CONSTRUCTION MONITORING REPORT
for
URBANA LANDFILL REMEDIAL MEASURES CONSTRUCTION

NYSDEC SITE NO. 8-51-007
HAMMONDSPORT, NY

October 2003
Revised February 2004

0001-001-100

Prepared for:

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CONSTRUCTION MONITORING REPORT

URBANA LANDFILL REMEDIAL MEASURES CONSTRUCTION

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1.0 INTRODUCTION

1.1 Background

The Urbana Landfill is located on Crow's Nest Road, approximately one mile northeast of the Village of Hammondsport, New York in Steuben County (see Figure 1). The landfill, which received municipal and industrial wastes, was classified by the New York State Department of Environmental Conservation (NYSDEC) as a Class 2 inactive hazardous waste disposal site (Site No. 8-51-007), indicating that it poses a significant threat to public health or the environment, and that remedial action is required. The landfill property encompasses an area of 20 acres, with approximately 13 acres dedicated to waste disposal. The property is currently owned by Steven and Tammy Perkins.

The NYSDEC performed a remedial investigation (RI) at the site in 1997 to determine the extent of contamination from past disposal practices. Industrial users of the landfill included Mercury Aircraft, Inc. who voluntarily reported the disposal of small quantities of chlorinated solvent still bottoms and paint sludge at the landfill. Mercury Aircraft subsequently retained Benchmark Environmental Engineering & Science, PLLC (Benchmark) to complete additional investigations at the site and to develop a Remedial Action Work Plan for the landfill. Mercury Aircraft executed an NYSDEC-issued Order on Consent covering design and construction of the remedial measures on June 21, 2000. Design plans and specifications were prepared by Benchmark and approved by NYSDEC in April 2001. Benchmark was retained by Mercury Aircraft to perform the remedial construction on a design-build basis. Benchmark subcontracted SLC Environmental Services, Inc. (SLC) to assist in certain components of the remedial construction, including landfill cover system construction and stream relocation/stabilization. Construction activities related to these components began in May 2001 and were substantially completed by July 2001.

Additional components of the remediation include a groundwater collection and treatment system and a soil vapor extraction (SVE) system. These elements of

the construction were constructed by Mercury Aircraft and Benchmark, and were substantially completed in July 2002.

1.2 Purpose and Scope

The purpose of this report is to document the construction and quality assurance procedures undertaken to complete remedial measures at the Urbana Landfill Site. Specifically, this construction monitoring report provides:

- A summary of the remedial design elements and construction approach.
- Daily construction logs for the remedial cover system, indicating work performed each day, weather conditions, field-testing results, problems encountered (if any), and remedial activities undertaken to correct these problems (as necessary).
- Survey data showing elevations of the landfill subgrade and recompacted soil barrier layer.
- Color photographs depicting major project aspects.
- Laboratory material test results.
- Construction Quality Assurance information.

2.0 REMEDIAL DESIGN

2.1 General

The basis for the remedial approach and design are presented in detail in the May 2000 Remedial Action Work Plan and April 2001 Design Plans and Specifications prepared by Benchmark. This section briefly describes the remedial measures implemented at the site, including:

- Enhancement of the existing landfill cover.
- Collection and treatment of contaminated groundwater.
- Installation of a soil vapor extraction (SVE) system within "Hotspot 5" on the upper terrace of the landfill, where solvent contaminated vapors were previously identified.
- Stream bank relocation/stabilization.

2.2 Landfill Cover System

Mercury Aircraft's supplemental investigation indicated that much of the existing landfill had sufficient cover thickness and low permeability to provide an effective hydraulic barrier against infiltration consistent with the substantive requirements of 6NYCRR Part 360. To preclude contact with the waste and limit leachate generation, areas of the site where sufficient cover soil was not already present were enhanced with additional soil cover to provide a minimum of 24 inches of soil cover. The supplemental cover placed consisted of up to 18 inches of barrier layer and 6 inches of topsoil.

A gas venting system, which consisted of gas venting wells, was installed at approximately one per acre. The gas venting wells were constructed to fully penetrate the cover system and unsaturated fill material. Gas vents were completed with a perforated PVC pipe, backfilled with select granular fill, and a solid riser pipe extending a minimum of three feet above the final cover system.



2.3 Groundwater Recovery and Treatment System

Contaminated groundwater is recovered along the western perimeter of the landfill between Crow's Nest Road and monitoring well MW-107 using submersible pumps in three previously installed vertical recovery wells. The groundwater is pumped to treatment equipment housed in a pre-cast concrete building located near Crow's Nest Road.

The treatment process utilized for this project incorporates advanced oxidation technology (AOT). AOT is a destructive process incorporating ultraviolet light and hydrogen peroxide to form hydroxyl radicals, which are powerful oxidizers that convert chlorinated organics to carbon dioxide, water, and chloride salts. The groundwater treatment process also incorporates an influent day tank to temporarily store groundwater and facilitate batch process treatment. A filtration system (e.g., bag filters) installed ahead of the day tank mitigates solids build-up in the tank and increases AOT efficiency. Groundwater is pumped from the day tank through the AOT unit. A hydrogen peroxide feed system incorporating a storage tank, metering pump, and control panel is installed in-line with the AOT unit. The feed system delivers 50 percent hydrogen peroxide to the groundwater influent line upstream of the AOT unit. The peroxide is delivered proportional to influent groundwater flow, measured via an influent magnetic flow meter. Treated groundwater is transferred to an effluent storage tank, and is discharged via gravity to an infiltration chamber located downgradient of the recovery wells. The system is furnished with automatic controls and safety interlocks to provide for automatic operation. An auto-dialer has been installed to alert Mercury Aircraft personnel in the event of a process failure.

2.4 Hot Spot 5 Remediation

Hot Spot 5, located in the upper terrace of the landfill, is being remediated through SVE remediation. A pilot test was performed to demonstrate the effectiveness of the technology. The SVE system is comprised of a series of six vertical extraction wells piped to a trailer-mounted vapor extraction system, incorporating a condensate knock-out tank, blower, and process controls. The SVE system will be operated on a seasonal basis, with temporary shutdown and relocation of the trailer off-site during the period of November



through March. This manner of operation eliminates potential freeze-up of the SVE equipment and collection wells, and mitigates the significant potential for vandalism of the trailer during popular hunting seasons.

2.5 Stream Bank Stabilization

NYSDEC requested that 30 feet of separation be maintained between the landfill and an unnamed stream located to the west of the landfill. This was accomplished by regrading and consolidating portions of the waste along the west bank of the landfill and by relocating and stabilizing (with riprap) two sections of the stream away from the landfill. All stream relocation and stabilization work was performed after June 1, 2001 to minimize the disruption of downstream fish spawning, per NYSDEC's request.



3.0 REMEDIAL CONSTRUCTION

3.1 General

This section describes the various materials and methods of construction used for the project. Remedial construction began during the week of May 6, 2001 and was substantially completed by July 20, 2001 with the completion of seeding and related turf work across the landfill.

Temporary erosion control measures were maintained throughout the project in accordance with the Stormwater Management and Erosion Control Plan prepared by Benchmark in February 2001, which was included with the design plans and specifications. Specific erosion control measures included installation of silt fencing and straw bales along the west perimeter of the site near the unnamed stream; creation of temporary berms to minimize surface water erosion along the western side of the site; and placement of a series of sandbags at three locations in the stream adjacent to the site to allow for settlement of any suspended silt/sediment bypassing the silt fencing. In addition, silt fencing was placed at the junction of Crow's Nest Road and the newly created access drive for the groundwater treatment building to minimize the potential for soils release from the access road drainage swale.

3.2 Clearing and Subgrade Preparation

Clearing of mature trees and other vegetation was required on areas where supplemental cover material was to be placed. Existing vegetation was cut to within 4 inches of grade on other areas of the landfill surface (i.e., where sufficient cover soils exist). Mature trees were stockpiled on the upper terrace of the property, outside the work limits, for the property owner's use per his request. Other vegetation was chipped and spread on-site in a thin layer. This was performed concurrently with relocation, consolidation, and regrading of waste on the west bank of the landfill to achieve 30 feet of separation between the waste and the unnamed stream and an approximately 30 percent slope, as required by NYSDEC. Areas that



were cleared for barrier material were also compacted with a pad foot roller to minimize settling after placement of barrier soils.

Following the clearing work, a licensed NY State Surveyor performed a topographic survey of the prepared subgrade (see Sheet G-2, Appendix M). A 50-foot grid was then completed across the subgrade, with grade stakes marked at the nodes of the grid to designate the required thickness of barrier soil per the design drawings.

3.3 Barrier Layer Construction

Barrier material was brought on-site by tandem trucks from SLC's NYSDEC-permitted borrow source in Dresden, New York (NYSDEC Mine No. 0609). Material testing was performed ahead of the construction to verify the suitability of the borrow pit soils for barrier layer construction, as described in Section 4.0. The barrier soil material was either stockpiled for later use or spread as it was brought on-site using wide-track bulldozers. Work was initiated on the upper terrace of the landfill per the specifications so as to facilitate SVE well installation work prior to topsoil placement. Barrier material was placed in approximately 8-inch, uncompacted lifts. Following placement, the material was compacted using a pad foot roller, followed by a smooth-drum roller to achieve the specified minimum density (90 percent of the modified proctor density). Density compaction tests were performed as described in Section 4.2.1. Water was added as necessary to assure the material was placed wet of the specified optimum moisture.

In order to expedite barrier material placement, SLC demonstrated via a test pad that the barrier soil material could be placed in a compacted lift of up to 12 inches thick and still achieve the specified minimum density and hydraulic conductivity. The test pad was placed in an approximately 15-inch lift in the lower terrace and compacted to approximately 12 inches with the pad foot roller followed by the smooth drum roller. Nuclear densitometer tests were taken by CQA personnel to verify that the specified minimum density was achieved, and the



designated third party soils testing laboratory verified that samples from the test pad achieved the specified hydraulic conductivity. Approval was secured from both the CQA Engineer and NYSDEC to place the barrier material in compacted lifts of up to 12 inches, provided the specified Quality Assurance (QA) testing results were maintained. Therefore, the contractor began to place barrier material on the West Bank of the landfill in compacted lifts between 6 inches and 12 inches after June 18, 2001.

Following the barrier soil placement work, a licensed NY State Surveyor performed a topographic survey of the completed barrier layer (see Sheet G-3, Appendix M) and other areas where vegetation was stripped. This allowed for better determination of the amount of topsoil required to complete the cover system, and provided the basis for final cover system elevations as all disturbed areas and barrier soils received an additional 6 inches of topsoil.

3.4 Topsoil Placement

Upon receipt of acceptable QA test results for the placed barrier material, topsoil was brought on-site by tandem truck and spread in approximately 6-inch lifts using wide-track bulldozers. Topsoil used for this project originated from two sources: topsoil stripped from the barrier material borrow pit, and topsoil stripped from a virgin source at a development site located Bath, New York. Material testing performed on these sources indicated that topsoil from the Bath, New York location slightly exceeded quality assurance requirements for sieve distribution (the amount passing the No. 200 sieve was reported at approximately 18 percent, which is just below the 20 percent minimum limit established under the contract specifications). Accordingly, this material was blended with borrow pit soils and raked free of large stones to increase the relative fines content.

Topsoil thickness was verified as described in section 4.2.4. Topsoil samples were collected after placement and submitted to a soil testing laboratory for testing (see discussion in Section 4.5 and laboratory results in Appendix G).



3.5 Seeding & Planting

Seeding was initiated upon acceptance of the placed topsoil. Seed was spread on all areas of the landfill where topsoil was placed, as well as perimeter areas disturbed by remedial construction activities. Seeding within landfill limits was placed at a rate of 100 lbs./acre using the following mixture:

Name of Grass	Application Rate	Purity	Germination
Perennial Ryegrass	10 lbs./acre	95%	85%
Kentucky Bluegrass	20 lbs./acre	85%	75%
Strong Creeping Red Fescue	20 lbs./acre	95%	80%
Chewings Fescue	20 lbs./acre	95%	80%
Hard Fescue	20 lbs./acre	95%	80%
White Clover	10 lbs./acre	98%	75%

Perimeter areas disturbed by construction included: areas immediately west of the stream disturbed by riprap placement, areas proximate to Crow's Nest Road where excavation was required to install the groundwater treatment system effluent line, and soils surrounding the groundwater treatment system access drive. At these locations, perennial ryegrass was sewn at a rate of approximately 100 lbs./acre. All seeded areas were covered with threshed straw mulch to prevent erosion and wind dispersal of the seed.

Seven poplar trees were planted in July 2001 between monitoring wells MW 108D and MW 107D, at a point approximately equidistant from the toe of the landfill and the edge of the unnamed stream, in accordance with the design specifications and drawings.

3.6 Gas Vent Installation

Thirteen gas vents were installed at a frequency of approximately one per acre. Gas vents were prefabricated off-site in accordance with the contract drawings, and transported to the site for installation. An approximately 3-foot by 3-foot wide excavation was advanced with a rubber-tired backhoe to the base of the waste or a

minimum of five feet below grade if no waste was encountered. After setting and leveling the gas vent in the excavation, crushed stone was used as backfill material. A section of geotextile (Evergreen Tech TG800) was placed on top of the crushed stone before replacing and recompacting the barrier soils to grade or replacing site soils. Refer to Sheet G4 in Appendix M for gas vent construction details.

Two gas vents located on the upper terrace were damaged on June 22, 2001 by vandals who broke into the field trailer and accessed keys to a bulldozer. The vents were snapped off at the surface with the dozer blade and were substantially filled with soil. These gas vents were excavated and replaced in a like manner on July 3, 2001 in the same location as those that were damaged. Refer to Problem Identification Report #4 and the associated Corrective Measures Report contained in Appendix L.

3.7 Soil Vapor Extraction (SVE) System

3.7.1 SVE Wells and Piezometers

Six SVE wells and eight observation piezometers were installed throughout Hot Spot 5, located on the upper terrace of the landfill, on June 13-15, 2001. The SVE wells and piezometers were installed by Benchmark's subcontractor, Parrat-Wolf, Inc. Fourteen boreholes designated SVE-1 through SVE-6 and P-5 through P-12 were advanced through landfill waste and unconsolidated overburden/weathered bedrock using air rotary drilling techniques with a 9.875-inch tri-cone roller bit. A previously installed (February 1999) SVE pilot test piezometer, designated as P-3, is also used in collection system efficiency monitoring. The remaining 1999 pilot test piezometers (P1, P2 and P4) were decommissioned during landfill construction. New SVE well and piezometer boreholes were advanced to approximately four feet below encountered groundwater or top of competent bedrock, but no deeper than 14 feet below ground surface (fbgs). The locations of new and existing SVE/piezometer/monitoring wells are presented on Sheet M-1 of Appendix M. At



each borehole location, cuttings evacuated from the borehole annulus were used to identify the site lithology as well as the presence of groundwater.

Subsequent to completion of borings SVE-1 through SVE-6, a 4-inch diameter well was installed in each borehole. Similarly, a 2-inch diameter well was installed at each observation piezometer location (P-5 through P-12). All wells/piezometers were constructed using Schedule 40 PVC screen and riser. Screens measuring 10 feet were installed at each location, except for the following locations: SVE-2 (7-feet), P-5 (2.5-feet), P-6 (3.5-feet) and P-7 (9-feet). Screens measuring less than 10 feet were required due to the presence of bedrock at each of these identified locations. The well screen and attached riser were placed approximately 6 inches above the bottom of the borehole and backfilled with No. 1 silica sand. A bentonite chip seal approximately 1.5 feet thick was placed at the surface and hydrated at each well/piezometer. Each well/piezometer was then fitted with a lockable j-plug (keyed alike) to complete installation. Field notes/logs recorded during the installation of the SVE wells and piezometers are provided in Appendix H.

3.7.2 SVE Well Replacement

Similar to the upper terrace gas vents described above, SVE-3 and P-10 were also destroyed on June 22, 2001 by vandals. The wells were snapped off below the surface with the bulldozer, bent below grade, and substantially backfilled with soil. The damaged wells were decommissioned in-place by backfilling the remaining sections of casing with bentonite grout. Refer to Problem Identification Report #4 and the associated Corrective Measures Report contained in Appendix L. These wells were replaced with new wells using the methods described above in June 2003. Specifically, Nothnagle Drilling advanced and installed one soil vapor extraction (SVE) replacement well (SVE-3) and one replacement observation piezometer (P-10) within Hot Spot 5. The well and piezometer were installed to replace the original wells damaged by vandalism. The newly installed replacement well and piezometer



were installed as close as possible to the original well/piezometer locations without actually over-drilling the abandoned locations. It should be noted, at the time of the vandalism (June 2001), each original well/piezometer was decommissioned in accordance with generally accepted practices (i.e., grouted in place).

Prior to initiating drilling activities, water table conditions were measured in existing observation well P-11 to provide an indication of groundwater elevation within Hot Spot 5. The water level measured in P-11 indicated a depth of 9.74 feet below ground surface. Two boreholes designated SVE-3 and P-10 were then advanced through landfill waste and unconsolidated overburden/weathered bedrock using air rotary drilling techniques with a 9.875-inch tri-cone roller bit. The boreholes were advanced to approximately four feet below encountered groundwater or top of competent bedrock, but no deeper than fourteen feet below ground surface (fbgs). A site location map showing the approximate location of new and existing SVE/piezometer/monitoring wells located within Hot Spot 5 is presented in Appendix M. At each borehole location, cuttings evacuated from the borehole annulus were used to identify the site lithology as well as the presence of groundwater.

Subsequent to completion of boring SVE-3, a 4-inch diameter well was installed. Similarly, a 2-inch diameter well was installed at observation piezometer P-10. Each well/piezometer was constructed using Schedule 40 PVC screen and riser. Screens with machine slotted openings of 0.010-inch and measuring 10-feet in length were installed at each location. The well screen and attached riser were placed approximately 6-inches above the bottom of the borehole and backfilled with No. 0 silica sand to a depth above the top of the screened interval. A bentonite chip seal, approximately 1.5 feet thick, was placed in the remaining annulus of each boring from the top of the sand pack to the surface and hydrated with potable water. Each well/piezometer was then fitted with a lockable j-plug (keyed alike) to complete installation. A summary of the construction details for each replacement well/piezometer is presented on the record drawings in Appendix M. Project



documentation was recorded in the Project Field Book and on field data sheets, including but not limited to Field Activity Daily Logs, Equipment Calibration Logs, Tailgate Safety Meeting Forms, etc. Pertinent documentation is presented in Appendix H.

3.7.3 SVE Equipment

The SVE equipment was assembled to Benchmark's specifications by Northeast Environmental Products, Inc. As detailed in the May 2003 Post-Remedial Operation & Maintenance Plan prepared by Benchmark, the SVE equipment housed in the utility trailer includes a blower, condensate knockout tank, condensate receiving tank, air pressure gauges and control panel with auto-dialer. The trailer was transported to the site on April 14, 2002. Three-inch diameter, schedule 40 PVC piping was installed from the SVE wells to the SVE trailer in mid June 2002. System start-up was completed by Mercury Aircraft and Benchmark personnel on June 21, 2002.

3.8 Groundwater Recovery Wells and Conveyance

Groundwater recovery wells PW-1, PW-2, and PW-3 were installed during the week of April 12, 1999 by Geomatrix Consultants. Each extraction well is constructed of stainless steel continuous slot screen (0.020 inch) with a stainless steel riser. A screen measuring 10 feet in length was installed at location PW-1 and screens measuring 5 feet in length were installed at locations PW-2 and PW-3. A complete description of the extraction well installation and construction is included as Appendix I.

Groundwater conveyance lines and electrical conduit from each pumping well were installed simultaneously during the period of June 1-5, 2001. A trench running from PW-3 to within 15 feet of where the groundwater treatment system building was to be placed was excavated using a rubber-tired backhoe to approximately four feet below grade. Approximately six inches of bedding sand, which was approved by



NYSDEC in lieu of bedding stone, was placed at the bottom of the trench. Stainless steel pitless adapters were installed in each pumping well by Mercury Aircraft plumbers approximately two feet below subgrade elevation and each was fitted with a ¾-inch diameter, SDR-11 HDPE line for conveyance of groundwater. Two PVC electrical conduits, one for power and one for control, were also installed from each pumping well (six total) to within 15 feet of where the groundwater treatment system building was to be placed. A detectable underground caution tape was installed above the conveyance lines and conduit and the trench was backfilled with the material originally excavated. Submersible groundwater pumps were installed in June 2002 per design drawings.

3.9 Groundwater Treatment

3.9.1 Treatment Building and Site Work

The groundwater treatment system is housed in a pre-cast concrete building located south of the landfill along Crow's Nest Road. The building was manufactured by Kistner Concrete Products, Inc. in accordance with the design plans. It was transported to the site and set on a compacted gravel base on July 16, 2001. The floor is constructed of steel grating raised approximately 6 inches above a concrete base to provide secondary containment in the event of a spill or leak from the treatment process. Watertight pipe sleeves through the building floor (i.e., for groundwater influent and effluent lines) and an opening for a floor sump were pre-installed by Kistner. An 18-inch diameter x 24-inch deep PVC sump basin was grouted flush with the sump opening after the building was set. A concrete ramp and asphalt driveway were installed at the building entrance per the design plans.

A six-inch diameter, schedule 40 PVC treated groundwater conveyance line was installed on May 31, 2001. The line was installed at a depth of four feet below grade and runs approximately 173 feet from the groundwater treatment building to a groundwater infiltration chamber located near the southwestern corner of the site



near Crow's Nest Road (see Sheet M-3, Appendix M). The discharge line incorporates three 45-degree cleanouts capped at grade. Approximately six inches of sand bedding sand was placed at the bottom of the discharge line trench.

The groundwater infiltration chamber is comprised of a Kistner Concrete Products, eight-foot diameter, pre-cast concrete leaching chamber (LC-85). As indicated above, this unit was installed southwest of the groundwater treatment system building pad, near Crow's Nest Road. The base of the chamber is situated approximately 6 fbgs on a bed of crushed stone, per the design plans. Crushed stone was also placed around the outside of the infiltration chamber during installation. See Sheet M-3 in Appendix M for locations of these items.

3.9.2 Treatment Process

Groundwater treatment system construction was initiated in August 2001 with mounting of service panels required for electrical power connections. The treatment train incorporates: influent turbine flow sensors and meters to individually monitor flow from the recovery wells; dual stainless steel bag filters; a 550-gallon HDPE process feed tank; centrifugal process transfer pump; magnetic flow meter; 30 KW Rayox® Advanced Oxidation Treatment (AOT) unit; and a 200-gallon HDPE effluent receiving tank per the design plans. Ancillary equipment includes a 65-gallon HDPE peroxide feed tank and metering skid; a compressor to operate pneumatic valves on the AOT unit; environmental controls (heaters, fan and intake louvers); process control panel; and auto-dialer. A portable eyewash/safety shower station and effluent wash water pump are also located in the building.

Mercury Aircraft personnel substantially completed electrical and plumbing connections during the week of June 24, 2002. System wet testing and startup/shakedown was completed in July 2002. Record drawings showing treatment system layout are presented on Sheet M-3.

3.10 Stream Bank Stabilization

Two separate sections of the unnamed stream were rerouted to achieve no less than 30 feet of separation between the stream and the landfill, as required by NYSDEC. One section, approximately 108 feet long and located near the southern portion of the western side slope of the landfill, was constructed per the original design plans. A second section, approximately 145 feet long and located near the northern portion of the western side slope of the landfill, was also constructed due to the discovery of wastes further north along the western side slope. Each of the new stream channels were excavated by a track-mounted excavator. The soils excavated for the new streambed were placed in the existing streambed as fill material. Geotextile (Evergreen Tech TG800) was placed at the bottom of the newly excavated channel and 7-10 inch diameter riprap was placed on the fabric to minimize erosion. In the case of the rerouted section of stream below the northern-most section of the west bank, a clay plug was placed and compacted in lifts in the previous streambed to prevent the stream from re-establishing itself in its former location. New stream locations can be found on Sheet G2 in Appendix M.



4.0 CONSTRUCTION MONITORING

This section of the report describes the construction Quality Assurance/Quality Control (QA/QC) testing performed during remedial construction activities. Benchmark personnel were on-site on a daily basis from May 14, 2001 through July 3, 2001 and as needed through the remainder of the project. Daily inspection reports prepared by QA personnel are included in Appendix D.

4.1 Quality Control Testing

4.1.1 Barrier Material Evaluation

The project specifications for the soil barrier layer material required that it conform to the following approximate gradation requirements:

Sieve Size Distribution	Percent Passing by Weight
3-inch	100
No. 4	85
No. 200	50
0.002 mm	25

In addition, the material specifications required that the laboratory recompacted permeability of the soil be less than or equal to 1×10^{-7} cm/s. Moisture/density relationships were developed during QC material evaluation testing and were used during construction as an indication of optimal moisture content and to determine if minimum compaction requirements were achieved.

Specific QC analyses performed on barrier layer material to determine if it was acceptable for use on the project included the following:



TEST	METHOD	FREQUENCY
Water (moisture) Content of Soil and Soil Aggregate	ASTM D2216	1 per 1000 cubic yards
Gradation Analysis of Soils (Sieve and Hydrometer)	ASTM D422, D421	1 per 1000 cubic yards
Atterberg Limits (liquid Limit and Plasticity Index)	ASTM D4318-3	1 per 1000 cubic yards
Moisture Density Relations of Soil and Soil Aggregate Mixtures Using 10-lb. Hammer and 18-in. Drop (Modified Proctor)	ASTM D1557-78	1 per 5000 cubic yards
Recompacted Laboratory Hydraulic Conductivity Testing at 90 Percent of the Modified Proctor Density on Wet Side of Optimum	ASTM D5084	1 per 5000 cubic yards
Moisture and Organic Matter Content of Peat and Other Organic Soils	ASTM D2974-87	Whenever organic soils are visually encountered

Barrier layer material evaluations were performed from soils collected at the borrow pit on April 30, 2001. The borrow pit was divided into three areas representing 5,000 cubic yards per area. Samples were collected from each area at the frequency stated in the above table. Quality Control laboratory results are provided in Appendix B.

4.1.2 Topsoil Evaluation

Topsoil samples from proposed sources for this project were submitted for the following laboratory analyses:

TEST	METHOD	FREQUENCY
Gradation Analysis of Soils (Sieve and Hydrometer)	ASTM D422, D421	1 per 5000 cubic yards
Organic Content	Ignition Loss	1 per 5000 cubic yards
Soluble Salt Content	Current Literature	1 per 5000 cubic yards
pH	ASTM D4972	1 per 5000 cubic yards

The project specifications for the topsoil required that it conform to the following approximate gradation requirements:



Sieve Size Distribution	Percent Passing by Weight
3-inch	100
1-inch	85-100
¼-inch	65-90
No. 200*	20-80
* Clay content of material passing No. 200 sieve not greater than 15 percent, as determined by hydrometer tests.	

In addition, topsoil used for the project must have organic content greater than 2.5 percent; soluble salt content less than 500 ppm; a pH between 5.0 and 7.6; and be free of pests and pest larvae. Quality Control laboratory results are provided in Appendix C.

4.2 Quality Assurance Testing

4.2.1 Nuclear Densitometer Testing

In-place density testing on the barrier material was performed by CQA personnel in accordance with ASTM D2922-81. A Troxler 3411 nuclear densitometer was used to measure the density and moisture of the placed material. The barrier material was considered acceptable if it was not less than 90 percent of the modified proctor maximum density and above optimum moisture content. Nuclear densitometer test field data sheets are presented in Appendix E. In all cases, the density tests were above 90 percent of the modified proctor density. On-site inspection personnel conducted 147 density tests over approximately 6 acres, or an average of 24.5 tests/acre.

4.2.2 Hydraulic Conductivity Testing

Undisturbed hydraulic conductivity testing (Shelby tubes) was performed at a frequency of approximately one test per acre-lift of barrier layer material. Locations were determined in the field by CQA personnel. Testing of consecutive lifts was offset to eliminate "stacking" of tests. Sixteen Shelby tubes representing approximately 12 acre-lifts were tested by a soils testing laboratory. Laboratory results are provided in Appendix F.

During construction, three separate lifts failed undisturbed hydraulic conductivity tests in the laboratory. Because each lift that failed the tests was less than an acre in size, the contractor elected to entirely rework each lift, upon approval from the CQA Engineer. The material was reworked by either scarifying the surface, or stripping and stockpiling the entire thickness of the failed lifts, then adding water to the material and respreading and recompacting it. After the material was reworked, additional nuclear densitometer tests were taken and Shelby tube samples were collected and submitted to the soils testing laboratory to verify that the material had achieved the specified hydraulic conductivity. Refer to Problem Identification Report #3 and #5 and the associated Corrective Measures Reports contained in Appendix L.

4.2.3 Survey Control

Licensed land surveyors Muller & Muller were retained by SLC to establish horizontal control over the site. Stakes or paint marks were placed to establish a 50-foot control grid over the site, based upon New York Transverse Mercator coordinates. Elevation shots of the site were taken before and after barrier material placement to certify barrier layer thickness. See Sheet G-3 in Appendix M for the barrier layer survey. It should be noted that final (topsoil) survey of the site was not performed due to the requirement that all areas where barrier soil was placed receive a uniform 6 inches of topsoil.



4.2.4 Topsoil Thickness Verification

Topsoil placement was observed by CQA personnel to verify proper placement. CQA personnel also excavated the topsoil in seven locations across the landfill with a spade or hand trowel to verify that the required thickness was placed. The minimum thickness of six inches was achieved at all inspection locations.

4.3 Community Air Monitoring

CQA personnel performed community air monitoring of airborne particulates, combustible gases, and organic vapors daily with the use of an MIE Personal DataRAM, a GasTech GT402 Multi-Gas Meter, and a Photovac 2020 PID, respectively. No exceedances of action levels were observed during construction activities. Nonetheless, landfill access roads were watered, as deemed necessary, to minimize dust. No visible dust was observed leaving the working area of the landfill during construction activities, and no complaints were received from neighboring residents during construction activities. Community air monitoring results are presented in Appendix J.

4.4 Notations of Deviation

During placement of the horizontal control grid, it became apparent that the existing grades on the upper terrace of the landfill varied from the base map; specifically, a number of ruts and settled areas were observed. The difference was attributed to the removal of thick vegetation and/or the settlement of waste, producing localized areas of depression. To correct the deviation, barrier material was placed in depths equal to or greater than the fills called for in the design documents to achieve sufficient cover and to promote positive drainage off the site. Refer to Problem Identification Report #1 and the associated Corrective Measures Report contained in Appendix L.

During the course of the remedial construction, an additional approximate 0.6-acre area on the northern side of the west bank, outside the planned work limits,



was found to contain waste and large debris. This waste was presumably pushed over the top of the slope from the upper terrace during the operational life of the landfill. Originally, only hand picking of large surface debris was planned for this area. NYSDEC approval was secured to place additional cover material over this area, relocate the stream further west to achieve 30 feet of separation (see Section 3.10), clear the mature trees present on the slope, and regrade the area by pushing from the upper terrace down to the stream.

While preparing the subgrade for this area, it became evident that there was a considerable amount of soil/cover material mixed with the debris, and that the debris was generally of an innocuous nature (typically metal debris and some plastics). After preparation of the slope for barrier material placement, approval was secured from NYSDEC to place 18 inches of cover (12 inches of compacted barrier material and 6 inches of topsoil) over this section, rather than the maximum 24 inches required over other areas of the landfill. Refer to Problem Identification Report #2 and the associated Corrective Measures Report contained in Appendix L.

As indicated in Appendix C, the two topsoil sources used for this project differed in grain-size distribution. The topsoil stripped from the barrier material source contained more fines (i.e., silt and clay), while the other source was generally more gravelly. Bulldozers spread stockpiles of both sources of topsoil conjointly, in an attempt to blend the two soil sources. All placed topsoil was also raked with a tractor-mounted york rake. Although no topsoil construction-phase QA testing was required by the design specifications, four topsoil grab samples were collected from separate locations on the cover and submitted for the laboratory analyses outlined in Section 4.1.2, at the request of NYSDEC. Samples taken from the placed topsoil met all required material specifications with the exception of gradation. Three of the four samples had fines passing the ¾-inch sieve in an amount greater than 90 percent, which was attributed to the breakdown of clods during the raking/blending process. However, all samples complied with maximum criteria for passing the No. 200 sieve,



and NYSDEC approved the topsoil material for seeding. Laboratory testing results for the placed topsoil are provided in Appendix G.

5.0 CERTIFICATION STATEMENT

Benchmark Environmental Engineering & Science, PLLC hereby certifies that the completed Remedial Action at the Urbana Landfill Site, unless noted, was performed in conformance with the approved Remedial Design. Deviations from the approved Remedial Design are documented in Section 4.0 of this report.



Thomas H. Forbes, P.E.
New York State Professional Engineer
License No. 70950-1

FIGURES

BENCHMARK
ENVIRONMENTAL
ENGINEERING &
SCIENCE, PLLC

Figure 1-1



SITE VICINITY MAP
CONSTRUCTION MONITORING REPORT
URBANA LANDFILL SITE

APPENDICES

Appendix A

Limitations

DECLARATION/LIMITATIONS

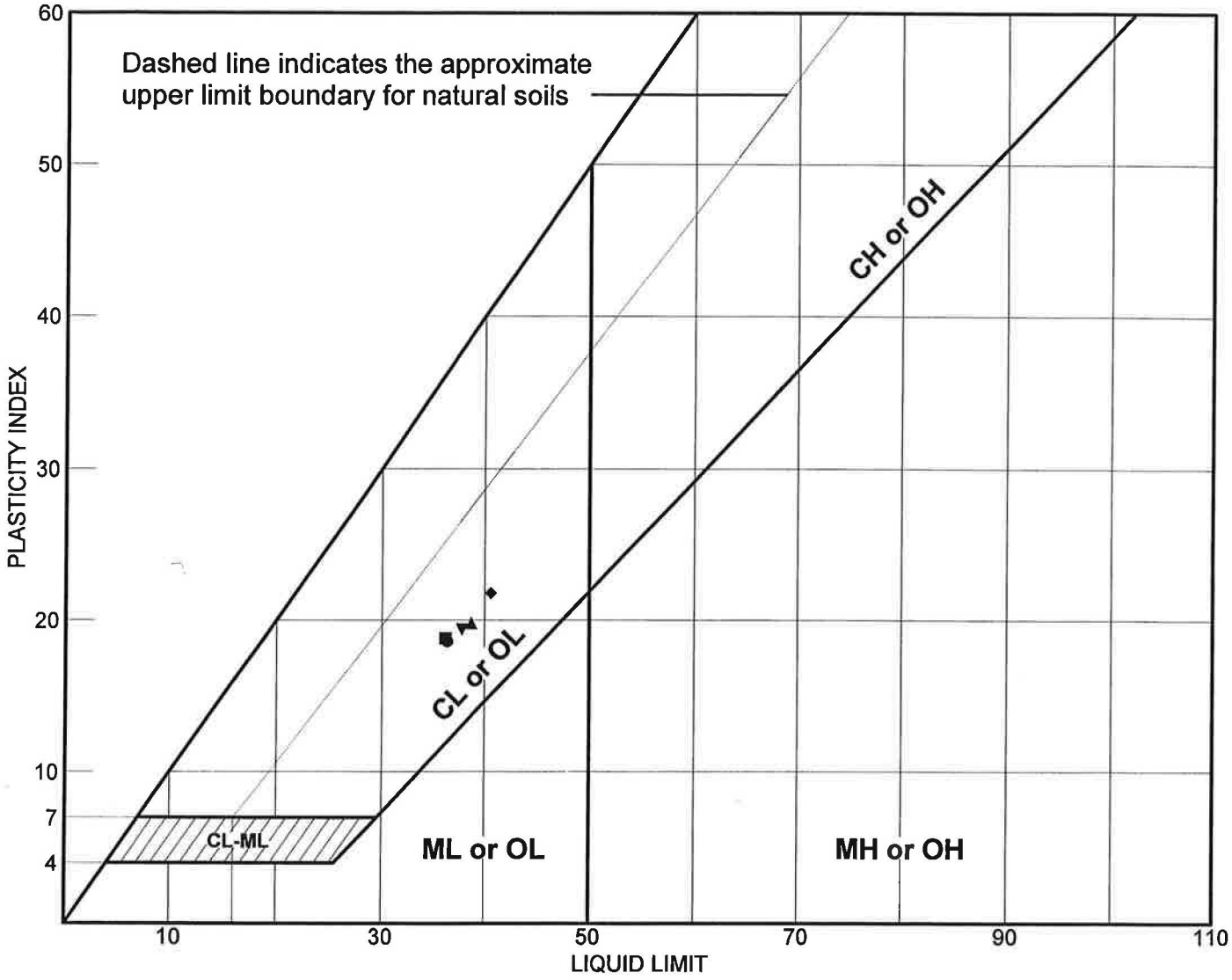
CQA personnel observed all construction activities associated with the Remedial Measures construction at the Urbana Landfill Site according to generally accepted engineering practices. Based on the field observations made by CQA personnel, field and laboratory test data, the construction activities performed at the Site complied with the NYSDEC-approved May 2000 Remedial Action Work Plan and March 2001 Plans and Specifications for the Site.

This construction monitoring report has been prepared for the exclusive use of Mercury Aircraft, Inc. The contents of this report are limited to information available at the time of the construction activities and to data referenced herein, and assume all referenced historic information sources to be true and accurate. The findings herein may be relied upon only at the discretion of Mercury Aircraft, Inc. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of Benchmark Environmental Engineering & Science, PLLC.

Appendix B

Laboratory QC Material Testing Results, Barrier Material

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Barrier	1-1		15.6	17.8	36.4	18.6	CL
■	Barrier	1-2		14.3	17.4	36.2	18.8	CL
▲	Barrier	1-3		17.5	18.9	38.7	19.8	CL
◆	Barrier	1-4		20.0	18.8	40.6	21.8	CL
▼	Barrier	1-5		13.9	18.4	37.8	19.4	CL

LIQUID AND PLASTIC LIMITS TEST REPORT

3rd Rock, LLC

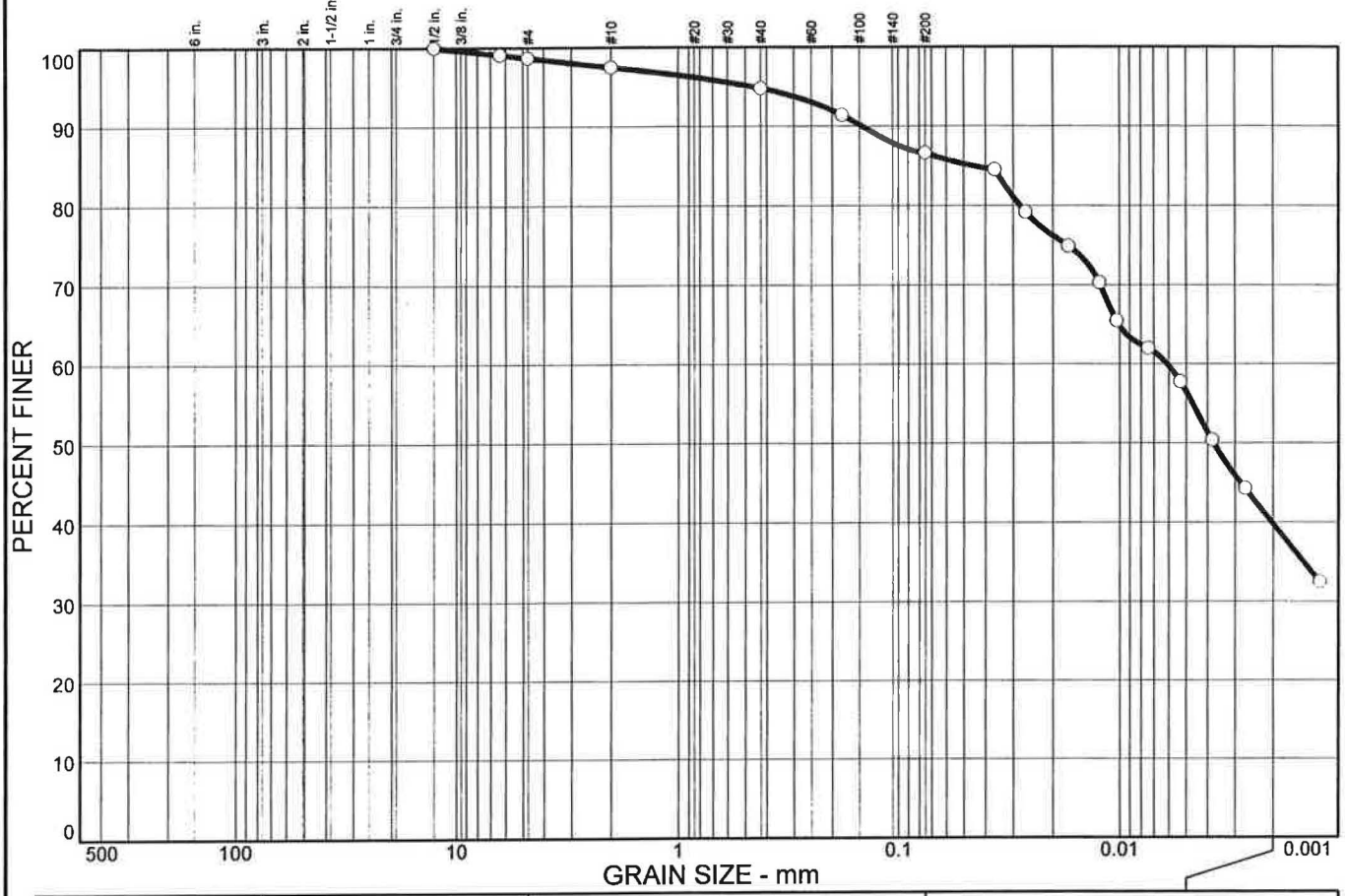
Client: Benchmark Environmental Engineering & Science

Project: Urbana Landfill

Project No.: 01-004

Plate

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.3	1.2	2.7	8.2	46.8	39.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.1		
#4	98.7		
#10	97.5		
#40	94.8		
#80	91.4		
#200	86.6		

* (no specification provided)

Soil Description

RCD 4/30/01
Lab ID#01-007

Atterberg Limits

PL= 17.8 LL= 36.4 PI= 18.6

Coefficients

D_{85}= 0.0461 D_{60}= 0.0061 D_{50}= 0.0037
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Sample No.: 1-1 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.9	1.1	2.0	8.2	42.8	45.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.6		
#4	99.1		
#10	98.0		
#40	96.0		
#80	92.6		
#200	87.8		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-008

Atterberg Limits

PL= 17.4 LL= 36.2 PI= 18.8

Coefficients

D_{85}= 0.0264 D_{60}= 0.0049 D_{50}= 0.0029
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

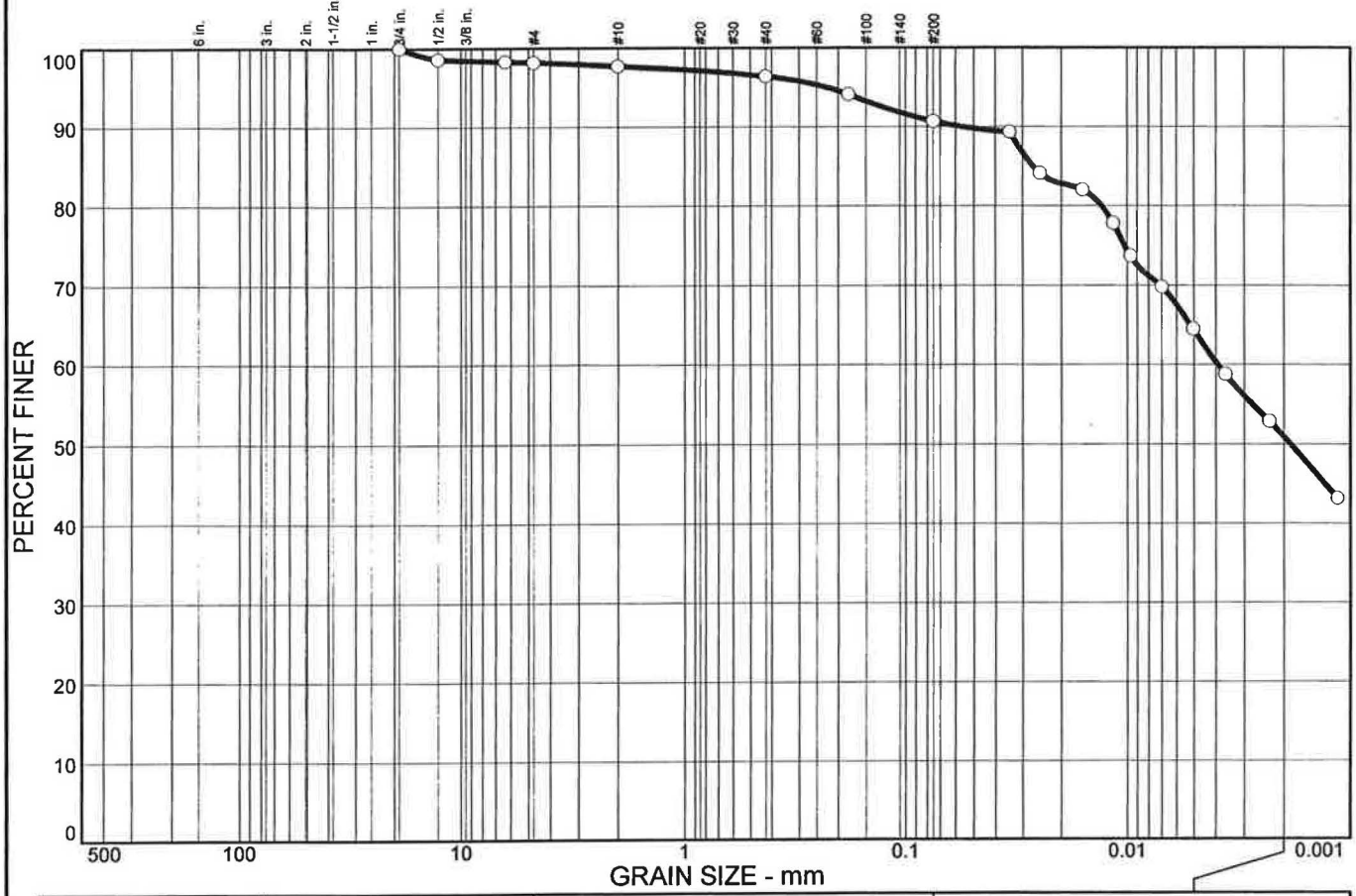
Sample No.: 1-2 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.8	0.5	1.3	5.7	39.7	51.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.6		
.25 in.	98.3		
#4	98.2		
#10	97.7		
#40	96.4		
#80	94.1		
#200	90.7		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID #01-009

