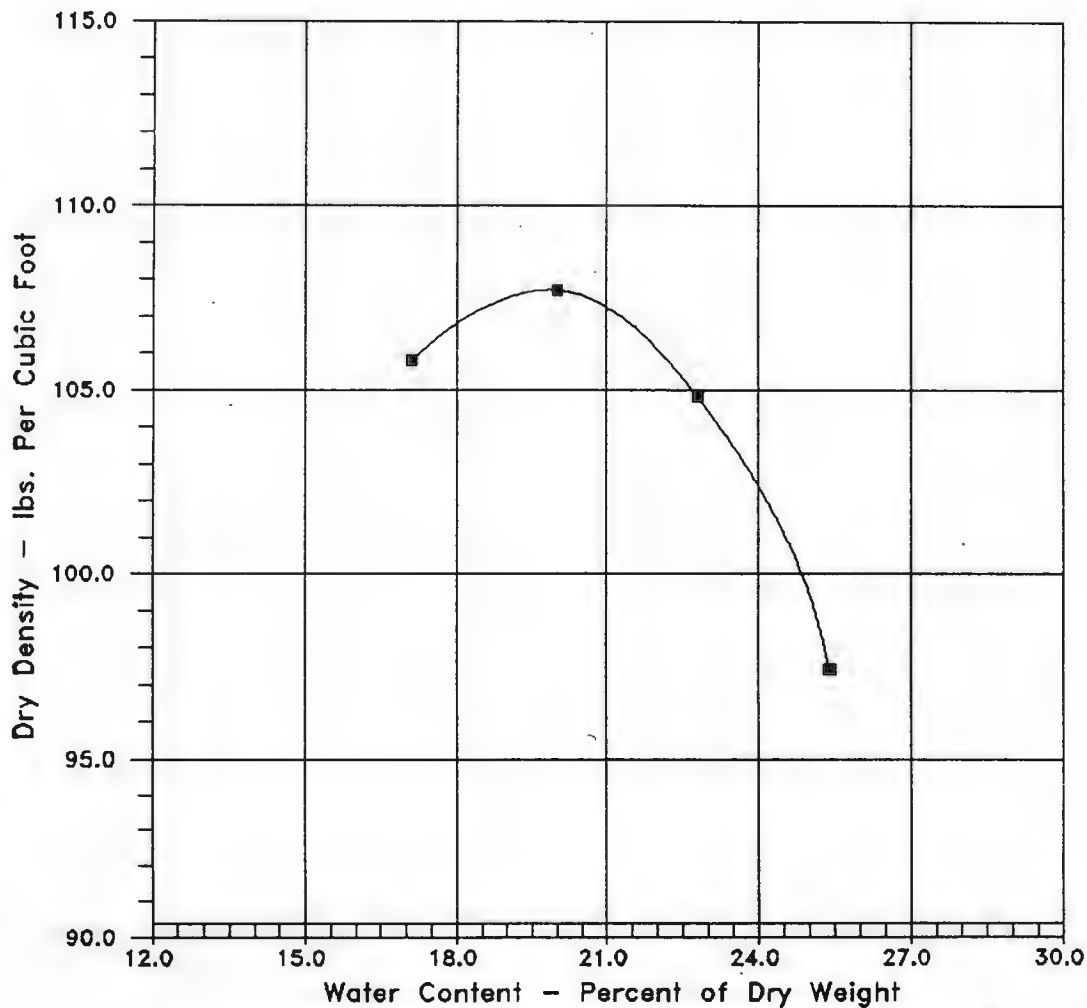
SOIL & MATERIAL TESTING, INC.


Thomas M. Kenney

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PROJECT: BERLIN-PETERSBERG LANDFILL CLOSURE
SMT JOB No.: 79349
SAMPLE ID: LPB-1 (Babcock Pit)
SAMPLE DESCRIPTION: Brown Silty CLAY
TEST PROCEDURE: ASTM D 1557 (Modified)
DATE TESTED: August 27, 1993

LABORATORY COMPACTION REPORT



■■■■■ ASTM D 1557 - LPB-1, (Babcock Pit)
DATE SAMPLED: 8/25/93

RESULTS: MAXIMUM DRY DENSITY: 107.7 PCF
OPTIMUM WATER CONTENT: 20.1%
NATURAL WATER CONTENT: 21.0%

ENGINEER: Smith & Mahoney, P.C.



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Pittsfield (413) 445-7766

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name:

Proposed Landfill Material,
Dunn Pit

Client:

R.J. Valente, Inc.
8 Jennifer Lane
Troy, New York 12180

SMT Project No.

78696

Sample Description:

Dunn Pit;

Date Sampled :
Date Reported: 9/2/92

Date Tested: 8/24/92
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

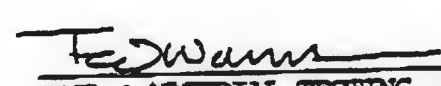
Length = 7.75 cm
Diameter = 7.23 cm
Moisture Content = 23.6%
Dry Density = 100.4 pcf

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 72.0 psi
Pressure Gradient = 3.5 psi
Permeant Liquid: Tap Water

Remarks:

Hydraulic Conductivity: $k = 1.5 \times 10^{-8}$ cm/sec


SOIL & MATERIAL TESTING, INC.

R.J. VALENTE EXCAVATING, INC.

☒ QUOTES
☒ CONTRACTS & CHANGE ORDERS

SEP - 3 1992

☒ SUBCONTRACTORS & P.O.'S
☒ SCHEDULES ☐ SUBMITTALS
☒ TEST & INSPECTION REPORTS
☒ CORRESPONDENCE ☐ MISC

SOIL & MATERIAL TESTING, INC.

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* PHONES *
CASTLETON OFFICE (518) 732-7205
BINGHAMTON OFFICE (807) 722-7582

S.M.T. JOB NO. 79349
TEST DATE 11/18/94

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Lean Clay

MATERIAL MARK D-1

UNIFIED CLASSIFICATION CL

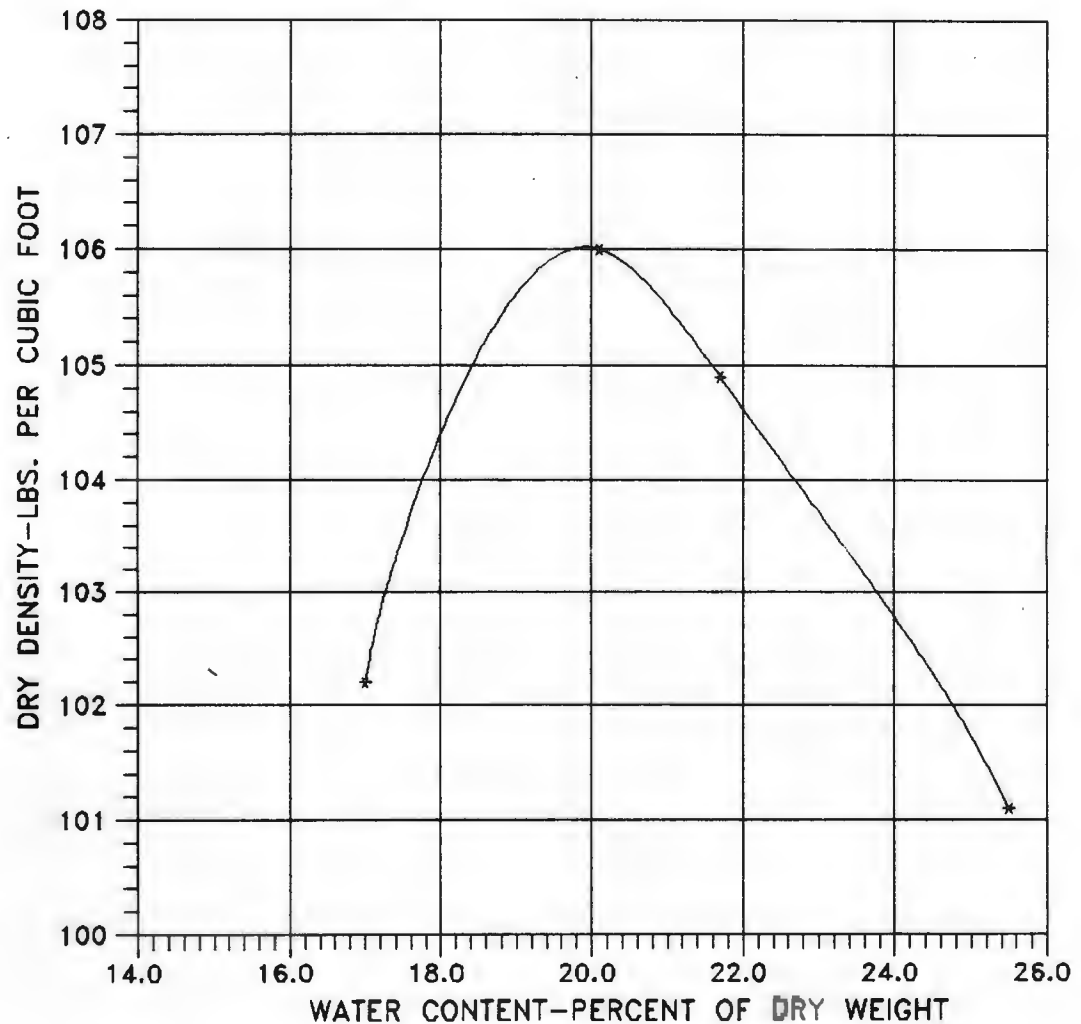
SOURCE OF MATERIAL Low Perm Barrier - Dunn Pit - Received 11/14/94

NATURAL WATER CONTENT 23.6

LIQUID LIMIT 47 PLASTIC LIMIT 20 PLASTICITY INDEX 27

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 106.0 PCF
OPTIMUM WATER CONTENT 20.1 %



SOIL & MATERIAL TESTING, INC.
FIELD TEST DATA SUMMARY SHEET - LOW PERM BARRIER

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C., MAURICE CROMIER DATE: 11/18/94

SAMPLE ID		D - 1									
DATE RECEIVED		11/14/94									
MATERIAL SOURCE		DUNN PIT									
LAYER		LOW PERM									
P A S S I N G S I E V E	%	3-INCH									
		2-INCH									
		1-INCH									
		1/2-INCH									
		1/4-INCH	100.0								
		NO. 10	98.9								
		NO. 40	96.8								
		NO. 200	89.3								

REMARKS: _____

APPENDIX D

Low Permeability Barrier Soil Layer Interval-Based Quality Control Test Results

APPENDIX D

LOW PERMEABILITY BARRIER SOIL LAYER

Interval-Based Quality Control Test Results

Quality Control Testing Summary

Low Permeability Barrier Soil

Sheet 1 of 2

Project: Berlin Petersburg

Contractor: A. Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	Moisture ² Content (%)	Atterberg ³ Limits			Comments
				LL	PL	PI	
0 - 1000	LPB-1	8-24-93	27.1	43	25	18	
1000 - 2000	LPB-2	8-24-93	22.9	36	24	12	
2000 - 3000	LPB-3	8-27-93	34.6	39	23	16	
3000 - 4000	LPB-4	8-27-93	30.5	47	28	19	
4000 - 5000	LPB-5	8-27-93	33.9	48	23	25	
5000 - 6000	LPB-6	9-2-93	32.3	47	25	22	
6000 - 7000	LPB-7	9-2-93	34.5	48	27	21	
7000 - 8000	LPB-8	9-2-93	27.4	32	22	10	
8000 - 9000	LPB-9	9-8-93	37.4	51	25	26	
9000 - 10000	LPB-10	9-8-93	33.2	38	23	15	
10000 - 11000	LPB-11	9-8-93	35.3	42	24	18	
11000 - 12000	LPB-12	9-15-93	37.5	54	27	27	
12000 - 13000	LPB-13	9-15-93	25.3	25	25	0	Soil not hauled to site.
13000 - 14000	LPB-14	9-15-93	29.6	44	22	22	
14000 - 15000	LPB-15	10-6-93	34.8	47	25	23	
15000 - 16000	LPB-16	10-6-93	32.9	49	28	21	
16000 - 17000	LPB-17	10-6-93	32.0	37	23	15	
17000 - 18000	LPB-18	10-6-93	35.9	47	25	22	

Notes:

- ¹ In-Truck Measure
- ² Test Method ASTM D-2216
- ³ Test Method ASTM D-4318

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Low Permeability Barrier Soil

Sheet 2 of 2

Project: Berlin - Petersburg

Contractor: A - Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

[illegible]

Notes:

- 1 In-Truck Measure
- 2 Test Method ASTM D-2216
- 3 Test Method ASTM D-4318

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Quality Control Testing Summary
Low Permeability Barrier Soil

Sheet 1 of

Project: Berlin - Petersburg

Contractor: A - Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	% Passing #200 Sieve ²	% Passing 0.005mm Sieve ²	Comments
0 - 2,500	LPB-1	9-7-93	91	59	
2,500 - 5000	LPB-3	9-7-93	92	49	
5000 - 7500	LPB-5	9-15-93	92	53	
7500 - 10000	LPB-7	9-15-93	93	41	
10000 - 12500	LPB-10	9-8-93	99	45	
12500 - 15000	LPB-12	9-15-93	94	48	
15000 - 17500	LPB-16	10-6-93	99	27	
17500 - 20000	LPB-18	10-6-93	99	57	
20000 - 22500	LPB-21	10-26-93	97	47	
22500 - 25000	LPB-23	10-26-93	99	35	
	D-1	11-14-94	89.3		

Notes: Truck

¹ In-Place Measure

² Test Method ASTM D-422

Quality Control Testing Summary
Low Permeability Barrier Soil

Sheet ____ of ____

Project: Berlin - Petersburg

Contractor: A-Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

Sample Frequency (CY) ¹	Sample No.	Date Sampled/ Date Tested	Moisture/Density Relationship ²		Permeability ³ (cm/sec)	Comments
			Optimum Moisture Content (%)	Dry Density (PCF)		
0-5000	GC-1	8-27-93	24.1	101.0	9.8×10^{-8}	Blue Clay
5000-10000	LPB-1	8-27-93	20.1	107.7	1.0×10^{-7}	Brown Clay
10000-15000	LPB-5	8-27-93	20.3	102.6		Blue Clay
15000-20000	LPB-11	9-8-93	23.2	100.7	6.0×10^{-8}	Blue Clay
20000-25000	LPB-16	10-6-93	21.5	101.9	7.7×10^{-8}	Blue Clay
25,000-30,000	LPB-21	10-26-93	20.2	103.1	9.4×10^{-8}	Blue Clay
	D-1	11-14-94	20.1	106.0	1.5×10^{-8}	Brown Clay

Notes: Truck

- ¹ In-Place Measure
- ² Test Method ASTM D-1557
- ³ Test Method ASTM D-5084

SOIL & MATERIAL TESTING, INC.
LABORATORY TEST DATA SUMMARY SHEET - LOW PERMEABILITY LAYER

PROJECT: BERLIN PETERSBURG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT DATE: 9/7/93

SAMPLE ID	LPB-1	LPB-2	LPB-3	LPB-4	LPB-5	LPB-6	LPB-7	LPB-8
DATE RECEIVED	8/24/93	8/24/93	8/27/93	8/27/93	8/27/93	9/2/93	9/2/93	9/2/93
MATERIAL SOURCE	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY BABCOCK PIT	SAMPLED BY SMITH & MAHONEY BABCOCK PIT	SAMPLED BY SMITH & MAHONEY BABCOCK PIT
STATION	1000 CY	2000 CY	3000 CY	4000 CY	5000 CY	6,000 CY	7,000 CY	8,000 CY
MATERIAL TYPE	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER
ASTM D 4318:								
ATTERBERG LIMIT								
LIQUID LIMIT	43	36	39	47	48	47	48	32
PLASTIC LIMIT	25	24	23	28	23	25	27	22
PLASTICITY LIMIT	18	12	16	19	25	22	21	10
ASTM D 2216:								
MOISTURE CONTENT: %	27.1%	22.9%	34.6%	30.5%	33.9%	32.3%	34.5%	27.4%
ASTM D 2487								
CLASSIFICATION	CL	ML	CL	CL	CL	CL	CL	CL

SOIL & MATERIAL TESTING, INC.
LABORATORY TEST DATA SUMMARY SHEET - LOW PERMEABILITY LAYER

PROJECT: BERLIN PETERSBURG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT DATE: 10/12/93

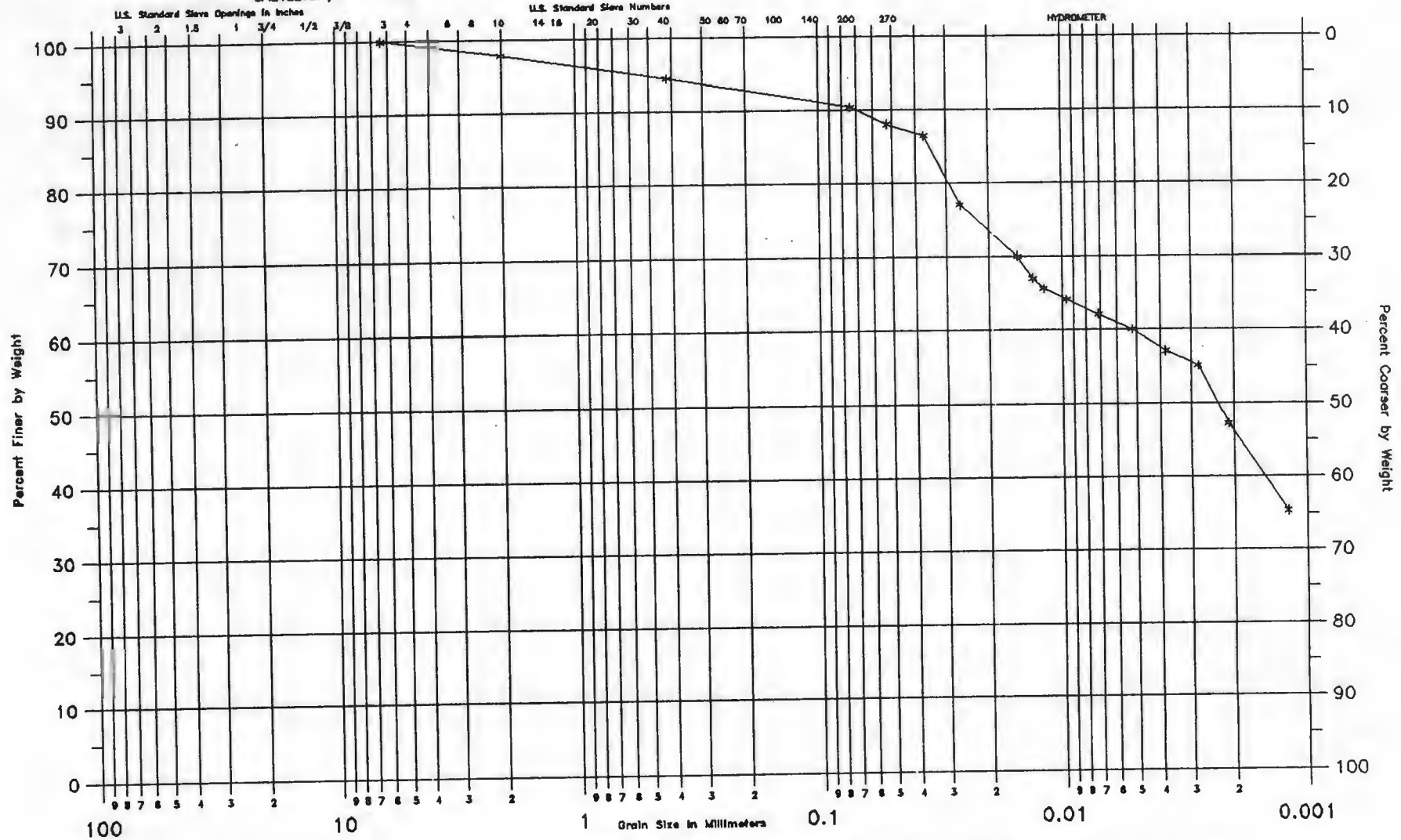
SAMPLE ID	LPB-9	LPB-10	LPB-11	LPB-12	LPB-13	LPB-14	LPB-15	LPB-16
DATE RECEIVED	9/08/93	9/08/93	9/08/93	9/15/93	9/15/93	9/15/93	10/6/93	10/6/93
MATERIAL SOURCE	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY BLUE CLAY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY
STATION	9000 CY	10,000 CY	11,000 CY	12,000 CY	13,000 CY	14,000 CY	15,000 CY	16,000 CY
MATERIAL TYPE	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER
ASTM D 4318:								
ATTERBERG LIMIT								
LIQUID LIMIT	51	38	42	54	25	44	47	49
PLASTIC LIMIT	25	23	24	27	25	22	25	28
PLASTICITY LIMIT	26	15	18	27	0	22	23	21
ASTM D 2216:								
MOISTURE CONTENT: %	37.4%	33.2%	35.3%	37.5%	25.3%	29.6%	34.8%	32.9%
ASTM D 2487								
CLASSIFICATION	CH	CL	CL	CH	ML	CL	CL	CL

SOIL & MATERIAL TESTING, INC.
LABORATORY TEST DATA SUMMARY SHEET - LOW PERMEABILITY LAYER

PROJECT: BERLIN PETERSBURG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT DATE: 10/29/93

SAMPLE ID	LPB-17	LPB-18	LPB-19	LPB-20	LPB-21	LPB-22	LPB-23	
DATE RECEIVED	10/6/93	10/6/93	10/6/93	10/6/93	10/26/93	10/26/93	10/26/93	
MATERIAL SOURCE	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	SAMPLED BY SMITH & MAHONEY	
STATION	17,000 CY	18,000 CY	19,000 CY	20,000 CY	21,000 CY	22,000 CY	23,000 CY	
MATERIAL TYPE	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	LOW PERM. BARRIER	
ASTM D 4318:								
ATTERBERG LIMIT								
LIQUID LIMIT	37	47	48	46	53	48	47	
PLASTIC LIMIT	23	25	26	14	27	25	24	
PLASTICITY LIMIT	15	22	22	22	26	23	23	
ASTM D 2216:								
MOISTURE CONTENT: %	32.0%	35.9%	35.7%	37.9%	36.9%	44.9%	37.8%	
ASTM D 2487								
CLASSIFICATION	CL	CL	CL	CH	CH	CL	CL	

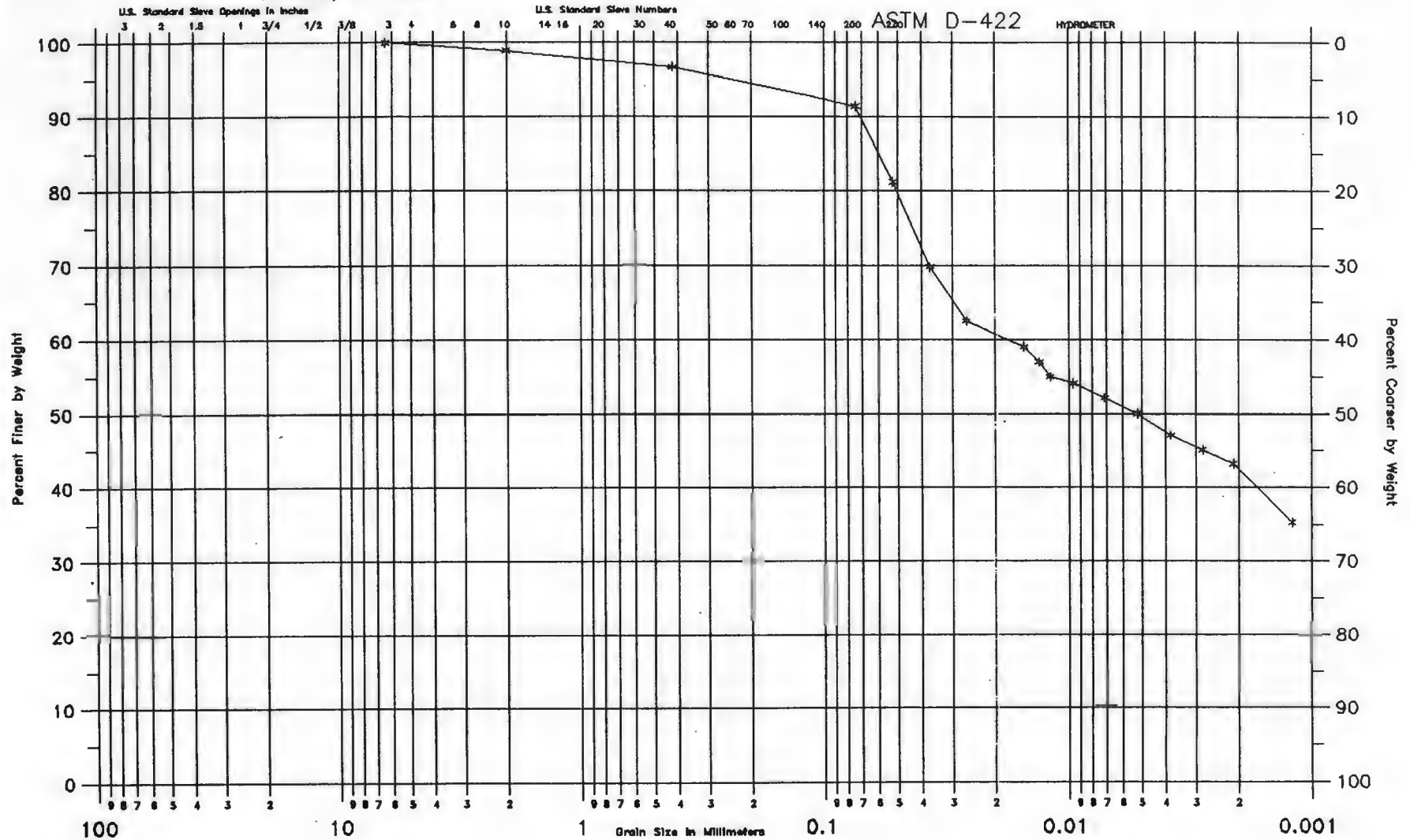


PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 9/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-1
Date Recieved: 8/24/93
Source: Sampled by Smith & Mahoney
1000 cyd.
Natural Moisture Content: 27.1%
LL=43 PL=25 PI=18
Classification: Lean Clay, CL

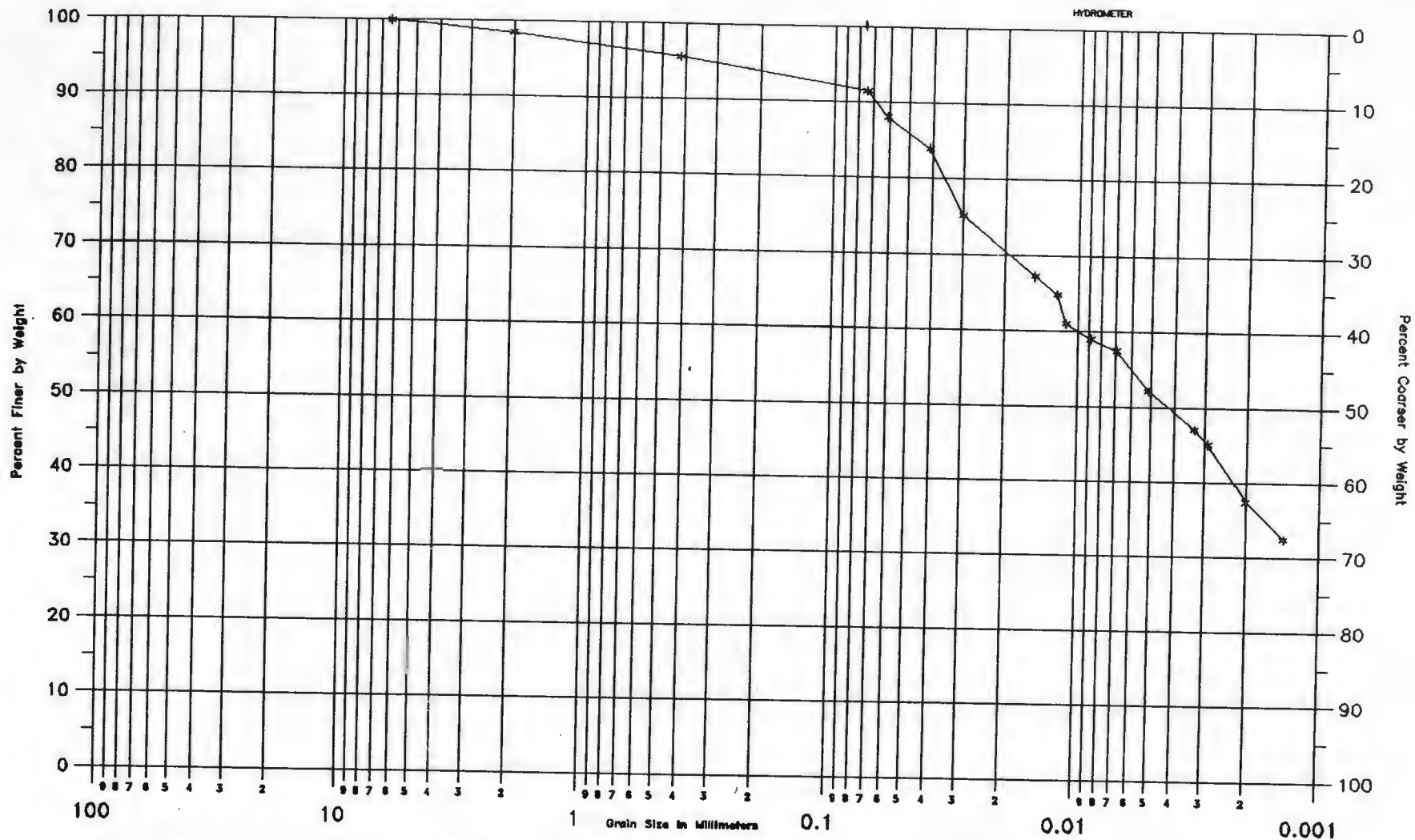
SOIL & MATERIAL TESTING, INC.

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CASTLETON, NY 12033



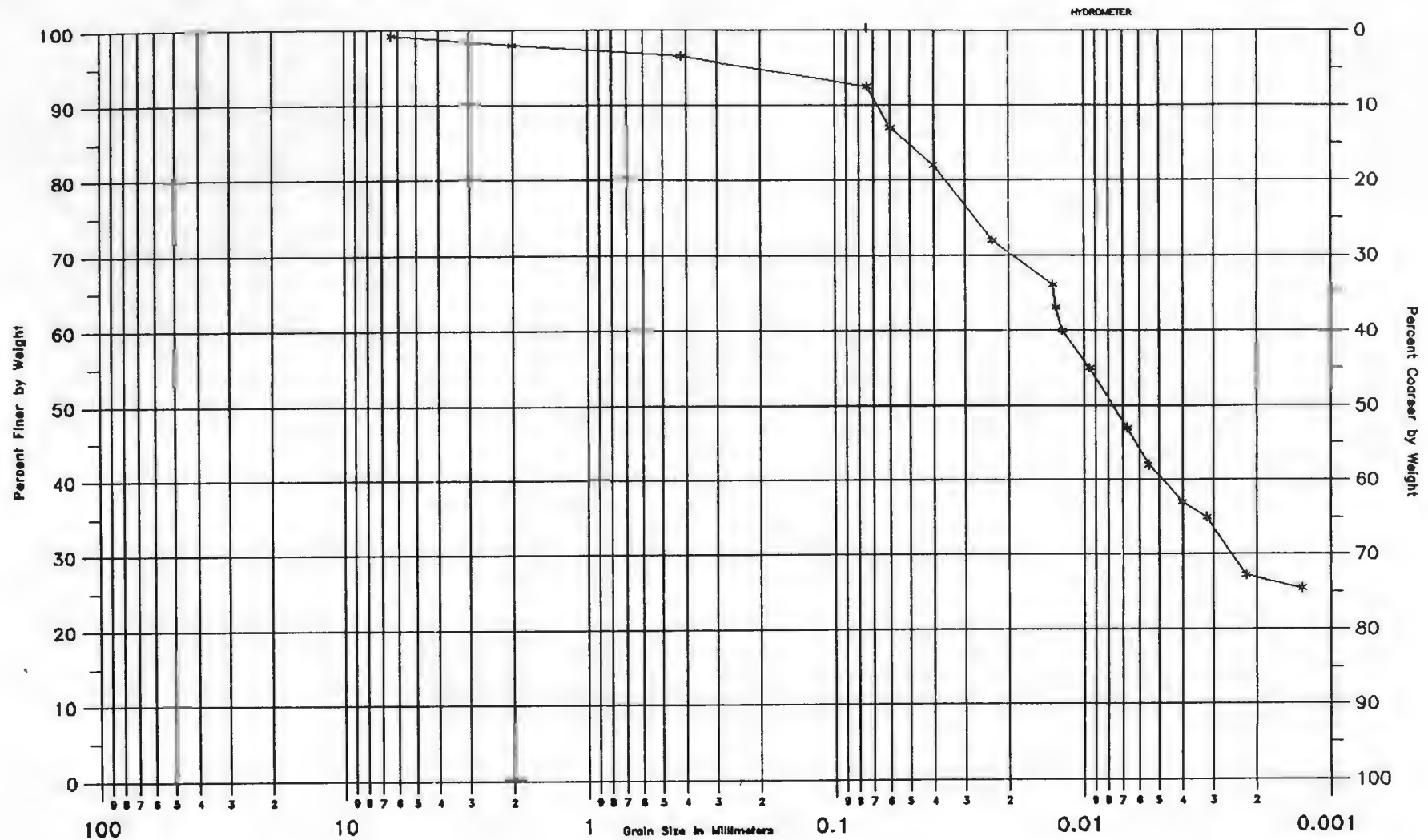
PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 9/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-3
Date Received: 8/24/93
Source: Sampled by Smith & Mahoney
3000 cyd.
Natural Moisture Content: 34.6%
LL=39 PL=23 PI=16
Classification: Lean Clay, CL



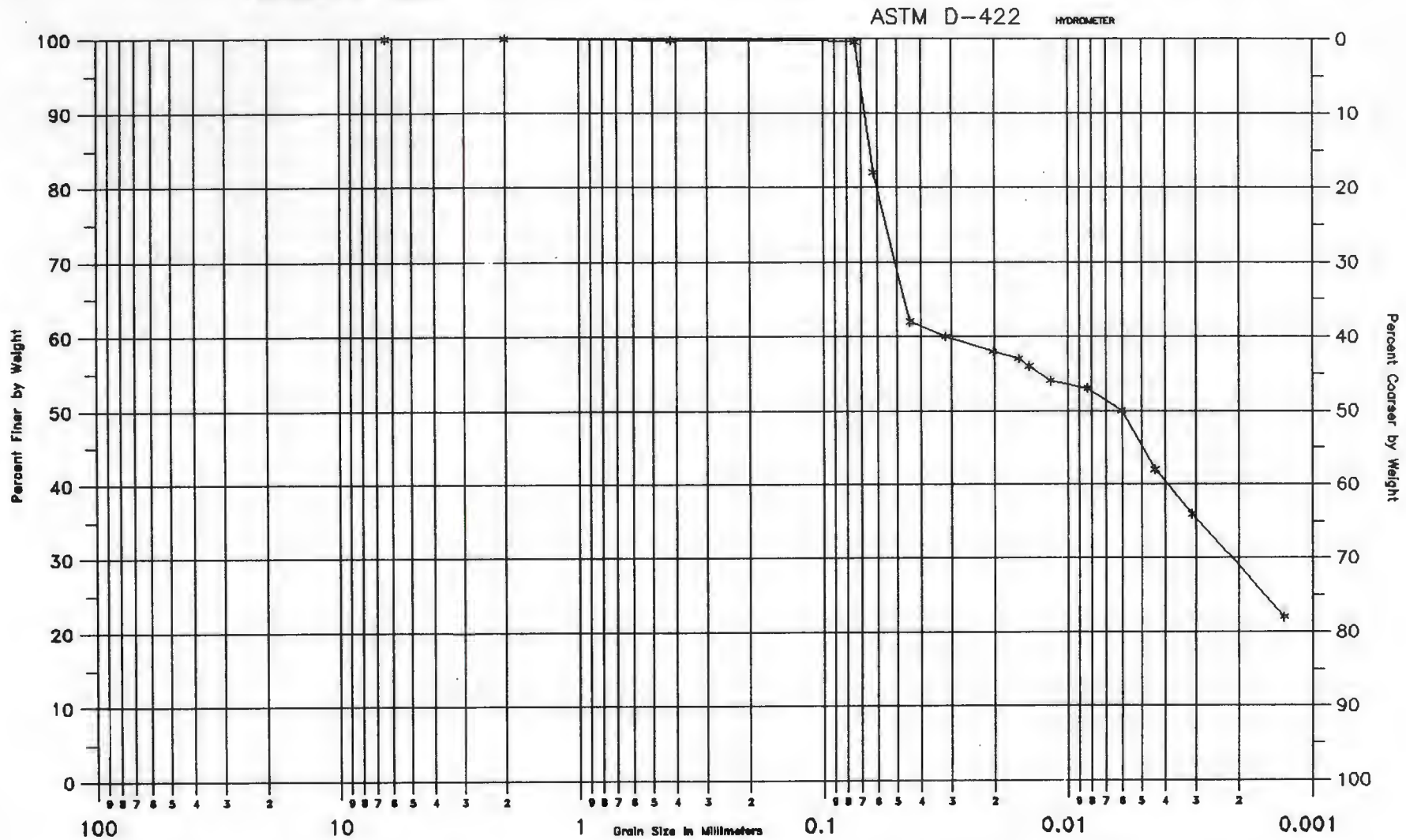
PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 9/15/93
Drawn: LL
Reviewed: REV

