

Guidance for Waste-fill Management During Site Development on the Former Emerson Street Landfill

Location:

Former Emerson Street Landfill
Lexington Ave
Rochester, New York

Prepared For:

City of Rochester
Division of Environmental Quality
Rochester, New York 14614

LaBella Project No. 210173

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Table of Contents

	Page
1.0 Introduction.....	1
1.1 Background.....	1
1.2 Objective and NYSDEC Part 360.....	4
2.0 Supporting Analytical Data/Site Characterization.....	4
3.0 Development and Pre-Excavation Planning	9
4.0 Pre-Construction Sampling.....	9
4.1 Investigation and Sampling.....	10
4.2 Sample Analysis	11
5.0 Excavation Management.....	12
5.1 Management Plan	12
5.2 Development Considerations.....	13
5.3 Geotechnical Considerations	14
5.4 Screening and Sampling Procedures for Excavated Soil and Fill.....	14
5.5 Hazardous Waste Characterization.....	15
5.6 Non-FESL Related Areas of Concern.....	16
5.7 Classification and Handling of Excavated Soil and Fill	16
6.0 Disturbed Materials Quantities	18
7.0 Environmental Monitoring.....	18
7.1 Environmental Monitor Duties	18
7.2 Responsibilities of Contactor.....	19
8.0 Health and Safety Plan.....	19
9.0 Summary and Limitations.....	21
10.0 Reporting	21
11.0 Contact Information.....	21

Figures

Figure 1 – Site location within FESL boundary

Figure 2 – FESL Parcels

Figure 3 – Extent of Fill Material by Time Period

Figure 4 – FESL Radioactive Study Area

Figure 5 – Historic Test Locations with Regulated Solid Waste Isopleths

Figure 6 – Chlorinated VOC Plume Concentration Contours

Figure 7 – Chlorinated VOC Soil Vapor Plume

Appendices

Appendix 1 – List of FESL Documents

Appendix 2 – FESL Boring Logs

Appendix 3 – 2010 Groundwater Table FESL Boring Logs

Appendix 4 – Generic Monitoring Plans

1.0 Introduction

This document provides guidance for property owners, contractors, developers or other parties who intend to disturb sub-surface materials at properties within the footprint of the Former Emerson Street Landfill (FESL). The FESL parcels consist of approximately 255-acres of land in the City of Rochester, Monroe County, New York (City) and are depicted on Figure 1. This guidance document was developed by LaBella Associates, P.C. (LaBella), on behalf of the City of Rochester's Division of Environmental Quality (DEQ), to update the document titled "Guidance for Waste-fill Management During Site Development" dated July 1995 by Haley and Aldrich (H&A) of New York and Revised July 1997 by the City. These updates reflect information obtained since 1997 on the FESL (historic and subsurface data) and changes in the Regulatory Guidance (most notably NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation).

As an institutional control (IC), the City has "flagged" each property located on the FESL on the City's computerized Building Information System (BIS) with a red flag that notifies City staff and the permit applicant that the flagged parcel requires additional environmental review by City DEQ. This requires that environmental conditions are evaluated and addressed prior to issuing new permits or site plan approvals for any work that has the potential to disturb FESL waste fill. This process ensures that the proposed permit activities do not result in disturbances to the existing monitoring wells or other environmental monitoring points, or disturb existing soil vapor mitigation systems. In addition, the flagging system allows the City to work with the permit applicant to develop plans to properly manage any regulated waste or waste-fill materials that may be generated as a result of the permit activities. This flagging process also allows the City to require:

- 1) Referral of the proposed permit or site plan to the NYSDEC Region 8 for review, comments and approvals;
- 2) Implementation of a site-specific health and safety plan and/or environmental management plan for the specific proposed scope of work;
- 3) Installation of new engineering controls such as soil vapor intrusion mitigation systems, and
- 4) Modifications to environmental monitoring points or existing soil vapor intrusion mitigation systems.

1.1 Background

1.1.1 History Overview

The FESL was operated by the City from about the early 1940's to 1971 as a landfill. The landfill was used to dispose of ash derived from the incineration of municipal waste at the City's incinerators. Although a majority of the material placed is ash fill, construction and demolition debris was also placed into the landfill in some areas. In addition, partially incinerated materials and direct burial were documented in the later years of operation as noted below. Landfilling began south of Emerson Street and gradually expanded northward and eastward to include areas between Emerson Street and Lexington Avenue and east of Colfax Street and south of Emerson Street and generally west of McCrackanville Street. Fires due to incomplete incineration and open burning of refuse reportedly occurred in the late 1960s and early 1970s due to operational problems with the incinerators. Fill during this time frame was reportedly being placed north of

Emerson Street. In May of 1971 the City's incinerators were shut down; however un-incinerated municipal refuse continued to be placed north of Emerson Street until August of 1971. In August 1971, refuse disposal was ceased at FESL and disposal shifted to a different county landfill. In 1971 the landfill was officially closed and a contract for the closure of the eastern half of the landfill specified two feet of cover material (preferred to be a sandy loam) to be placed and compacted to 30% in one foot lifts. In September 1971, a contract was awarded for the closure of the western portion of the landfill. Since closure, portions of the Site have been developed by various private parties. As of the date of this report, the landfill consists of forty-five (45) individual parcels of land, which are shown on Figure 2. Figure 3 provides the approximate FESL fill limits associated with the time frames of deposition.

A portion of the FESL, (four parcels), are listed as a NYSDEC Class 3 Inactive Hazardous Waste Disposal Site (IHWDS), Site #828023, while the remaining parcels within the FESL have been de-listed. The four (4) parcels listed as IHWDS are identified on Figure 2. A "3" classification indicates a site "at which hazardous waste does not presently constitute a threat to the environment".

1.1.2 FESL Documented Fill Materials

The general types of wastes encountered during investigations, remediation and development projects over the past 35 years at the FESL site include the following:

- Municipal Incinerator Ash – Generally consisting of ash, cinders, charred refuse, glass and metal slag. Most ash observed during site investigations appears to be fly ash and bottom ash (clinker) from the municipal solid waste incinerators.
- Construction and Demolition Debris – Construction and demolition debris observed in past investigations generally fits the definition of construction demolition debris contained in NYSDEC's Part 360 and is considered regulated solid waste. Construction demolition debris fill is common in areas adjacent to current and former roadways onsite and particularly in the lobe of fill south of Emerson Street and east of Colfax Street.
- Soil and Municipal Refuse - This regulated solid waste generally consists of silty sand cover material and Regulated Solid Waste (un-incinerated municipal refuse).

It should be noted that one discrete location of low-activity radioactive waste was identified on the FESL. This material generally consisted of a sludge-like waste material associated with glass lenses. The sludge was found to contain low levels of radioactive thorium. This material was encountered in a relatively small area in the southwest portion of the FESL and was not associated with incinerator ash and refuse fills. The material appears to have been associated with surficial dumping which occurred after the FESL closure. Figure 4 depicts a radiological survey performed by Recra Environmental, Inc in 1988, which identified the areas of radioactive waste. This material was removed by Severson Environmental Services on behalf of the City (see Figure 4). Radioactive waste has not been identified elsewhere on the FESL.

The majority of the existing landfill has a soil cover. Cover ranges in thickness from 0 ft. up to approximately 6 ft. Cover materials generally consist of topsoil with grass, gravel, asphalt, or glacial till-derived sandy silt.

1.1.3 Summary of Significant Previous Environmental Reports

Numerous subsurface geotechnical and environmental investigations have been conducted at the FESL since its closure in 1971 and as recently as 2013. A list of reports available currently is included as Appendix 1.

Reports include document reviews, groundwater evaluations and sub-surface investigations and have been performed to characterize the type, nature, extent, and impact resulting from waste contained in the FESL. Figure 5 depicts the cumulative subsurface investigation points within the FESL as well as a model interpretation of fill thickness. It should be noted that additional private testing has also been completed but this information is not included herein. The approximate limits of FESL fill materials based on the previous studies and aerial photograph interpretations are shown on Figure 3. Studies completed after 1990 were completed solely by the City. A summary of the information obtained during these studies is presented in Section 2 on a location basis; below is a brief summary of the significant reports:

- A Soil Vapor Intrusion Assessment Report (SVI Report) by LaBella on behalf of the City dated June 2011. This report includes a comprehensive review of previous testing completed at the FESL. Although the intent of this report was to evaluate SVI, a detailed review of landfill history was completed for a comprehensive analysis. The landfill review included a review of historic documents (maps, reports, letters, memos, etc.), investigation data, landfilling operations (filling locations, dates, material, etc.) and development projects. This SVI Report work also included advancing additional soil borings, installing monitoring wells and sampling soil and groundwater at the FESL.
- Former Emerson Street Landfill Remedial Investigation Report by LaBella/Geomatrix dated April 2001 on behalf of the City – This report includes a remedial investigation study of three (3) specific parcels on the FESL with the purpose of characterizing environmental conditions, assessing the potential human health risks and evaluating remedial alternatives. Field investigations performed during this report included surface soil samples, a subsurface vapor assessment and a subsurface soil and water assessment. Analytical results confirmed and further delineated the presence of chlorinated volatile organic compounds (CVOCs) in the IHWDS portion of the landfill.