Atterberg Limits

PL= 18.9 LL= 38.7 PI= 19.8

Coefficients

D_{85}= 0.0269 D_{60}= 0.0039 D_{50}= 0.0019
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

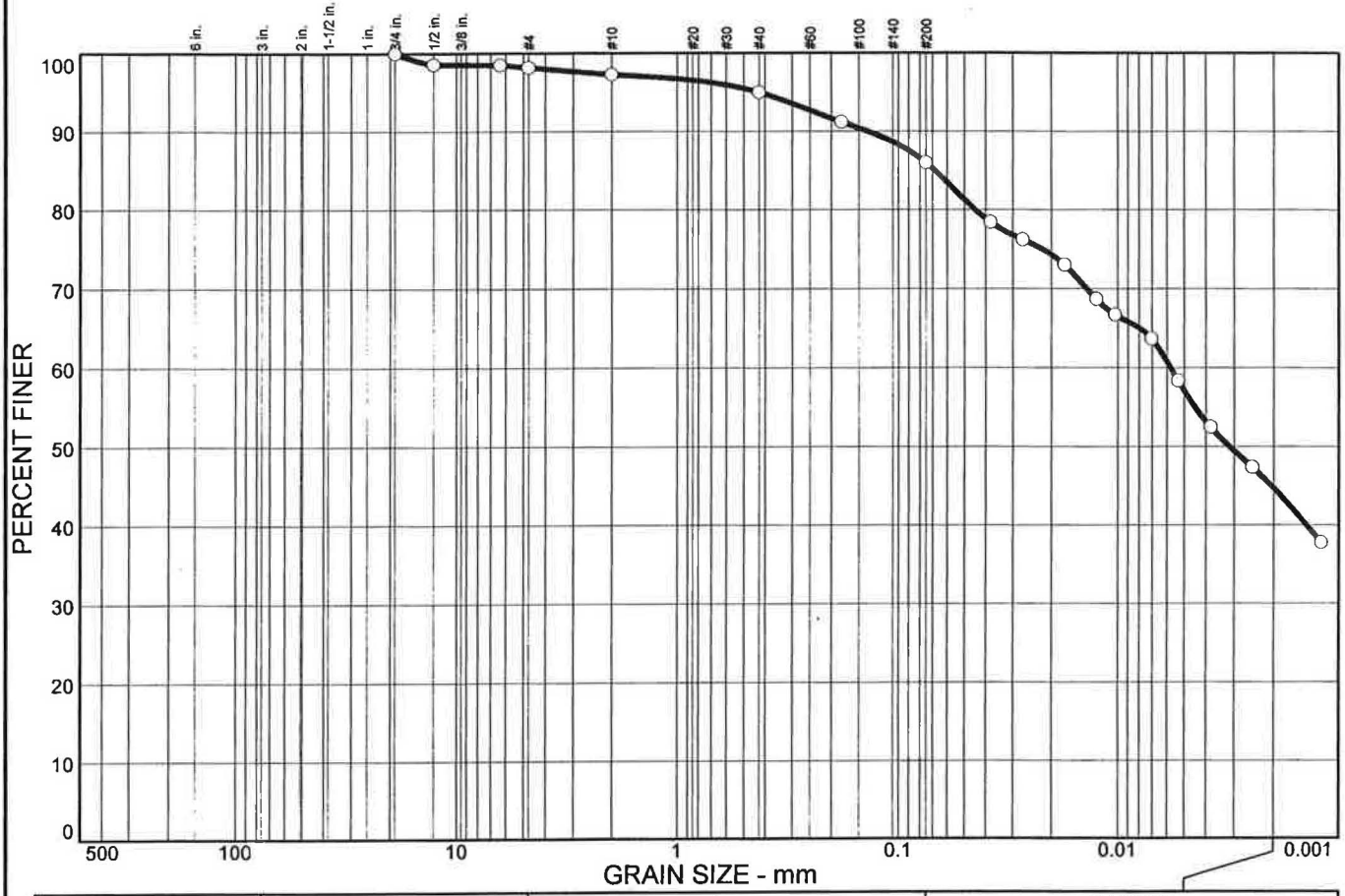
Sample No.: 1-3 **Source of Sample:** Barrier Material **Date:** 5/7/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.8	0.9	2.3	9.0	41.3	44.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.6		
.25 in.	98.5		
#4	98.2		
#10	97.3		
#40	95.0		
#80	91.2		
#200	86.0		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-010

Atterberg Limits

PL= 18.8 LL= 40.6 PI= 21.8

Coefficients

D_{85}= 0.0682 D_{60}= 0.0058 D_{50}= 0.0031
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

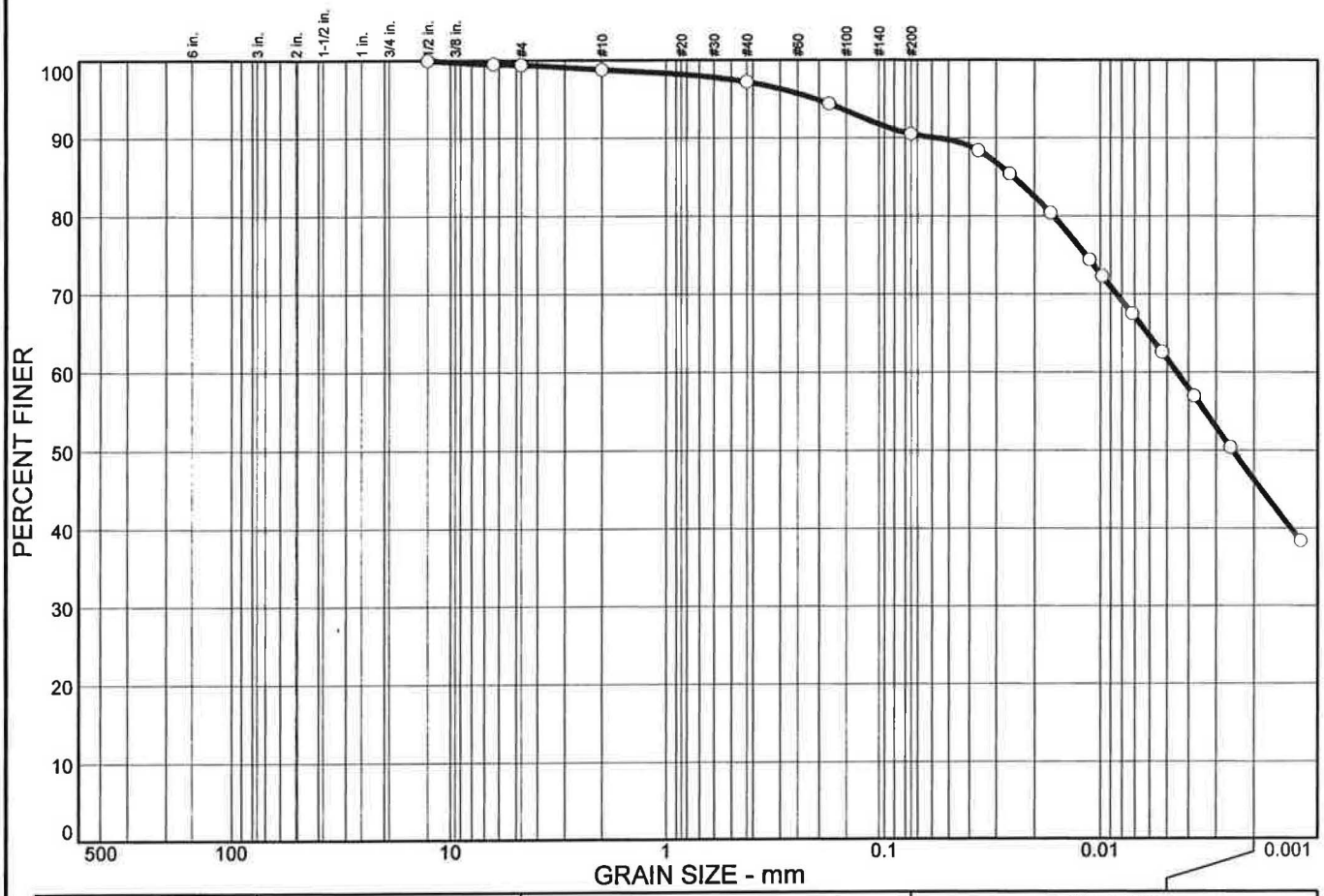
Sample No.: 1-4 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.6	0.6	1.6	6.7	44.2	46.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.5		
#4	99.4		
#10	98.8		
#40	97.2		
#80	94.4		
#200	90.5		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID# 01-011

Atterberg Limits

PL= 18.4 LL= 37.8 PI= 19.4

Coefficients

D_{85}= 0.0250 D_{60}= 0.0045 D_{50}= 0.0025
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

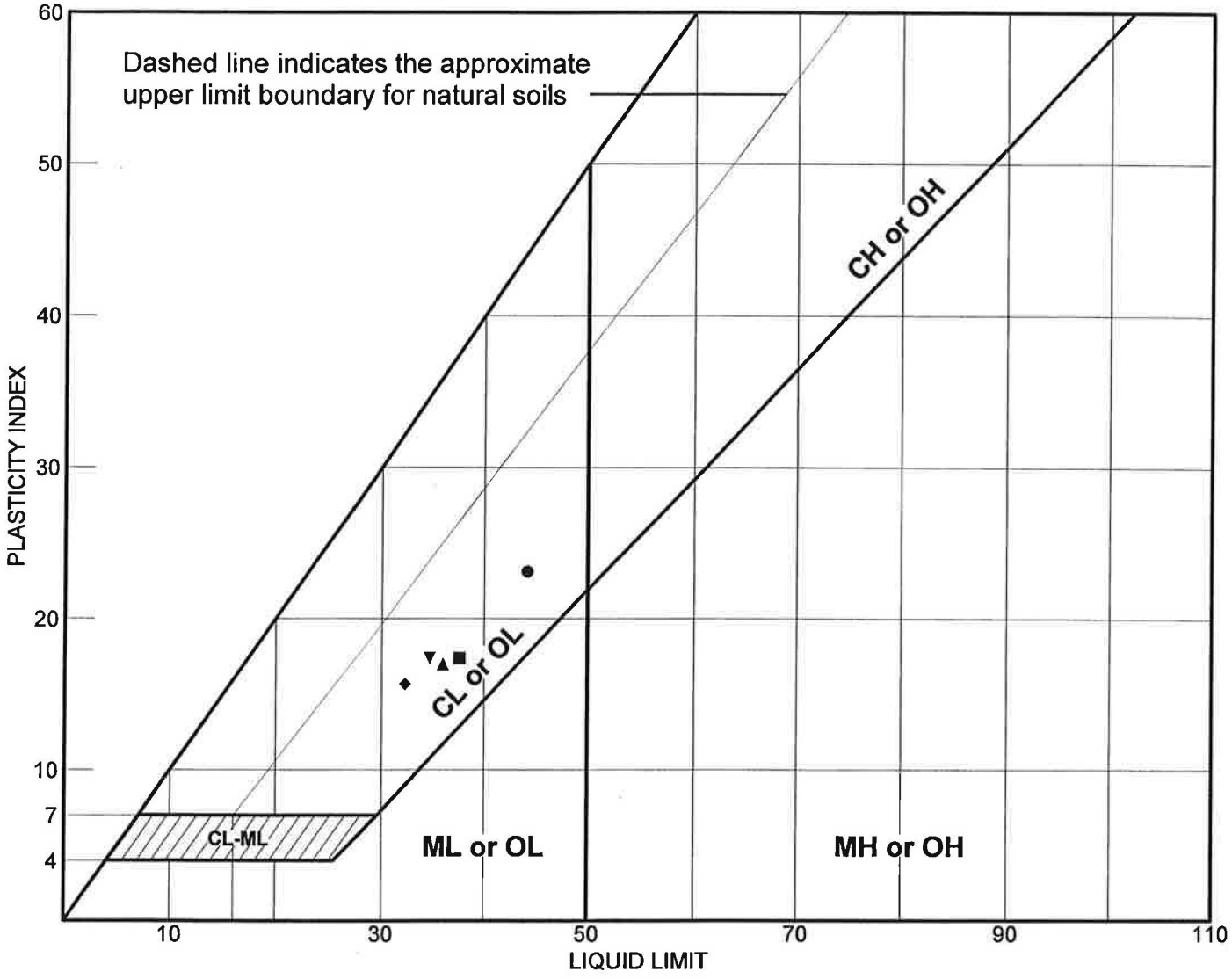
Remarks

Sample No.: 1-5 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Barrier	2-1		17.9	21.1	44.2	23.1	CL
■	Barrier	2-2		17.7	20.2	37.6	17.4	CL
▲	Barrier	2-3		13.9	19.0	36.0	17.0	CL
◆	Barrier	2-4		10.3	16.6	32.3	15.7	CL
▼	Barrier	2-5		11.9	17.3	34.7	17.4	CL

LIQUID AND PLASTIC LIMITS TEST REPORT

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science

Project: Urbana Landfill

Project No.: 01-004

Plate

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.3	0.9	2.4	9.8	43.4	41.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.2		
.25 in.	97.8		
#4	97.7		
#10	96.8		
#40	94.4		
#80	89.8		
#200	84.6		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID# 01-018

Atterberg Limits

PL= 21.1 LL= 44.2 PI= 23.1

Coefficients

D_{85}= 0.0808 D_{60}= 0.0072 D_{50}= 0.0038
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

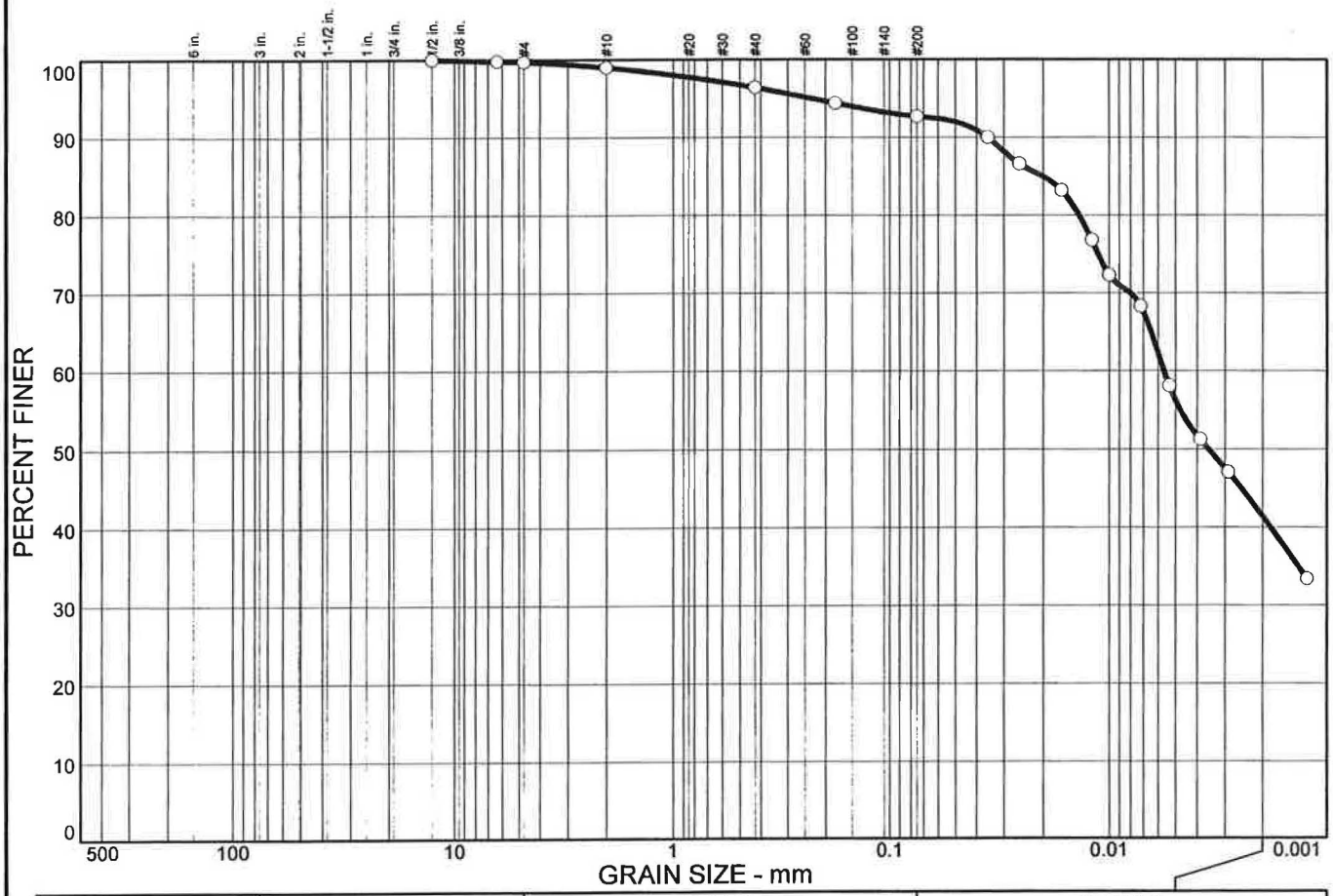
Remarks

Sample No.: 2-1 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.3	0.7	2.6	3.7	51.3	41.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.8		
#4	99.7		
#10	99.0		
#40	96.4		
#80	94.4		
#200	92.7		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-019

Atterberg Limits

PL= 20.2 LL= 37.6 PI= 17.4

Coefficients

D_{85}= 0.0200 D_{60}= 0.0056 D_{50}= 0.0035
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Sample No.: 2-2 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.2	0.6	1.2	3.8	49.3	43.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.0		
#4	98.8		
#10	98.2		
#40	97.0		
#80	95.5		
#200	93.2		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-020

Atterberg Limits

PL= 19.0 LL= 36.0 PI= 17.0

Coefficients

D_{85}= 0.0161 D_{60}= 0.0045 D_{50}= 0.0029
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

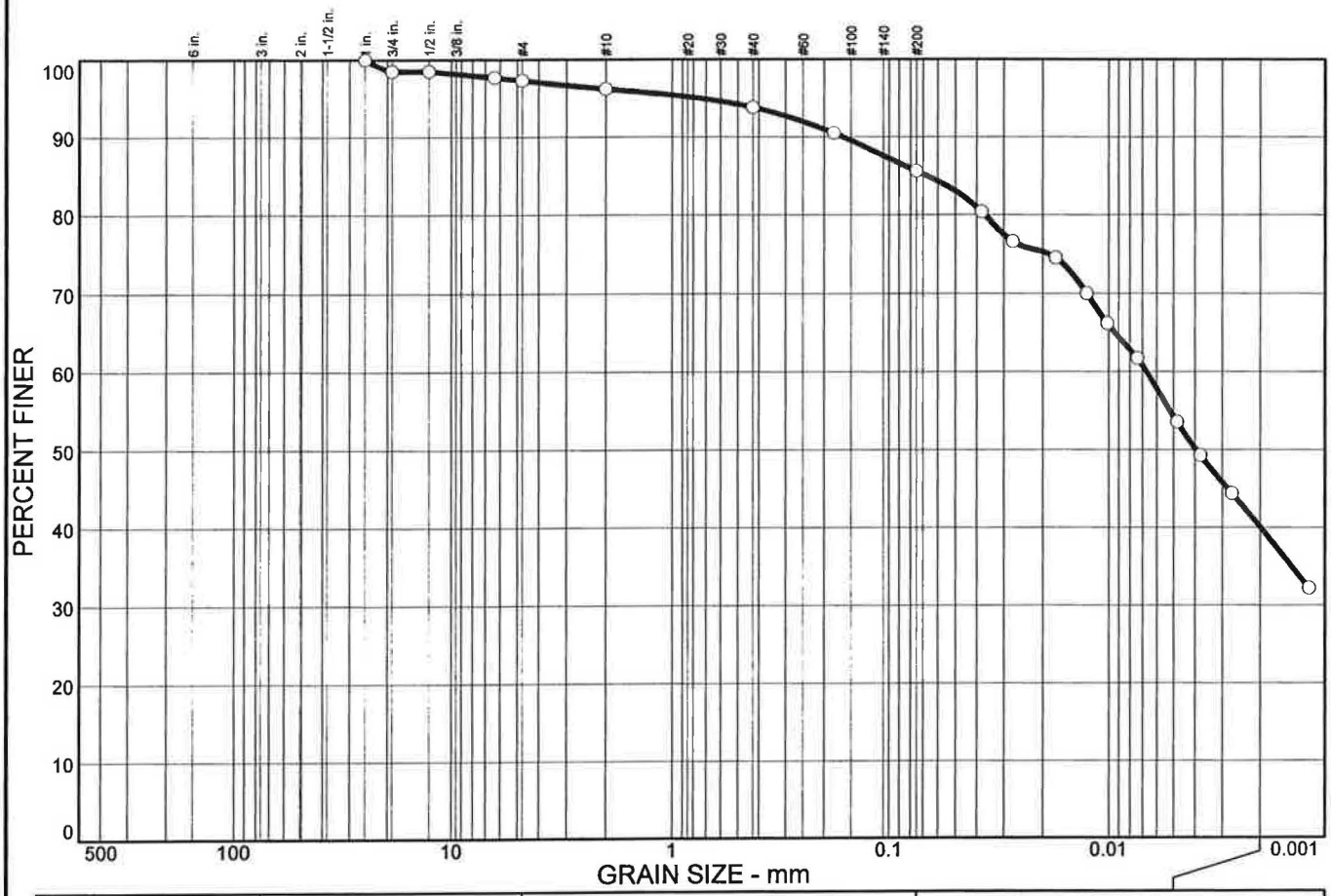
Remarks

Sample No.: 2-3 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	1.5	1.2	1.1	2.4	8.2	45.5	40.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	98.5		
.5 in.	98.5		
.25 in.	97.7		
#4	97.3		
#10	96.2		
#40	93.8		
#80	90.5		
#200	85.6		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-021

Atterberg Limits

PL= 16.6 LL= 32.3 PI= 15.7

Coefficients

D_{85}= 0.0674 D_{60}= 0.0067 D_{50}= 0.0039
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

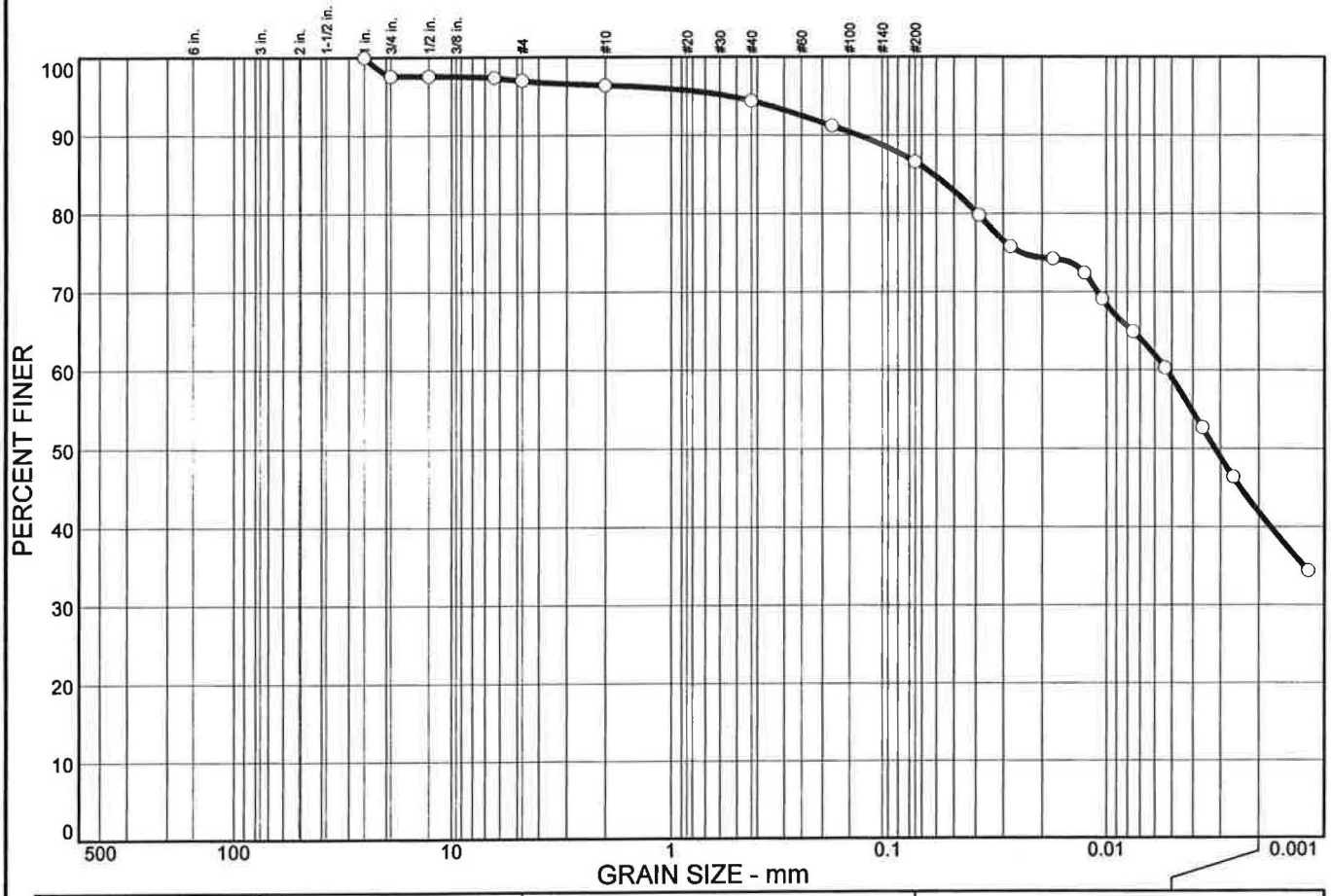
Remarks

Sample No.: 2-4 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	2.4	0.6	0.6	2.0	7.8	44.7	41.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	97.6		
.5 in.	97.6		
.25 in.	97.4		
#4	97.0		
#10	96.4		
#40	94.4		
#80	91.2		
#200	86.6		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-022

Atterberg Limits

PL= 17.3 LL= 34.7 PI= 17.4

Coefficients

D_{85}= 0.0617 D_{60}= 0.0053 D_{50}= 0.0032
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

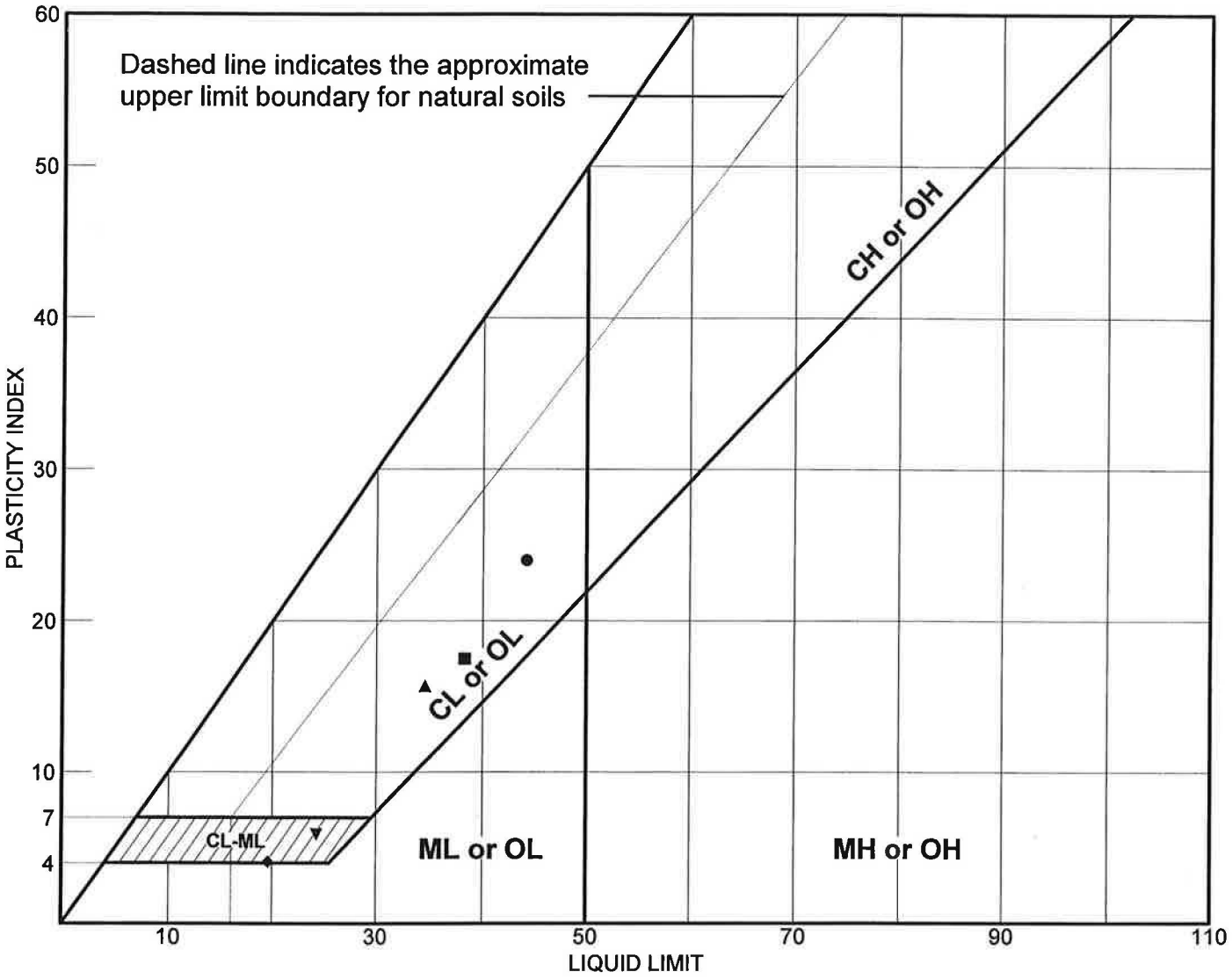
Remarks

Sample No.: 2-5 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Barrier	3-1		18.9	20.2	44.2	24.0	CL
■	Barrier	3-2		17.5	20.8	38.3	17.5	CL
▲	Barrier	3-3		14.5	18.9	34.6	15.7	CL
◆	Barrier	3-4		14.1	15.5	19.6	4.1	CL-ML
▼	Barrier	3-5		12.4	18.4	24.3	5.9	CL-ML

LIQUID AND PLASTIC LIMITS TEST REPORT

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science

Project: Urbana Landfill

Project No.: 01-004

Plate

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	3.2	1.0	0.9	8.0	44.3	42.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.1		
.25 in.	96.9		
#4	96.8		
#10	95.8		
#40	94.9		
#80	91.6		
#200	86.9		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-024

Atterberg Limits

PL= 20.2 LL= 44.2 PI= 24.0

Coefficients

D_{85}= 0.0416 D_{60}= 0.0055 D_{50}= 0.0032
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

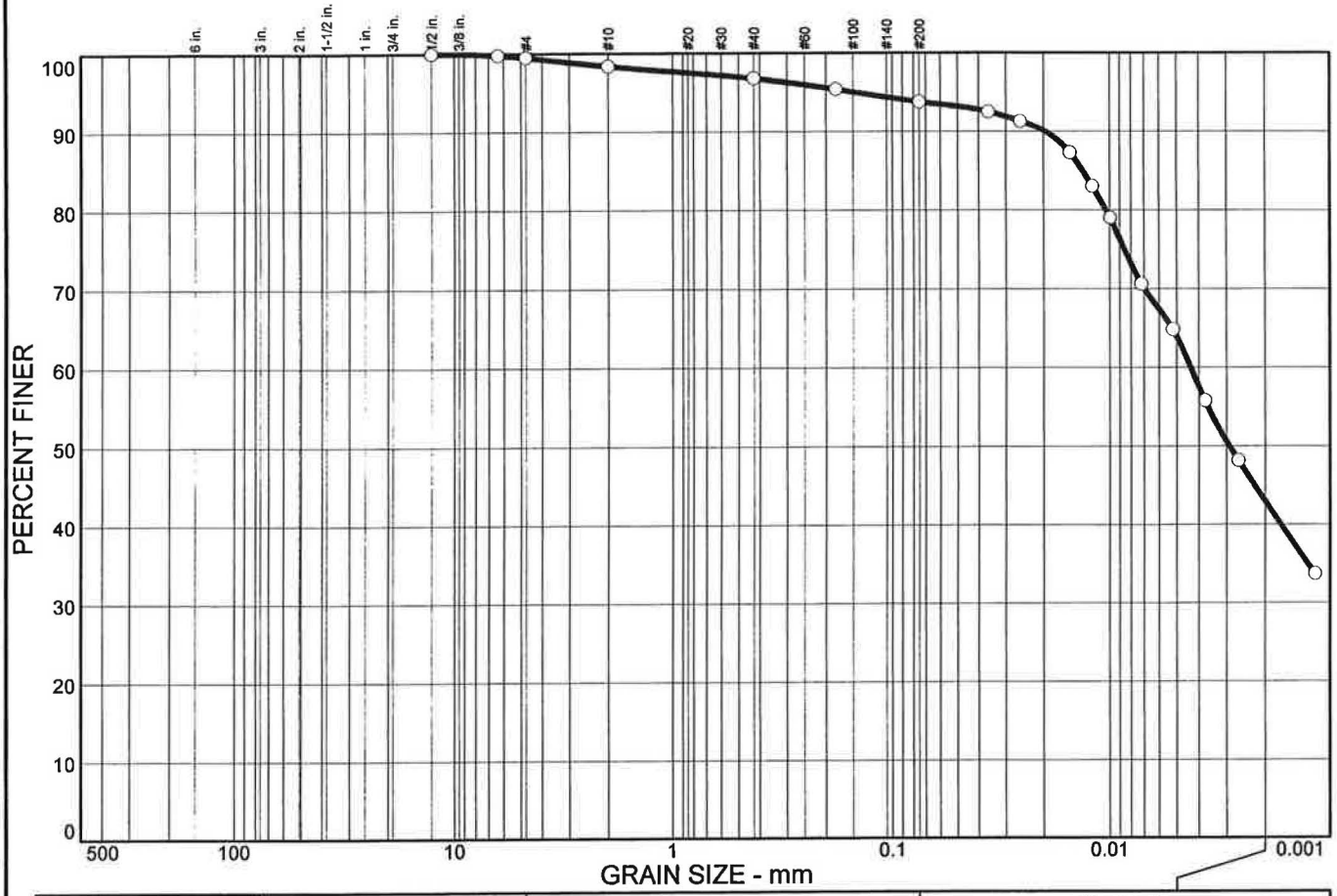
Remarks

Sample No.: 3-1 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.5	1.1	1.6	3.0	50.8	43.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.8		
#4	99.5		
#10	98.4		
#40	96.8		
#80	95.4		
#200	93.8		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-025

Atterberg Limits

PL= 20.8 LL= 38.3 PI= 17.5

Coefficients

D_{85}= 0.0132 D_{60}= 0.0043 D_{50}= 0.0029
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Sample No.: 3-2 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	2.5	0.8	2.0	4.0	50.7	40.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.4		
.25 in.	97.8		
#4	97.5		
#10	96.7		
#40	94.7		
#80	93.0		
#200	90.7		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-026

Atterberg Limits

PL= 18.9 LL= 34.6 PI= 15.7

Coefficients

D_{85}= 0.0380 D_{60}= 0.0048 D_{50}= 0.0031
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Sample No.: 3-3 **Source of Sample:** Barrier Material **Date:** 5/11/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.4	0.5	1.0	14.0	65.4	18.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.5 in.	100.0		
.25 in.	99.8		
#4	99.6		
#10	99.1		
#40	98.1		
#80	97.1		
#200	84.1		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-027

Atterberg Limits

PL= 15.5 LL= 19.6 PI= 4.1

Coefficients

D_{85}= 0.0819 D_{60}= 0.0129 D_{50}= 0.0090
D_{30}= 0.0037 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO=

Remarks

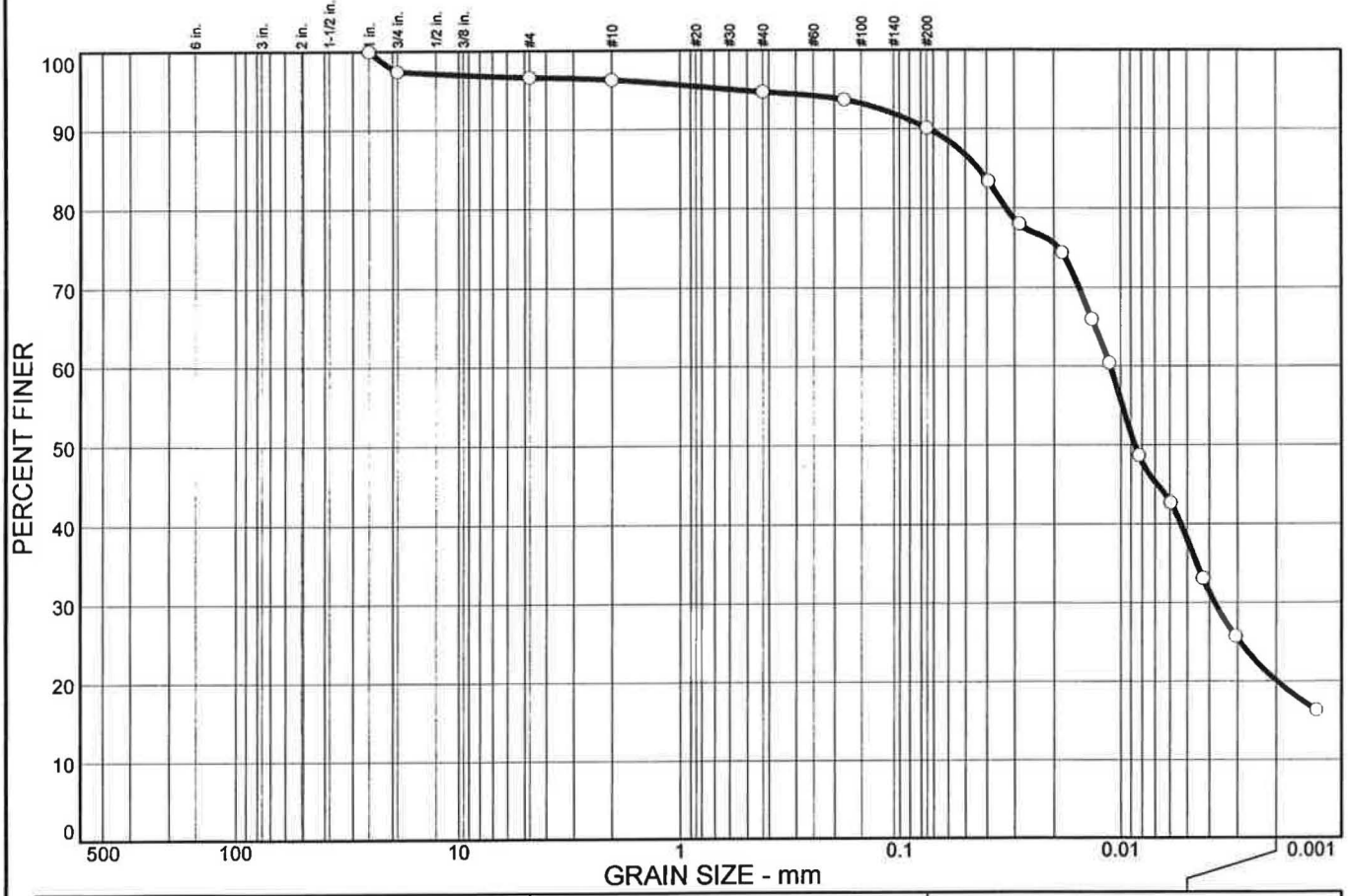
Sample No.: 3-4 **Source of Sample:** Barrier Material **Date:** 5/8/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	2.6	0.8	0.3	1.6	4.6	70.0	20.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	97.4		
#4	96.6		
#10	96.3		
#40	94.7		
#80	93.7		
#200	90.1		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-028

Atterberg Limits

PL= 18.4 LL= 24.3 PI= 5.9

Coefficients

D_{85}= 0.0434 D_{60}= 0.0111 D_{50}= 0.0086
D_{30}= 0.0038 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= CL-ML AASHTO=

Remarks

Sample No.: 3-5 **Source of Sample:** Barrier Material **Date:** 5/8/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill

Project No: 01-004 **Plate**

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	CL							

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 121.0 pcf Optimum moisture = 13.8 %	Rcd 4/30/01 Lab ID#01-012

Project No. 01-004 **Client:** Benchmark Environmental Engineering & Science

Project: Urbana Landfill

● **Source:** Barrier Material **Sample No.:** Comp 1

Remarks:

COMPACTION TEST REPORT

3rd Rock, LLC

Plate

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Borrow Soil Evaluation, Urbana Landfill
Project No: 01-004

Date of Test: May 11, 2001
Date Sample Received: April 30, 2001

Sample No: Comp 1, 01-012
Bulk Sample

Before Test

Wet Density (pcf): 125.0
Moisture Content (%): 15.7
Dry Density (pcf): 108.1
Compaction (%): 89.3

After Test

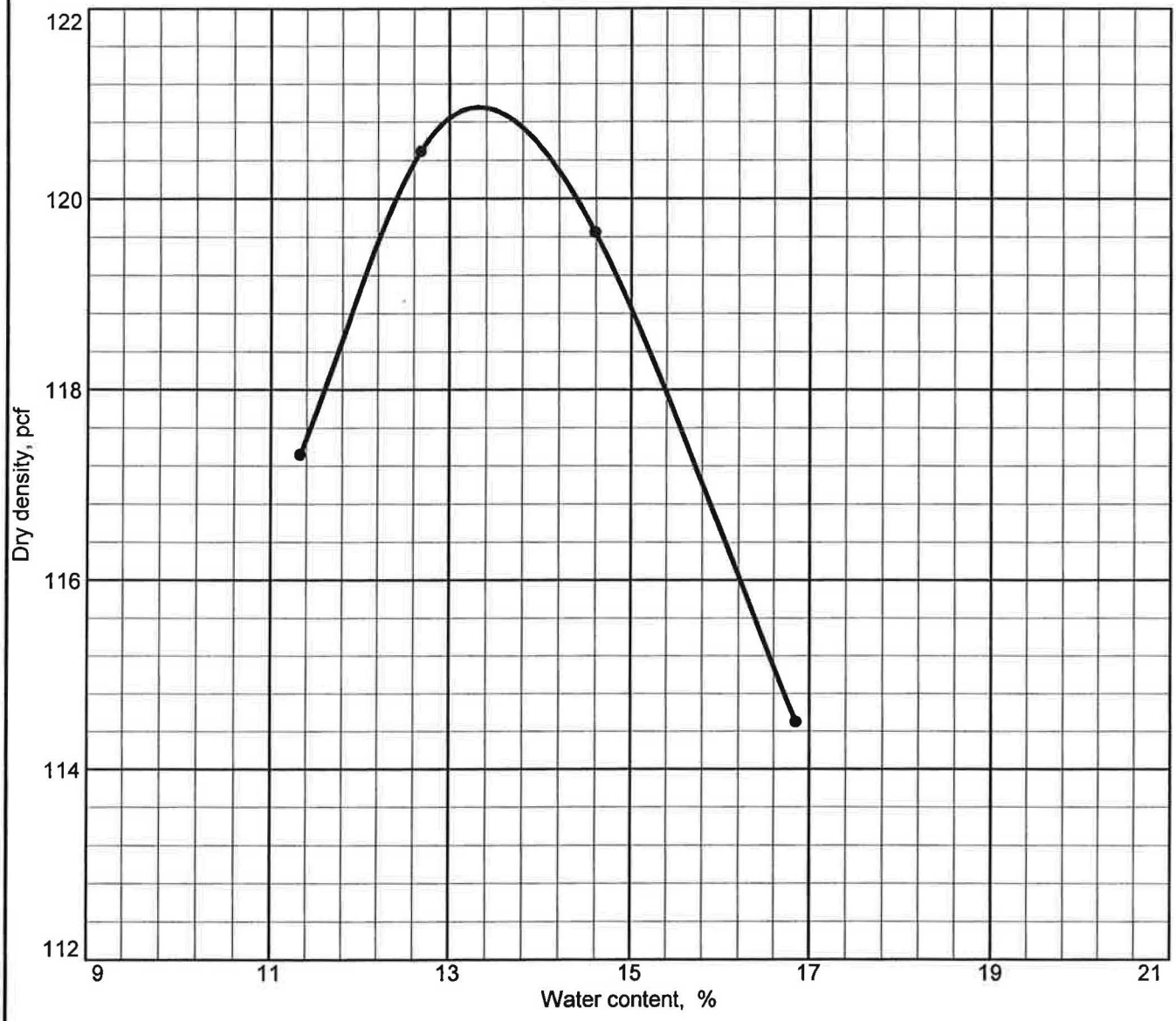
Wet Density (pcf): 129.3
Moisture Content (%): 21.8
Dry Density (pcf): 106.1
Compaction (%): 87.7