Sample No. LPB-5
Date Recieved: 8/27/93
Source: Sampled by Smith & Mahoney
5000 cyd.
Natural Moisture Content: 33.9%
LL=48 PL=23 PI=25
Classification: Lean Clay, CL



PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 9/15/93
Drawn: LL
Reviewed: REV

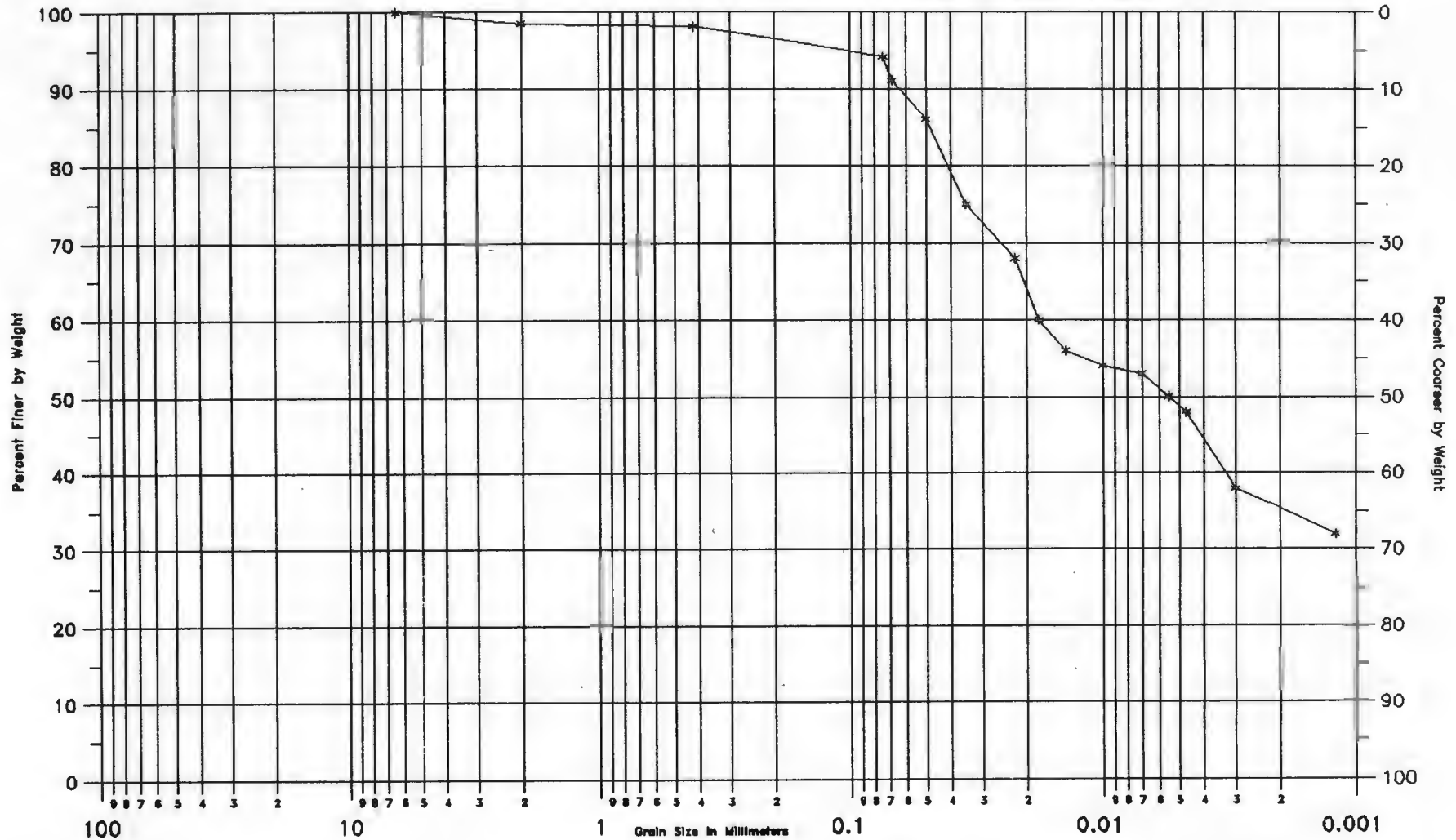
Sample No. LPB-7
Date Received: 9/2/93
Source: Sampled by Smith & Mahoney
7000 cyd.
Natural Moisture Content: 34.5%
LL=48 PL=27 PI=21
Classification: Lean Clay, CL

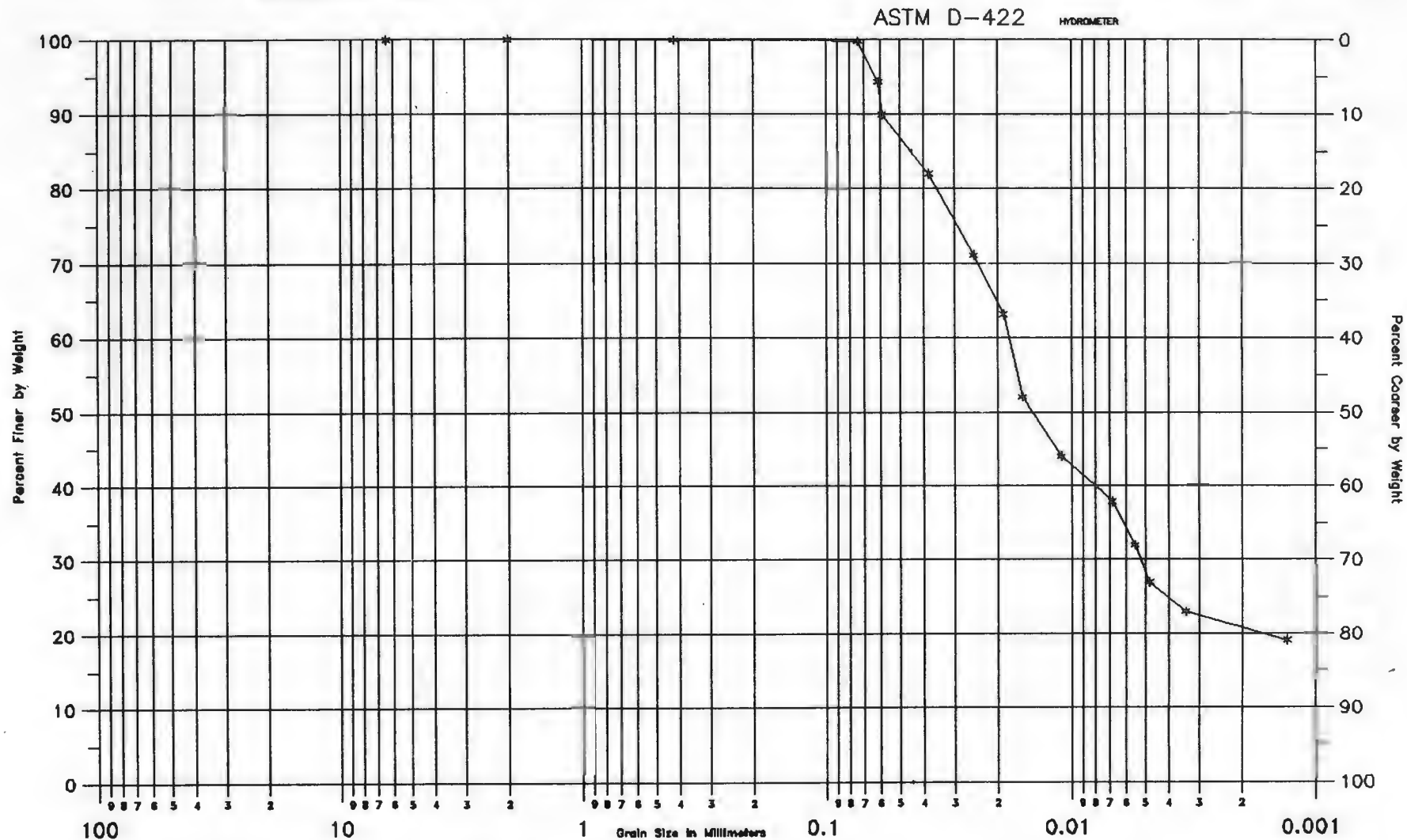


PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 12/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-10
Date Received: 9/08/93
Source: Sampled by Smith & Mahoney
10,000 cyd.
Natural Moisture Content: 33.2%
LL=38 PL=23 PI=15
Classification: Lean Clay, CL

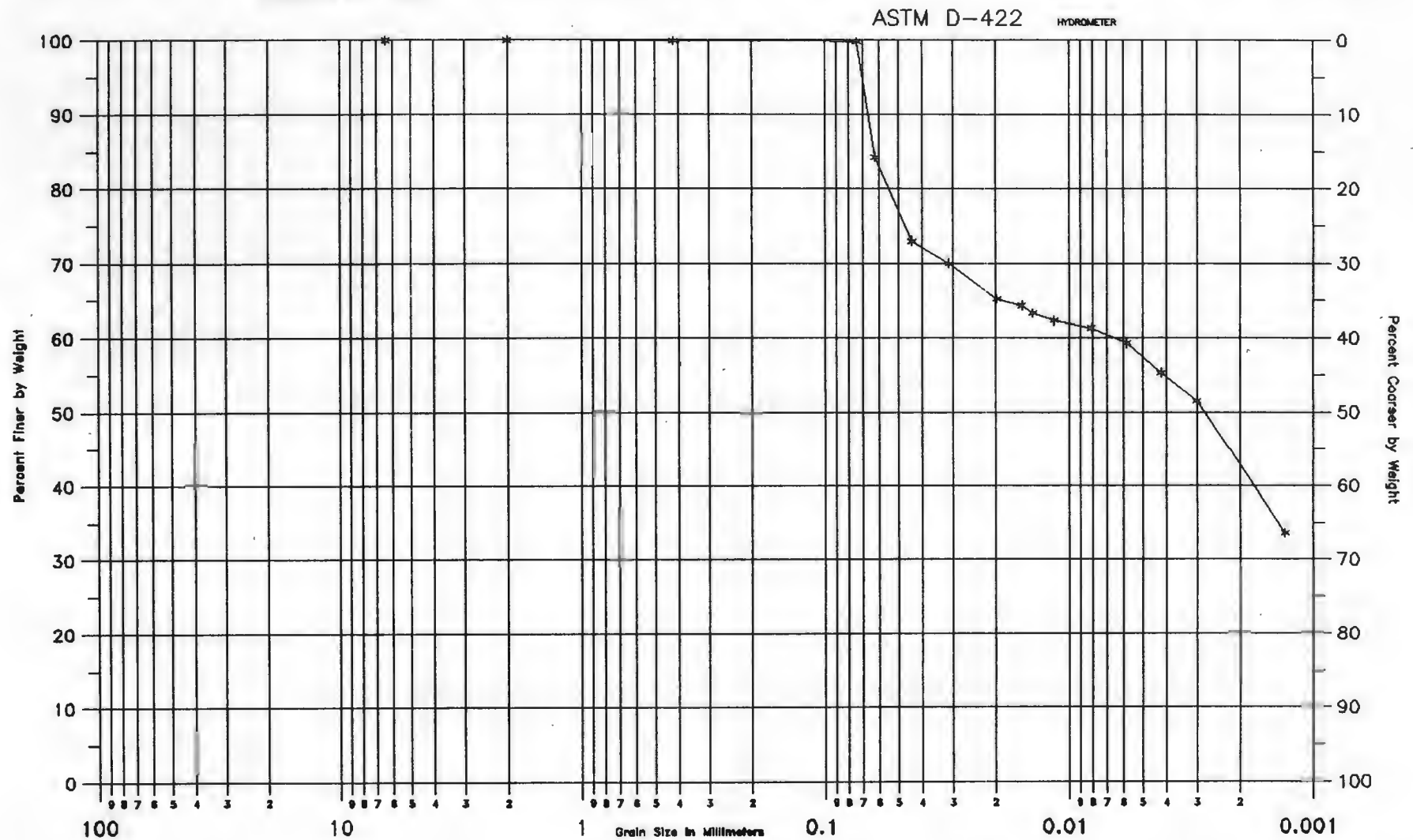
ASTM D-422 HYDROMETER





PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 12/7/93
Drawn: LL
Reviewed: REV

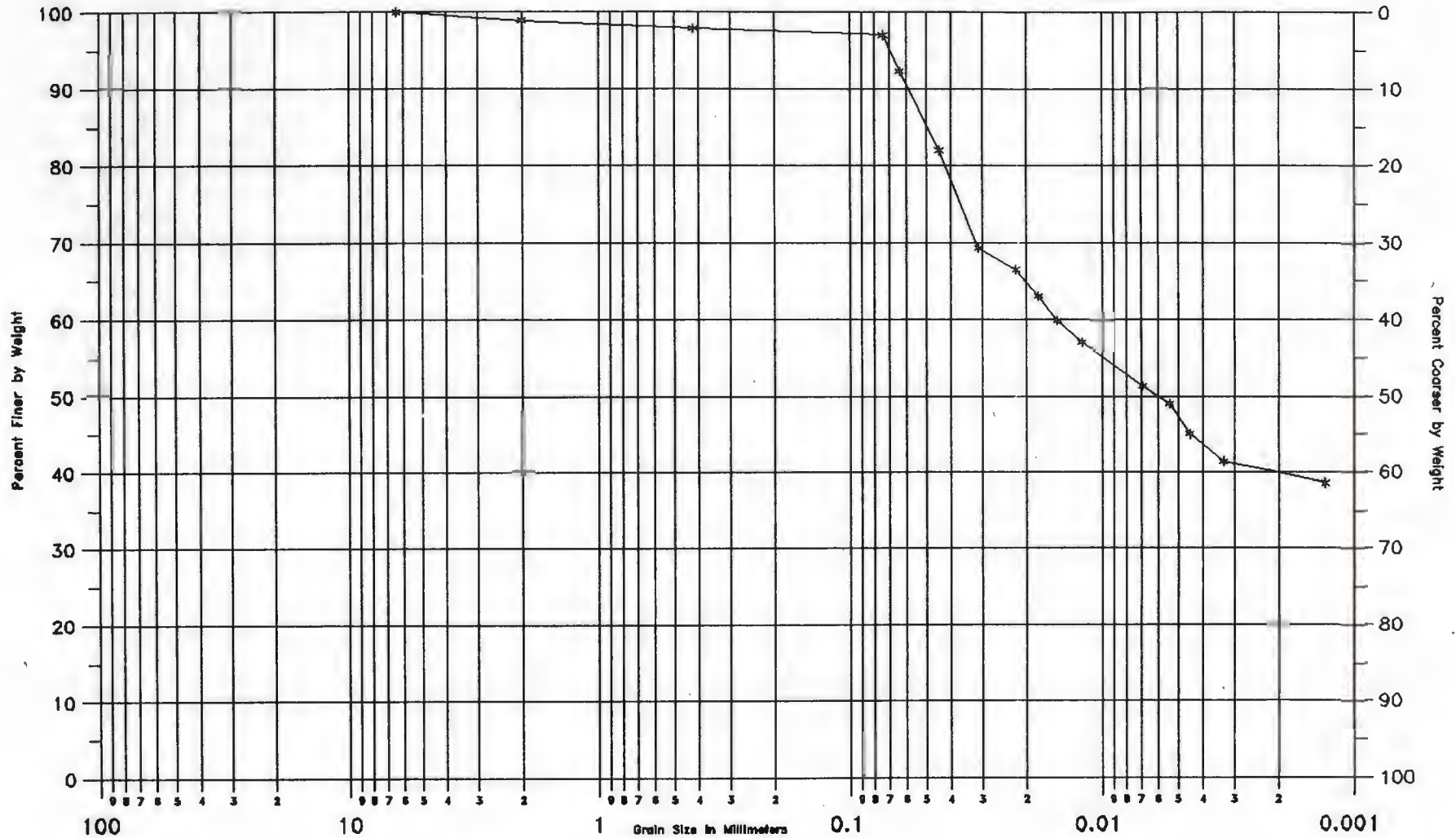
Sample No. LPB-16
Date Recieved: 10/06/93
Source: Sampled by Smith & Mahoney
16,000 cyd.
Natural Moisture Content: 32.9%
LL=49 PL=28 PI=21
Classification: Lean Clay, CL



PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 12/7/93
Drawn: LL
Reviewed: REV

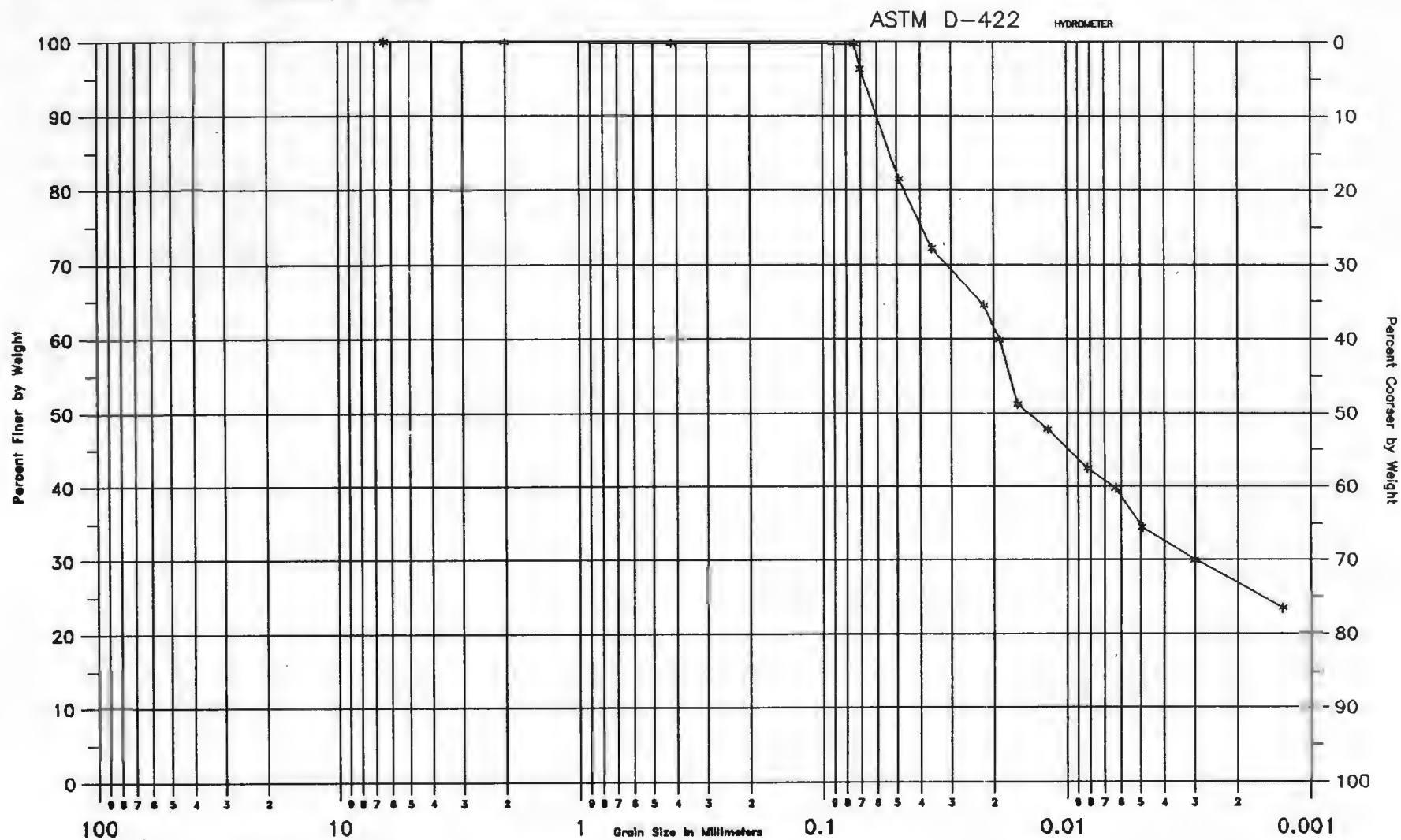
Sample No. LPB-18
Date Recieved: 10/06/93
Source: Sampled by Smith & Mahoney
18,000 cyd.
Natural Moisture Content: 35.9%
LL=47 PL=25 PI=22
Classification: Lean Clay, CL

ASTM D-422 HYDROMETER



PROJECT: Berlin Petersburg Landfill
CLIENT: Smith & Mahoney, P.C.
SMT JOB #: 79349
Date: 12/7/93
Drawn: LL
Reviewed: REV

Sample No. LPB-21
Date Received: 10/26/93
Source: Sampled by Smith & Mahoney
21,000 cyd.
Natural Moisture Content: 36.9%
LL=53 PL=27 PI=26
Classification: Fat Clay, CH





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S.M.T. Job No. 78227

Test Date 10/9/91

• TELEPHONES •
(518) 732-7205 CASTLETON OFFICE
(607) 722-1582 BINGHAMTON

LABORATORY COMPACTION REPORT

Job Name and Location Berlin-Petersburg Landfill
Architect or Engineer Smith & Mahoney, P.C.
Contractor _____

A. Description of Soil: Grey clay (Blue)

Material Mark GC-1 Unified Classification _____ AASHO Classification _____

Source of Material Received 9/20/91

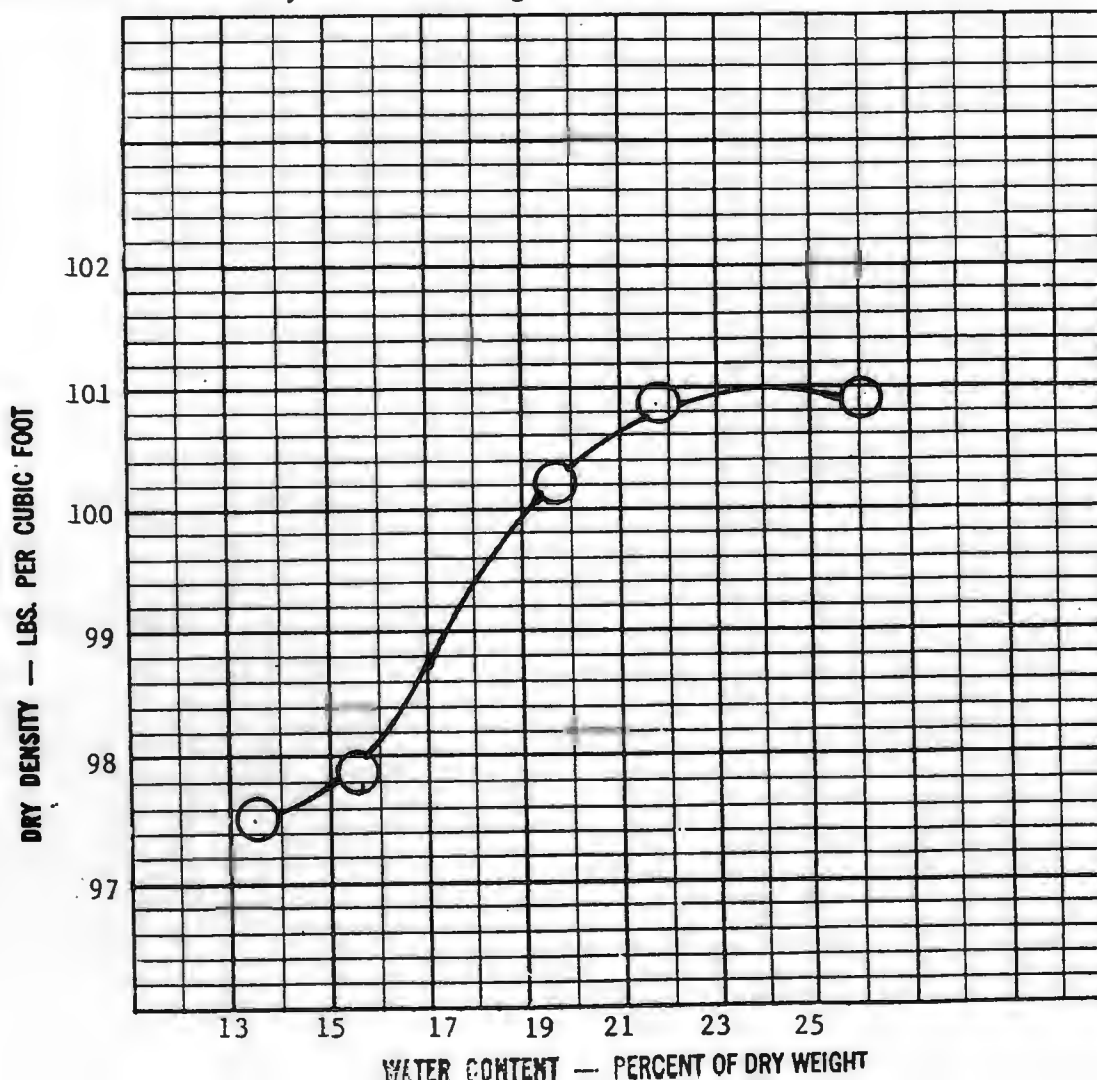
Natural Water Content 38.1 % Natural Dry Density _____ PCF Specific Gravity _____

Liquid Limit 47 % Plastic Limit 33 % Plasticity Index 14

B. Test Procedure Used: ASTM D 1557 (Modified)

C. Test Results: Maximum Dry Density 101.0 PCF Optimum Water Content 24.1 %

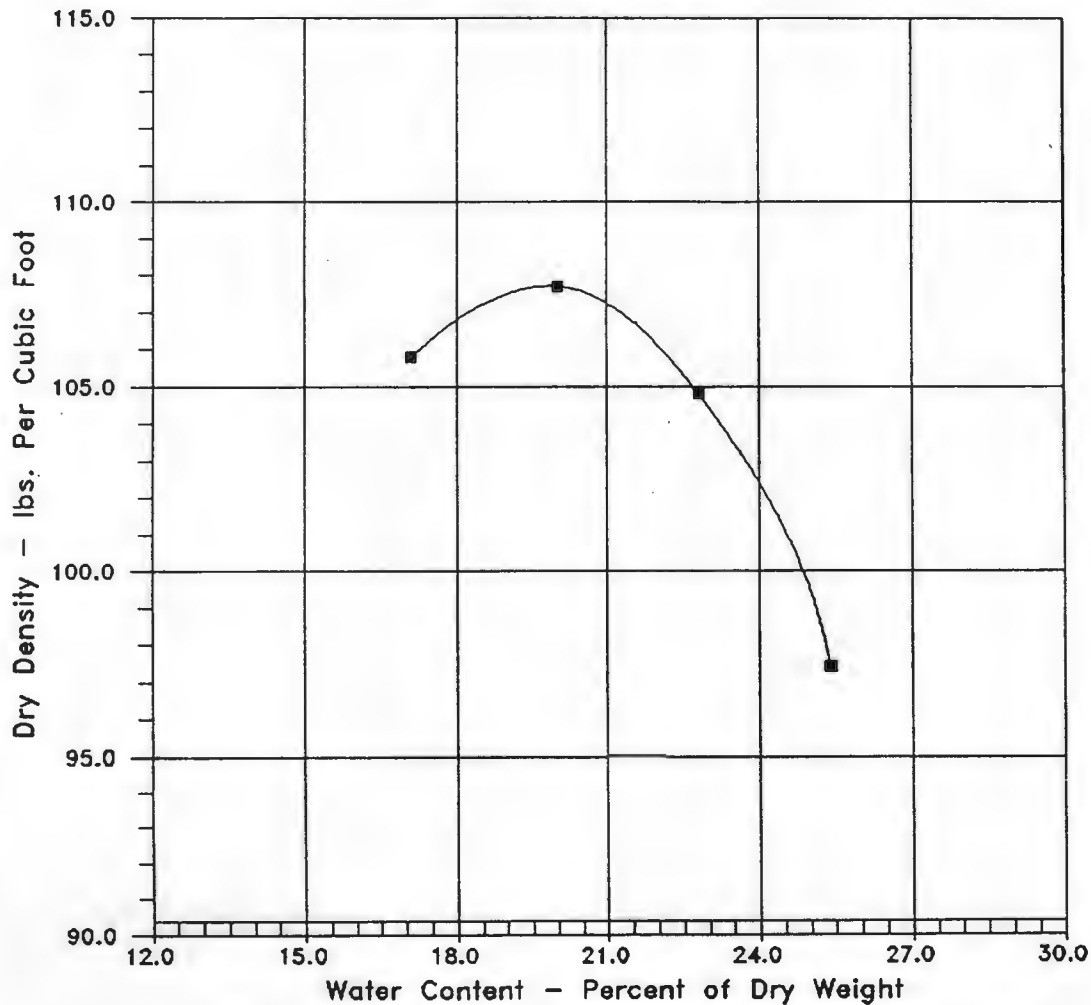
D. Washed Grain Size Analysis: % Passing #200 = 99.3%



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PROJECT: BERLIN-PETERSBERG LANDFILL CLOSURE
SMT JOB No.: 79349
SAMPLE ID: LPB-1 (Babcock Pit)
SAMPLE DESCRIPTION: Brown Silty CLAY
TEST PROCEDURE: ASTM D 1557 (Modified)
DATE TESTED: August 27, 1993

LABORATORY COMPACTION REPORT



■■■■■ ASTM D 1557 - LPB-1, (Babcock Pit)
DATE SAMPLED: 8/25/93

RESULTS: MAXIMUM DRY DENSITY: 107.7 PCF
OPTIMUM WATER CONTENT: 20.1%
NATURAL WATER CONTENT: 21.0%

ENGINEER: Smith & Mahoney, P.C.

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S.M.T. JOB NO. 79349
TEST DATE 1/04/94

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Silty Clay

MATERIAL MARK LPB-5

UNIFIED CLASSIFICATION CL

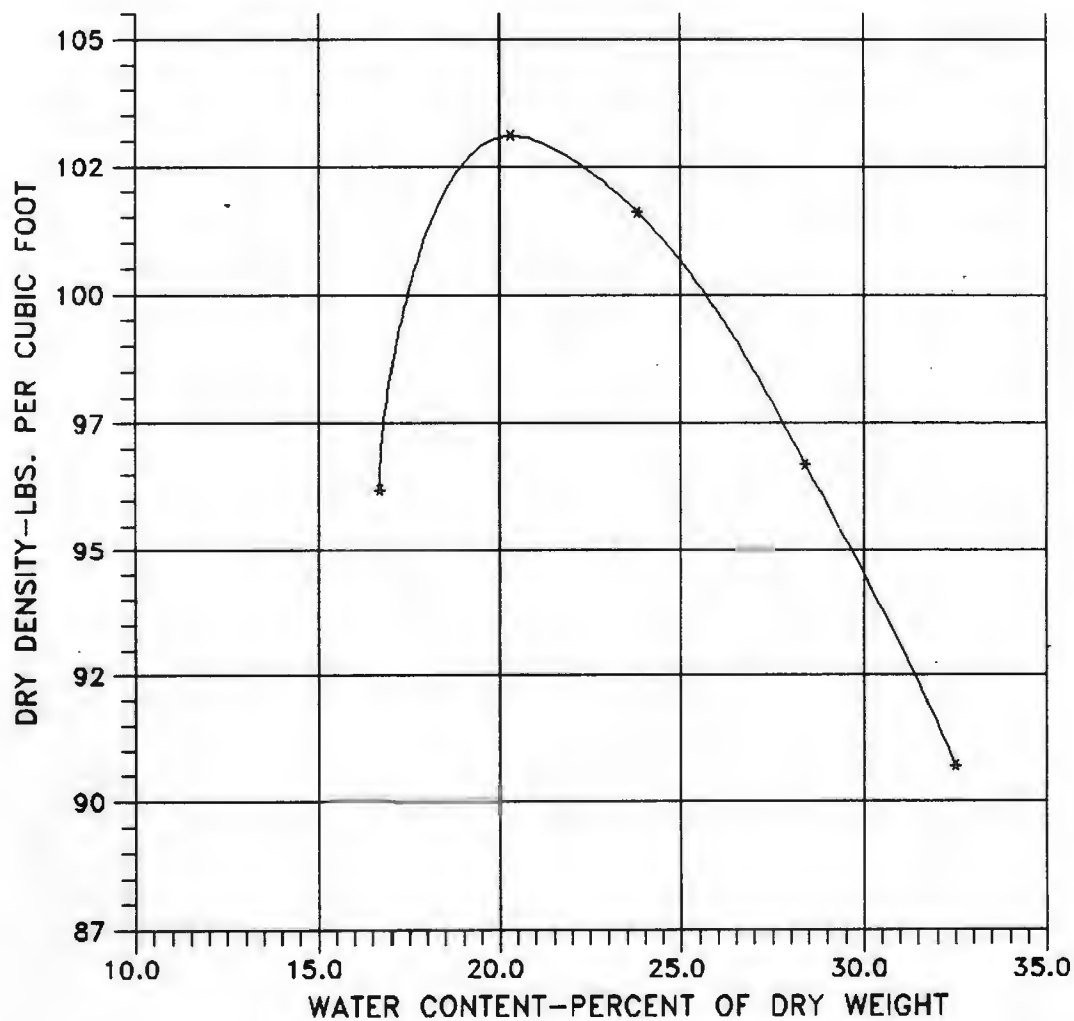
SOURCE OF MATERIAL Low Perm Barrier - Sample LPB-5 - Received 8/27/93

NATURAL WATER CONTENT 33.9

LIQUID LIMIT 48 PLASTIC LIMIT 23 PLASTICITY INDEX 25

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 102.6 PCF
OPTIMUM WATER CONTENT 20.3 %



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S.M.T. JOB NO. 79348
TEST DATE 9/21/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Blue Clay

MATERIAL MARK LPB-11

UNIFIED CLASSIFICATION CL

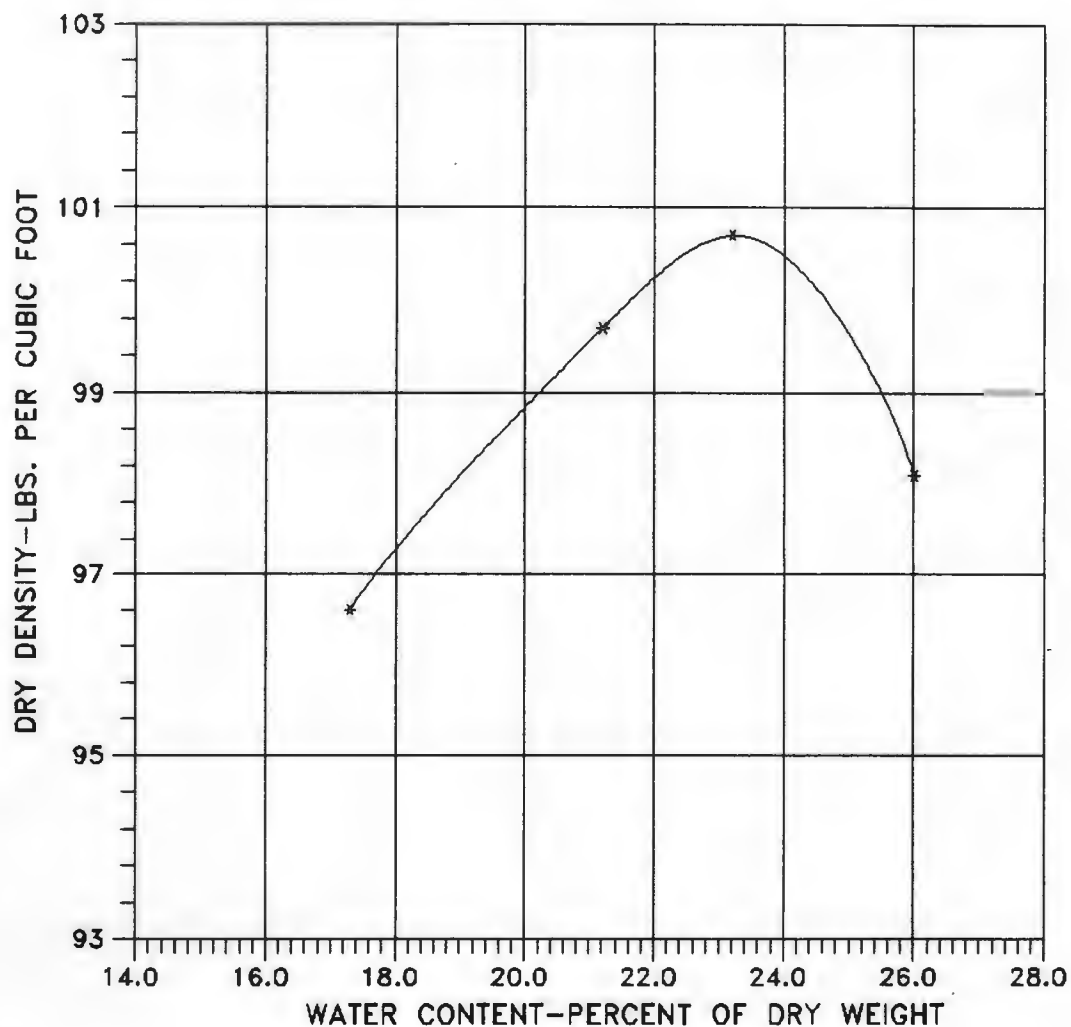
SOURCE OF MATERIAL Low Perm Barrier - Sample 11,000 cy - Received 9/8/93

NATURAL WATER CONTENT 35.3

LIQUID LIMIT 42 PLASTIC LIMIT 24 PLASTICITY INDEX 18

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 100.7 PCF
OPTIMUM WATER CONTENT 23.2 %



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S.M.T. JOB NO. 79348
TEST DATE 10/14/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Silty Clay