Specifically, the groundwater CVOC plume (P-1 Plume) was partially delineated during work conducted for this report. The P-1 Plume may be attributable to the FESL or potentially due to post landfilling operations. The plume is contained within the FESL and predominantly located at the 1655 Lexington Avenue parcel. The P-1 Plume area is generally defined and significantly influenced by the storm sewer system that runs through McCrackanville Street, west down Emerson Street and then south parallel to (but west of) ‘W’ Street and eventually to an outfall into the Barge Canal. Analytical results have indicated a significant reduction in CVOC concentrations beyond the location of the storm sewer on both the southerly and easterly directions.

- Former Emerson Street Landfill Modified Remedial Investigation by H&A of New York dated January 1994 – Work associated with this report included the provision of historic data to the NYSDEC, a request to delist specific properties from the NYSDEC IHWDS and an extensive field investigation. The field investigation work included the advancement of soil borings, monitoring wells, landfill gas sampling, gas emission monitoring in and around buildings/structures, sampling of stormwater, sampling groundwater and performing hydrogeological testing. In support of the field investigation activities; a photogrammetric survey, fill history evaluation, and an evaluation of existing utilities and cover material were also conducted.

The above reports provide the most information on subsurface conditions at the FESL; however, additional reports exist (refer to Appendix 1) and private investigations may also exist for individual parties. The inferred extent of the CVOC plume discussed above is shown on Figure 6.

1.2 Objective and NYSDEC Part 360

Due to the environmental history of the property, any waste-fill generated during site disturbances requires special consideration and management. The NYSDEC regulations regarding management of solid waste can be found in 6 NYCRR Part 360. Part 360 contains a provision that allows for non-hazardous solid waste to be properly managed and replaced within the confines of an inactive solid waste landfill with NYSDEC approval (see Part 360-1.7(b)(9)). Proper management requires that care be taken in planning, monitoring and testing excavated waste-fill material to confirm non-hazardous nature of the excavated materials and allow proper replacement and covering onsite (within the confines of the landfill).

The objective of this document is to provide guidance on any subsurface management of soil, fill materials, and water that will be disturbed during activities at the FESL.

2.0 Supporting Analytical Data/Site Characterization

This Plan utilizes existing analytical data for the FESL in order to develop management practices for fill and soil encountered during excavations within the FESL boundaries. As noted above, fill materials at the FESL have been studied through extensive subsurface evaluations which have included: soil borings, test pits and groundwater monitoring wells. Appendix 2 contains a summary table of all the sub-surface investigations conducted on the FESL as well as the investigation logs. Specific data relating to the Site is summarized below:

FESL Fill Materials and Soil Gas:

Previous investigations have characterized the landfill based on numerous soil borings, test pits and groundwater monitoring wells. The Soil Vapor Intrusion Assessment Report prepared by LaBella on behalf of the City, June 2011 included a comprehensive review of all the subsurface investigation work at the FESL. This review resulted in categorizing the FESL subsurface into four distinct quadrants, which are described below and are shown on Figure 3.

Quadrant A (North of Emerson Street, West of Colfax Street):

Quadrant A is characterized by the presence of both insufficiently incinerated highly putrescible waste, and illegally disposed chemical waste, resulting in the presence of anthropogenic methane gas due to the decomposition of putrescible materials, as well as CVOC contamination in soil vapor and groundwater. Methane flux was measured at levels ranging from 33 to 1,200 ug/ m²-min, and/ or soil gas methane concentrations were recorded above 5,000 parts per million (ppm). Modeled groundwater CVOC contamination contours are depicted on Figure 6. Soil vapor CVOC contours are depicted on Figure 7. The fill material in this area ranges in thickness from no fill material observed in the western portion of the quadrant to approximately 23-ft. thick in the central portion of the quadrant. Fill thickness contours are depicted on Figure 5. The cover thickness in this quadrant ranges from less than 1-ft. in the northeastern portion of the quadrant to greater than 3-ft. in the central portion of the quadrant. Underlying the cover material, the fill consists of putrescible waste (wood, paper, misc. refuse,), metal, plastic, rubber, brick, glass and some ash in the central and northern portions of the quadrant and predominantly ash in the southern portion of the quadrant in proximity to Emerson Street. These findings are consistent with the historic information reviewed. Some locations within this quadrant were noted to have fill material placed directly on top of bedrock, which would indicate portions of the quadrant were excavated prior to filling. Some testing

locations indicated apparent native material beneath the fill materials and overlying the bedrock. This native material included in some locations silt and peat deposits which would be consistent with a marsh/swamp area. Locations without fill materials are generally located in the western portion of the quadrant and consist of native silts and sands.

This quadrant was generally the last to be filled, Figure 3, and as such the fill material varies from fully combusted ash material in the southeastern corner to partially incinerated or direct burial of un-incinerated or putrescible solid waste in the central portions. The western portion of this quadrant was generally not filled and the 500 Lee Road parcel underwent a fill relocation project during construction; as such, fill materials are not located beneath the main building or power house building. Additionally, the 1770 Emerson Street parcel underwent a fill relocation project during construction of a new building from 2010 to 2011; as such, fill material is not located beneath this new structure. The central portion of Quadrant A contains the CVOC plume depicted in Figure 6 and designated as the “P-1 plume”. This plume is likely due to either 1) direct disposal of waste solvents sometime around the closing of the landfill (1971); 2) post-landfill dumping; or 3) fire training operations by GM, at which time the property was owned by the State of New York. Additionally, the presence of methane due to the FESL was recorded on field meter at concentrations within the explosive range; however, laboratory analysis has indicated that the field meters overestimated the methane concentrations (refer to Section 4.1 for more information of the limitations of methane gas meters). According to analytical laboratory results, the methane concentrations were just below the lower explosive limit (LEL). In addition to the methane gas, CVOCs have been documented in soil gas in the central portion of this quadrant.

Quadrant B (North of Emerson Street, East of Colfax Street):

Quadrant B was active as a landfill during the periods of high and low incinerator efficiency, resulting in areas consisting of well incinerated ash fill material, putrescible waste, and methane. Investigations in the northern portion of Quadrant B, within the Edison Tech parcel, revealed only sparse amounts of un-incinerated material. Methane flux readings in this quadrant ranged from 15 to 140 ug/ m²-min. An apparent discrete CVOC plume is also present in this quadrant (i.e., separate from the P-1 plume in Quadrant A); see Figure 6. This plume appears limited in extent, generally within the 535 Colfax Street parcel and is believed to be related to post-landfill operations. CVOCs in soil gas were not extensively studied within this quadrant.

The impacted CVOCs in groundwater within the southeastern portion of this quadrant may be due to post-landfill operations. The City was not accepting liquid waste, at least for direct burial, beginning at least as early as July 1969. Incineration of solvents, even when incomplete, would likely provide complete combustion. Furthermore, this area was developed in 1985 as a metal fabrication facility which could have used chlorinated solvents. Concentrations of CVOCs in this area have been found to increase over time.

The fill material thickness in this area ranges from no fill material in the northeast portion of the quadrant to 22.5-feet thick in the western-central portion of the quadrant (Figure 5). The cover thickness in this quadrant ranged from less than 6-inches to up to 2-feet thick. Underlying the cover material, the fill consists of ash, putrescible waste (wood, paper, and misc. refuse), metal, plastic, rubber, brick, glass, etc. in the central and northern portions of the quadrant and predominantly ash with some putrescible waste in the southern portion of the quadrant. Fill material in some locations was noted to be directly on top of bedrock, while other locations indicated apparent native material between the fill and bedrock. Native organic materials (peat) were noted in several borings overlying the bedrock. In locations without fill materials (generally the western portion of the quadrant), the native material consisted of silts and sands.

This quadrant began to be filled sometime around 1960 and until 1970 (Figure 3). Based on a review of contract documents and a 1971 aerial photograph, it appears that a majority of this quadrant was covered and seeded in 1970. Few soil gas points have been installed in this quadrant, and thus methane in soil gas is not well characterized; however, the available data shows significantly lower concentrations in soil gas than in the central portion of Quadrant A. The fill materials in this quadrant consist of ash material in the southern portion and some partially incinerated or direct burial/ putrescible waste in the central -northern portions. The thickness of fill material ranges from no fill to greater than 20 feet in the western central portion of the quadrant. The 655 Colfax Street building (Edison Tech) contains a basement constructed directly on top of bedrock and thus a complete removal of fill material was completed for the northern and southern portions of the main building (see Site Specific Investigation for more information regarding 655 Colfax Street). Partial removal of fill material has also occurred at the 655 Colfax Street parcel. During construction, most of the site was excavated to bedrock and filled with reworked material including a mixture of clean fill and historic landfill material. Additionally, the 1560 Emerson Street building has undergone two additions, both of which received partial fill removals at that time.

Quadrant C (South of Emerson Street, West of Colfax Street):

Quadrant C was landfilled during the years of maximum incinerator efficiency, resulting in the lowest methane detections of the FESL quadrants.

Based on aerial photography it appears this quadrant began to be filled in the 1940s in the southeastern corner and expanded north and west until about 1961 when landfilling likely ceased in this quadrant. The fill materials generally consist of ash materials; however, some paper and wood were noted in select testing locations. Portions of this quadrant were also noted to have fill material placed directly on top of bedrock and in other locations to contain marsh deposits between the fill material and bedrock. Soil gas testing in this quadrant is limited; however, the testing completed did not indicate significant landfill gas flux readings. Four fill material removal actions have occurred in this quadrant during redevelopment work; specifically, all fill material beneath the 55 Vanguard Parkway building was removed during construction and all fill material encountered on the 105 Vanguard Parkway was removed during site development. Partial removals of fill occurred at 1667 Emerson Street during a parking lot expansion project and at 1555 Emerson Street during a development project. Additionally, a small removal was conducted to address radiological contamination; the general location of the fill removed and the extent of a 1988 radiological survey are included on Figure 4. Fill thickness and areas of partial removal are included on Figure 5.