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 4.5×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						
	CL							

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 121.0 pcf Optimum moisture = 13.3 %	Rcd 4/30/01 Lab ID#01-023

Project No. 01-004 **Client:** Benchmark Environmental Engineering & Science

Project: Urbana Landfill

● **Source:** Barrier Material **Sample No.:** Comp 2

Remarks:

COMPACTION TEST REPORT

3rd Rock, LLC

Plate

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Borrow Soil Evaluation, Urbana Landfill
Project No: 01-004
Sample No: Comp 2, 01-023 Bulk Sample

Date of Test: May 11, 2001
Date Sample Received: April 30, 2001

Before Test

Wet Density (pcf): 124.5
Moisture Content (%): 16.2
Dry Density (pcf): 107.1
Compaction (%): 88.5

After Test

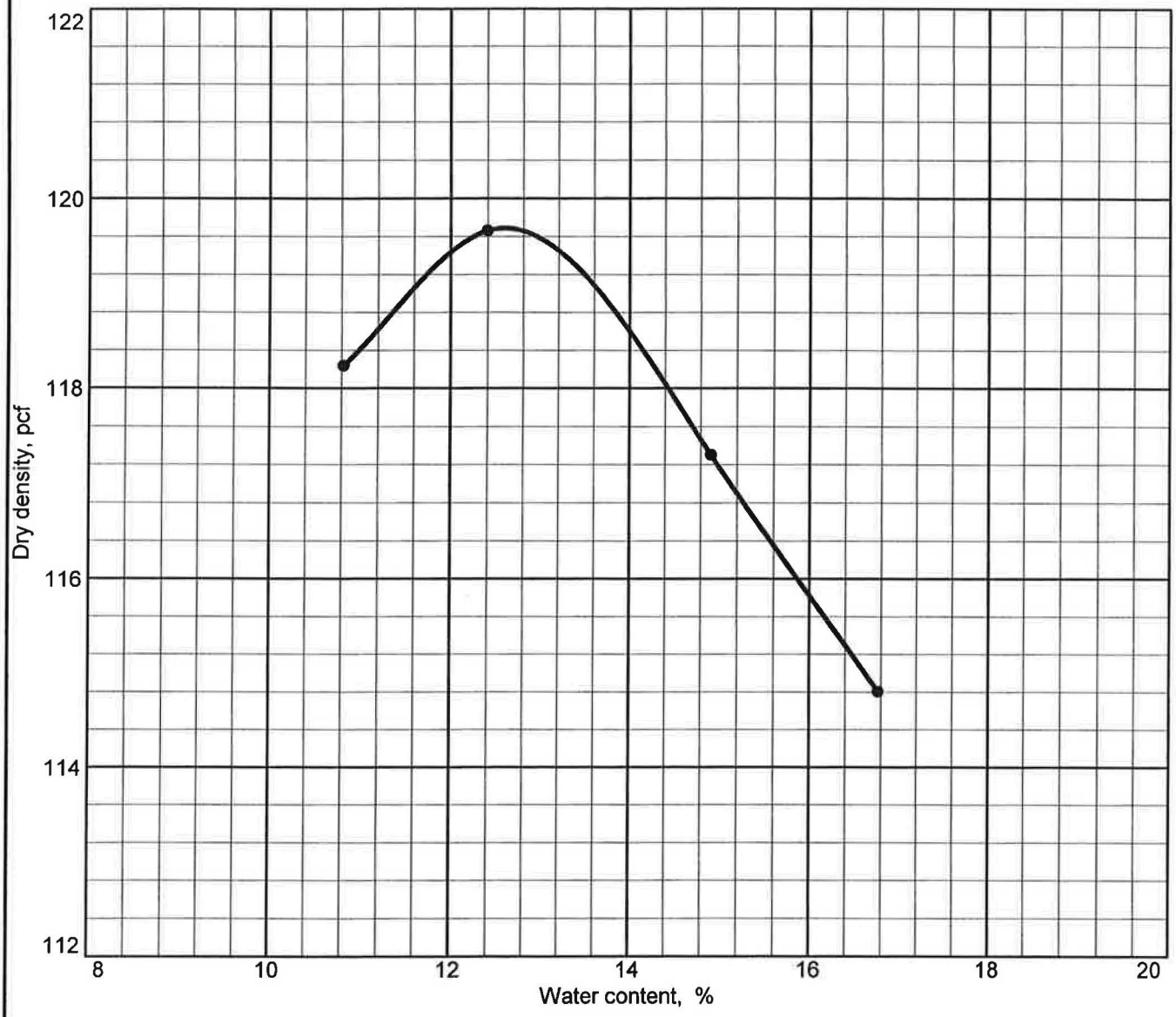
Wet Density (pcf): 127.2
Moisture Content (%): 22.3
Dry Density (pcf): 104.0
Compaction (%): 86

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 7.6×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

COMPACTION TEST REPORT



Test specification: ASTM D 1557-91 Procedure A Modified

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > No.4	% < No.200
	USCS	AASHTO						

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 119.7 pcf Optimum moisture = 12.6 %	Rcd 4/30/01 Lab ID#01-029

Project No. 01-004 **Client:** Benchmark Environmental Engineering & Science

Project: Urbana Landfill

● **Source:** Barrier Material **Sample No.:** Comp. 3

Remarks:

COMPACTION TEST REPORT

3rd Rock, LLC

Plate

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Borrow Soil Evaluation, Urbana Landfill
Project No: 01-004

Date of Test: May 17, 2001
Date Sample Received: April 30, 2001

Sample No: Comp 3, 01-029
Bulk Sample

Before Test

Wet Density (pcf): 130.6
Moisture Content (%): 18.8
Dry Density (pcf): 109.9
Compaction (%): 91.8

After Test

Wet Density (pcf): 133.2
Moisture Content (%): 20.2
Dry Density (pcf): 110.8
Compaction (%): 92.6

Hydraulic Conductivity Result

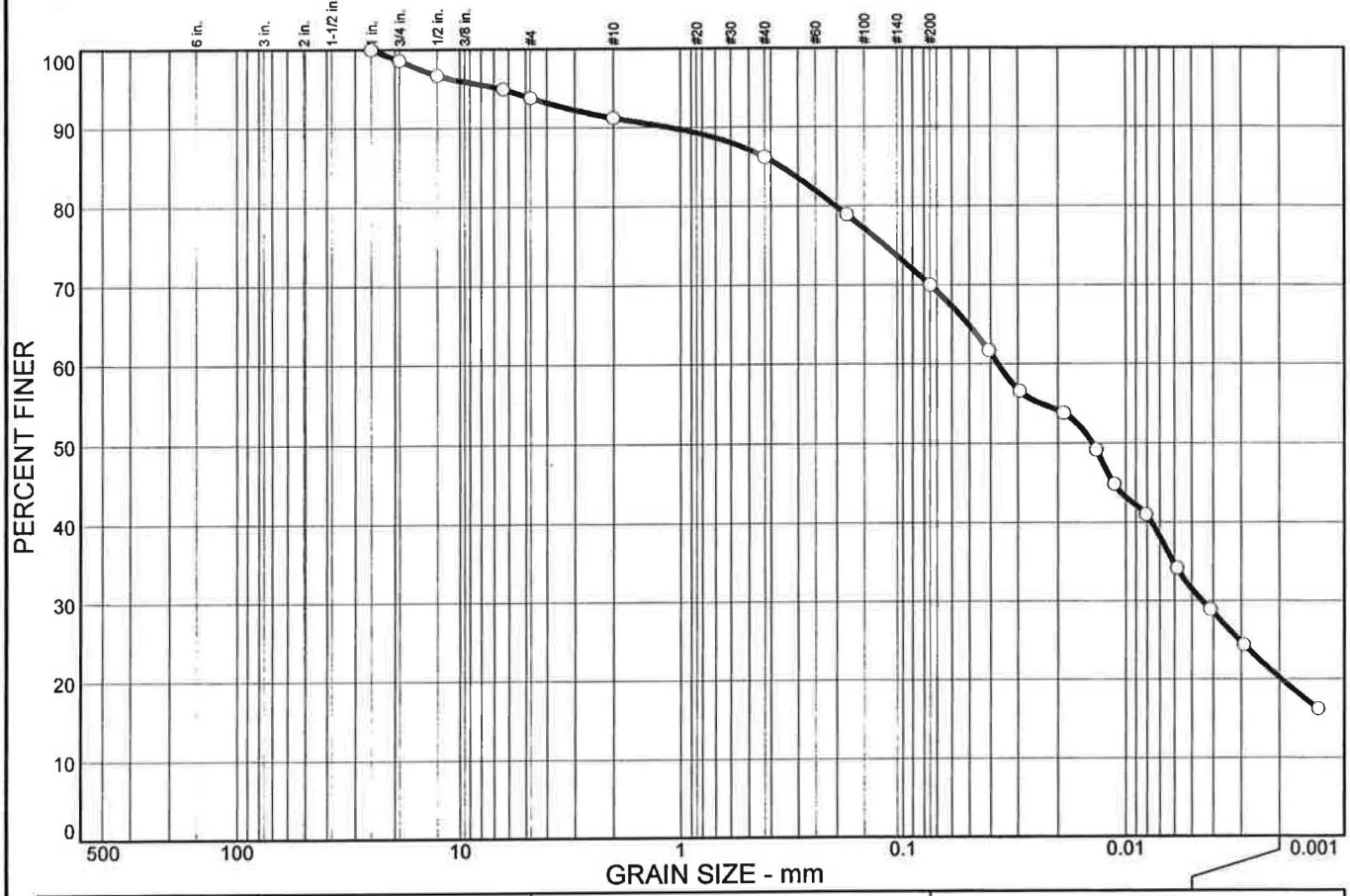
Average of Last 4 Readings (cm/s): 4.4×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

Appendix C

Laboratory QC Material Testing Results, Topsoil

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	1.4	4.8	2.6	5.0	16.2	49.8	20.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
.75 in.	98.6		
.5 in.	96.7		
.25 in.	94.9		
#4	93.8		
#10	91.2		
#40	86.2		
#80	78.9		
#200	70.0		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-030

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.358 D_{60}= 0.0369 D_{50}= 0.0141
D_{30}= 0.0045 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

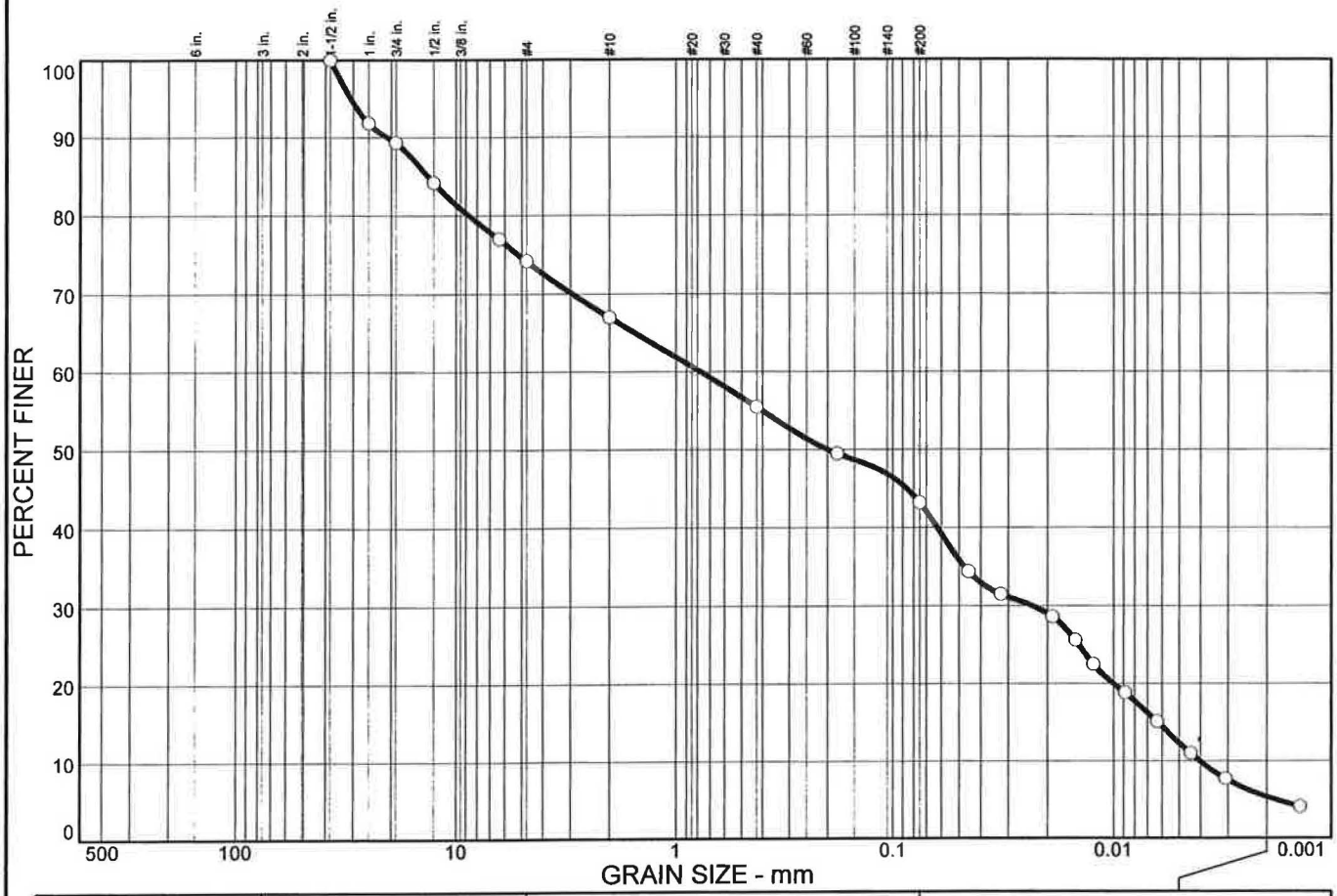
pH=6.97 Units
Soluble Salts=135 ppm
Organic Content=4.4%

Sample No.: Borrow Pit Topsoil-1 **Source of Sample:** Topsoil Layer **Date:** 5/14/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	10.7	15.1	7.2	11.5	12.3	37.8	5.4

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	91.8		
.75 in.	89.3		
.5 in.	84.2		
.25 in.	77.0		
#4	74.2		
#10	67.0		
#40	55.5		
#80	49.5		
#200	43.2		

* (no specification provided)

Soil Description

Rcd 4/30/01
Lab ID#01-031

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 13.5 D_{60}= 0.773 D_{50}= 0.198
D_{30}= 0.0233 D_{15}= 0.0063 D_{10}= 0.0040
C_u= 192.07 C_c= 0.17

Classification

USCS= AASHTO=

Remarks

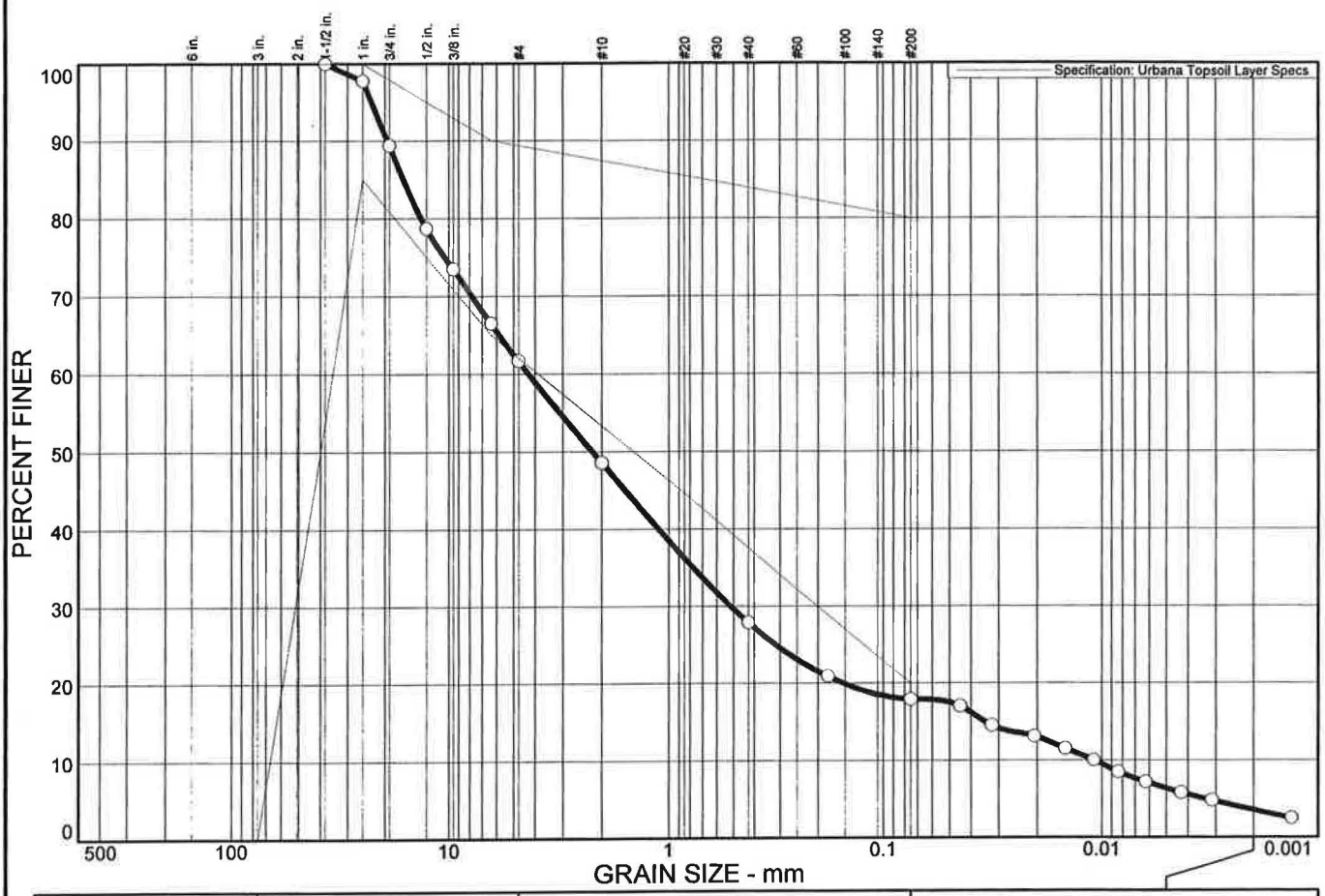
pH=6.67 Units
Soluble Salts=119 ppm
Organic Content=3.9%

Sample No.: Kolo Topsoil#1 **Source of Sample:** Topsoil Layer **Date:** 5/14/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	10.6	27.7	13.1	20.7	10.0	14.3	3.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5 in.	100.0		
1 in.	97.8	85 - 100	
.75 in.	89.4		
.5 in.	78.7		
.375 in.	73.5		
.25 in.	66.5	65 - 90	
#4	61.7		
#10	48.6		
#40	27.9		
#80	20.9		
#200	17.9	20 - 80	X

* Urbana Topsoil Layer Specs

Soil Description

ID#01-152

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 16.3 D_{60}= 4.27 D_{50}= 2.20
D_{30}= 0.514 D_{15}= 0.0346 D_{10}= 0.0109
C_u= 392.37 C_c= 5.70

Classification

USCS= AASHTO=

Remarks

Sample No.: Kolo Topsoil#2 **Source of Sample:** Topsoil Layer **Date:** 6/15/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Appendix D

Daily Inspection Reports

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL

LOCATION URBANA LANDFILL

DATE 5-14-97 (M) Tu Wed Th F Sat

WEATHER ~~[illegible]~~ CLOUDY, INTERMITTENT SHOWERS

TIME start: 8:00 end: 4:00

WORK PERFORMED:

- CLEARING ALONG SOUTHERN & WESTERN SLOPES WITH EXCAVATOR
- SILT FENCING INSTALLED ~~[illegible]~~ IN BUILDING DRAINAGE DITCH ALONG CROWS NEST RD. (PARTIAL)
- CLEARING ALONG UPPER NORTHERN PORTION BY HAND EXCAVATION
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE

PICTURES TAKEN: 27-19, ROLL 1

VISITORS: Bob Long, Jim Crutchwell, Ray Kolo, personnel

QA PERSONNEL SIGNATURE: [signature]

REPORT NO.

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SCS ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER SUNNY

DATE 5-15-07 | M (Tu) Wed Th F Sat
TIME start: 8:00 end: 4:00

WORK PERFORMED:
- CLEARING ALONG SOUTHERN TOE, NEAR CREEK W/EXCAVATOR
- 250' GRID INSTALLED BY OUTSIDE SURVEYORS
- SILT FENCING INSTALLED ALONG THE ~~[illegible]~~ SOUTHERN PERIMETER ALONG CREEK (PARTIAL)
- GRADING OF WASTE ALONG CREEK, WASTE PUSHED BACK TO GET 30' SEPARATION BETWEEN CREEK & WASTE
- CLEARING ALONG UPPER NORTHERN PORTION BY KOLO EXCAVATION
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN: 18-11, ROLL
VISITORS: SURVEYORS

QA PERSONNEL SIGNATURE: J. Murphy
REPORT NO. 2

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER SUNNY, BREEZE FROM SOUTH

DATE 5-16-07 | M Tu (Wed) Th F Sat
TIME start: 8:00 end: 4:30

WORK PERFORMED:
- GRADING OF WESTERN SLOPE W/ DOZER & EXCAVATOR
- CLEARING ALONG NORTHERN PORTION BY KOLO EXCAVATION
- 50' GRID PARTIALLY INSTALLED ON NORTHERN SLOPES BY MARSHALL & A. MURPHY
- SILT FENCING COMPLETED ALONG UNNAMED CREEK
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED:	NONE
PICTURES TAKEN:	10
VISITORS:	NONE

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 3

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, RAIN

DATE 5-17-01 | M Tu Wed (Th) F Sat
TIME start: 8:30 end: 4:30

WORK PERFORMED:
- GRADING ALONG WESTERN SLOPE BY SLC EXCAVATOR & DOZER
- CLEARING & CHIPPING BY KOLO EXCAVATION
- SILT FENCING INSPECTED & DEEMED SATISFACTORY
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: NONE

QA PERSONNEL SIGNATURE: D. Murphy
REPORT NO. 64

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SCC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, RAIN

DATE 5-18-07
M Tu Wed Th (F) Sat
TIME start: 8:00 end: 4:30

WORK PERFORMED:
- CLEARING BY SCC
- CHIPPING BY KORD EXCAVATION
BEGIN TO BURY STUMPS IN LANDFILL
- SILT FENCING INSPECTED @ END OF DAY
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN: 1-5
VISITORS: NONE

QA PERSONNEL SIGNATURE: M. Murphy
REPORT NO. 5

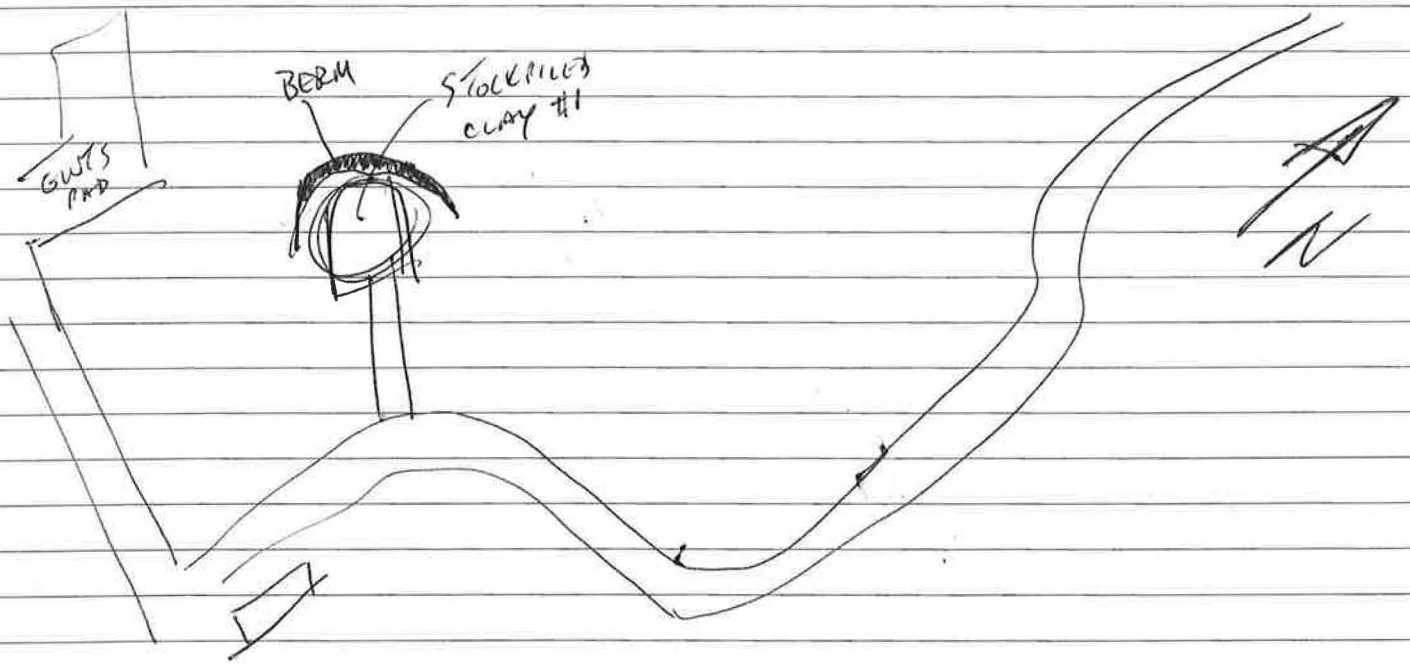
SHEET | OF |

DAILY INSPECTION REPORT

CONTRACTOR: S2C ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, RAIN IN P.M.

DATE 5-21-07 (M) Tu Wed Th F Sat
TIME start: 7:30 end: 4:30

WORK PERFORMED: CLEARING & SUB-GRADE PREP
CHIPPING BY KOLO EXCAVATION
LOGS SKIDDED TO TOP OF LANDFILL
STUMPS BURIED
BETWEEN 40 & 50 LOADS OF CLAY STOCKPILED (SEE SKETCH BELOW)
CLAY SEALED WITH COMPACTOR (SMOOTH DRUM)
& EARTHEN BERM CONSTRUCTED AROUND IT



COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN: #2
VISITORS: Sam D'Angelo

QA PERSONNEL SIGNATURE: J. Murphy
REPORT NO. 6

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER RAIN IN a.m.

DATE 5-22-01 | M (Tu) Wed Th F Sat
TIME start: 7:00 end:

WORK PERFORMED:
- REMAINING STUMPS BURIED BY EXCAVATOR
- FINAL TREES SKIDDED TO PILE @ NORTH END
- CLEARING ALONG EASTERN SIDE ACROSS ROAD BY KOLO EXCAVATION
- SURVEYORS MULLER & MULLER ON-SITE LAYING OUT 50' GRID ALONG UPPER TERRACE (WILL SHOOT ELEVATIONS TOMORROW OR FRIDAY?)
- EFFLUENT INFILTRATION CHAMBER (BY KISTNER) DELIVERED & SET ON STONE PAD [redacted]
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN: #1 (FINAL SHOT, ROLL)
VISITORS: [redacted] Sam D'angelo

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 7

DAILY INSPECTION REPORT

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION: (IRBANK LANDFILL
WEATHER: CLOUDY, COOL

DATE: 5-23-07 (M Tu (Wed) Th F Sat)
TIME: start: 7:00 end:

WORK PERFORMED: SUBGRADE PREPARATION BY SLC
- HANDPICKING TRASH ALONG WEST SLOPE BY KORO EXCAVATION
- PROGRESS MEETING NO. 2 @ 10:00 a.m.
- TEST PAD PLACED & COMPACTED BY SLC, 9:30-
- TEST PAD TESTING (DENSITOMETER & SHELBY TUBE) 10:30 - 11:00
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: Bob Long, Sam D'Angelo, Tim Forbes,

QA PERSONNEL SIGNATURE: F. Murphy
REPORT NO. 8

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, 60's

DATE 5-24-07
M Tu Wed Th F Sat
TIME start: 7:00 end: 3:30

WORK PERFORMED: - GRADING & COMPACTING OF WASTE/SUBGRADE BY SLC,
- HANDPICKING OF WASTE ALONG BACK OF LANDFILL BY KUBO EXCAVATION - BURIED ON-SITE BY SLC.
- CLEARING WORK @ TOP OF LANDFILL BY KUBO EXCAVATION.
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: NONE

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 9

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, 60's

DATE 5-25-07 | M Tu Wed Th (F) Sat
TIME start: 7:30 end:

WORK PERFORMED: - COMPACTION & GRADING OF WASTE/~~ASH~~ SUBGRADE PREPARATION BY SLC.
- EXTRA SILT FENCING INSTALLED ALONG CREEK BY HOLD EXCAVATION.
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: KISTNER R | GOER, DARYL
SAM D'ANGELO

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 10

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL SERVICES
LOCATION URBANA LANDFILL
WEATHER CLOUDY, COOL in a.m., 60's in P.M.

DATE 5-29-07 M (Tu) Wed Th F Sat
TIME start: 7:00 end:

WORK PERFORMED:
- ADDITIONAL CLEARING ON UPPER TERRACE BY SLC
- STRIP TOPSOIL LAYER OFF OF UPPER ~~TERRACE~~ TERRACE
- BURIED TREE STUMPS ONSITE
- SILT FENCING REPAIRED AFTER STORM EVENT
- SANDBAGS REPLACED " "
- NO FORCE MAIN TRENCHING PERFORMED - TOO WET
- PIPING & CONDUIT DELIVERED
- MANHOLE DELIVERED
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED:	NONE
PICTURES TAKEN:	
VISITORS:	NYSEG PERSONNEL

QA PERSONNEL SIGNATURE	F. Murphy
REPORT NO.	11

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER SUNNY, WINDY, 50's

DATE 5-30-07 M Tu (Wed) Th F Sat
TIME start: 7:00 end: 6:00 pm

WORK PERFORMED:
- TRENCH FOR EFFLUENT DISCHARGE LINE BEGUN BY KOLO EXC.
- 40-50 LOADS OF CLAY BROUGHT ONSITE TO UPPER TERRACE
- " " SPREAD & COMPACTED ON ≈ 1/3 acre ON UPPER TERRACE IN P.M.
- 3rd Progress meeting @ 10:40 attended by T. Forbes, F. Kelley, P. Werthman, M. Marshall, S. D'angelo, R. Long, A. Murphy R. Kolo
- GAS VENTS DELIVERED
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: DENSITOMETER # 1-5
PICTURES TAKEN: 17-9, ROLL #2
VISITORS:

QA PERSONNEL SIGNATURE: A. Murphy
REPORT NO. 12

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER SUNNY, WINDY, 50-60°

DATE 5/31/01
M Tu Wed (Th) F Sat
TIME start: 7:00 end: 6:30 pm

WORK PERFORMED:
- INFILTRATION CHAMBER INSTALLED BY KOLO EXCAVATION & SLC
- GW'S EFFLUENT LINE INSTALLED BY MERCURY AIRCRAFT & KOLO
- 40-50 TRUCKLOADS OF CLAY BROUGHT ONSITE
- CLAY BROUGHT ONSITE SPREAD & COMPACTED ~~SPREAD~~ ON UPPER TERRACE (APPROX. 3/4-1 ACRE LOWER 6" LIFT) (Toirm w/regrading)
(APPROX 1/4 [redacted] -1/2 ACRE 2nd 6" LIFT)
- BURY MISC. DEBRIS ALONG WESTERN SLOPE BY SLC
- COMMUNITY AIR MONITORING BY BENCHMARK

TEST PERFORMED: TROXLER #'s 10-13
PICTURES TAKEN: 8-1, ROLL 2
VISITORS:

QA PERSONNEL SIGNATURE: F. Murphy
REPORT NO. 13

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC ENVIRONMENTAL
LOCATION URBANA LANDFILL
WEATHER CLOUDY, HEAVY RAIN @ 12:30

DATE 6/1/07
M Tu Wed Th (F) Sat
TIME start: 4:00 end: 3:30 pm

WORK PERFORMED:
- TRENCH FOR PUMPING WELLS STARTED; LINES PLACED FOR PW-3
- 20-25 TRUCK LOADS OF CLAY BROUGHT TO UPPER TERRACE
- " " SPREAD & COMPACTED ON UPPER TERRACE OVER APPROX. 3/4 ACRE (LIFTS 2&3)
- BURN MISC. DEBRIS ALONG WESTERN TOE BY SLC
- INSTALLATION OF 3 GAS VENTS ON UPPER TERRACE BY SLC & KOLO; SLOTTED 5' ON LOWER END PLACED INTO WASTE

TEST PERFORMED: DENSITOMETER # 1-4, SHELBY - 1-2
PICTURES TAKEN: ROLL #3 : # 1 -
VISITORS: Sam D'Angelo

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 14

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER CLOUDY, WINDY, 50's

DATE 6/4/01 (M) Tu Wed Th F Sat

TIME start: 7:00 end: 3:00

WORK PERFORMED: CLEARED TOPSOIL IN EASTERN PORTION NEAR OLD BLDG.
INSTALLED 7 GAS VENTS FOR DWGS IN VARIOUS LOCATIONS

TEST PERFORMED:

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: E. Murphy

REPORT NO. 15

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY 60's

DATE 6/5/07
M (Tu) Wed Th F Sat
TIME start: 7:00 end: 6:30

WORK PERFORMED: - 90-100 TRUCKLOADS OF CLAY BROUGHT ONSITE
- " " SPREAD & COMPACTED ON UPPER TERRACE
- TOP SOIL STRIPPED OFF OF "MIDDLE TERRACE"
- PUMPING WELL TRENCH COMPLETED WITH FORCE MAIN & CONDUIT BROUGHT WITHIN 15' OF BUILDING PAD

TEST PERFORMED: DENSITOMETER #'s 1-11
PICTURES TAKEN: 17 & 16?
VISITORS:

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 16

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY 60's

DATE 6/6/07
M Tu (Wed) Th F Sat
TIME start: 7:00 end: 6:00

WORK PERFORMED:
- CLAY SPREAD & COMPACTED ON UPPER TERRACE NEAR GASVENT (UPPER TERRACE SUBSTANTIALLY COMPLETE)
- CLAY STOCKPILED ON UPPER [redacted] TERRACE (100+ TRUCKS ONSITE)
- SOME CLAY SPREAD ON "MIDDLE TERRACE"
- ACCESS ROAD & CROWN'S NEST ROAD WATERED TO PREVENT DUST
- CLEARING OF [redacted] DEBRIS IN SECTIONS OF CREEK BY KOLO EXC.
- TREE REMOVAL ON WESTERN SLOPE BEGUN BY KOLO EXCAVATION
- JUNCTION BOXES INSTALLED ON PUMPING WELLS FOR CONDUIT, BY MERCURY PLUMBERS
- BOB KONG ONSITE TO INSPECT WESTERN SLOPE & PROPOSED ACTION
- PROGRESS MEETING @ 10:30 W/ JOE LONG, SAM D'ANTONIO, TOM FORBES, D. MURPHY

TEST PERFORMED:
PICTURES TAKEN: 15 - 10, ROLL #3
VISITORS:

QA PERSONNEL SIGNATURE: A. Murphy
REPORT NO. 17

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY, 70's

DATE 6/7/07
M Tu Wed (Th) F Sat
TIME start: 7:30 end: 6:00

WORK PERFORMED:
- FINISHED PLACING & COMPACTING CLAY ON MIDDLE TERRACE @ TOE OF UPPER TERRACE PER DWGS
- STREAM CHANNEL CLEARED OF DEBRIS AND NEW CHANNEL NEAR ADDITIONAL WASTE EXCAVATED
- GEOTEXTILE & RIP RAP PLACED IN NEW CHANNEL; WATER NOT DIVERTED
- SVE WELLS STAKED BY BENCHMARK
- CLAY STOCKPILED ON UPPER TERRACE

TEST PERFORMED:
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE
REPORT NO. 18

DAILY INSPECTION REPORT

CONTRACTOR: SLC
LOCATION URBANA
WEATHER SUNNY, 70's

DATE 6/8/11
M Tu Wed Th (F) Sat
TIME start: 7:00 end: 5:30

WORK PERFORMED:
- CLAY BROUGHT ONSITE FROM DRESDEN
- CLAY SPREAD & COMPACTED ON AREA EAST OF ACCESS ROAD
- CLEARING/CUTTING ON "NEW" WESTERN SLOPE BY KOLO EXCAVATION
- REGRADING/STABILIZING OF CREEK INCLUDING PLACEMENT OF GEOTEXTILE & RIPRAP BY KOLO EXCAVATION
- CLAY SPREAD & COMPACTED ON

TEST PERFORMED: SHELBY # A2-L1 & A3-L1; DENSOMITER #'S 1-9
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: A. Murphy
REPORT NO. 19

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER CLOUDY, 60's

DATE 6-14-05
(M) Tu Wed Th F Sat
TIME start: 7:00 end: 3:00

WORK PERFORMED:
- STREAM FINISHED W/ RIPRAP ON NORTHERN SECTION
- WESTERN BANK: REGRADING STARTED, STUMPS BURIED
- VAN NESS ROAD REPAIRED BY TOWN OF URBANA
- GWTS DRIVEWAY WIDENED BY KOLO EXCAVATION
- LOWER END OF STREAM REROUTED STARTED BY KOLO

TEST PERFORMED:
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: F. Murphy
REPORT NO. 20

SHEET 1 OF 1

DAILY INSPECTION REPORT

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY 70's

DATE 6-12-07 M (Tu) Wed Th F Sat
TIME start: 7:00 end: 5:30

WORK PERFORMED:
- LOWER PORTION OF CREEK REROUTED / COMPLETED W/ RIPRAP BY KOLO EXCAVATION
- "NEW" WESTERN SLOPE GRADED & SHAPED BY EXCAVATOR & BULLDOZER
- 50-60 TRUCKLOADS OF CLAY BROUGHT ONSITE
- " " + A (20-25) LOADS STOCKPILE SPREAD & COMPACTED ON WESTERN SLOPE

TEST PERFORMED: DENSITOMETER #1-6
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: J. Myers
REPORT NO. 21

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBAN LANDFILL

WEATHER SUNNY, 80's

DATE 6-13-07 M Tu (Wed) Th F Sat

TIME start: 7:00 end: 5:30

WORK PERFORMED: - CLAY BROUGHT ONSITE
- CLAY PLACED AND COMPACTED (LIFT 1) ON WESTERN SLOPE
- DRILLERS ONSITE ON UPPER SLOPE TO INSTALL SVE WELLS
- TEST PAD # 2 PLACED IN 12" LIFT, SHELBY TUBE PULLED

TEST PERFORMED: Shelby Tube A4-L1

PICTURES TAKEN:

VISITORS: Bob Long, NMSIDEC

QA PERSONNEL SIGNATURE: M. Murphy

REPORT NO. 22

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION: ORIZABA LANDFILL

DATE: 6-14-21 (M Tu Wed Th F Sat)

WEATHER: SUNNY, 80's, 90's

TIME: start: 7:00 am end: 6:00 pm

WORK PERFORMED:
- CLAY BROUGHT ONSITE FROM BORROW SOURCE IN DRESDEN (>60 trucks?)
- CLAY SPREAD & COMPACTED ON WESTERN SLOPE
- PARROT-WOLF DRILLERS ONSITE TO INSTALL SVE WELLS & PIEZOMETERS

TEST PERFORMED: Dens. cometer #'s 1-13

PICTURES TAKEN:

VISITORS: John Gathwright, MSDEC

QA PERSONNEL SIGNATURE: A. Murphy

REPORT NO. 23

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER SUNNY, 90's

DATE 6-15-07

M Tu Wed Th (F) Sat

TIME start: 7:00 end: 6:00

WORK PERFORMED: - CLAY BROUGHT ONSITE FROM DRESDEN
- CLAY COMPACTED & SPREAD ON WESTERN SLOPE (LIFTS 2&3)

TEST PERFORMED: DENSITOMETER # 1-11, Shelby Tube A3-L2

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: A. Murphy

REPORT NO. 24

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY, 80's

DATE 6-18-07
(M) Tu Wed Th F Sat
TIME start: 7:00 end:

WORK PERFORMED: - TOPSOIL BROUGHT ONSITE SATURDAY, 6-16-07, BY HAND EXCAVATION
- TOPSOIL SPREAD ON UPPER TERRACE BY HAND EXCAVATION
- CLAY BROUGHT ONSITE FROM DRESDEN BARROW SOURCE
- CLAY SPREAD AND COMPACTED ON WESTERN SLOPE (LIFTS 2&3)
- CLAY SPREAD ON "NOV" SECTION OF WESTERN SLOPE FROM STOCKPILE

TEST PERFORMED: Shelby A4-L2&L3; Density 12-19
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: F. Murphy
REPORT NO. 25

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY S, 80's

DATE 6-19-07
M (Tu) Wed Th F Sat
TIME start: 7:00 end: 5:30

WORK PERFORMED: - TOPSOIL SPREAD ON UPPER TERRACE BY KOLO EXCAVATION
- CLAY BROUGHT ONSITE FROM DRESDEN
- CLAY SPREAD & COMPACTED ON WESTERN SLOPE
CLAY SPREAD ON "NEW" WESTERN SLOPE

TEST PERFORMED: DENSITOMETER #1-9, shelby AS-L482
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: [signature]
REPORT NO. 26

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY, 80's

DATE 6-20-01
M Tu (Wed) Th F Sat
TIME start: 9:00 end: 6:00

WORK PERFORMED:
- CLAY [redacted] BROUGHT ONSITE FROM DRESDEN
- CLAY SPREAD & COMPACTED ON "NEW" WESTERN SLOPE & TRANSITION SLOPE FROM UPPER TO MIDDLE TERRACE
- TOP SOIL SPREAD ON UPPER TERRACE BY KOMO EXCAVATION
- STONES & ROCKS REMOVED FROM TOPSOIL BY KOMO EXCAVATION

TEST PERFORMED: DENSITOMETER # 10-22
PICTURES TAKEN:
VISITORS: Bob Long

QA PERSONNEL SIGNATURE: J. Murphy
REPORT NO. 27

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER CLOUDY, SHOWERS

DATE 6-21-07
M Tu Wed (Th) F Sat
TIME start: 7:00 end: 5:30

WORK PERFORMED: - CLAY & TOPSOIL BROUGHT ONSITE FROM DRESDEN
- LIFT #283 WHERE "ACRE 4" SHELBY TUBES FAILED PEELED & REWORKED (ADDITIONAL CLAY ADDED AS WELL; FULL 18" THICKNESS NOT ACHIEVED IN SOME AREAS) (APPROX 100' X 150' AREA)
- CLAY SPREAD & COMPACTED (LIFT #2) ON SLOPE BETWEEN "UPPER" & "MIDDLE" TERRACES NEAR WEST SLOPE

TEST PERFORMED: DENSITOMETER #1-7, Shelby: A4-L2 "reworked"
PICTURES TAKEN:
VISITORS:

QA PERSONNEL SIGNATURE: E. Murphy
REPORT NO. 28

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLR

LOCATION URBANA LANDFILL

WEATHER SUNNY, 80's

DATE 6-25-07 (M) Tu Wed Th F Sat

TIME start: 7:00 end: 17:00

WORK PERFORMED: - WORK POSTPONED FRIDAY, 6/22. SLOPES TOO WET FOR EQUIPMENT. NO WORK COMPLETED

- VANDALISM OVER WEEKENDS ON UPPER ~~TERRACE~~ (SEE PROBLEM IDENTIFICATION REPORT) & middle slope

- SHELBY TUBES PULLED FROM REWORKED SECTION A. REST WILL BE PULLED & SEALED TOMORROW, 6/26

TEST PERFORMED: DOSIMETER #1-4, Shelbys: A4-L3, A5-L2

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: M. Murphy

REPORT NO. 29

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER SUNNY, 80's

DATE 6-26-07

M (Tu) Wed Th F Sat

TIME start: 7:00 end: 5:30

WORK PERFORMED: - TOPSOIL BROUGHT ONSITE FROM DRESSDEN & BY HAND EXCAVATION (STOCKPILED)
- ACRE 5 - LIFT 1 AREA (APPROX 100' X 150') WHERE SHELBY TUBE FAILED, REWORKED BY TAKING OFF TOP 9", SCARIFYING LOWER 9" AND REWETTING AND RECOMPACTING. SHELBY TUBE PULLED AND 2ND 9" LIFT PLACED OVER THE TOP

TEST PERFORMED: Shelby AS-L1 Reworked

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: A. Murphy

REPORT NO. 30

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY, 80°-90°

DATE 6-27-01
M Tu (Wed) Th F Sat
TIME start: 7:00 end: 5:30

WORK PERFORMED:
- TOPSOIL BROUGHT ONSITE BY KOLO & FROM DRESDEN
- CLAY BROUGHT ONSITE FROM DRESDEN (30-40 TRUCKLOADS)
- CLAY SPREAD ACROSS "NEW" WESTERN SLOPE
- 50' X 150' SECTION OF "NEW" PORTION WATERED, COMPACTED & TESTED
- TOPSOIL SPREAD ON AREA ACROSS ACCESS ROAD, NEAR TRAILER, BY KOLO EXCAVATION
- "ROCK HOUNDS" CREATED ON UPPER TERRACE BY KOLO EXCAVATION

TEST PERFORMED: Densitometer #'s 1-3
PICTURES TAKEN:
VISITORS: John Grathwol, MSDEC

QA PERSONNEL SIGNATURE: M. Murphy
REPORT NO. 31

SHEET 1 OF 1

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER SUNNY, 90's

DATE 6/28/07

M Tu Wed Th F Sat

TIME start: 7:00 end: 5:00

WORK PERFORMED: TOPSOIL BROUGHT ONSITE FROM DIXSON

TOPSOIL SPREAD DOWN PORTIONS OF WESTERN SLOPE

TOPSOIL ON PORTION NEAR TRAILER RAKED W/ YORK RAKE

CLAY COMPACTED, WETTED, ROLLED ON "NEW" WEST SLOPE (BACKSIDE)

TEST PERFORMED: DENSITY #4-6, Shelby A6-L1

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: E. Murphy

REPORT NO. 32

SHEET | OF |

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC
LOCATION URBANA LANDFILL
WEATHER SUNNY, 90's

DATE 6/29/07 M Tu Wed Th (F) Sat
TIME start: 7:00 end: 4:30

WORK PERFORMED:
- TOPSOIL BROUGHT ONSITE FROM DRESDEN
- TOPSOIL SPREAD ON "MIDDLE TERRACE" & "UPPER TERRACE" BY KOLO EXCAVATION
- ADD'L CLAY BROUGHT ONSITE FROM DRESDEN
- " " SPREAD & COMPACTED @ TOE OF "IVEN" WEST SLOPE
- PROGRESS MEETING

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: R. Long, T. Furbos, S. D'Angelo, etc.