MATERIAL MARK LPB-16

UNIFIED CLASSIFICATION CL

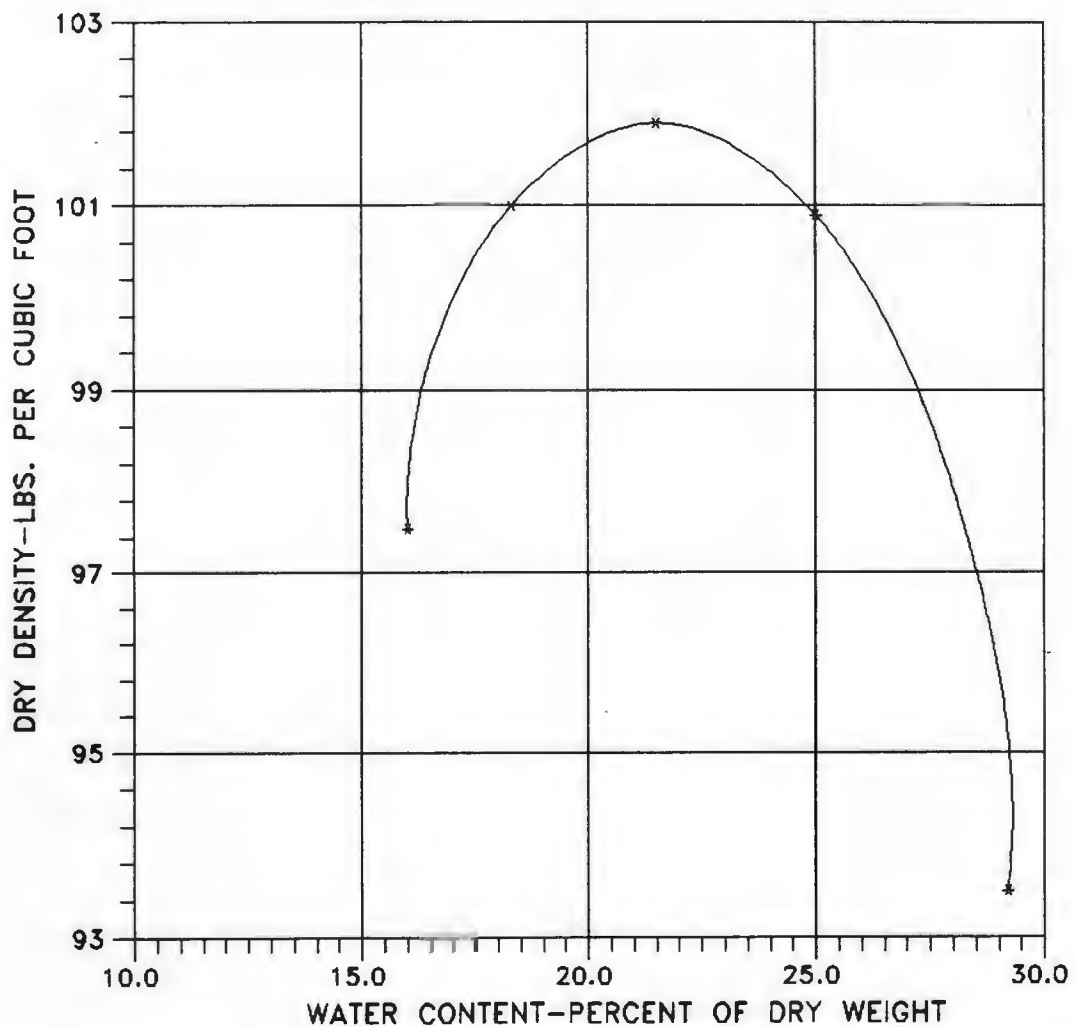
SOURCE OF MATERIAL Low Perm Barrier - Sample 16,000 cy - Received 10/6/93

NATURAL WATER CONTENT 32.9

LIQUID LIMIT 49 PLASTIC LIMIT 28 PLASTICITY INDEX 21

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 101.9 PCF
OPTIMUM WATER CONTENT 21.5 %



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S.M.T. JOB NO. 79348
TEST DATE 11/30/93

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Silty Clay

MATERIAL MARK LPB-21

UNIFIED CLASSIFICATION CH

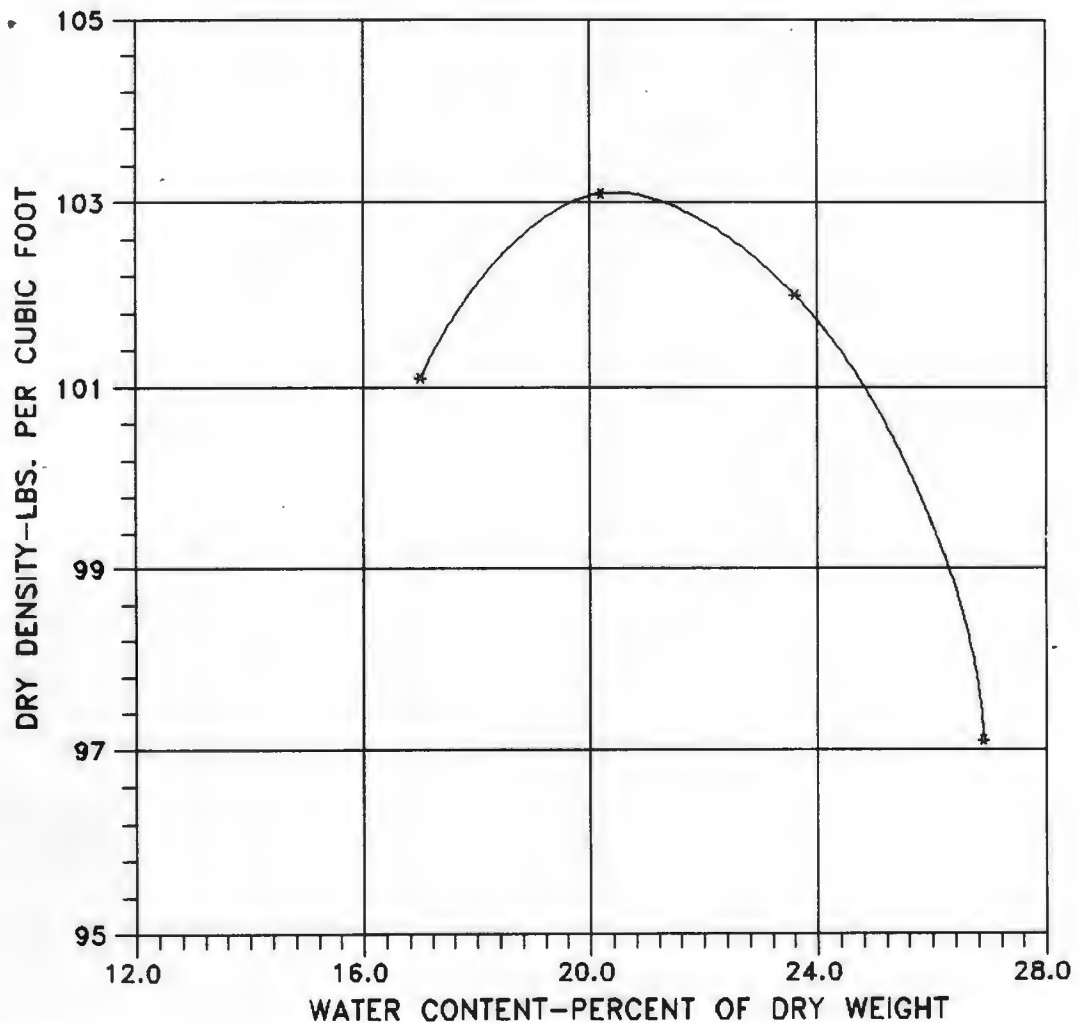
SOURCE OF MATERIAL Low Perm Barrier - Sample 21,000 cy - Received 10/26/93

NATURAL WATER CONTENT 36.9

LIQUID LIMIT 53 PLASTIC LIMIT 27 PLASTICITY INDEX 26

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 103.1 PCF
OPTIMUM WATER CONTENT 20.2 %



SMT - QA/QC



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(413) 445-7766

HYDRAULIC CONDUCTIVITY TEST DATA

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Project Name: Berlin-Petersburg Landfill
Client: Smith & Mahoney, P.C.
79 North Pearl Street
Albany, New York 12207
SMT Project No. 78227
Sample Description: (blue) Gray clay sampled by client. GC-1
Remolded to +90 percent density.

Date received: 9/20/91
Date Reported: 10/29/91

Date Tested: 10/21/91

Reviewed By: REV

REV *[Signature]*

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 7.55 cm
Diameter = 7.21 cm
Moisture Content = 21.4%
Dry Density = 92.4 pcf
% Compaction = 91.5%

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.8 psi
Pressure Gradient = 1.5 psi
Permeant Liquid: Tap Water

Final Specimen Properties

Length = 7.51 cm
Diameter = 7.20 cm
Moisture Content = 25.6%
Dry Density = 93.7 pcf

Remarks:

Hydraulic Conductivity: $k = 9.8 \times 10^{-8}$ cm/sec

[Signature]
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(413) 499-5338

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Brown Silty CLAY
LPB-1 (Babcock Pit, Brown)
Laboratory Remolded 90%

Date Received: 8/25/93
Date Reported: 9/2/93

Date Tested: 8/31/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 12.50 cm
Diameter = 7.23 cm
Moisture Content = 18.2%
Dry Density = 97.0 pcf
% Compaction = 90.1%

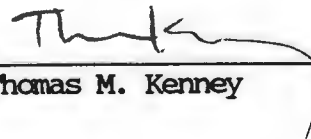
Test Conditions

Back Pressure = 83.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 20
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 1.0 \times 10^{-7}$ cm/sec

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Thomas M. Kenney



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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) CLAY
LPB-11 (Low Perm Barrier, 11,000 cy)
Laboratory Remolded

Date Received: 9/8/93
Date Reported: 9/27/93

Date Tested: 9/21/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 7.97 cm
Diameter = 7.13 cm
Moisture Content = 25.4%
Dry Density = 92.1 pcf
% Compaction = 91.5%

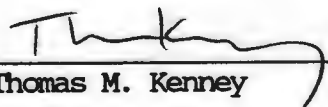
Test Conditions

Back Pressure = 80.0 psi
Cell Pressure = 76.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 6.0 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) CLAY
LPB-16 (Low Perm Barrier, 16,000 cy)
Laboratory Remolded

Date Received: 10/6/93
Date Reported: 10/29/93

Date Tested: 10/25/93
Reviewed By: REV hw

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.11 cm
Diameter = 7.10 cm
Moisture Content = 24.3%
Dry Density = 93.5 pcf
% Compaction = 91.8%

Test Conditions

Back Pressure = 80.0 psi
Cell Pressure = 85.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 7.7 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) CLAY
LPB-21 (Low Perm Barrier, 21,000 cy)
Laboratory Remolded

Date Received: 10/26/93
Date Reported: 12/29/93

Date Tested: 12/1/93
Reviewed By: REV *lw*

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 6.75 cm
Diameter = 7.12 cm
Moisture Content = 25.0%
Dry Density = 93.3 pcf
% Compaction = 90.5%

Test Conditions

Back Pressure = 71.0 psi
Cell Pressure = 75.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 9.4 \times 10^{-8}$ cm/sec

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SOIL & MATERIAL TESTING, INC.
FIELD TEST DATA SUMMARY SHEET - LOW PERM BARRIER

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C., MAURICE CROMIER DATE: 11/18/94

SAMPLE ID		D - 1									
DATE RECEIVED		11/14/94									
MATERIAL SOURCE		DUNN PIT									
LAYER		LOW PERM									
P A S S I N G S I E V E	% 3-INCH										
	2-INCH										
	1-INCH										
	1/2-INCH										
	1/4-INCH	100.0									
	NO. 10	98.9									
	NO. 40	96.8									
	NO. 200	89.3									

REMARKS: _____

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S.M.T. JOB NO. 79349
TEST DATE 11/18/94

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Lean Clay

MATERIAL MARK D-1

UNIFIED CLASSIFICATION CL

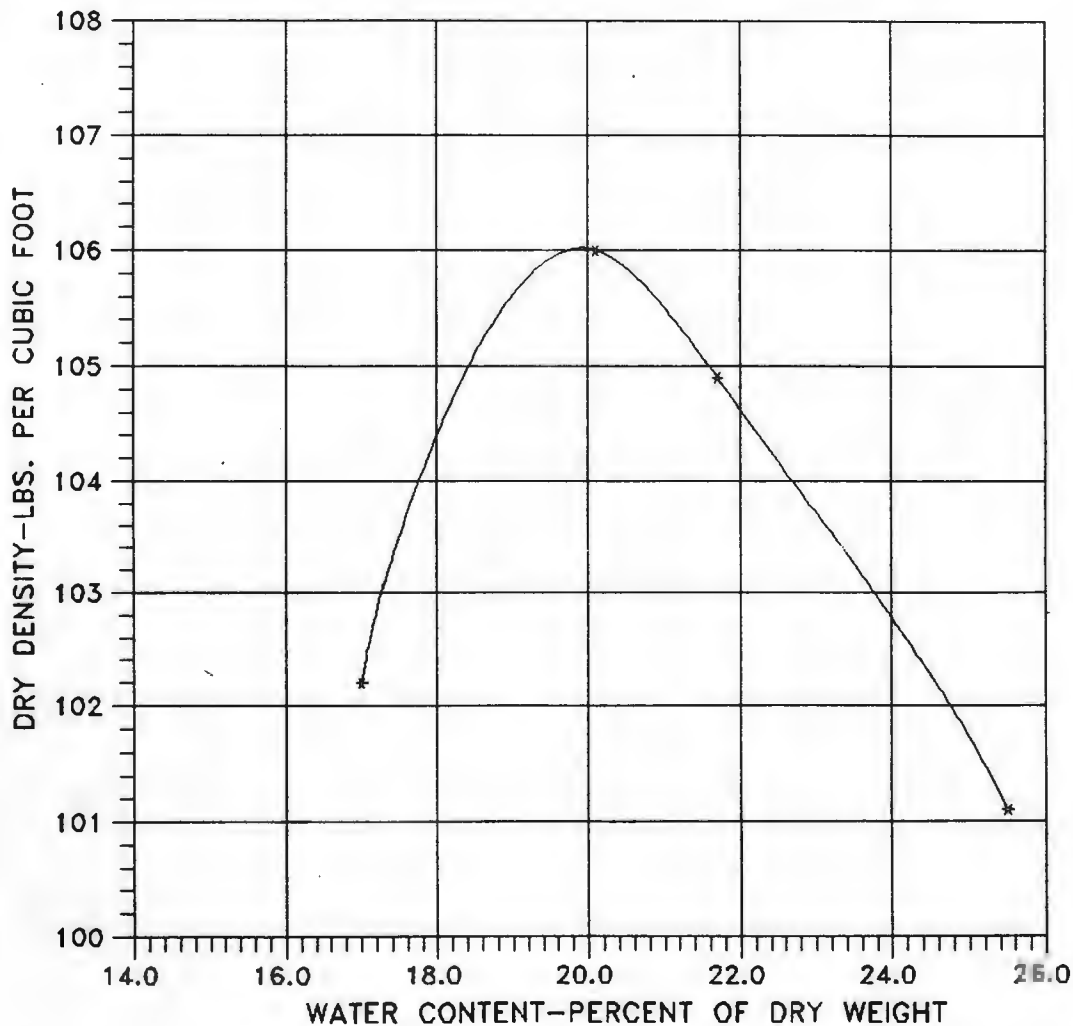
SOURCE OF MATERIAL Low Perm Barrier - Dunn Pit - Received 11/14/94

NATURAL WATER CONTENT 23.6

LIQUID LIMIT 47 PLASTIC LIMIT 20 PLASTICITY INDEX 27

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 106.0 PCF
OPTIMUM WATER CONTENT 20.1 %



SMT - QA/QC

APPENDIX E

Low Permeability Barrier Soil Layer Quality Assurance Test Results

Quality Assurance Testing Summary
Laboratory Testing: Undisturbed Samples (Shelby Tubes)

Sheet 1 of 2

Project: Berlin - Petersburg

Contractor: A - Ritz

Client: EAC

Material Source: Babcock Pit

S&M Job #: 4110900

Sample No.	Test Area ¹	Soil Lift	Permeability ² (cm/sec)	Comments
ST 1A	Acre 1	1	3.2×10^{-8}	
ST 3A	Acre 2	1	7.5×10^{-8}	
ST 4A	Acre 3	1	5.3×10^{-8}	
ST 5A	Acre 4	1	1.8×10^{-7}	Does not meet required permeability
ST 6A	Acre 4	1	2.9×10^{-8}	Taken at location of ST 5A
ST 7A	Acre 1	2	6.8×10^{-8}	
ST 7A'	Acre 1	3	1.0×10^{-7}	
ST 8A	Acre 2	2	2.8×10^{-8}	
ST 8A'	Acre 2	3	2.2×10^{-8}	
ST 9A	Acre 3	2	5.6×10^{-8}	
ST 9B'	Acre 3	3	9.3×10^{-8}	
ST 10A	Acre 5	1	5.6×10^{-8}	
ST 11A	Acre 4	2	3.7×10^{-8}	
ST 11A'	Acre 4	3	4.8×10^{-8}	
ST 12A	Acre 6	1	5.3×10^{-8}	
ST 13A	Acre 7	1	4.6×10^{-8}	
ST 14A	Acre 5	2	4.1×10^{-8}	
ST 14A'	Acre 5	3	3.6×10^{-8}	
ST 15A	Acre 6	2	3.0×10^{-8}	
ST 15A'	Acre 6	3	2.7×10^{-8}	

Notes:

¹ See field book sketch(s) for test area location.

² Test Method ASTM D-5084

Sheet 2 of 2

Contractor: **A - Ritz**

Material Source: B26cock Pit

[illegible]

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SMITH & MAHONEY, P.C.

HYDRAULIC CONDUCTIVITY TEST DATA

Project Name:

BERLIN-PETERSBURG LANDFILL CLOSURE

Client:

Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No.

79349

Sample Description:

Visual Description:
Blue (gray) CLAY
ST-1A
Undisturbed Tube

Date Received: 9/1/93
Date Reported: 9/3/93

Date Tested: 9/2/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 11.13 cm
Diameter = 7.18 cm
Moisture Content = 34.1%
Dry Density = 91.6 pcf

Test Conditions

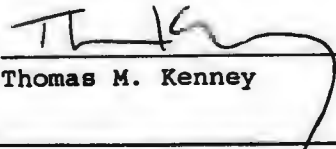
Back Pressure = 70.0 psi
Cell Pressure = 75.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

A

Hydraulic Conductivity: $k_{20} = 3.2 \times 10^{-8}$ cm/sec

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Thomas M. Kenney



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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Brown Silty CLAY
ST-3A
Undisturbed Tube

Date Received: 9/7/93
Date Reported: 9/9/93

Date Tested: 9/8/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 13.71 cm
Diameter = 7.23 cm
Moisture Content = 21.3%
Dry Density = 100.5 pcf

Test Conditions

Back Pressure = 81.0 psi
Cell Pressure = 85.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 7.5 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) CLAY
ST-4A
Undisturbed Tube

Date Received: 9/8/93
Date Reported: 9/10/93

Date Tested: 9/9/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 11.45 cm
Diameter = 7.05 cm
Moisture Content = 35.3%
Dry Density = 91.2 pcf

Test Conditions

Back Pressure = 78.0 psi
Cell Pressure = 82.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks:

Hydraulic Conductivity: $k_{20} = 5.3 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty Clay
ST-5A
Undisturbed Tube

Date Received: 9/13/93
Date Reported: 9/16/93

Date Tested: 9/14/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 13.03 cm
Diameter = 7.00 cm
Moisture Content = 27.0%
Dry Density = 92.3 pcf

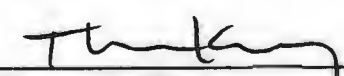
Test Conditions

Back Pressure = 75.0 psi
Cell Pressure = 79.0 psi
Hydraulic Gradient = 20
Permeant Liquid: Deaired
Tap Water

Remarks: very silty gray (blue) clay, very moist. Fragile, trace gravel with brown silty streaks. Total sample length = 13". Top 2" + bottom 3" discarded.

Hydraulic Conductivity: $k_{20} = 1.8 \times 10^{-7}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty Clay
ST-6A
Undisturbed Tube

Date Received: 9/16/93
Date Reported: 9/21/93

Date Tested: 9/17/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 10.43 cm
Diameter = 7.24 cm
Moisture Content = 22.4%
Dry Density = 100.9 pcf

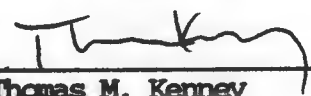
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Gray silty CLAY, firm, uniform. One small gravel near top.
Total Length = 8.25". Top 2.25" + bottom 2.25" moisture/removed.

Hydraulic Conductivity: $k_{20} = 2.9 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-7A, Lift #2
Undisturbed Tube

Date Received: 9/21/93
Date Reported: 9/24/93

Date Tested: 9/22/93
Reviewed By: REV EW

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.14 cm
Diameter = 7.11 cm
Moisture Content = 35.4%
Dry Density = 90.9 pcf

Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 1.25" of lift #2, 2.0" of lift #1.
Gray silty CLAY, with areas and lenses of brown silty clay.
Total Length = 14.5". Moisture sample taken from 7.0"-8.0"

Hydraulic Conductivity: $k_{20} = 6.8 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-7A', Lift #2 (Top 3")
Undisturbed Tube

Date Received: 9/20/93
Date Reported: 10/4/93

Date Tested: 9/29/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 6.30 cm
Diameter = 7.10 cm
Moisture Content = 27.5%
Dry Density = 94.8 pcf

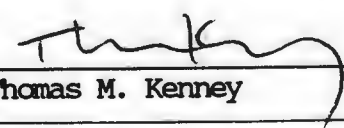
Test Conditions

Back Pressure = 72.0 psi
Cell Pressure = 77.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 0.50" to 3.00" down of Lift #2
Blue (gray) brown silty, crumbly Clay.
Total Length = 14.5". Moisture sample taken from 0.0"-0.5"

Hydraulic Conductivity: $k_{20} = 1.0 \times 10^{-7}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-8A, Lift #2
Undisturbed Tube

Date Received: 9/21/93
Date Reported: 9/24/93

Date Tested: 9/22/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.13 cm
Diameter = 7.11 cm
Moisture Content = 31.3%
Dry Density = 95.6 pcf

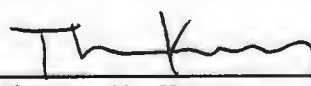
Test Conditions

Back Pressure = 66.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 1.75" of lift #2, 1.75" of lift #1.
Gray silty CLAY, smooth, consistent, well compacted at bottom, top more
fragile. Lift line (crack) at 5.0", ¹/₄ circumference.
Total Length = 14.5". Moisture sample taken from 7.0"-8.0"

Hydraulic Conductivity: $k_{20} = 2.8 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-8A', Lift #2 (Top 3")
Undisturbed Tube

Date Received: 9/20/93
Date Reported: 10/4/93

Date Tested: 9/29/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 5.84 cm
Diameter = 7.07 cm
Moisture Content = 27.2%
Dry Density = 97.8 pcf

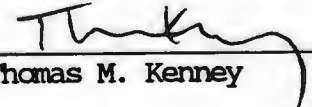
Test Conditions

Back Pressure = 72.0 psi
Cell Pressure = 77.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 0.75" to 3.25" down of lift #2
Gray silty CLAY, moist, with slight silty texture.
Total Length = 14.5". Moisture sample taken from 0.0"-0.75"

Hydraulic Conductivity: $k_{20} = 2.2 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-9A, Lift #2
Undisturbed Tube

Date Received: 9/23/93
Date Reported: 10/18/93

Date Tested: 9/24/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 10.15 cm
Diameter = 7.15 cm
Moisture Content = 29.7%
Dry Density = 95.6 pcf

Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from, 2.25" to 6.25".
Gray silty CLAY, smooth, moist, homogeneous, well compacted.
Total Length = 10.0". Moisture sample taken from 6.5"-7.5"

Hydraulic Conductivity: $k_{20} = 5.6 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-9B', Lift #2, Top only.
Undisturbed Tube

Date Received: 9/23/93
Date Reported: 11/4/93

Date Tested: 10/5/93
Reviewed By: REV *lw*

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.50 cm
Diameter = 7.23 cm
Moisture Content = 29.1%
Dry Density = 92.3 pcf

Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from, lift #2 only.
Gray silty CLAY, smooth, moist, homogeneous, well compacted.
Moisture sample taken from either side of specimen.

Hydraulic Conductivity: $k_{20} = 9.3 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-10A, Lift #1
Undisturbed Tube

Date Received: 10/4/93
Date Reported: 10/12/93

Date Tested: 10/5/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 10.31 cm
Diameter = 7.26 cm
Moisture Content = 29.7%
Dry Density = 91.1 pcf

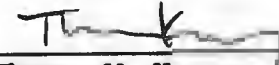
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from, 4.0" to 8.0".
Gray silty CLAY, smooth, moist, homogeneous, well compacted.
Total Length = 9.0". Moisture sample taken from top + bottom 1"

Hydraulic Conductivity: $k_{20} = 5.6 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-11A, Lift #2 (interlift)
Undisturbed Tube

Date Received: 10/5/93
Date Reported: 10/12/93

Date Tested: 10/6/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 11.30 cm
Diameter = 7.07 cm
Moisture Content = 28.8%
Dry Density = 99.3 pcf

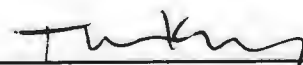
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 5.0" to 9.5" down of lift #2
Gray silty CLAY with brown silty sections.
Total Length = 14.25". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 3.7 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-11A', Lift #2 (top)
Undisturbed Tube

Date Received: 10/5/93
Date Reported: 10/12/93

Date Tested: 10/6/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.92 cm
Diameter = 7.08 cm
Moisture Content = 34.8%
Dry Density = 90.7 pcf

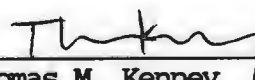
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 1.0" to 5.5" down of lift #2
Gray silty CLAY with brown silty sections.
Total Length = 14.25". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 4.8 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-12A, Lift #1
Undisturbed Tube

Date Received: 10/8/93
Date Reported: 10/18/93

Date Tested: 10/14/93
Reviewed By: REV W

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.44 cm
Diameter = 7.03 cm
Moisture Content = 31.4%
Dry Density = 96.0 pcf

Test Conditions

Back Pressure = 74.0 psi
Cell Pressure = 78.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; 2.5" to 5.75" down.
Gray silty CLAY with brown silty sections near top.
Total Length = 7.5". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 5.3 \times 10^{-8}$ cm/sec

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Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-13A, Lift #1
Undisturbed Tube

Date Received: 10/8/93
Date Reported: 10/14/93

Date Tested: 10/11/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 9.94 cm
Diameter = 7.17 cm
Moisture Content = 31.4%
Dry Density = 92.4 pcf

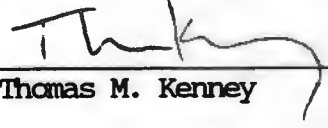
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from; bottom 5" of tube.
Smooth, homogeneous gray clay, well compacted.
Total Length = 9.25". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 4.6 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-14A, Lift #2, Interlift
Undisturbed Tube

Date Received: 10/26/93
Date Reported: 10/29/93

Date Tested: 10/28/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 12.92 cm
Diameter = 7.27 cm
Moisture Content = 30.4%
Dry Density = 92.7 pcf

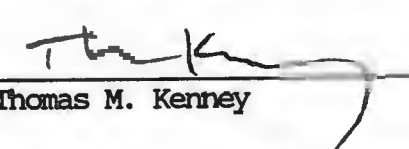
Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken at intersection of lift #1 and lift #2.
Smooth, homogeneous gray clay, well compacted.
Total Length = 9.0". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 4.1 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-14B, Lift #2 Only.
Undisturbed Tube

Date Received: 10/26/93
Date Reported: 11/12/93

Date Tested: 10/28/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 5.66 cm
Diameter = 7.03 cm
Moisture Content = 28.6%
Dry Density = 100.2 pcf

Test Conditions

Back Pressure = 71.0 psi
Cell Pressure = 75.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from lift #2 only.
Smooth, homogeneous gray clay.
Total Length = 8.5". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 3.6 \times 10^{-8}$ cm/sec

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Thomas M. Mahoney



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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-15A, Lift #2/1 Intersection.
Undisturbed Tube

Date Received: 11/4/93
Date Reported: 11/12/93

Date Tested: 11/8/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 8.49 cm
Diameter = 7.18 cm
Moisture Content = 27.9%
Dry Density = 95.5 pcf

Test Conditions

Back Pressure = 76.0 psi
Cell Pressure = 80.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from lift #2 / Lift #1 intersection.
Smooth, homogeneous gray clay, well Compacted.
Total Length = 9.3". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 3.0 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-15A, Lift #2 only.
Undisturbed Tube

Date Received: 11/4/93
Date Reported: 11/12/93

Date Tested: 11/8/93
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TRW

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 6.52 cm
Diameter = 7.07 cm
Moisture Content = 30.3%
Dry Density = 97.2 pcf

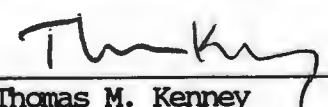
Test Conditions

Back Pressure = 71.0 psi
Cell Pressure = 75.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Sample taken from lift #2 only.
Smooth, homogeneous gray clay.
Total Length = 9.3". Moisture sample taken from 1" either side of sample

Hydraulic Conductivity: $k_{20} = 2.7 \times 10^{-8}$ cm/sec

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HYDRAULIC CONDUCTIVITY TEST DATA

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-1A, Lift #1 (94)
Undisturbed Tube

Date Received: 10/10/94
Date Reported: 10/13/94

Date Tested: 10/11/94
Reviewed By: REV 

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 11.53 cm
Diameter = 7.25 cm
Moisture Content = 26.6%
Dry Density = 101.9 pcf

Test Conditions

Back Pressure = 65.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Smooth, homogeneous gray clay, well compacted, trace gravel.
Total Length = 9.0". Moisture sample taken from 1.5" either side of sample

Hydraulic Conductivity: $k_{20} = 2.5 \times 10^{-8}$ cm/sec

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OCT 25 1994

HYDRAULIC CONDUCTIVITY TEST DATA

SMITH & MAHONEY, P.C. Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE
Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047
SMT Project No. 79349
Sample Description: Visual Description:
Blue (gray) Silty CLAY
ST-2A, Lift #2 (94)
Undisturbed Tube

Date Received: 10/21/94
Date Reported: 10/24/94

Date Tested: 10/22/94
Reviewed By: REV

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 9.79 cm
Diameter = 7.24 cm
Moisture Content = 24.0%
Dry Density = 102.0 pcf

Test Conditions

Back Pressure = 65.0 psi
Cell Pressure = 70.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Smooth, homogeneous gray clay, well compacted.
Total Length = 8.75". Moisture sample taken from 1.0" either side of sample

Hydraulic Conductivity: $k_{20} = 3.6 \times 10^{-8}$ cm/sec

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NOV 22 1994

HYDRAULIC CONDUCTIVITY TEST DATA

SMITH & MAHONEY, P.C.

Project Name: BERLIN-PETERSBURG LANDFILL CLOSURE

Client: Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-2047

SMT Project No. 79349

Sample Description: Visual Description:
Brown Silty CLAY, trace gravel.
ST-30 (94)
Undisturbed Tube

Date Received: 11/17/94
Date Reported: 11/21/94

Date Tested: 11/17/94
Reviewed By: REV *lw*

Test Standard: ASTM D 5084
Test By: TMK

Test Description: Falling Head/Rising
tail Flexible Wall Permeability

RESULTS:

Initial Specimen Properties

Length = 9.53 cm
Diameter = 7.28 cm
Moisture Content = 24.5%
Dry Density = 98.1 pcf

Test Conditions

Back Pressure = 67.0 psi
Cell Pressure = 72.0 psi
Hydraulic Gradient = 30
Permeant Liquid: Deaired
Tap Water

Remarks: Well compacted brown silty CLAY, trace Gravel. Minor gravel patch.
Total Length = 7.75". Moisture sample taken from 1.0" either side of sample

Hydraulic Conductivity: $k_{20} = 5.3 \times 10^{-8}$ cm/sec

SOIL & MATERIAL TESTING, INC.

Thomas M. Kenney
Thomas M. Kenney

SOIL & MATERIAL TESTING, INC.
FIELD TEST DATA SUMMARY SHEET - LOW PERMEABILITY BARRIER

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C., MAURICE CROMIER DATE: 11/18/94 & 11/28/94

SAMPLE ID		D - 1	ST - 3						
DATE RECEIVED		11/14/94	11/17/94						
MATERIAL SOURCE		DUNN PIT	SHELBY TUBE						
LAYER		LOW PERM	LOW PERM						
P A S S I N G S I E V E	3-INCH								
	2-INCH								
	1-INCH								
	1/2-INCH								
	1/4-INCH	100.0	100.0						
	NO. 10	98.9	98.2						
	NO. 40	96.8	93.0						
	NO. 200	89.3	89.7						

REMARKS: _____

SOIL & MATERIAL TESTING, INC.
TEST DATA SUMMARY SHEET - LOW PERMEABILITY BARRIER

PROJECT: BERLIN PETERSBERG LANDFILL JOB#: 79349

CLIENT: SMITH & MAHONEY, P.C. DATE: 11/28/94 INSPECTOR: SMT

SAMPLE ID	D - 1	ST - 3						
DATE OF TEST	11/14/94	11/17/94						
MATERIAL SOURCE	DUNN PTT	DUNN PTT						
LAYER	LOW PERM	LOW PERM						
ASTM D 4318:								
ATTERBERG LIMIT								
LIQUID LIMIT	47	42						
PLASTIC LIMIT	20	22						
PLASTICITY INDEX	27	20						
ASTM D 2216:								
MOISTURE CONTENT	23.6%	24.5%						

REMARKS:

Moisture and Density Test Results

Project:

Berlin/Petersburg Landfill

Job Number:

4110900

Contractor:

A. Ritz, Inc.

Owner:

Energy Answers Corporation

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
101	8/31/93	1	5+00	0+50	104.8	18.2	97.3	
102		1	5+50	0+65	104.0	21.0	96.6	
103		1	6+00	0+80	102.7	21.3	95.3	
104		1	6+50	1+10	104.4	20.6	96.9	
105		1	6+80	1+35	91.2	24.9	84.7	
106	9/1/93	1	3+00	2+50	100.2	21.9	99.2	
107		1	4+00	2+50	111.2	14.6	103.2	
108		1	4+50	2+60	111.2	12.2	103.2	
109		1	5+00	2+70	129.8	11.5	120.5	
110		1	5+50	2+80	105.3	16.1	97.8	
111		1	6+00	3+10	104.3	17.3	96.9	
112		1	6+50	3+00	100.0	19.6	92.8	
113		1	7+00	3+00	100.5	16.3	93.3	
114		1	7+00	2+40	103.0	18.5	95.6	
115		1	6+00	2+30	99.0	17.6	91.9	
116		1	5+00	2+20	102.2	17.9	94.9	
117		1	4+50	2+00	100.2	16.3	93.1	
118		1	4+00	2+00	104.0	18.9	96.6	
119		1	3+50	2+00	100.1	22.2	99.1	
120		1	3+50	1+50	99.8	20.4	98.8	
121		1	3+50	1+00	95.6	24.6	94.7	ST-1A, 1B
122		1	3+50	0+20	94.4	30.6	93.4	
123		1	4+00	0+30	92.9	30.1	92.0	
124		1	4+50	0+40	99.5	22.4	92.4	
125		1	5+00	0+50	98.8	21.0	91.8	
126		1	6+00	0+70	106.9	20.1	99.2	
127		1	7+00	1+00	97.2	23.5	90.3	
128		1	7+80	1+50	96.0	19.9	89.1	
129	9/2/93	1	3+00	2+20	90.9	31.5	90.0	
130		1	3+00	2+00	90.4	32.2	89.5	
131		1	3+00	1+50	94.5	27.7	93.5	
132		1	3+50	2+00	97.6	27.8	96.6	
133	9/3/93	1	6+00	3+50	96.7	24.1	89.7	
134		1	6+00	3+00	96.1	29.0	89.2	
135		1	6+00	2+50	92.3	30.7	91.4	
136		1	6+00	2+00	94.9	24.3	88.2	
137		1	6+00	1+50	96.5	21.6	89.6	
138		1	6+00	0+80	89.2	25.2	82.8	
139		1	5+00	0+55	89.6	30.0	83.2	
140		1	5+00	1+00	91.8	21.3	85.2	
141		1	5+00	1+50	98.6	20.5	91.5	
142		1	5+00	2+00	95.6	24.8	8.7	
143		1	5+00	2+50	102.1	21.4	94.0	
144		1	5+00	3+00	96.7	27.0	89.8	
145		1	5+00	3+35	95.6	21.5	88.8	
146		1	7+00	3+40	89.2	28.8	82.8	
147		1	7+00	2+40	89.4	32.9	83.0	
148		1	7+00	1+40	96.5	23.7	89.6	
149		1	7+00	1+40	86.8	29.0	80.6	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
150	9/3/93	1	4+00	3+00	97.0	27.8	90.1	
151		1	4+00	2+50	105.1	24.7	97.6	
152		1	4+00	2+00	102.4	26.1	95.1	
153		1	4+00	1+50	92.1	29.3	85.5	
154		1	4+00	1+00	98.3	25.5	91.3	
155		1	4+00	0+65	102.9	23.6	95.5	
156		1	6+00	2+00	94.0	24.3	87.3	ST-2B
157		1	6+00	1+90	94.0	26.9	87.3	ST-2A
158	9/7/93	1	5+00	0+55	93.8	24.8	87.0	Retest 139
159		1	5+00	1+00	97.4	24.6	90.4	Retest 140
160		1	6+00	0+80	96.4	21.3	89.5	Retest 138
161		1	6+00	2+50	95.8	24.6	88.9	Retest 135
162		1	7+00	3+40	93.0	27.7	86.3	Retest 146
163		1	7+00	2+40	97.7	25.1	90.7	Retest 147
164		1	7+00	1+50	95.8	26.8	89.0	Retest 149
165		1	7+30	2+80	79.9	38.7	79.1	
166		1	7+30	2+50	88.5	35.5	88.6	Retest 165
167		1	7+30	2+50	91.1	33.1	90.2	
168		1	7+15	2+80	87.1	37.5	86.2	
169		1	4+70	2+90	95.1	26.7	88.7	
170		1	4+70	2+40	97.0	24.8	90.1	
171		1	4+70	1+90	97.2	25.0	90.2	
172		1	4+70	1+40	98.6	24.7	91.5	
173		1	6+50	1+50	94.8	28.6	88.1	
174		1	6+50	2+00	96.6	26.4	89.7	
175		1	6+50	2+80	98.0	26.4	91.0	ST-3A, 3B
176	9/8/93	1	3+00	2+00	87.4	35.5	86.5	
177		1	3+40	2+30	98.8	26.3	97.9	
178		1	3+40	2+80	99.5	26.0	98.5	
179		1	2+80	2+50	95.2	30.5	94.2	
180		1	3+00	2+00	91.6	32.9	90.7	Retest 176
181		1	3+00	2+50	97.6	26.6	96.7	
182		1	3+00	2+00	93.4	30.8	92.4	
183		1	3+00	1+50	90.8	34.4	89.9	
184		1	3+00	0+25	95.0	27.7	94.1	
185		1	2+50	1+00	91.5	31.6	90.6	
186		1	2+60	2+30	91.8	29.7	90.9	
187		1	2+10	2+30	88.9	28.3	88.0	
188		1	1+80	2+30	90.6	31.0	89.7	
189		1	1+80	1+80	95.4	27.7	92.4	
190		1	1+80	1+30	92.7	29.3	91.8	
191		1	2+40	1+25	88.7	35.6	87.3	ST-4A, 4B
192	9/13/93	1	1+80	2+60	92.9	30.4	92.0	
193		1	2+00	1+90	92.7	29.5	91.8	
194		1	7+20	3+70	88.3	35.0	87.4	
195		1	7+10	3+00	87.3	37.1	86.5	
196		1	7+10	2+50	88.6	36.5	87.8	
197		1	7+20	4+20	95.7	30.6	94.7	
198		1	2+00	2+60	90.4	32.0	89.3	
199		1	1+70	3+00	94.4	28.5	93.5	
200		1	1+70	2+30	98.0	24.0	97.0	
201		1	2+00	1+00	97.1	27.0	96.1	
202		1	1+20	1+60	88.7	34.5	87.8	
203		1	1+20	2+80	93.5	27.3	92.5	
204		1	1+70	2+80	95.3	30.1	94.4	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
205	9/13/93	1	1+70	2+40	91.1	31.9	90.2	
206		1	2+10	2+60	90.4	33.2	89.6	
207		1	2+00	3+00	94.4	31.0	93.5	ST-5A, 5B
208		1	6+50	3+60	93.2	32.2	92.3	
209		1	6+50	3+10	90.9	34.2	90.0	
210		2	1+00	3+50	90.3	33.3	89.4	
211		2	1+00	3+00	90.6	32.0	89.7	
212	9/14/93	2	6+10	3+20	88.6	32.6	87.7	
213		2	6+30	2+50	88.6	34.2	87.7	
214		2	7+00	3+20	89.1	35.9	88.2	
215		1	6+50	3+40	89.7	34.0	88.8	
216		1	7+00	3+20	93.6	26.8	92.7	
217		1	6+00	1+70	100.2	23.4	93.0	
218		1	6+80	1+50	96.8	28.4	89.9	
219		1	5+70	3+00	89.4	33.5	88.5	
220		1	6+10	3+20	92.7	29.8	91.8	Retest 212
221		1	6+30	2+50	91.1	32.0	90.2	Retest 213
222		1	2+00	2+30	93.0	30.7	92.1	
223		1	1+00	3+30	94.7	25.8	93.7	
224		1	1+00	2+30	94.4	30.6	93.5	
225		1	1+00	1+30	92.6	33.3	91.7	
226		1	1+00	0+30	96.7	28.6	95.7	
227		1	3+00	0+00	89.4	35.9	88.5	
228		1	3+70	0+15	94.2	30.2	93.3	
229		1	4+50	0+40	94.6	30.3	93.7	
230		1	5+60	0+65	106.2	20.5	98.6	
231		2	7+00	2+00	91.9	30.8	91.0	
232		2	7+00	2+50	91.8	30.2	90.9	
233	9/15/93	1	3+00	1+00	98.1	23.1	97.1	
234		1	2+50	0+50	96.2	28.3	95.3	
235		1	2+00	1+00	95.5	28.6	94.6	
236		1	1+70	1+70	97.6	21.8	96.7	
237		1	1+50	2+20	99.9	19.3	98.9	
238		1	6+30	2+00	101.8	23.5	94.6	
239		1	6+40	1+50	96.8	25.4	89.9	
240		1	6+50	1+00	102.8	18.8	95.4	
241		1	0+50	3+20	98.6	23.8	97.6	
242		1	0+70	2+70	104.7	20.4	103.7	
243		1	1+00	2+20	104.8	20.4	103.8	
244		1	0+40	3+50	96.9	26.0	96.0	
245		1	0+20	3+80	101.1	22.8	100.1	
246		1	6+00	4+20	96.0	27.8	95.1	
247		2	6+00	3+00	89.3	35.0	88.4	
248		2	6+70	3+00	91.9	30.3	91.0	
249		2	7+30	2+50	90.2	33.2	89.3	
250		2	6+30	1+50	91.8	29.3	90.9	
251	9/16/93	1	5+50	2+00	96.4	28.9	89.5	
252		1	5+70	1+30	98.9	28.3	91.8	
253		1	4+50	2+00	97.9	25.2	90.9	
254		1	4+70	1+60	98.1	25.3	91.1	
255		1	2+00	3+00	93.3	32.4	92.4	
256		1	1+65	3+00	97.7	29.5	96.7	
257		1	1+80	2+50	94.1	30.9	93.2	
258		1	2+00	2+50	99.7	25.9	98.7	
259		1	2+30	2+70	98.7	27.3	97.7	ST-6A, 6B

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
260	9/16/93	2	5+00	2+50	88.7	35.9	87.9	
261		2	5+00	2+90	90.0	35.8	89.1	
262		2	5+00	2+50	91.7	32.0	90.8	Retest 260
263		2	5+50	2+50	90.6	33.2	89.7	
264		2	4+70	2+20	91.6	31.5	90.7	
265	9/20/93	2	6+20	2+50	91.5	31.4	90.6	
266		2	6+30	2+00	96.3	26.9	95.4	
267		2	6+40	1+50	93.6	30.1	92.7	
268		2	6+50	0+80	93.0	28.5	92.1	
269		2	7+00	1+50	94.7	27.4	93.8	
270		2	7+00	2+00	91.3	32.6	90.4	
271		2	6+70	2+50	96.5	28.1	95.5	
272		2	6+80	3+00	93.0	30.9	92.1	
273		2	6+70	3+70	91.2	31.0	90.3	
274		2	7+20	3+60	89.6	31.9	88.7	
275		2	7+30	3+20	96.3	26.8	95.4	
276		2	5+00	3+20	90.2	30.9	89.3	
277		2	5+20	2+40	90.7	33.2	89.8	
278		2	5+40	1+80	93.7	28.6	92.8	
279		2	5+60	1+30	91.7	30.5	90.8	
280		2	5+80	0+90	89.6	33.0	88.8	
281		1	4+10	2+70	108.3	20.9	100.5	
282		1	4+20	1+70	103.3	22.4	95.9	
283		1	4+80	0+70	100.1	25.5	92.9	
284		1	5+50	2+00	93.9	29.9	93.0	ST-7A, 7B
285		1	6+90	2+90	92.4	30.8	91.5	
286		1	7+00	3+00	94.4	30.2	93.4	ST-8A, 8B
287	9/21/93	1	4+00	2+20	105.3	24.1	104.3	
288		1	4+30	1+50	104.2	24.1	103.2	
289		1	4+50	1+00	104.5	23.5	103.5	
290		1	3+20	1+70	101.1	24.1	100.1	
291		1	3+50	0+50	100.9	24.5	99.9	
292		3	3+50	0+15	87.8	35.1	86.9	
293		3	3+20	0+10	86.5	36.0	85.6	
294		2	3+80	1+00	86.4	35.1	85.6	
295		2	4+00	2+00	90.2	33.3	89.3	
296	9/22/93	2	7+25	4+50	102.7	22.9	101.7	
297		1	7+25	4+70	91.8	32.3	90.9	
298		1	7+20	5+00	91.0	33.9	90.1	
299		2	7+20	5+00	98.6	25.8	97.6	
300		2	7+20	5+40	89.4	32.6	88.5	
301		2	4+50	2+20	91.2	31.9	90.3	
302		2	4+00	2+00	87.8	35.0	86.9	
303		2	4+00	1+50	86.7	36.6	85.8	
304		2	4+00	1+00	93.7	27.3	92.8	
305		2	4+00	0+50	93.9	26.7	93.0	
306		2	5+20	0+80	91.9	32.5	91.0	
307		2	4+70	1+30	89.9	32.8	89.0	
308		2	4+70	1+70	88.9	33.0	88.0	
309		1	3+00	2+30	105.1	20.2	104.0	
310		1	2+80	1+60	102.2	18.9	101.2	
311		1	2+40	1+00	100.9	22.3	99.9	
312		1	2+20	1+50	100.5	23.1	99.5	
313		1	1+70	1+00	91.0	26.6	90.1	
314		1	1+70	1+50	100.5	23.2	99.5	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
315	9/22/93	1	2+00	2+00	96.2	24.7	95.2	
316	9/23/93	2	7+00	5+20	88.1	36.3	87.2	
317		2	7+00	4+80	88.4	33.8	89.3	
318		2	7+00	4+50	95.5	32.4	94.6	
319		1	2+00	2+10	100.0	25.6	99.0	
320		1	1+50	2+50	100.9	26.4	99.9	
321		2	4+00	2+00	92.3	30.6	91.4	
322		2	4+00	1+50	91.9	30.6	91.0	
323		2	4+70	1+70	99.3	24.9	98.3	
324		2	5+50	1+50	98.1	24.9	97.1	
325		2	6+00	1+00	93.7	28.0	92.8	
326		2	5+40	0+70	95.0	29.3	94.0	
327		2	4+90	0+60	91.6	29.3	90.7	
328		2	4+10	0+40	96.2	25.4	95.2	
329		2	3+20	0+20	97.8	25.9	96.8	
330		2	2+40	0+50	100.0	23.0	99.0	
331		2	2+20	0+80	97.6	25.8	96.6	
332		2	2+00	1+20	93.8	30.2	92.9	
333		2	1+80	2+00	93.5	27.1	92.5	
334		2	2+00	1+00	92.9	31.4	92.0	
335		2	2+20	0+50	98.5	25.8	97.6	
336		2	2+50	0+50	97.7	26.0	96.7	ST-9A, 9B
337	9/24/93	2	2+00	2+00	86.3	36.3	85.4	
338		2	2+00	3+00	91.6	32.5	90.7	
339		1	1+50	2+70	94.6	28.9	93.7	
340		2	2+00	1+30	97.9	25.4	96.9	
341		1	1+40	3+40	91.0	32.3	90.1	
342		2	3+80	2+80	96.9	27.1	95.9	
343		2	4+50	3+50	95.3	28.0	94.4	
344		2	5+00	3+00	97.5	24.0	96.5	
345	9/30/93	1	0+00	4+50	88.9	33.2	88.0	
346		1	0+20	4+80	87.8	32.6	86.9	
347		1	0+50	4+00	88.2	33.8	87.3	
348		1	1+00	3+50	91.1	31.2	90.2	
349		1	1+00	3+00	90.2	34.0	89.3	
350		1	1+50	3+00	91.7	31.1	90.0	
351		1	1+50	4+20	88.9	33.4	88.0	
352		2	0+20	4+50	90.4	31.2	89.5	
353		2	0+00	4+00	88.9	33.0	88.1	
354		2	0+30	3+50	88.8	32.2	88.0	
355		2	0+50	5+00	90.0	33.1	89.1	
356		1	1+00	5+20	90.4	32.4	89.5	
357		1	1+50	5+30	87.3	33.9	86.4	
358	10/1/93	2	1+00	5+20	86.5	33.9	85.6	
358a		2	1+00	5+20	89.9	32.6	89.0	
359		2	0+50	5+00	91.9	30.7	91.0	
360		2	0+00	4+80	91.2	31.2	90.3	
361		1	1+30	4+00	99.4	22.7	91.4	
362		1	1+00	4+50	94.8	23.2	87.2	
363		1	0+90	4+50	98.0	21.3	91.0	
364		1	0+40	4+70	97.6	20.5	90.7	
365		1	0+70	4+00	99.0	20.0	91.9	
366		1	1+00	3+50	99.4	20.7	92.3	
367		1	0+60	3+60	96.7	21.2	89.8	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
368	10/1/93	1	1+50	4+00	97.6	23.7	96.7	
369		1	6+30	4+30	93.2	25.9	92.3	
370		1	6+60	4+80	97.2	21.5	90.2	
371		1	6+75	4+00	91.3	29.3	90.4	
372		1	6+00	4+00	95.9	27.5	89.1	
373	10/4/93	2	7+00	3+00	100.3	25.7	99.3	
374		2	6+00	3+00	100.7	24.4	99.7	
375		2	5+00	3+00	95.2	27.6	94.3	
376		2	4+00	3+00	91.0	32.3	90.1	
377		2	3+00	3+00	97.0	27.6	96.0	
378		2	3+00	2+00	93.9	30.5	92.9	
379		2	4+00	2+00	93.0	30.4	92.1	
380		2	5+00	2+00	92.4	30.5	91.5	
381		2	6+00	2+00	94.1	29.1	93.1	
382		2	7+00	2+00	100.0	23.1	99.0	
383		2	7+50	2+00	93.3	28.2	92.3	
384		2	7+00	1+50	89.3	33.8	88.5	
385		2	6+00	1+00	90.0	33.1	89.1	
386		2	5+00	1+00	96.4	29.1	95.4	
387		2	4+00	1+00	92.9	29.5	92.0	
388		2	3+80	0+40	93.0	29.9	92.1	
389		1	1+00	3+20	93.8	26.4	92.9	
390		1	1+00	3+70	96.7	24.3	95.8	ST-10A, 10B
391	10/5/93	2	7+00	2+00	89.4	34.7	88.5	
392		2	1+90	1+90	94.5	30.5	93.5	ST-11A, 11B
393	10/6/93	1	5+00	5+80	87.7	35.0	86.9	
394		1	4+50	5+80	94.5	29.1	93.5	
395		1	5+50	5+90	88.5	34.5	87.6	
396		1	6+00	6+00	89.7	32.7	88.8	
397		1	6+50	5+50	93.0	29.8	92.0	
398	10/7/93	2	6+50	5+70	87.5	35.6	86.6	
399		2	6+90	5+50	87.7	36.8	86.8	
400		2	6+80	5+30	86.1	35.5	85.3	
401		2	7+00	5+10	89.3	34.1	88.4	
402		1	6+50	4+00	92.6	30.5	91.7	
403		1	7+00	4+00	96.9	22.9	96.0	
404		1	7+00	4+50	92.0	29.6	91.1	
405		1	6+50	4+50	94.2	26.5	93.3	
406		3	6+50	5+80	89.9	34.1	89.0	
407		3	6+90	5+50	92.6	32.1	91.7	
408		1	6+50	4+80	92.5	30.3	91.6	
409		1	6+20	4+60	91.0	33.0	90.1	
410		1	1+80	4+00	91.7	32.6	90.8	
411	10/8/93	1	1+70	4+00	96.5	29.7	95.5	
412		1	1+50	4+50	95.4	28.5	94.4	
413		1	1+30	5+00	92.0	27.5	91.1	
414		1	0+80	4+80	97.2	27.2	96.2	
415		1	0+50	4+00	94.3	26.0	93.4	
416		1	1+00	4+00	103.0	21.9	102.0	
417		1	2+00	4+00	95.6	28.4	94.7	
418		1	2+00	3+50	93.0	30.5	92.1	
419		1	1+50	4+50	94.7	29.9	93.7	ST-12A, 12B
420		1	4+20	5+70	88.5	35.7	87.6	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
421	10/8/93	1	4+60	5+20	87.5	36.2	86.6	
422		1	6+30	4+60	91.8	31.0	90.0	
423		1	6+40	5+00	94.3	27.8	93.5	ST-13A, 13B
424		1	6+90	4+80	93.5	28.5	92.5	
425		1	6+90	5+20	98.2	28.0	97.3	
426	10/11/93	3	4+70	5+80	87.9	36.6	87.0	
427		3	5+20	5+80	89.1	34.3	88.2	
428		1	6+00	5+00	95.0	27.1	94.1	
429		1	5+50	5+50	93.2	29.3	92.3	
430		1	5+00	6+00	93.4	31.0	92.5	
431		1	5+00	5+50	93.8	29.9	92.9	
432		1	5+00	5+00	87.8	34.6	86.9	
433		1	5+80	4+80	91.3	33.4	90.4	
434		1	6+60	3+90	98.6	24.9	97.6	
435		1	7+10	4+10	94.5	26.5	93.6	
436		1	7+00	4+50	97.0	24.6	96.1	
437		1	7+00	5+00	94.5	27.7	93.6	
438		1	6+50	5+00	94.1	25.7	93.1	
439		1	6+50	4+50	96.6	24.8	95.6	
440		1	6+50	4+00	96.1	26.7	95.2	
441		1	4+30	5+00	89.7	31.3	88.8	
442		3	4+70	5+80	90.7	31.4	89.8	Retest 426
443		3	5+20	5+80	92.1	30.1	91.2	Retest 427
444	10/12/93	1	4+80	5+50	93.6	28.4	92.6	
445		1	4+80	5+00	95.1	33.0	94.2	
446		1	4+75	5+00	85.7	36.4	84.8	
447		1	5+50	5+00	91.7	30.3	90.8	
448	10/14/93	3	3+90	5+60	93.5	30.6	92.6	
449		3	3+40	5+50	89.1	32.1	88.2	
450		3	4+70	5+60	90.0	32.7	89.2	
451	10/19/93	2	3+20	0+40	93.6	30.7	92.7	
452		2	2+50	0+20	98.4	27.6	97.4	
453		2	2+30	0+70	96.6	27.5	95.7	
454		2	1+90	1+20	99.8	24.4	98.8	
455		2	1+60	1+80	98.4	24.9	97.4	
456		2	2+10	1+80	95.6	27.9	94.7	
457		2	3+00	1+80	100.0	26.7	99.0	
458		2	3+20	1+40	100.7	24.4	99.7	
459		2	3+00	2+50	98.0	27.9	97.0	
460		1	3+80	4+70	96.0	25.9	95.1	
461		1	3+80	5+30	91.5	29.5	90.6	
462		1	3+90	5+80	94.3	29.7	93.3	
463	10/25/93	1	3+80	5+50	98.8	22.5	97.8	
464		1	4+30	5+60	96.4	25.9	95.5	
465		1	5+00	5+70	101.0	21.9	100.0	
466		1	6+00	5+80	96.3	25.3	95.4	
467		1	5+50	5+80	95.8	26.6	94.8	
468		1	5+00	5+00	96.7	27.0	95.7	
469		1	4+30	4+90	98.9	22.5	97.9	
470		1	3+70	4+60	100.3	22.8	99.3	
471		1	6+20	4+90	98.0	26.4	97.0	
472		1	6+70	4+50	96.8	26.4	95.9	
473		2	6+50	4+00	100.2	24.2	99.2	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
474	10/25/93	2	7+00	4+00	92.1	29.6	91.2	
475		2	7+10	3+60	90.2	34.0	89.3	
476		2	6+60	3+70	94.8	27.7	93.8	
477	10/26/93	2	5+50	5+40	90.0	35.0	89.1	
478		2	5+50	4+90	86.5	35.7	85.7	
479		2	6+00	4+90	85.9	36.5	84.9	
480		2	6+00	5+40	85.9	38.0	85.0	
481		2	6+00	5+40	87.1	35.1	86.2	Retest 479
482		2	6+00	4+90	88.0	33.1	88.0	Retest 480
483		2	6+50	4+90	90.1	31.9	89.2	
484		2	6+50	5+40	89.1	34.2	88.2	
485		2	7+00	4+50	90.9	34.1	90.0	
486		2	6+50	4+50	88.4	34.4	87.5	
487		2	6+10	4+50	88.5	34.5	87.6	
488		2	6+50	4+00	93.8	31.5	92.8	
489		2	6+50	4+50	93.7	30.3	92.8	ST-14A, 14B
490	10/27/93	2	4+80	5+70	89.8	34.3	88.9	
491		2	4+80	5+20	89.1	34.1	88.2	
492		1	1+50	4+60	98.9	25.6	97.9	
493		1	0+90	4+50	105.0	22.5	103.9	
494	10/29/93	2	5+00	5+80	94.2	27.5	93.2	
495		2	5+50	5+80	92.4	29.4	91.5	
496		2	6+00	5+70	94.3	27.5	93.4	
497		2	6+00	5+20	97.0	25.0	96.0	
498		2	5+50	5+00	96.1	24.5	95.2	
499		2	5+00	5+00	93.7	27.8	92.8	
500		2	4+50	5+00	91.9	30.1	91.0	
501		2	4+00	4+80	95.4	25.3	94.5	
502		2	4+00	5+50	90.5	30.3	89.6	
503	11/10/93	1	6+00	4+00	92.6	32.0	91.7	
504		1	4+50	3+50	97.4	30.5	96.5	
505		1	5+00	4+00	93.5	31.1	92.5	
506		1	1+00	4+00	92.0	33.9	91.1	ST-15A, 15B
507		1	6+00	3+60	96.5	31.7	95.5	
508		1	5+50	3+60	91.4	33.1	90.5	
509		1	5+00	3+50	89.9	33.5	89.0	
510		2	6+00	4+90	93.2	32.5	92.3	Retest 482
511		2	6+00	5+40	95.2	31.0	94.3	Retest 481
512		2	6+50	5+40	96.0	31.2	95.0	Retest 484
513		2	6+10	4+50	92.7	33.5	91.8	Retest 487
514	10/3/94	1	6+00	3+50	85.2	25.0	82.6	
515		1	6+00	4+00	82.8	25.3	80.3	
516		1	6+00	4+50	88.4	20.4	85.8	
517		1	5+00	3+50	85.6	20.6	83.0	
518		1	5+50	4+00	87.2	20.7	84.6	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
519	10/3/94	1	5+00	4+50	87.5	19.9	84.9	
520		1	3+50	3+50	91.9	19.9	89.1	
521		1	3+50	4+00	88.9	23.3	86.3	
522		1	3+00	3+50	92.1	19.6	89.3	
523		1	3+00	4+00	90.8	19.5	88.1	
524		1	2+50	4+00	91.1	18.0	88.4	
525		1	2+50	4+50	90.6	23.7	87.9	
526	10/4/94	1	4+00	4+00	91.1	22.2	88.3	
527		1	4+00	3+50	86.7	21.5	84.1	
528		1	4+00	3+00	82.7	21.4	80.2	
529		1	3+50	3+50	88.2	22.6	85.6	
530		1	3+50	4+00	92.1	23.7	89.4	
531		1	3+50	4+50	87.6	24.2	85.0	
532		1	3+00	4+50	92.4	21.1	89.6	
533		1	3+00	4+00	90.8	21.1	88.1	
534		1	3+00	3+50	89.2	20.3	86.5	
535		1	2+50	3+50	92.7	21.9	89.9	
536		1	2+50	4+00	87.7	21.7	85.1	
537		1	2+50	4+50	94.7	20.4	91.8	
538	10/7/94	1	4+00	3+50	92.0	21.3	89.3	
539		1	4+00	4+00	88.7	24.0	86.1	
540		1	4+00	4+50	91.1	22.3	88.4	
541		1	4+00	5+00	88.7	25.2	86.0	
542		1	3+50	5+00	85.1	25.2	82.5	
543		1	3+50	4+50	92.3	21.9	89.6	
544		1	3+50	4+00	93.6	20.5	90.8	
545		1	3+50	3+50	94.6	21.0	91.8	
546		1	3+00	3+50	92.0	21.8	89.3	
547		1	3+00	4+00	90.4	21.8	87.7	
548		1	3+00	4+50	90.4	23.2	87.6	
549		1	3+00	5+00	85.3	25.7	82.7	
550		1	2+50	5+00	84.9	27.2	82.4	
551		1	2+50	4+50	89.8	23.2	87.1	
552		1	2+50	4+00	92.7	21.7	89.9	
553		1	2+50	3+50	86.0	23.7	83.4	
554	10/10/94	1	4+00	3+50	89.9	23.7	89.0	
555		1	4+00	4+00	91.0	23.7	90.1	
556		1	4+00	4+50	93.5	22.1	92.6	
557		1	4+00	5+00	91.6	24.2	90.7	
558		1	3+50	5+00	88.2	26.1	87.4	
559		1	3+50	4+50	88.4	23.6	87.6	
560		1	3+50	4+00	93.0	21.4	92.0	
561		1	3+50	3+50	91.5	22.4	90.6	
562		1	3+00	3+50	91.5	25.3	90.6	
563		1	3+00	4+00	89.1	21.7	88.2	
564		1	3+00	4+50	89.4	25.3	88.5	ST-1A, 1B
565		1	3+00	5+00	84.3	28.8	83.5	
566		1	2+50	5+00	83.1	28.6	82.3	
567		1	2+50	4+50	90.6	22.1	89.7	
568		1	2+50	4+00	86.7	29.1	85.9	
569		1	2+50	3+50	85.1	27.3	84.2	
570	10/14/94	2	4+00	1+00	86.9	17.9	86.0	
571		2	4+00	0+90	88.4	24.1	87.5	
572		2	4+00	0+80	94.1	20.4	93.2	

Test #	Date	Lift #	Location		DD (PCF)	%M	%PR	Remarks
			N	E				
573	10/17/94	1	4+50	5+00	81.2	21.0	80.4	
574		1	4+00	5+00	91.4	19.7	90.5	
575		1	3+50	5+00	90.4	20.0	89.5	
576		2	5+25	1+10	93.2	19.4	92.2	
577		2	5+25	1+20	90.8	20.8	89.9	
578		2	5+25	1+30	95.2	18.1	94.3	
579	10/18/94	2	6+00	4+00	96.2	20.7	95.2	
580		2	5+50	4+00	88.4	25.4	87.5	
581		2	6+00	4+50	92.9	22.1	92.0	
582		2	6+00	4+75	90.4	17.7	89.5	
583		2	5+75	4+50	88.5	20.8	87.7	
584		2	6+00	3+50	95.1	18.2	94.2	
585		2	6+00	3+75	93.7	21.4	92.8	
586		2	6+25	3+75	99.7	15.5	98.7	
587		2	6+25	4+00	85.2	19.5	84.3	
588		2	5+75	5+00	89.5	20.8	88.6	
589		2	6+00	3+75	93.7	22.5	92.7	
590		2	5+50	3+50	93.9	18.9	93.0	
591		2	5+00	3+50	94.7	19.8	93.8	
592		2	4+50	3+50	91.2	22.7	90.3	
593		2	4+00	3+50	92.5	21.2	91.6	
594		2	4+00	3+75	96.5	20.4	95.5	
595		2	4+00	4+00	98.3	18.9	97.4	
596	10/20/94	2	4+50	4+00	91.4	23.1	90.5	ST-2A, 2B
597		2	4+50	3+50	89.0	22.7	88.1	
598		2	4+50	4+50	85.1	23.8	84.2	
599		2	4+50	5+00	90.8	20.8	89.9	
600	10/21/94	2	4+50	4+00	89.3	26.1	88.4	
601		2	4+50	3+50	87.6	22.5	86.8	
602		2	4+50	4+50	86.4	28.1	85.5	
603		2	4+50	5+00	89.9	22.7	89.0	
604		2	4+00	5+00	88.5	24.1	87.6	
605		2	4+00	5+50	82.6	20.4	81.8	
606		2	4+00	4+50	88.6	24.8	87.7	
607	10/24/94	2	4+00	4+00	92.9	21.2	92.0	
608		2	4+00	3+50	92.0	20.6	91.1	
609		2	3+50	3+50	89.0	23.7	88.2	
610		2	3+50	4+00	87.0	20.0	86.1	
611		2	3+50	4+50	91.3	20.8	90.4	
612		2	3+50	5+00	92.5	21.5	91.6	
613		2	3+50	5+50	88.8	16.7	87.9	
614		2	3+00	5+50	76.7	18.2	76.0	
615		2	3+00	5+00	82.7	19.0	81.9	
616		2	3+00	4+50	90.0	16.0	89.1	
617		2	3+00	4+00	84.8	23.9	84.0	
618		2	3+00	3+50	84.3	17.7	83.5	
619		2	3+00	3+00	85.7	19.5	84.8	
620		2	2+50	3+00	83.2	23.9	82.4	
621		2	2+50	3+50	90.0	20.9	89.1	
622		2	2+50	4+00	88.8	21.6	87.9	
623		2	2+50	4+50	78.8	22.3	78.1	
624		1	2+50	5+00	90.3	21.1	89.4	
625		1	2+50	5+50	89.4	21.4	88.5	
626		1	2+00	5+50	90.8	22.1	89.9	

[illegible]

APPENDIX F

Barrier Protection Layer Quality Control Test Results

Quality Control Testing Summary
Barrier Protection Soil

Sheet 1 of 1

Project: Berlin - Petersburg

Contractor: A-Ritz

Client: EAC

Material Source: Charlie Jones Pit

S&M Job #: 4110900

Sample Frequency (C.Y.) ¹	Sample No.	Date Sampled/ Date Tested	% Passing 3" Sieve ²	Comments
0 - 5000	BPS-1	10-6-93/ 10-14-93	100	Proctor Test (ASTM D-1557) performed on this sample.
10,000	BP-2	11-29-94/ 12-12-94	100	
15,000	BP-3	11-29-94/ 12-12-94	100	
20,000	BP-4	11-29-94/ 12-12-94	100	
25,000	BP-5	11-29-94/ 12-12-94	100	
30,000	BP-6	11-29-94/ 12-12-94	100	

Notes: Track

¹ In-Place Measure

² Test Method ASTM D-422

SOIL & MATERIAL TESTING, INC.
WASHED GRAIN SIZE ANALYSIS SUMMARY SHEET - BARRIER PROTECTION LAYER

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349 DATE: 10/14/93

CLIENT: SMITH & MAHONEY, P.C. INSPECTOR: SMT
MAURICE CROMIER

SAMPLE ID		BP S-1							
DATE RECEIVED		10/6/93							
SOURCE		SAMPLED BY SMITH & MAHONEY							
	LAYER	BARRIER PROTECTION							
P A S S I N G S I E V E	3-INCH	100.0							
	2-INCH	100.0							
	1-INCH	95.2							
	1/2-INCH	86.0							
	1/4-INCH	70.1							
	NO. 10	47.5							
	NO. 40	26.6							
	NO. 200	13.2							

REMARKS: _____

SOIL & MATERIAL TESTING, INC.

57 SOUTH MAIN STREET * CASTLETON, NEW YORK 12033

* PHONES *
CASTLETON OFFICE (518) 732-7205
BINGHAMTON OFFICE (807) 722-7582

S.M.T. JOB NO. 79348
TEST DATE 10/14/93
10/20/93 (REVISED)

LABORATORY COMPACTION REPORT

PROJECT AND LOCATION Berlin Petersberg Landfill

→→→→

ARCHITECT OR ENGINEER Smith & Mahoney, P.C.

CONTRACTOR

A. DESCRIPTION OF SOIL Sand and Gravel, Trace to some Silt

MATERIAL MARK BPS-1 UNIFIED CLASSIFICATION

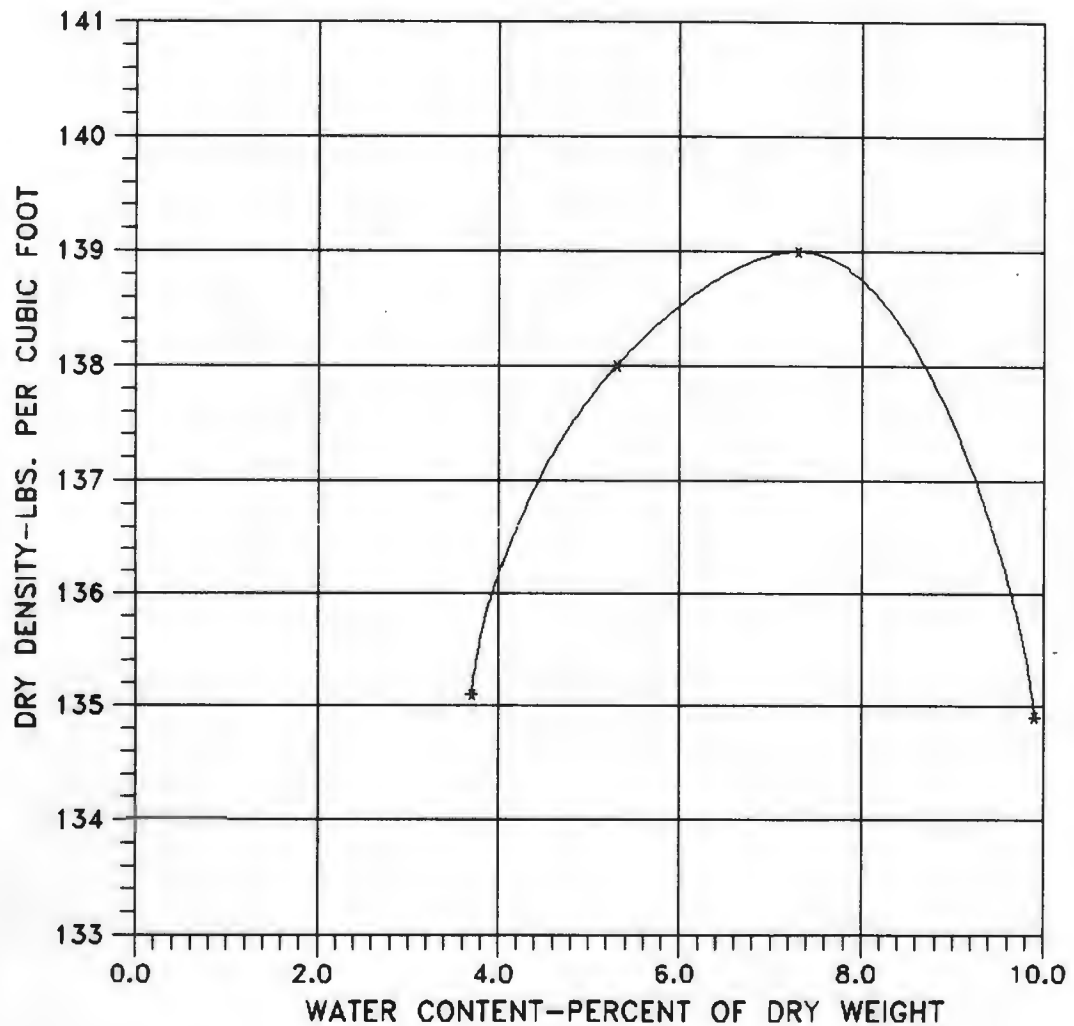
SOURCE OF MATERIAL Barrier Protection - Sample Received 10/6/93

NATURAL WATER CONTENT

LIQUID LIMIT PLASTIC LIMIT PLASTICITY INDEX

B. TEST PROCEDURE USED: ASTM D 1557 (Modified)

C. TEST RESULTS: MAXIMUM DRY DENSITY 139.0 PCF
OPTIMUM WATER CONTENT 7.3 %



SMT - QA/QC

SOIL & MATERIAL TESTING, INC.
FIELD TEST DATA SUMMARY SHEET - LOW PERMEABILITY BARRIER

PROJECT: BERLIN PETERSBERG LANDFILL JOB #: 79349

CLIENT: SMITH & MAHONEY, P.C. DATE: 12/12/94

SAMPLE ID		BP - 2	BP - 3	BP - 4	BP - 5	BP - 6			
DATE RECEIVED		11/29/94	11/29/94	11/29/94	11/29/94	11/29/94			
SOURCE		SAMPLED BY CLIENT	SAMPLED BY CLIENT	SAMPLED BY CLIENT	SAMPLED BY CLIENT	SAMPLED BY CLIENT			
LAYER		BARRIER PROTECTION	BARRIER PROTECTION	BARRIER PROTECTION	BARRIER PROTECTION	BARRIER PROTECTION			
P A S S I N G S I E V E	3-INCH	100.0		100.0					
	2-INCH	95.4	100.0	91.7	100.0	100.0			
	1-INCH	82.0	92.0	87.1	93.7	92.1			
	1/2-INCH	72.1	80.0	76.7	84.8	78.6			
	1/4-INCH	62.8	64.4	65.2	73.2	66.6			
	NO. 10	18.8	41.3	57.3	59.7	51.4			
	NO. 40	38.2	21.8	43.9	42.7	36.0			
	NO. 200	22.1	9.2	32.4	19.3	21.8			

REMARKS: _____

APPENDIX G

Topsoil Layer Quality Control Test Results



SOIL & MATERIAL TESTING, INC.

57 SOUTH MAIN STREET • CASTLETON, N.Y. 12033

Office
Castleton

Telephone
(518) 732-7205
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Office
Binghamton
Kingston
Pittsfield

Telephone
(607) 722-1582
(914) 336-4471
(413) 499-5338

October 11, 1995

Mr. Peter Sutherland
Smith & Mahoney, P.C.
P.O. Box 22047
Albany, New York 12201-0247

RECEIVED

OCT 13 1995

Smith & Mahoney, P.C.