Methane flux readings in Quadrant C were nearly identical to the control sample, at 33 to 35 ug/ m²-min; however, only two soil gas sampling locations were located within this quadrant. In addition, the presence of organic, rich, marsh-derived soils at depths in this quadrant could also be a natural source of methane.

CVOCs are present in groundwater in the north-central portion of Quadrant C, immediately south of Emerson Street to a limited extent and east of Vanguard Parkway (Figure 6). It is possible that this plume is related to the P-1 plume in Quadrant A, from an entirely different source, or a combination of both. The groundwater contamination present along Emerson Street likely stems from the P-1 plume, while the shallow soil contamination further to the south may be derived from its own source.

The fill material in this area ranges from no fill material in the western portion of the quadrant to 11.2-feet thick in the central and north-central portion of the quadrant. The cover thickness in this quadrant ranged from no cover to up to 3-feet thick. Underlying the cover material, the fill consists predominantly of ash material with some slag and cinders. It should be noted that some borings

indicated lesser (trace) amounts of paper or wood; however, these were not the predominant material. Some locations within this quadrant were noted to contain fill material directly overlying bedrock, while others contained native materials between the fill and bedrock. The native materials included apparent marsh deposits (clayey silt with organics) in some locations up to 5-feet thick.

Quadrant D (South of Emerson Street, East of Colfax Street):

Quadrant D received material from the Smith Street incinerator prior to the 1954 construction of the on-site incinerator (Figure 3). Native marsh soils are present in this quadrant and likely account for methane flux readings of up to 190 ug/ m²-min in the central portion of the quadrant. A small plume of CVOCs was detected along Colfax Street (Figure 6), but this plume has been determined to have been caused by industrial site operations subsequent to the closure and re-development of the FESL.

The fill material in this area ranges from no fill material in the eastern and portions of the northern section of the quadrant to 11.5-feet thick in the central portion of the quadrant (Figure 5). The cover thickness in this quadrant ranged from approximately 6-inches to 3-feet thick. Underlying the cover material, the fill consists predominantly of ash with some cinders, slag and glass noted. In addition, some wood and charred paper was noted in select borings. Some locations within this quadrant were noted to have fill material overlying bedrock, while other locations noted apparent native material between the fill material and bedrock. The native material in some locations included apparent marsh deposits (clayey silt with organics) in some locations up to 6.8-feet thick.

Groundwater:

Groundwater has been investigated at the FESL site beginning in approximately 1988. Previous investigations have documented groundwater conditions across most of the site, on both a site-wide and parcel-specific scale. These investigations have resulted in the installation and sampling of a total of 53 wells at the Site. This includes 45 shallow bedrock (or overburden/ bedrock interface) and 8 deep bedrock wells. During the subsequent years, several of the historic monitoring wells were damaged, lost or otherwise rendered unusable, some due to development and new construction. As part of a 2010 investigation, an inventory and assessment of all existing wells on the site was performed. The resulting inventory indicates that a total of 47 monitoring wells were still present on the site and in a serviceable condition.

The 2010 investigation also included the sampling of 29 of these monitoring wells and analysis for VOCs, using USEPA Method 8260B. Appendix 3 provides a summary of the 2010 groundwater analytical results. Twenty of the twenty nine recently-sampled wells contained VOCs at levels at or above the method detection limit (MDL); nine wells showed no detectable VOC presence. Of the twenty wells with VOCs detected, eleven did not contain VOCs at concentrations in excess of the NYSDEC's Part 703 Drinking Water Standards. The remaining nine wells contained one or more VOCs at a concentration that exceeded the standards. Seven of these nine wells exhibiting exceedances were located on or in close proximity to the IHWD site, and are related to the previously-identified VOC plume. The remaining two wells (GW-7R and GW-9) are located on Colfax Street and appear to represent sources of VOCs separate from the IHWD site.

The following is a summary of significant findings from these previous investigations:

- The groundwater flow system at the Site is comprised of two hydro-stratigraphic units, an Upper Water Bearing Zone (UWBZ) and Intermediate Water Bearing Zone (IWBZ). Both

zones are located in bedrock.

- Water levels typically reside in the rock but occasionally exist in the lower portions of the overburden/ fill.
- Groundwater in the UWBZ is influenced by large diameter storm sewers running north-south along the eastern edge of McCrackanville Street and east-west within Emerson Street. These storm sewers were reportedly installed in blasted bedrock. All storm sewer inverts appear to be below bedrock in McCrackanville and Emerson Streets. Invert elevations of these sewers correspond closely to groundwater elevations. The table below illustrates the approximate bedrock elevation, and groundwater elevation for select wells and the nearest invert elevation available from Monroe County mapping.

Well	Bedrock Elevation	Groundwater Elevation	Nearest Sewer Invert Elevation
GMX-MW-3	525.39'	519.86'	517.08' (90 feet Southeast)
GMX-MW-6S	524.26'	516.51'	515.93' (150 feet East)
LAB-106	531.16'	514.06'	514.33' (90 feet North/Northeast)

Note: All elevations are NGVD 29.

As shown in the table above, the bedrock elevations range between about 6 and 16 feet above the groundwater elevation and about 8 and 17 feet above the elevation of the sewer inverts. The groundwater levels range between about 2.8 feet above the sewer inverts to about 0.3 feet below the sewer invert. Although the invert elevations are 90-feet or more away from the wells, this indicates that the sewers in McCrackanville and Emerson Street are likely at least 6 feet below the top of bedrock and appear to extend deeper into rock down Emerson Street and the portions west of W Street. Additionally, the groundwater levels correlate closely with the invert elevations, which indicate that groundwater is influenced by the fracture network in the bedrock in close proximity to the storm sewers which provide a preferential pathway for groundwater and thus a flow zone.

- A CVOC plume in groundwater is located on the City-owned parcel at 1655 Lexington Avenue (Quadrant A), which comprises approximately 60% of the approximate 24 acre NYSDEC-listed IHWD Site. Given that total CVOCs in Monitoring Well P-1, located in the apparent source area of the plume, have historically been as high as approximately 54 ppm, dense non-aqueous phase liquid (DNAPL) may be present based upon the > 1% solubility for CVOCs per DER-10.
- The most recent sampling event (July 2010) showed a decrease in CVOC concentrations to 34,007 parts per billion (ppb), which is a decrease of 37 percent from the previous event. Relatively low levels (19.2 ppb) of petroleum-related VOCs (benzene, toluene, ethylbenzene and xylene, or BTEX) were also detected in the 2010 event.
- The CVOC plume extends generally toward the east and south from well P-1. Interference of the impacted groundwater by the storm sewers located along the east and south limits of the IHWDS appears to have limited the extent of the plume. Some extension of the plume has occurred to the south and east beyond the storm sewers in Emerson Street and McCrackanville Street; however, the extent is limited and CVOC concentrations were significantly lower in wells on the opposing side of these sewers (Figure 6).

- CVOCs at significantly lower concentrations than the IHWDS area described above have been identified in other areas of the FESL. These occurrences appear to be limited in lateral extent and may be the result of post-landfill site uses (Figure 6).

3.0 Development and Pre-Excavation Planning

Projects planned within the FESL boundaries should be evaluated to determine their location with respect to the location of fill material. If the proposed development is located outside of the footprint of the waste-fill area as shown on Figure 5, fill materials derived from FESL operations are unlikely to be encountered and; therefore, would not be subject to the guidance described in this document. However, proposed development locations located near the edge or within the footprint of the waste-fill area are subject to this guidance. In this case, a thorough review of previous investigations to evaluate information pertinent to the intended project location should be conducted. A list of previous investigations is presented in Appendix 1; additionally, all of the available boring logs from previous investigation are located in Appendix 2.

A geophysical survey, using ground penetrating radar, may also be used prior to invasive work to help identify subsurface features; however, due to the nature of historic fill material and the results of previous surveys it appears that geophysical surveys do not contribute much value to subsurface evaluations.

4.0 Pre-Construction Sampling

A site specific pre-construction investigation following NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, May 2010 guidelines (DER-10) is recommended to characterize the type of material that is expected to be excavated during construction activities. This type of investigation can fill site specific data gaps. Waste-fill materials may vary considerably from one location to the next over relatively short distances; as such, site specific investigations can provide valuable information and allow proper preparation. The overall objective of such characterization is to obtain, observe, and analyze samples that are representative of the waste-fill that will be excavated during construction. This section contains guidance on sampling methods, sample frequency, and laboratory analysis that may be used to characterize waste-fill.

Prior to initiating a pre-characterization sampling event, a plan for such work should be developed. The plan should include at a minimum the following:

- Summary of Development – Include details on areas of excavation, depths, volume of material to be excavated/ disturbed and anticipated volumes of spoils generated.
- Proposed Field Screening – This should include meters and personnel qualifications.
- Proposed Sampling – Include basis for locations and number of samples based on the above. Also include proposed laboratory.