QA PERSONNEL SIGNATURE: T. Murphy
REPORT NO. 33

SHEET / OF /

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER CLOUDY, 70's

DATE 7-2-01 (M) Tu Wed Th F Sat

TIME start: 7:30 end: 5:30

WORK PERFORMED:

- COMPACTION OF CLAY ON "NEW" WESTERN SLOPE COMPLETED
- TOPSOIL BROUGHT ONSITE SATURDAY, 6-30-01, BY KOLO EXCAVATION (≈ 846 C.Y.)
- TOPSOIL BROUGHT ONSITE FROM DRESDEN MINE (APPROX. 60 LOADS)
- TOPSOIL SPREAD ON WESTERN SLOPE BY SLC & KOLO
- MONITORING WELLS TO BE EXTENDED; PROTECTIVE CASINGS CUT BACK W/ SAWZALL
- SILT FENCING REPAIRED BY SLC
- STONE PAD FOR SVE TRAILER INSTALLED BY KOLO EXC. ON UPPER TERRACE

TEST PERFORMED: DENSITY # 788

PICTURES TAKEN:

VISITORS:

QA PERSONNEL SIGNATURE: L. Murphy

REPORT NO. 34

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC
LOCATION URBANA
WEATHER SUNNY, 70'S

DATE 7-3-07 M (Tu) Wed Th F Sat
TIME start: 7:00 end: 4:30

WORK PERFORMED:
- TOPSOIL BROUGHT ONSITE FROM DREDGE (APPROX 65 loads)
- TOPSOIL SPREAD ACROSS WESTERN SLOPE BY SLC & KOLO EXC.
- 2 DAMAGED GAS VENTS REPLACED BY SLC & KOLO EXC.
- GAS VENT PLACED IN APPROX. CENTER OF "NEW" WESTERN SLOPE BY SLC
- MONITORING WELLS 103S, 107D, 106D & BMW1, BMW2 ALL EXTENDED BY SLC W/ COMPRESSION COUPLINGS ON WELLS & BROAD FERNCOS(SP?) ON PIEZOMETERS
- TOPSOIL SAMPLE #'S 2-4 COLLECTED IN P.M. BY BENCHMARK
- VERIFICATION OF TOPSOIL DEPTH AT LOCATIONS OF TOPSOIL SAMPLE #'S 2-4; MIN. 6"

TEST PERFORMED: NONE
PICTURES TAKEN:
VISITORS: SURVEYORS

QA PERSONNEL SIGNATURE: A. Murphy
REPORT NO. 35

SHEET OF

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Science, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER ~~CLOUDY~~ CLOUDY, RAIN IN a.m.

DATE 7/5/07

M Tu Wed (Th) F Sat

TIME start: 7:30 end: 12:30

WORK PERFORMED:

- TOPSOIL BROUGHT ONSITE FROM DRESDEN (APPROX. 20 LOADS)
- SILT FENCING INSPECTED & REPAIRED AS NECESSARY, FROM OVERNIGHT STORM EVENT DAMAGE
- MW- EXTENDED

TEST PERFORMED:	NONE
PICTURES TAKEN:	NONE
VISITORS:	NONE

QA PERSONNEL SIGNATURE: E. Murphy

REPORT NO.:

DAILY INSPECTION REPORT

Benchmark Environmental Engineering & Sciences, PLLC

CONTRACTOR: SLC

LOCATION URBANA LANDFILL

WEATHER SUNNY, 80's

DATE 7-9-09 (M) Tu Wed Th F Sat

TIME start: 700(?) end: 4:45

WORK PERFORMED:

- TOPSOIL SPREAD BY KOLO & SLC ON WESTERN SLOPES
- SEEDING & MULCHING BEGUN ON AREA CLOSEST TO TRAILER
- STRAW BROUGHT ONSITE BY KOLO
- TOPSOIL DEPTH VERIFIED ON "NEW" WESTERN SLOPE, MIDDLE TERRACE

TEST PERFORMED:	NONE
PICTURES TAKEN:	NONE
VISITORS:	NONE

QA PERSONNEL SIGNATURE: F. Murphy

REPORT NO.:

Appendix E

Nuclear Densitometer Data Sheets

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 5-30-01
Job No. 0001-007-150

Proctor Test Data:

Type of Material	Clay
Maximum Density	121 pcf
Optimum Moisture Content	13.8 %

LIFT #1, UPPER TERRACE

NUCLEAR GAGE STANDARD COUNTS	Density:										
	Moisture:										
TEST NUMBER	1	2	3	4	5						
DEPTH OR ELEVATION	6"	6"	6"	6"	6"						
DENSITY COUNT	2347	2542	2856	2607	2552						
WET DENSITY (pcf)	131.2	127.6	122.6	126.6	127.6						
MOISTURE COUNT	218	206	167	187	171						
MOISTURE (pcf)	19.5	18.3	14.4	16.4	14.8						
DRY DENSITY (pcf)	111.7	109.3	108.2	110.2	112.8						
PERCENT MOISTURE	17.5	16.7	13.8	14.9	14.8						
PERCENT COMPACTION	92.3	90.4	89.4	91.1	93.3						
PASS (P) OR FAIL (F)	P	P	F	P	P						

TEST NO.	LOCATION OR REMARKS
TEST NO 4	#4 IN ADJACENT VICINITY OF #3

Inspection Time: P.M
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC ENVIRONMENTAL

Date: 5-31-01
Job No. 2001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121 pcf
Optimum Moisture Content	13.8 %

NUCLEAR GAGE STANDARD COUNTS
Density: 2764
Moisture: 612

TEST NUMBER	6	7	8	9	10	11	12	13			
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"	6"	6"			
DENSITY COUNT	2384	2383	2529	2285	2112	2681	2205	2178			
WET DENSITY (pcf)	129.3	129.2	126.6	131.2	135.8	125.1	132.7	133.4			
MOISTURE COUNT	183	202	186	189	186	179	214	179			
MOISTURE (pcf)	16.1	18.0	16.4	16.7	16.4	15.7	19.2	15.7			
DRY DENSITY (pcf)	113.2	111.2	110.2	114.5	119.4	109.4	113.4	117.7			
PERCENT MOISTURE	14.2	16.2	14.9	14.6	14.9	13.9	17.0	13.9			
PERCENT COMPACTION	93.5	91.9	91.1	94.6	98.7	90.4	93.7	97.3			
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P			

TEST NO.	LOCATION OR REMARKS
10-13	2nd LIFT ON UPPER TERRACE

Inspection Time:
Inspector: AM M
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-1-01
Job No. 0001-001-100
UPPER TERRACE, LIFT 2/3 (DAY 3)

Proctor Test Data:

Type of Material	Clay
Maximum Density	121 pcf
Optimum Moisture Content	13.8 %

NUCLEAR GAGE STANDARD COUNTS
Density: 2769
Moisture: 617

TEST NUMBER	1	2	3	4							
DEPTH OR ELEVATION	6"	6"	6"	6"							
DENSITY COUNT	2340	2319	2156	2134							
WET DENSITY (pcf)	130.2	130.6	133.8	134.3							
MOISTURE COUNT	196	194	196	195							
MOISTURE (pcf)	17.3	17.1	17.3	17.2							
DRY DENSITY (pcf)	112.9	113.5	116.6	117.1							
PERCENT MOISTURE	15.3	15.0	14.8	14.7							
PERCENT COMPACTION	93.3	93.8	96.3	96.8							
PASS (P) OR FAIL (F)	P	P	P	P							

TEST NO.	LOCATION OR REMARKS
1-4	LIFT # 2/3

Inspection Time: 10:00 am
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY AIRCRAFT
Contractor: SLC

Date: 6-5-07
Job No. 0001-001-130

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	17.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2762
Moisture: 612

TEST NUMBER	1	2	3	4	5	6	7	8	9	10	11
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"	6"	4"	6"	6"	6"
DENSITY COUNT	2551	2436	2411	2500	2454	2310	2429	3215	2421	2580	2254
WET DENSITY (pcf)	126.2	128.3	128.7	127.1	127.9	130.6	128.3	128.1	128.6	125.7	131.7
MOISTURE COUNT	185	190	196	182	187	193	205	188	187	188	204
MOISTURE (pcf)	16.3	16.8	17.4	16.0	16.5	17.1	18.3	16.6	16.5	16.6	18.2
DRY DENSITY (pcf)	109.9	111.4	111.3	111.1	111.4	113.5	110.0	111.5	112.0	109.0	113.5
PERCENT MOISTURE	14.8	15.1	15.7	14.4	14.8	15.1	16.7	14.9	14.7	15.2	16.1
PERCENT COMPACTION	90.8	92.1	92.0	91.8	92.1	93.8	90.9	92.1	92.6	90.1	93.8
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
8-11	LIFT #2

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-6-07
Job No. 0007 – 001 – 100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121 pcf
Optimum Moisture Content	13.8 %

NUCLEAR GAGE STANDARD COUNTS	Density: 2783	Moisture: 609									
TEST NUMBER	1	2	3	4	5	6					
DEPTH OR ELEVATION	6"	6"	8"	8"	6"	8"					
DENSITY COUNT	2441	2175	1609	1409	2405	1609					
WET DENSITY (pcf)	128.4	133.6	127.7	132.9	129.2	127.6					
MOISTURE COUNT	208	217	198	197	194	203					
MOISTURE (pcf)	18.7	19.7	16.1	17.6	17.3	18.2					
DRY DENSITY (pcf)	109.7	113.9	109.9	115.2	111.8	109.4					
PERCENT MOISTURE	17.1	17.3	17.7	15.3	15.5	16.7					
PERCENT COMPACTION	90.6	94.1	90.9	95.2	92.4	90.4					
PASS (P) OR FAIL (F)	P	P	P	P	P	P					

TEST NO.	LOCATION OR REMARKS
283	SAME LOCATION, DIFFERENT DEPTHS
586	" "

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SCC

Date: 6/7/07
Job No. 0001 - 001 - 100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2758
Moisture: 614

TEST NUMBER	7	8	9	10								
DEPTH OR ELEVATION	6"	6"	6"	6"								
DENSITY COUNT	2418	2391	2444	2232								
WET DENSITY (pcf)	129.0	129.4	128.4	132.5								
MOISTURE COUNT	178	194	191	199								
MOISTURE (pcf)	15.7	17.3	17.0	17.8								
DRY DENSITY (pcf)	113.3	112.1	111.4	114.7								
PERCENT MOISTURE	13.8	15.4	15.3	15.5								
PERCENT COMPACTION	93.6	92.6	92.1	94.8								
PASS (P) OR FAIL (F)	P	P	P	P								

TEST NO.	LOCATION OR REMARKS

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 3/337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-8-07
Job No. 0501-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2775
Moisture: 613

TEST NUMBER	1	2	3	4	5	6	7	8	9		
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"	6"	6"	6"		
DENSITY COUNT	2368	2297	2420	2632	2286	2427	2380	2485	2471		
WET DENSITY (pcf)	129.7	131.1	128.8	125.0	131.4	128.7	129.4	127.6	127.7		
MOISTURE COUNT	207	191	181	177	184	185	211	177	217		
MOISTURE (pcf)	18.5	16.9	15.9	15.5	16.2	16.3	18.9	15.5	17.5		
DRY DENSITY (pcf)	111.2	114.2	112.9	109.6	115.2	112.4	110.5	112.2	110.2		
PERCENT MOISTURE	16.6	14.8	14.1	14.1	14.0	14.5	17.1	13.8	17.0		
PERCENT COMPACTION	91.9	94.4	93.3	90.5	95.2	92.9	91.3	92.7	90.4		
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P		

TEST NO.	LOCATION OR REMARKS
1-5	ON AREA EAST OF ACCESS ROAD
6-9	

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

TURNKEY ENVIRONMENTAL RESTORATION, LLC

Benchmark Environmental Engineering & Science, PLLC

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-12-07 & 6-13-07
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS

Density: 2768 } 6/12/07
Moisture: 610

Density: 2775 } 6/13/07
Moisture: 607

TEST NUMBER	1	2	3	4	5	6	7	8	9	10	11
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	2592	2138	2479	2425	2584	2602	2451	2596	2139	2336	2647
WET DENSITY (pcf)	125.6	134.3	129.9	128.6	126.8	125.4	124.9	125.6	134.3	130.4	126.4
MOISTURE COUNT	182	183	170	188	170	185	174	180	187	182	188
MOISTURE (pcf)	16.1	16.2	17.1	16.7	15.9	16.4	17.0	16.0	16.7	16.2	16.3
DRY DENSITY (pcf)	109.5	118.1	112.8	111.9	110.9	109.0	112.9	109.7	117.7	114.2	111.1
PERCENT MOISTURE	14.7	13.8	13.8	14.9	13.8	15.0		14.5	14.2	14.1	13.8
PERCENT COMPACTION	90.5	97.6	93.2	92.5	91.7	90.1	93.3	90.6	97.2	94.4	91.8
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
1&2	LIFT #2
3-6	LIFT #1 ON WESTERN RAMP
7-11	5-13-01: measurements taken
	ALL TESTS on WESTERN SLOPE

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA L.F. Date: 6-13-57
Client: MERCURY Job No. 0001-001-100
Contractor: SLC

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS Density: 2775
Moisture: 607

TEST NUMBER	~~11~~ 12	13	14	15	16	17					
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"					
DENSITY COUNT	2238	2431	2616	2398	2511	2593					
WET DENSITY (pcf)	132.3	128.6	126.3	129.2	127.1	125.7					
MOISTURE COUNT	193	186	178	194	183	181					
MOISTURE (pcf)	17.3	16.6		17.4	16.3	16.1					
DRY DENSITY (pcf)	115.0	112.0	110.4	111.8	110.9	109.6					
PERCENT MOISTURE	15.0	14.8		15.6	14.7	14.6					
PERCENT COMPACTION	95.2	92.6	91.2	92.4	91.6	90.6					
PASS (P) OR FAIL (F)	P	P		P	P	P					

TEST NO.	LOCATION OR REMARKS
12	LIFT #2
13-17	LIFT #1

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA "TEST PAD 2" Date: 6-13-07
Client: Job No.
Contractor: SLC

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS	Density: 2775 Moisture: 607											
TEST NUMBER	1	2										
DEPTH OR ELEVATION	12"	10"										
DENSITY COUNT	460	857										
WET DENSITY (pcf)	131.4	130.9										
MOISTURE COUNT	197	193										
MOISTURE (pcf)	17.7	17.3										
DRY DENSITY (pcf)	113.7	113.6										
PERCENT MOISTURE	15.6	15.2										
PERCENT COMPACTION	94.0	93.9										
PASS (P) OR FAIL (F)	P	P										

TEST NO.	LOCATION OR REMARKS
1&2	SAME LOCATION, DIFFERENT DEPTH

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL Date: 6-14-01
Client: MERCURY Job No.
Contractor: SLC

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS Density: 2783 Moisture: 613 LIFT #1 UNLESS OTHERWISE NOTED

TEST NUMBER	1	2	3	4	5	6	7	8	9	10	11
DEPTH OR ELEVATION	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"	6"
DENSITY COUNT	2133	2383	2158	2662	2410	2315	2198	2558	2270	2642	2365
WET DENSITY (pcf)	134.4	129.4	133.9	124.5	129.0	130.8	133.1	126.3	131.6	124.9	129.8
MOISTURE COUNT	194	195	190	173	182	192	193	174	190	172	185
MOISTURE (pcf)	17.4	17.9	17.0	15.2	16.2	17.2	17.3	15.3	17.0	15.1	16.5
DRY DENSITY (pcf)	117.0	111.9	116.9	109.3	112.8	113.6	115.8	111.0	114.7	109.7	113.4
PERCENT MOISTURE	14.9	15.6	14.5	13.9	14.3	15.1	14.9	13.8	14.8	13.8	14.5
PERCENT COMPACTION	96.7	92.5	96.6	90.3	93.2	93.9	95.7	91.7	94.8	90.7	93.7
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
2,3,6	LIFT #2
-7	LIFT #2

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SCC

Date: 6-14-01
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS

Density: 2783
Moisture: 613

TEST NUMBER	12	13									
DEPTH OR ELEVATION	6"	6"									
DENSITY COUNT	2658	2626									
WET DENSITY (pcf)	125.8	125.2									
MOISTURE COUNT	174	169									
MOISTURE (pcf)	16.0	14.8									
DRY DENSITY (pcf)	109.8	110.3									
PERCENT MOISTURE	13.9	13.4									
PERCENT COMPACTION	90.7	91.2									
PASS (P) OR FAIL (F)	P	P									

TEST NO.	LOCATION OR REMARKS

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-15-07
Job No. 0001-001-138

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2764
Moisture: 611

LIFT #2 UNLESS OTHERWISE NOTED

TEST NUMBER	1	2	3	4	5	6	7	8		10	11
DEPTH OR ELEVATION	6"	10"	6"	6"	6"	6"	6"	6"		6"	6"
DENSITY COUNT	2417	940	2251	2634	2557	2574	2186	2319		2362	2397
WET DENSITY (pcf)	128.7	127.6	131.9	124.8	126.1	125.9	133.2	130.5		129.7	129.0
MOISTURE COUNT	183	200	187	176	180	175	192	188		182	184
MOISTURE (pcf)	16.1	17.9	16.5	15.4	15.8	15.3	17.1	16.6		16.0	16.2
DRY DENSITY (pcf)	112.5	109.7	115.3	109.4	110.3	110.5	116.1	113.9		113.7	112.8
PERCENT MOISTURE	14.3	16.3	14.3	14.1	14.4	13.9	14.7	14.6		14.1	14.4
PERCENT COMPACTION	93.0	90.7	95.3	90.4	91.2	91.4	96.0	94.1		94.0	93.2
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P		P	P

TEST NO.	LOCATION OR REMARKS
12	SAME LOCATION, DIFF. DEPTH

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: VRBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-18-07
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS	Density: 2776 Moisture: 607										
TEST NUMBER	12	13	14	15	16	17	18	19			
DEPTH OR ELEVATION	8"	8"	8"	8"	6"	6"	6"	6"			
DENSITY COUNT	1346	1660	1651	1686	2508	2524	2102	2550			
WET DENSITY (pcf)	134.5	126.4	126.7	125.8	127.2	126.9	135.1	126.5			
MOISTURE COUNT	204	180	178	187	177	177	184	176			
MOISTURE (pcf)	18.4	16.0	15.7	16.7	15.6	15.6	16.4	15.5			
DRY DENSITY (pcf)	116.1	110.5	110.9	109.1	111.6	111.3	118.8	110.9			
PERCENT MOISTURE	15.9	14.4	14.2	15.3	14.0	14.1	13.8	14.0			
PERCENT COMPACTION	96.0	91.3	91.7	90.2	92.2	92.0	98.2	91.7			
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P			

TEST NO.	LOCATION OR REMARKS
12-15	LIFT #2/3 (10"-12" LIFT)

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-19-07
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

"AREA A" LIFT #3

119.7 / 12.8 "AREA B" NEAR MW-106

NUCLEAR GAGE STANDARD COUNTS
Density: 2759
Moisture: 609
6/19/07

TEST NUMBER	1	2	3	4	5	6	7	8	9	10	11
DEPTH OR ELEVATION	6"	6"	6"	8"	8"	8"	8"	8"	8"	8"	8"
DENSITY COUNT	2472	2255	2484	1652	1438	1813	1755	1733	1720	1750	1710
WET DENSITY (pcf)	127.5	131.7	127.3	126.4	131.8	122.8	124.0	124.5	124.8	124.1	125.0
MOISTURE COUNT	196	185	201	175	186	171	175	188	177	177	177
MOISTURE (pcf)	17.5	16.4	18.0	15.4	16.5	15.0	15.4	16.7	15.6	15.8	15.6
DRY DENSITY (pcf)	110.0	115.3	109.2	111.0	115.3	107.8	108.6	107.7	109.2	108.3	109.4
PERCENT MOISTURE	15.9	14.2	16.5	13.9	14.3	13.9	14.2	15.5	14.3	14.6	14.2
PERCENT COMPACTION	90.9	95.3	90.3	92.8	96.3	90.0	90.8	90.0	91.2	90.5	91.4
PASS (P) OR FAIL (F)	P Area	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
1-3	LIFT #3, AREA A
4-7	LIFT #1, AREA B (≈ 9")
8&9	LIFT #2, AREA B (≈ 9")
10&11	MEASUREMENTS TAKEN 6-20-07 IN a.m.

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA L.F. Date: 6-20-07
Client: MERCURY Job No. 0001-001-100
Contractor: SLC

Proctor Test Data:

Type of Material	Clay
Maximum Density	119.7
Optimum Moisture Content	12.8

NUCLEAR GAGE STANDARD COUNTS Density: 2767 Moisture: 607

TEST NUMBER	12	13	14	15	16	17	18	19	20	21	22
DEPTH OR ELEVATION	10"	8"	10"	6"	6"	6"	6"	6"	8"	8"	8"
DENSITY COUNT	992	1871	1009	2434	2486	2334	2091	2137	1524	1655	1686
WET DENSITY (pcf)	125.7	121.6	125.1	128.2	127.3	130.1	135.1	134.1	129.5	126.3	125.5
MOISTURE COUNT	200	160	189	190	184	196	186	187	195	180	187
MOISTURE (pcf)	17.9	13.9	16.8	16.9	16.3	17.5	16.5	16.6	17.4	15.9	16.6
DRY DENSITY (pcf)	107.7	107.7	108.3	111.3	111.0	112.6	118.6	117.5	112.1	110.4	108.9
PERCENT MOISTURE	16.6	12.9	15.5	15.2	14.7	15.6	13.9	14.1	15.5	14.4	15.2
PERCENT COMPACTION	90.0	90.0	90.5	93.0	92.7	94.1	99.1	98.2	92.6	91.3	90.0
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
15-19	LIFT #3 (≈6")
12-14	LIFT #1 (≈12")
20-22	LIFT #1 (≈9")

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: VRIJANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-21-07
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2748
Moisture: 612

TEST NUMBER	1	2	3	4	5	6	7				
DEPTH OR ELEVATION	6"	6"	6"	6	6"	8"	8"				
DENSITY COUNT	2337	2403	2152	2304	2239	1511	1484				
WET DENSITY (pcf)	129.8	128.6	133.4	130.4	131.8	129.6	130.3				
MOISTURE COUNT	204	204	222	215	197	203	212				
MOISTURE (pcf)	18.2	18.2	20.1	19.3	17.5	18.1	19.0				
DRY DENSITY (pcf)	111.6	110.3	113.4	111.1	114.3	111.5	111.2				
PERCENT MOISTURE	16.3	16.5	17.7	17.4	17.3	16.3	17.1				
PERCENT COMPACTION	92.2	91.2	93.7	91.8	94.4	92.1	91.9				
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P				

TEST NO.	LOCATION OR REMARKS
1-5	LIFT #2 (REINSTALLED) (≈6")
687	LIFT #2 (≈9")

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: VERSAILLES LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-25-07 & 6/26/07
Job No. 0051-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS — Density: 2769 (6/25/07); Moisture: 608 (6/25/07); D: 2735 M: 612 (6/26/07)

TEST NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
DEPTH OR ELEVATION	6"	6"	8"	8"	8"	8"	6"	6"	8"	8"	8"	8"
DENSITY COUNT	2402	2207	1594	1564	1578	1508	2399	2422	1487	1414	1528	1741
WET DENSITY (pcf)	129.0	132.7	127.9	128.5	127.8	129.6	128.6	128.1	130.1	132.0	129.1	124.0
MOISTURE COUNT	194	203	165	215	191	190	180	194	186	210	187	172
MOISTURE (pcf)	17.4	18.3	16.4	19.5	16.9	16.8	15.8	17.2	16.4	18.8	16.5	15.5
DRY DENSITY (pcf)	111.6	114.5	111.5	109.0	110.9	112.8	112.8	110.8	113.7	113.2	112.6	109.0
PERCENT MOISTURE	15.5	16.0	14.7	17.9	15.3	14.9	14.0	15.5	14.4	16.7	14.7	13.8
PERCENT COMPACTION	92.3	94.6	92.1	90.1	91.6	93.2	93.2	91.6	94.0	93.5	93.0	90.1
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P	P	P	P	P

TEST NO.	LOCATION OR REMARKS
1-4	MEASUREMENTS TAKEN 6/25/07
5-12	" " 6/26/07
5-6	LIFT #2 (~9")
7-8	LIFT #3 (~6")
9-12	LIFT #1 (REWORKED) (~9")

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-26-07
Job No. 0001-001-100

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS
Density: 2735
Moisture: 612

TEST NUMBER	13	14	15								
DEPTH OR ELEVATION	8"	8"	8"								
DENSITY COUNT	1466	1486	1650								
WET DENSITY (pcf)	130.6	130.6	126.1								
MOISTURE COUNT	212	200	164								
MOISTURE (pcf)	19.0	17.8	16.2								
DRY DENSITY (pcf)	111.5	112.8	109.9								
PERCENT MOISTURE	17.1	15.8	14.8								
PERCENT COMPACTION	92.2	93.2	90.8								
PASS (P) OR FAIL (F)	P	P	P								

TEST NO.	LOCATION OR REMARKS
1 [illegible] 13-15	LIFT #2 (~9") (REWORKED DUE TO FAILURE IN BOTTOM LIFT)

Inspection Time:
Inspector: ADAM
Data Checked By:
Troxler Serial No.: 31337

NUCLEAR DENSITOMETER DATA SHEET

Project: URBANA LANDFILL
Client: MERCURY
Contractor: SLC

Date: 6-27-07 thru 7/2/07
Job No. 0201 - 001 - 150

Proctor Test Data:

Type of Material	Clay
Maximum Density	121
Optimum Moisture Content	13.8

NUCLEAR GAGE STANDARD COUNTS											
	Density: 2756 } 6/27/01				D: 2762 M: 614 } 6/28/07			D: 2767 M: 603 } 7/2/07			
	Moisture: 609										
TEST NUMBER	1	2	3	4	5	6	7	8			
DEPTH OR ELEVATION	12"	12"	12"	12"	12"	12"	12"	12"			
DENSITY COUNT	423	445	455	505	438	477	569	551			
WET DENSITY (pcf)	133.5	131.9	131.3	128.4	132.8	130.9	124.9	125.9			
MOISTURE COUNT	204	214	209	202	201	226	177	185			
MOISTURE (pcf)	18.2	19.2	18.7	18.0	17.9	20.4	15.8	16.6			
DRY DENSITY (pcf)	115.3	112.7	112.5	110.4	114.9	109.6	109.2	109.3			
PERCENT MOISTURE	15.8	17.1	16.7	16.3	15.5	18.6	14.4	15.2			
PERCENT COMPACTION	95.3	93.1	93.0	91.3	95.0	90.6	90.2	90.3			
PASS (P) OR FAIL (F)	P	P	P	P	P	P	P	P			

TEST NO.	LOCATION OR REMARKS
1-3	TAKEN ON "NEW" PORTION OF WESTERN SLOPE, 6/27/07
4-6	" " 6/28/01
7&8	" " 7/2/07

Inspection Time:
Inspector: AMM
Data Checked By:
Troxler Serial No.: 31337

Appendix F

Laboratory QA Testing Results, Barrier Material

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 2, 2001**
Project No: 01-004 **Date Sample Received: June 1, 2001**

Sample No: Upper Terrace Acre 1-Lift 1,
01-096, Shelby Tube Sample

Before Test

Wet Density (pcf): 129.3
Moisture Content (%): 18.3
Dry Density (pcf): 109.3

After Test

Wet Density (pcf): 131.0
Moisture Content (%): 22.3
Dry Density (pcf): 107.1

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 2.7×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 3, 2001**
Project No: 01-004 **Date Sample Received: June 1, 2001**

Sample No: Upper Terrace Acre 1-Lift 2,
01-102, Shelby Tube Sample

Before Test

Wet Density (pcf): 130.3
Moisture Content (%): 17.6
Dry Density (pcf): 110.8

After Test

Wet Density (pcf): 132.2
Moisture Content (%): 20.0
Dry Density (pcf): 110.1

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 8.9×10^{-9}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 11, 2001
Date Sample Received: June 9, 2001

Sample No: Acre 2-Lift 1, 01-130
Shelby Tube Sample

Noted 1.5" Rock in sample after test was performed.

Before Test

Wet Density (pcf): 129.1
Moisture Content (%): 16.5
Dry Density (pcf): 110.8

After Test

Wet Density (pcf): 131.7
Moisture Content (%): 20.6
Dry Density (pcf): 109.2

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 1.9×10^{-7}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 12, 2001**
Project No: 01-004 **Date Sample Received: June 9, 2001**

Sample No: Acre 2-Lift 1(Backup), 01-143
Shelby Tube Sample

Before Test

Wet Density (pcf): 131.5
Moisture Content (%): 16.4
Dry Density (pcf): 113.0

After Test

Wet Density (pcf): 135.0
Moisture Content (%): 19.9
Dry Density (pcf): 112.6

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 1.8×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 11, 2001**
Project No: 01-004 **Date Sample Received: June 9, 2001**

Sample No: Acre 3-Lift 1, 01-131
Shelby Tube Sample

Before Test

Wet Density (pcf): 130.9
Moisture Content (%): 19.5
Dry Density (pcf): 109.5

After Test

Wet Density (pcf): 131.5
Moisture Content (%): 19.7
Dry Density (pcf): 109.8

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 3.1×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 17, 2001
Date Sample Received: June 15, 2001

Sample No: Acre 3-Lift 2, 01-155
Shelby Tube Sample

Before Test

Wet Density (pcf): 129.2
Moisture Content (%): 16.3
Dry Density (pcf): 111.1

After Test

Wet Density (pcf): 131.2
Moisture Content (%): 19.9
Dry Density (pcf): 109.4

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 2.7×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 21, 2001
Date Sample Received: June 20, 2001

Sample No: Acre 3-Lift 3, 01-163
Shelby Tube Sample

Before Test

Wet Density (pcf): 130.3
Moisture Content (%): 15.4
Dry Density (pcf): 112.9

After Test

Wet Density (pcf): 135.2
Moisture Content (%): 19.4
Dry Density (pcf): 113.2

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 2.1×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 15, 2001
Date Sample Received: June 14, 2001

Sample No: Acre 4-Lift 1, 01-154
Shelby Tube Sample

Before Test

Wet Density (pcf): 131.6
Moisture Content (%): 17.7
Dry Density (pcf): 111.8

After Test

Wet Density (pcf): 133.3
Moisture Content (%): 18.8
Dry Density (pcf): 112.2

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 1.3×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 20, 2001
Date Sample Received: June 19, 2001

Sample No: Acre 4-Lift 2, 01-161
Shelby Tube Sample

Before Test

Wet Density (pcf): 120.7
Moisture Content (%): 14.8
Dry Density (pcf): 105.1

After Test

Wet Density (pcf): 122.0
Moisture Content (%): 21.2
Dry Density (pcf): 100.6

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 3.8×10^{-6}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 25, 2001**
Project No: 01-004 **Date Sample Received: June 22, 2001**

Sample No: Acre 4-Lift 2, Reworked
01-178 Shelby Tube Sample

Before Test

Wet Density (pcf): 132.4
Moisture Content (%): 18.1
Dry Density (pcf): 112.1

After Test

Wet Density (pcf): 133.1
Moisture Content (%): 19.6
Dry Density (pcf): 111.3

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 1.1×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 20, 2001
Date Sample Received: June 19, 2001

Sample No: Acre 4-Lift 3, 01-162
Shelby Tube Sample

Before Test

Wet Density (pcf): 128.9
Moisture Content (%): 15.1
Dry Density (pcf): 112.0

After Test

Wet Density (pcf): 133.2
Moisture Content (%): 19.4
Dry Density (pcf): 111.6

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 8.8×10^{-7}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 26, 2001**
Project No: 01-004 **Date Sample Received: June 25, 2001**

Sample No: Acre 4-Lift 3, Reworked
01-185 Shelby Tube Sample

Before Test

Wet Density (pcf): 135.3
Moisture Content (%): 15.0
Dry Density (pcf): 117.7

After Test

Wet Density (pcf): 138.1
Moisture Content (%): 19.9
Dry Density (pcf): 115.2

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 9.2×10^{-9}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 21, 2001
Date Sample Received: June 20, 2001

Sample No: Acre 5-Lift 1, 01-164
Shelby Tube Sample

Note: Tested backup sample-unable to test original sample.

Before Test

Wet Density (pcf): 118.9
Moisture Content (%): 15.5
Dry Density (pcf): 102.9

After Test

Wet Density (pcf): 122.5
Moisture Content (%): 22.3
Dry Density (pcf): 100.2

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 5.1×10^{-6}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill **Date of Test: June 28, 2001**
Project No: 01-004 **Date Sample Received: June 27, 2001**

Sample No: Acre 5-Lift 1, Reworked
01-187 Shelby Tube Sample

Before Test

Wet Density (pcf): 133.2
Moisture Content (%): 19.0
Dry Density (pcf): 112.0

After Test

Wet Density (pcf): 136.4
Moisture Content (%): 19.7
Dry Density (pcf): 114.0

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 7.8×10^{-9}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 26, 2001
Date Sample Received: June 25, 2001

Sample No: Acre 5-Lift 2, 01-184
Shelby Tube Sample

Before Test

Wet Density (pcf): 132.1
Moisture Content (%): 17.9
Dry Density (pcf): 112.1

After Test

Wet Density (pcf): 133.7
Moisture Content (%): 19.4
Dry Density (pcf): 112.0

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 8.9×10^{-9}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: July 2, 2001
Date Sample Received: June 29, 2001

Sample No: Acre 6-Lift 1, 01-201
Shelby Tube Sample

Before Test

Wet Density (pcf): 128.8
Moisture Content (%): 19.4
Dry Density (pcf): 107.8

After Test

Wet Density (pcf): 130.6
Moisture Content (%): 23.0
Dry Density (pcf): 106.1

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 2.7×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: May 24, 2001
Date Sample Received: May 23, 2001

Sample No: Test Pad A, 01-069
Shelby Tube Sample

Before Test

Wet Density (pcf): 130.8
Moisture Content (%): 16.9
Dry Density (pcf): 111.9

After Test

Wet Density (pcf): 132.2
Moisture Content (%): 18.8
Dry Density (pcf): 111.3

Hydraulic Conductivity Result

Average of Last 4 Readings (cm/s): 4.7×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

3rd Rock, LLC
Hydraulic Conductivity Report Sheet

Project: Urbana Landfill
Project No: 01-004

Date of Test: June 15, 2001
Date Sample Received: June 13, 2001

Sample No: Test Pad#2, 01-153
Shelby Tube Sample

Before Test

Wet Density (pcf): 131.7
Moisture Content (%): 16.2
Dry Density (pcf): 113.3

After Test

Wet Density (pcf): 132.4
Moisture Content (%): 19.8
Dry Density (pcf): 110.5

Hydraulic Conductivity Result

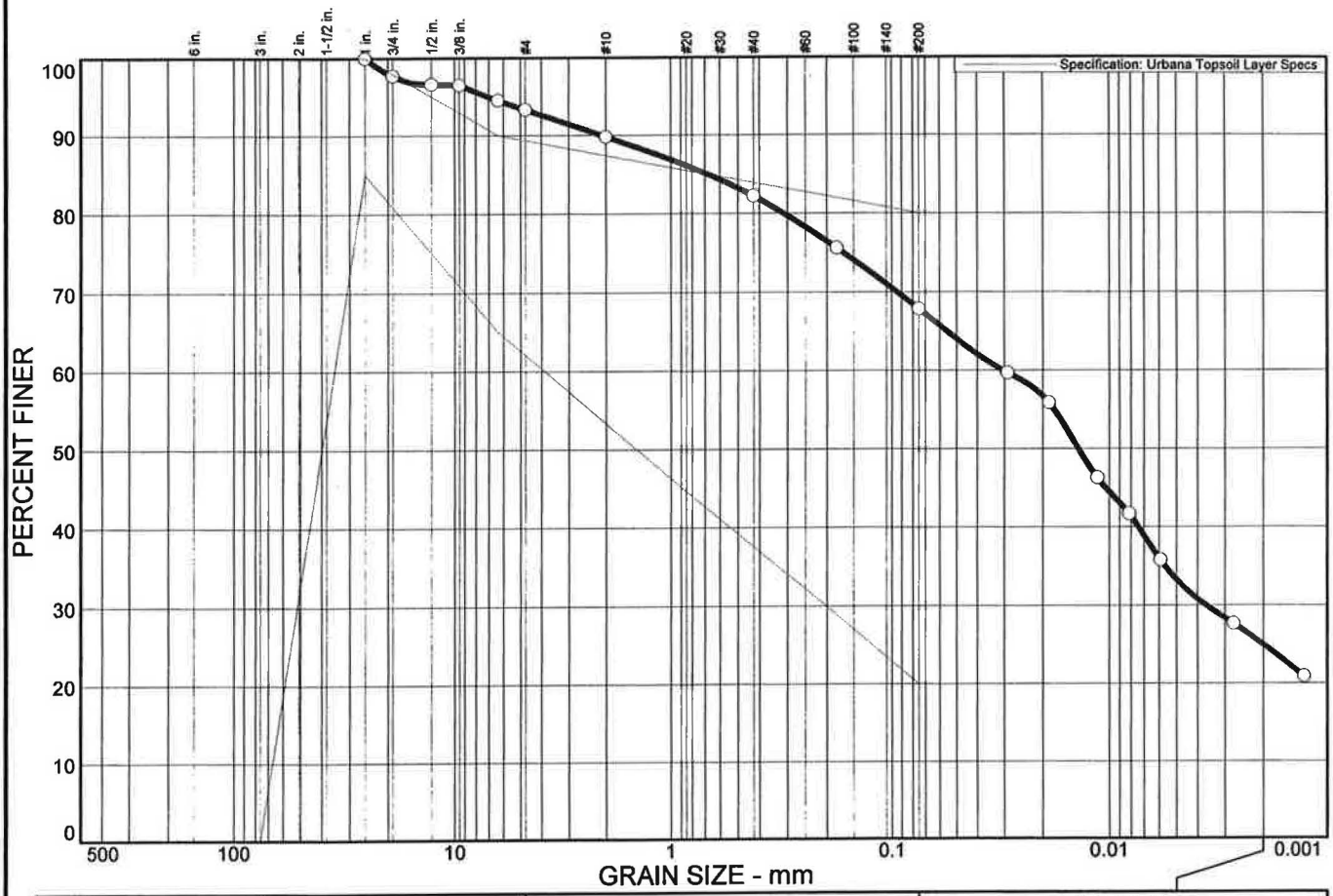
Average of Last 4 Readings (cm/s): 3.5×10^{-8}

580 Olean Road
East Aurora, New York 14052
(716) 655-4933

Appendix G

Laboratory QA Testing Results, Topsoil

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	2.3	4.4	3.5	7.6	14.3	42.9	25.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0	85 - 100	
.75 in.	97.7		
.5 in.	96.6		
.375 in.	96.5		
.25 in.	94.5	65 - 90	X
#4	93.3		
#10	89.8		
#40	82.2		
#80	75.6		
#200	67.9	20 - 80	

* Urbana Topsoil Layer Specs

Soil Description

ID#01-203

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.682 D_{60}= 0.0304 D_{50}= 0.0137
D_{30}= 0.0036 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

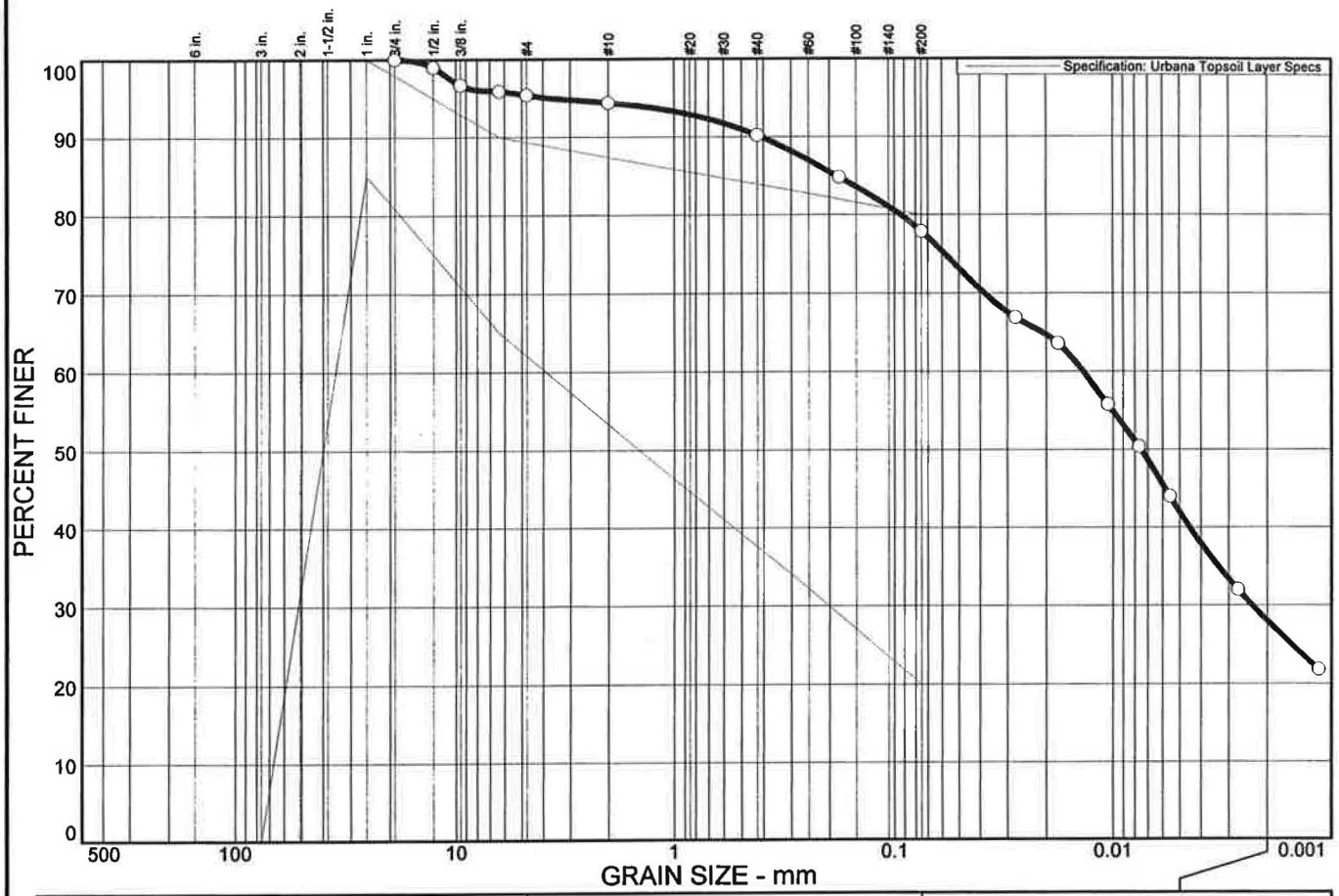
Organic Content=4.6%
Soluble Salts=117 ppm
pH=6.38 units