SMT 80751

Re: DAC

Gentlemen:

Listed below are the results of the laboratory tests on the Planting Material samples that were submitted for testing on 10/4/95.

Id: Top Soil

Sieve Analysis: (Washed)

Sample Id:	Sludge	Protective Layer
<u>Sieve</u>	<u>% Passing</u>	<u>% Passing</u>
2"	100.0	100.0
1"	100.0	89.8
1/2"	100.0	82.8
1/4"	100.0	72.2
#10	60.8	51.0
#40	25.5	36.0
#200	13.6	17.7

pH Results

pH	6.4	7.2
----	-----	-----

Organic Content Results Loss on Ignition

% Organic Content:	59.61	2.22	
Blended Organic Content	10%	90.0%	Total
	5.96	2.00	7.96

If you have any questions regarding these test results, please do not hesitate to contact us.

Sincerely yours,

Lizette L. Strait
Vice President
Field & Laboratory Services

ILS

APPENDIX H

Quality Assurance/Quality Control Plan

QA/QC Plan

EAC Systems, Inc.
79 North Pearl Street
Albany, New York 12207

Berlin/Petersburg Landfill Closure

Quality Assurance/Quality Control Plan

Thomas E. Julien
Project Manager

July 1991

Prepared by:



SMITH & MAHONEY, P.C.

ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS

79 NORTH PEARL STREET, ALBANY, NEW YORK 12207

(518) 463-4107

128 ROUTE 6A, P.O. BOX 1591, SANDWICH, MASSACHUSETTS 02563

(508) 833-0219

Berlin/Petersburg Landfill
Quality Assurance/Quality Control Plan

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1.0 INTRODUCTION

This Quality Assurance/Quality Control Plan (the "QA/QC Plan") has been prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) Solid Waste Management Regulations 6 NYCRR Part 360-2.8. The QA/QC Plan has been developed specifically for the Berlin/Petersburg Landfill Closure. The closure encompasses an estimated area of 7.4 planimetric acres of landfill final cover system. The cover system will be comprised, from the lower to upper final grade, of the following:

1. Twelve (12) inches of gas venting layer soil, bounded on its upper and lower surfaces with a geosynthetic filter fabric;
2. Eighteen (18) inches of low permeability barrier soil;
3. Twenty four (24) inches of a barrier protection layer; and,
4. A six (6) inch layer of topsoil and vegetative support layer.

The purpose of the QA/QC Plan is to facilitate monitoring of the landfill final cover system installation. The monitoring program established for this project shall ensure that all construction-related activities are executed in accordance with Part 360-2.13. The contents of the QA/QC Plan will fulfill these objectives by describing the following:

1. The responsibilities of the QA/QC management and chain of command for the QA/QC contractors and inspectors;
2. The experience and training for the contractor, contractor personnel, and QA/QC inspectors assigned to the project; and,
3. The testing procedures and protocols for the major phases of construction.

The QA/QC Plan shall facilitate monitoring of the construction of the landfill final cover system to provide assurance that the final cover system will be satisfactory in terms of both the quality of material and the resulting workmanship. The material quality will be monitored through a series of background and interval-based QC tests. The quality of workmanship and compliance with required performance standards shall be verified by associated QA tests. Technical specifications prepared as part of the Contract Documents for this project shall include material and performance requirements for each layer of the landfill final cover system. Responsibilities for each party involved in the contract for performing the QC and QA testing prescribed in this QA/QC plan shall be identified in these Contract Documents. In no way shall the responsibilities and requirements listed in the Contract Documents deviate from the specific requirements included in this QA/QC plan. Where any such discrepancy may occur, this QA/QC plan shall govern.

2.0 QA/QC MANAGEMENT AND CHAIN OF COMMAND

During each phase of construction, involved parties will include the Owner, Engineer, and the Contractor. A general description of each party's responsibilities is set forth as follows:

2.1 Owner

The Owner shall have primary authority and responsibility for the administration of the project. The Owner shall be responsible for securing an agreement with a contractor capable of demonstrating the qualifications and level of experience necessary to construct a landfill final cover system. The Owner shall also retain the services of a professional engineer, licensed in the State of New York, to evaluate the experience and training of the contractor, and to administer the project, and monitor the performance of the required work. The responsibilities for performance of all QA/QC testing included in this QA/QC plan shall be dictated by the Owner through the Contract Documents established for the project.

2.2 Engineer

The Engineer shall function as the Owner's representative during the construction phase of the project and shall have primary responsibility for monitoring the work and QA/QC testing. The Engineer shall also maintain the appropriate records and reports necessary for the final certification of the project.

During construction, the Engineer shall provide a full-time Resident Engineer (RE) on site through the installation of the low permeability barrier layer and a part-time RE for the remainder of the final cover system construction. The RE shall monitor the construction of the project and act as a liaison between the Owner, Engineer, and the Contractor. The RE shall also observe construction, prepare daily reports, review progress made by the Contractor, and monitor the performance of all QA/QC field testing.

A Project Engineer shall supervise and direct the RE to provide for the proper monitoring of the technical requirements for the construction project, and shall monitor the recording of information necessary for the certification of the landfill final cover system. The Project Engineer shall also have additional responsibilities necessary for the proper administration of the project, as necessary.

The Engineer shall, subsequent to successful completion of the project, prepare and submit to DEC a construction report, as certified by a licensed professional engineer, for the landfill final cover system. The report shall demonstrate how the work complies with the applicable regulatory requirements for the construction of a landfill final cover system.

2.3 Contractor

The Contractor shall be responsible for the supply of all materials, labor, and equipment incidental to the final cover system installation and associated work. The Contractor shall

provide for quality control and quality assurance of the work by assigning a Quality Control Manager (QCM) to the project. The QCM shall work closely with the RE and shall be responsible for the timely and accurate submission of all required test results. A project superintendent, provided by the Contractor, shall have overall responsibility for the project and shall supervise and direct the QCM and all other contractor personnel.

3.0 EXPERIENCE AND TRAINING

The work tasks associated with the construction of a landfill final cover system are very similar to those of a large-scale earth moving project. The necessary experience of the engineer and contractor personnel for the project may be broken down into two general areas: company-wide experience and company personnel experience.

3.1 Company-Wide Experience

3.1.1 Engineer

The engineering firm designated to supervise the final cover system installation shall have a minimum five (5) years experience in the supervision and administration of similar, successful projects.

3.1.2 Contractor

The contractor designated to construct the final cover system shall have a minimum of five years experience in similar, successfully completed projects.

3.2 Personnel Experience

The individual experience which will be required of the Engineer's and Contractor's key personnel is set forth in the following section. Depending on the experience of the engineer and/or contractor, some of these positions may be served by one individual.

3.2.1 Engineer's Personnel

Licensed Engineer:

Education: minimum B.S. in Engineering.

Experience: minimum 5 years design, construction observation, and coordination of similar, successful earth moving or waste containment projects; licensure as a Professional Engineer in New York State; thorough understanding of soil properties and testing.

Project Engineer:

Education: minimum B.S. in Engineering or related science.

Experience: minimum 2 years design, construction observation, and coordination of similar, successful earth moving or waste containment projects; thorough understanding of soil properties and testing.

Resident Engineer (RE):

Education: minimum A.A.S. in Engineering Technology or related science; certification for use of nuclear moisture-density gauges.

Experience: minimum 1 year design and construction observation of similar, successful earth moving or waste containment projects; thorough understanding of soil properties and testing.

Technician:

Education: certification for use of nuclear moisture-density gauges.

Experience: 0-1 year experience performing routine field and/or lab tests on soils and associated construction materials; knowledge of soil properties and testing.

3.2.2 Contractor Personnel

Superintendent - A minimum of five (5) years experience directing work crews and coordinating similar successfully completed projects.

Foreman - A minimum of two (2) years experience directing work crews on similar, successfully completed projects.

Quality Control Manager - A minimum of two (2) years experience working on similar, successfully completed projects; must possess a thorough understanding of soil properties and testing.

Equipment Operators - A minimum of one (1) year experience operating heavy equipment.

Laborers - A minimum of one (1) year experience on earth moving projects.

4.0 TESTING PROCEDURES AND PROTOCOLS

4.1 Definitions

4.1.1 Quality Control (QC) Testing

Quality control shall be maintained through performance of initial background/qualification and interval-based QC tests on soils to ensure materials meet and are capable of consistently meeting or exceeding the requirements set forth in 6 NYCRR Part 360.

Background/qualification testing shall be performed on all materials prior to their use in the construction of the landfill final cover system to determine the adequacy of each proposed material for its intended use. In addition, such testing shall be used to establish parameters and criteria for certain types of interval-based QC and QA testing, where tests must be initially performed to define pass/fail limits.

The interval-based testing shall be performed to verify the consistency of the physical properties of approved materials. Throughout construction, such testing shall serve to continually refine quality assurance parameters. In addition, performance audits shall be conducted during the construction period to provide an independent check of the testing procedures implemented at the certified testing laboratories providing services for this project.

4.1.2 Quality Assurance (QA) Testing

The purpose of QA testing is to verify that all installed layers of the landfill final cover system meet or exceed the performance standards set forth in the applicable sections of 6 NYCRR Part 360. Furthermore, QA testing serves to demonstrate the contractor's level of workmanship in the installation of these materials.

4.2 Soil Components

Soil is used in the construction of a landfill final cover system to meet the regulatory requirements for a gas venting layer, a low-permeability barrier layer, a barrier protection layer, and a vegetative support or topsoil layer. The specific testing procedures and protocols for these soil layers are summarized below.

4.2.1 Gas Venting Layer

4.2.1.1 QC Testing

Initial background/qualification QC tests for the gas venting layer soils shall begin with procurement of bulk samples from the proposed soil borrow location(s), as directed by the RE.

At least one (1) sample, weighing approximately 4-5 pounds, shall be labeled with the following information:

- 1.) Project name,
- 2.) Sample number,
- 3.) Proposed final cover system component,
- 4.) Date of sampling,
- 5.) Sampler's name, and
- 6.) Location of sample.

The sample(s) shall be delivered to a certified soil testing laboratory and tested for the following parameters, in accordance with 6 NYCRR Part 360-2.13(p) and with protocols outlined by the American Society for Testing and Materials (ASTM), as noted.

The following tests shall be performed initially to establish conformance with the required performance standards.

Permeability (ASTM D-2434)

The gas venting material will be required to have a hydraulic conductivity equal to or greater than 1×10^{-3} cm/sec. Any material not able to meet or exceed this hydraulic conductivity will be rejected.

Particle Size Analysis (ASTM D-422)

The gas venting layer soil will be required to have less than 5% by weight passing the #200 sieve, and no particle larger than 3 inches in any dimension. Any material not meeting these requirements will not be allowed for use without preprocessing to remove the unacceptable portions.

Additional tests, as listed below, shall be performed on material achieving the minimum requirements specified above. Information derived from these tests will establish parameters for subsequent QA testing, as required, to monitor

moisture and density of the material, in accordance with the technical specifications.

Moisture Content (ASTM D-2216)

Natural moisture content of the proposed material will be measured for comparison with workable moisture ranges identified by other background tests (see below) to evaluate the possible need for adjusting moisture during construction of this layer.

Moisture-Density Relationship Testing (ASTM D-1557)

A moisture-density relationship will be established to determine the moisture content and dry density necessary to achieve a specified level of soil compaction. Also, such parameters shall simulate expected typical field conditions. Technical specifications shall require this material to be compacted to 90% of the maximum dry density, according to this relationship.

Interval-based QC testing shall consist of repetition of the above-mentioned tests on materials delivered to the project site. Such testing shall serve to verify material conformance and consistency. Tests shall be repeated at the following intervals (Note: Yardage values are stated as in-truck volumes, as delivered to the project site.):

Permeability (ASTM D-2434) - One sample per 5000 c.y.

Grain-size analysis (ASTM D-422) - One sample per 1000 c.y.

Moisture Content (ASTM D-2216) - One sample per 1000 c.y.

Moisture-Density Relationship testing (ASTM D-1557) - One sample per 5000 c.y. and each time soil material changes are noted.

4.2.1.2 QA Testing

Upon completion of lift installation, field QA testing shall be performed with a nuclear moisture-density gauge, as specified by ASTM D-2922 and ASTM D-3017, respectively. This form of testing, used in conjunction with the pass/fail criteria established during background testing, enable monitoring of the material to consistently achieve the required soil characteristics (in this case, soil dry density). These tests will be performed at a minimum frequency of nine (9) tests per acre per lift.

If moisture-density testing fails to satisfy the pass/fail criteria, various corrective measures (addition or removal of moisture content, addition of compactive effort, etc.) shall be discussed with all involved parties and corrective action shall be implemented in a timely manner, as directed and approved by the Engineer and Owner. Upon completion of corrective measures, affected areas will be re-tested with the nuclear moisture-density gauge, in accordance with the above-stated procedure.

4.2.2 Low Permeability Barrier Layer

4.2.2.1 QC Testing

As with the initial background QC tests for the gas venting layer, low permeability barrier soil samples shall be procured from the proposed soil borrow location(s), as directed by the RE. At least one (1) sample, weighing approximately 4-5 pounds, shall be labeled with the following information:

- 1.) Project name,
- 2.) Sample number,
- 3.) Proposed final cover system component,
- 4.) Date of sampling,
- 5.) Sampler's name, and
- 6.) Location of sample.

The sample(s) shall be delivered to a certified soil testing laboratory and tested for the following parameters, in accordance with 6 NYCRR Part 360-2.13(q) and with protocols outlined by the American Society for Testing and Materials (ASTM), as noted.

The first test listed, permeability, shall be performed initially to verify conformance with the required performance standards. Additional tests, as listed below, shall be performed to identify the associated physical properties of the material and to establish parameters for material

placement to ensure continued conformance with the required permeability standard.

Permeability Test (ASTM D-5084)

A minimum of one (1) triaxial permeability test shall be performed to demonstrate that the proposed material is capable of achieving a maximum hydraulic conductivity of 1×10^{-7} cm/sec.

Atterberg Limits (ASTM D-4318)

Atterberg limits will be established to evaluate the material consistency and indicate the range of moisture content through which the soil displays characteristics of plasticity.

Particle Size Analysis (ASTM D-422)

The low permeability barrier soil will be tested to monitor the clay content, or percentage of particles passing the 0.005 mm sieve.

Natural Moisture Content (ASTM D-2216)

The natural moisture content of the low permeability barrier soil will be compared with workable ranges identified by a moisture-density relationship. Subsequently, the data will be used to evaluate the need for adjustments to the soil (addition or removal of moisture) during construction.

Moisture - Density Relationship Testing (ASTM D-1557)

A moisture density relationship will be established to determine the range of moisture contents and dry densities at which to install the proposed material.

Moisture - Density - Permeability Relationship

The previously mentioned moisture-density relationship and at least three (3) triaxial permeability tests of the proposed soil, remolded to pre-determined values of moisture content and dry density, will be analyzed to establish appropriate pass/fail criteria for the low permeability barrier material. This information will be used during construction, in conjunction with nuclear moisture/density testing, to evaluate workmanship.

Interval-based QC testing shall consist of repetition of the above-mentioned tests on materials delivered to the project site. Such testing shall serve to verify material conformance and consistency. Tests shall be repeated at the following intervals (Note: Yardage values are stated as truck volumes, as delivered to the project site.):

Moisture Content (ASTM D-2216) - One sample per 1000 c.y.

Atterberg Limits (ASTM D-4318) - One sample per 1000 c.y.

Grain Size Analysis (ASTM D-422) - One sample per 2500 c.y.

Moisture-Density Relationship (ASTM D-1557) - One sample per 5000 c.y.

Permeability Test (ASTM D-5084) - One sample per 5000 c.y.

Moisture-Density-Permeability Relationship
- The above-stated permeability results shall be plotted with the initial Moisture-Density-Permeability Relationship to refine the background pass/fail criteria. A new Moisture-Density-Permeability Relationship shall be established if a significant change in material properties occurs.

4.2.2.2 QA Testing

The following field QA test shall be performed on the low permeability barrier layer upon installation of each soil lift, in accordance with Part 360-2.13(j)(1)(iii):

Nuclear Moisture-Density Test (ASTM D-3017, D-2922)

- Nine tests per acre per lift.

NOTE:

Deviation of moisture content values derived from field and laboratory methods occurs due to the presence of hydrogen bonds in soil other than those found in water. Therefore, the nuclear moisture-density gauge will be calibrated to counter this occurrence on a weekly basis.

This procedure shall consist of obtaining five or more samples at field test points for laboratory testing. Both field and laboratory data will be compared and a compensation value will be computed. This value will then be entered into the gauge memory. Therefore, subsequent field measurements with the gauge will automatically compensate for any deviation.

Upon completion and acceptance of QC testing and field moisture-density testing, undisturbed soil samples shall be obtained at a frequency of one (1) per acre per lift. Undisturbed samples will be delivered to an approved certified laboratory for the following tests:

- 1.) Falling head/rising tail flexible wall permeability (ASTM D-5084).
- 2.) Atterberg limits (ASTM D-4318).
- 3.) Grain size analysis (ASTM D-422).
- 4.) Moisture content (ASTM D-2216).

An alternate sample will also be obtained directly adjacent to the initial sample. The alternate sample will serve as a replacement if the initial sample is disturbed or damaged in transit, or if the initial sample fails the laboratory testing. Testing of the alternate sample will only be performed as directed by the Engineer. Unused samples will be discarded by the laboratory.

In all cases, test failures will be reviewed by the Engineer to determine cause. The Engineer will discuss appropriate corrective measures with the Contractor and subsequently implement corrective action.

All in-place sample and testing locations shall be repaired with bentonite or other approved method, as approved by the Engineer.

4.2.3 Barrier Protection Layer

4.2.3.1 QC Testing

As with the initial background QC tests for the previously-mentioned soil layers, barrier protection soil samples shall be procured from the proposed soil borrow location(s), as directed by the RE. At least one (1) sample, weighing approximately 4-5 pounds, shall be labeled with the following information:

- 1.) Project name,
- 2.) Sample number,
- 3.) Proposed final cover system component,
- 4.) Date of sampling,
- 5.) Sampler's name, and
- 6.) Location of sample.

The sample(s) shall be delivered to a certified soil testing laboratory and tested for the following parameter, in accordance with 6 NYCRR Part 360-2.13(q) and with protocols outlined by the American Society for Testing and Materials (ASTM), as noted.

Grain-size analysis (ASTM D-422)

The barrier protection material will be required to contain no particle larger than three (3) inches in any dimension. Any material not meeting this requirement will be considered unacceptable. However, the engineer may, after reviewing the test data, pre-approve some variation in this requirement.

Interval-based QC testing shall consist of repetition of the above-mentioned test on materials delivered to the project site. Such testing shall serve to verify material conformance and consistency. This test shall be repeated at the following interval (Note: Yardage value is stated as an in-truck volume, as delivered to the project site.):

Grain Size Analysis (ASTM D-422) - One sample per 5000 c.y.

4.2.4 Topsoil

4.2.4.1 QC Testing

As with the initial background QC tests for the previously-mentioned soil layers, topsoil samples shall be procured from the proposed soil borrow location(s), as directed by the RE. At least one (1) sample, weighing approximately 4-5 pounds, shall be labeled with the following information:

- 1.) Project name,
- 2.) Sample number,
- 3.) Proposed final cover system component,
- 4.) Date of sampling,
- 5.) Sampler's name, and
- 6.) Location of sample.

The sample(s) shall be delivered to a certified soil testing laboratory and tested for the following parameters, in accordance with 6 NYCRR Part 360-2.13(s) protocols outlined by the American Society for Testing and Materials (ASTM), as noted.

Particle size analysis (ASTM D-422)

Particle size analysis shall be performed on proposed topsoil samples to ensure no large particles or deleterious materials are present to inhibit root growth. Any materials with particles greater than three (3) inches in any dimension shall be rejected.

Organic content (ASTM D-2974)

Topsoil samples shall be tested for organic content to ensure a proper level of nutrients are present. The acceptable range of organic content shall be 2 to 6 percent.

pH (ASTM D-2976)

Topsoil samples shall be tested for pH to ensure use of a relatively neutral soil. Acceptable pH values shall range from 6.5 to 7.5.

Interval-based QC testing shall consist of repetition of the above-mentioned tests on materials delivered to the project site. Such testing shall serve to verify material consistency. These tests shall be repeated at the following intervals (Note: Yardage values are stated as in-truck volumes, as delivered to the project site.):

Grain Size Analysis (ASTM D-422) - One sample per 5000 c.y.

Organic Content (ASTM D-2975) - One sample per 5000 c.y.

pH (ASTM D-2976) - One sample per 5000 c.y.

4.2.5 Soil Layer Depth

The depth of all soil layers will be established by using survey grade stakes. Also, the depth of the material will be monitored daily by the RE. The grade staking will be conducted prior to placement, grading, and rolling of each soil lift. When installing grade stakes, necessary means shall be employed to prevent damage to installed filter fabrics.

An "as-built" survey will be reviewed by the Engineer to confirm the final soil layer depth. The survey will be approved by the Project Engineer prior to placement

of additional lifts or layers of material.

4.2.6 Soil Layer Area

The areal extent of soil layer placement will be staked prior to commencement soil placement and verified upon completion of each lift. The area of soil placement will be established with survey stakes delineating the horizontal extent of each lift area. The area stakes will be monitored and approved by the RE. Upon final completion of the project, "as-built" drawings will be provided to show the horizontal extent of the entire landfill final cover system.

4.2.7 Vegetative Cover

The topsoil layer will be visually observed by the RE for the establishment of vegetative cover within four (4) weeks of the final placement of topsoil, seed, fertilizer, and mulch.

4.3 Geosynthetic Component

The geosynthetic component of the final cover system (filter fabric) shall be used as part of the landfill final cover system to separate the gas venting layer from the underlying daily cover subgrade and the overlying low permeability barrier layer. The specific testing procedures and requirements for the geosynthetic material are summarized below.

4.3.1 QC Testing

Since the geosynthetic components of the final cover system represent manufactured materials produced under controlled conditions, background QC testing for these materials shall consist of a certification from the manufacturer that materials to be supplied for the job meet or exceed the required criteria, as set forth in this document and in accordance with 6 NYCRR Part 360-2.13(o).

The filter fabric supplied for this project shall be required to meet or exceed the requirements stated below:

Apparent Opening Size Analysis (ASTM D-4751) - All filter fabric used for this project shall conform to the following criteria:

$$\frac{O_{95} \text{ (geotextile)}}{d_{85} \text{ (soil)}} \leq 2$$

$$\frac{O_{95} \text{ (geotextile)}}{d_{15} \text{ (soil)}} \geq 2$$

where O_{95} is the apparent opening size of the geotextile at which 95 percent of the soil particles will pass; d_{85} is the soil particle size at which 85 percent of the particles are finer; and d_{15} is the soil particle size at which 15 percent of the particles are finer.

In addition to the above-stated test, the manufacturer shall certify that the filter fabric's hydraulic conductivity, physical characteristics, and chemical characteristics shall not be significantly altered due to the surrounding landfill final cover system soils or leachate generated within the landfill limits.

Interval-based QC testing shall consist acquiring manufacturer's certification for the above-mentioned Apparent Opening Size Analysis (ASTM D-4751) for each roll of material delivered to the job site.

When samples are required in the field, they shall be approximately 4-5 square feet in size, and shall be taken from the outside lap of a designated roll. The samples shall be labeled by project name, sample number, roll number, date, and sampler's name, and sent to a certified laboratory for performance of the required testing, as approved by the owner and engineer.

4.3.2 QA Testing

During construction, at least one sample of filter fabric shall be taken, at random, and tested at a certified independent laboratory for apparent opening size (ASTM D-4751). Additional testing shall be performed, as required, to ensure conformance with the above-stated material requirement.

APPENDIX I

Construction Photos



GAS VENTING SOIL LAYER PLACEMENT



GAS VENT CONSTRUCTION



GEOTEXTILE FILTER FABRIC INSTALLATION



LOW PERMEABILITY SOIL PROCUREMENT - BABCOCK ROAD PIT



LOW PERMEABILITY SOIL INSTALLATION



PERIMETER TRENCH CONSTRUCTION WITH LOW PERMEABILITY SOIL



LOW PERMEABILITY SOIL INSTALLATION - LIFT TWO



BARRIER PROTECTION SOIL INSTALLATION - LIFT ONE



ABOVE: TOPSOIL LAYER AFTER BEING DISCED
BELOW: PERIMETER TRENCH PRIOR TO INSTALLATION OF VEGETATIVE LAYER
(NOTE INLET TO STREAM DIVERSION CULVERT IN UPPER RIGHT HAND
CORNER)



ABOVE: PERIMETER TRENCH SHOWING LOCATION OF TWO DRAINAGE CULVERTS
FOR DISCHARGE OF RUNOFF
BELOW: TOPSOIL LAYER AFTER SEEDING AND MULCHING



ESTABLISHED VEGETATIVE LAYER AFTER ONE SEASON GROWTH



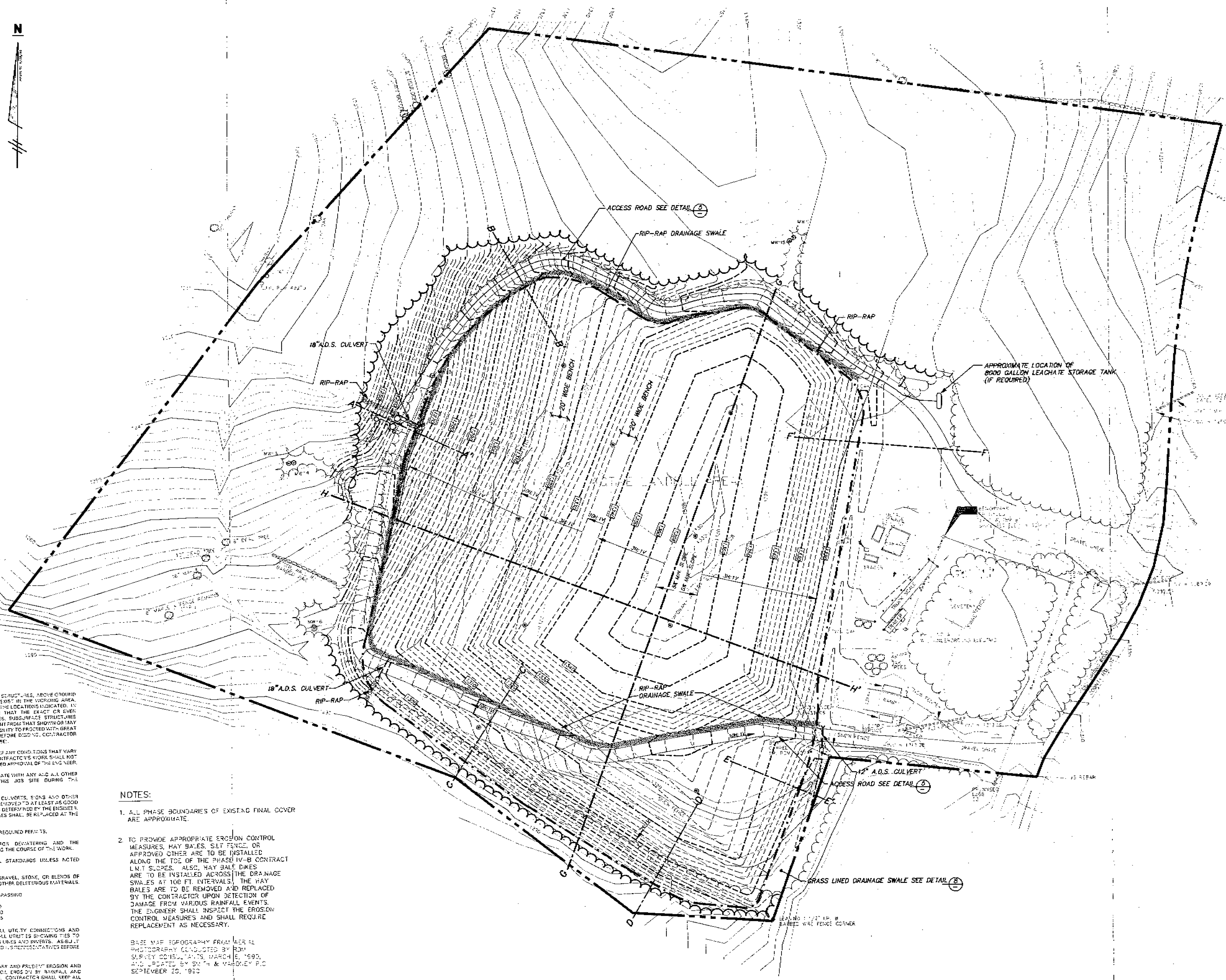
ABOVE: ESTABLISHED VEGETATIVE LAYER ON TOP SURFACE OF LANDFILL
AFTER ONE SEASON OF GROWTH
BELOW: RECONFIGURED DRAINAGE OUTFALL AREA AFTER INSTALLATION OF
DRAINAGE BLANKET

APPENDIX J

Final Grading Plan and Surface Topographic Survey



- LEGEND**
- EXISTING:**
- CONTOUR
 - APPROXIMATE PROPERTY LINE
 - DISCHARGE MONITORING WELL
 - EDGE OF ACCESS
 - APPROXIMATE LIMITS TO SOLID WASTE
- PROPOSED:**
- FINAL GRADING CONTOUR
 - H --- H' LANDFILL PROFILES (SEE SHEET # 6)
 - A --- A' LANDFILL SECTIONS (SEE SHEET # 7)
 - GAS VENT
 - RIP-RAP



GENERAL NOTES

THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, INCLUDING EXISTING UTILITIES BELIEVED TO EXIST IN THE VICINITY AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS ADVISED THAT THE EXISTING SUBSURFACE STRUCTURES, SUCH AS PIPES, LINES, STRUCTURES, ETC., ARE NOT SHOWN. THE AREA MAY BE DIFFERENT FROM THAT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT WITH GREAT CARE ANY EXISTING UTILITY WORK. 48 HOURS BEFORE THE START OF WORK, THE CONTRACTOR SHALL CALL UP N.Y. 1-800-362-7675 TO LOCATE ANY UTILITIES.

THE ENGINEER SHALL BE NOT RESPONSIBLE FOR ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.

THE CONTRACTOR IS NOTIFIED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.

THE CONTRACTOR SHALL: RESTORE LAINS, CULVERTS, ETC. AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR DISTURBED TO AT LEAST AS GOOD A CONDITION AS BEFORE BEING DISTURBED AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.

CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF THE WORK.

ALL SITE FILL SHALL MEET SELECTED FILL STANDARDS UNLESS NOTED OTHERWISE ON THE DRAWING.

SELECTED FILL: SOUND, DURABLE, SAND, GRAVEL, STONE, OR BLEND OF THESE MATERIALS, FREE FROM COARSE OR OTHER DESTRUCTIVE MATERIALS.

SIEVE	PERCENT PASSING
4 INCH	100
2 1/2 INCH	100
2 INCH	100
1 1/2 INCH	100
1 INCH	100
3/4 INCH	100
3/8 INCH	100
NO. 20	100
NO. 40	100
NO. 60	100
NO. 100	100
NO. 200	100

THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE DETAILED AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENCH, VALVES, LEAKS OR LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE ENGINEER AND APPROVED BEFORE UTILITIES ARE ACCEPTED.

CONTRACTOR SHALL EXERCISE ALL NECESSARY PREVENTIVE EROSION AND SLOPE CONTROL MEASURES TO MINIMIZE SOIL EROSION BY RAINFALL AND WIND. CONTRACTOR SHALL MAINTAIN ALL EXISTING DRIVEWAYS FREE AND CLEAR OF SOIL AND DEBRIS TRACKED BY TRUCKS AND AUTO TRAFFIC TO AND FROM THE PROJECT ON A DAILY BASIS.

ALL TRENCH EXCAVATION AND ANY REQUIRED EROSION AND SLOPE CONTROL SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISED EROSION CONTROL STATE INDUSTRIAL CODE RULE 23 AND CDEA REGULATIONS FOR CONSTRUCTION.

NOTES:

1. ALL PHASE BOUNDARIES OF EXISTING FINAL COVER ARE APPROXIMATE.
 2. TO PROVIDE APPROPRIATE EROSION CONTROL MEASURES, HAY BALES, SILT FENCE, OR APPROVED OTHER ARE TO BE INSTALLED ALONG THE TOP OF THE PHASE IV-B CONTRACT LIMIT SLOPES. ALSO, HAY BALE Dikes ARE TO BE INSTALLED ACROSS THE DRAINAGE SWALES AT 100 FT. INTERVALS. THE HAY BALES ARE TO BE REMOVED AND REPLACED BY THE CONTRACTOR UPON DETECTION OF DAMAGE FROM VARIOUS RAINFALL EVENTS. THE ENGINEER SHALL INSPECT THE EROSION CONTROL MEASURES AND SHALL REQUIRE REPLACEMENT AS NECESSARY.
- BASE MAP TOPOGRAPHY FROM AERIAL PHOTOGRAPHY CONDUCTED BY RAM SURVEY CONSULTANTS, INC. IN 1990, AND UPDATED BY SMITH & MAHONEY P.C. ON SEPTEMBER 20, 1992.
- FINAL GRADING CONTOURS REPRESENT ELEVATIONS AFTER PLACEMENT OF FINAL COVER SYSTEM.

revisions			
#	REVISION FOR REVIEW	DATE	BY
1	ISSUED FOR REVIEW	JULY 1991	RAM

SMITH & MAHONEY, P.C.
CONSULTING ENGINEERS • SURVEYORS
LAND PLANNERS

79 NORTH PEARL STREET ALBANY, NEW YORK

Alteration of this document, except by a licensed Professional Engineer, is illegal.

signature: *[Signature]*
signature

designed by	MY
drawn by	RAM/ADD
checked by	PTS
approved by	GAM
scale	1" = 50'
date	JULY 1991

TOWNS OF BERLIN AND PETERSBURG, STATE OF NEW YORK

BERLIN / PETERSBURG LANDFILL

FINAL GRADING PLAN

sheet number	
5	
S OF S	
rev. no.	dwg. no.
A	F-910/01

N



LANDS W/T
LLOYD BURDICK
&
MABEL A. BURDICK

LANDS W/T
LLOYD BURDICK
&
MARY BURDICK

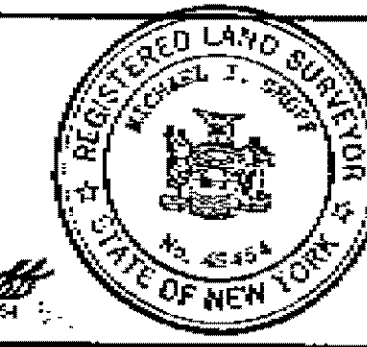
LANDS W/T
RICHARD DAKES
MARTHA DAKES

LANDS W/T
DAVID DUGHANE
&
MARL'S DUGHANE

- NOTES:
1. TOPOGRAPHIC DATA OBTAINED FROM SURVEY OF THE AREA WAS FIELD LOCATED BY SMITH & MAHONEY, P.C. ON MARCH 21, 22, & 23, 1990 AND SUBMITTED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION FOR REVIEW AND APPROVAL.
 2. THIS MAP IS A PRELIMINARY MAP FROM AERIAL PHOTOGRAPHY LOCATED BY SMITH & MAHONEY, P.C. ON MARCH 21, 22, & 23, 1990 AND SUBMITTED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION FOR REVIEW AND APPROVAL.
 3. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.
 4. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.
 5. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.
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 8. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.
 9. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.
 10. ELEVATIONS SHOWN ON THIS MAP ARE BASED ON THE NEW YORK STATE DATUM.



DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
SCALE
DATE



TOWNS OF BERLIN AND PETERSBURG, STATE OF NEW YORK
BERLIN / PETERSBURG LANDFILL

SURFACE TOPOGRAPHIC SURVEY

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sheet number
1
rev. no.
dwg. no.
F-91144

SMITH & MAHONEY, P.C.
ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS
382 BROADWAY ALBANY, NEW YORK

DESIGNED BY
DRAWN BY
CHECKED BY
APPROVED BY
SCALE
DATE

Revisions		drawn by	app'd by	date	Revisions		drawn by	app'd by	date
E	TOPOGRAPHY UPDATED	RDD	MIG	5/10/91					
D	TOPOGRAPHY UPDATED	RDD	MIG	5/1/91					
C	TOPOGRAPHY UPDATED	RDD	MIG	3/22/91					
B	TOPOGRAPHY UPDATED	RDD	MIG	2/21/91					
A	ISSUED FOR REVIEW	RDD	MIG	11/26/90	F	TOPOGRAPHY UPDATED	JPP	EN	3/24/91

APPENDIX K

Daily Construction Reports



SMITH & MAHONEY, P.C. • 540 BROADWAY, P.O. BOX 22047, ALBANY, NEW YORK 12201-2047 • (518) 463-4107
ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS

ENGINEERS DAILY CONSTRUCTION REPORT

Page No. _____

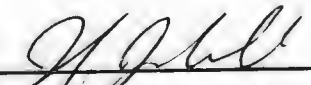
DATE 8/5/93	JOB NO 4110400/1122	CONTRACTORS FORCES & EQUIPMENT IN USE						
PROJECT BERLIN/PETERSBURGH LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.		
LOCATION PETERSBURGH, NY	3	TRUCKS	8	1	FORMAN	8		
CONTRACTOR RITZ CONSTRUCTION	1	JD 850 DOZER	8	3	OPERATOR	8		
WEATHER	TEMP ° AT ° AT	AM PM	1	D68P DOZER	8	1	LABORER	8
SUPERINTENDENT OR FOREMAN MARTY BERNARDU	1	936 CAT LOADER						
HOW WORKED	OWNER EAL							

WORK PERFORMED:

- ARRIVED ON SITE AT 9:30 AM ✓ NO CORRIER.
- MARTY INFORMED US THAT HE HAD BEEN WORKING (1) TRUCK TUESDAY, (2) TRUCK WED, AND (3) TODAY.
- MARTY ANTICIPATES STARTING GAS VENTS AND CLAY DURING THE MIDDLE OF NEXT WEEK. HE HAS (8) GAS VENTS ON ORDER → NEEDS (9).
- WENT TO JONES PIT TO SEE OPERATIONS/MATERIAL. TOOK SAMPLES GV-14 & GV-15.
- WENT TO BACKCOCK PIT (CLAY). NO WORK BEING DONE THERE. DEATH IN BACKCOCK FAMILY COULD DELAY MINING.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

RESIDENT ENGINEER OR FIELD REPRESENTATIVE



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ENGINEERS DAILY CONSTRUCTION REPORT

Page No. _____

DATE 8/6/93	JOB NO. 4110406/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT BERLIN/PETERSBURGH LANDFILL	NO.	Equipment Type	Hrs.	NO.	MANPOWER	Hrs.	
LOCATION PETERSBURGH, NY	3	TRUCKS	8	1	FOREMAN	8	
CONTRACTOR RITZ CONSTRUCTION	1	JD 850 DOZER	8	3	OPERATOR	8	
WEATHER	TEMP	° AT	AM	1	D68P DOZER	8	
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	1	936 CAT LOADER	8				
HRS. WORKED	OWNER EAL						

WORK PERFORMED:

• ARRIVED ON SITE @ 9:30 AM

• MARTY NOT ON SITE, IN ALBANY AT AN EMERGENCY MEETING, SHOULD BE BACK AT 11:00 AM.