4.1 Investigation and Sampling

Conventional subsurface exploration methods consisting of test pits, test borings, or other methods may be used for sampling waste-fill materials. Overall, the intent of such explorations is to view materials that may be excavated during construction for observable signs of contamination. Such signs typically include:

- Staining

- Odors
- Gases, fumes or vapors detected by monitoring instruments
- Observable Sheens

Field Meters

In addition to the observable signs indicated above the following instruments should be used for screening during the investigation:

- Photoionization detector instruments (PID) - These instruments operate by drawing a sample of ambient air or gas into a chamber where the gas is ionized using a light source of a specific energy (either 10.2 or 11.7 eV). The intensity of ionization energy is then measured and converted to a signal and a scale reading in parts-per-million (ppm) of total volatile organics concentration. It should be noted the ionization potentials of measureable constituents varies and the PID lamp utilized may need to be evaluated to ensure accurate results.
- Radiation Meter – These portable survey instruments can detect alpha, beta, and/or gamma radiation, and display the radiation level over a specified time period (e.g., counts per minute, milli-Roentgens per hour, etc.). A scintillation probe, radiation ion chamber, or GM probe is typically used to detect the radiation. Each meter detects different forms of ionizing radiation with different levels of efficiencies. Geiger Muellen (GM) meters are often used as survey meter to detect gamma radiation and would be an appropriate instrument to use at this site (i.e., Ludlum Meter).
- Landfill Gas Meter – the gas meter utilized should be capable of detecting the following; carbon dioxide, carbon monoxide, methane, and hydrogen sulfide. The capabilities of the gas meter utilized should be identified prior to usage. Interference of the gas meter may occur from the detection of non-target gases. Such interferences can significantly impact the meter readings and may be biased high for methane concentrations and not representative of the actual vapor concentrations. If warranted, analytical testing may be necessary to determine actual concentrations.

These instruments are generally available in the Rochester, NY area and can be rented from several sources. They should; however, only be operated by individuals trained and experienced in their use, limitations, and capabilities for data generation. The observations and sample collection described above should be documented on test pit logs, test boring logs, or other field notes by a qualified environmental professional.

Laboratory Testing

The investigation explorations may be used to gather samples that can be used for laboratory analysis waste characterization. Sampling should obtain a sufficient number of samples to be representative of the total mass of material that is expected to be excavated during construction. Sample collection should incorporate the results of onsite monitoring equipment. If laboratory analysis demonstrates that the samples are non-hazardous, then the material excavated can be managed within the FESL boundaries.

All samples should be collected in accordance with DER-10 unless the fill has been previously sampled. Per DER-10 Section 3.11, a minimum of four (4) samples per acre should be collected to characterize historic fill materials and if different types of historic fill material are encountered (e.g. ash, construction debris, etc.) each type of material must be sampled.

Soil samples should be sent under standard chain-of-custody procedures to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory (or appropriate certification at the time of work).

In addition to the general sampling indicated above, targeted investigation and sampling should be considered in order to generate samples that are representative of the overall waste-fill mass to be excavated. Specifically, regular sampling along foundation elements and utility cuts is recommended. The developer and/or design engineer is cautioned that test pit or test trench type explorations should be limited only to the depth and extent of anticipated construction excavation. Such excavation should not be advanced to depths greater than anticipated construction excavation depths. The appropriate geotechnical investigations should be conducted to ensure the sub-surface material can provide adequate support.

The designer/ developer is cautioned that information derived from grab and composite samples may be limited as a result of the method of sampling. Grab samples are representative of a single location and conditions at that location may vary from similar-appearing material located nearby the sample location. Composite samples tend to average conditions from the locations that the composite represents and; therefore, may result in laboratory analytical results that dilute elevated contaminant concentrations or obscure non-detect results. These limitations should be considered in developing a sample plan. Per DER-10 composite samples may not be used for those samples analyzed for volatile organic compounds. Additionally, composite samples are generally not acceptable in determining the nature of material (DER-10 Section 3.2(d)).

Variations to sampling methods dictated in DER-10 may be acceptable and should be described in a Sampling Method Plan.

4.2 Material Characterization Sample Analysis

The intent of pre-construction sample laboratory analysis is to characterize the material to be excavated. Previously gathered data, as well as the history of operation of the site should be used in collaboration with analytical results during characterization. The developer/designer should consider past site information and these factors in planning lab analyses. The following analysis should be considered for characterization:

- CP-51 SVOCs
- TCL VOCs
- RCRA Metals

In the event that excessive spoils are anticipated and disposal offsite appears necessary, disposal facility requirements for analysis should also be considered when sampling, particularly the requirements for non-hazardous and hazardous waste classifications (see Section 5.5).

5.0 Excavation Management

5.1 Management Plan

Previous investigations and laboratory analyses of the waste-fill material in the FESL have shown the majority of it to be non-hazardous solid waste. However, hazardous waste has also been encountered at discrete locations and in very limited quantities. Any waste material that is excavated during construction or site development must be properly managed; therefore, the development process can be greatly simplified by

planning to minimize excavation needed for construction and anticipating the waste-fill that will be handled during excavation and construction in a Management Plan.

A Site Specific Management Plan should be developed for each project and depending on project size should include the following in some level of detail:

1. Historic Information and Pre-Characterization Testing Data – This should include previous testing locations, depths, materials encountered and laboratory results.
2. Summary of Development Proposed – This should include proposed project summary, mapping with excavation areas and depths and estimates on volumes of material to be generated.
3. Comparison of Pre-Characterization Work in Relation to Development Work - This should identify methods of handling excavated materials which do not coincide with the site-specific pre-characterization. Materials which do not coincide with the pre-characterized material should be sampled and analyzed to determine the appropriate disposal or re-use measures.
4. Classification and Handling of Excavated Materials – This should include a description of the anticipate material, volumes and management onsite or disposal offsite. This should include both soil/fill and water.
5. Environmental Monitoring – This should define the monitoring to be completed, including specific meters, area to be monitored and anticipated frequency of monitoring.
6. Roles and Responsibilities – This should define entities/companies involved and the key contact people, responsibilities and contact information. At a minimum this should include:
 - Property Owner
 - City DEQ
 - Engineer/Architect
 - Environmental Monitor
 - Contractor
7. Community Air Monitoring Plan (CAMP) – This should include the NYSDOH Generic CAMP or a site specific CAMP.
8. Health and Safety Plan – Additional details on the components of such a plan are provided in Section 8.

5.2 Development Considerations

NYSDEC regulations under Part 360 (Part 360-1.7 (b) (9)) allow solid waste from non-hazardous inactive landfills, which is excavated as part of construction project, to be returned to the same excavation, or other excavations containing similar solid waste. Such materials may also be relocated within the landfill's existing footprint with the property owner's approval, provided there is an acceptable location and the handling, relocation, and disposal practices are deemed acceptable to NYSDEC in writing and in advance of the project.

Hazardous waste that is generated as part of the excavation cannot be replaced on the site and must be properly characterized, managed, and disposed off-site at a permitted facility. The party responsible for generating the excavated material (developer or property owner) would be responsible for such characterization, management, and proper disposal. Accordingly, construction planning and development design that allows minimal site excavation means less material needs to be handled on-site (solid waste) or disposed off-site (hazardous waste).

Developers and design engineers for planned development should also consider that the following elements of construction may be affected by waste characterization and management:

- **Construction De-Watering:** Groundwater in some areas of the landfill has been found to contain chemicals at concentrations that warrant proper handling, management and disposal. Construction design and planning should consider existing data regarding groundwater quality and depths to allow for proper management of groundwater flow into excavations during construction, if de-watering is necessary for construction purposes. See Section 6 for further information regarding excavation dewatering.
- **Waste Variability:** Construction schedules should allow contingency time and measures to address potential unanticipated conditions.
- **Basements:** If possible, new structures with basements should not be constructed within the waste fill area. If basements are necessary, waste materials must be removed from beneath and adjacent to the basement structure. Basement structures should have adequate drainage to prevent the accumulation of groundwater, and they should be adequately ventilated to prevent the accumulation of landfill gases and/or volatile organic compounds.
- **Schedules:** Scheduling of construction will need to allow for potential sampling, monitoring, and management of waste-fill material that is excavated during the course of construction. Sampling, in particular, may lead to laboratory analysis. Analytical results typically take from several days to several weeks to be generated. Therefore, design and construction schedules should allow for adequate sample analysis turn-around time.

Site development plans and designs should allow for placement of the waste-fill as backfill (if the material is deemed acceptable by a geotechnical engineer) and subsequent grading and covering of the material with soil and vegetation, or a structure (building, parking lot, etc.). The objective of placing cover over the solid waste material is to prevent routine contact with the waste. Therefore coverage should generally consist of approximately 18 inches (compacted) of clean soil cover and vegetation, or a substantial barriers consisting of concrete slab, the building slab, or asphalt cover. It also meets the minimum cover thickness criteria for ash monofills specified in NYSDEC's Part 360.

Material management planning should include a possible need to temporarily stockpile excavated solid or hazardous waste and measures to prevent its contamination of other materials. Stockpile locations should not be in the vicinity of storm sewers and drainage courses and downwind property boundaries. Stockpiles should be placed on impervious material (minimum 6-mil Poly sheeting) with perimeter berms. Stockpiles or exposed waste areas should be covered to prevent migration by wind-blown dust or storm water runoff until final placement and final cover is established. The cover must be maintained and monitored daily until the materials are placed back into the excavation or disposed of off-site.

If quantities of excavated material are too great to be incorporated in site grading, then placement off-site within the confines of the FESL footprint may be possible. Such placement, however, will require permission of the receiving property owner, NYSDEC, and possibly the City and Monroe County Department of Health. The proposed method of placement and cover material will need to be identified to the agencies. Therefore, wherever possible, site development should allow for replacement of excavated solid waste-fill back on the site to be developed.