Sample No.: Topsoil Sample #1 **Source of Sample:** Topsoil Layer **Date:** 7/3/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	4.6	1.0	4.2	12.3	49.9	28.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	99.0		
.375 in.	96.7		
.25 in.	95.9	65 - 90	X
#4	95.4		
#10	94.4		
#40	90.2		
#80	84.8		
#200	77.9	20 - 90	

* Urbana Topsoil Layer Specs

Soil Description

ID#01-207

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.185 D_{60}= 0.0136 D_{50}= 0.0075
D_{30}= 0.0023 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

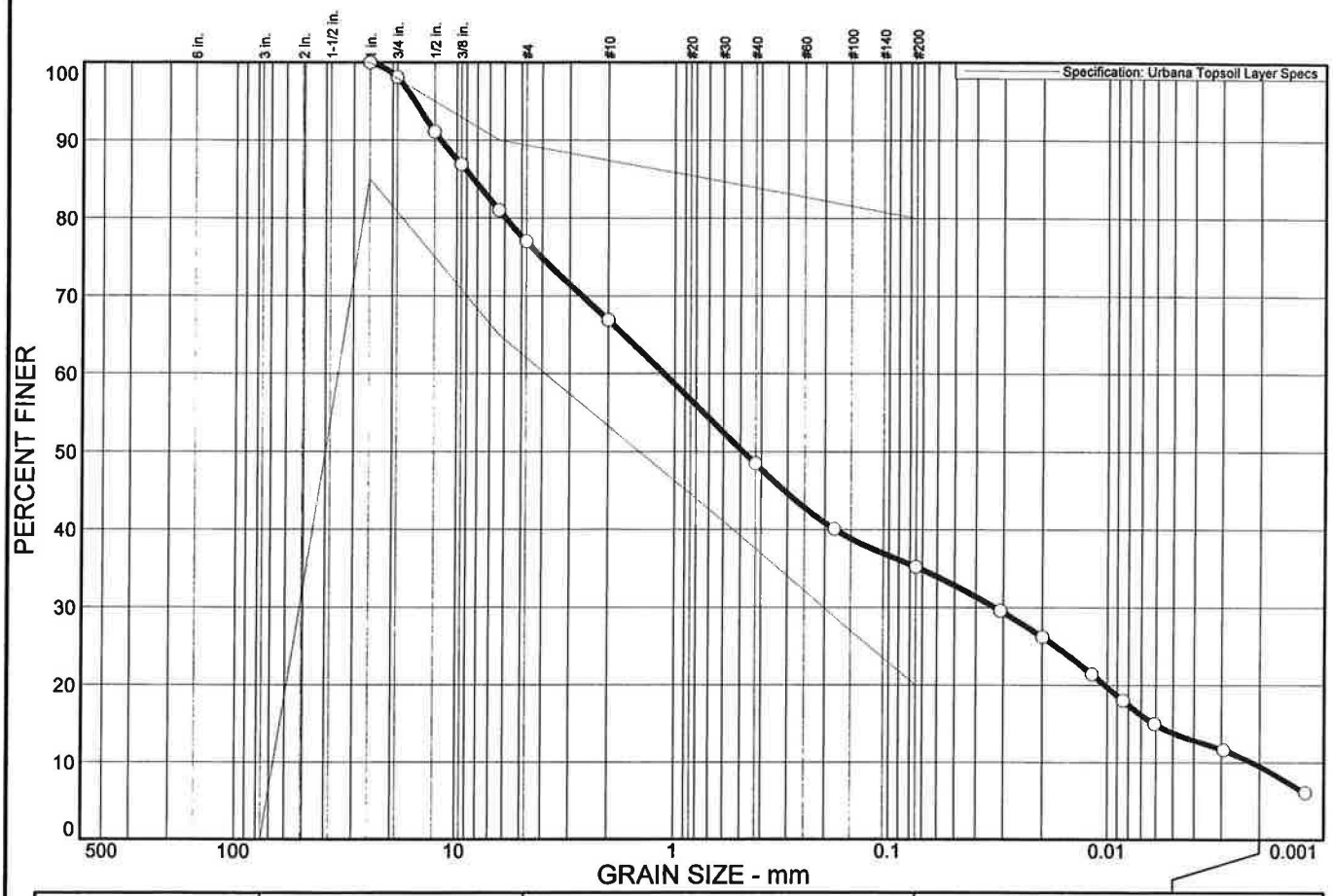
Remarks

Sample No.: Topsoil Sample #2 **Source of Sample:** Topsoil Layer **Date:** 7/9/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	1.9	21.1	10.1	18.4	13.3	25.7	9.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0	85 - 100	
.75 in.	98.1		
.5 in.	91.1		
.375 in.	86.9		
.25 in.	81.0	65 - 90	
#4	77.0		
#10	66.9		
#40	48.5		
#80	40.1		
#200	35.2	20 - 80	

* Urbana Topsoil Layer Specs

Soil Description

ID#01-208

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 8.34 D_{60}= 1.12 D_{50}= 0.484
D_{30}= 0.0327 D_{15}= 0.0061 D_{10}= 0.0022
C_u= 514.43 C_c= 0.44

Classification

USCS= AASHTO=

Remarks

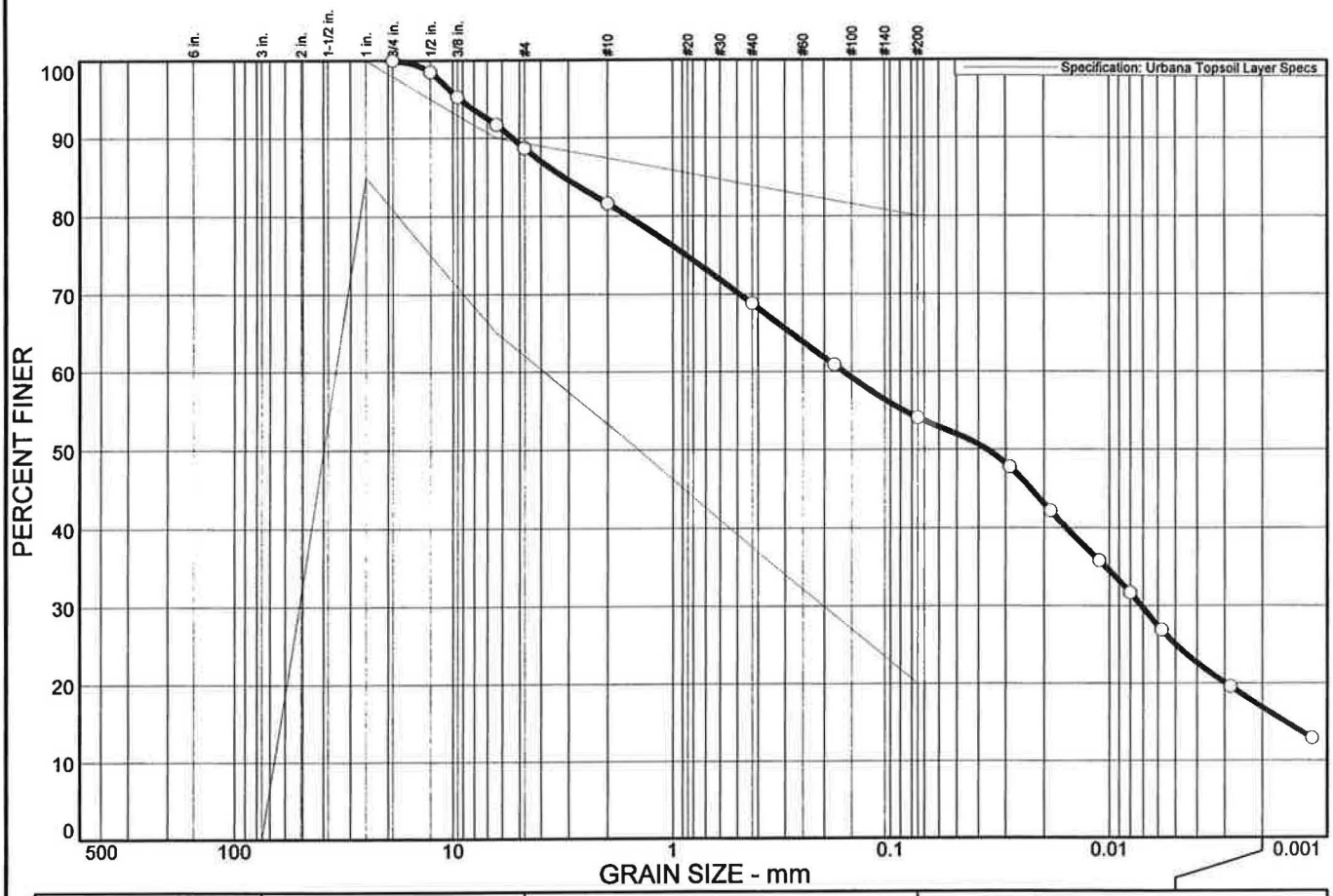
Organic Content=3.1%
Soluble Salts=141 ppm
pH=6.07 units

Sample No.: Topsoil Sample #3 **Source of Sample:** Topsoil Layer **Date:** 7/9/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Particle Size Distribution Report



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	11.3	7.1	12.8	14.7	37.2	16.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.75 in.	100.0		
.5 in.	98.5		
.375 in.	95.3		
.25 in.	91.7	65 - 90	X
#4	88.7		
#10	81.6		
#40	68.8		
#80	60.9		
#200	54.1	20 - 80	

* Urbana Topsoil Layer Specs

Soil Description

ID#01-209

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 3.14 D_{60}= 0.163 D_{50}= 0.0365
D_{30}= 0.0071 D_{15}= 0.0016 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: Topsoil Sample #4 **Source of Sample:** Topsoil Layer **Date:** 7/9/01
Location: **Elev./Depth:**

3rd Rock, LLC

Client: Benchmark Environmental Engineering & Science
Project: Urbana Landfill
Project No: 01-004 **Plate**

Appendix H

SVE Well and Piezometer Installation Field Notes

Location _____ Date _____

Project/Client _____

Weather:

1000 mostly sunny, hot, humid, hazy, sl. breeze (0-5 mph, SE) 70°F

1230 same as above, 80°F

1600 same as above, 88°F

Parratt Wolff, Inc.
Driller: Brian Waters
Helper: Rod Trask

12
13.64
2.74
10.90
12.58
1.96
10.62

2.74
- .30
2.44

Ingersoll Rand A300 rear mounted air-rotary
9 7/8" Tri-cone roller bit

4" PVC screen, 0.020-inch
4" PVC riser
Sand pack - ~~Morie~~ BCH No. #1 Sand
Bentonite Chips (3/4") (med.)

Location Urbana LF Date 6/13/01

Project/Client SVE Well Inst. - Mercury Aircraft

Doc. i-001-100 DAY 1 Scale

1000 TK (TurnKey) on site (BCH)
Met Fred Kelley SLC PM
Andy Murphy BM
Mike Marshall SLC Superintendent

1015 Sam D. (MA) on site

1033 measured W.L.

	W.L. (fbTOR)	stick-up fags	W.L. fbgs
VEW-1	13.64	2.74	10.90
MW-103S	12.58	1.96	10.62

1033 - 1130 waited for Drillers (Parratt Wolff)

1130 Drillers on site Brian Waters (Driller), Rod Trask (Helper)

1130 - 1200 Drillers set up rig around SVE-6

1200 - 1215 LUNCH

1215 - 1221 Tailgate H+S meeting w/ drillers

1225 Calibrated Photovac 2020 PID and GasTech GT 402 multi gas meter

PID: 100 ppm Isobutylene gas
120 ~~1000~~ ppm
0.0 ppm open air

GasTech multi Gas GT 402: ~~0000~~ LEL = 0.0 O2 = 20.9
H2S = 0.0 CO = 0

Location _____ Date _____

Project/Client _____

Air Monitoring

~~Time PID LEL~~

~~1230 Background/Upwind~~

	Time	PID	LEL	H_2S	O_2	CO
	12:30 U	0.0	0	0	20.9	0
	12:31 BZ	0.0	0	0	20.9	0
SVE-6	12:31 D	0.0	0	0	20.9	0
SVE-6	1240 BZ	0.0	0	0	20.9	0
SVE-6	1241 D	0.0	0	0	20.9	0
	1350 BZ	0.0	0	0	20.9	0
	1351 D	0.0	0	0	20.9	0
	1422 BZ	0.0	0	0	20.9	0
SVE-5	1423 D	0.0	0	0	20.9	0
SVE-5	1503 BZ	0.0	0	0	20.9	0
SVE-5	1504 D	0.0	0	0	20.9	0
	1605 BZ	0.0	0	0	20.9	0
SVE-4	1606 D	0.0	0	0	20.9	0
SVE-4	1632 BZ	0.0	0	0	20.9	0
SVE-4	1633 D	0.0	0	0	20.9	0

U = upwind approx. 250 ft.
BZ = Breathing Zone
D = Downwind approx 150 ft.

Location Urbana LF Date 6/13/01

Project/Client SVE well Inst. - MA (cont'd)

Scale _____

1230 - 1355 Advanced **SVE-6** to 14 fbgs
1355 - 1407 installed well (4" PVC)

bedrock ~10 fbgs?

screen	~~3.5~~ - ~~13.5~~	1.5 - 11.5
riser	~~+1.0~~ - ~~3.5~~	-1.0 - 1.5
sand	1.5 - 12.0	
Bentonite Chips	0.0 - 1.4	

} fbgs

borehole collapsed to 12 fbgs

1407 - 1415 Site restoration @ SVE-6
1421 - 1520 Advanced **SVE-5** to 14 fbgs
1520 - 1530 installed 4" PVC well
borehole collapsed to 12.5 fbgs

bedrock ~12 fbgs?

screen	2 - 12	
riser	-1.0 - 2.0	
sand	1.8 - 12.5	
Bentonite Chips	0.0 - 1.8	

} fbgs

1530 - 1535 Site restoration @ SVE-5
1541 - 1700 Advanced **SVE-4** to 14 fbgs
bedrock ~13.5 fbgs?
trash (paper, plastic etc.) ~ 6 fbgs
~12.5 fbgs, no waste/fill to 14 fbgs
borehole open to 13.5 fbgs

1700 - 1710 Installed 4" well

screen	3.5 - 13.5	
riser	-1.0 - 3.5	
sand	2.0 - 3.5	
Bentonite Chips	0.0 - 2.0	

} fbgs

(continued on p. 7 (bottom)

Location _____ Date _____

Project/Client _____

Location Urbana LF - SVE well Inst. Date 6/13/01

Project/Client Mercury Aircraft (cont'd)

Scale

Location	Distance ft	to Location
P-5	42.5	SVE-1
P-5	91.0	SVE-2
P-6	72.0	SVE-1
P-6	37.0	SVE-2
P-7	36.0	SVE-3
P-7	98.0	SVE-2
P-8	48.0	SVE-3
P-8	43.5	SVE-6
P-9	16.0	~~SVE-5~~ MW-103D
P-9	16.5	~~SVE-6~~ MW-103S
P-10	99.0	SVE-5
P-10	48.5	SVE-6
P-11	31.0	SVE-5
P-11	73.0	SVE-6
P-12	37.5	SVE-4
P-12	100.5	SVE-5

1710-1730 site restoration @ SVE-4

1730 All off site

Location _____ Date _____

Project/Client _____

WEATHER:

700 Sunny, hazy, hot humid, sl. breeze (0-5 mph, S/SE) 66°F

1030 Same as above, (sl. breeze 0-5 mph S, SW), 70°F

1430 Same as above (sl. breeze 5-10 mph S, SW), 87°F

1600 Same as above breezy (10-15 mph, S), 87°F

Location Urbana LF - SVE Date 6/14/01

Project/Client Mercury Aircraft 0001-001-100

DAY 2 Scale

700 Drillers on Site (Brian Waters and Rod Trask)

705 TK on site (BCH

710-715 TK Conducted tailgate H+S Meeting w/ Drillers

715 TK calibrated air monitoring equipment

Photovac 2020 PID: w/ 100 ppm Isobutylene gas and open air zero

readings: 120 ppm
0.0 ppm

GeoTech GT402 multigas meter w/ open air

LEL: 0 % O2: 20.9 %
H2S: 0 ppm CO: 0 ppm

717- Advanced **SVE-1** to 12.5 fbgs

813 TK performed air monitoring at regular intervals throughout all intrusive activities

waste/trash (paper, plastic) approx. 6-12 fbgs

Bedrock approx. 12 fbgs

open borehole to 12.0 fbgs

813-825 Installed 4" PVC well

Screen 1.5 - 11.5
Riser -1.0 - 1.5
sand 1.4 - 12.0
Bentonite Chips 0.0 - 1.4

} fbgs

Location _____ Date _____

Project/Client _____

Air Monitoring

	Time		PID ppm	LEL %	H_2S ppm	O_2 %	CO ppm
SVE-1	730	U	0.0	0	0	20.9	0
	731	BZ	0.0	0	0	20.9	0
	732	D	0.0	0	0	20.9	0
	750	BZ	0.0	0	0	20.9	0
	751	D	0.0	0	0	20.9	0
SVE-2	845	BZ	0.0	–	NEED TO CHARGE BATTERY	–	–
	846	D	0.0	–	–	–	–
	915	BZ	0.0	–	–	–	–
	916	D	0.0	–	–	–	–
	1004	BZ	0.0	–	–	–	–
	1005	D	0.0	–	–	–	–
SVE-3	1020	BZ	0.0	–	–	–	–
	1021	D	0.0	–	–	–	–
	1100	BZ	0.0	–	–	–	–
	1101	D	0.0	–	–	–	–
	1130	BZ	0.0	–	–	–	–
	1131	D	0.0	–	–	–	–

U = Upwind
BZ = Breathing Zone
D = Downwind

Location Urbana LF- SVE Date 6/14/01 (cont'd)

Project/Client Mercury Aircraft

Scale

825-833 mob to SVE-2
833-920 Advanced **SVE-2** to 9 fbgs
Bedrock approx **8.0** fbgs
Open borehole to 9 fbgs NO WASTE

920-930 Installed SVE well

Screen (7')	1.5 – 8.5
Riser	–1.0 – 1.5
Sand	1.4 – 9.0
Bentonite Chips	0.0 – 1.4

} fbgs

Slip cap at bottom (4")

930-935 Site restoration @ SVE-2
935-945 Mob to SVE-3
945 Tom Forbes (BM-pm) on site
945-1037 Advanced **SVE-3** to 14 fbgs
NO WASTE, Bedrock approx. 11 fbgs
Borehole open to 12.0 fbgs
1000 Sam D'Angelo (BMA) on site
1037-1042 Installed well

screen (10.0')	1.5 – 11.5
Sand	1.4 – 12.0
riser	–1.0 – 1.5
Bentonite Chips	0.0 – 1.4

} fbgs

1042-1050 Site restoration @ SVE-3
1050-1053 Mob to P-7
1053-1140 Advanced **P-7** to 10.8 fbgs
NO WASTE; Bedrock approx 10 fbgs

screen (9.0')	1.5 – 10.5
sand	1.4 – 10.8
riser	–3.0 – 1.4
Bentonite Chips	0.0 – 1.4

} fbgs

Location _____ Date _____

Project/Client _____

Air Monitoring

Time	PID ppm	LEL %	H_2S ppm	O_2 %	CO ppm
1235 BZ	0.0	—	—	—	—
1236 D	0.0	—	—	—	—
1300 BZ	0.0	—	—	—	—
1301 D	0.0	—	—	—	—
1336 BZ	0.0	0	0	20.9	0
1337 D	0.0	0	0	20.9	0
1400 BZ	0.0	0	0	20.9	0
1401 D	0.0	0	0	20.9	0

P-6

P-5

BZ = Breathing Zone
D = Downwind

Location Urbana LF-SVE Well Inst Date 6/14/01

Project/Client Mercury Aircraft (cont'd)

Scale

1140-1205 Downtime - Driller left site to get diesel fuel for air compressor
Site Restoration @ P-7

1145-1215 TK took LUNCH

1205-1215 Installed 2" PVC well @ ~~P-7~~ P-7

1205-1225 Mob to P-6
Drillers fueled up air compressor

1225-1316 Advanced **P-6** to **5.0** fbgs
refusal @ 5fbgs ~~moved location approx 5 ft. N and re-advanced~~ Continued advancement to 5 fbgs NO WASTE
Bedrock approx. 4 fbgs
(V. competent)

1316-1325 Installed 2" well @ P-6

screen (3.5')	1.5 - 5.0	fbgs
sand	1.4 - 5.0	
riser	-3.0 - 1.5	
Bentonite Chips	0.0 - 1.4	

1325-1330 Site restoration @ P-6
Mob to P-5

1330-1404 Advanced **P-5** to 4 fbgs
Bedrock approx. 3 fbgs

1404-1410 Installed well - 2"

Screen (2.5')	1.5 - 4.0	fbgs
sand	1.4 - 4.0	
riser	-3.0 - 1.5	
Bentonite Chips	0.0 - 1.4	

NO WASTE → V. competent

1410-1415 site restoration @ P-5

Location _____ Date _____

Project/Client _____

Air Monitoring

Time	PID ppm	LEL %	H_2S ppm	O_2 %	CO ppm
1435 BZ	220 max	0	0	20.9	0
1436 D	0.0	0	0	20.9	0
1450 BZ	20.7 max	0	0	20.9	0
1451 D	0.0	0	0	20.9	0
1515 BZ	0.0	0	0	21.0	0
1516 D	0.0	0	0	21.0	0
1540 BZ	0.0	0	0	21.0	0
1541 D	0.0	0	0	20.9	0
1600 BZ	0.0	0	0	20.9	0
1601 D	0.0	0	0	20.9	0

BZ = Breathing Zone
D = Down Wind

Location Urbana LF - SVE Date 6/14/01

Project/Client Mercury Aircraft (cont'd)

Scale

1415 - 1430 Mob to P-8

1430 - 1520 Advanced **P-8** to 14 fbgs

elevated PID concentrations - max 220

nothing sustaind

Chemical odor -- solvent approx. 4 - 8 fbgs

NO WASTE, Bedrock approx. 10 fbgs

Borehole open to 12 fbgs

1520 - 1530 Installed well @ P-8

screen	1.5 - 11.5	fbgs
sand	1.4 - 12.0	fbgs
riser	-3.0 - 1.5	fbgs
Bentonite Chips	0.0 - 1.4	fbgs

1525 - 1533 Site restoration @ P-8

1533 - 1537 mob to P-9

1537 - 1626 Advanced **P-9** to 14 fbgs

NO WASTE, Bedrock approx. 10 fbgs

Borehole open to 13 fbgs

1626 - 1632 Installed well @ P-9

screen	2.5 - 12.5	fbgs
sand	1.5 - 13.0	fbgs
riser	-3.0 - 2.5	fbgs
Bentonite Chips	0.0 - 1.5	fbgs

1632 - 1640 Site Restoration @ P-9

Location _____ Date _____

Project/Client _____

Location Urbana LF - SVE Date 6/14/01

Project/Client Mercury Aircraft, Inc. (cont'd)

Scale

1640 - 1700 Drillers cleaned up mobed to P-10 for tomorrows drilling (6/15/01)

Due to lack of supplies, piezometers P-7, 8 and 9 and SVE-3 need to be completed w/ Sand and Bentonite Chips - will be completed on 6/15/01

1700 Drillers off site

1715 TK off site

Location _____ Date _____

Project/Client _____

Weather:

700 sunny, hazy, hot, humid, breezy (5-10 mph S/SE) 69°F

1200 same as above, 80°F

P-10 well construction detail

Screen 2.0 - 12.0
sand 1.5 - 12.2
riser -3.0 - 2.0
Bentonite Chips 0.0 - 1.5

800-1000 Drillers Helper (Mike) moved soil cuttings at each well location to Komatsu PC400 LC excavator bucket staged in center of Hot Spot #5. To be buried along west side of LF by SLC.

Location Urbana LF - SVE Date 6/15/01

Project/Client Mercury Aircraft 0001-001-100

DAY 3 Scale

615 Drillers on site (Brian Waters, Rod Trask, Mike Ellis - North, Parratt Wolff)

705 TK on site (BCII)

715-721 Tailgate H+S meeting

615-710 Advanced **P-10** to 12.2 fbgs
encountered GW @ 8 fbgs
open hole to 12.2 fbgs
NO WASTE
Drillers re-hydrated Bentonite Chips for all wells installed as per TK request

728 TK calibrated air monitoring equip
Photovac 2020 PID: 0.0 ppm open air
120 ppm 100 ppm Isobutylene gas

GeoTech GT 402 multi-gas - open air
LEL 0% O2 20.9%
H2S 0 ppm CO 0 ppm

730-811 Advanced **P-11** to 14 fbgs

730-740 Drillers Helpers (Rod + Mike) installed 2" PVC well @ P-10
→ Bedrock approx 10 fbgs NO WASTE
Open borehole to 12.3 fbgs

812-826 Installed 2" well @ P-11
screen 2 - 12
Sand 1.5 - 12.3
riser -3.0 - 2.0
Bentonite Chips 0.0 - 1.5

826-832 mob to P-12

Location _____ Date _____

Project/Client _____

Air Monitoring

Time	PID	LEL	H_2S	O_2	CO
743 BZ	0.0	0	0	20.7	0
744 D	0.0	0	0	20.6	0
P-1 802 BZ	0.0	0	0	20.5	0
803 D	0.0	0	0	20.4	0
838 BZ	0.0	0	0	20.4	0
P-12 839 D	0.0	0	0	20.4	0
905 BZ	0.0	0	0	19.8	0
906 D	0.0	0	0	19.8	0

Location	stick-up fags	W.L. ftTOR	W.L. fbgs	Screen Interval fbgs
SVE-1	1.60	11.41	9.81	1.5-11.5
SVE-2	1.34	8.63	7.29	1.5-8.5
SVE-3	0.90	8.55	7.65	1.5-11.5
SVE-4	1.29	12.62	11.33	3.5-13.5
SVE-6	0.92	10.82	9.90	1.5-11.5
~~P-5~~	3.02	Dry	Dry	1.5-4.0
P-6	3.05	7.21	4.16	1.5-5.0
P-7	3.13	9.48	6.35	1.5-10.5
P-8	3.20	10.91	7.71	1.5-11.5
P-9	3.00	14.34	11.34	2.5-12.5
P-10	3.04	8.04	5.00	2.0-12.0
P-11	3.05	Dry	Dry	2.0-12.0
P-12	3.07	11.76	8.69	3.0-13.0
VEW-1	2.74	13.66	10.92	2.7-9.7
SVE-5	0.95	11.65	10.70	2.0-12.0

Location Urbana LF - SVE Date 6/15/01 (cont'd)

Project/Client _____ Scale

832-928 Advanced P-12 to 14 fbgs
GW @ 12 fbgs
BCH ~~Some~~ WASTE (paper, plastic, wood) in cuttings 4-8 fbgs
Open hole to 13.5 fbgs

928-945 Installed 2" PVC well @ P-12
screen 3.0 - 13.0
sand 2.0 - 13.5
riser -3.0 - 3.0
Bentonite Chips 0.0 - 2.0

945-1010 Site Cleanup

1010-1105 BCH ~~Attempted to~~ repair protective casing at MW-112S that was damaged. replacement complete - see photos

1105-1120 Drillers packed up and secured equipment

1115-1145 TK measured W.L. of all installed SVE wells & Piezometers (see facing page)

1140 Drillers off site

1230 TK off site

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	13	01
	NO.	0	0	1
	SHEET	1	OF	2

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE

PROJECT NO.: 0001-001-100

FIELD ACTIVITY SUBJECT: SVE well Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

1000 TurnKey on site (BCH)
Met Fred Kelley - SLC PM
Andy Murphy - BM Construction Oversite
Mike Marshall - SLC Superintendent
1015 Sam D'Angelo (Mercury Aircraft) (MA) on site
1033 TK measured water levels of Hot Spot 5 wells/Piezometers

Location	W.L. (ftTOR)	Stick-up (fags)	W.L. (fbgs)
P-1	13.64	2.74	10.90
MW-103S	12.58	1.96	10.62

1033 - 1130 TK waited for Parratt Wolff drillers (PW)
1130 PW drillers on site (Driller: Brian Waters, Helper: Rod Trask).
1130 - 1200 PW drillers prepared rig/equipment for drilling at SVE-6 location
1200 - 1235 LUNCH
1215 - 1221 TK conducted tailgate H+S meeting w/ drillers.
1225 TK calibrated air monitoring equipment (see Equip. Cal. Log)
Photovac 2020 PID: 100 ppm Isobutylene gas
readings: 100 ppm
0.0 ppm (open air)
GasTech GT 402 multi-gas meter (open air).
LEL: 0 %
CO: 0 ppm
H_2S: 0 ppm
O_2: 20.9 %

VISITORS ON SITE:
NYSDEC - Bob Long
Mercury Aircraft - Sam D'Angelo

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
none

WEATHER CONDITIONS:
Mostly sunny, hot, hazy, humid, sl. breeze (0-5 mph, S/SE), 70 - 88 °F

IMPORTANT TELEPHONE CALLS:
none

BM/TK PERSONNEL ON SITE: Bryan Hann, Andy Murphy

SIGNATURE: Bryan C. Hann DATE: 6/13/01

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	13	01
	NO.	0	0	1
	SHEET	2	OF	2

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO.: 0001-001-100

FIELD ACTIVITY SUBJECT: SVE Well Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

1230 - 1355	Drillers advanced SVE-6 w/ 9 7/8" tri-cone roller bit (air rotary) to approx. 14 fbgs Bedrock (shale) approx. 10 fbgs. Borehole open to 12 fbgs.
1355 - 1407	Drillers installed 4" PVC well (see Well/ Piezometer Completion Detail)
1407 - 1415	Drillers conducted site restoration at SVE-6
1421 - 1520	Drillers advanced SVE-5 w/ 9 7/8" tri-cone roller bit (air rotary) to approx. 14 fbgs. Borehole open to 12.5 fbgs. Bedrock (shale) approx. 12 fbgs.
1520 - 1530	Drillers installed 4" PVC well (see Well/ Piezometer Completion Detail).
1530 - 1535	Drillers conducted site restoration at SVE-5
1541 - 1700	Drillers advanced SVE-4 w/ 9 7/8" tri-cone roller bit (air rotary) to approx. 14 fbgs. Waste fill encountered approx. 6 - 12.5 fbgs. - paper, plastic, wood mixed w/ soil cuttings. Bedrock (shale) approx. 13.5 fbgs. Borehole open to 13.5 fbgs.
1700 - 1710	Drillers installed 4" PVC well (see Well/Piezometer Completion Detail)
1710 - 1730	Drillers conducted site restoration at SVE-4
1730	All off site.

DAILY LOG				
	DATE	06	14	01
	NO.	0	0	2
	SHEET	1	OF	3

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO.: 0001-001-100

FIELD ACTIVITY SUBJECT: SVE/Piezometer Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

700	Drillers on site (Parratt Wolff - Brian Waters & Rod Trask)
705	TK (TurnKey) on site (BCM)
710 - 715	TK conducted tailgate H+S meeting w/ Drillers
715	TK Calibrated air monitoring equipment (see Equipment Calibration Log)
717	Drillers advanced SVE-1 to 12.5 fbgs
All DAY	TK performed air monitoring at regular intervals throughout all intrusive activities. SVE-1: waste/trash (paper, plastic) at approx. 6 to 12 fbgs. Bedrock encountered approx 12 fbgs, Open borehole to 12 fbgs
813 - 825	Drillers installed 4" PVC SVE well @ SVE-1 (see Well/Piezometer Construction Detail)
825 - 833	Drillers mobilized to location SVE-2
833 - 920	Drillers advanced boring SVE-2 to 9 fbgs. Bedrock encountered approx. 8 fbgs, open borehole to 9 fbgs. NO waste
920 - 930	Drillers installed 4" PVC SVE well @ SVE-2 (see Well/Piezometer Construction Detail)
930 - 935	Drillers performed site restoration activities @ SVE-2.
935 - 945	Drillers Mobilized to location SVE-3
945	Tom Forbes (Benchmark PM) on site
945 - 1037	Drillers advanced boring SVE-3 to 14 fbgs

VISITORS ON SITE:
NYSDEC - Mike ?
Benchmark - Tom Forbes
Mercury Aircraft - Sam D'Angelo

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
none

WEATHER CONDITIONS:
sunny, hazy, hot, humid, sl. breeze (0-5 mph, S/SW), 66°F - 87°F

IMPORTANT TELEPHONE CALLS:
none

BM/TK PERSONNEL ON SITE: Bryan Hann, Tom Forbes, Andy Murphy

SIGNATURE: Bryan C. Hann DATE: 6/14/01

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	14	01
	NO.	0	0	2
	SHEET	2	OF	3

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO. 0001-001-100

FIELD ACTIVITY SUBJECT: SVE/Piezometer Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

945 - 1037 (continued)
No waste was encountered. Bedrock encountered approx. 11 fbgs. Borehole open to 12 fbgs.

1000 Sam D'Angelo (Mercury Aircraft) on site

1037 - 1042 Drillers installed 4" PVC SVE well @ SVE-3 (see Well/Piezometer Completion Detail)

1042 - 1053 Drillers performed site restoration @ SVE-3

1050 - 1053 Drillers mobilized to location P-7

1053 - 1140 Drillers advanced boring P-7 to 10.8 fbgs. No waste. Bedrock encountered approx. 10 fbgs Open borehole to 10.8 fbgs.

1140 - 1205 DOWNTIME - Driller left site to get diesel fuel for air compressor. Drillers helper performed site restoration activities @ P-7.

1145 - 1215 TK took LUNCH

1205 - 1215 Drillers Helper installed 2" PVC well in borehole P-7 (see Well/Piezometer Completion Detail).

1205 - 1225 Drillers mobilized to location P-6. Drillers fueled air compressor unit.

1225 - 1316 Drillers advanced boring P-6 to 5 fbgs No waste. Bedrock was encountered approx. 4 fbgs. ~~(see to~~ (BCH)

1316 - 1325 Drillers installed 2" PVC well in borehole P-6 (see Well/Piezometer Completion Detail)

1325 - 1330 Drillers performed site restoration @ P-6

1330 - 1404 Drillers advanced boring P-5 to 4 fbgs No waste. Bedrock was encountered approx. 3 fbgs

1404 - 1410 Drillers installed 2" PVC well in borehole P-5 (see Well/Piezometer Completion Detail)

1410 - 1415 Drillers performed site restoration @ P-5

1415 - 1430 Drillers mobilized to location P-8.

1430 - 1520 Drillers advanced boring P-8 to 14 fbgs. No waste. Bedrock encountered approx. 10 fbgs. Elevated PID concentrations (max 220) - nothing sustained.

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	14	01
	NO.	0	0	2
	SHEET	3	OF	3

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO.: 0001-001-100

FIELD ACTIVITY SUBJECT: SVE/Piezometer Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

1430 - 1520	(continued) Strong chemical odor (solvent) approx. 4 to 8 fbgs. Borehole open to 12 fbgs.
1520 - 1530	Drillers installed 2" PVC well in borehole P-8. (see Well/Piezometers Completion Detail)
1525 - 1533	Drillers performed site restoration @ P-8.
1533 - 1537	Drillers mobilized to location P-9.
1537 - 1626	Drillers advanced boring P-9 to 14 fbgs. No Waste. Bedrock encountered approx. 11 fbgs. Borehole open to 13 fbgs.
1626 - 1632	Drillers installed 2" PVC well in borehole P-9 (see Well/Piezometer Completion Detail)
1632 - 1640	Drillers performed site restoration @ P-9
1640 - 1700	Drillers picked up and mobilized to location P-10 for tomorrows (6/15/01) activities
1700	Drillers off site
1715	TK off site

NOTE: Due to lack of well materials (i.e sand) piezometers P-7, P-8 and P-9, and SVE well SVE-3 were not completed to grade. Sufficient sand was installed to hold well in place. On 6/15/01, all afore mentioned wells will be completed to grade.

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	15	01
	NO.	0	0	3
	SHEET	1	OF	

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO.: 0001-001-100

FIELD ACTIVITY SUBJECT: SVE / Piezometer Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

615	Drillers on site (Brian Waters, Rod Trask and Mike Ellingsworth - Parratt Wolff), scheduled meeting time was established on 6/14/01 to be 7 AM.
705	TK on site (BCH) - Drillers completing P-10 see below.
715-721	TK conducted tailgate H+S meeting w/ Drillers.
615-710	Drillers advanced P-10 to 12.2 fbgs. Encountered groundwater @ approx. 8 fbgs. Open borehole to 12.2 fbgs. No waste. Drillers Helpers (Rod + Mike) completed construction of observation Piezometers P-7, P-8 and P-9 and SVE well SVE-3. Also re-hydrated Bentonite Chips @ all newly installed wells
728	TK calibrated air monitoring equipment (see Equipment Calibration Log)
730-740	Drillers Helpers (Rod + Mike) installed 2" PVC well @ P-10 (see Well/Piezometer completion Detail)
730-811	Drillers advanced P-11 to 14 fbgs. No waste. Bedrock approx. 10 fbgs. Open borehole to 12.3 fbgs
812-826	Drillers installed 2" PVC well @ P-11 (see well/ Piezometer Completion Detail)
826-832	Drillers mobilized to P-12.
832-928	Drillers advanced P-12 to 14 fbgs. Waste encountered (paper, plastic, wood) @ 4-8 fbgs. Open borehole to 13.5 fbgs. Groundwater encountered approx. 12 fbgs

VISITORS ON SITE:
Sam D'Angelo - Mercury Aircraft

CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS:
none

WEATHER CONDITIONS:
Sunny, hazy, hot, humid, breezy (5-10, S/SE)
69-80 °F

IMPORTANT TELEPHONE CALLS:
none

BM/TK PERSONNEL ON SITE: Bryan Hann, Andy Murphy

SIGNATURE: Bryan Hann DATE: 6/15/01

Benchmark Environmental Engineering & Science, PLLC

TurnKey Environmental Restoration, LLC

DAILY LOG	DATE	06	15	01
	NO.	0	0	3
	SHEET	2	OF	

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE | PROJECT NO. 0001-001-100

FIELD ACTIVITY SUBJECT: SVE / Piezometer Installation

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

0928 - 0945 Drillers installed 2" PVC well @ P-12 (see Well/Piezometer Completion Detail)

0945 - 1010 Drillers performed general site cleanup.

1010 - 1105 Drillers mobilized rig to MW-11S located on south side of Crows Nest Road and replaced damaged protective casing and concrete seal. (see photos)

1105 - 1120 Drillers packed up and secured equipment

1115 - 1145 TK measured water levels of SVE wells and observation piezometers (see below).