• 3 TRUCK Hauling GAS VENT MATERIAL. NOT AS DONEY AND SOME LARGE CHUNKS MIXED IN.

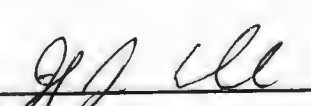
• AT JONES P.T., CREWS NOW EXCAVATING IN UPPER BENCH. AS THEY RAN INTO SOME BAD MATERIAL IN LOWER AREA.

• OPERATOR AT LANDFILL WORKING SLOPE TO NE AS WELL AS TOP.

• LEFT SITE AT 11:45 AM, TOOK (12) PHOTOS. MARTY NOT ON SITE WHEN LEFT.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

RESIDENT ENGINEER OR FIELD REPRESENTATIVE



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ENGINEERS DAILY CONSTRUCTION REPORT

Page No. _____

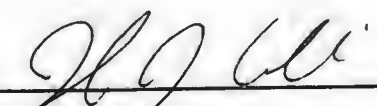
DATE 8/9/93	JOB NO. 4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE							
PROJECT BERLIN/PETERSBURG LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.			
LOCATION PETERSBURGH, NY	1	JD 850 DOZER	8	1	FORMAN	8			
CONTRACTOR RITE CONSTRUCTION	1	D68 P DOZER	8	2	OPERATOR	8			
WEATHER	TEMP.	° AT	AM	1	936 CAT LOADER	8	1	OPERATOR	5
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	3	TRUCKS	8						
HRS. WORKED	OWNER EAC								

WORK PERFORMED:

- ARRIVED ON SITE AT 9:45 AM. DOZER OPERATION WORKING NE SLOPE AND WILL CONTINUE THRU TOP REAR OF LANDFILL.
- MARTY ORDERED REST OF GAS VENT MATERIAL.
- CLAY PIT (BABCOCK) OFF LIMITS UNTIL ESTATE IS SETTLED.
- WENT TO JONES PIT TO LOOK AT MATERIAL. GAS VENT MATERIAL APPEARING TO GET SILTY. HAD EXCAVATOR ADJUST HIS LOCATION.
- RITE RUNNING 3 TRUCKS TODAY.
- SURVEYORS ON SITE TO SET UP CONTROL. PUT IN LATKE MARKING N+DD : E+DD LINE THRU LANDFILL AT 100' INTERVALS.
- TOOK SAMPLES GV-16, GV-17 ± (12) PHOTOS

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

RESIDENT ENGINEER OR FIELD REPRESENTATIVE



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DATE 8/10/93	JOB NO. 111090W/1122	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT BERLIN/PETERSBURGH LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION PETERSBURGH, NY	3	TRUCKS	8	1	FORMAN	8
CONTRACTOR RITE CONSTRUCTION	1	JD850 DOZER	8	2	OPERATOR	8
WEATHER	TEMP. ° AT	AM	1	D68P DOZER	8	
SUPERINTENDENT OR FOREMAN MARTY BEANARD	1	936 CAT LOADER	8			
HRS. WORKED	OWNER EAL	1	RITE LOW BED	4		

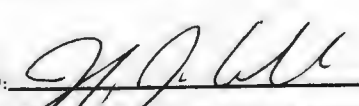
MOVE BH ON SITE

WORK PERFORMED:

- ARRIVED ON SITE AT 9:30 AM
- DOZER OPERATION WORKING FLAT AREA ON TOP OF NORTH SLOPE.
- RITE RUNNING 3 TRUCKS TODAY.
- CALLANAN DELIVERED (2) LOADS OF CRUSHED STONE FOR GAS VENT LAYER.
- OPERATOR NOT ABLE TO FINISH GRADE WELL. MARTY TAKING OVER DOZER TO FINISH GRADE.
- MARTY/JSW LAYED OUT LOCATIONS OF (5) GAS VENTS. RITE INSTALLED ONE VENT (#8) IN NW CORNER OF SITE.
- MATERIAL LOOKS VERY CONSISTANT, BENEATH. TOOK (12) PHOTOS. LEFT SITE AT 3PM.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE	8/11/93	JOB NO.	4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	BERLIN/PETERSBURGH LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	PETERSBURGH, NY	3	TRUCKS	8	1	FORMAN	8
CONTRACTOR	RITE CONSTRUCTION	1	JD850 DOZER	8	3	OPERATORS	8
WEATHER	TEMP ° AT ° AT AM PM	1	D68P DOZER	8	1	LABORER	8
SUPERINTENDENT OR FOREMAN	MARTY BERNARDO	1	936 CAT LOADER	8			
HRS. WORKED	OWNER EAC						

WORK PERFORMED:

- ARRIVED ON SITE AT 8:10 AM
- GAS VENT LAYER MATERIAL BEING SPREAD ON TOP OF NORTH SLOPE.
- MARTY/OPERATOR SPLITTING TIME ON RUBBER TIRE BACKHOE FOR INSTALLATION OF GAS VENTS (#1,2,3,6)
- OPERATOR ON DOZER SAT FOR APPROX. 1/2 DAY. SPENT OTHER 1/2 DAY BACK BLADING OVERGROWTH.
- MSW BEING STOCKPILED IN LOW AREA (FROM GAS VENT INSTALLATION) TOLD MARTY TO COVER AT END OF DAY.
- GAS VENT LAYER MATERIAL LOOKS GOOD, VERY BONEY.
- TOOK SAMPLES GV-18, GV-19 FOR GRAIN SIZE ANALYSIS.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 8/12/93	JOB NO. 4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT BERLIN/PETERSBURGH LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION PETERSBURGH, NY	3	TRUCKS	8	1	FOREMAN	8	
CONTRACTOR RITE CONSTRUCTION	1	JD850 DOZER	8	3	OPERATORS	8	
WEATHER	TEMP.	* AT	AM	1	D68P DOZER	8	
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	1	936 CAT LOADER	8	1	LABORER	8	
HRS. WORKED	OWNER EAC						

WORK PERFORMED:

- ARRIVED ON SITE @ 8:30 AM
- RITE HAS 3 TRUCKS HAULING GAS VENT LAYER MATERIAL.
- MSW EXCAVATED FROM AREA OF GAS VENTS LEFT UNCOVERED OVER NIGHT. SITE SMELLED BAD. TOLD MARTY TO SPREAD IN LOW AREA AND COVER WITH GAS VENT LAYER MATERIAL.
- CREW INSTALL FOUR GAS VENTS IN MORNING.
- LOCAL DRIVER UPSET & QUIT IN MORNING.
- OPERATOR WORKING NORTHERN SLOPE OF LANDFILL.
- MARTY APPEARS TO BE DOING MAJORITY OF WORK ON DOZER.
- TOOK (12) PHOTOS. LEFT SITE AT 11:30 AM.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	8/13/93	JOB NO.	4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	BERLIN/PETERSBURGH LANDFILL			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	PETERSBURGH, NY			3	TRUCKS	8	1	FORMAN	8
CONTRACTOR	RITE CONSTRUCTION			1	JD 850 DOZER	8	2	OPERATOR	8
WEATHER	TEMP. ° AT ° AT AM PM			1	068P DOZER	8	1	LABORER	8
SUPERINTENDENT OR FOREMAN	MARTY BERNARD			1	936 CAT LOADER	8			
HRS. WORKED	OWNER EAL								

WORK PERFORMED:

- ARRIVED ON SITE AT 8:30 AM
- MARTY HAS NEW LOCAL TRUCK DRIVER ON SITE THIS MORNING. STILL WORKING CLAS VENT LAYER ON NORTH SLOPE.
- OPERATION NOT DOING MUCH, MARTY WORKING DOZER. MARTY PLANS ON LETTING HIM GO ON FRIDAY AS HE PLANS ON GETTING A RITE OPERATOR NEXT WEEK.
- TOOK SAMPLES. GV-20 & GV-21

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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PROJECT	BERLIN/PETERSBURGH LANDFILL			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	PETERSBURGH, NY			3	TRUCKS	8	1	FOREMAN	8
CONTRACTOR	RITE CONSTRUCTION						2	OPERATORS	8
WEATHER	TEMP. ° AT ° AT AM PM								
SUPERINTENDENT OR FOREMAN	MARTY BERNARDO								
HRS. WORKED	OWNER EAC								

WORK PERFORMED:

- ARRIVED ON SITE @ 9:30 AM
- NEW OPERATOR WORKING DOZER AT LANDFILL (BAS VER LAMM)
- AFTER 10 DAYS OF HAULING MATL., APPROX 9600 CY OF MATL. BROUGHT TO LANDFILL.
- MARTY FEELS THAT LANDFILL IS ABOUT 9.5 ACRES. ASKED S+M TO CHECK.
- A LOAD OF SILTY MATERIAL NOTICED AT LANDFILL. WENT TO JONES P.T. ADJUSTED LOCATION OF EXCAVATION TO THE MORE GRAINIER AREA.
- TOOK SAMPLES GV-22 : GV-23

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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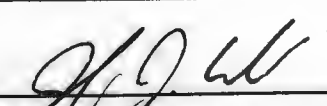
DATE 8/18/93	JOB NO 4110400/1122	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT BERLIN/PETENSBURG LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION PETENSBURG, NY	3	TRUCKS	8			
CONTRACTOR RITE CONSTRUCTION						
WEATHER	TEMP.	° AT	AM			
		° AT	PM			
SUPERINTENDENT OR FOREMAN MARTY BERNARDO						
HRS. WORKED	OWNER EAC					

WORK PERFORMED:

- ARRIVED ON SITE AT 7:00 AM
- MARTY NOT ON SITE, IN OFFICE.
- DOZER OPERATION WORKING SOUTH SLOPE. (GAS VENT LAYER)
- RUNNING 3 TRUCKS TODAY.
- TRIED TO LOCATE LIMITS OF BABCOCK PIT, NO SUCCESS.
- LEFT SITE AT 11:45 AM

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE 8/19/93	JOB NO. 4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT BERLIN/PETERSBURG LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION PETERSBURGH, NY	3	TRUCKS	8	1	FORMAN	8	
CONTRACTOR RIFE CONSTRUCTION	1	JD850 DOZER	8	2	OPERATOR	8	
WEATHER	TEMP	° AT	AM	1	D68P DOZER	8	
		° AT	PM	3	TRUCKS	8	
SUPERVISOR OR FOREMAN MARTY BERNARDO	1	936 CAT LOADER	8				
HRS. WORKED	OWNER EAC						

WORK PERFORMED:

- Arrived ON SITE AT 9:30 PM
- DOZER OPERATOR WORKING FRONT FACE (GVL) FROM SOUTH TO NORTH.
- MARTY WOULD LIKE TO START SWALE ACROSS FRONT FACE ON MON OR TUES.
- TOOK TWO SAMPLES GV-24 & GV-25 AT JONES P.T.
(FULL ANALYSIS.) (BONEY/GAINET MATERIAL)
- MARTY WANTS TO INSTALL LANDFILL ACCESS ^{ROAD} BEFORE EARLY NEXT WEEK. LAYOUT OF THE ROADS TO BE APPROVED.
- TOOK 12 PHOTOS. LEFT SITE @ 12:30 PM.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *J.D. W.*

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DATE	8/20/93	JOB NO	4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE						
PROJECT	Berlin/Petersburg Landfill CLOS.			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY			3	TRUCKS	6	1	FORMAN	8	
CONTRACTOR	RITZ CONSTRUCTION			1	JD850 DOZER	6	1	OPERATOR	8	
WEATHER	CLOUDY (WINDY)		TEMP	70 ° AT 2:00 PM	1	D68P DOZER	6	1	OPERATOR	6
SUPERINTENDENT OR FOREMAN	MARTY BERNARDO			1	936 CAT LOADER					
HRS. WORKED										
	OWNER									
	EAC									

WORK PERFORMED:

- ARRIVED ON SITE @ 9:00AM
- RITZ HAS 3 TRUCKS HAULING GAS VENT LAYER MATL.
- DISCUSSED SWALE @ TOE OF SLOPE NEAR THE SE CORNER WITH MARTY. ONLY APPROX 11' FROM E OF SWALE TO PROPERTY LINE. RITZ TO START WORK ON THIS ON MON OR TUES OR FOLLOWING WEEK.
- TOOK PHOTOS ALONG RTE 90 : RTE 2 (11 PHOTOS OF STREET)
- LEFT SITE AT 12:30 PM.
- CREWS KNOCKED OFF AT 2 PM DUE TO RAIN.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	8/23/93	JOB NO.	A110400/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	BERLIN/PETERSBURGH LAND. CLOSURE			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	PETERSBURGH, NY			3	TRUCKS	8	1	FORMAN	8
CONTRACTOR	RITZ CONSTRUCTION			2	DOZERS	8	3	OPERATORS	8
WEATHER	SUNNY	TEMP	85 ° AT 2 AM	1	CAT 936 LOADER	8			
SUPERINTENDENT OR FOREMAN	MARTY BERNARDI								
HRS. WORKED		OWNER	EAC						

WORK PERFORMED:

- MARTY STRIPPING TOPSOIL AT BABLOCK PIT.
- GEORGE EISTON (DEC) ON SITE IN MORNING LOOKING OVER PROGRESS. NO PROBLEMS. GE WENT TO BABLOCK PIT TO VIEW.
- GAS VENT MATERIAL BEING BROUGHT IN LOOKS VERY CONSISTENT. TOOK SAMPLES GV-26, GV-27
- MARTY PLANNING TO START CLAY WORK ON NW SLOPE AND WORK SOUTH MOST PROBABLY ON WEDNESDAY.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *M.D. Williams*

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DATE 8/24/93	JOB NO 9110400/1122	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT BERLIN/PETERBURGH LAND CLOSURE	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION PETERBURGH, NY	3	TRUCKS	8	3	OPERATORS	8
CONTRACTOR RITE CONSTRUCTION	1	CAT 936 LOADER	8	1	FOREMAN	8
WEATHER SWAMPY	TEMP 80 ° AT 12 AM	2	DOZENS	8		
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	1	CAT 225 B.H.	4			
HRS. WORKED	OWNER EAL					

WORK PERFORMED:

- FINISHING UP NE CORNER OF GAS VENTING LAYER. MARTY TO LEAVE ACCESS ROAD SUCH THAT GAS LAYER WILL NOT BE RUINED.
- SOME ADDITIONAL MATERIAL FOR GVL WILL BE PLACED IN NW CORNER OF SITE (10 LOADS) TO DRESS AREA.
- CAT B.H. DELIVERED TO SITE (BAGDOCK PIT) @ 1:30PM WITH 12" ADS CULVERT PIPE.
- OPERATION PUSHING OFF TOPSOIL AT BAGDOCK PIT. MARTY INSTALLED CULVERT IN AREA OF SWALE. BUILT ROAD OVER.
- TOOK CLAY SAMPLE LPB-1 : LPB-2 FOR FULL ANALYSIS.
- SHOULD BE INTO HAULING CLAY ON 8/25/93.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 8/25/93	JOB NO. 4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT BERLIN/PETERSBURGH LAND. CLOSING	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION PETERSBURGH, NY	2	TRUCKS	8	1	FORMAN	8	
CONTRACTOR RITE CONSTRUCTION	2	DOZENS	8	1	OPERATORS	8	
WEATHER SUNNY	TEMP 87° AT 11 AM	1	CAT 936 LOADER	8	3	LABORERS	8
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	1	SK-120 BH.	8				
HRS. WORKED	OWNER EAC	1	225 CAT B.H.	8			

WORK PERFORMED:

- ROUGH STAKED LIMITS OF BABCOCK PLOT. DOZEN OPERATION WORKING OUTSIDE OF LIMITS, NOTIFIED.
- MARTY HAVING TROUBLE GETTING TRUCKS. (2) CURRENTLY RUNNING AS ONE IS WAITING FOR NEW TIRES. S: M TO ASSIST IF SITUATION IS NOT BETTER BY TOMORROW.
- THREE ROLLS OF FABRIC LAID AND CLAY BEGINNING TO BE BROUGHT IN. BRINGING IT IN AT 9' LIFTS.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	8/26/93	JOB NO.	7110700/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	BERLIN/PETERSBURGH LAND. CLOSURE			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	PETERSBURGH, NY			6	TRUCKS	8	1	FORMAN	8
CONTRACTOR	RITZ CONSTRUCTION			2	DOZEN JD85-D68P	8	4	OPERATORS	8
WEATHER	SUNNY	TEMP	90 ° AT 1 AM	1	936 CAT LOADER	8	3	LABORERS	8
SUPERINTENDENT OR FOREMAN	MARTY BERNARDO			1	225 CAT BH.	8			
HRS. WORKED		OWNER	EAL	1	SK 120 BH.	8			

WORK PERFORMED:

1 SD 100F ROLLER 8
1 DR TO ROLLER 8

- SIX TRUCKS ON SITE TODAY, MUCH MORE PRODUCTION. LOADER OPERATOR AT BASCOCK PIT AND DOZEN OPERATOR AT LANDFILL STILL STAYING WELL AHEAD OF ~~TRUCKS~~ TWO MORE TRUCKS WOULD EASILY FIT INTO SCHEME.
- DOZEN OPERATOR AT LANDFILL TOLD TO KEEP LIFTS AT 9". LABORENS TOLD TO PIN FABRIC AT NO MORE THAN 15' INTERVALS.
- RAN INTO SOME SILTY, EVEN SANDY MATERIAL AT BASCOCK PIT. SHIPPED AREA TO MORE CLAYEY MATERIAL. LOADER OPERATOR TOLD TO STAY AWAY FROM BLUE CLAY UNTIL BE CAN GET A DECISION.
- SHEEPFOOT ROLLER DELIVERED TO SITE AT 10:45 AM. VIBRATING ROLLER DELIVERED TO SITE IN AM.
- OPERATOR TO STAY AN EXTRA (1) HR TO REMOVE OVERBURDEN (1'-2') AT BASCOCK PIT.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *H. J. W.*

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DATE 8/27/93	JOB NO. 4110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT BERLIN/PETERSBURGH LAND CONVERSION		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION PETERSBURGH, NY		2	DOZER JD85-D68P	8	1	FORMAN	8
CONTRACTOR RITE CONSTRUCTION		5	TRUCKS	8	5	OPERATORS	8
WEATHER SUNNY	TEMP. 92° AT 2 PM	1	CAT 225 BH.	8	4	LABORERS	8
SUPERINTENDENT OR FOREMAN MARTY BERNARDO		1	936 CAT LOADER	8			
HRS. WORKED	OWNER EAC	1	SK 120 BH.	8			

WORK PERFORMED:

1 SD100F ROLLER 8
1 DR TO ROLLER 8

• WORK SHIFTED AT BABCOCK PIT SUCH THAT WE ARE NOW INTO GOOD MATERIAL.

• MO CORRIEN ON SITE TO SEE PROGRESS @ 10:00AM MO SUGGESTED THAT THE CLAY BE ROLLED (SHEEPFOOT) HEAVILY EACH DAY SUCH THAT IT WILL NOT DRY (OR AT LEAST IT WILL BE KNEADED BEFORE IT DRIES.).

• OPERATIONS, LABORERS DIGGING KEYWAY AT SLOPE BASE. JJW HAD LABORERS PLACE A CLOTH WHERE IT DID NOT REACH TO TOP OF SLOPE. LATER IN DAY, JJW HAD MARTY STOP KEYWAY OPERATION AS THEY WERE WELL AHEAD OF THEMSELVES. A RAINSTORM WILL WASH TRENCH AWAY IF THAT OCCURS.

• LOWER BENCH AT BABCOCK PIT HAS AT LEAST 2-4' OF OVERBURDEN ON THE CLAY. OPERATOR WILL SCRATCH OFF UNTIL HE GETS TO IT. BUT WILL ONLY DO SMALL AREA.

• GRABBED CLAY SAMPLES LPB-3 (FULL ANALYSIS - BLUE CLAY), LPB-4, LPB-5 (MOISTURE, ATTEN BENCH)

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *J. J. Will*

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DATE 8/30/93	JOB NO 9110900/1122	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT BENH/PETERSBURGH LANDFILL CLDS	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION PETERSBURGH, NY	1	225 CAT B.H.	8	1	FORMAN
CONTRACTOR RITZ CONSTRUCTION	1	936 CATLOMER	8	5	OPERATORS
WEATHER SUNNY	TEMP 75 ° AT 10.30 AM	1	SD100F ROLLER	8	4 LABORERS
SUPERINTENDENT OR FOREMAN MARTY BERNARDO	1	DL70 ROLLER	8		
HRS. WORKED	OWNER EAC	1	SK20 B.H.	8	

WORK PERFORMED:

5 TRUCKS
2 DOZER JDBS-DEBP
1 TRUCK

- VISITED BARLOCK PIT, MATERIAL LOOKS FAIRLY CONSISTANT NOW ON THE UPPER BENCH MOVING TOWARD THE PRIVATE ROAD. MOVING WEST ALONG THE SITE, THE MATERIAL BECOME MORE SILTY, SANDY. UNDER OPERATOR STOPS WHEN HE HITS BLUE CLAY AT BOTTOM OF MINE.
- AT LANDFILL, MARTY REMINDED THAT FABRIC ROLLS TO BE PINNED AT 15' INTERVALS. CREW WORKING NORTHERN SLOPE TO THE WEST ACCESS. CLAY LOOKS CONSISTENT, YET, VERY DRY.
- OPTIMUM NUMBER OF TRUCKS WOULD BE "8". MARTY TO LET JKW KNOW IF HE CANNOT GET 8 TRUCKS FOR TOMORROW. IF HE CANNOT, S:K CAN WORK ON TO SUPPLY. MARTY THINKS THAT HE CAN DO IT.
- VISIT BY GEORGE ELSTON (DEC). WAS NOT SATISFIED WITH THE AMOUNT OF LUNSTONE IN CLAY. SUGGESTED THAT A MATCH TRUCK BE BROUGHT ON SITE TO KEEP THE MATERIAL MOIST.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	9-1-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	Berlin / Petersburg Cap	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs
LOCATION	Petersburg, NY	1	John Deere 850	8	5	Laborers	8
CONTRACTOR	A - Ritz	2	Backhoes - 225, 5428	8	4	Operators	8
WEATHER	Cloudy	TEMP	70° AT 1:00 PM	1	7	Truck Drivers	8
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	IR Sheepfoot	8		(1 Truck - 2 loads @ 1:00pm)	
HRS. WORKED	8	OWNER	EAC	1		Cat 936 Loader	8

WORK PERFORMED:

1 UR 70 Roller 8

225 - Loads trucks w/ clay at Babcock Pit

Dump Trucks - Haul clay to site for clay lift 1

John Deere 850 Dozer - Spreads + Tracks clay lift 1 on south west part of landfill.

IR Sheepfoot Roller - Compacts clay lift.

Cat 936 Loader - Hauls clay for landfill perimeter trench; also haul excavated material to top of landfill from backhoe excavation.

Robelco SK120 Backhoe - Excavates soil to form perimeter trench; installs and compacts clay lifts in trench.

Komatsu D68 dozer - Used by pit operator to loosen up clay for ease of loading operation.

UR 70 roller - compacts placed clay lifts in perimeter trench.

Laborers - Place geotextile fabric over gas vent layer and pin fabric overlaps together. Laborers also install grade stakes and label lifts marks on stakes.

JCL - Performs M/D tests on clay lift 1. Obtains 2 Shelby Tube samples, ST1A and ST1B and delivers same to SMT Labs. Location - N 350, E 100

SIGNED: _____

SUPERINTENDENT OR FOREMAN

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DATE	9-2-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	1	John Deere 850 Dozer	8	5	Operators	8	
CONTRACTOR	A-Ritz	2	Backhoes - 225, SK120	8	4	Laborers	8	
WEATHER	Cloudy	TEMP	70° AT 9:00 AM ° AT PM	2	1	Vibratory Roller	8	
SUPERINTENDENT OR FOREMAN	Marty Berner d.	1	Cat 936 Loader	8	7	Truck Drivers	8	
HRS. WORKED	8	OWNER	EAC	1		Komatsu D68	1 Driver - 4 hrs.	

WORK PERFORMED:

1 Hand-Op. Roller 8
7 Dump Trucks

Cat 225 Excavator - Loads 7 dump trucks with blue clay at Babcock Pit.

Komatsu D68 dozer - Loosens clay for 225 and strips overburden

John Deere 850 dozer - Grades clay lift 1 at LF southwest corner.

Cat 936 Loader - Carries filter fabric rolls for deployment.

- Also hauls clay for SK120.

Bobcat SK120 backhoe - digs load fill limit trench and fills it back in with clay lift. Clay is then compacted with vibratory roller

IR Sheepsfoot roller - Compacts placed clay lift.

Hamm Smooth-drum roller arrives on site; used to smooth out clay lift.

Laborers - Clean entrance road, deploy + tack down filter fabric

JCL - performs moisture/density tests on clay lift 1.

also obtained 3 samples of Blue Clay from Babcock Rd. Pit and delivers same to SMT Lab. Samples LPB6, LPB7, LPB8.

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DATE	9-3-93	JOB NO.	4110300	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	Berlin - Petersburg Landfill			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Petersburg, NY			1	Cat 225 Excavator	4	2	Laberers	5
CONTRACTOR	A - Ritz			1	John Deere Dozer	1	1	Foreman	5
WEATHER	Cloudy Partly Sunny			TEMP	75° AT 9:00 AM		1	Operator	4
					82° AT 1:00 PM				
SUPERINTENDENT OR FOREMAN	Marty Bernardo								
HRS. WORKED	5			OWNER	EAC Op.				

WORK PERFORMED:

Heavy rain yesterday prevents earthwork machines from effectively moving clay. Most of crew sent home.

Cat 225 - Creates drainage channels at Babcock Rd Pit to drain water out of mining area.

John Deere 850 Dozer - Used to push Shelby Tubes into clay lift 1.

Laberers - perform maintenance to machines and assist in M/D testing.

SIL - performs moisture/density testing on clay lift 1 in north west part of clay cap.
- Also obtains 2 Shelby Tube samples, ST2A and ST2B and delivers same to SMT Lab.

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SUPERINTENDENT OR FOREMAN

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DATE	9-7-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin-Petersburg Landfill	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	1	John Deere 850	8	5	Operators	8	
CONTRACTOR	A-Ritz	1	Kobelco Backhoe	8	4	Laborers	8	
WEATHER	Partly Cloudy	TEMP	68 ° AT 900 AM	1	1	Cat 225 Excavator	8	
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Sheepsfoot Roller	7	5	Dump Trucks	8	
HRS. WORKED	8	OWNER	EAC Op.	1	1	Cat 936 Loader	8	
						Dump - Red Mack	6	

WORK PERFORMED:

1 Hamm Smooth-Drum 1
1 Hand-Op. V.b. Roller 0.5
Dump-Western Star 2

Cat 936 Loader and laborers deploy filter fabric over gas vent soil in southwest corner of landfill.

John Deere 850 dozer spreads clay lift 1 over fabric.

Cat 225 Excavator - loads dump trucks with blue clay at Babcock Rd. clay pit.

IR Sheepsfoot Roller - Compacts brown clay lift 1 on western landfill side slope; then blue clay lift @ south end.

Kobelco backhoe - digs landfill perimeter trench at south end; - also places compacted clay lifts in previously dug trench at northwest corner of landfill.

Hand operated compactor used to compact clay lifts in trench.

Laborers clean clay off landfill entrance road w/ shovels and broom.

Laborers also deploy geotextile filter fabric over gas vent layer.

SKL - Performs moisture/density tests on clay lift 1. Obtains 2 Shelby Tube samples of brown clay and delivers them to SMT Lab. (Samples ST-3A and ST-3B.)

Hamm smooth-drum roller used to seal blue clay on part of slope.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John X. Lovell

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DATE	9-8-93	JOB NO.	4110980	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	Berlin - Petersburg, LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Petersburg, NY	1	John Deere 850 Dozer		5	Operators	
CONTRACTOR	A-Ritz	2	Backhoes		3	Laborers	
WEATHER	Partly Cloudy Light Rain	TEMP.	69° AT 900 AM 69° AT 100 PM	1	Sheepsfoot Roller	1	Superintendent
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Cat 936 Loader		7	Dump Truck Drivers	
HRS. WORKED	8	OWNER	EAC	7	Dump Trucks		

WORK PERFORMED:

Cat 225 Excavator - Loads 7 dumps with blue clay at Babcock St clay pit.

JD 850 Dozer - Grades blue clay lift 1 on southern landfill slope.

Cat 936 loader - Deploys filter fabric; hauls clay for perimeter trench; general site clean-up.

IR Sheepsfoot Roller - Compacts previously placed brown clay lift 1 on western landfill slope.

Kobelco SK 120 Backhoe - Compacts blue clay in perimeter trench on south side of landfill.

Laborers - deploy filter fabric; check clay depths; clean up landfill entrance road.

JKL - performs M/D testing on blue clay lift 1; obtains 2 Shelby tube samples # ST-4A and ST-4B, 5 moisture correction samples # 186-190, and 3 bulk samples from Babcock Rd. clay pit # LPB9, LPB10, LPB11 and delivers all to SMT Labs for testing.

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SUPERINTENDENT OR FOREMAN

SIGNED: _____

John H. Lavelle
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DATE <u>9-9-93</u>	JOB NO <u>466900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg LF</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	John Deere 850	0	3	Operators	8
CONTRACTOR <u>A-Ritz</u>		1	Kobelco SK120 Backhoe	8	3	Laborers	8
WEATHER <u>Cloudy</u>	TEMP. <u>64°</u> AT <u>900 AM</u>	1	Cat 936 Loader	8	1	Superintendent	8
<u>Partly Sunny</u>	<u>74°</u> AT <u>100 PM</u>						
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		4	Dump Trucks		4	Drivers	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>						

WORK PERFORMED:

Cat 936 Loader - Loads Gas Vent Soil into 4 dump trucks at "Charlie Jones" pit.

Dump Trucks - haul gas vent soil to top of land fill.

J.D. 850 Dozer - Grades gas vent soil over top of land fill on areas not yet covered with vent material.

Kobelco SK120 Backhoe - Continued excavation of perimeter trench at southeast corner of land fill. Excavation of trench included removal of some refuse which was loaded into dump truck and hauled to hollow area at top of land fill. Refuse/soil material was spread and compacted with 850 dozer and a subsequent lift of gas vent material was then spread.

Laborers - Picked litter in southeast corner of site

Heavy rain yesterday prevents work on clay haul, place, compact operations.

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DATE	9-10-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin-Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs	
LOCATION	Petersburg, NY	1	John Deere 750		2	Operators		
CONTRACTOR	A - Ritz	1	Cat 225 Excavator		1	Superintendent	8	
WEATHER	Rain Cloudy	TEMP	66° AT 900 AM ° AT ° PM					
SUPERINTENDENT OR FOREMAN	Marty Bernardo							
HRS. WORKED	8	OWNER	EAC					

WORK PERFORMED:

Cat 225 Excavator - Improves drainage channels at Babcock Rd. Clay pit; removes overburden silty soil on top 2-3 feet off virgin ground; excavates soil which caved into pit from rain.

John Deere 750 Dozer - Regrades roadways at Babcock Rd. Clay pit; begins creating terraces with overburden soil; backfills completed mined areas, and begins restoring pit to final condition.

Rain last night and this morning prevent working on clay at landfill site. All laborers and all but two operators sent home.

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SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE	9-13-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin - Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	2	Backhoes - 225, SK120	1-8 1-5	5	Operators	8	
CONTRACTOR	A. Ritz	2	Dozers - 750, 850	1-0	3	Laborers	8	
WEATHER	Cloudy Sunny	TEMP	64° AT 900 AM 80° AT 100 PM	1	5	Dump Truck Drivers	8	
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Gehl Sweeper	2	1	Superintendent	8	
HRS. WORKED	8	OWNER	EAC	1	3	1	Mechanic	
			1 DRYO Roller	2				

WORK PERFORMED:

225 Backhoe - Loads dump trucks at Babcock Rd pit with blue clay.
 750 Dozer - At Babcock pit - idle
 Dump Trucks - Haul blue clay for lift 1 at south end; then lift 2 at north end
 850 Dozer - Grades clay lift 1 at south end of LF in run; Grades lift 2 at north end of land fill.
 Sheepfoot Roller - Makes several passes over placed clay at south end of land fill; also compacts lift 2 at north end.
 Hamm Smooth-drum roller - Smooth rolls clay lift 1 at south end of land fill, lift 1.
 Gehl Sweeper - Sweeps clay off road into land fill.
 Kobelco SK120 Backhoe - Digs anchor trench at south end; places clay lifts in trench at north end, then compacts.
 DR 70 Hand-Operated Roller - Compacts placed clay in perimeter trench at north end.
 SKL - Performs moisture/density testing on blue clay, lift 1, at north and south ends of land fill. Obtains Shelby Tube samples ST5A and ST5B and delivers them to SMT Lab.

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SUPERINTENDENT OR FOREMAN

SIGNED: John K. Ravelle

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DATE <u>9-14-93</u>	JOB NO. <u>4610900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Backhoes - 225, SK120	4	6	Operators	8
CONTRACTOR <u>A-Ritz</u>		2	Dozers - 750, 850	8	3	Laborers	8
WEATHER <u>Sunny</u>	TEMP <u>80</u> ° AT <u>11:00</u> AM	1	Cat 936 Loader	4	1	Superintendent	8
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		1	Sheepsfoot Roller	8	1	Mechanic	—
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Hammer Smooth Roller	8	4	Dump Truck Drivers	8
		1 DR70 Hand-Op Roller 8					

WORK PERFORMED:

225 Backhoe - Loads dump trucks at Babcock Rd. pit w/ blue clay
 750 Dozer - Begins restoration work at pit, grading overburden.
 4 Dump Trucks - Haul clay to LF for lift 2 at North end.
 850 Dozer - Grades blue clay lift 2 at north end.
 Sheepsfoot Vibratory Roller - Compacts lift 2 on blue clay, northwest corner of landfill.
 Hammer Smooth-drum Roller - Seals lift 1 throughout placed lift on west half of landfill.
 Kobelco SK120 Backhoe - Excavates trench at south end of landfill; also places and compacts clay back in trench.
 DR70 Hand-Operated Roller - Makes several passes over installed clay in perimeter trench on south and west sides of landfill.
 Cat 936 Loader - Loosens up, excavates, and stockpiles Barrier Protection Layer soil at Charlie Jones pit.
 JKL - Performs M/O testing on gas vent soil, and clay lifts 1 and 2.

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DATE	9-15-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin-Petersburg Landfill	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	2	Dozers - 750 - 850		7	Operators		
CONTRACTOR	A-Ritz	2	Backhoes - 225, SK120		3	Laborers		
WEATHER	Sunny Hazy	TEMP.	75° AT 900 AM 83° AT 100 PM		1	Cat 936 Loader		
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Sheepsfoot Roller		5	Dump Truck Drivers		
HRS. WORKED	8	OWNER	A-Ritz	1	Smooth-Drum Roller			

WORK PERFORMED:

1 Hand-Operated Roller
1 Low-Bed Trailer
1 Ford Tractor/Sweeper

Cat 225 Backhoe - Loads dump trucks with blue clay at Babcock Rd. pit.
Dump Trucks - Haul clay to landfill site.

JD 750 dozer - Strips overburden soil on new area of pit to be mined.
- also works on restoring shape of pit, filling in mine.

JD 850 dozer - Spreads clay lift 2 in northwest quadrant of LF.

Sheepsfoot - Compacts spread clay, lifts 1 and 2.

Smooth-drum - Continues sealing clay, lift 1, moving further down slopes as clay dries out somewhat.

Kobelco SK120 Backhoe - Excavates ponded water in southern perimeter trench; installs clay lift on excavated trench, using soupy soil to prevent inflow of water.

DR70 Hand-Operated Roller - Compacts clay in trench placed by backhoe, making several passes over installed clay.

Low-bed trailer - Arrives on site with Ford Tractor/Sweeper, removes GETHL sweeper from site.

Cat 936 Loader - Works at Charlie Jones pit stripping and stockpiling barrier protection layer soil.

JKL - Performs M/D testing on blue clay lift 1, lift 2 and in southern anchor trench; Obtains 5 samples for moisture correction #3, #s 241-245; Obtains samples LPB12, LPB13, LPB14 from Babcock Rd. pit and delivers them to SMT Lab.