5.3 Geotechnical Considerations

Typical structures constructed at the FESL site generally consist of slab-on-grade foundations or, for larger structural loads, spread footings, piers, or other foundation elements that provide greater bearing capacity and minimize waste fill disturbances. The extent and nature of fill at the site is a limiting factor on the types of structures which can be placed at the site and requires that careful consideration be given to foundation design of proposed structures so that adequate structural support is maintained. Therefore, developers and design engineers will need to carefully balance the extent and methods of subsurface excavation that will be necessary for foundation construction against the goal of minimizing the amount of waste-fill that needs to be excavated and properly managed during construction.

5.4 Screening and Sampling Procedures for Excavated Soil and Fill

Monitoring of waste-fill excavated during construction should be considered for the following reasons:

- To determine that the waste-fill actually excavated during construction is consistent with the characterization of fill developed prior to construction.
- To allow characterization of the non-hazardous or hazardous nature of solid waste excavated in the event that no pre-construction planning, sampling, or analysis was performed.
- To segregate materials based on impacts and avoid overpaying for disposal.
- Health and safety of onsite staff, and the community.

During excavation, soils should be screened intermittently and anytime the general conditions of the excavated materials change or as otherwise specified in the Management Plan. Screening will consist of visual and olfactory observations, supplemented by a photoionization detector, landfill gas meter (i.e. methane and hydrogen sulfide) and radiation meter. Any significant findings including staining, non-soil fill types, odors, elevated PID readings above background, gas meter or radiation readings two times above the background reading will be noted in the site log book, and the associated material will be segregated for management as described below. Additionally, a Community Air Monitoring Plan (CAMP) should be instituted during excavations. Details on screening and the responsibilities of the Environmental Monitor are provided in Section 7.1.

Sampling of excavated waste-fill materials during construction should be considered if either of the following conditions exists:

- No pre-construction planning or sampling was performed.

- If conditions during actual construction are significantly different than those observed during pre-construction investigations (pre-characterized material) or described in the approved management plan.
- Waste disposal characterization.

The recommended frequency of sampling during construction should follow the guidelines of DER-10, or as dictated in the NYSDEC approved Management Plan. Laboratory analysis of samples during the excavation phase can be used to determine whether the waste material excavated is hazardous or non-hazardous. By USEPA and NYSDEC regulation a generator of such waste is also allowed to make this determination using knowledge of the waste. Therefore, previously gathered data for an intended development site, as well as the history of operation of the site may be used to form knowledge of the waste.

5.5 Hazardous Waste Characterization

Generally the waste-fill material excavated at the FESL site will be considered to be non-hazardous solid waste provided laboratory analysis does not show it to be a "Characteristic Hazardous Waste". It is also possible that waste encountered in the fill such as a labeled drum may be a "Listed Hazardous Waste". The generator of the waste will need to use knowledge of the waste and how it was generated to determine if a listed waste is present. Please note that "Characteristically Hazardous" and "Listed Hazardous Waste" are both defined terms within USEPA and NYSDEC regulation.

Solid waste will be considered as hazardous if it exhibits a Hazardous Characteristic, namely, ignitability, corrosivity, reactivity, or toxicity. If Listed Waste is contained within the solid waste sample, the mixture may also be considered as hazardous waste. If it is determined that listed waste is present in the excavated soil, the NYSDEC's Technical Administration Guidance Memorandum No. 3028 of November 30, 1992, "Contained-In" Criteria for Environmental Media, provides guidance on how the listed waste may be managed.

Past analyses from the FESL site have generally identified waste as hazardous when they exhibit a hazardous waste characteristic by toxicity test (see below). In most cases, it should be possible to limit laboratory analyses for waste to be excavated during site development to the following parameters:

- Hazardous Waste Characteristics – ignitability, corrosivity, reactivity and toxicity.
- Hazardous Waste Characteristic of Toxicity – this analysis is performed by using the Toxicity Characteristic Leaching Procedure (TCLP)
- Volatile Organic Analysis

Disposal facility requirements for analysis should also be determined when sampling the excavated soil, particularly the requirements for non-hazardous waste landfills as these usually have the most stringent analytical requirements.

Because the majority of waste-fill within the FESL site consists of incinerator ash, waste analyses have not to date shown the characteristics of ignitability, corrosivity or reactivity to be present. Potential leachability of heavy metals has been the primary reason that a sample may be characterized as hazardous waste by the TCLP procedure. Therefore, it may be possible to limit TCLP analyses to metal constituents. If TCL VOC analysis indicated elevated levels then it would be appropriate to also include the VOC constituent portion of

the TCLP analyses. The developer/designer should consider past site information and these factors in planning lab analyses.

5.6 Non-FESL Related Areas of Concern

While the sub-surface material within the FESL footprint contains historic fill material, it should be noted that impacts from other non-landfill related sources may be present. Several industrial and manufacturing facilities operate or have operated within the FESL foot print. Many of these operations require the use and storage of solvents and petroleum products which are inherent with the potential for environmental impacts. Section 2 provides an overview of the extensive information available regarding the FESL site. Individual properties should be researched to determine the potential for post landfill issues

Consideration should be taken to identify impacts as non-FESL related when impacts are identified near potential onsite point sources or if the impacts are inconsistent with pre-characterization or previous site knowledge.

5.7 Classification and Handling of Excavated Soil and Fill

Excavated materials should be classified utilizing excavation monitoring, historic knowledge and pre-construction investigation data. Material classifications should be established considering the material re-use, disposal requirements and handling requirements. Materials classifications and the handling of each should be addressed in a site specific Management Plan.

Re-use options should be considered during the classification of fill materials anticipated for excavation. Solid waste excavated may be maintained and replaced on-site with similar materials (assuming non-hazardous), or otherwise within the footprint of the inactive landfill when covered appropriately. Specifically, excavated materials may be relocated to another parcel which lies within the FESL boundaries and properly covered.

The Table below provides an example of how site specific sub-surface materials may be pre-characterized. Management Plans should also include an expanded section on the management of each classified material.

Table 1 Example of Material Classifications and Management

Class of Material	Physical Description	Screening Parameter	Management
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Class of Material	Physical Description	Screening Parameter	Management
Class 1 Material	Clean soil, clean fill materials, and visually identifiable non contaminated solid waste (e.g. Brick, concrete, rock – i.e., construction and demolition debris)	No Discernable Odor PID readings less than 50 ppm No ash/cinders/slag or other regulated waste	Staging on-site for subsequent reuse.
Class 2 Material	FESL Ash/Fill and smaller pieces of metal, plastic, wood, paper, etc.	Visibly identifiable as ash/cinders/slag or other regulated solid waste (grey color, characteristic appearance)	Staging on-site for subsequent reuse or off-site disposal as a regulated solid waste
Class 3 Material	Soil and Fills with Moderate Petroleum/Cl-VOC Impacts that may Exceed CP-51 Soil Cleanup Objectives	Moderate Petroleum Odor Moderate Staining PID Readings Greater than 50 PPM and less than 1000 PPM	Material should be analyzed per DER-10. Material could be reused on site if lab results below Part 375-6 criteria or otherwise sent off-site for disposal.
Class 4 Material	Solid waste Physically unacceptable for re-use (e.g. larger pieces of refuse, metal scrap, rail road ties)	May or may not contain evidence of Impairment or regulated waste	Off-site Disposal to be determined based on waste stream characterization.
Class 5 Material	Significantly impacted soils either solid waste impacted with Petroleum or Possibly solid waste impacted by other chemicals	Strong Petroleum or other odor Significant Staining or presence of free phase liquids PID Readings of 1000 PPM or greater Laboratory analysis required for characterization	Off-site Disposal to be determined based on waste stream characterization.
Class 6 Material	Radiation Contaminated Soil/Fill	Ludlum Radiation Meter readings 2x greater than background	Off-site Disposal at regulated facility

As indicated previously, it is possible that characteristic hazardous waste could be encountered during site development. If such waste is encountered and excavated, it will be the responsibility of the site developer or owner (as the generator of the hazardous waste) to properly handle this waste. Management of such hazardous waste will require characterization, management, and off-site disposal at an appropriate approved facility, consistent with NYSDEC and USEPA hazardous waste management regulations.

6.0 Management Plan for Excavation Derived Water

Groundwater and/or rainwater may enter excavations and require removal (dewatered) to facilitate construction activities will require proper handling, treatment, and disposal (i.e., small quantities of water that do not interfere with construction activities may not require removal). In the event that groundwater is encountered, the groundwater will be containerized, characterized and disposed of in accordance with applicable regulations. The following should be considered to manage excavation derived water:

- Adequate storage (frac tank) of excavation derived waters.
- The appropriate number and size of pumps to dewater the excavation.
- Best management practices to minimize sediments during pumping.
- Discharge, if applicable and under permit, to the Monroe County Pure Waters (MCPW) sanitary system. The excavation waters must be containerized, sampled and analyzed for parameters specified by MCPW.
- Onsite treatment (activated carbon, air stripping, etc.) if warranted to meet MCPW sewer use criteria.
- In the event that off-site transportation of impacted water is necessary, a valid 6 NYCRR Part 364 Waste Transporter Permit shall be required. All disposal documentation at an approved treatment storage and disposal facility should be provided to the City.

7.0 Environmental Monitoring

It is strongly recommended an Environmental Monitor, preferably one with previous experience with the FESL site, be assigned to projects disturbing the sub-surface material within the FESL boundaries on a full time basis during those activities which will result in subsurface disturbances. This will significantly reduce the potential for any improper management, transportation or disposal of materials.