Location	stick-up (fags)	W.L. (ftTOR)	W.L. (fbgs)	Screened Interval (fbgs)
SVE-1	1.60	11.41	9.81	1.5 - 11.5
SVE-2	1.34	8.63	7.29	1.5 - 8.5
SVE-3	0.90	8.55	7.65	1.5 - 11.5
SVE-4	1.29	12.62	11.33	3.5 - 13.5
SVE-5	0.95	11.65	10.70	2.0 - 12.0
SVE-6	0.92	10.82	9.90	1.5 - 11.5
P-5	3.02	DRY	DRY	1.5 - 4.0
P-6	3.05	7.21	4.16	1.5 - 5.0
P-7	3.13	9.48	6.35	1.5 - 10.5
P-8	3.20	10.91	7.71	1.5 - 11.5
P-9	3.00	14.34	11.34	2.5 - 12.5
P-10	3.04	8.04	5.00	2.0 - 12.0
P-11	3.05	DRY	DRY	2.0 - 12.0
P-12	3.07	11.76	8.69	3.0 - 13.0
VEW-1	2.74	13.66	10.92	2.7 - 9.7

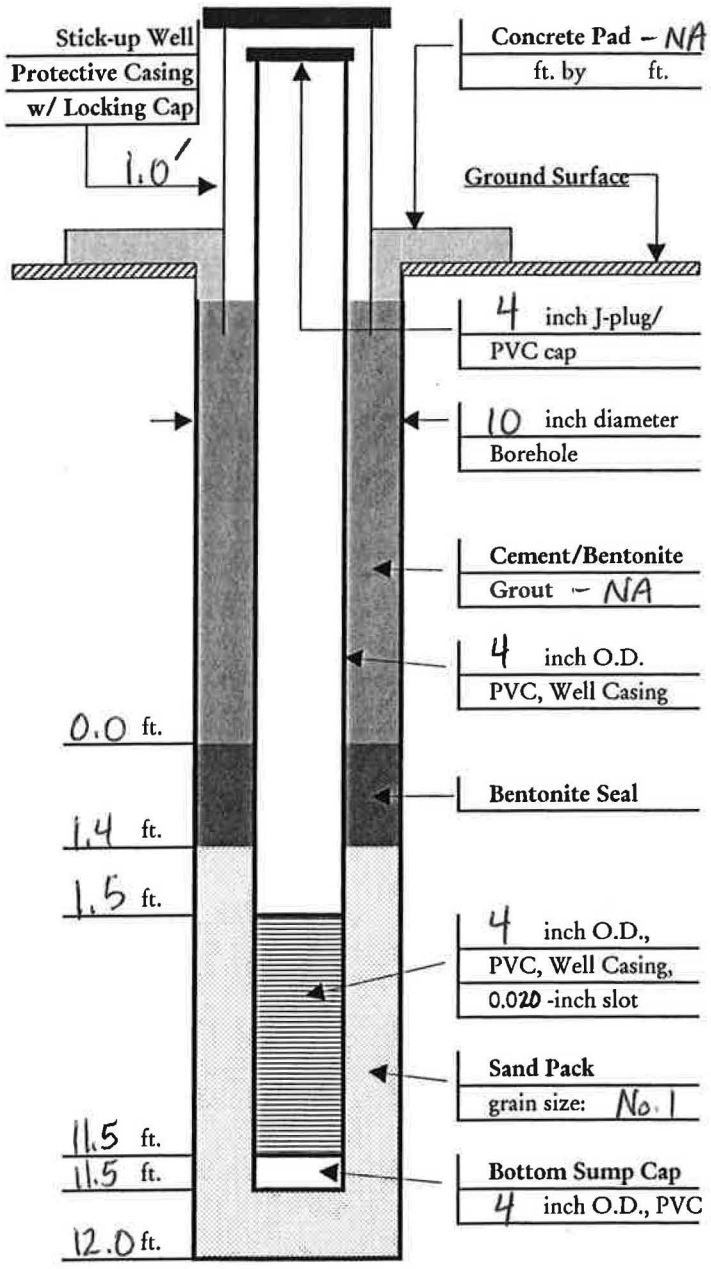
1140 Drillers off site

1230 TK off site

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: SVE-1
PROJECT No.:



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1576.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA – Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1 Sand
Bentonite Pellets:	3/4" Bentonite Chips

Well Development

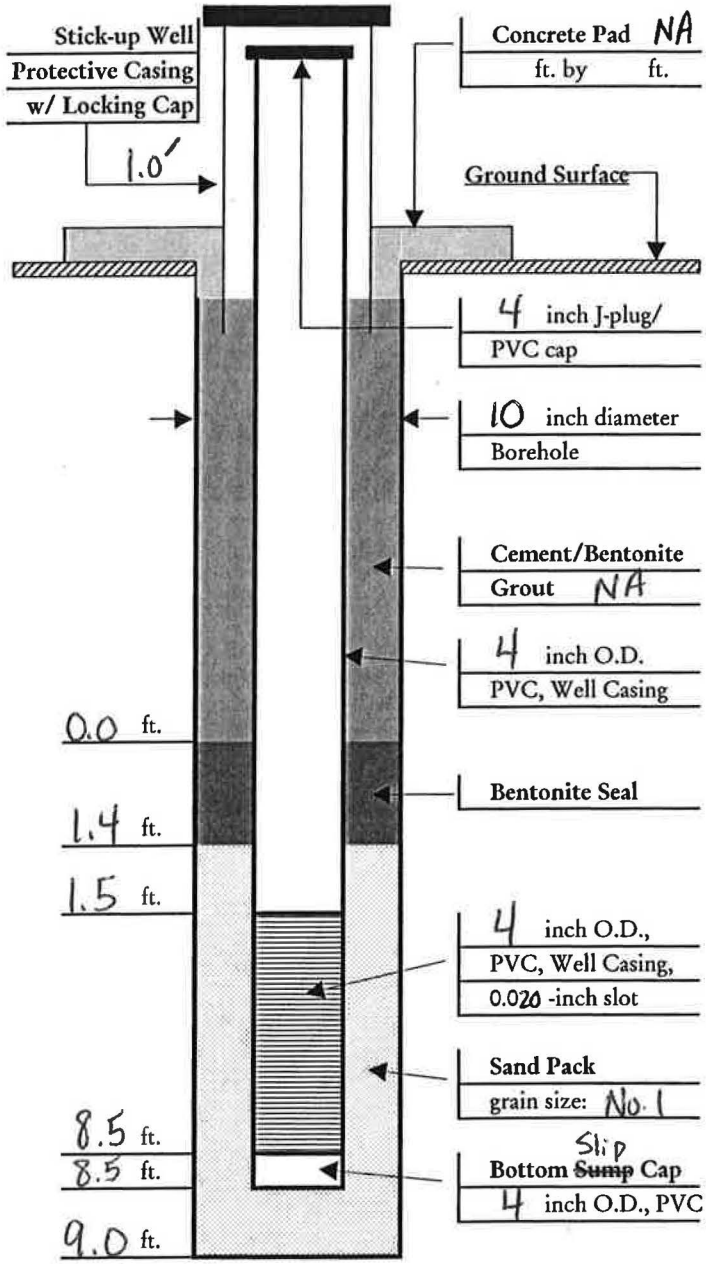
Well Purpose:	SVE
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 12 fbgs

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: SVE-2
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1577.5 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	Chips 3/4"

Well Development

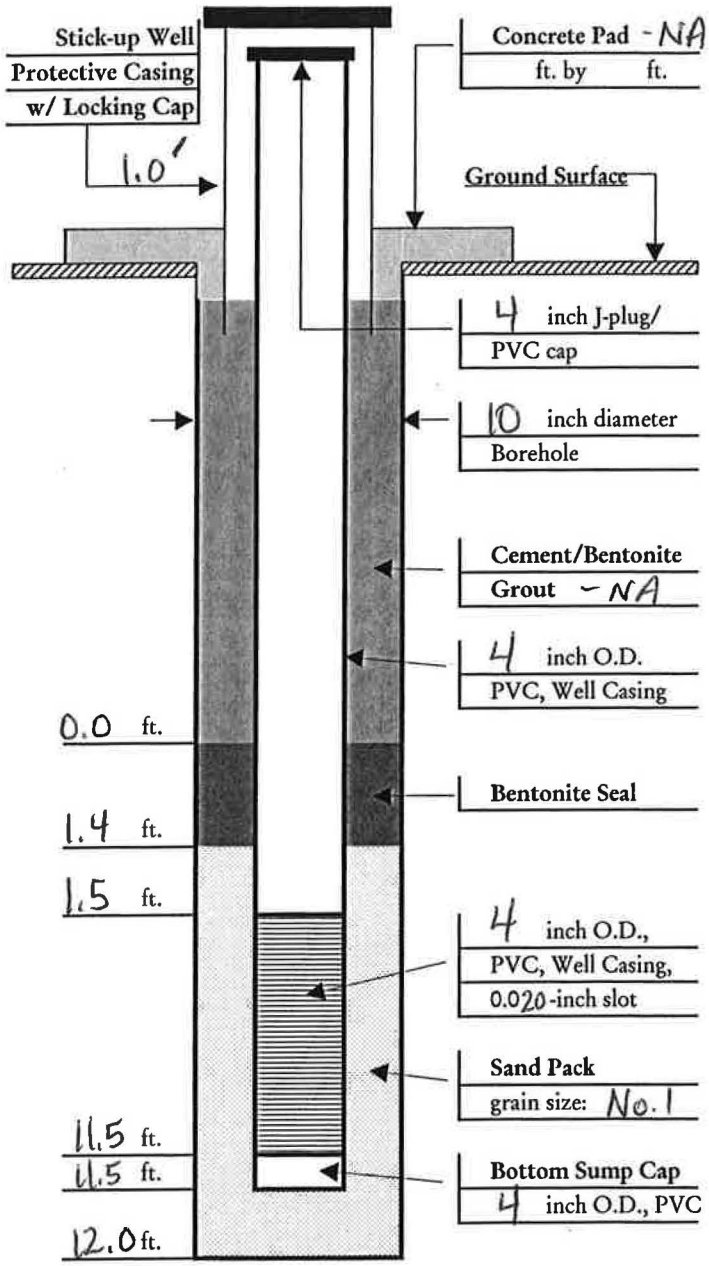
Well Purpose:	SVE
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 8 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: SVE - 3
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1578.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

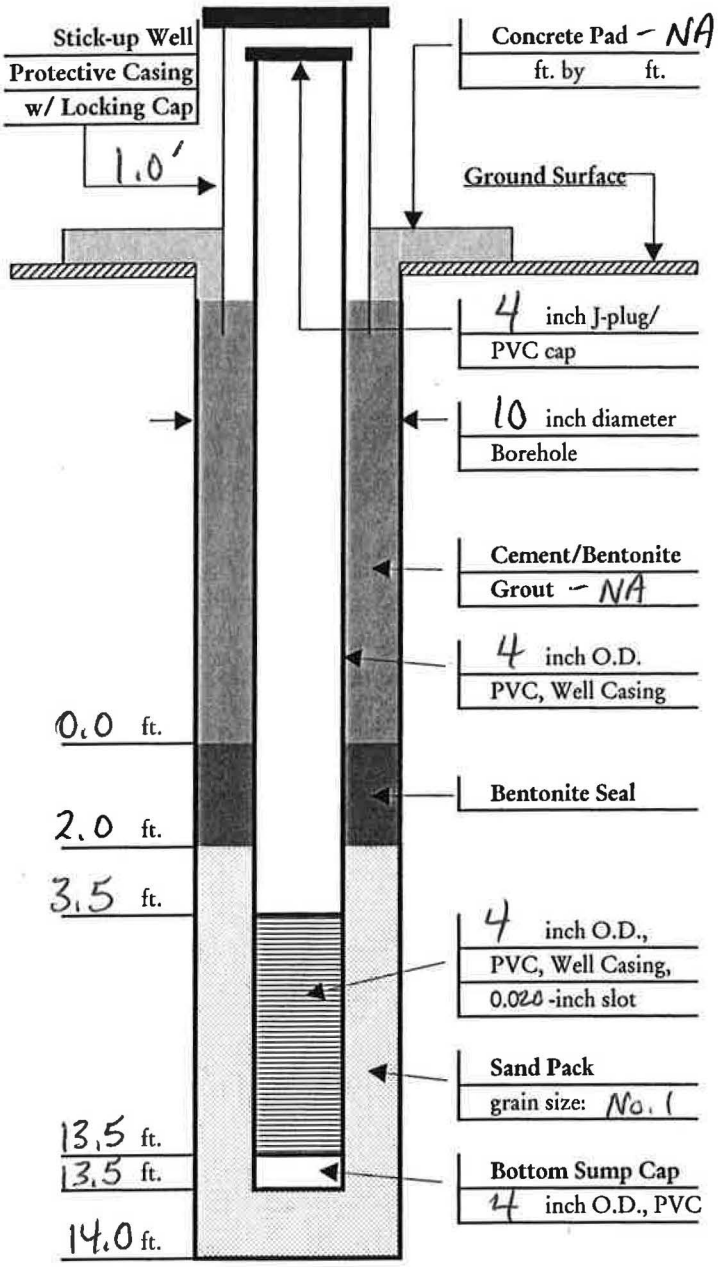
Well Purpose:	SVE
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 11 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF-SVE Well Installation
BORING LOCATION: Hot Spot #5 - upper terrace
DATE INSTALLED: 6/13/01

WELL No.: SVE-4
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1573.5 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1 Sand
Bentonite Pellets:	3/4" Chips

Well Development

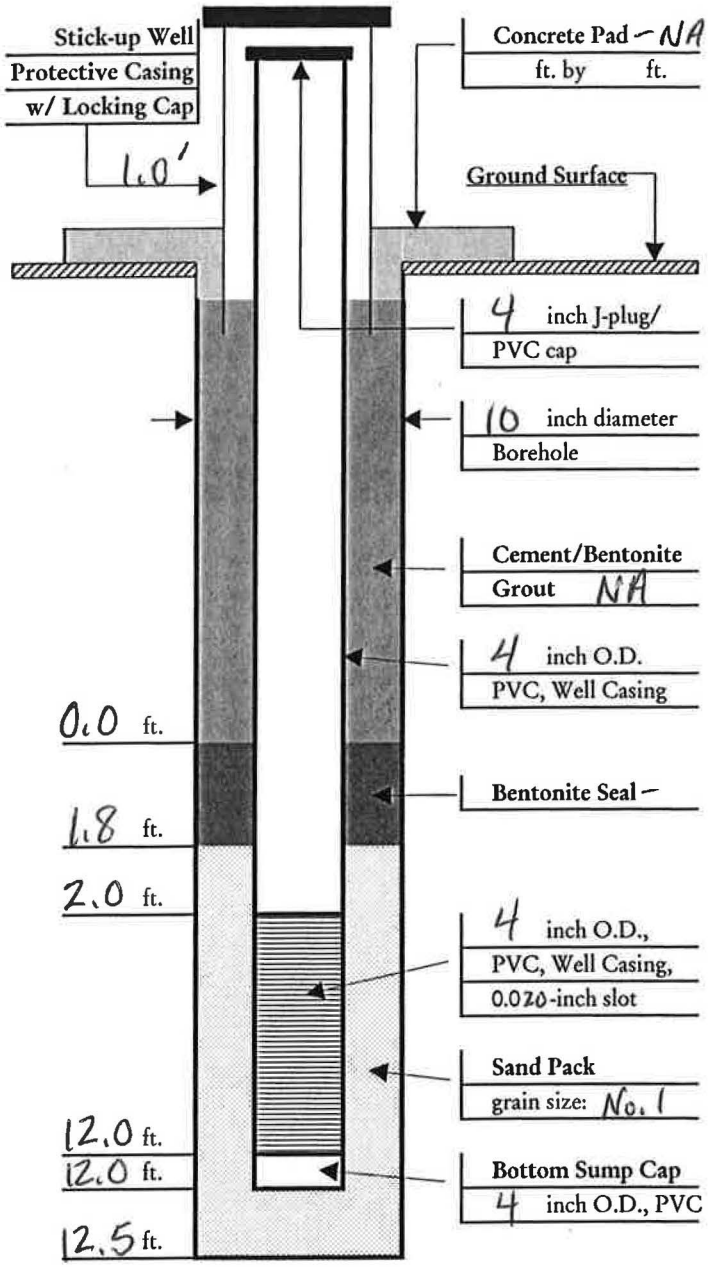
Well Purpose:	SVE	
Techneque(s):	NA	
Date Completed:		
BM/TK Personnel:		
Total Volume Purged:		gallons
Static Water Level:		fbTOR
Pump Depth:		
Pumping Duration:		hours
Yeild:		gpm
Specific Capacity:		gpm/ft

Comments: Bedrock encountered approx. 13.5 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF-SVE Well Installation
BORING LOCATION: Hot Spot #5 - upper terrace
DATE INSTALLED: 6/13/01

WELL No.: SVE-5
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1579.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1 Sand
Bentonite Pellets:	3/4" Chips

Well Development

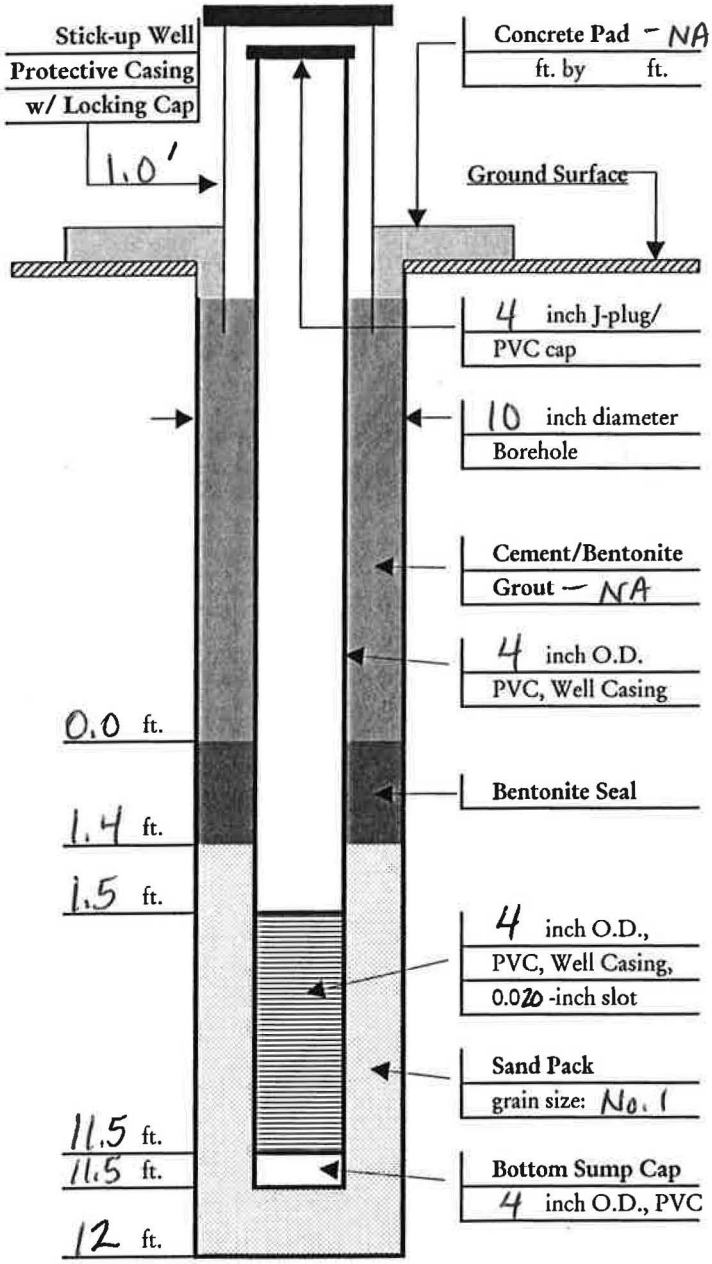
Well Purpose:	SVE
Techneque(s):	NA
Date Completed:	NA
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Borehole advanced to 14 fbgs, however borehole open to 12.5 fbgs
Bedrock encountered approx. 12 fbgs

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - upper terrace
DATE INSTALLED: 6/13/01

WELL No.: SVE-6
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1580.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	4" Schedule 40 PVC
Screen:	4" Sch. 40 PVC, 0.020-inch
Sump:	NA (BCH) (BCH)
Sand Pack:	~~Morie #1~~ No. 1 Sand
Bentonite Pellets:	3/4" Chips

Well Development

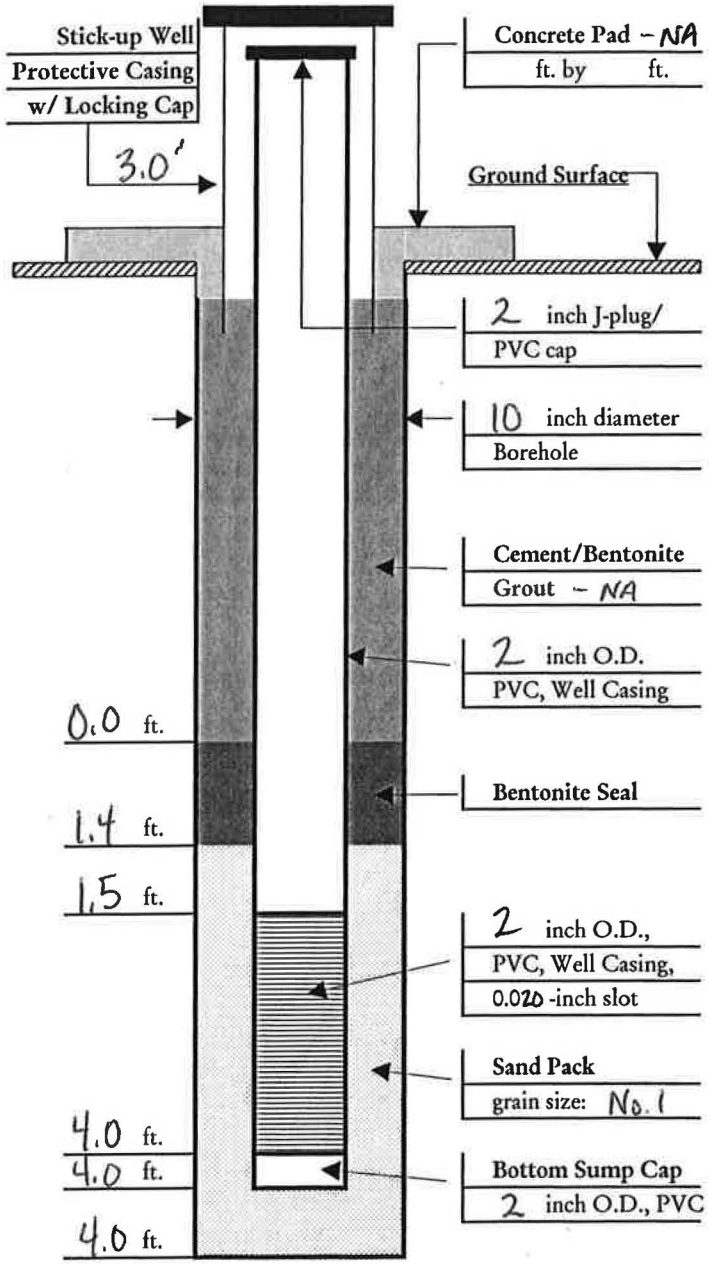
Well Purpose:	SVE
Techneque(s):	NA
Date Completed:	NA
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Borehole advanced to 14 fbgs, however borehole open to 12 fbgs. Bedrock encountered approx. 10 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED:

WELL No.: P-5
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1573.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

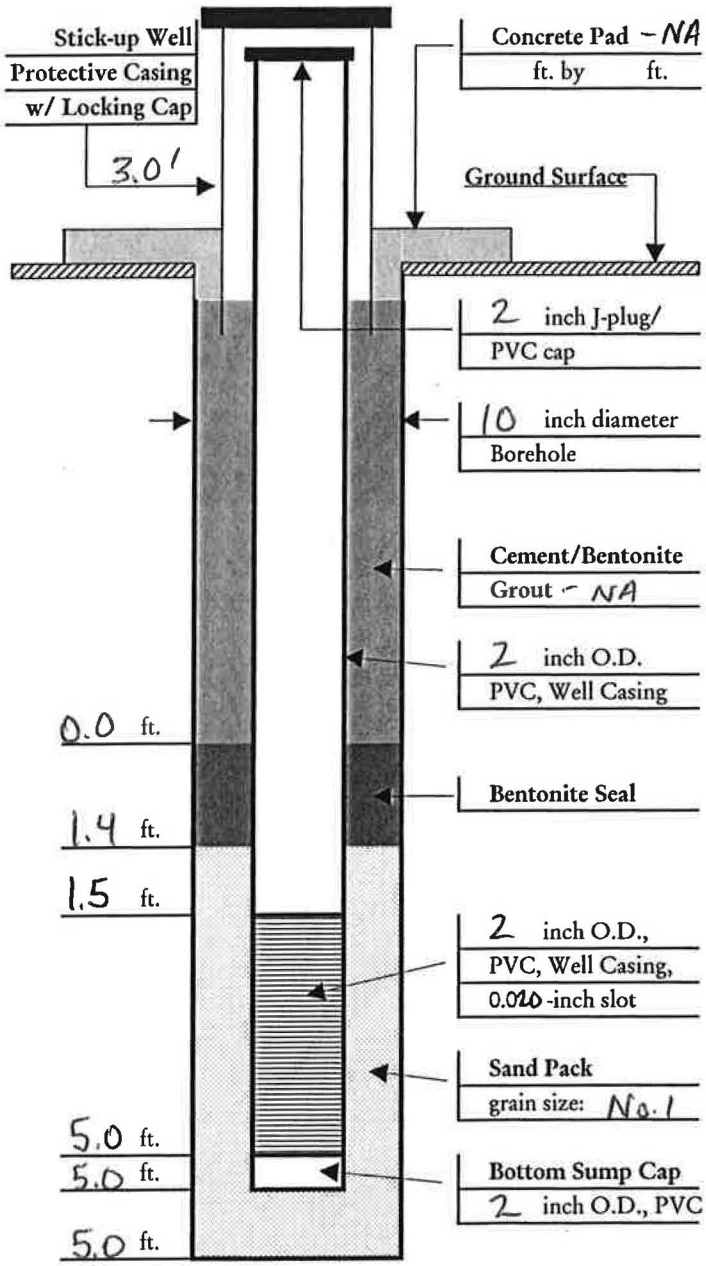
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 3 fbgs

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: P-6
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1575.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC; 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

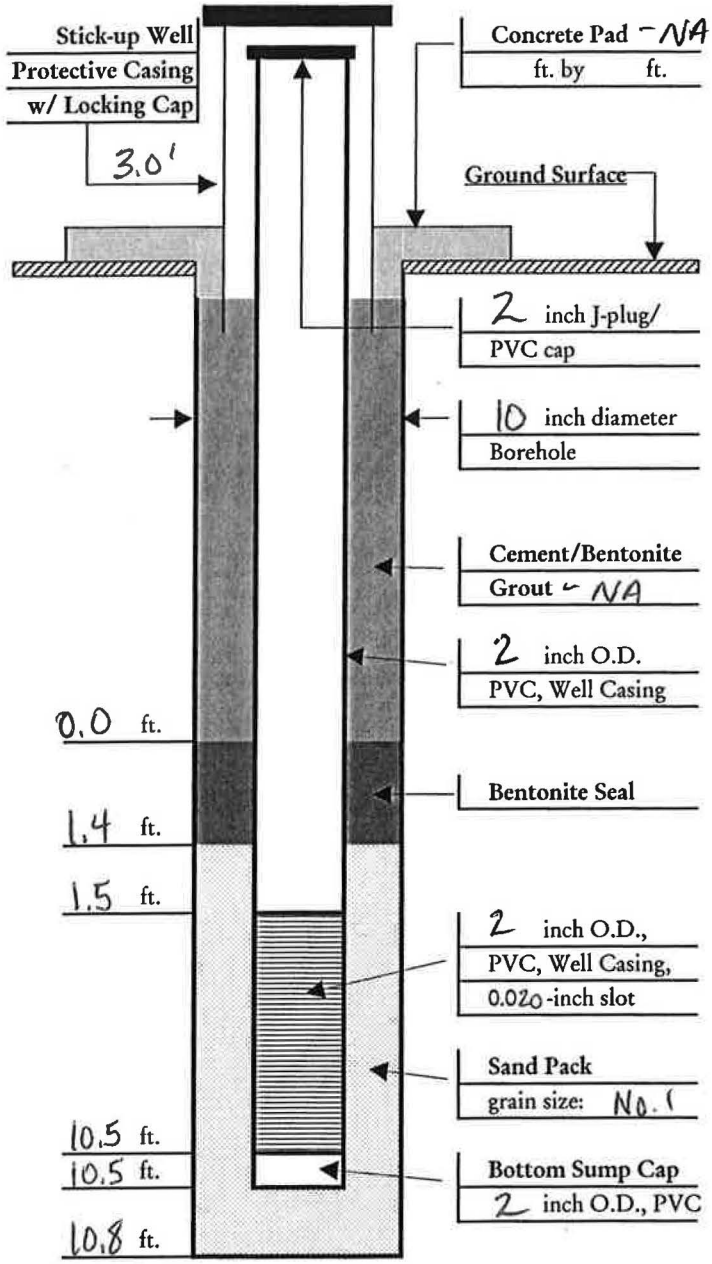
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 4 fbgs

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: P-7
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1576.5	fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary	
Soil Sample Colletion Method:	NA	
Drilling Fluid:	NA - Air	
Fluid Loss During Drilling:	NA	gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

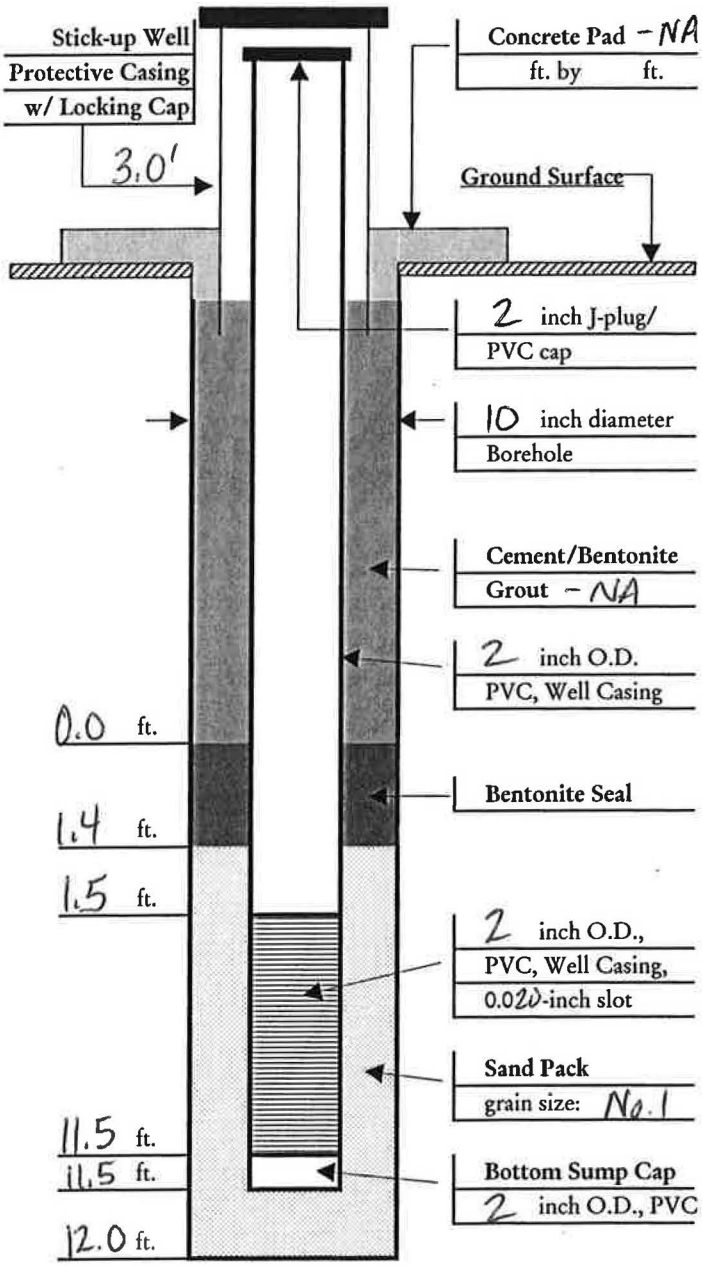
Well Purpose:	SVE - observation	
Techneque(s):	NA	
Date Completed:		
BM/TK Personnel:		
Total Volume Purged:		gallons
Static Water Level:		fbTOR
Pump Depth:		
Pumping Duration:		hours
Yeild:		gpm
Specific Capacity:		gpm/ft

Comments: Bedrock encountered approx. 10 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: P-8
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1581.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

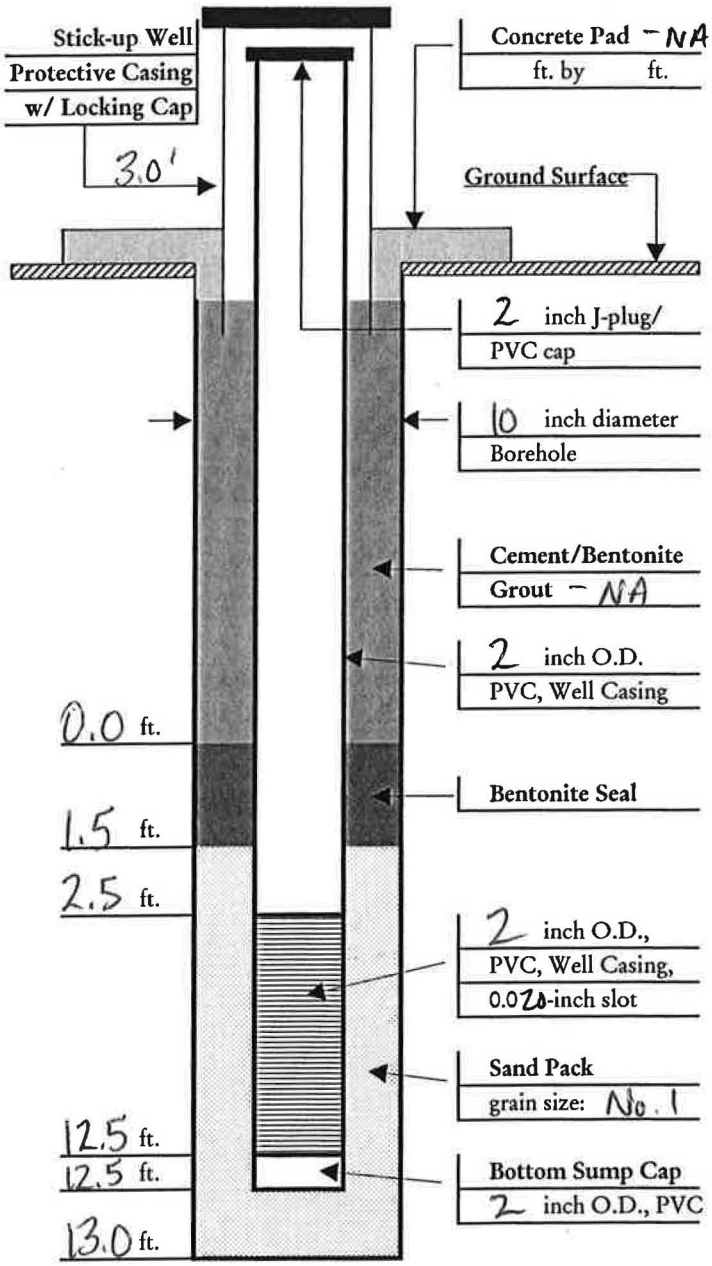
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 10 fbgs
Borehole advanced to 14 fbgs, however borehole open to 12 fbgs.
Max PID reading of 220 ppm (peak, not sustained) at interval of 4-8 fbgs (approx.)

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/14/01

WELL No.: P-9
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1579.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

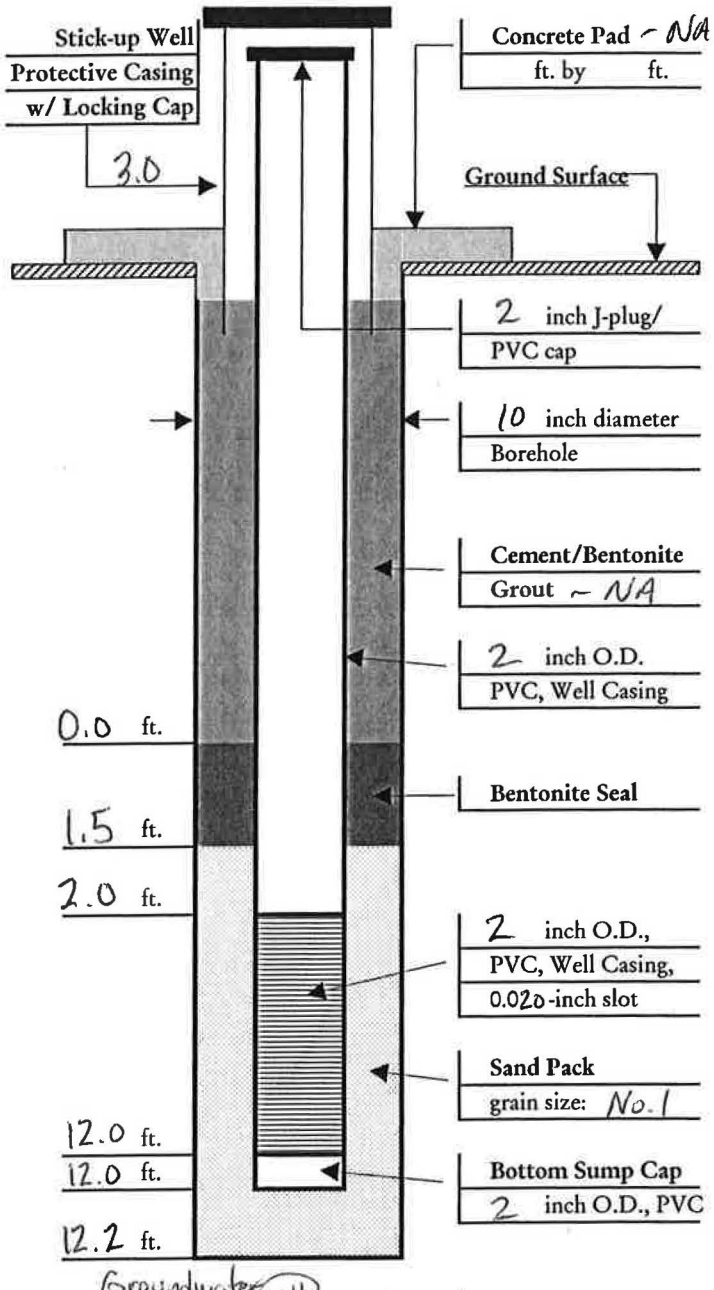
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 11 fbgs. Borehole advanced to 14 fbgs, however bore hole open to 13 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5 - Upper Terrace
DATE INSTALLED: 6/15/01

WELL No.: P-10
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask, Mike Ellingsworth
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1583.0 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

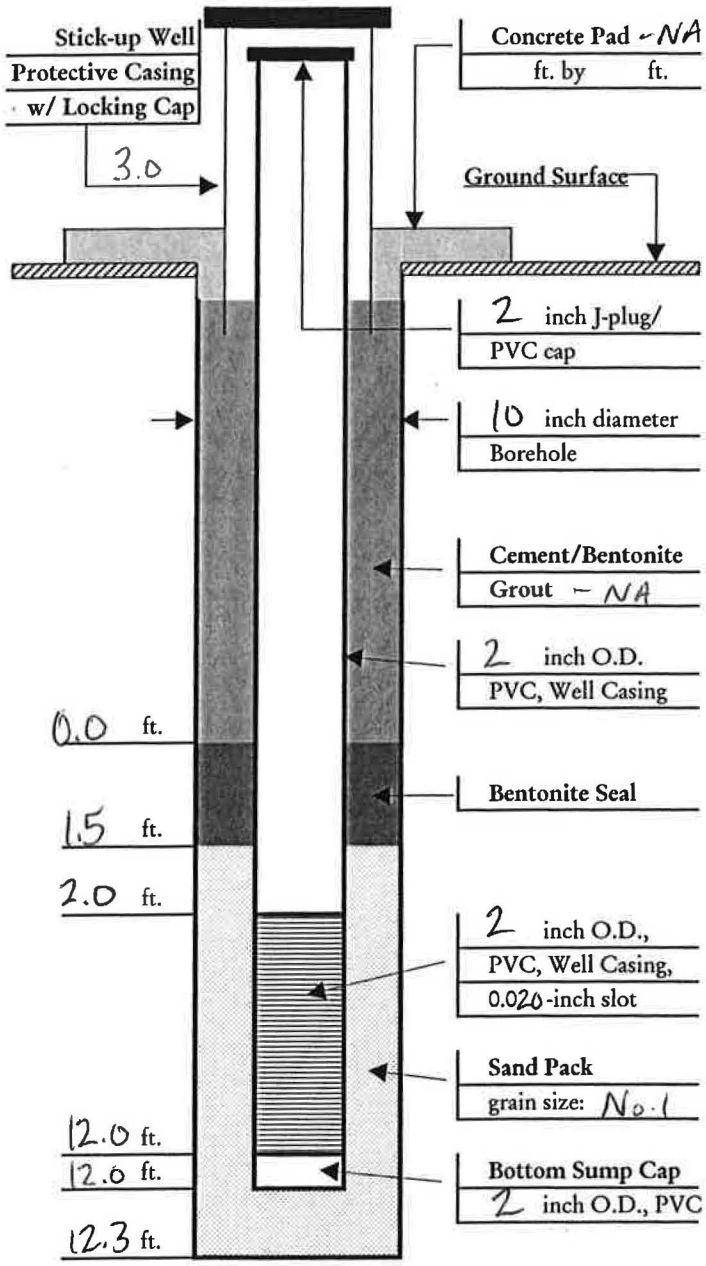
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: ~~Bedrock~~ Groundwater (ZCH) encountered approx. 8 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF - SVE Well Installation
BORING LOCATION: Hot Spot #5, Upper Terrace
DATE INSTALLED: 6/15/01

WELL No.: P-11
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc
Driller:	Brian Waters
Helper:	Rod Trask, Mike Ellingsworth
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1580.5 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020-inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

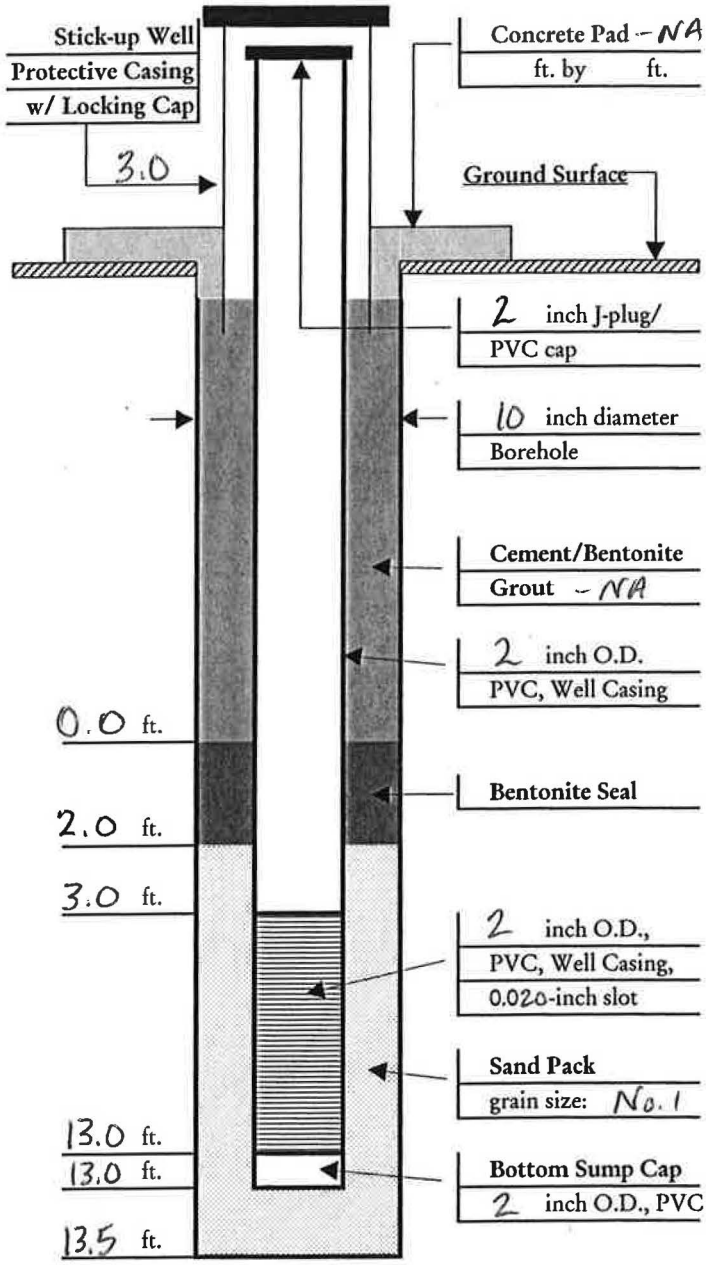
Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments: Bedrock encountered approx. 10 fbgs.

Well/Piezometer Completion Detail

PROJECT NAME: Urbana LF-SVE Well Installation
BORING LOCATION: Hot Spot #5- Upper Terrace
DATE INSTALLED: 6/15/01

WELL No.: P-12
PROJECT No.: 0001-001-100



Driller Information

Company:	Parratt Wolff, Inc.
Driller:	Brian Waters
Helper:	Rod Trask, Mike Elingsworth
Permit Number:	NA
Drill Rig Type:	Ingersoll Rand A300

Well Information

Land Surface Eleavation:	1570.5 fmsl (approximate)
Drilling Method:	9 7/8" tri-cone air rotary
Soil Sample Colletion Method:	NA
Drilling Fluid:	NA - Air
Fluid Loss During Drilling:	NA gallons (approximate)

Material of Well Construction

Casing:	2" Schedule 40 PVC
Screen:	2" Sch. 40 PVC, 0.020 inch
Sump:	NA
Sand Pack:	No. 1
Bentonite Pellets:	3/4" Chips

Well Development

Well Purpose:	SVE - observation
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purged:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Pumping Duration:	hours
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments:

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ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

Replacement wells

DAILY LOG	DATE	06	03	03
	NO.	0	0	1
	SHEET	1	OF	2

FIELD ACTIVITY DAILY LOG

PROJECT NAME: Urbana LF - SVE System	PROJECT NO. 0001-001-100
PROJECT LOCATION: Urbana, NY	CLIENT: Mercury Aircraft
FIELD ACTIVITY SUBJECT: SVE well replacement	

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS:

TIME	DESCRIPTION
830	BM on site (BCH)
840	Nothnagle Drilling on site (Driller - Neil Short, Steve Celsen, Dwayne ??) w/ CME-75 rig & Ingersoll-Rand 400 air compressor
845	BM conducted H&S meeting w/ Drillers.
845	Mercury Aircraft on site (Sam Diangelo)
850 - 930	Drillers prepped for drilling @ P-10
	BM located replacement well locations P-10 and SVE-3.
910	BM measured water level @ P-11 = 12.45 ftbTOR stick up = 2.71 feet WL = 9.74 fbgs
920	BM calibrated air monitoring equipment
930 - 1005	Drillers advanced observation well P-10 to 14.5 fbgs. Driller reported groundwater approx. 8 fbgs and bedrock approx. 9.5 fbgs. Used 9.875" tri-cone roller bit.
	BM monitored air quality upwind downwind and @ boring location P-10 (breathing zone)
1005 - 1015	Drillers installed 2" Sch. 40 PVC well @ P-10 set at 12.5 fbgs
1015 - 1035	Drillers cleaned up. All soil cuttings were placed on polyethylene tarp for disposal by others.
1035 - 1052	Drillers mobilized rig/equipment to SVE-3 and prepped for drilling

VISITORS ON SITE: Sam Diangelo (MA)	CHANGES FROM PLANS AND SPECIFICATIONS, AND OTHER SPECIAL ORDERS AND IMPORTANT DECISIONS: none
WEATHER CONDITIONS: A.M.: partly sunny, calm-sl. breeze (0-5mph, S/SE), 65°F P.M.: cloudy, calm-sl. breeze (0-5mph, S/SW), 70°F	IMPORTANT TELEPHONE CALLS: none
BM/TK PERSONNEL ON SITE: B. Hamm	
SIGNATURE [signature]	DATE: 6/3/03

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DAILY LOG	DATE	06	03	03
	NO.	0	0	1
	SHEET	2	OF	2

FIELD ACTIVITY DAILY LOG
(CONTINUED)

PROJECT NAME: Urbana LF - SVE System | PROJECT NO. 0001-001-100

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS: SVE Well Replacement

TIME	DESCRIPTION
1052 - 1135	Drillers advanced SVE-3 to 14 fbgs. Borehole open to 12.5 fbgs. BM monitored air quality upwind, downwind and @ boring location SVE-3 (breathing zone)
1135 - 1145	Drillers installed 4" PVC (Sch. 40) well @ SVE-3 to approx. 12 fbgs.
1145 - 1200	Drillers cleaned up
1200 - 1220	Drillers mobilized rig/equipment to GW treatment building for decon.
1220 - ??	Drillers decon'ed equipment.
1230	BM off site

REFERENCED PROJECT FIELD FORMS: ☒ Drilling Safety Checklist

☐ Construction Sample Summary Log	☐ Nuclear Densitometer Field Log	☐ Groundwater Elevation Log
☐ Corrective Measures Report	☐ Photographic Log	☐ Step-Drawdown Test Data Sheet
☒ Daily Drilling Report	☐ Post-Closure Field Inspection Report	☐ Water Quality Field Collection Log
☒ Equipment Calibration Log	☐ Problem Identification Report	☐ Water Sample Collection Log
☐ Field Borehole Log	☒ Real-Time Air Monitoring Log	☐ GW Well Development and Purge Log
☐ Field Borehole/Monitoring Well Installation Log	☐ Record of Telecom Meeting	☐ Hot Work Permit
☐ Field Investigation Report	☐ Test Pit Excavation Log	☐ Flushmount Well Completion Detail
☐ Well Abandonment/Decommissioning Log	☐ Underground/Overhead Utility Checklist	☒ Stick-up Well Completion Detail
☐ IDW Container Log	☐ Variance Log	☐ Sample Summary Collection Log
☐ Impacted Soil Excavation Log	☐ Water Level Monitoring Record	☐ Survey Elevation Log
☐ Impacted Soil Transportation Log	☐ Aquifer Test Data Sheet	☒ Tailgate Safety Meeting Form

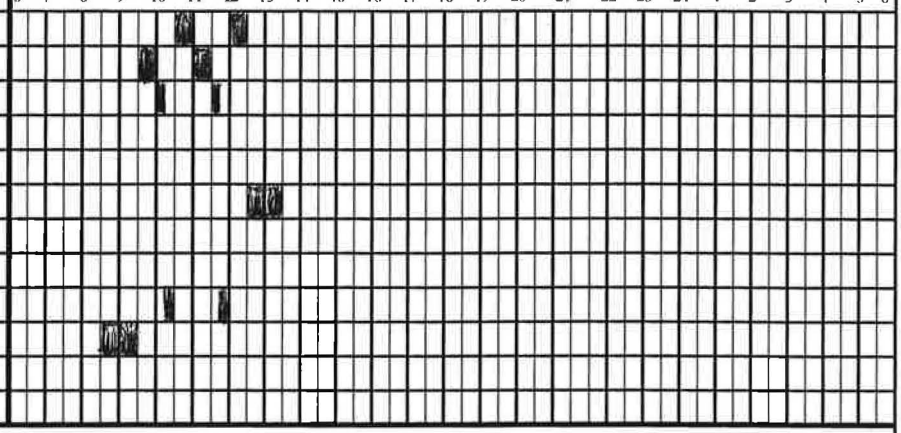
SIGNATURE Bryan C. Hu DATE: 6/3/03

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DAILY DRILLING REPORT

CONTRACTOR: Nathaniel Drilling
DRILLING EQUIPMENT: CME-75
CREW MEMBERS: Neil Short, Steve Gelsen, Dwayne ?
SITE NAME: Urbana Landfill
DATE: 6/3/03
WEATHER: Mcr clouds, calm-sl. breeze, 65-76°F
JOB NUMBER: 0001-001-100
BM PERSONNEL: BCH

CATEGORY	Total Hours
MOB / DEMOB	
DRILLING	
WELL INSTALLATION	
DEVELOPMENT / TESTING	
GROUTING	
STEAM / DECON	
DOWN TIME (explain below)	
STANDBY (explain below)	
CLEANUP	
PREP FOR DRILLING	
LUNCH	
OTHER:	



REMARKS:

Advanced P-10 to 14.5 fbgs w/ 9.875" tri-cone roller bit; installed 2" PVC ob. well
Advanced SVE-3 to 14.0 fbgs " " " " " " ; installed 4" PVC SVE well

CONSUMABLE: DESCRIBE NATURE, QUANTITY, SIZE, ETC.