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SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE <u>9-16-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Backhoes - 225, SK120	8	6	Operators	8
CONTRACTOR <u>A - Ritz</u>		2	Dozers - 750, 850	8	4	Laborers	8
WEATHER <u>Cloudy, Dried</u>	TEMP <u>60</u> ° AT <u>900</u> AM ° AT	1	Sheepsfoot Roller	4	1	Superintendent	8
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		1	Cat 936 Loader	8	5	Dump Truck Drivers	8
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Ford Tractor/Sweeper	6			

WORK PERFORMED:

1 Smooth-drum Roller

225 Backhoe - Loads dump trucks with clay at Babcock Rd. pit.

750 Dozer - Strips overburden soil at pit; fills in excavated pit with overburden soil.

850 Dozer - Spreads clay lift 2 on western landfill sideslope.

Kobelco SK 120 Backhoe - Excavates northern perimeter trench for three foot clay layer; stockpiles refuse removed from trench.

Sheepsfoot Roller - Compacts clay lift 2.

Ford tractor/sweeper - Cleans clay/mud off landfill entrance road.

Cat 936 Loader - Moves excavated refuse from northern perimeter trench to hollow area at top of landfill.

Smooth-drum roller - Seals sheepsfoot compacted areas of lift 2.

JKL - Performs M/D Testing on clay lifts 1 and 2. Obtains Shelby Tube samples ST6A and 6B and delivers to SMT Lab.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	9-20-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	Berlin-Petersburg Landfill	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Petersburg, NY	2	Backhoes-225, SK120B	8	6	Operators	
CONTRACTOR	A-Ritz	2	Dozers-750, 850	8	4	Labors	
WEATHER	Sunny	TEMP.	60 ° AT 9:15 AM ° AT PM	1	1	Sheepsfoot Roller	Superintendent
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Grd Tractor/Sweeper	8	9	Dump Truck Drivers	
HRS. WORKED	8	OWNER	EAC	1	1	Cat 936 Loader	Mechanic

WORK PERFORMED:

1 Hamm Smooth-drum
1 Walk Behind Roller

225 Backhoe - Loads dump trucks with blue clay at Babcock Rd. pit.
Dump trucks - Haul clay for lift 2 on western sideslope.
850 Dozer - Grades clay lift 2 with blue clay on west slope.
Sheepsfoot - Compacts graded clay over lift 2 areas.
750 Dozer - Continues stripping overburden at Babcock Rd. pit.
SK120 Backhoe - Digs anchor trench at southeast corner of site.
2 loads dump with landfilled refuse in trench, which hauls it to top of landfill.
936 Loader - Continues stripping and stockpiling of barrier protection layer soil at Charlie Jones pit.
Labors - Run tractor/sweeper to clean entrance road, check clay depths, insert grade stakes, direct dump trucks.
SKL - Performs moisture/density tests on lift 2; obtains Shelby Tube Samples ST7A, ST7B, ST8A, ST8B and delivers same to S&M Lab.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 9-21-93	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin - Petersburg Landfill	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION Petersburg, NY	2	Dozers - 750, 850	8	6	Operators	8	
CONTRACTOR A-Ritz	2	Backhoes - 225, SK120	8	3	Laborers	8	
WEATHER Cloudy, Drizzle	TEMP 58° AT 900 AM	1	Cat 936 Loader	8	1	Superintendent	8
SUPERINTENDENT OR FOREMAN Marty Bernardo	1	Sheepsfoot Roller	4	10	Dump Truck Drivers	Vary	
HRS. WORKED 8	OWNER EAC	1	Ford Tractor/Sweeper	8			
		1	Duomat Roller	2			

WORK PERFORMED:

225 Backhoe - Loads dump trucks in pit with blue clay.

Dump trucks - Haul clay to site for lift 2 on western sideslope.

750 Dozer - Strips overburden soil off of blue clay layer at Babcock Rd. pit.

- Also forms new access road for dump trucks.

- Also fills in excavated clay pit with overburden soil.

850 Dozer - Grades clay lift 2 on west side of landfill.

- Also grades excavated refuse piles on top of landfill and spreads gas vent soil over refuse area.

Cat 936 Loader - Loads gas vent soil into (2) dump trucks which haul soil to site.

Sheepsfoot Roller - Compacts clay lift 2.

SK120 Backhoe - Compacts clay lift 2 at toe of west slope and in western anchor trench.

Ford Tractor/Sweeper - Cleans entrance road to landfill.

Three dump trucks used to haul gas vent soil to Landfill from Charlie Jones pit.

JKL - Performs Moisture/Density testing on lifts 1 and 2.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

John K. Lovelle

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DATE 9-22-93	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin - Petersburg		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION Petersburg, NY		2	Dozers - 750, 850	8	6	Operators	8
CONTRACTOR ArRitz		2	Backhoes - 225, SK120	8	4	Laborers	8
WEATHER Cloudy	TEMP. 68° AT 12:00 AM ° AT ° PM	1	Shredsfoot Roller	4	1	Superintendent	8
SUPERINTENDENT OR FOREMAN Marty Bernardo		1	Cat 936 Loader	8	10	Dump Truck Drivers	8
HRS. WORKED 8	OWNER EAC	1	Walk Behind Roller	4			

WORK PERFORMED:

225 - Loads dump trucks with blue clay at Babcock Rd. pit
- Also digs test pits to check depth of over burden soils.
750 - Fills in excavated areas with overburden soil.
850 - Grades clay life 2 in south west corner of landfill.
Shredsfoot Roller - Compacts clay life 2 on western sideslope
Kobalco SK120 Backhoe - Installs clay in perimeter trench at north end of landfill; compacts with bucket.
Walk Behind Roller - Compacts placed clay lifts 1 and 2 in north side trench.

Marty B., Tom Julian, JKL, MSC, and Babcock Pit owner discuss progression for excavation of clay from same pit. Clay will be mined to the west of existing pit after survey is completed.

JKL - Performs M/D Testing on clay lifts 1 and 2.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE	9-23-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	2	Dozers - 750, 850	8	5	Operators	8	
CONTRACTOR	A - Ritz	1	Backhoe - Cat 225	8	4	Laborers	8	
WEATHER	Cloudy Periods of rain	TEMP.	62 ° AT 900 AM ° AT ° PM	1	Sheepsfoot Roller	8	1 Superintendent	8
SUPERINTENDENT OR FOREMAN	Marty Bernardo	1	Cat 936 Loader	8	7	Dump Truck Drivers	8	
HRS. WORKED	8	OWNER	EAC	1	Ford Tractor/Sweeper	8		

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Rd. pit.
750 - Continues restoration of Babcock Rd pit, filling in mined area with overburden soil.
Dump trucks - Drop clay piles for lift 2 at southwest corner of L5
850 - Grades clay lift 2 on southern slope at southwest corner.
Sheepsfoot Roller - Compacts clay lift 2 on west sideslope.
Cat 936 Loader - Strips and stockpiles barrier protection soil at Charlie Jones pit.
Ford Sweeper - Cleans clay off landfill entrance road.
13 Rolls of Typar 3801 geotextile filter fabric arrive on truck, laborers place rolls in garage.
Laborers - direct dump trucks, place grade stakes, clean garage.

JKL - Performs moisture/density testing on compacted clay lifts.
Obtains Shelby Tube samples 9A and 9B.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John X. Ronelli

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DATE	9-24-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	Berlin - Petersburg LF			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs
LOCATION	Petersburg, NY			2	Dozers - 750, 850		5	Operators	
CONTRACTOR	A - Ritz			1	Cat 936 Loader		4	Laborers	
WEATHER	Sunny, Clear	TEMP	62° AT 900 AM 75° AT 200 PM	1	Backhoe - 225		1	Superintendent	
SUPERINTENDENT OR FOREMAN	Marty Bernardo			1	Sheepsfoot Roller		7	Dump Truck Drivers	
HRS. WORKED	8			1	For 1 Tractor / Sweeper				
OWNER	EAC								

WORK PERFORMED:

225 - Loads dump trucks with blue clay at Babcock Rd. pit.
750 Dozer - Strips over burden and fills in mined areas at Babcock pit.
Stm Surveyors - Perform field work for additional topography
north and west of existing mine area; also surveys landfill limits
Cat 936 Loader and laborers - deploy filter fabric on southern
landfill slope; Also stockpile barrier protection soil at Jones
850 - Grades clay life 2 near top of landfill at southwest quad.
- Also grades clay life 1 over filter fabric on south slope.
For 1 Sweeper - Clean off landfill entrance road.
JKL - Performs moisture/density testing on clay lifes 1 and 2.
JJW - On-site to learn MFD testing procedures

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE <u>9-29-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - 750, 850	8	5	Operators	8
CONTRACTOR <u>A-Ritz</u>		1	Backhoe - 225	6 1/2	3	Laborers	8
WEATHER <u>Cloudy Showers</u>	TEMP. <u>55° AT 930 AM</u> <u>66° AT 200 PM</u>	1	Cat 936 Loader	6 1/2	1	Superintendent	4
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		1	Ford Tractor/Sweeper	8	5	Dump Truck Drivers	6 1/2
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>				1	Dump Truck Driver	

WORK PERFORMED:

225 - Loads dump trucks w/ blue clay at Babcock Rd. pit.

750 Dozer - Strips overburden soil into excavated area of Babcock Rd. pit.

850 Dozer - Spreads blue clay lift 1 at southeast corner of land fill.

Cat 936 Loader and laborers - Deploy filter fabric over gas venting soil at southeast part of land fill.

Showers prevent dump trucks from hauling clay after 2:30.

D&H L&P Dozer - arrives on low-bed at 4:00 pm.

Ford Tractor/Sweeper - Cleans off land fill entrance road.

Laborers - Place grade stakes; deploy filter fabric; shovel clay chunks off road.

JKL Performs M/D testing on clay lift 1 in southeast corner of land fill; J&W observes testing.

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SUPERINTENDENT OR FOREMAN

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DATE <u>9-30-93</u>	JOB NO <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers-D6H, 750		4	Operators	
CONTRACTOR <u>A-Ritz</u>		2	Backhoes-225, SK120		3	Laborers	
WEATHER <u>Sunny Breezy</u>	TEMP. <u>50</u> ° AT <u>900</u> AM <u>60</u> ° AT <u>100</u> PM	1	Cat 936 Loader		1	Superintendent	
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		1	Ford Tractor/Sweeper		7	Dump Truck Drivers	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Sheepsfoot Roller				

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Rd. pit.

750 Dozers - Strips overburden soil and fills in excavated areas.

D6H LGP Dozer - Grades clay lift 1 in southeast corner of LF

Cat 936 Loader - Buckets clay down to toe of western slope where additional clay is needed; also carries filter fabric rolls when required.

Laborers - Deploy filter fabric and stake it down; install grade stakes; clean clay off entrance road.

Backhoe SK120 Backhoe - Installs clay in trench at southeast corner of landfill

Ford Sweeper - Used to clean off landfill entrance road.

Sheepsfoot Roller - Compacts clay lift 1 in Northwest part of LF.

IKL - Performs M/D testing on clay in trench and lift 1 at southeast part of landfill.

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SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE	10-1-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Petersburg, NY	2	Dozers - D6H, 850		5	Operators	
CONTRACTOR	A-Ritz	2	Backhoes - 225, SK120		3	Laborers	
WEATHER	Sunny	TEMP. 50° AT 9:00 AM 60° AT 1:00 PM	1	Cat 936 Loader		1	Superintendent
SUPERINTENDENT OR FOREMAN	Marty Bernardo		1	Sheepsfoot Roller		7	Truck Drivers
HRS. WORKED	8	OWNER	EAC	1	Ford Sweeper		

WORK PERFORMED:

225 - Loads trucks with clay at Babcock Rd. pit.
 750 - Strips overburden soil at Babcock Rd pit.
 D6H - Grades clay lift 1 at north end of land fill; also grades add'l clay for lift 2 on western slope down to toe.
 Sheepsfoot Roller - Compacts clay lift 1 on recently placed clay at north end and in SE corner, placed yesterday.
 Ford Tractor Sweeper - Cleans clay off land fill entrance road.
 Laborers - Remove clay clods off entrance road; direct dump trucks at site; check depth of clay lift 2.
 SK120 Backhoe - Places and compacts clay in perimeter trench in southeast section of land fill; also uncovers monitoring well - MW-W5.
 JKL - Performs moisture/density testing on clay lifts.
 - Takes progress photos.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 10-4-93	JOB NO. 4110960	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION Petersburg, NY	2	Dozers D6, 750		5	Operators	
CONTRACTOR A-Ritz	2	Backhoes - 225, SK120		3	Laborers	
WEATHER Sunny, Breezy TEMP. 54° AT 900 AM • AT • PM	1	Loader - 936		1	Superintendent	
SUPERINTENDENT OR FOREMAN Marty Bernardo	1	Ford Tractor			Dump Truck Drivers	
HRS. WORKED 8 OWNER EAC						

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Rd pit.
750 - Strips overburden soil off of clay to be excavated.
Ford Tractor Sweeper - Cleans clay off land fill entrance road.
Kobelco SK120 Backhoe - Excavates another trench at northeast corner of land fill; loads dump w/ excavated soil which dumps at top
D6H - Continues grading clay lift 2 on west slope down to toe of slope; installing additional clay as needed to meet required 18" depth; also spreads clay lift 1 at north end of land fill.
Laborers - Run sweeper in road, direct dump trucks, check clay depths.
JKL - Performs m/d Testing on completed clay lifts; Obtains Shelby Tube samples 10A and 10B and delivers to SMT Lab.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE <u>10-5-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	D6H Dozer	8	2	Operators	8
CONTRACTOR <u>A-Ritz</u>		1	Cat 936 Loader	3	2	Laborers	3
WEATHER <u>Partly Sunny</u>	TEMP <u>55°</u> AT <u>1000</u> AM ° AT PM	1	Kobelco SK120 Backhoe	8	1	Superintendent	
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>					1	Dump Truck Drivers	8
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>				1	Laborer	8

WORK PERFORMED:

Rain last night prohibits dump trucks from hauling clay.

936 Loader - Deploys filter fabric at north end of site.

D6H Dozer - Spreads blue clay lift 1 over fabric at north end of landfill; also continues regrading lift 2 at southwest corner of site.

Laborers - Deploy filter fabric; one laborer stays to check depth of clay as dozer grades.

SK120 Backhoe - Continues excavating perimeter trench on east side, loading dump truck with excavated material which dumps it on top of landfill.

JRL - Performs M/D testing on lift 2 at southwest corner. Obtains Shelby Tube samples ST-11A and ST-11B for permeability testing.

936 Loader - Hauls clay to trench on east side of site where Kobelco Backhoe spreads and compacts it.

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DATE <u>10-6-93</u>	JOB NO <u>4110400</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs
LOCATION <u>Petersburg, NY</u>		1	D6H Dozer	9	4	Operators	8
CONTRACTOR <u>A. Pitz</u>		1	Kobelco SK120 Backhoe	8	3	Laborers	8
WEATHER <u>Sunny</u>	TEMP. 62° AT 1130 AM ° AT ° PM	1	Ford Tractor Sweeper	8	4	Dump Truck Drivers	8
SUPERINTENDENT OR FOREMAN <u>Marty Brinardo</u>		1	Cat 936 Loader	8	1	Superintendent	2
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Smooth Drum Roller	2			

WORK PERFORMED:

1 Walk Behind Roller 1

No clay hauling today as Babcock Rd. pit is too wet.

D6H Dozer - Spreads Barrier Protection Material over clay lift 2 on western half of land fill; also pushes clay down to southwest toe of slope for backhoe, as needed.

Kobelco SK120 Backhoe - Places and compacts clay lift 2 in southwest corner of site and in perimeter trench.

Cat 936 Loader - Loads barrier protection soil into dump trucks at Charlie Jones pit.

Ford Sweeper - Cleans roadway from site to Jones pit.

Smooth-drum Roller - Compacts barrier protection soil.

Walk Behind Roller - Compacts clay lift placed in trench yesterday.

JKL - Performs Moisture/Density tests on clay and barrier-protection soil; obtains samples # LPB 15, 16, 17, 18, 19, and LPB 20 from Babcock Rd. pit; obtains bag sample of barrier protection soil from Jones pit and delivers all samples to SMT Lab.

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SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE <u>10-7-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	D6H Dozer	9	5	Operators	8
CONTRACTOR <u>A-Ritz</u>		1	Sheepsfoot Roller	8	3	Labarers	8
WEATHER <u>Sunny Clear</u>	TEMP <u>75°</u> AT <u>230</u> AM PM	1	Ford Tractor	8	7	Dump Truck Drivers	8
SUPERINTENDENT OR FOREMAN <u>Bob</u>		1	936 Loader	8			
HRS. WORKED <u>8</u>	OWNER <u>EAL</u>	2	Backhoes - 225, SK120	8			

WORK PERFORMED:

225 - Loads dump truck with clay at Babcock Rd. pit.

Cat 936 Loader - Deploys filter fabric at northeast part of site in an; loads barrier protection soil into dump trucks the rest of the day.

5 Dump Trucks - Haul clay from Babcock pit for lift 1 in NE part of landfill.

2 Dump Trucks - Haul Barrier protection soil from Jones pit.

D6H Dozer - Spreads barrier protection soil over clay lift 2 in western part of site; spreads clay lift 1 in NE part of site; grades clay lift 2 on southern slope.

Kobelco SK120 Backhoe - Places and compacts clay lifts 1, 2, and 3 in trench at northeast part of site; also grades and compacts additional clay in SW corner of site where needed.

JKL - Performs Moisture / Density testing on clay lifts.

Ford Tractor - Sweeps roadways near landfill entrance.

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SIGNED: John K. Lovell

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DATE <u>10-8-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO. MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6H, 750	8	5 Operators	8
CONTRACTOR <u>A. Ritz</u>		2	Backhoes - 225, SK120	8	3 Laborers	8
WEATHER <u>Sunny</u>	TEMP. <u>70</u> ° AT <u>300</u> AM PM	1	Loader - 936	8	1 Superintendent	
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		2	Vibrating Rollers	8	7 Truckers	8
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Ford Tractor	8		

WORK PERFORMED:

1 Walk Behind Roller

225 - Loads trucks with clay at Babcock Road pit.

750 - Grades and regrades roadways in and around Babcock Rd. pit.

SK120 Backhoe - Places and compacts clay in perimeter trench at northeast part of site.

Walk Behind Roller - Compacts clay in perimeter trench.

936 Loader - Strips, stockpiles, and loads barrier protection soil at Jones Pit in am; deploys filter fabric and buckets clay to trenches in pm.

D6H Dozer - Spreads clay lift 1 in northeast part of site over deployed filter fabric.

Sheepsfoot and Smooth-drum Rollers - Compact clay lifts.

Laborers - Operate walk-behind roller, direct trucks, check depths and grades, operate Ford sweeper, operate sheepsfoot and smooth-drum rollers.

SKL - Performs M/D testing on compacted clay lifts. Obtains Shelby Tube samples ST12A, ST12B, ST13A, and ST13B and delivers to SMT Lab.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John H. Lovell

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DATE <u>10-11-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6H, 750	8	5	Operators	8
CONTRACTOR <u>A-Ritz</u>		2	Backhoes - 225, SK120	8	4	Laborers	8
WEATHER <u>Sunny, Clear</u>	TEMP <u>50</u> ° AT <u>10:00</u> AM <u>56</u> ° AT <u>2:30</u> PM	1	Loader - 936	8	1	Superintendent	
SUPERINTENDENT OR FOREMAN <u>Marty Bernardo</u>		1	Ford Tractor Sweeper	8	5	Dump Truck Drivers	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Sheepsfoot Roller	8			

WORK PERFORMED:

1 Walk Behind Roller

225 - Loads dump trucks with blue clay at Babcock Rd. pit.

750 - Grades roadways in and around Babcock clay pit.

D6H - Grades clay lift 1 on east side of landfill over filter fabric

936 Loader - Deploys filter fabric over eastern landfill slope; also strips and stockpiles barrier protection soil at Jones pit.

Kobelco SK120 Backhoe - Places and compacts clay lifts 2 and 3 in perimeter trench on east side of landfill; also places + compacts clay in drainage swale along western toe of slope.

Laborers - Operate sweeper, walk-behind roller, sheepsfoot roller, and smooth-drum roller; also direct trucks; deploy filter fabric

JKL - Performs moisture / Density testing on completed clay lifts.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lowelle

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DATE <u>10-12-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO. MANPOWER
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6H, 750		5 Operators
CONTRACTOR <u>A - Ritz</u>		2	Backhoes - 225, SK120		4 Laborers
WEATHER <u>Cloudy Rain</u>	TEMP <u>42° AT 900 AM</u> <u>50° AT 100 PM</u>	1	Loader - 936		6 Truckers
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		1	Sheepsfoot Roller		
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Walk-Behind Roller		

WORK PERFORMED: Rain prohibits clay hauling after noon.

225 - Loads trucks with blue clay at Babcock Pit until noon.

750 - Grades roadways at pit until noon when rain prevents hauling.

Dump Trucks - Haul clay to site in am; haul gravel to site in pm.

D6H - Spreads clay life 1 on east slope of landfill in am; spreads life 1 of barrier protection soil on west slope in pm.

SK120 - Places and compacts clay lifes in east perimeter trench.

936 Loader - Deploys filter fabric on east slope in am;

Loads barrier protection soil into trucks at Jones pit in pm.

Laborers - Operate sheeps foot, smooth-drum, + walk-behind rollers; direct trucks at site; deploy filter fabric; check clay depth; operate Ford Tractor Sweeper to clean road.

JKL - Performs M/D tests on clay life 1 - east slope.

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DATE <u>10-13-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	Dozer - D6H	8	3	Operators	8
CONTRACTOR <u>A - Ritz</u>		1	Loader - 936	8	2	Laborers	8
WEATHER <u>Partly Cloudy</u>	TEMP. <u>45°</u> AT <u>900</u> AM AT <u>PM</u>	1	Smooth-Drum Roller	8	6	Truckers	8
SUPERINTENDENT OR FOREMAN <u>Bob La Duke</u>		1	Ford Tractor Sweeper	8		(1 truck stopped @ 9:30 am)	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>						

WORK PERFORMED:

Heavy Rains Last Night Prohibits Clay Hauling Today.

225 Excavator and 750 Dozer idle at Babcock pit.

936 - Loads barrier protection soil into dump trucks at Jones pit.

SK120 Backhoe - Idle; Sheepsfoot - Idle.

D6H - Grades barrier protection soil lift 1 over clay on west slope of land fill; regrades swale at toe of west slope

Ford Tractor - Sweeps soil off road between pit and land fill.

Smooth-drum Roller - Compacts Barrier Protection soil, and access roads for dump trucks

Laborers - Direct trucks, operate smooth-drum, place hay bales to prevent erosion.

SKL - Performs M/D Testing on barrier protection soil; checks depth of clay on completed areas of second lift.

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SUPERINTENDENT OR FOREMAN

SIGNED: _____

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John K. Lavelle



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DATE <u>10-14-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin-Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6H, 750	8	5	Operators	8
CONTRACTOR <u>A-Ritz</u>		2	Backhoes - 225, SK120	8	4	Laborers	8
WEATHER <u>Sunny</u>	TEMP. <u>40° AT 900 AM</u> <u>50° AT 1200 PM</u>	1	Loader - 936	8	4	Truckers	8
SUPERINTENDENT OR FOREMAN <u>Bob La Duke</u>		1	Ford Tractor Sweeper	8		1 Operator is Foreman	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Sharpfoot Roller	1			

WORK PERFORMED:

1 Smooth-drum Roller

225 Excavator - Loads dump trucks with clay at Babcock pit.
750 Dozer - Strips overburden and grades roadways around Babcock pit.

SK120 Backhoe - Places and compacts clay in trench on east side of LF.
D6H Dozer - Spreads clay lift 1 over east slope of land fill; also spreads piles of barrier protection soil left from 10-13-93.

936 Loader - Deploys filter fabric over east slope of land fill in am; strips and stockpiles barrier protection soil at Jones pit in pm.

Laborers - Direct dump trucks; operate sharpfoot and smooth-drum rollers and Ford sweeper; shovel clay chunks off entrance road; deploy and stake down filter fabric; check depth of barrier protection soil, lift 1.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE <u>10-15-93</u>	JOB NO <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO. MANPOWER	Hrs.
LOCATION <u>Berlin - Petersburg, NY</u>		2	Dozers - D6H,		5 Operators	
CONTRACTOR <u>A-Ritz</u>		2	Backhoes - 225, 2400		3 Laborers	
WEATHER <u>Cloudy</u> <u>Sunny</u>	TEMP. <u>48°</u> AT <u>900</u> AM <u>58°</u> AT <u>100</u> PM	1	Loader - 936		4 Truckers	
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		1	Smooth-Drum Roller		1 Superintendent	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Ford Tractor			

WORK PERFORMED:

936 Loader - Loads trucks with barrier protection soil at Charlie Jones pit.

D6H Dozer - Grades barrier protection soil over clay life 2 on west slope.

Smooth-drum Roller - Compacts barrier protection soil.

Ford Tractor - Sweeps roadways by land fill entrance

Laborers - Operate sweeper; direct trucks; check depth of soil

JKL - Performs M/D testing on barrier protection soil.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lavella

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DATE <u>10/18/93</u>	JOB NO <u>4110900/1122</u>	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT <u>BERLIN PETERSBURGH LANDFILL</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>	<u>4</u>	<u>TRUCKS</u>				
CONTRACTOR <u>A. RITE CONSTN.</u>						
WEATHER <u>P. CLOUDY</u>	TEMP <u>50</u> ° AT <u>2</u> AM					
SUPERINTENDENT OR FOREMAN <u>BOB La Duke</u>						
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>					

WORK PERFORMED:

MON 10/18/93

1 OPERATION → SWEEPER

1 OPERATION (LOADER) @ JONES PIT. (B/P)

1 " (SMOOTH PAV. ROLLER) LANDFILL

1 " DOZER (BOB)

2 CABOZERS

1 TRACK HDE (IDLE)

1 SHEEPSFOOT (IDLE)

JSU PERFORMS M/D TESTING ON B/P LIFT 1

ONLY SMALL AREA COMPACTED : READY FOR TESTING
(200-300 SF)

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: J.D. Williams

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DATE	10-19-93	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	Berlin-Petersburg		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY		2	Dozers-750, D6H		5	Operators 1-9	8	
CONTRACTOR	A-Ritz		2	Backhoes-225, SK120		3	Laborers 1-9	8	
WEATHER	Sunny	TEMP.	55° AT 9:20 AM 62° AT 2:00 PM	1	Loader-936	8	6	Truckers	8
SUPERINTENDENT OR FOREMAN	Bob LaDuke		1	Ford Sweeper	8				
HRS. WORKED	8	OWNER	EAC	1	Sheepsfoot Roller	8			

WORK PERFORMED:

1 Smooth-drum Roller 8

225 - Loads dump trucks with clay at Babcock Rd. pit.
750 - Grades roads at pit and backfills mined areas. 1

D6H - Grades clay lift 2 on southern slope of landfill; also places additional clay as needed to meet required 18" depth on southwest quadrant of site.

SK120 Backhoe - Places and compacts clay at foot slope in SW corner.
Smooth-drum Roller - Compacts clay in regraded areas and on west slope to seal 2nd lift.

Sheepsfoot Roller - Compacts clay lift 2.

936 Loader - Buckets clay for SK120 in am; strips and stockpiles barrier protection soil in pm.

Laborers - Operate Ford Tractor to sweep entrance roads; direct dump trucks at site; check clay depths.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE	10-20-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Petersburg, NY	1	D6H Dozer	8	4	Operators	8
CONTRACTOR	A - Ritz	1	Cat 936 Loader	8	4	Laborers	8
WEATHER	Cloudy Drizzle	TEMP.	45° AT 900 AM 50° AT 100 PM	1	6	Truckers-1@ 35 hrs.	8
SUPERINTENDENT OR FOREMAN	Bob La Duke	1	Ford Tractor/Sweeper	8			
HRS. WORKED	8	OWNER	EAC	1			
			Shreps foot Roller	8			

WORK PERFORMED:

1 Smooth-drum Roller 8

Rain last night prevents clay hauling at site - 225+750 idle.

936 - Loads dump trucks with barrier protection soil at Jones Pit.

D6H - Grades B.P. soil, lift 1, over west slope of landfill.

Ford Tractor - Sweeps roads clean down to Jones pit.

SK120 Backhoe - Excavates clay off of filter fabric edge at Gas vent soil / fabric / clay interface on top of landfill in preparation for deploying fabric over incomplete areas.

Laborers - Direct trucks, operate rollers, assist backhoe in clearing clay off fabric edge.

Mechanics - Repairs Mack Triaxle dump truck; changes sweeper brush on Ford Tractor.

Shreps foot and smooth-drum rollers - compact barrier protection soil.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

John K. Lovell

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DATE <u>10-21-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs.	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	D6H Dozer		4	Operators	
CONTRACTOR <u>A-Ritz</u>		1	936 Loader	8	3	Laborers	
WEATHER <u>Cloudy</u>	TEMP. <u>50°</u> AT <u>900 AM</u>	1	Kobelco SK120 Backhoe	8	4	Truckers	
<u>Light Rain</u>	<u>60°</u> AT <u>100 PM</u>	1	Ford Sweeper	8			
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		2	Vibratory Rollers	8			
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>						

WORK PERFORMED:

No clay work due to rain today and last night - 225 and 750 - idle.
 936 Loader - Loads dump trucks with BP soil at Jones pit.
 D6H - Grades barrier protection soil lift 1 on west slope of landfill down to toe, completing lift 1 on northeast quadrant of site.
 SK120 Backhoe - Grades and compacts clay at toe of slope in southeast corner of landfill; also repairs eroded gullies to west of landfill perimeter, and improves drainage at perimeter swale.
 Sheepfoot Roller - Compacts BP Lift 1 on west slope.
 Smooth-drum - Compacts barrier protection soil on flatter part of west slope.
 Ford Tractor - Sweeps BP Soil off landfill road entrance down to pit.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lucille

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DATE	10-22-93	JOB NO.	4110980	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	1	D6H Dozer	8	4	Operators	8	
CONTRACTOR	A-Ritz	1	936 Loader	8	3	Laborers	8	
WEATHER	Cloudy Sunny	TEMP.	50° AT 1000 AM 50° AT 100 PM	1	Ford Tractor/Sweeper	8	4 Truckers	8
SUPERINTENDENT OR FOREMAN	Bob La Duke	1	SK120 Backhoe	3				
HRS. WORKED	8	OWNER	EAC	2	Vibrating Rollers	8		

WORK PERFORMED:

936 Loader - Loads dump trucks with barrier protection soil at Charlie Jones pit.

D6H Dozer - Grades BP soil lift 1 at southwest quad of site forming new ramp w/ BP soil for trucks to back up on over clay layer.

SK120 Backhoe - Removes truck ramp of BP soil at north end of site in am; low-bed trailer removes back hoe and walk-behind roller @ 10:00 am.

Sheepsfoot and Smooth-drum Rollers - Compact barrier protection soil and roadways on-site.

Ford Tractor - Sweeps road down to Jones pit from landfill site.

Laborers - Direct trucks, operate Ford Tractor.

JKL - Performs M/D Testing on barrier protection soil, lift 1.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

John R. Lovell

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DATE <u>10-25-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT <u>Berlin - Petersburg</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs
LOCATION <u>Petersburg, NY</u>	2	Dozers - 750, D6H		5	Operators	
CONTRACTOR <u>A - Ritz</u>	1	Backhoe - 225		3	Labors	
WEATHER <u>Sunny</u>	1	Loader - 936		4	Truckers	
SUPERINTENDENT OR FOREMAN <u>Bob La Duke</u>	1	Sheepsfoot Roller				
HRS. WORKED <u>0</u>	1	Ford Tractor				
OWNER <u>EAC</u>						

WORK PERFORMED:

1 Smooth-drum Roller

225 - Loads dump trucks with blue clay at Babcock Pit.

750 - Grades roadways at Babcock pit and fills excavated areas with overburden soil.

D6H - Grades clay lift 2 at north end of 1st fill.

Sheepsfoot Roller - Compacts clay lifts 1 and 2 at north end and east slope of land fill.

Smooth-drum Roller - Compacts barrier protection soil and clay lifts.

936 Loader - Buckets barrier protection soil to toe of west slope to form drainage swale; then goes to Jones Pit to strip and stock pile barrier protection soil.

Labors - Direct trucks; check depths of clay lifts; operate Ford Tractor to clean entrance road.

SKL - Performs Moisture/Density tests on compacted clay lifts.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE <u>10-26-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6H, 750		5	Operators	
CONTRACTOR <u>A - Ritz</u>		1	Backhoe - 225		3	Laborers	
WEATHER <u>Cloudy</u>	TEMP <u>50</u> ° AT <u>10:30</u> AM ° AT	1	Loader - 936		5	Truckers	
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		1	Sheepsfoot Roller				
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Smooth-drum Roller				

1 Ford Tractor Sweeper

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Pit.

750 - Strips overburden and stockpiles clay for backhoe at ~~Jim~~ Babcock pit.

936 Loader - Strips and stockpiles barrier protection soil at Charlie Jones pit.

D6H - Spreads clay lift 2 in northeast quadrant of landfill.

Sheepsfoot and smooth-drum rollers - Compact clay lift 2

Laborers - Direct trucks, check clay lift depths, operate Ford Tractor to clean entrance road.

JKL - Performs M/D testing on clay lift 2; obtains Shelby tube samples ST14A and ST14B; obtains clay samples LPB21, LPB22, and LPB23 and delivers all to SMT Lab.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE <u>10-27-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers-D6H, 750	8	5	Operators	8
CONTRACTOR <u>A-Ritz</u>		1	Backhoe-225	8	2	Laborers	8
WEATHER <u>Cloudy</u>	TEMP. <u>48</u> ° AT <u>1000</u> AM ° AT PM	1	Loader-936	8	8	Truckers	7-8 1-3.5
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		2	Vibratory Rollers	8			
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Ford Tractor	8			

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Pit.
750 - Strips overburden and loosens clay for 225 at Babcock Pit.
D6H - Grades clay lift 2 on east slope of landfill in am; grades clay lift 2 on southeast corner in pm; also grades BP soil in southwest corner.
936 Loader - Strips + stockpiles barrier protection soil in am; load (2) dump trucks with BP soil in pm.
Sweeps front and smooth-drum rollers - Compact clay lifts
Ford Tractor - Sweeps entrance road clean
JKL - Performs M/D tests on clay lifts 1 and 2.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE <u>10-28-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - D6, 750		5	Operators	
CONTRACTOR <u>A-Rite</u>		1	Backhoe - 225		3	Laborers	
WEATHER <u>Cloudy Light Rain</u> TEMP. <u>40°</u> AT <u>030</u> AM		1	936 Loader		8	Truckers	
<u>Sunny, Dry</u> TEMP. <u>50°</u> AT <u>200</u> PM							
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		1	Smooth-drum Roller				
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Sheepsfoot Roller				

WORK PERFORMED:

1 Ford Tractor
1 Low-Bed Trailer

225 - Loads dump trucks with clay at Babcock Pit.

936 - Loads dump trucks with barrier protection soil at Jones Pit.

750 - Strips and stockpiles B.P. soil at Jones Pit till 10:30 am.

- Grades life 1 of BP at southwest corner of landfill till after 10:30.

Low-Bed Trailer - Moves 750 from Jones Pit to landfill site.

D6H - Grades clay life 2 at southeast corner of landfill.

Sheepsfoot and Smooth-drum - Compact and seal clay life 2.

Laborers - Direct trucks at site, operate Ford Sweeper to clean road, check clay depths, dig clay up from filter fabric at top of landfill in preparation for installing more fabric and clay life 1 in area left open on top of landfill.

JKE - Performs M/D Tests on clay life 2

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE <u>10-29-93</u>	JOB NO <u>440900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin-Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - 750, D6H		5	Operators	
CONTRACTOR <u>A-Ritz</u>		1	Backhoe - 225		4	Laborers	
WEATHER <u>Sunny</u>	TEMP <u>50</u> ° AT <u>1000</u> AM	1	Loader - 936		8	Truckers	
SUPERINTENDENT OR FOREMAN <u>Bob Lz Duke</u>		1	Sheepsfoot Roller		1	Mechanics	
HRS WORKED <u>8</u>	OWNER <u>EAC</u>	1	Smooth-drum Roller				
			1 Ford Tractor/Sweeper				

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Pit.

936 Loader - Loads dump trucks with barrier protection soil at Jones Pit.

750 Dozer - Spreads BP soil lift 1 in southwest corner of site; also begins grading berm/swale halfway up west slope.

D6H Dozer - Grades clay lift 1 on top of land fill at north end.

Laborers - Deploy filter fabric on top of land fill; direct trucks; probe clay depths; operate Ford Sweeper.

Sheepsfoot and smooth-drum rollers - Provide compaction on clay and barrier protection lifts.

SKC - Performs M/D testing on clay lifts.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE 11-2-93	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION Petersburg, NY	1	D6H Dozer	0.5	2	Operators	1
CONTRACTOR A-Ritz	1	Sheepsfoot Roller	0.2		Laborers	
WEATHER Sunny, Clear	TEMP. 30° AT 700 AM 50° AT 130 PM			5	Truckers	0
SUPERINTENDENT OR FOREMAN Bob La Duke						
HRS. WORKED 8	OWNER EAC					

WORK PERFORMED:

No hauling of clay or BP soil today due to snow, frozen soil, and ice on roadways to borrow pits.

D6H Dozer - Grades northwest perimeter road/swale so that water drains to inside edge of roadways.