7.1 Environmental Monitor Duties

The responsibilities of the Environmental Monitor should include the following:

- Working with the contractor to pre-determine offsite disposal locations.
- Preparation of waste stream profile(s) if offsite disposal of excavated material is anticipated.
- Work closely with the contractor to monitor excavations for evidence of environmental impairment, and/or the presence of regulated solid waste. Specifically, this monitoring will include use of a photo-ionization detector (PID), a radiation meter and a gas meter.
- Make all determinations with regard to the classification of materials as detailed in the site specific Management Plan.
- Direct the contractors as to the proper placement and covering materials at the site.
- Assist the contractors as to the proper staging, covering, characterizing, transporting and disposing of materials requiring off-site disposal.
- Sampling, analysis, and any additional waste stream profiling material sent off-site as required by the receiving part 360 landfill, or the NYSDEC.
- Implementation of a Health and Safety Plan (HASP) for personnel at the Site. All contractors are responsible for their own health and safety plans (Section 8).

- Implementation of the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) and Fugitive Dust and Particulate Monitoring Plan during all fill relocation/grading work where there is exposed fill materials. See Appendix 4 for generic plans.

7.2 Responsibilities of the Contractor

It is recommended that all contractors involved with subsurface work at FESL be made aware of the history and provided all available information regarding a site. In addition contractors should be aware of these additional requirements for subsurface work:

- Dust/particulate and VOC suppression (i.e., wetting excavations, equipment, etc.) may be necessary, as directed by the Environmental Monitor.
- Maintain stockpiled regulated materials that are staged onsite (i.e., covering with polyethylene sheeting).
- Decontamination of the contractors' equipment prior to removing it from the site.

8.0 Health and Safety Plan

Past investigations of the FESL site have shown that materials encountered during subsurface exploration or construction activities may require special care and monitoring. These include constituents in materials associated with the known FESL filling and undocumented direct burial of materials and potentially naturally occurring from bedrock at the site, and include:

- Volatile organic compounds - these include petroleum derived constituents as well as a limited number of chlorinated volatile organic compounds.
- Heavy metals from incinerator ash - a variety of heavy metals are present in detectable concentrations in the incinerator ash. Past analyses of incinerator ash have only shown lead to be present at concentrations that exceed TCLP toxicity limits. Health and safety planning should generally consider measures to prevent exposure to heavy metals through engineering controls (dust suppression) or use of personnel protective equipment, or other measures.
- Radioactivity - a radiation survey and subsequent sampling and laboratory analysis revealed the presence of a relatively small volume of low-activity radioactive waste material associated with glass lenses and refuse fills in the southwest portion of the FESL. Approximately 12 tons of the low-level radioactive waste material was excavated at 1645-1685 Emerson St. and disposed of off-site. Although unlikely, it is possible that other low-level radioactive materials could be encountered during construction. Health & safety planning should consider measures to monitor waste materials for radiation levels above background.
- Landfill derived gases - these may include methane, hydrogen sulfide, or carbon monoxide. Landfill gas sampling and characterization performed during previous investigations has not shown significant levels of these gases to be generated from the waste fill at the locations sampled. A brief description of the landfill gases identified in each Quadrant are presented below:

Quadrant A (Northwest Portion of FESL):

Quadrants A is characterized by landfill gas flux measurements between 100 and 1200 $\mu\text{g}/\text{m}^2$ -minute, and/or soil gas methane concentrations above 5,000 ppm. In addition, this quadrant has also been documented with chlorinated-VOC contamination in soil gas, soil, and groundwater.

Quadrant B (Northeast Portion of FESL):

Quadrants B is characterized by landfill gas flux measurements between 15 and 140 $\mu\text{g}/\text{m}^2$ -minute. An apparent discrete CVOC plume is also present in this quadrant (i.e., separate from the P-1 plume in Quadrant A); however, this plume appears limited in extent and generally is within the 535 Colfax Street parcel. CVOCs in soil gas were not extensively studied within this quadrant.

Quadrant C (Southwest Portion of FESL):

Quadrant C is characterized by landfill gas flux measurements between 33 and 35 $\mu\text{g}/\text{m}^2$ -minute; however, only two soil gas sampling locations were located within this quadrant. In addition, the presence of organic rich marsh-derived soils at depth in this quadrant could also be a source of methane.

Quadrant D (South of Emerson Street, West of Colfax Street):

Quadrant D is characterized by landfill gas flux measurements between 57 and 190 $\mu\text{g}/\text{m}^2$ -minute. In addition, there is one apparent small area of Chlorinated-VOC contamination in this quadrant, which appears to be the result of post-landfill industrial activity rather than landfill operations.

Sub-surface gases may be present in other locations and they may be generated in greater concentrations from bedrock at the site (see below).

Naturally occurring substances that may require health and safety planning include the following:

- Bedrock derived gases - this includes primarily methane and hydrogen sulfide. The bedrock underlying the site contains pockets of naturally occurring methane which has been encountered in past borings at concentrations that may approach or exceed explosive limits. In addition, methane and hydrogen sulfide have the potential to collect in deep excavations. Both of these gases are defined as "simple asphyxiants" and therefore consideration should be given to health and safety protection for these conditions.

It is recommended that a Health and Safety Plan (HASP) is developed for construction activities based on sample analytical results, information specific to the parcel being developed, specific construction tasks to be performed, and the potential for exposure for site workers. Previous investigations and construction activities have routinely been performed. These previous activities has shown that overall, the potential for worker exposure is relatively low. However, all contractors and developers should consider the need for health and safety planning relative to their specific development, and planned activities and tasks.

Health and safety planning should also give consideration to other construction related issues, such as but not limited to trenching safety (as is required under OSHA regulations 29 CAR 1910.1926), or other construction-related OSHA regulations.

9.0 Summary and Limitations

Significant development has been performed at the FESL site and future development is anticipated. Past investigations at the FESL site has shown the waste-fill to contain primarily non-hazardous solid waste. NYSDEC regulations allow such solid waste to be excavated and replaced during the course of construction and development. However, hazardous waste has occasionally been encountered in the past at the site and excavation for construction purposes creates the potential for additional generation of hazardous waste. Further, it is desirable to reduce the potential for individual exposure to even non-hazardous solid waste. Accordingly, this guidance document has been developed to assist developers and designers in planning for development, characterizing materials that may be encountered during excavation, and planning for the management of those materials.

This document is intended for guidance purposes only. The information contained in the document is neither to be considered as specific direction or policy binding on any of the agencies or firms mentioned in the document. Significant investigation has been performed at the site in the past to develop a general understanding of subsurface conditions. However, such conditions can vary significantly between locations sampled. Further, conditions at a single location can change with time. Therefore, responsibility for properly characterizing excavated materials, planning construction, and appropriately managing any materials encountered, generated, or handled during site development is solely the responsibility of the site developer, owner, and designer.

10.0 Reporting Requirements

In accordance with 6NYCRR Part 613.8, contractors/owners are obligated to report any spill, leak, or discharge of petroleum products from bulk petroleum storage facilities to the New York State Department of Environmental Conservation. In addition, in accordance with 6NYCRR Part 595.2, contractors/owners are obligated to report any release of a reportable quantity or an unknown quantity of a hazardous substance from bulk chemical storage facilities as listed in 6NYCRR 597.2 when this contractual relationship is with the owner, agent of owner, or person in constructive possession or control of such a hazardous substance.

11.0 Contact Information

The individuals, agencies, and organizations listed below may be contacted for additional information:

Joseph Biondolillo
City of Rochester, Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-6649

Todd Caffoe
NYSDEC Region 8
Div. of Hazardous Waste Remediation
6274 E. Avon Lima Road
Avon, NY 14414
(585) 226-2466