ITEM OR SERVICE	QUANTITIES	LOCATION P-10	LOCATION SVE-3	TOTALS
2 -inch Schedule 40 PVC screen, slot size 0.010"		10'		
2 -inch Schedule 40 PVC riser		4.5'		
Sand pack, size #0		12.7'	11.0'	
Bentonite pellets/~~chips~~, size 3/8"		1.8'	1.5'	
Cement/beontonite grout		NA	NA	
☐ Protective casing ☐ Flushmount road box		NA	NA	
Lockable J-plug		1	1	
4-inch Sch 40 PVC screen 0.010"			10'	
4-inch Sch 40 PVC riser			31	

Borehole No.	From (feet)	To (feet)	Footage Drilled (ft.)	METHOD, SIZE, ETC.
P-10	0.0	14.5	14.5	9.875" tri-cone roller bit / air rotary
SVE-3	0.0	14.0	14.0	" " " " " " "

PERSONNEL TIME LOG:

POSITION	NAME	HOURS
Observer	Bryan Hamm	8:30 - 12:30
Driller	Neil Short	8:40 - 13:30
Helper	Steve Gelsen, Dwayne ??	8:40 - 13:30

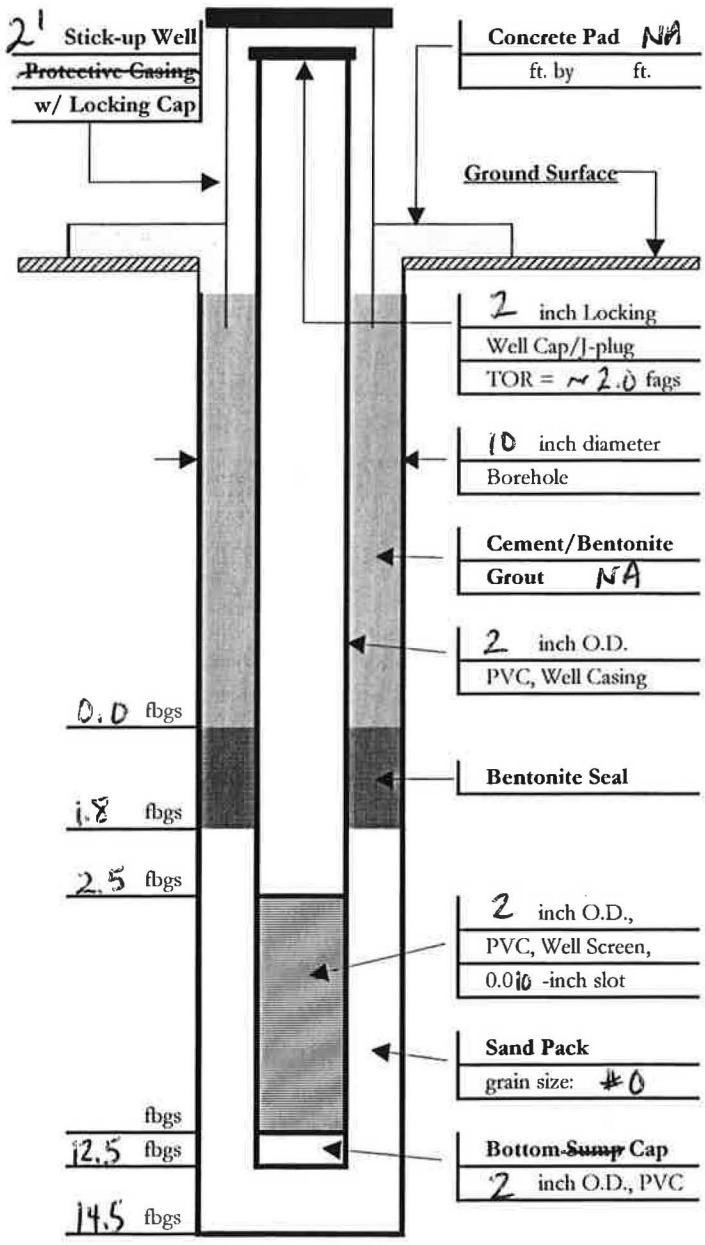
DRILLER (optional):
BM REP. Bryan C. Hamm

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STICK-UP WELL/PIEZOMETER COMPLETION DETAIL

Project Name: Urbana LF - SVE Replacement Wells
Client: Mercury Aircraft
Boring Location: Hot Spot #5

WELL NUMBER: P-10
Date Installed: 6/3/03
Project Number: 0001-001-100



Driller Information

Company:	Nothnagle Drilling
Driller:	Neil Short
Helper:	Steve Gelsen, Dwayne ??
Permit Number:	NA
Drill Rig Type:	CME 75

Well Information

Land Surface Elevation:	NA	fmsl (approximate)
Drilling Method:	9.875" tri-cone roller bit - air rotary	
Soil Sample Collection Method:	NA	
Drilling Fluid:	None	
Fluid Loss During Drilling:	0	gallons (approximate)

Material of Well Construction

Casing:	2" Sch. 40 PVC
Screen:	2" Sch 40 PVC, 0.010-inch
Sump:	None
Sand Pack:	#0
Annular Seal:	Bentonite Pellets 3/8"

Well Development

Well Purpose:	Observation Well
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purge:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Purge Duration:	minutes
Yeild:	gpm
Specific Capacity:	gpm/ft

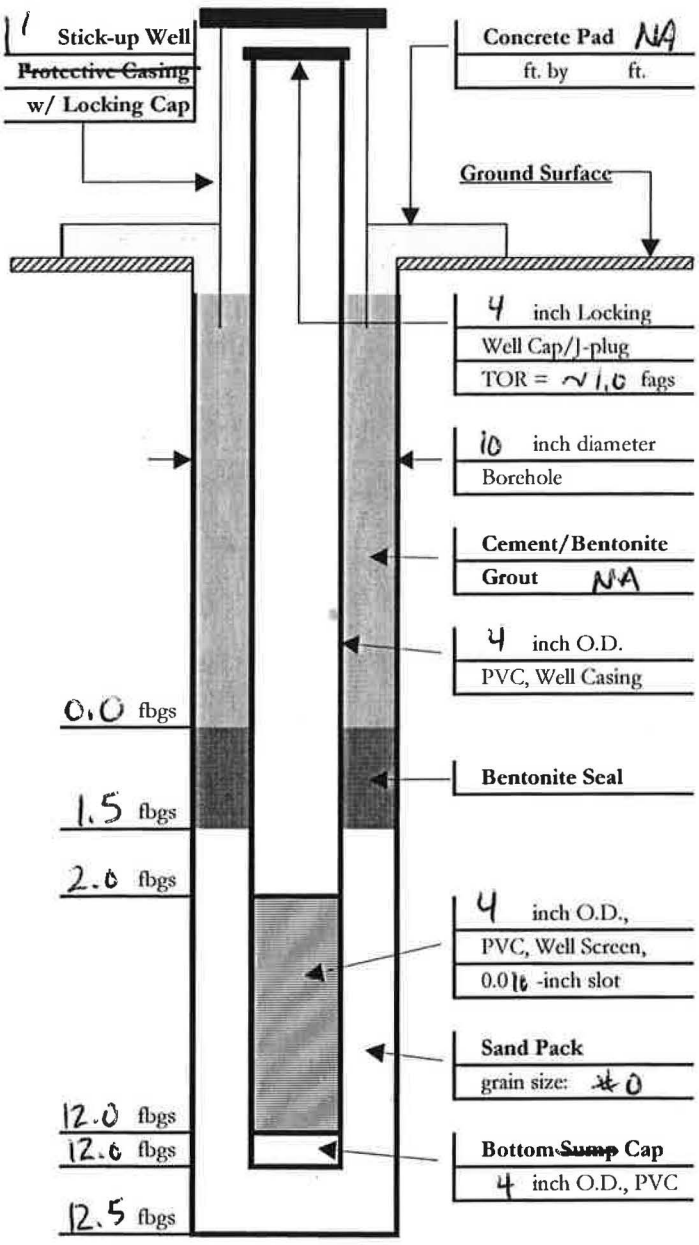
Comments:

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STICK-UP WELL/PIEZOMETER COMPLETION DETAIL

Project Name: Urbana LF - SVE Replacement Wells
Client: Mercury Aircraft
Boring Location: Hot Spot #5

WELL NUMBER: SVE-3
Date Installed: 6/3/03
Project Number: 0061-001-100



Driller Information

Company:	Nothnagle Drilling
Driller:	Neil Short
Helper:	Steve Geisen, Dwayne ?
Permit Number:	NA
Drill Rig Type:	CME 75

Well Information

Land Surface Elevation:	NA	fmsl (approximate)
Drilling Method:	9.875" tri-cone roller bit - air rotary	
Soil Sample Collection Method:	NA	
Drilling Fluid:	none	
Fluid Loss During Drilling:	0	gallons (approximate)

Material of Well Construction

Casing:	4" Sch 40 PVC
Screen:	4" Sch 40 PVC, 0.010"
Sump:	NA
Sand Pack:	#0
Annular Seal:	Bentonite Pellets 3/8"

Well Development

Well Purpose:	Soil Vapor Extraction
Techneque(s):	NA
Date Completed:	
BM/TK Personnel:	
Total Volume Purge:	gallons
Static Water Level:	fbTOR
Pump Depth:	
Purge Duration:	minutes
Yeild:	gpm
Specific Capacity:	gpm/ft

Comments:

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

DRILLING SAFETY CHECKLIST

Project: Urbana LF - SVE well replacement
Drilling Company: Nothnagle Drilling
Project No.: 0001-001-100
Drill Rig Type: CME 75
Client: Mercury Aircraft
Date: 6/3/03

ITEMS TO CHECK	OK	ACTION NEEDED
"Kill switches" installed by the manufacturer are in operable condition and all workers at the drill site are familiar with their location and how to activate them?	X	
"Kill switches" are accessible to workers on both sides of the rotating stem? NOTE: Optional based on location and number of switches provided by the manufacturer.	X	
Cables on drill rig are free of kinks, frayed wires, "bird cages" and worn or missing sections?	X slight fraying drill: notified	
Cables are terminated at the working end with a proper eye splice, either swaged Coupling or using cable clamps?	X	
Cable clamps are installed with the saddle on the live or load side? Clamps should not be alternated and should be of the correct size and number for the cable size to which it is installed. Clamps are complete with no missing parts?	X	
Hooks installed on hoist cables are the safety type with a functional latch to prevent accidental separation?	X	
Safety latches are functional and completely span the entire throat of the hook and have positive action to close the throat except when manually displaced for connecting or disconnecting a load?	X	
Drive shafts, belts, chain drives and universal joints shall be guarded to prevent accidental insertion of hands and fingers or tools.	X	
Outriggers shall be extended prior to and whenever the boom is raised off its cradle. Hydraulic outriggers must maintain pressure to continuously support and stabilize the drill rig even while unattended.	X	
Outriggers shall be properly supported on the ground surface to prevent settling into the soil.	X	
Controls are properly labeled and have freedom of movement? Controls should not be blocked or locked in an action position.	X	
Safeties on any device shall not be bypassed or neutralized.	X	
Controls shall be operated smoothly and cables and lifting devices shall not be jerked or operated erratically to overcome resistance.	X	
Slings, chokers and lifting devices are inspected before using and are in proper working order? Damaged units are removed from service and are properly tagged?	X	
Shackles and clevises are in proper working order and pins and screws are fully inserted before placing under a load?	X	
High-pressure hoses have a safety (chain, cable or strap) at each end of the hose section to prevent whipping in the event of a failure?	X	
Rotating parts of the drill string shall be free of sharp projections or hooks, which could entrap clothing or foreign objects?	X	
Wire ropes should not be allowed to bend around sharp edges without cushion material.	X	

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

DRILLING SAFETY CHECKLIST

Project: Urbana LF - SVE Well Replacement
Project No.: 0001-001-100
Client: Mercury Aircraft
Drilling Company: Nothnagle Drilling
Drill Rig Type: CME-75
Date: 6/3/03

ITEMS TO CHECK	OK	ACTION NEEDED
The exclusion zone is centered over the borehole and the radius is equal or greater than the boom height?	X	
The work area around the borehole shall be kept clear of trip hazards and walking surfaces should be free of slippery material.	X	
Workers shall not proceed higher than the drilling deck without a fall restraining device and must attach the device in a manner to restrict fall to less than 6 feet.	X	
A fire extinguisher of appropriate size shall be immediately available to the drill crew. The drill crew shall have received annual training on proper use of the fire extinguisher.	X	
29 CFR 1910.333 © (3) Except where electrical distribution and transmission lines have been de-energized and visibly grounded, drill rigs will be operated proximate to, under, by, or near power lines only in accordance with the following: .333 © (3) (ii) 50 kV or less -minimum clearance is 10 ft. For 50 kV or over - 10ft. Plus ½ in. For each additional kV **Benchmark Policy: Maintain 20 feet clearance**	X	
29 CFR 1910.333 © (3) (iii) While the rig is in transit with the boom in the down position, clearance from energized power lines will be maintained as follows: Less than 50 kV - 4 feet 50 to 365 kV - 10 feet 365 to 720 kV - 16 feet	X	

Name: Bryan C. Hann (printed)
Signed: Bryan C. Hann Date: 6/3/03

BENCHMARK ENVIRONMENTAL ENGINEERING & SCIENCE, PLLC

TAILGATE SAFETY MEETING FORM

Project Name: Urbana LF - SVE Well Replacement Date: 6/3/03 Time: 8:45
Project Number: 0001-001-100 Client: Mercury Aircraft
Work Activities: Drilling, Well Installation

HOSPITAL INFORMATION:

Name: IRA Davenport Memorial Hospital
Address: 7571 State Route 54 City: Bath State: NY Zip:
Phone No.: (607) 776-8700 Ambulance Phone No. 911

SAFETY TOPICS PRESENTED:

Chemical Hazards: Benzene, Chlorobenzene, 1,1-DCE, 1,2-DCE, MC, 1,1,1-TCA, TCE, PCE, VC, Xylenes, As, Be, Cd, Cr, Pb, Mn, Se, Th, V

Physical Hazards: Slips, Trips, Falls, Pinch/crunch points,

PERSONAL PROTECTIVE EQUIPMENT:

Activity:	Drilling	PPE Level:	A	B	C	(D)
Activity:	Well Installation	PPE Level:	A	B	C	(D)
Activity:	Decon	PPE Level:	A	B	C	(D)
Activity:		PPE Level:	A	B	C	D
Activity:		PPE Level:	A	B	C	D

New Equipment: none

Other Safety Topic (s): Environmental Hazards (aggressive fauna)
Eating, drinking, use of tobacco products is prohibited in the Exclusion Zone (EZ)
Heat Stress

ATTENDEES

Name Printed	Signatures
Neil Short	
Steve Gelsen	
Dwayne ??	
Bryan Hann	Bryan C. Hann

Meeting conducted by: B. Hann

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EQUIPMENT CALIBRATION LOG

PROJECT INFORMATION:

Project Name: Urbana LF - SVE Well Replacement Date: 6/3/03

Project No.: 0001-001-100

Client: Mercury Aircraft Instrument Source: [X] BM/TK [ ] Rental

METER TYPE	UNITS	TIME	MAKE/MODEL	SERIAL NUMBER	CAL. BY	STANDARD	READING	SETTINGS
[ ] pH meter	units					4.00		
						7.00		
						10.01		
[ ] Turbidity meter	NTU					< 0.5		
						20		
						100		
						800		
[ ] Sp. conductance meter	uS/mS					____ µS @ 25 °C		
[X] PID	ppm	9:20	Photovac 2020 PID	ED GK 301	BCH	open air zero	0.6	RF set to MIBK = 1.0
						100 ppm Iso. Gas	100	
[ ] Particulate meter	mg/m³					zero air		
[X] Oxygen	%	9:20	4-Gas Meter	—	BCH	open air	20.9	NA
[X] Hydrogen sulfide	ppm	9:20	↓	—	BCH	open air	0	↓
[X] Carbon monoxide	ppm	9:20		—	BCH	open air	0	
[X] LEL	%	9:20		—	BCH	open air	0	
[ ] Radiation Meter	uR/H					background area		
[ ]								

ADDITIONAL REMARKS:

PREPARED BY: Bryan C. Hanson **DATE:** 6/3/03

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REAL TIME AIR MONITORING LOG

Date: 6/3/03
Project Name: Urbana LF - SVE Well Replacement
Project Number: 0001-001-100
Project Location: ~~Hot~~ Spot #5
Client: Mercury Aircraft
Purpose of Air Monitoring: Drilling

WEATHER CONDITIONS:

Time of Day:	A.M.	P.M.
Ambient Air Temp.:	65°F	70°F
Wind Direction:	S/SE	S/SW
Wind Speed:	0-5 mph	0-5 mph
Precipitation:	none	none

Date	Personnel	Time	Air Monitoring Meter Measurement (Units) PID (ppm)	LEL (%)	H_2S (ppm)	O_2 (%)	CO (ppm)	Particulates (mg/m³)	Other	Location/Activity/Comments
6/3/03	BCH	915	0.0	0	0	20.9	0	NA		P-10 upwind (U)
		915	0.0	0	0	20.9	0			downwind (D)
		916	0.0	0	0	20.9	0			P-10
		955	0.0	0	0	20.8	0			U
		955	0.0	0	0	20.8	0			D
		956	0.0	0	0	20.8	0			P-10
6/3/03	BCH	1045	0.0	0	0	20.8	0	NA		SVE-3 U
		1045	0.0	0	0	20.8	0			D
		1045	0.0	0	0	20.8	0			SVE-3
		1100	0.0	0	0	20.7	0			U
		1100	0.0	0	0	20.7	0			D
		1101	0.0	0	0	20.7	0			SVE-3
		1125	0.0	0	0	20.7	0			U
		1125	0.0	0	0	20.7	0			D
		1126	0.0	0	0	20.7	0			SVE-3

NOTE: SEE EQUIPMENT CALIBRATION LOG FOR DESCRIPTION OF EQUIPMENT TYPE.

Appendix I

Groundwater Pump Test Summary (Well Installation Description)

GEOMATRIX

HYDRAULIC TESTING PROGRAM
Urbana Landfill
Town of Urbana, New York

INTRODUCTION

Geomatrix Consultants, Inc. (Geomatrix) conducted a hydraulic testing program in the southwest portion of the Urbana Landfill site in conjunction with staff from Benchmark Environmental Engineers and Scientists, PLLC (Benchmark). The information provided by this hydraulic testing will be used by Benchmark to design remedial actions involving groundwater collection and treatment at the landfill.

The scope of work for hydraulic testing was described in a letter submitted to the NYSDEC dated December 22, 1998. The letter included a description of hydrogeologic information obtained from the drilling and installation of piezometers utilized as observation wells during this hydraulic testing program and presented a refined interpretation of the conceptual hydrogeologic model for the site. The current conceptual hydrogeologic model for the site provides an improved understanding of the conditions affecting the migration of chemical constituents in the groundwater. The hydraulic testing conducted at the site further supports this refined conceptual model and allows Benchmark to evaluate and design a remedial action that will achieve remedial objectives for the site. The objective of the hydraulic testing program was to establish the spacing of groundwater extraction wells that will be used to mitigate VOC impacted groundwater located in the southeastern portion of the site from migrating off-site.

BACKGROUND

Geologic and hydrogeologic information used to locate groundwater extraction wells and identify critical hydrostratigraphic zones for monitoring was provided in the CDM Remedial Investigation Report and obtained from the Pre-Design Study summarized in the Benchmark letter dated December 22, 1998.

The Pre-Design Study consisted of the completion of six borings and conversion to piezometers. Four borings/piezometers were completed during the week of November 2, 1998 at the Urbana Landfill. Boring locations were selected to provide additional hydrogeologic information for the site in the vicinity of impacted groundwater (i.e., the northeast portion of the site where groundwater collection is proposed). Two (2) additional borings/piezometers were installed during the week of November 30, 1998 to better characterize hydrogeologic

conditions near the un-named creek located east of the landfill. Boring/piezometer locations from this investigation are shown on Figure 1. A summary of the well completion details and hydrostratigraphic units screened is presented in Table 1. Groundwater elevation data obtained from these wells during individual pump testing of three pumping wells were used to better characterize the hydrogeologic conditions at the site and provide information for remedial design.

METHODOLOGY

A pump test was conducted in three pumping wells (viz., PW-1, PW-2, and PW-3) installed at locations shown on Figure 1. Groundwater discharged from the pumping wells was filtered through activated carbon to remove volatile organic compounds and any other organic or inorganic compound with strong carbon affinity. The treated groundwater was discharged back into the fill distant from the area of pumping. Water levels were measured either manually or automatically using transducer/data loggers in on-site and off-site monitoring wells during pumping. A summary of wells and piezometers monitored during the hydraulic testing program is presented in Table 2. A description of well installation and water level monitoring information is provided below.

PUMPING WELL DRILLING

A total of three (3) borings/groundwater extraction wells designated PW-1, PW-2, and PW-3 were installed during the week of April 12, 1999 at the Urbana Landfill. Boring/pumping well locations are shown on Figure 1. Each borehole was advanced through unconsolidated overburden using 10-1/4-inch hollow stem augers (HSA). Each borehole was advanced through the weathered bedrock unit and five-feet into the competent bedrock unit. A site map showing the approximate location of new and existing piezometers/monitoring wells is presented in Figure 1. Borehole PW-1 was advanced to a depth of 45.0 feet below ground surface (fbgs), borehole PW-2 was advanced to a depth of 23.2 fbgs and PW-3 was advanced to a depth of 19.6 fbgs. The wells were drilled to depths that would accommodate a five foot well sump below the well screen into bedrock. Each well was installed in close proximity to recently completed observation wells that were logged continuously during borehole advancement. At each pumping well boring location, soil cuttings from HSA advancement were described on field borehole logs. The total volatile organic vapors in the soil cuttings during drilling were measured using a PE Photovac (Model No. 2020) photo-ionization detector (PID) equipped with a 10.2 eV lamp. PID readings for each borehole were collected periodically during the drilling program and recorded on the borehole logs.

PUMPING WELL INSTALLATION

A six-inch diameter pumping well (groundwater extraction well) was installed in each borehole. Each well was constructed with stainless steel continuous slot, wire-wrap well screen (0.020-inch) and riser with a No. 2 silica sand filter pack. A screen measuring 10 feet in length was installed at location PW-1 and screens measuring 5 feet in length were installed at locations PW-2 and PW-3. Each well was equipped with a 5-foot sump below the screened

interval. The wells screened the saturated lower portion of the till and weathered bedrock. The sump, well screen and attached riser were placed at the bottom of the borehole and a silica sand filter pack was installed from the bottom of the sump to the following distances above the top of the slotted screen:

Pumping Well	Distance Above Well Screen (feet)
PW-1	20.0
PW-2	6.2
PW-3	4.6

A sand pack extending 20 feet above the top of the well screen was necessary to intercept a saturated sand stringer identified in the till approximately 15 feet above the weathered bedrock. A three to four foot bentonite pellet seal was placed above the sand pack and allowed to hydrate for a minimum of one hour. Each extraction well was then grouted to the surface and a keyed alike, lockable cap installed to complete the installation. Upon curing of the grout, a concrete pad was installed at each well location. Borehole logs presented in Attachment 1 provide well completion details for each pumping well. General well construction details for the pumping wells, monitoring wells, and observation wells are summarized in Table 1.

Each pumping well was developed by using a Grundfos Redi-Flo 2 pump assembly to purge and remove groundwater. Prior to purging, each well was surged by the drill rig utilizing a 6-inch rubber gasket surge block and steel rod assembly for approximately 10 to 15 minutes to pull any fine grained material from the well screen. Purged groundwater was monitored for pH to ensure bentonite-grout did not enter the groundwater. Development continued until visual turbidity was reduced and pH values stabilized.

HYDRAULIC TESTING

Hydraulic tests were conducted in each extraction well to assess the hydraulic influence from pumping. Water levels measured in observation wells and monitoring wells screened in the overburden and the bedrock were used to determine if a hydraulic response from pumping occurred. Water levels were automatically measured by transducers and electronically recorded at five minute intervals in select monitoring wells. Manual water level measurements were periodically recorded as a check to ensure accurate readings were being recorded by the data logger. A summary of observation wells utilized during testing and associated instrumentation is presented in Table 2. A description of testing is presented below.

PUMPING WELL PW-1

Pumping was initiated at pumping well PW-1 (see Figure 1) on April 21, 1999 at 16:35. The pumping test ran concurrently with pumping at PW-3. Drawdown within PW-1 was accomplished utilizing a Waterra Hydrolift II Electric pump (110-volt) with a 1.0-inch outside diameter (O.D.) high-density polyethylene (HDPE) tubing and foot valve attachment. The foot valve was set at a depth of 45.0 feet below the top of riser (fbtor), which is the approximate depth of the bottom of the well screen. A maximum pumping rate of 4.5 gallons per minute (gpm) was established and held constant throughout the duration of the pump test for the Waterra pump assembly. Because the specific capacity of the well was substantially greater than the maximum flow rate of the pump, an additional pump was utilized to increase the rate of drawdown in the well. A Grundfos Redi-Flo 2 pump assembly was used concurrently with the Waterra pump assembly and pumped at a rate of 2.5 gpm. The total combined pumping rate during the pump test for PW-1 was generally consistent at 7.0 gpm for approximately 48 hours. The static water level of PW-1 prior to pumping was manually measured at 17.84 fbtor with an electronic water level indicator. The water level in PW-1 in the upper water bearing zone and bedrock water-bearing zone was measured at 24.82 fbtor for a maximum drawdown of 6.98 feet immediately prior to pumping termination.

The hydraulic response to pumping is presented as a plot of drawdown and recovery water level data. Hydraulic response data are summarized in Attachment 2. The step increases and decreases in drawdown water levels observed on the figure reflect an increase or decrease in the rate of groundwater removal using the Grundfos pump. Start-up and shut-off times of the pumps are identified on the figure. Drawdown and recovery water level data for the monitored observation wells are also presented in Attachment 2. The aerial extent of hydraulic responses (Drawdown > 0.25 feet) to pumping after 48 hours is shown on Figure 2.

PUMPING WELL PW-2

Pumping was initiated at pumping well PW-2 (see Figure 1) on April 26, 1999 at 11:10. Drawdown at PW-2 was accomplished utilizing the Water Hydrolift II Electric pump. The foot valve was set at the bottom of the well screen approximately 14 feet below the static water level. A low pumping rate of approximately 0.5 gpm was sufficient to maintain a constant head level in the well during testing. After approximately 12 hours of pumping, the foot-valve malfunctioned and required replacement. Observation wells did not fully recover during pumping inactivity and the test was restarted and continued for over 24-hours. Because of the low specific capacity of the well, dewatering of the well to pump intake level occurred within 2 hours.

The hydraulic response to pumping is presented as a plot of drawdown and recovery water level data. Hydraulic response data are summarized in Attachment 3. A drop-off in drawdown approximately 12 hours after test startup represents the malfunctioning foot valve that occurred overnight. Start-up and shut-off times of the pumps are identified on the figure. Drawdown and recovery water level data for the monitored observation wells are also presented in Attachment 3. The aerial extent of hydraulic response (drawdown > 0.25 feet) to pumping after nearly 48 hours is shown on Figure 2.

PUMPING WELL PW-3

Pumping was initiated at pumping well PW-3 (see Figure 1) on April 21, 1999 at 9:30. Drawdown at PW-3 was accomplished utilizing the Waterra Hydrolift II Electric pump. The foot valve was set at the bottom of the well screen approximately 19 feet below the top of the riser. A constant head level was maintained in the well during testing by achieving a very low pumping rate of approximately 0.25 gpm.

The hydraulic response to pumping is presented as a plot of drawdown and recovery water level data. Hydraulic response data are summarized in Attachment 4. Start-up and shut-off times of the pumps are identified on the figure in the attachment. Drawdown and recovery water level data for the monitored observation wells are also presented in Attachment 4. The aerial extent of hydraulic responses (drawdown > 0.25 feet) after more than 28 hours of pumping is shown on Figure 2. The response curves for BMW-1 and PW-2 show continued drawdown after pumping termination in PW-3 and continued pumping in PW-1 indicating that the hydraulic responses to in these wells was due to pumping at PW-1. The relatively small area of hydraulic influence from pumping at PW-3 is consistent with the low well yield.

ANALYSIS

PW-1

As shown in Figure 2, a relatively large area of hydraulic influence developed in the saturated overburden and bedrock after 48 hours of pumping at PW-1. The area of hydraulic influence extends south of the site along Crows Nest Road in both the overburden and shallow bedrock (MW-112S and 112D); west of the site beyond monitoring well pair MW-202; north to approximately PW-2; and east toward the landfill waste. The distance-drawdown graph for pumping well PW-1 is presented in Figure 3. Under ideal conditions (homogenous porous media), the distance-drawdown plot should extend in a straight line from the y-axis (pumping well location). However, Figure 3 identifies substantial drawdown in wells screened in the overburden and bedrock within 100 feet of the pumping well PW-1 and substantially less than the drawdown predicted by a straight line drawn beyond observation well BW-1. The anisotropy of the bedrock is partially responsible for the non-uniform spatial distribution in drawdown in the overburden and bedrock water-bearing zones. Fracture orientations in the bedrock possibly creates preferential areas of dewatering in the bedrock and overburden during pumping.

Figure 4 presents residual drawdown data from PW-1 (measure of the rate of recovery). Under ideal conditions, a plot of the best-fit line through the data should extend to the origin in the upper left-hand corner of the plot. However, the linear plot of the recovery data falls well below the origin indicating less recharge to the pumping well than a predicted rate of recovery. The cause of the slower rate of recovery is likely due to dewatering of fractures in the vicinity of the pumping well with slow recharge or dewatering of the glacio-fluvial deposits in the vicinity of monitoring well cluster MW-108. These deposits may become dewatered as groundwater is removed from the deposits, thereby depleting the volume of water held in storage. Due to the very low permeability of the till surrounding the glacio-fluvial deposit, recharge occurs only as fast as the till and weathered bedrock will allow. The slow recovery of the glacio-fluvial deposit also indicates that the unnamed stream running north-south located west of MW-108 (S, I and D) is not hydraulically connected to the glacio-fluvial deposit. A hydraulic connection between the unnamed stream and the glacio-fluvial deposit would have resulted in a slower removal of the groundwater from storage within the deposit and a subsequent quicker recovery of the groundwater level within the monitoring well cluster MW-108 (S, I, D).

PW-2

As shown in Figure 2, a somewhat smaller area of hydraulic influence developed in the saturated overburden and bedrock after nearly 48 hours of pumping at PW-2. The area of hydraulic influence extends south beyond BMW-1 and north of GMX-2. The distance-drawdown graph for pumping well PW-2 is presented in Figure 5. The distance-drawdown plot predicts an area of hydraulic influence that extends approximately 100 feet from the pumping well. Greater drawdown in BMW-2 than BMW-1 demonstrates bedrock anisotropy with non-proportional drawdown (more drawdown in a well farther from the pumping well than a well closer to the pumping well).

Figure 6 presents residual drawdown data from PW-2 plotting recovery water level data measured in the pumping well after pumping. A somewhat faster rate of water level recovery occurred than that predicted under ideal hydraulic conditions. The best-fit line drawn through the residual drawdown data intersects to the right of the origin suggesting recharge to the weathered bedrock water-bearing zone during recovery. Recharge may have occurred either from losing water conditions from the unnamed stream or leaky conditions associated with saturated waste that exists in close proximity to the well.

PW-3

The smallest area of hydraulic influence developed in the saturated overburden and bedrock from the three pumping wells occurred from pumping at PW-3. After more than 24 hours of pumping, the area of hydraulic influence extends beyond monitoring well pair at MW-107 (Figure 2). The distance-drawdown graph for pumping well PW-3 is presented in Figure 7. The distance-drawdown plot predicts an area of hydraulic influence that is less than 100 feet from the pumping well. Drawdown occurs in the overburden and weathered bedrock as well as the competent bedrock (MW-107D).

Figure 8 presents residual drawdown data from PW-3 plotting recovery water level data measured in the pumping well after pumping. Similar to PW-2, a slightly faster rate of water level recovery occurred than that predicted under ideal hydraulic conditions. The line of the residual drawdown plot intersects to the right of the origin suggesting recharge to the weathered bedrock water-bearing zone during recovery. Recharge may have occurred either from losing water conditions from the unnamed stream or leaky conditions associated with the saturated waste that exists in close proximity to the well.

SUMMARY AND CONCLUSION

Hydraulic testing was conducted in three pumping wells located in the southwest corner of the Urbana Landfill. Respective areas of hydraulic influence from pumping at PW-1, PW-2, and PW-3 are approximately 250 feet, 100 feet, and 75 feet from each pumping well with respective pumping rates of 7, 0.5, and 0.25 gallons per minute. Analysis of the pumping test data identifies anisotropic conditions in the weathered bedrock water-bearing zone that produces non-uniform drawdown across the area of hydraulic influence at each pumping well location. The glacio-fluvial deposits located in the vicinity of well cluster MW-108 do not appear to be hydraulically connected to the stream.

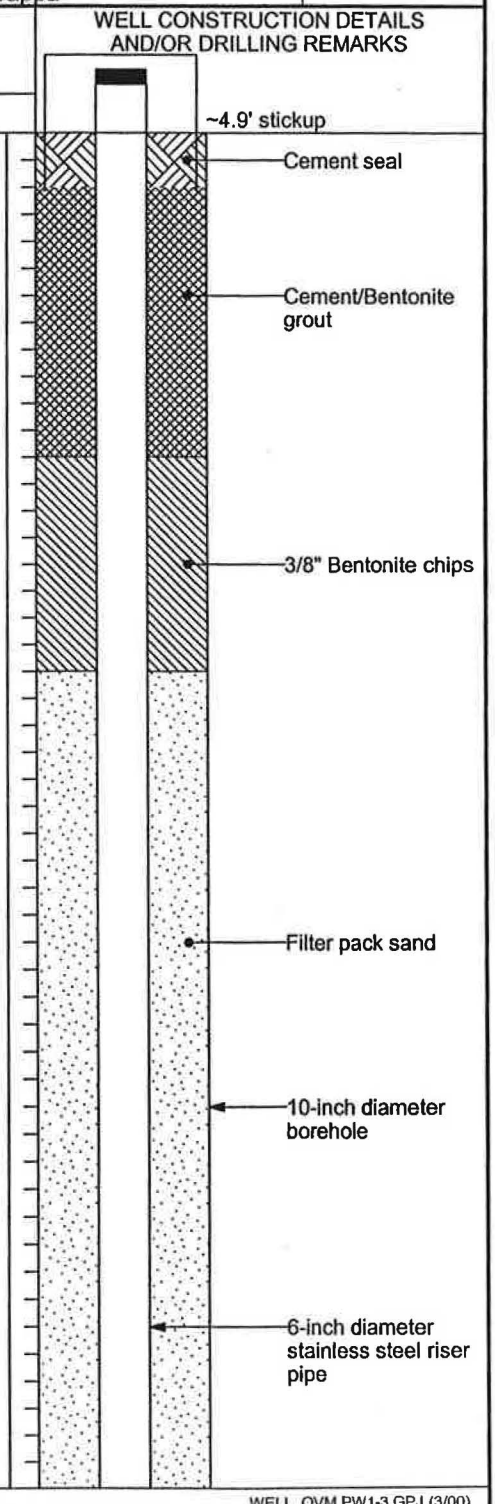
As shown on Figure 2, the area of hydraulic influence from each pumping well location overlaps the area of hydraulic influence from the adjacent pumping well. Collective pumping from the three pumping wells will produce an area of hydraulic influence that extends south of Crows Nest Road, northward more than 200 feet beyond well pair MW-107. The combined operation of the existing pumping wells will be sufficient to capture VOC-impacted groundwater and mitigate its migration off-site. The anticipated combined flow to achieve hydraulic capture will be in the range of 5 to 10 gpm.

ATTACHMENT 1

Pumping Well Borehole Logs

PROJECT: Urbana Landfill Hammondsport, New York	**Log of Well No. PW-1**	
BORING LOCATION: West of landfill (farthest south)	TOP OF RISER ELEVATION: ~1466.9 fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 4/13/99	DATE FINISHED: 4/16/99
DRILLING METHOD: HSA (6 1/4" ID) and Air rotary (10" OD roller bit)	TOTAL DEPTH: 45.0 fbgs	SCREEN INTERVAL: 30-40 fbgs
DRILLING EQUIPMENT: Guspech 750 (ATV rig)	DEPTH TO WATER: | FIRST: 21 fbgs | COMPL.: --	CASING: 6" Stainless steel
SAMPLING METHOD: Drill cuttings	LOGGED BY: BCH	
HAMMER WEIGHT: -- | DROP: --	RESPONSIBLE PROFESSIONAL: Richard H. Frappa | REG. NO.	

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, reacl. w/HCl, geo. inter.
					Surface Elevation: ~1462 fmsl
1					**SILT with SAND (ML):**dark brown, moist, 70% fines, 15% fine to medium sand, 15% coarse gravel (subrounded), medium plasticity, [TILL]
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					wet zone (21-23'), increase fraction of fines (21-32 fbgs)
22					
23					
24					
25					



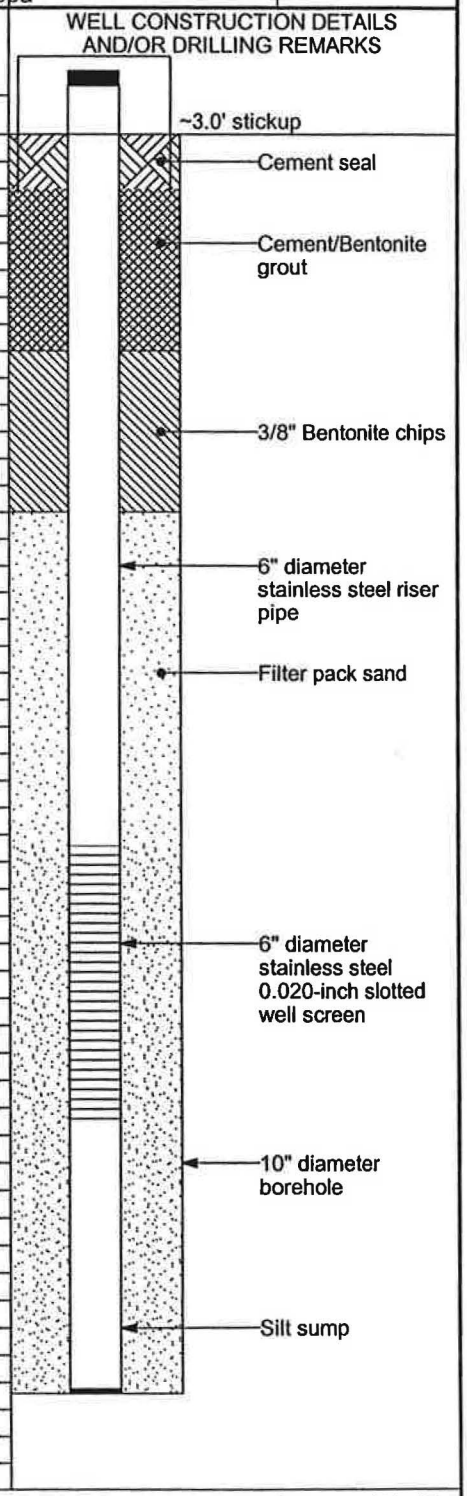
PROJECT: Urbana Landfill
Hammondsport, New York

Log of Well No. PW-1 (cont'd)

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. Inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
26						
27						
28						
29						
30						
31						
32						
33						
34						
35					**WEATHERED BEDROCK:**weathered bedrock	6-inch diameter stainless steel 0.020-inch slotted well screen
36						
37					**COMPETENT BEDROCK:**competent bedrock	
38						
39						
40						
41						
42						Silt sump
43						
44						
45					Bottom of boring at 45 feet below ground surface	
46						
47						
48						
49						
50						
51						
52						
53						
54						
55						

PROJECT: Urbana Landfill Hammondsport, New York	**Log of Well No. PW-2**	
BORING LOCATION: West of landfill (central location)	TOP OF RISER ELEVATION: ~1459.0 fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 4/15/99	DATE FINISHED: 4/16/99
DRILLING METHOD: HSA (6 1/4" ID) and Air rotary (10" OD roller bit)	TOTAL DEPTH: 23.2 fbgs	SCREEN INTERVAL: 13.2-18.2 fbgs
DRILLING EQUIPMENT: Guspech 750 (ATV rig)	DEPTH TO WATER: FIRST 8 fbgs; COMPL. --	CASING: 6" Stainless steel
SAMPLING METHOD: Drill cuttings	LOGGED BY: BCH	
HAMMER WEIGHT: -- DROP: --	RESPONSIBLE PROFESSIONAL: Richard H. Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION (NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.)
					Surface Elevation: ~1456 fmsl
1					**SILT with SAND (ML):**dark brown, moist, 80% fines, 15% coarse grave, 5% fine sand, medium plasticity, soft, [TILL]
2				0	increase gravel and cobble fraction to 25% (2-7 fbgs)
3					
4					
5					
6					
7				0	decrease gravel and cobble fraction to 10%
8					
9					
10					
11					
12					
13					
14					
15					
16				0	
17					**WEATHERED BEDROCK:**dark blue/gray, weathered shale, dry
18					
19					**COMPETENT BEDROCK:**dark blue/gray, competent shale, dry to moist
20					
21					
22					
23					Bottom of boring at 23.2 feet below ground surface
24					
25					



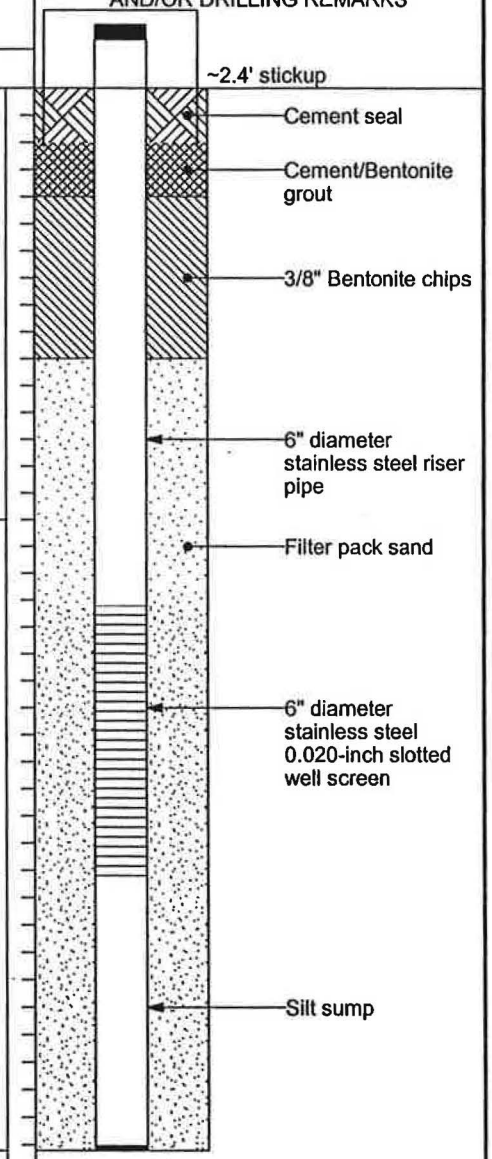
PROJECT: Urbana Landfill
Hammondsport, New York

Log of Well No. PW-3

BORING LOCATION: West of landfill (farthest north)	TOP OF RISER ELEVATION: ~1464.4 fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 4/15/99	DATE FINISHED: 4/15/99
DRILLING METHOD: HSA (6 1/4" ID) and Air rotary (10" OD roller bit)	TOTAL DEPTH: 19.6 fbgs	SCREEN INTERVAL: 9.6-14.6 fbgs
DRILLING EQUIPMENT: Guspech 750 (ATV rig)	DEPTH TO WATER: FIRST 5 fbgs / COMPL. --	CASING: 6" Stainless steel
SAMPLING METHOD: Drill cuttings	LOGGED BY: BCH	
HAMMER WEIGHT: -- / DROP: --	RESPONSIBLE PROFESSIONAL: Richard H. Frappa / REG. NO.	