Truckers hung out 7:00-10:00 am in hopes of hauling BP soil, but road to Jones pit is impossible for two trucks to pass as edges remained icy.

Frozen soil and snow existed on LF site in am and began to melt by 10:00 am.

Laborers - Place hay bales to control erosion in afternoon on west slope, at pipe inverts, and across brook to slow sedimentation.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John H. Lovell

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DATE <u>11-3-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	Backhoe - 225	8	4	Operators	
CONTRACTOR <u>A - Ritz</u>		1	Loader - 936	8	3	Laborers	
WEATHER <u>Cloudy Windy</u>	TEMP. ° AT ° AT AM PM	1	Dozer - D6H	8	1	Foreman	
SUPERINTENDENT OR FOREMAN <u>Bob LaDuke</u>		1	Ford Tractor	8	7	Truckers 6-8	
HRS. WORKED <u>8</u>	OWNER <u>EAC</u>	1	Smooth-drum Roller	8			

WORK PERFORMED:

225 - Loads dump trucks with clay at Babcock Pit till 9:00 when melting snow, ice, and soil make it impossible for loaded trucks to haul clay. After 9:00, 225 strips and stockpiles clay for hauling at a later date.

936 - Strips and stockpiles barrier protection soil till 9:00 am, then loads trucks remainder of day at Jones pit.

D6H - Spreads clay lift 1 over fabric in middle part of top of landfill ~~the~~ till 9:00; then spreads BP Lift 1 in southwest corner of landfill.

Smooth-drum Roller - Compacts barrier protection soil and roadways around site.

Ford Tractor - Sweeps roadway between landfill and Jones Pit.

JKL - Performs M/D testing on Barrier Protection soil, lift 1.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovell

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DATE	11-4-93	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT	Berlin - Petersburg	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION	Petersburg, NY	2	Dozers - D6H, 750		5	Operators		
CONTRACTOR	A-Ritz	1	Loader - 936		3	Laborers		
WEATHER	Sunny	TEMP	45° AT 1000 AM 52° AT 200 PM	1	Backhoe - 225	7	Truckers	
SUPERINTENDENT OR FOREMAN	Bob LaDuke	1	Smooth-drum Roller					
HRS. WORKED	9	OWNER	EAC	1	Ford Sweeper			

WORK PERFORMED:

936 - Loads trucks with barrier protection soil at Jones Pit.
- 7 Trucks in am; 2 trucks in pm.

225 - Loads trucks with clay at Babcock Pit after 12:00 pm.

750 - Strips and piles clay for 225 to load at Babcock pit

D6H - Spreads barrier protection soil in southwest corner of sit
- Also grades clay lift 1 on top of land fill; and spreads
lift 1 clay as trucks haul it in.

Laborers - Direct trucks; operate sweeper to clean road;
install grade stakes; check depth of soil lifts

Smooth-drum Roller - Compacts barrier protection soil.

JKL - Performs M/D testing on clay lift 2; obtains Shelby tube
samples ST-15A and ST-15B

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE <u>11-5-93</u>	JOB NO <u>Y110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		1	Backhoe - 225	4	5	Operators	4
CONTRACTOR <u>A - Ritz</u>		2	Dozers - D6H, 750	4	3	Laborers	4
WEATHER <u>Rain</u>	TEMP. <u>40° AT 900 AM</u> <u>50° AT 1100 PM</u>	1	Loader - 936	4	8	Truckers	4
SUPERINTENDENT OR FOREMAN <u>Bob La Duke</u>		1	Smooth-drum Roller	4			
HRS. WORKED <u>4</u>	OWNER <u>EAC</u>	1	Ford Tractor	4			

WORK PERFORMED:

225 - Loads Trucks with clay at Babcock pit till 10:00 am.
- Created berms to control water till 11:00 am.

750 - Stripped overburden soil and piled clay for 225 at Babcock.

936 - Loaded trucks with barrier protection soil at Jones pit.

D6H - Spread clay lift over filter fabric until 10:00.
Spread barrier protection soil in southwest part of site until 11:00 am.

Smooth-drum Roller - Compacted + sealed barrier protection soil on southwest slope.

Work discontinued at 11:00 am due to steady rain.

Ford Tractor - Cleans road from land fill to Jones pit.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

RESIDENT ENGINEER OR FIELD REPRESENTATIVE

John K. Lovell



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DATE <u>11-9-93</u>	JOB NO <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Beaulieu/Petersburgh Landfill</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION <u>PETERSBURGH, NY</u>							
CONTRACTOR <u>A-LITE</u>							
WEATHER <u>M. Cloudy</u>	TEMP <u>45</u> ° AT <u>2</u> <u>AM</u>						
SUPERINTENDENT OR FOREMAN <u>BOB</u>							
HRS. WORKED <u>9</u>	OWNER <u>EAL</u>						

WORK PERFORMED:

225 - Loads clay
750 - Babcock pit restoration
936 - Loads BP
DH - Spreads BP; ~~stack~~ piles clay
Ford Tractor - Sweeps road
8 - Dump trucks haul

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE <u>11-10-93</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin - Petersburg</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Petersburg, NY</u>		2	Dozers - 750, D6H	9	5	Operators	9
CONTRACTOR <u>A - Ritz</u>		1	Backhoe - 225	9	2	Laborers	9
WEATHER <u>Sunny</u>	TEMP. <u>42° AT 400 AM</u> <u>56° AT 200 PM</u>	1	Loader - 936	9	9	Truckers	9
SUPERINTENDENT OR FOREMAN <u>Bob La Duke</u>		1	Ford Tractor	9			
HRS. WORKED <u>9</u>	OWNER <u>EAC</u>	9	Dump Trucks	9			

WORK PERFORMED:

225 - Loads 7 trucks with clay at Babcock Pit.

750 - Grades overburden soil at Babcock Pit to restore pit to an evenly sloped field.

936 - Loads 2 trucks with barrier protection soil at Jones pit.

D6H - Stockpiles incoming clay loads on top center part of landfill; also grades barrier protection soil - lift 1.

Laborers - Direct trucks on-site, operate Ford Sweeper; place grade stakes.

JKL - Performs M/D testing on clay lifts

Obtains clay samples LPB 24 and LPB 25 from Babcock pit

Obtains barrier protection soil samples BP 2 and BP 3 from Jones pit

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: John K. Lovelle

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DATE 9/21/94	JOB NO 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT BERLIN/PETERSBURG LANDFILL	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION BERLIN, NY	1	D-8 DOZER		1	FORMAN
CONTRACTOR A-RITZ	1	FE LOADER		1	MARTY B
WEATHER SUNNY	TEMP 80 ° AT 3 AM	1	SHEEPSFOOT		
SUPERINTENDENT OR FOREMAN GARY/MARTY B					
HRS. WORKED	OWNER EAC				

WORK PERFORMED:

- ARRIVED ON SITE AT 1:30 PM. RITZ PERSONNEL ON SITE DELIVERING EQUIPMENT. MARTY ARRIVED APPROX 2 PM. NEW FORMAN TO COMPLETE WORK, GARY. MARTY, GARY, MYSELF WALK TO BACK SLOPE TO LOOK AT POOR AREAS. WE ALL AGREE THAT BACK SLOPE TO RECEIVE COMPLETE COVER SYSTEM INCLUDING TOPSOIL: SEEDING ASAP. ON AREAS THAT ARE ERODED TO CLAY BARRIER, CONTINUE TO STAY AWAY UNTIL WATER IS ON SITE. ONCE CLAY IS WORKABLE, BARRIER PROTECTION SHOULD BE CLEANED OFF AND CLAY INSTALLED TO MIN. 18". TESTING COULD BE DONE IMMEDIATELY ON THESE AREAS: THEN COVERED. THIS PROCESS COULD BE DONE ON ONE OR TWO WELL COORDINATED DAYS. REST OF AREAS SHOULD BE DRESSED TO 2' MIN BARRIER PROTECTION. MORE MEN ON JOB TOMORROW. LOOKED AT JONES PIT. BACK BLADE VEGETATION PRIOR TO EXCAVATING.
- MARTY BEGAN DOZING/DRESSING BEAR BANK @ 3:30 PM. LEFT SITE AT 3:30 PM.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	9/22/94	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT	B/P LANDFILL CLOSURE	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	BERLIN, NY	1	D-8 DOZER		1	FORMAN	
CONTRACTOR	A-RITZ	1	FE LOADER		1	OPERATOR	
WEATHER	CLOUDY	TEMP.	65° AT 3 AM ° AT PM	1		SHEEPSOOT	
SUPERINTENDENT OR FOREMAN	GARY						
HRS. WORKED		OWNER	EAL				

WORK PERFORMED:

- ON SITE AT 2:30 PM
- NO TRUCKS TODAY, OPERATOR HAD TO LEAVE EARLY. MARTY NOT ON SITE TODAY. NOT MUCH ACTIVITY. WENT TO JONES PIT w/ GARY. OPERATOR BEGAN TO EXCAVATE LOWER BANK. GARY CONCERNED ABOUT MATERIAL. NO PROBLEMS WITH IT. OPERATOR SHOULD BACK BLADE VEGETATION. BACK OVER AT LANDFILL: WE WALKED OVER TO POOR AREAS OF BACK SLOPE. ONE ERODED SECTION DOWN TO LINER. WE MUST COMPLETELY REWORK THIS AREA. ALL AREAS OF CONCERN STAKED OUT BY GARY. TRUCK, WHEN THEY ARRIVE, WILL BEGIN TO STOCKPILE GRAVEL. BARRIER PROTECTION LAYER VARIES FROM 6" TO 2' WHERE NOT ERODED. MEN ARE TO WORK 10 HOUR DAYS: SATURDAYS TO COMPLETE PROJECT. BAS VERT AREAS YET TO RELIEVE CLAY SHOULD BE BACKBLADED.
- LEFT SITE AT 3:45 PM.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 10/28/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT Berlin/Petersburg LF		NO.	Equipment Type	Hrs	NO. MANPOWER	Hrs.
LOCATION Towns of Berlin & Petersburg		1	John Deere 850		1	Site Super.
CONTRACTOR A. Ritz, Inc.			bulldozer		2	Operators
WEATHER	TEMP. ° AT ° AT AM PM	1	Hamm 2410 SD		1	laborer
SUPERINTENDENT OR FOREMAN Gary Guadagno			sheepsfoot roller			
HRS. WORKED	OWNER EAC	1	Cat 936 loader			

WORK PERFORMED:

3 dump trucks delivered run-of-bank material from the Jones Pit

Hamm roller used to compact clay

5 Triaxler moist. - dens. tests performed (537-641)

area tested O.K., so I gave super. the O.K. to cover it with barrier protective material

Barrier Protective material stockpiled around edges of recently placed clay work

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 10/31/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE.			
PROJECT Berlin/Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION Towns of Berlin & Petersburg	1	John Deere 850 bulldozer		1	Site Super.
CONTRACTOR A. Ritz, Inc.				2	Operators
WEATHER	TEMP	° AT	AM		
SUPERINTENDENT OR FOREMAN Gary Guadagno			PM	1	laborer
HRS WORKED	OWNER ETC	sheepsfoot roller			
		1 Cat 936 loader			

WORK PERFORMED:

Bulldozer operator spread Towns Pit material over the 2nd lift of clay to form the barrier protective layer between the gas vents located at N 4+40 and N 3+00, respectively

3 dump trucks operated between the Towns Pit and the LF, delivering run-of-bank material

Towns Pit material was placed along the edge of the LF's southern slope to be used in constructing the barrier-protective layer in that area

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SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 11/1/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin/Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION Towns of Berlin & Petersburg	1	John Deere 850		1	Site Super.		
CONTRACTOR A. Ritz, Inc.		bulldozer		2	operators		
WEATHER	TEMP	° AT	AM	1	Hamm 2410 SD		
		° AT	PM		1	Laborer	
SUPERINTENDENT OR FOREMAN Gary Guadagno		sheepsfoot roller					
HRS. WORKED	OWNER EAC	1	Cat 936 loader				

WORK PERFORMED:

- 1/2 day worked due to rain
- 3 trucks transported Jones Pit material to the site for use as barrier-protection layer
- Bulldozer spread Jones Pit material into 2' barrier-protection layer

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 11/2/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT Berlin/Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs
LOCATION Towns of Berlin; Petersburg	1	John Deere 850		1	Site Super.	
CONTRACTOR A. Ritz, Inc.		bulldozer		2	Operators	
WEATHER	TEMP.	° AT	AM	PM		
SUPERINTENDENT OR FOREMAN Gary Guadagno		2	Hyman 2410 SD		1	Laborer
HRS. WORKED	OWNER EAC		sheepsfoot roller			
		1	Cat 936 loader			

WORK PERFORMED:

- 3 trucks hired by A. Ritz transported Jones pit material to the site all day for use as barrier-protective material
- Approx. 60 cy of a compost/sludge mixture were delivered to the site from Schenectady by Mangiardi Trucking
- Aggregated samples of clay from the Jones pit, and the compost/sludge mixture that Mangiardi delivered brought the samples to SMT in Castleton for testing

Topsoil: gradation, pH & organic content

Clay: gradation, Atterberg Limits and Modified Proctor (hold for permeability)

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *John M. Kay*

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DATE 11/3/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Berlin/Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION Jones of Berlin i Petersburg	1	John Deere 850 bulldozer		1	Site Super.
CONTRACTOR A. Ritz, Inc.				2	operators
WEATHER	TEMP	° AT	AM	1	Hammer 2410 SD
		° AT	PM		sheepsfoot roller
SUPERINTENDENT OR FOREMAN Gary Guadagno					
HRS. WORKED	OWNER EAC	1			Cat 936 loader

WORK PERFORMED:

- 3 10-wheel dump trucks are being loaded with run-of-bank material at the Jones Pit
- This material is being spread to the finish grade of the barrier protective layer as it arrives on site
- Inform the super. that the Jones Pit clay sample was delivered (along with the topsoil sample) to the lab yesterday - I'll let him know the results as soon as I get word

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	11/4/94	JOB NO	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	Berlin/Petersburg LF			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Towns of Berlin & Petersburg			1	John Deere 850		1	Site Super.	
CONTRACTOR	A. Ritz, Inc.				bulldozer		2	Operators	
WEATHER		TEMP	° AT	1	Hamm 2410 SD		1	Laborer	
			° AT		sheepsfoot roller				
SUPERINTENDENT OR FOREMAN	Gary Guadagnolo			1	Cat 936 loader				
HRS. WORKED		OWNER	EAC						

WORK PERFORMED:

• Mangiardi Trucking delivered compost/sludge mixture with dump trailers to the site today - 3 trucks were used in this effort

• 3 trucks were used to transport run-of-bank material from the Jones Pit to the LF

• Jones Pit material is being spread into the barrier protective layer as it arrives on site

• Super. informs us that a decision was made by A. Ritz to hire R.J. Valente to supply the remaining clay that is needed (approx. 1000 CY).

• I'll have to get a hold of SMT to stop testing on clay sample acquired @ the Jones Pit

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE 11/5/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Berlin / Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION Towns of Berlin & Petersburg	1	John Deere 850		1	Site Super.
CONTRACTOR A. Ritz, Inc.		bulldozer		2	Operators
WEATHER	TEMP.	° AT	AM	1	Hamm 2410 SD
		° AT	PM		sheepsfoot roller
SUPERINTENDENT OR FOREMAN Gary Guadagno	OWNER ETC	1	Cat 936 loader		
HRS. WORKED					

WORK PERFORMED:

- 3 trucks transported run-of-bank material from the Jones Pit to the site all day
- Bulldozer is being used to spread the Jones Pit material into the barrier-protective layer
- No clay delivered to the site today
- Jones Pit material will be placed in a 3"-4" lift over the barrier protective material; this small lift will be mixed w/ the compost/sludge mixture to create the topsoil layer
- stone size may be a problem for the mixture to pass as topsoil

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE	11/9/94	JOB NO.	4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT	Berlin/Petersburg LF			NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION	Towns of Berlin; Petersburg			1	John Deere 850		1	Site super.	
CONTRACTOR	A. Ritz, Inc.				bulldozer		2	Operators	
WEATHER		TEMP	° AT ° AT AM PM	1	Hamm 2410 SD		1	Laborer	
SUPERINTENDENT OR FOREMAN	Gary Guadagno				sheepsfoot roller				
HRS. WORKED		OWNER	EAC	1	Cat 936 loader				

WORK PERFORMED:

- 3 trucks transported run-of-bank material from the Jones Pit to the site all day
- Loader used at the Jones Pit to load the 3 trucks transporting the run-of-bank material
- Bulldozer operator spread the Jones Pit material into the barrier-protection layer
- 3 dump trailers from Mangiardi trucking delivered the sludge/compost mixture
- No word from the contractor yet concerning the additional clay

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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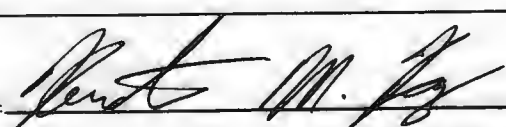
DATE 11/10/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Berlin/Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER
LOCATION Towns of Berlin & Petersburg	1	John Deere 850		1	Site super.
CONTRACTOR A. Ritz, Inc.		bulldozer		2	Operators
WEATHER	TEMP.	° AT	AM	1	Hamm 2410 SD
		° AT	PM	1	Laborer
SUPERINTENDENT OR FOREMAN Gary Guadagno		sheepsfoot roller			
HRS. WORKED	OWNER EAC	1	Cat 936 loader		

WORK PERFORMED:

- 3 trucks transported run-of-bank material from the Jones Pit to the LF all day
- Cat 936 loader was used all day to load the trucks at the Jones Pit
- 3 dump trailers from Mangiardi trucking delivered loads of the compost/sludge mixture that will be used for topsoil production
- At the end of today, there is approx. 1500 cy of the sludge on site
- Jones Pit material spread into a 3" lift over the barrier-protective layer; this will be "disced" together w/ the compost/sludge mixture to create a 6" lift of topsoil
- No word yet concerning additional clay

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE 11/11/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin / Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION Towns of Berlin & Petersburg	1	John Deere 850		1	Site Super.		
CONTRACTOR A. Ritz, Inc.		bulldozer		2	Operators		
WEATHER	TEMP	° AT	AM	1	Hamm 2410 SD		
		° AT	PM				
SUPERINTENDENT OR FOREMAN Gary Guadagno		shanksfoot roller					
HRS. WORKED	OWNER EAC	1	Cat 936 loader				

WORK PERFORMED:

- 3 trucks transported run-of-bank material from the Jones Pit to the LF site all day
- Jones Pit material has been spread into a 3" - 4" lift over the barrier protective layer to be used for topsoil production
- Mangiardi trucking used 2 dump trailers to deliver compost/sludge mixture from Schenectady
- No clay delivered today - possibly tomorrow; Site super. instructed to call when he knows for sure

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

Robert M. Foy
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DATE <u>11/12/94</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>Berlin/Petersburg LF</u>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <u>Towns of Berlin & Petersburg</u>		1	John Deere 850		1	Site Super.	
CONTRACTOR <u>A. Ritz, Inc.</u>			bulldozer		1	Operator	
WEATHER	TEMP. ° AT ° AT AM PM	1	Hamm 2410 SD		1	Laborer	
SUPERINTENDENT OR FOREMAN <u>Gary Guadagno</u>			sheepsfoot roller				
HRS. WORKED	OWNER <u>EAC</u>	1	Cat 936 loader				
			1 John Deere backhoe				

WORK PERFORMED:

• Mangiardi trucking delivered compost/sludge mixture to site using 2 dump trailers
 • R.J. Valente Excavating, Inc. delivered clay to complete the remaining exposed area - approx. 100' x 150'

• small, rubber-tired backhoe on site to finish keyway construction

• Make plans with super. to acquire a clay sample on Mon. when all the clay has been delivered

• No material brought in from the Jones pit

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: Christ M. Kay

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DATE 11/14/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin / Petersburg LF	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION Towns of Berlin & Petersburg	1	John Deere 850		1	Site Super.		
CONTRACTOR A. Ritz, Inc.		bulldozer		1	Operator		
WEATHER	TEMP	° AT	AM	1	Hamm 2410 SD	1 Laborer	
SUPERINTENDENT OR FOREMAN Gary Guadagno		sheepsfoot roller					
HRS. WORKED	OWNER EAC	1	Cat 936 loader				

WORK PERFORMED:

- 3 dumptrucks transported run of bank material from the Jones Pit to the site
- Material from the Jones Pit is being stockpiled
- Mangiardi trucking contracting to stockpile compost/sludge mixture
- R.J. Valente is on site today delivering the last of the remaining clay
- 4-5 lb. bag sample of clay taken for gradation, Atterburg limits and modified Proctor; sample delivered to SMT in Castleton

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: *V. M. Jay*

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DATE 11/15/94	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Berlin/Petersburg LF		NO.	Equipment Type	Hrs	NO. MANPOWER
LOCATION Towns of Berlin & Petersburg		1	John Deere 850		1 Site Super.
CONTRACTOR A. Ritz, Inc.			bulldozer		2 Operators
WEATHER overcast	TEMP 50s	1	Hamm 2410 SD		1 Laborer
SUPERINTENDENT OR FOREMAN Gary Guadagno			sheepfoot roller		
HRS. WORKED	OWNER EAC	1	Cat 936 loader		

WORK PERFORMED:

- 3 dumptrucks transporting run-of-bank material from the Jones Pit all day long
- Run-of-bank material from the Jones Pit is being spread in an approx. 3" 4" lift to be mixed with compost/sludge mixture to create topsoil layer
- Filter fabric placed along entire length of newly constructed keyway
- Mangiacchi trucking delivered compost/sludge mixture from Schenectady for use in topsoil production
- Valente clay (Dunn's Pit) spread into keyway over filter fabric; spread over remaining 2nd lift area as well

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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ENGINEERS DAILY CONSTRUCTION REPORT

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DATE <u>11/17/94</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>BERLIN-PETERSBURG LF</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION <u>BERLIN, N.Y.</u>							
CONTRACTOR <u>A-RITZ</u>							
WEATHER <u>SUNNY</u>	TEMP <u>25</u> ° AT	AM					
		PM					
SUPERINTENDENT OR FOREMAN							
HRS WORKED	OWNER						

WORK PERFORMED:

Am 7:30 AOS w/ M.C., MEET w/ GARY BONOMAN
DISCUSS WORK PROGRESS

2nd LIFT OF CLAY HAS BEEN INSTALLED w/ MATERIAL
FROM DUNN PIT. ONLY SMALL WEDGE SHAPED
AREA ON SLOPE AND KEY TRENCH REMAIN.

SOME TROUBLE w/ YARDAGE DELIVERED, L YARDAGE
PAID FOR THE CLAY MATERIAL, STILL WAITING FOR
MORE CLAY TO BE DELIVERED. IN THE MEAN TIME
A-RITZ IS STOCK PILING GRAVEL FOR COVER
LAYER FROM A LOCAL SOURCE.

2nd LIFT ~~PROX~~ TROXLER TESTING

MS: 735

DS: 3152

TEST NO	WD	DD	M	%M	% PR	
1	121.7	101.8	19.9	19.5	100.8	
2	108.1	93.4	14.8	15.8	92.4	
3	119.8	99.3	20.5	20.7	98.3	
4	118.4	100.2	18.2	18.1	99.2	ST-30

TOOK ONE SHELBY TUBE SAMPLE of 2nd LIFT

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: Tom W. A.

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DATE <u>11/18/94</u>	JOB NO. <u>4110900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>BERLIN PETERSBURG LF</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION <u>PETERSBURG, NY</u>							
CONTRACTOR <u>A. RITZ</u>							
WEATHER	TEMP	° AT	AM				
		° AT	PM				
SUPERINTENDENT OR FOREMAN							
HRS. WORKED	OWNER						

WORK PERFORMED:

AQS. 7:30 AM, MEET w/ GARY REVIEW
WHAT LITTLE PROGRESS SINCE 11/17. REWORKED
GARBAGE ALONG DRAINAGE KEY TO ALLOW ACCESS FOR
CLAY DEPOSITION. TRUCKS CONTINUE TO PILE
GRAVEL. WAITING FOR THE REST OF THE CLAY
TO ARRIVE AND THE RESULTS OF THE SHELBY
TUBE SAMPLE (TAKEN ON 11/17) BEFORE THE
GRAVEL IS PUSHED OVER COMPACTED CLAY.

10:45 LEAVE SITE

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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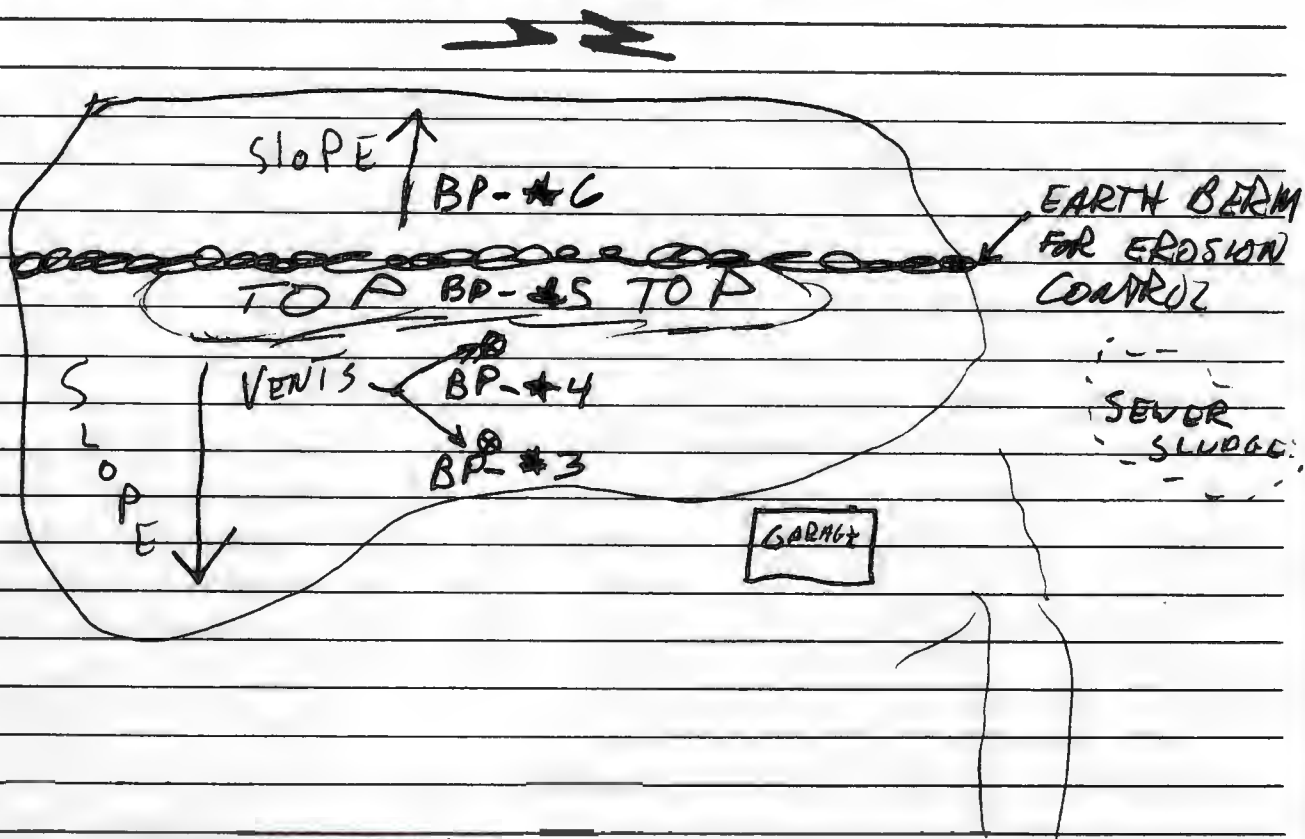
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DATE <u>11/29/94</u>	JOB NO. <u>410900</u>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <u>BERLIN - PETERSBURG LF</u>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION							
CONTRACTOR <u>A-RITZ</u>							
WEATHER <u>SUNNY</u>	TEMP. <u>40</u> ° AT <u>12:30 PM</u>						
SUPERINTENDENT OR FOREMAN							
HRS. WORKED	OWNER						

WORK PERFORMED:

11:50 AM A.O.S. MEET w/ GARY. THEY ARE REWORKING GRAVEL PIT w/ 2 DOZERS. GARY & I GO TO SITE TO GET (4) BARRIER PROTECTION LAYER SAMPLES.



12:45 LEAVE SITE

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: _____

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DATE Sept 23, 1996		JOB NO. 4110900		CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Berlin Polystyrene Lab F.		NO.		Equipment Type	Hrs	NO.	MANPOWER
LOCATION Berlin							
CONTRACTOR A. Ritz				NA.			NA.
WEATHER Sunny		TEMP		° AT	AM		
				° AT	PM		
SUPERINTENDENT OR FOREMAN H. Brumada							
HRS. WORKED		OWNER					

WORK PERFORMED:

Had conversation with Bill Ritz over the phone. Bill stated he will mobilize his equip. on Wednesday and will start work on Thursday Sept 26, also stated that Tom told him he can use some stone in place of rip rap for the back of the repair area. Related message back to Mike.

Sept. 24, 1996

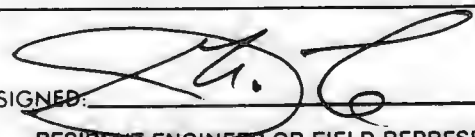
I visited the site and found that the job site in general is in pretty good shape, there are four areas that need to be changed or, all areas have erosion repairs required.

Noticed that there is a lot of vegetation on the site but some areas need to be removed and seeded and sod wash out at the lower slope.

Called Ritz and left message for Hardy or Bill to call me to arrange a meeting at the site prior to starting work. Had brief meeting with Mike about what I had discussed with Bill.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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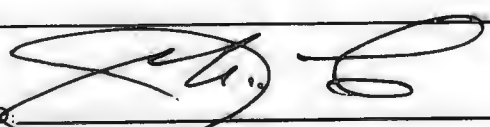
DATE <i>Sept 25, 1996</i>	JOB NO. <i>4110900</i>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <i>Berlin Doherty Bay L&B.</i>	NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.	
LOCATION <i>Berlin</i>							
CONTRACTOR <i>A.R. 13</i>		<i>MAN</i>			<i>MAN</i>		
WEATHER <i>N.A.</i>	TEMP.	° AT	AM				
		° AT	PM				
SUPERINTENDENT OR FOREMAN <i>H. Bernardo</i>							
HRS. WORKED	OWNER						

WORK PERFORMED:

*Had phone conversation with Marty, will meet Marty and operator on site tomorrow at 8:00.
Marty says he has fabric at his yard but doesn't know what it is because tags are gone, told Marty I would try to find sample in my office for comparison which I did.*

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE 5-04-20, 1996	JOB NO. 4110900	CONTRACTORS FORCES & EQUIPMENT IN USE			
PROJECT Burlington End. Fill	NO.	Equipment Type	Hrs.	NO.	MANPOWER
LOCATION Burlington	1	Backhoe		1	operator
CONTRACTOR A. Ritz				1	Supt. Hardy
WEATHER Sunny	TEMP 68°	° AT ° AT	AM PM		
SUPERINTENDENT OR FOREMAN H. Bernardo					
HRS. WORKED	OWNER				

WORK PERFORMED:

Met on the site with Hardy and discussed the work that had to be done.

Points out the marked out areas to Hardy and his operator and what was to be done at each location, at this time I didn't see any problems. Operator will be working all day alone will have laborer on site tomorrow to Hardy says.

Gave Hardy sample of fabric that was chosen by Duke Leach and area Hardy said he will get the fabric ordered and that what he had at his yard was not the same.

I am to meet his operator tomorrow morning and look at what has been done, Hardy stated that he won't do anything with the fabric until I see it.

operator was told to be careful and not disturb anything of an area then he has to.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED:  _____

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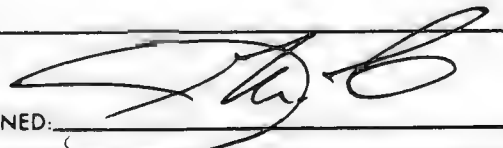
DATE Sept 27, 1996		JOB NO 4110900		CONTRACTORS FORCES & EQUIPMENT IN USE				
PROJECT Berlin Postcarding Loop 2.11		NO.		Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION Berlin		1		backhoe		1	operator	
CONTRACTOR A. Ritz		1				1	laborer	
WEATHER Sunny		TEMP.		° AT	AM			
SUPERINTENDENT OR FOREMAN M. Bernardo								
HRS. WORKED		OWNER						

WORK PERFORMED:

Checked job in the morning and the operator had more than excavated the area that had to be done. Laborer was on the site for the first time to install the fabric etc. Asked the laborer & the operator if the fabric was the right fabric both of them stated they didn't know. Spoke with Bill Ritz who gave me the info on the fabric. I called Ramaco and the Salesman stated the fabric was equal to Amara #5504, tried to get a hold of Marky but wasn't able to. When I left the job the Contractor was arranging to get some rip rap delivered to the site, the Parkway down the road is going to haul the rip rap for Ritz. Told the laborer & the operator to make sure they install the fabric according to the detail and that they better make sure the fabric is the right kind. Told the operator to call me if they plan on working tomorrow.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE Sept 30, 1996		JOB NO. 4110900		CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT Berlin Postoffice Land F.				NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION Berlin				1	backhoe		1	oper. eng.	
CONTRACTOR D. Ritz				1	dump Tr.		1	laborer	
WEATHER Sunny		TEMP 67	° AT ° AT						
SUPERINTENDENT OR FOREMAN M. Bonnerda									
HRS. WORKED									
OWNER									

WORK PERFORMED:

Visited the site first thing in the morning and spoke with the operator, asked him how come he didn't get more done the operator stated that by the time the farmer got around to hauling the stone it was almost noon time.

Told the laborer & the operator that they have to make sure the fabric is placed according to the detail, showed the detail to the laborer, the operator has a copy of the detail for his own use.

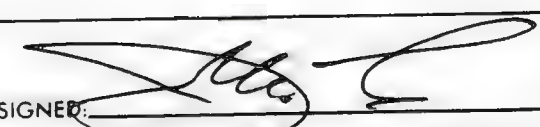
Told the operator he can tighten up the limit of the rip cage between the two culvert pipes he said he would.

Spoke with Hardy over the phone in the afternoon and told him what his men had gotten done also told him his operator didn't have to excavate as far as he did.

Told Hardy the fabric was okay and that I had talked to Ramson about it.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE <i>Oct 1, 1996</i>	JOB NO. <i>4110900</i>	CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <i>Berlin Detention Center</i>		NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <i>Berlin</i>		<i>1</i>	<i>backhoe</i>		<i>1</i>	<i>operator</i>	
CONTRACTOR <i>A. Ridz</i>					<i>1</i>	<i>laborer</i>	
WEATHER <i>Sunny</i>	TEMP <i>70</i>	° AT	° AT	AM	PM		
SUPERINTENDENT OR FOREMAN <i>M. Boudreau</i>							
HRS. WORKED	OWNER						

WORK PERFORMED:

Checked job in the afternoon and no one was on the site.

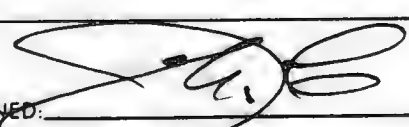
Contractor hasn't completed work area yet but it looks as though he should finish this area tomorrow. Looks as though there is a lot of dirt mixed in with the rip rock will have to discuss it with the operator tomorrow to find out what's going on.

Oct 2, 1996

Met with the operator and mentioned to him how come there is so much dirt mixed in around the rip rock the operator assured me that there was at least 3.0' of stone strength and the mixed area. Spoke with the operator and told him that he should speak to Hardy about getting the sand for the site. I gave the sand mix to the laborer so he could get the sand if Hardy didn't have it. Operator even told he has to find a way to get the compact spread, the operator told me that he doesn't have any way to get the compact so the owner area told him he should speak with Hardy about it.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

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DATE <i>Oct 4, 1996</i>		JOB NO. <i>4110900</i>		CONTRACTORS FORCES & EQUIPMENT IN USE					
PROJECT <i>Berlin Petersburg Lead F.</i>				NO.	Equipment Type	Hrs	NO.	MANPOWER	Hrs.
LOCATION <i>Berlin</i>									
CONTRACTOR <i>A. Ritz</i>									
WEATHER <i>Rain</i>		TEMP <i>3</i>	° AT ° AT						
SUPERINTENDENT OR FOREMAN <i>Marty</i>		OWNER							
HRS. WORKED									

WORK PERFORMED:

visited site to see if everything had been completed. Operator didn't finish problem with drainage ditch work. Included a little grade change to divert water into ditch line. Water at this time runs down the center of the road and keeps washing out the slope at the bottom, will call Marty about it.

(Oct 10, 1996)

check job during rain. Storm had washing out still trying to speak with Marty.

(Oct 22, 1996)

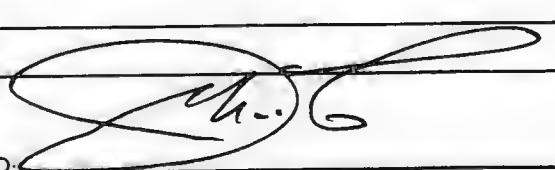
Finally got Marty told him about washout and the need for hay bails, arranged to meet laborer on site this Thursday to show him what needs to be done. Told Marty, we might need a 19th of pipe 10" or 8" HDPE.

(Oct 24, 1996)

Met laborer showed him what to do to correct erosion problems all work to be done by hand, no equip. on site. Told laborer to tell Marty he needs hay bails to go put out probably about thirty bails would do it.

SIGNED: _____

SUPERINTENDENT OR FOREMAN

SIGNED: 

RESIDENT ENGINEER OR FIELD REPRESENTATIVE