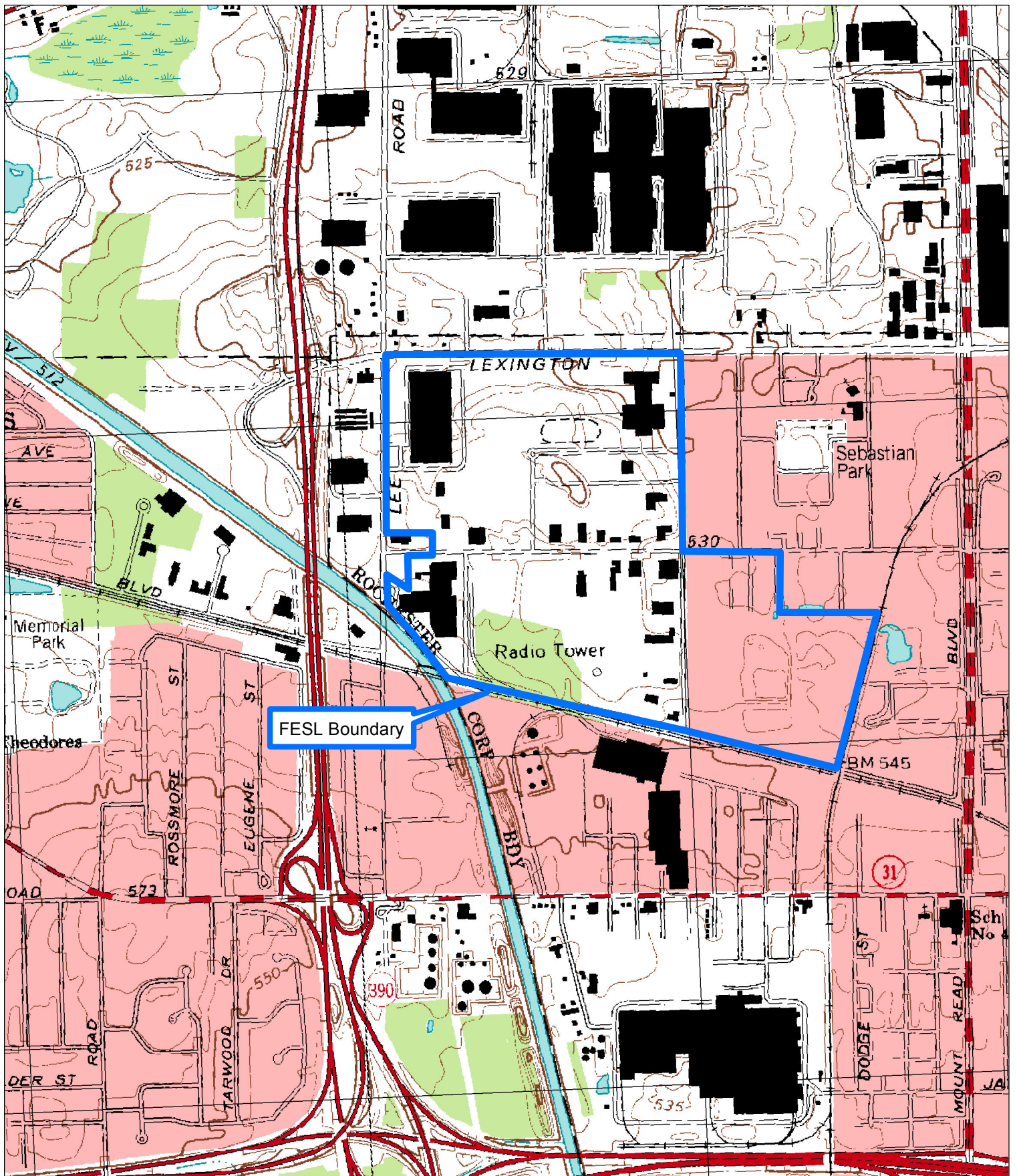
Mark Gregor
City of Rochester, Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-5978

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LaBELLA

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Figures



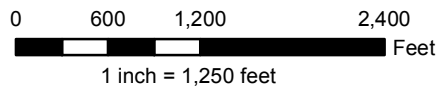
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FIGURE 1

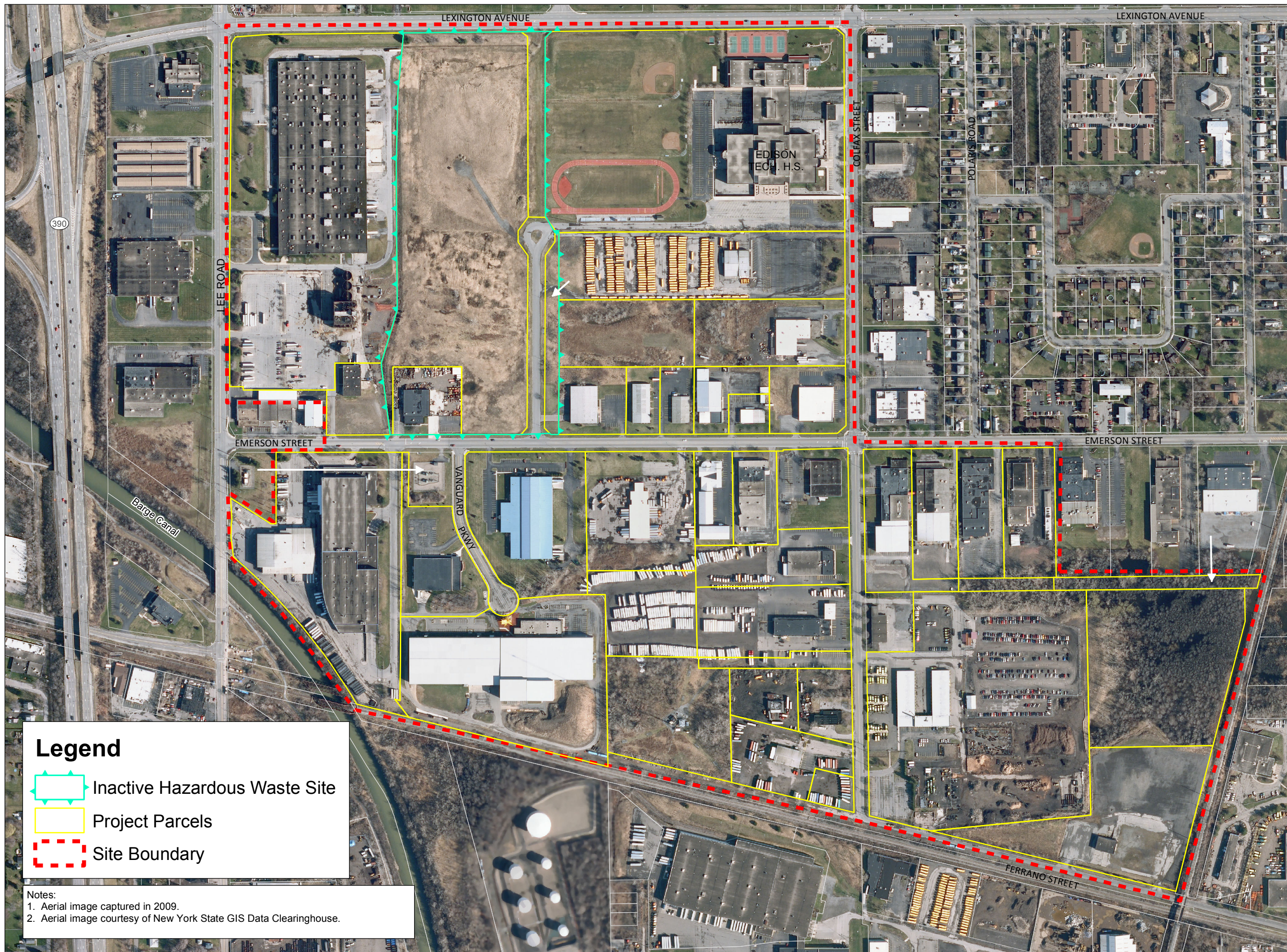
**PROJECT LOCUS WITH
 USGS 7.5-MINUTE
 ROCHESTER QUADRANGLE**

SITE LOCATION MAP
 GUIDANCE FOR WASTE-FILL
 MANAGEMENT DURING SITE
 DEVELOPMENT ON THE
 FORMER EMERSON STREET
 LANDFILL
 CITY OF ROCHESTER

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Legend

- Inactive Hazardous Waste Site
- Project Parcels
- Site Boundary

Notes:
 1. Aerial image captured in 2009.
 2. Aerial image courtesy of New York State GIS Data Clearinghouse.

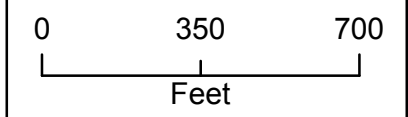
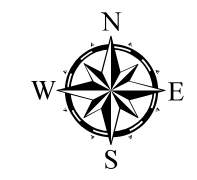
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**FORMER EMERSON STREET
 LANDFILL**