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION (NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.)
					Surface Elevation: ~1462 fmsl
1-5				0	**SILT with SAND (ML):**dark brown, moist, 70% fines, 5% fine sand, 15% coarse gravel (subrounded to subangular), trace waste material, medium plasticity, [TILL]
6-8				0	**WEATHERED BEDROCK:**dark blue/gray, weathered shale, dry
9-13				0	
14-15				0	**COMPETENT BEDROCK:**dark blue/gray, competent shale, dry to moist
16-20					Bottom of boring at 19.6 feet below ground surface
21-25					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Appendix J

Community Air Monitoring Data Sheets

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-14-09 Monitoring Personnel AMM

Wind Direction ESE (FROM NW) Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 8:10 / 0.005 mg/m³ TWA, 1:16 / 0.045 mg/m³

Downwind Perimeter Monitoring

Time	TWA Reading (ug/m³)	Remarks
9:31	0.024 mg/m³	@ CREEK
1:32	0.034 mg/m³	@ TRAILER
2:05	0.030 mg/m³	@ GWTS DRIVE
4:11	0.022 mg/m³	@ TRAILER
4:17	0.001 mg/m³	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time 0.0 %LEL 20.9 %O_2 0.0 ppm CO 000 ppm H_2S/ 8:06

Upwind Background Reading/Time 000 %LEL 20.8 %O_2 000 ppm CO 000 ppm H_2S/ 1:12

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
9:29	000	20.9	0	0	AT CREEK
2:04	000	20.9	0	0	@ GWTS DRIVE
4:11	000	20.9	000	000	@ TRAILER
4:17	000	20.9	000	000	@ CREEK

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 ppm 9:15, 0 ppm / 1:16

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
9:27	000	@ CREEK
2:05	000	@ GWTS DRIVE
4:11	0.0	@ TRAILER
4:17	0.0	@ CREEK

Additional Notes: BOTH UPWIND READINGS @ TOP OF LANDFILL NEAR POND

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-15-07 Monitoring Personnel AMM

Wind Direction SE (FROM NW) Page 1 of 2

Particulate Monitoring

Upwind Background Reading/Time 0.002 mg/m³ / 8:00 , 0.020 mg/m³ / 1:25

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
8:30	0.00 mg/m3	@ CREEK
9:22	0.000 mg/m3	@ TRAILER
10:38	0.004 mg/m3	@ GWTS BUILDING PAD
10:45	0.002 mg/m3	@ CREEK
11:30	0.001 mg/m3	@ TRAILER
1:35 ~~1:24~~	0.001 mg/m3	@ TRAILER
1:40	0.004 mg/m3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time 000 %LEL 20.9 %O_2 00 ppm CO 000 ppm H_2S/ 8:00

Upwind Background Reading/Time 000 %LEL 20.8 %O_2 000 ppm CO 000 ppm H_2S/ 1:25

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:30	000	20.9	000	000	@ CREEK
9:22	000	20.8	000	000	@ TRAILER
10:38	000	20.6	000	000	@ GWTS BUILD. PAD
10:45	000	20.7	000	000	@ CREEK
11:30	000	20.9	000	000	@ TRAILER
1:35	000	20.9	000	000	@ TRAILER
1:40	000	20.9	000	000	@ CREEK

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0ppm / 8:00 , 0.0ppm / 1:25

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:30	0.0	@ CREEK
9:22	0.0	@ TRAILER
10:38	0.0	@ GWTS BUILDING PAD
10:45	0.0	@ CREEK
11:30	0.0	@ TRAILER
1:35	0.0	@ TRAILER
1:40	0.0	@ CREEK

Additional Notes: UPWIND READING @ 8:00 am @ TOP OF LANDFILL, NEAR ROAD

" @ 1:25 @ "

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 4-15-07 Monitoring Personnel AMM

Wind Direction SE (FROM NW) Page 2 of 2

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
2:56	0.011 mg/m^3	@ TRAILER
3:00	0.018 mg/m^3	@ CREEK
4:08	0.000 mg/m^3	@ CREEK
4:15	0.004 mg/m^3	@ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
2:56	000	20.9	000	000	@ TRAILER
3:00	000	20.9	000	000	@ CREEK
4:08	000	20.9	000	000	@ CREEK
4:15	000	20.9	000	000	@ TRAILER

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
2:56	0.0	@ TRAILER
3:00	0.0	@ CREEK
4:08	0.0	@ CREEK
4:15	0.0	@ TRAILER

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-16-01 Monitoring Personnel AMM

Wind Direction SE (FROM S) Page 1 of 1

10:45

Particulate Monitoring

Upwind Background Reading/Time 0.001 mg/m³ / 8:33 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
9:00	0.005 mg/m³	@ TRAILER
9:05	0.032 mg/m³	@ CREEK DRIVE
10:50	0.209 mg/m³	@ TOP OF LANDFILL
11:30	0.005 mg/m³	" "
12:05	0.023 mg/m³	" "
1:30	0.000 mg/m³	@ TOP OF LANDFILL

TRUCK ON ACCESS RD @ READINGS
39 min. avg
35 min avg

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.7 %O_2 0 ppm CO 0 ppm H_2S/ 8:35

Upwind Background Reading/Time _____ %LEL _____ %O_2 _____ ppm CO _____ ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
9:00	0	20.8	0	0	@ TRAILER
9:05	0	20.9	0	0	@ CREEK DRIVE
10:50	0	20.9	0	0	@ TOP OF LANDFILL
11:30	0	20.7	0	0	" "
12:05	0	20.7	0	0	" "
1:30	0	20.7	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 ppm / 8:33 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
9:00	0.0	@ TRAILER
9:05	0.0	@ CREEK DRIVE
10:50	0.0	@ TOP OF LANDFILL
11:30	0.0	" "
12:05	0.0	" "
1:30	0.0	" "

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-17-01 Monitoring Personnel AMM

Wind Direction FROM SE Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.001 mg/m³ / 8:40 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
8:45	0.002 mg/m³	@ TOP OF LANDFILL

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 %O_2 0 ppm CO 0 ppm H_2S/ 8:40

Upwind Background Reading/Time _____ %LEL _____ %O_2 _____ ppm CO _____ ppm H_2S/ _____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:45	0	20.9	0	0	@ TOP OF LANDFILL

Organic Vapor Monitoring

Upwind Background Reading/Time 0 ppm / 8:40 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:45	0.0	@ TOP OF LANDFILL

Additional Notes: RAIN THROUGHOUT THE DAY

NO VISIBLE DUST

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-18-07 Monitoring Personnel AMM

Wind Direction FROM SOUTH Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.001 mg/m³ / 8:50 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
9:05	0.003 mg/m³	@ TOP OF LANDFILL
10:10	0.000 mg/m³	@ TOP OF LANDFILL
11:05	0.004 mg/m³	" "

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 %O_2 0 ppm CO 0 ppm H_2S/ 8:50

Upwind Background Reading/Time _____ %LEL _____ %O_2 _____ ppm CO _____ ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
9:05	0	20.9	0	0	@ TOP OF LANDFILL
10:10	0	20.9	0	0	" "
11:05	0	20.9	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 / 8:50 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
9:05	0.0	@ TOP OF LANDFILL
10:10	0.0	" "
11:05	0.0	" "

Additional Notes: NO VISIBLE DUST

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-21-01 Monitoring Personnel AMM

Wind Direction FROM SOUTH Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.004 mg/m³ / 8:00 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
8:45	0.006 mg/m³	@ TOP OF LANDFILL
9:31		
10:58		

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 %O_2 0 ppm CO 0 ppm H_2S/ 8:00

Upwind Background Reading/Time 0 %LEL 20.8 %O_2 0 ppm CO 0 ppm H_2S/ 1:20

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:45	0	20.9	0	0	@ TOP OF LANDFILL
9:31	0	20.9	0	0	" "
10:58	0	20.9	0	0	" "
1:30	0	20.9	0	0	" "
2:27	0	20.9	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 / 8:00 , 0.0 / 1:20

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:45	0.0	@ TOP OF LANDFILL
9:31	0.0	" "
10:58	0.0	" "
1:30	0.0	" "
2:27	0.0	" "

Additional Notes: Particulate meter battery dead @ 9:31, NOT USED

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-22-07 Monitoring Personnel AMM

Wind Direction NO BREEZE Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:35	0.000 mg/m3	@ TRAILER
10:21	0.000 mg/m3	" "
1:17	0.000 mg/m3	" "
2:30	0.001 mg/m3	" "
3:15	0.000 mg/m3	" "

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:35	0	20.9	0	0	@ TRAILER
1:17	0	20.9	0	0	" "
2:30	0	20.9	0	0	" "
3:15	0	20.9	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:35	0.0	@ TRAILER
10:21	0.0	" "
1:17	0.0	" "
2:30	0.0	" "
3:15	0.0	" "

Additional Notes: HEAVY RAIN IN a.m. , NO VISIBLE DUST

@ FILTER FOR COMBUSTIBLE GAS METER DAMAGED IN a.m. , NOT USED IN a.M.

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-23-07 Monitoring Personnel AMM

Wind Direction NO BREEZE IN a.m. FROM SOUTH IN P.M. Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-24-07 Monitoring Personnel AMM

Wind Direction SMALL BREEZE FROM SOUTH Page 1 of 2

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:32	0.000 mg/m^3	@ CREEK
7:37	0.000 mg/m^3	@ TRAILER
8:01	0.000	@ TOP OF LANDFILL
9:15	0.000 mg/m^3	@ CREEK
10:02	0.000 mg/m^3	@ TRAILER
10:17	0.000	@ TOP OF LANDFILL

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:33	0	20.9	0	0	@ CREEK
7:37	0	20.9	0	0	@ TRAILER
8:01	0	20.9	0	0	@ TOP OF LANDFILL
9:15	0	20.9	0	0	@ CREEK
10:02	0	20.9	0	0	@ TRAILER
10:17	0	20.8	0	0	@ TOP OF LANDFILL

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
7:31	0.0	@ CREEK & ROAD
7:37	0.0	@ TRAILER
8:01	0.0	@ TOP OF LANDFILL
9:15	0.0	@ CREEK
10:02	0.0	@ TRAILER
10:17	0.0	@ TOP OF LANDFILL

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-24-07 Monitoring Personnel AMon

Wind Direction Blow SOUTH Page 2 of 2

Particulate Monitoring

Upwind Background Reading/Time 0.000 mg/m³ / 1:20 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
1:29	0.000 mg/m³	@ TOP OF LANDFILL
2:54	0.000 mg/m³	" "
3:23	0.000 mg/m³	" "

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 %O_2 0 ppm CO 0 ppm H_2S/ 1:20

Upwind Background Reading/Time _____ %LEL _____ %O_2 _____ ppm CO _____ ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
1:29	0	20.8	0	0	@ TOP OF LANDFILL
2:54	0	20.7	0	0	" "
3:23	0	20.8	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 ppm / 1:20 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
1:29	0.0	@ TOP OF LANDFILL
2:54	0.0	" "
3:23	0.0	" "

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-25-07 Monitoring Personnel AMM

Wind Direction FROM SOUTHEAST Page 1 of 2

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:45	0.000 mg/m3	@ CREEK
10:17	0.000 mg/m3	" "
10:22	0.000 mg/m3	@ TRAILER
10:25	0.000 mg/m3	@ TOP OF LANDFILL
11:40	0.000 mg/m3	@ TRAILER
11:50	0.000 mg/m3	@ CREEK
1:33	0.000 mg/m3	@ TOP OF LANDFILL

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:45	0	20.9	0	0	@ CREEK
10:17	0	20.8	0	0	" "
10:22	0	20.7	0	0	@ TRAILER
10:25	0	20.7	0	0	@ TOP OF LANDFILL
11:40	0	20.7	0	0	@ TRAILER
11:50	0	20.7	0	0	@ CREEK
1:33	0	20.7	0	0	@ TOP OF LANDFILL

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
7:45	0.0	@ CREEK
10:17	0.0	" "
10:22	0.0	@ TRAILER
10:25	0.0	@ TOP OF LANDFILL
11:40	0.0	@ TRAILER
11:50	0.0	@ CREEK
1:33	0.0	@ TOP OF LANDFILL

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-25-07 Monitoring Personnel [illegible]
Wind Direction From SOUTHWEST Page 2 of 2

Particulate Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
2:06	0.000 mg/m^3	23 min TWA @ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____
Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
2:06	0	20.7	0	0	@ TRAILER

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
2:06	0.0	@ TRAILER

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-30-07 Monitoring Personnel AMM

Wind Direction SW Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 7:40 / 0.000 mg/m³ , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
7:50	0.000 mg/m³	@ TRAILER
8:30	0.000 mg/m³	@ TOP OF LANDFILL
9:00	0.000 mg/m³	@ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 $\%O_2$ 0 ppm CO 0 ppm H_2S/ 7:40

Upwind Background Reading/Time _____ %LEL _____ $\%O_2$ _____ ppm CO _____ ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:50	0	20.9	0	0	@ TRAILER
8:30	0	20.9	0	0	@ TOP OF LANDFILL
9:00	0	20.8	0	0	@ TRAILER

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 / 7:40 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
7:50	0.0	@ TRAILER
8:30	0.0	@ TOP OF LANDFILL
9:00	0.0	@ TRAILER

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 5-31-07 Monitoring Personnel AMM

Wind Direction FROM N Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.03 mg/m³ TWA / 8:30 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
9:00	0.000 mg/m³	@ CREEK
1:00	0.004 mg/m³	@ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 / 8:30 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
9:00	0.0	@ CREEK

Additional Notes: TRUCK PASSING BY ON A.M. UPWIND READING

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-1-07 Monitoring Personnel AMM

Wind Direction No breeze in a.m. FROM SW IN P.M. Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:00	0.000 mg/m^3	@ CREEK
8:15	0.000 mg/m^3	@ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8					

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:30	0.0	@ CREEK
8:15	0.0	@ TRAILER

Additional Notes: FILTER DAMAGED ON COMBUSTIBLE GAS METER, INSTRUMENT NOT USED

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-4-07 Monitoring Personnel AMM

Wind Direction Flow SW Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.002 mg/m³ / 7:30 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
8:00	0.000	@ TRAILER

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time 0.0 / 7:30 , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:00	0.0	@ TRAILER

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-6-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:10	0.000 mg/m^3	@ CREEK
7:42	0.000 mg/m^3	@ TOP OF LANDFILL; 22-min TWA w/ TRUCK TRAFFIC

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:10	0	20.9	0	0	@ CREEK
7:30	0	20.9	0	0	@ TOP OF LANDFILL

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
7:10	0.0	@ CREEK
7:30	0.0	@ TOP OF LANDFILL

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-7-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:30	0.000	@ CREEK
9:30	0.000	ON UPPER TERRACE
1:00	0.007	@ TRAILER
3:30	0.000	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:30	0	20.9	0	0	@ CREEK
9:30	0	20.9	0	0	ON UPPER TERRACE
1:00	0	20.9	0	0	@ TRAILER
3:30	0	20.9	0	0	@ CREEK

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
7:30	0.0	@ CREEK
9:30	0.0	ON UPPER TERRACE
1:00	0.0	@ TRAILER
3:30	0.0	@ CREEK

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-11-57 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:30	0.000 mg/m^3	@ CREEK
11:30	0.000 mg/m^3	@ TRAILER
1:47	0.000 mg/m^3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:30	0	20.9	0	0	@ CREEK
11:30	0	20.9	0	0	@ TRAILER
1:47	0	20.9	0	0	@ CREEK

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:30	0.0	@ CREEK
11:30	0.0	@ TRAILER
1:47	0.0	@ CREEK

Additional Notes: RAIN IN AFTERNOON

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-12-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:15	0.000 mg/m^3	@ CREEK
10:07	0.000 mg/m^3	@ TRAILER
1:10	0.000 mg/m^3	" "

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
8:15	0	20.9	0	0	@ CREEK
10:07	0	20.9	0	0	@ TRAILER
1:10	0	20.9	0	0	" "

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks
8:15	0.0	@ CREEK
10:07	0.0	@ TRAILER
1:10	0.0	" "

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-15-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:19	0.024 mg/m3	42-min TWA @ TOP OF WEST SLOPE
9:13	0.044 mg/m3	48-min TWA @ "
10:57	0.037 mg/m3	47-min TWA "

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-18-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:57	0.000 mg/m3	@ TOP OF WEST SLOPE
1:12	0.000 mg/m3	" "
4:46	0.000 mg/m3	" "

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-19-07 Monitoring Personnel AMM

Wind Direction FROM SW Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:02	0.019 mg/m^3	@ TOP OF WEST SLOPE
9:33	0.027 mg/m^3	" "
11:12	0.021 mg/m^3	@ TOP OF LANDFILL
11:16	0.040 mg/m^3	@ TRAILER
11:19	0.034 mg/m^3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-20-07 Monitoring Personnel AMM

Wind Direction FROM NW Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.500 / 7:51 @ TOP OF LANDFILL / _____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:56	0.028 mg/m^3	@ TRAILER
7:58	0.022 mg/m^3	@ CREEK
1:56	0.007 mg/m^3	@ TRAILER
2:02	0.000 mg/m^3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-26-07 Monitoring Personnel AMM

Wind Direction From NE Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time 0.003 mg/m³ / 8:26 , ____ / ____

@ EAST OF LANDFILL

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
8:26	0.015 mg/m3	@ [redacted] TRAILER
8:30	0.000 mg/m3	@ CREEK
8:33	0.000 mg/m3	@ TRAILER
8:36	0.000 mg/m3	@ CREEK
8:45	0.000 mg/m3	@ EAST OF LANDFILL

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____ / _____ , _____ / _____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6-27-07 Monitoring Personnel AMM

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
7:30	0.000 mg/m3	@ TRAILER
8:19	0.000 mg/m3	@ CREEK
8:31	0.000 mg/m3	@ TOP OF LANDFILL
2:20	0.000 mg/m3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____, _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6/28/57 Monitoring Personnel AMM

Wind Direction Flare NE Page 1 of ___

Particulate Monitoring

Upwind Background Reading/Time 0.000mg/m³ / 7:47 , ____ / ____

Downwind Perimeter Monitoring

Time	Reading (ug/m³)	Remarks
7:52	0.004 mg/m³	@ TRAILER
7:59	0.000 mg/m³	@ CREEK
1:27	0.003 mg/m³	@ TRAILER
2:51	0.000 mg/m³	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time 0 %LEL 20.9 $\%O_2$ 0 ppm CO 0 ppm H_2S/ 7:47

Upwind Background Reading/Time ____ %LEL ____ $\%O_2$ ____ ppm CO ____ ppm H_2S/ ____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
7:52	0	20.9	0	0	@ TRAILER
7:59	0	20.9	0	0	@ CREEK

Organic Vapor Monitoring

Upwind Background Reading/Time ____ / ____ , ____ / ____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 6/29/21 Monitoring Personnel Adam

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
9:25	0.000 mg/m^3	@ CREEK
9:36	0.025 mg/m^3	@ TRAILER
9:49	0.019 mg/m^3	@ TOP OF LANDFILL

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks
9:25	0	20.9	0	0	@ CREEK
9:36	0	20.9	0	0	@ TRAILER
9:49	0	20.9	0	0	@ TOP OF LAND FILL

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

Urbana Landfill Remedial Construction
Community Air Monitoring Data Sheet

Date 7/2/57 Monitoring Personnel AMan

Wind Direction _____ Page 1 of 1

Particulate Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ug/m^3)	Remarks
8:07	0.000 mg/m^3	@ TOP OF LANDFILL
8:09	0.007 mg/m^3	@ TRAILER
8:18	0.000 mg/m^3	@ CREEK

Explosive Vapor Monitoring

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Upwind Background Reading/Time _____%LEL _____%O_2 _____ppm CO _____ppm H_2S/_____

Downwind Perimeter Monitoring

Time	Combustible Gases (% LEL)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulfide (ppm)	Remarks

Organic Vapor Monitoring

Upwind Background Reading/Time _____/_____ , _____/_____

Downwind Perimeter Monitoring

Time	Reading (ppm)	Remarks

Additional Notes:

REAL TIME AIR MONITORING LOG

Project Name: Urbana LF - SVE Well Installation DAY 1

Project Location: Urbana, NY – Hot Spot #5, Upper Terrace

Project Number: 0001-001-100

Date	Analyst	Time	Instrument (Mfg./Model/Serial No.)	Concentration (Units) PID (ppm)	LEL (%)	H_2S (ppm)	O2 (%)	CO (ppm)	Other	Location/Activity/Comments
6/13/01	BCH	12:30	Photovac 2020 PID/GasTech GT 402	0.0	0	0	20.9	0		SVE-6 drilling U v. humid
		12:31		0.0	0	0	20.9	0		BZ
		12:31		0.0	0	0	20.9	0		D
		1240		0.0	0	0	20.9	0		BZ
		1241		0.0	0	0	20.9	0		D
		1350		0.0	0	0	20.9	0		BZ
		1351		0.0	0	0	20.9	0		D
		1422		0.0	0	0	20.9	0		SVE-5 drilling BZ
		1423		0.0	0	0	20.9	0		D
		1503		0.0	0	0	20.9	0		BZ
		1504		0.0	0	0	20.9	0		D
		1605		0.0	0	0	20.9	0		SVE-4 drilling BZ
		1606		0.0	0	0	20.9	0		D
		1632		0.0	0	0	20.9	0		BZ
		1633		0.0	0	0	20.9	0		D
										U = upwind
										BZ = Breathing Zone
										D = Downwind

REAL TIME AIR MONITORING LOG

Project Name: Urbana LF - SVE Well Installation DAY 2

Project Location: Urbana, NY – Hot Spot #5, Upper Terrace

Project Number: 0001-001-100

Date	Analyst	Time	Instrument (Mfg./Model/Serial No.)	Concentration (Units) PID (ppm)	LEL (%)	H_2S (ppm)	O2 (%)	CO (ppm)	Other	Location/Activity/Comments Drilling
6/14/01	BCH	730	Photovac 2020 PID / GasTech GT402 multi-gas	0.0	0	0	20.9	0		SVE-3 U
		731		0.0	0	0	20.9	0		BZ
		732		0.0	0	0	20.9	0		D
		750		0.0	0	0	20.9	0		BZ
		751		0.0	0	0	20.9	0		D
		845		0.0	—	—	—	—		multi-gas meter malfunction SVE-2 BZ
		846		0.0	—	—	—	—		O
		915		0.0	—	—	—	—		BZ
		916		0.0	—	—	—	—		D
		1004		0.0	—	—	—	—		SVE-1 BZ
		1005		0.0	—	—	—	—		D
		1020		0.0	—	—	—	—		BZ
		1021		0.0	—	—	—	—		D
		1106		0.0	—	—	—	—		P-7 BZ
		1101		0.0	—	—	—	—		D
		1130		0.0	—	—	—	—		BZ
		1131		0.0	—	—	—	—		D

U = upwind
BZ = Breathing Zone
D = Downwind

REAL TIME AIR MONITORING LOG

Project Name: Urbana LF - SVE Well Installation DAY 2

Project Location: Urbana, NY – Hot Spot #5, Upper Terrace

Project Number: 0001-001-100

Date	Analyst	Time	Instrument (Mfg./Model/Serial No.)	Concentration (Units) PID (ppm)	LEL (%)	H_2S (ppm)	O2 (%)	CO (ppm)	Other	Location/Activity/Comments
										Drilling
6/14/01	BCH	1235	Photovac PID 2020 / Eastech GT402 multi gas	0.0	—	—	—	—		multi-gas meter malfunction P-6 BZ
		1236		0.0	—	—	—	—		D
		1300		0.0	—	—	—	—		BZ
		1301		0.0	—	—	—	—		D
		1336		0.0	0	0	20.9	0		P-5 BZ
		1337		0.0	0	0	20.9	0		D
		1400		0.0	0	0	20.9	0		BZ
		1401		0.0	0	0	20.9	0		D
		1435		220	0	0	20.9	0		P-8 BZ max reading - not sustained
		1436		0.0	0	0	20.9	0		D
		1450		20.7	0	0	20.9	0		BZ max reading - not sustained
		1451		0.0	0	0	20.9	0		D
		1515		0.0	0	0	21.0	0		BZ
		1516		0.0	0	0	21.0	0		D
		1540		0.0	0	0	20.9	0		P-9 BZ
		1541		0.0	0	0	20.9	0		D
		1600		0.0	0	0	20.9	0		BZ
		1601		0.0	0	0	20.9	0		D
										BZ = Breathing Zone
										D = Downwind

REAL TIME AIR MONITORING LOG

Project Name: Urbana LF - SVE Well Installation DAY 3

Project Location: Urbana, NY HotSpot #5, Upper Terrace

Project Number: 6001-001-000

Date	Analyst	Time	Instrument (Mfg./Model/Serial No.)	Concentration (Units) PID (ppm)	LEL (%)	H_2S (ppm)	O2 (%)	CO (ppm)	Other	Location/Activity/Comments Drilling
6/15/01	BCH	—	Photovac 2020 PID / GasTech GT 402 multi-gas	—	—	—	—	—		P-10 BZ Monitoring not conducted *
		—		—	—	—	—	—		D
		—		—	—	—	—	—		BZ
		—		—	—	—	—	—		D
		743		0.0	0	0	20.7	0		P-11 BZ Very humid, hazy, hot
		744		0.0	0	0	20.6	0		D
		802		0.0	0	0	20.5	0		BZ
		803		0.0	0	0	20.4	0		D
		838		0.0	0	0	20.4	0		P-12 BZ
		839		0.0	0	0	20.4	0		D
		905		0.0	0	0	19.8	0		BZ
		906		0.0	0	0	19.8	0		D

BZ = Breathing Zone
D = Downwind
* = Drillers started @ 6Am prior to TK arrival @ 7am. Confusion about start time.

Appendix K

Construction Photographs



Clearing Mature Trees with Excavator



Relocating & Consolidating Waste on the West Bank of the Landfill



Subgrade Preparation



Placement and Compaction of Barrier Material on the Upper Terrace



Placement and Compaction of Barrier Material on West Bank



Placement and Compaction of Barrier Material on West Bank



Adding Water to Barrier Material During Placement and Compaction



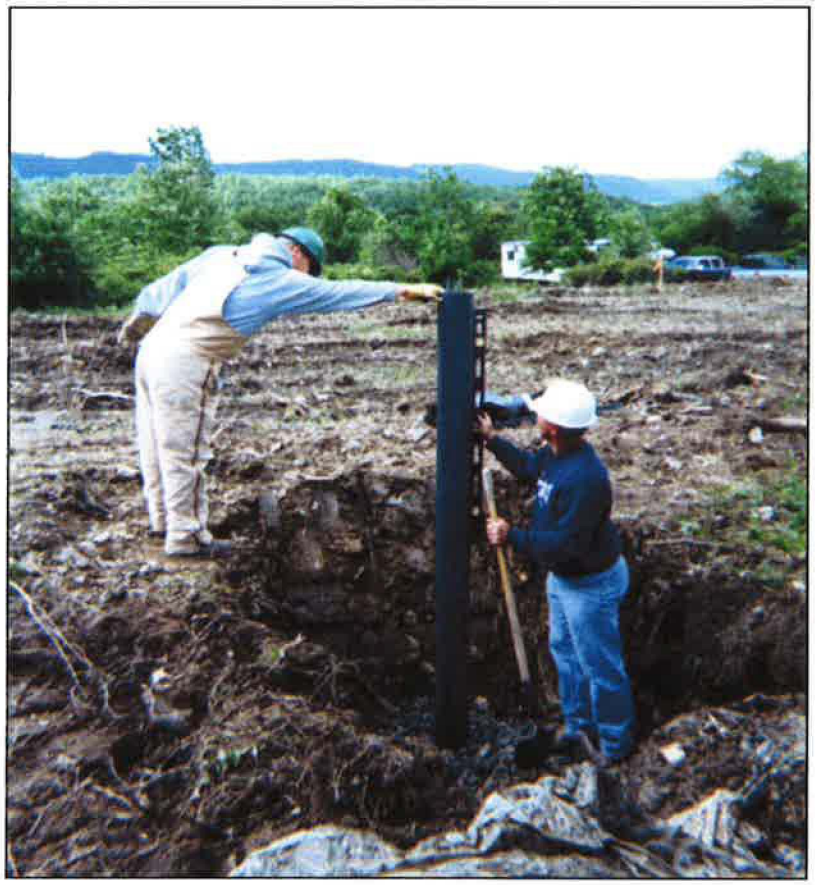
Placement of Topsoil on West Bank of Landfill



Raking Topsoil with York Rake



Spreading Straw Mulch on Upper Terrace



Typical Gas Vent Installation



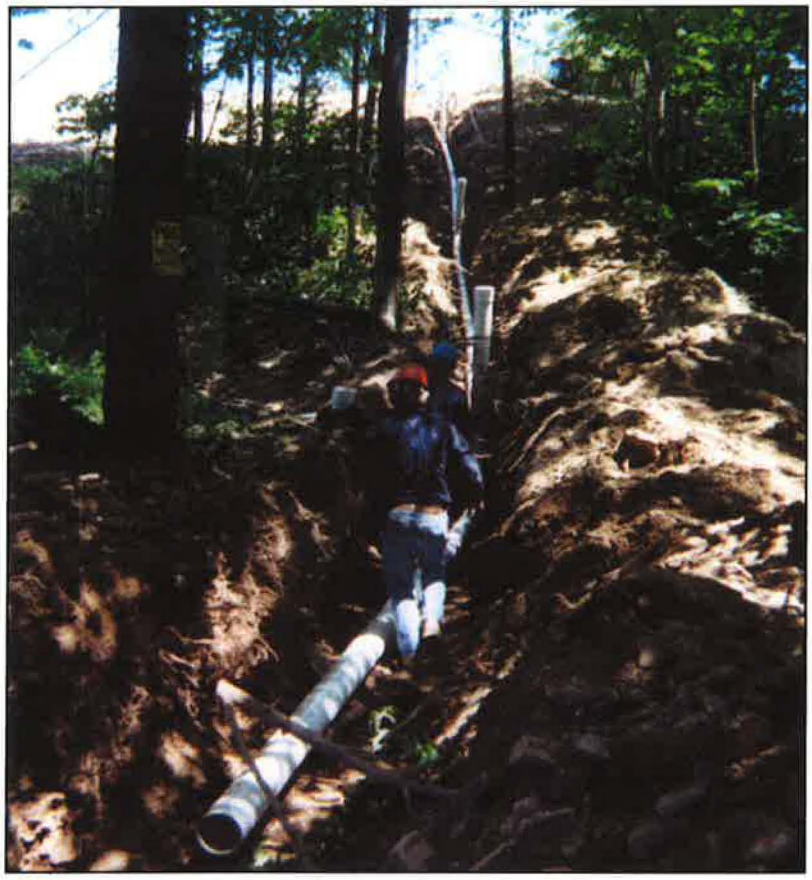
Groundwater Treatment System Building



SVE Well and Piezometer Installation on Upper Terrace



Force Main and Electrical Conduit Installation



Treated Groundwater Discharge Line Installation



Treated Groundwater Leaching Chamber Installation



Stream Relocation Work



Completed Re-routed Stream



Stream Relocation Work In Southern Area



Stream Relocation In Change Order Area

Appendix L

Problem Identification & Corrective Measures Reports

PROBLEM IDENTIFICATION REPORT (PIR#1)

PROJECT URBANA LANDFILL

DATE 5-22-91

JOB NO. 0001-001-100

WEATHER:

CONTRACTOR SLC

Temp:

SUBJECT CONTOUR VARIATION

Wind:

Precip: RAIN IN a.m.

Problem Description: WHILE PLACING GRADE STAKES ON UPPER TERRACE, IT WAS DETERMINED THAT THE EXISTING TOPOGRAPHY DID NOT COINCIDE WITH THE CONTRACT DRAWINGS, ~~AND THE~~ SURVEY, WHICH CUTS & FILLS WERE BASED. ~~LARGE TRU~~ LONG, TRENCH-LIKE VOIDS WERE DISCOVERED.

Problem Location (reference test location, sketch on back of form as appropriate):

UPPER TERRACE

Probable Causes: SETTLEMENT OF WASTE AND/OR REMOVAL OF VEGETATION

Suggested Corrective Measures: ADD ADDITIONAL BARRIER MATERIAL TO ACHIEVE FINAL GRADES

Approvals (initial):

CQA Engineer: _____

Project Manager: _____

QA Inspector Signature: E. Murphy

CORRECTIVE MEASURES REPORT

PROJECT URBANA LANDFILL

DATE 6/6/17

JOB NO. 0001-001-100

WEATHER: SUNNY

CONTRACTOR SLC

Temp: 60's

SUBJECT UPPER TERRACE TOPOGRAPHY/CONTOUR VARIATION

Wind:

Precip:

CORRECTIVE MEASURES UNDERTAKEN (Reference Problem Identification Report No.): SEE PIR #1

ADDITIONAL BARRIER MATERIAL PLACED IN TRENCH VOIDS ON UPPER TERRACE TO ACHIEVE MINIMUM SPECIFIED COVER THICKNESS AND POSITIVE SURFACE WATER DRAINAGE

RETESTING LOCATION: NOT APPLICABLE

SUGGESTED METHOD OF MINIMIZING RE-OCCURRENCE: NOT APPLICABLE

APPROVALS (initial):

CQA ENGINEER:

PROJECT MANAGER:

QA INSPECTOR SIGNATURE:

Benchmark Environmental Engineering & Science, PLLC

PROBLEM IDENTIFICATION REPORT (PIR #2)

PROJECT URBANA LANDFILL

DATE 5-23-07

JOB NO. 0001-007-100

WEATHER: SUNNY

CONTRACTOR SLC

Temp:

SUBJECT ADDITIONAL WASTE

Wind:

Precip:

Problem Description:

ADDITIONAL WASTE FOUND ALONG BACKSIDE (WESTERN) OF LANDFILL RUNNING APPROX 200' ALONG UPPER TERRACE DOWN TO UNNAMED CREEK. NO ACTION PLANNED FOR THIS AREA IN ORIGINAL DESIGN.

Problem Location (reference test location, sketch on back of form as appropriate):

Probable Causes:

WASTE BULLDOZED OFF OF UPPER TERRACE OVER SLOPE DURING WORKING LIFE OF LANDFILL.

Suggested Corrective Measures:

GRADE WASTE DOWN TO BOTTOM & RELOCATE STREAM TO ACHIEVE 30' OF SEPARATION AND PLACE CLAY OVER TOP OF WASTE

OR

BRING WASTE UP TO OTHER PORTIONS AND FILL INTO SUBGRADE OF LANDFILL

Approvals (initial):

CQA Engineer:

Project Manager:

QA Inspector Signature: M. Mosley

CORRECTIVE MEASURES REPORT

PROJECT URBANA LANDFILL **DATE** 7-9-07

JOB NO. C001-001-100 **WEATHER:** SUNNY

CONTRACTOR SLC **Temp:** 80's

SUBJECT ADDITIONAL WASTE **Wind:**

Precip: NONE

CORRECTIVE MEASURES UNDERTAKEN (Reference Problem Identification Report No.): SEE (PIR #2)

ADDITIONAL WASTE ALONG BACKSIDE LANDFILL REGRADED FROM THE UPPER TERRACE DOWN AND PREPARED FOR COVER SOILS. UNNAMED CREEK IN THIS AREA REROUTED TO ACHIEVE 30' FEET OF SEPARATION. REROUTING PERFORMED PRIOR TO GRADING OF WASTE AND IN ACCORDANCE WITH CONTRACT DRAWINGS. ADDITIONAL COVER ~~MATERIAL~~ IN THIS AREA CONSISTS OF 12" COMPACTED CLAY AND 6" OF TOPSOIL. GAS VENT PLACED IN APPROXIMATE CENTER OF THIS AREA.

RETESTING LOCATION:

SUGGESTED METHOD OF MINIMIZING RE-OCCURRENCE: NOT APPLICABLE

APPROVALS (initial):

CQA ENGINEER:

PROJECT MANAGER:

QA INSPECTOR SIGNATURE: F. Mugly

Benchmark Environmental Engineering & Science, PLLC

PROBLEM IDENTIFICATION REPORT (PIR #3)

PROJECT URBANA LANDFILL

JOB NO. 0001-001-100

CONTRACTOR SLC

SUBJECT FAILED SHELBY TUBE

DATE 6-20-07

WEATHER: SUNNY

Temp: 80's

Wind: _____

Precip: NONE

Problem Description:

FAILED SHELBY TUBE : A4, LIFTS 2 & 3

Problem Location (reference test location, sketch on back of form as appropriate):

SEE ATTACHED SKETCH

Probable Causes: INADEQUATE MOISTURE IN CLAY WHEN PLACED

Suggested Corrective Measures: REWORK LIFTS COVERING APPROXIMATELY 100' x 150' AREA WITH WATER & ADDITIONAL COMPACTION

ALSO, PLACE ADDITIONAL MATERIAL AS NECESSARY. IT WAS FOUND THAT SOME AREAS DID NOT HAVE A FULL 18" OF CLAY ONCE THE 100' x 150' AREA WAS RAKED DOWN 10-12". TAKE A SHELBY TUBE SAMPLE FROM EACH REWORKED LIFT.

Approvals (initial):

CQA Engineer: _____

Project Manager: _____

QA Inspector Signature: A. Murphy

CORRECTIVE MEASURES REPORT

PROJECT URBANA LANDFILL

DATE 6/26/07

JOB NO. 0001-021-100

WEATHER: SUNNY

CONTRACTOR SLC

Temp: 80's

SUBJECT FAILED SHELBY TUBE

Wind:

Precip: NONE

CORRECTIVE MEASURES UNDERTAKEN (Reference Problem Identification Report No.): (SEE PIR #3)
REWORK CLAY BY SCARIFYING AND ADDING WATER IN AN APPROXIMATELY 100' X 150' AREA ON SOUTHWEST SLOPE. ADD ADDITIONAL CLAY TO ENSURE MINIMUM 18" THICKNESS. ADDITIONAL TROXLER TESTS AND SHELBY TUBES TAKEN TO VERIFY QUALITY.

RETESTING LOCATION:

SUGGESTED METHOD OF MINIMIZING RE-OCCURRENCE: ENSURE PROPER MOISTURE IN CLAY DURING PLACEMENT AND COMPACTION

APPROVALS (initial):

CQA ENGINEER:

PROJECT MANAGER:

QA INSPECTOR SIGNATURE: S. Murphy

Benchmark Environmental Engineering & Science, PLLC

PROBLEM IDENTIFICATION REPORT (PIR #4)

PROJECT URBANA LANDFILL **DATE** 6-25-07

JOB NO. 0001-001-100 **WEATHER:** SUNNY, 80's

CONTRACTOR S2C **Temp:**

SUBJECT VANDALISM / TRESPASSING **Wind:**

Precip:

Problem Description:

VANDALISM OCCURRED ON THE UPPER TERRACE, REPORTEDLY FRIDAY NIGHT, 6-22-07. 2 GAS VENTS, 1 SVE WELL, AND 1 PIEZOMETER WERE DAMAGED BY BEING RUN OVER WITH A BULLDOZER

Problem Location (reference test location, sketch on back of form as appropriate):

Probable Causes:

Suggested Corrective Measures:

REPAIR GAS VENTS WITH 8", SCHEDULE 80 COLLAR.
SVE WELL & POSSIBLY PIEZOMETER ARE COMPLETELY BACKFILLED. (PIEZOMETER STUB CANNOT BE LOCATED) SVE WELL & PIEZOMETER WILL HAVE TO BE REDRILLED.

Approvals (initial):

CQA Engineer: _____

Project Manager: _____

QA Inspector Signature: M. Murphy

CORRECTIVE MEASURES REPORT

PROJECT URBANA LANDFILL **DATE** 7-3-07

JOB NO. 0001-001-100 **WEATHER:** SUNNY

CONTRACTOR SLC **Temp:** 70's

SUBJECT VANDALISM **Wind:**

Precip: NONE

CORRECTIVE MEASURES UNDERTAKEN (Reference Problem Identification Report No.): (SEE PIR #4)

~~GAS~~ DAMAGED GAS VENTS EXCAVATED AND REPLACED WITH NEW IDENTICAL VENTS, IN SAME LOCATION AS DAMAGED VENTS. EXCAVATION BACKFILLED WITH STONE. DAMAGED SVE WELL & PIEZOMETER LOCATED AND BACKFILLED WITH BENTONITE GROUT. SVE WELL & PIEZOMETER WILL BE REDRILLED AT A LATER DATE.

RETESTING LOCATION: NOT APPLICABLE.

SUGGESTED METHOD OF MINIMIZING RE-OCCURRENCE: INCREASED SITE SECURITY.

APPROVALS (initial):

CQA ENGINEER: _____

PROJECT MANAGER: _____

QA INSPECTOR SIGNATURE: T. Murphy

Benchmark Environmental Engineering & Science, PLLC

PROBLEM IDENTIFICATION REPORT (PIR #5)

PROJECT URBANA LANDFILL

DATE 6-26-07

JOB NO. 0001-001-100

WEATHER: SUNNY

CONTRACTOR SLC

Temp: 80's

SUBJECT FAILED SHELBY TUBE

Wind: _____

Precip: _____

Problem Description: FAILED SHELBY TUBE @ AREA 5, LIFT 1

Problem Location (reference test location, sketch on back of form as appropriate):

Probable Causes: INADEQUATE MOISTURE IN CLAY DURING PLACEMENT

Suggested Corrective Measures: REWORK LIFT BY SCARIFYING AND WATERING CLAY (APPROX. 100' X 150' AREA ON WEST SLOPE) TAKE ADDITIONAL SHELBY TUBE TO VERIFY ACCEPTABLE.

Approvals (initial):

CQA Engineer: _____

Project Manager: _____

QA Inspector Signature: T. Murphy

CORRECTIVE MEASURES REPORT

PROJECT URBANA LANDFILL

DATE 6/27/07

JOB NO. 0001-001-100

WEATHER: SUNNY

CONTRACTOR SLC

Temp: 80's

SUBJECT FAILED SHELBY TUBE

Wind:

Precip: NONE

CORRECTIVE MEASURES UNDERTAKEN (Reference Problem Identification Report No.): SEE PIR #5.

REWORKED LIFT WHICH FAILED SHELBY TUBE HAD ORIGINATED BY SCARIFYING AND ADDING WATER AND RECOMPACTING. APPROXIMATELY 100' X 150' AREA. ADDITIONAL TROXLER TESTS TAKEN AND AN ADDITIONAL SHELBY TUBE SAMPLE COLLECTED TO ENSURE ACCEPTABILITY OF WORK.

RETESTING LOCATION:

SUGGESTED METHOD OF MINIMIZING RE-OCCURRENCE: ENSURE ADEQUATE MOISTURE OF CLAY DURING PLACEMENT AND COMPACTION.

APPROVALS (initial):

CQA ENGINEER:

PROJECT MANAGER:

QA INSPECTOR SIGNATURE: D. Murphy

Benchmark Environmental Engineering & Science, PLLC

Appendix M

Record Drawings
(Provided under separate cover; index provided herein)

RECORD DRAWINGS SHEET INDEX

SHEET NO.	DESCRIPTION
G-1	Pre-construction Site Plan
G-2	Cover System Subgrade Layer
G-3	Cover System Clay Layer
G-4	Miscellaneous Details
M-1	SVE Collection System Plan & Details
M-2	Groundwater Treatment System Building Plans & Elevations
M-3	Groundwater Treatment System Process Piping Plan, Sections, & Details
M-4	Groundwater Pump Installation Details
E-1	Electrical Legend, Plans, & Details
E-2	Electrical Diagrams & Schematics
E-3	Electrical Diagrams & Schematics
E-4	Electrical Schematics & Details
E-5	Electrical Schedules