**GUIDANCE FOR
 WASTE-FILL MANAGEMENT
 DURING SITE
 DEVELOPMENT ON THE
 FORMER EMERSON
 STREET LANFILL**

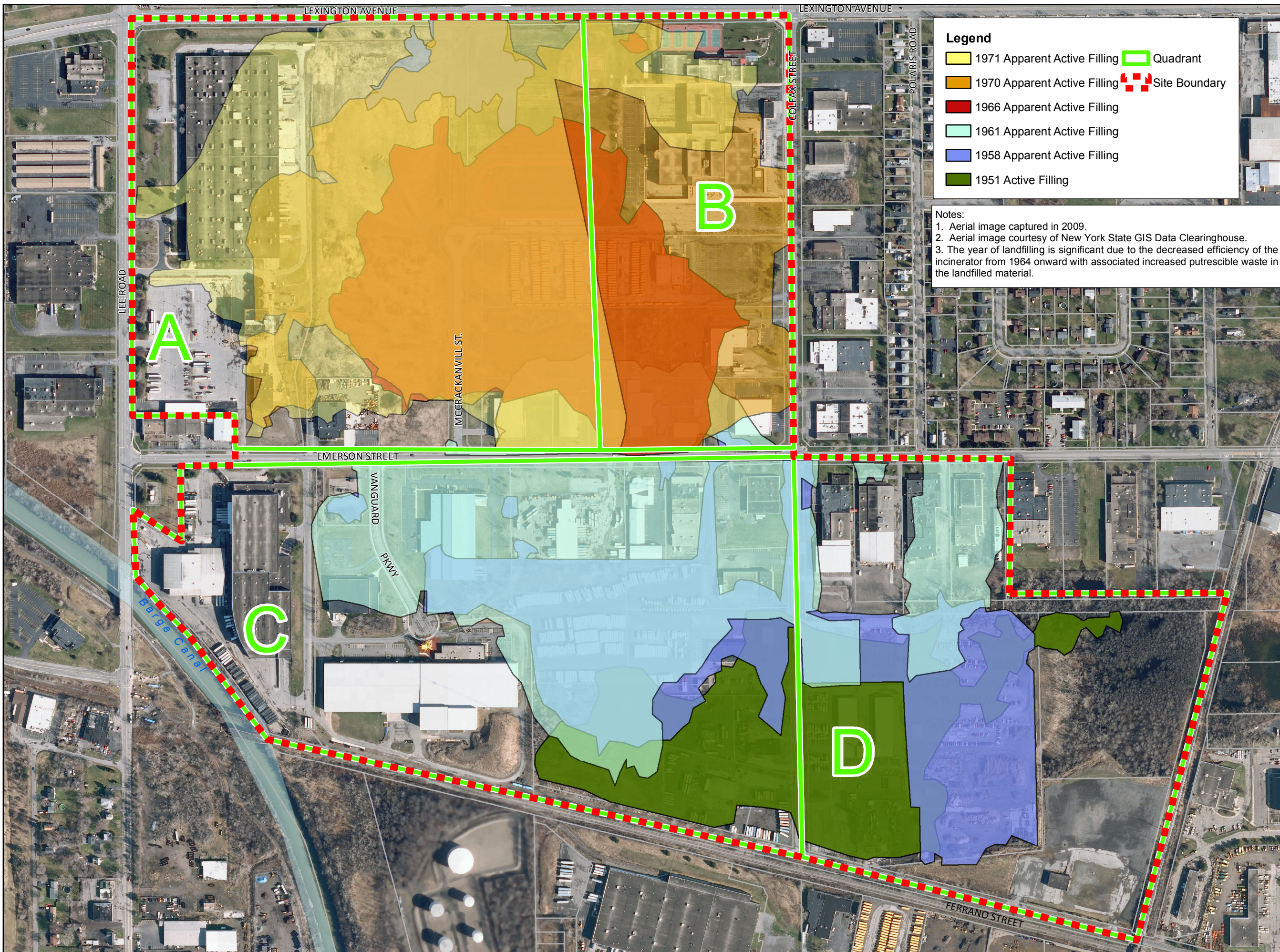
CITY OF ROCHESTER

**FESL Parcel
 Information**



[210173]

[FIGURE 2]



Legend

- 1971 Apparent Active Filling
- 1970 Apparent Active Filling
- 1966 Apparent Active Filling
- 1961 Apparent Active Filling
- 1958 Apparent Active Filling
- 1951 Active Filling
- Quadrant
- Site Boundary

Notes:

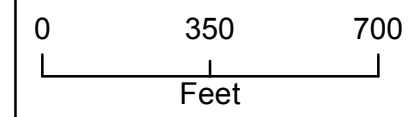
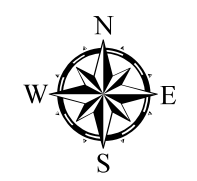
1. Aerial image captured in 2009.
2. Aerial image courtesy of New York State GIS Data Clearinghouse.
3. The year of landfilling is significant due to the decreased efficiency of the incinerator from 1964 onward with associated increased putrescible waste in the landfilled material.

**FORMER EMERSON STREET
 LANDFILL**

**GUIDANCE FOR WASTE-
 FILL MANAGEMENT DURING
 SITE DEVELOPMENT ON
 THE FORMER EMERSON
 STREET LANDFILL**

CITY OF ROCHESTER

**Total Fill Footprint with
 Areas of Filling Identified on
 Aerial Photographs Defined
 by Year**



[210173]
 [FIGURE 3]



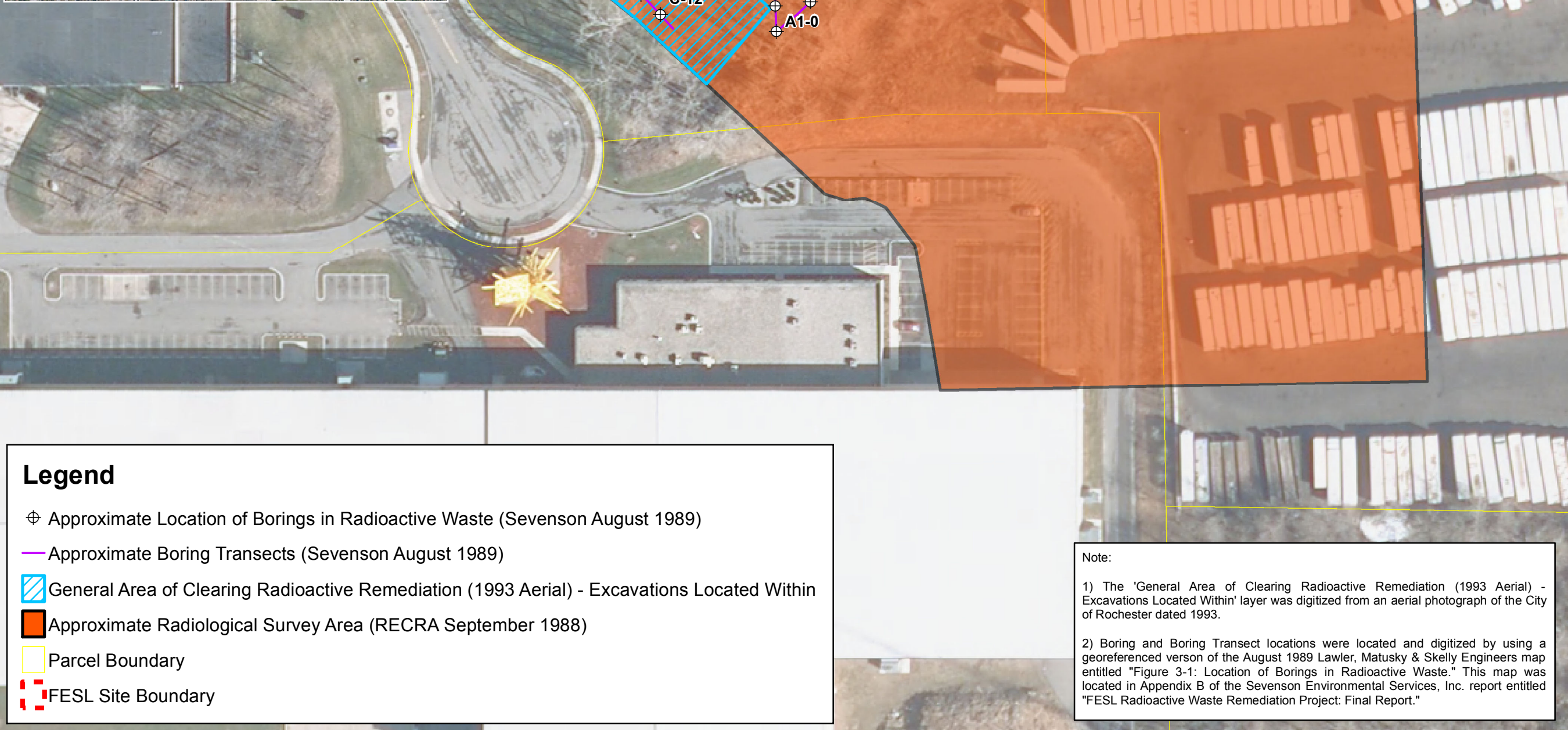
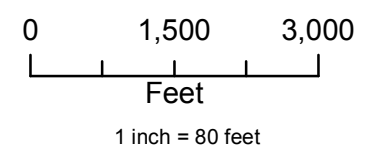
Overview
1 inch = 2,000 feet

**FORMER EMERSON
STREET
LANDFILL**

**GUIDANCE FOR WASTE-
FILL MANAGEMENT
DURING SITE
DEVELOPMENT ON THE
FORMER EMERSON
STREET LANDFILL**

CITY OF ROCHESTER

**RADIOLOGICAL
SURVEY
AND
APPROXIMATE AREA
OF REMOVAL**



Legend

- ⊕ Approximate Location of Borings in Radioactive Waste (Sevenson August 1989)
- Approximate Boring Transects (Sevenson August 1989)
- ▨ General Area of Clearing Radioactive Remediation (1993 Aerial) - Excavations Located Within
- Approximate Radiological Survey Area (RECRA September 1988)
- Parcel Boundary
- ⋮ FESL Site Boundary

Note:

1) The 'General Area of Clearing Radioactive Remediation (1993 Aerial) - Excavations Located Within' layer was digitized from an aerial photograph of the City of Rochester dated 1993.

2) Boring and Boring Transect locations were located and digitized by using a georeferenced version of the August 1989 Lawler, Matusky & Skelly Engineers map entitled "Figure 3-1: Location of Borings in Radioactive Waste." This map was located in Appendix B of the Sevenson Environmental Services, Inc. report entitled "FESL Radioactive Waste Remediation Project: Final Report."

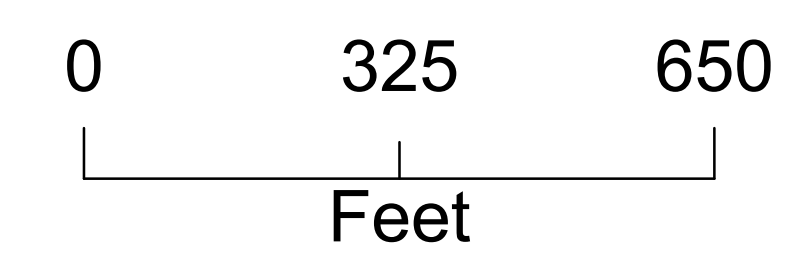
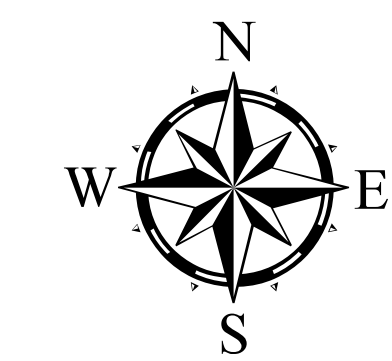
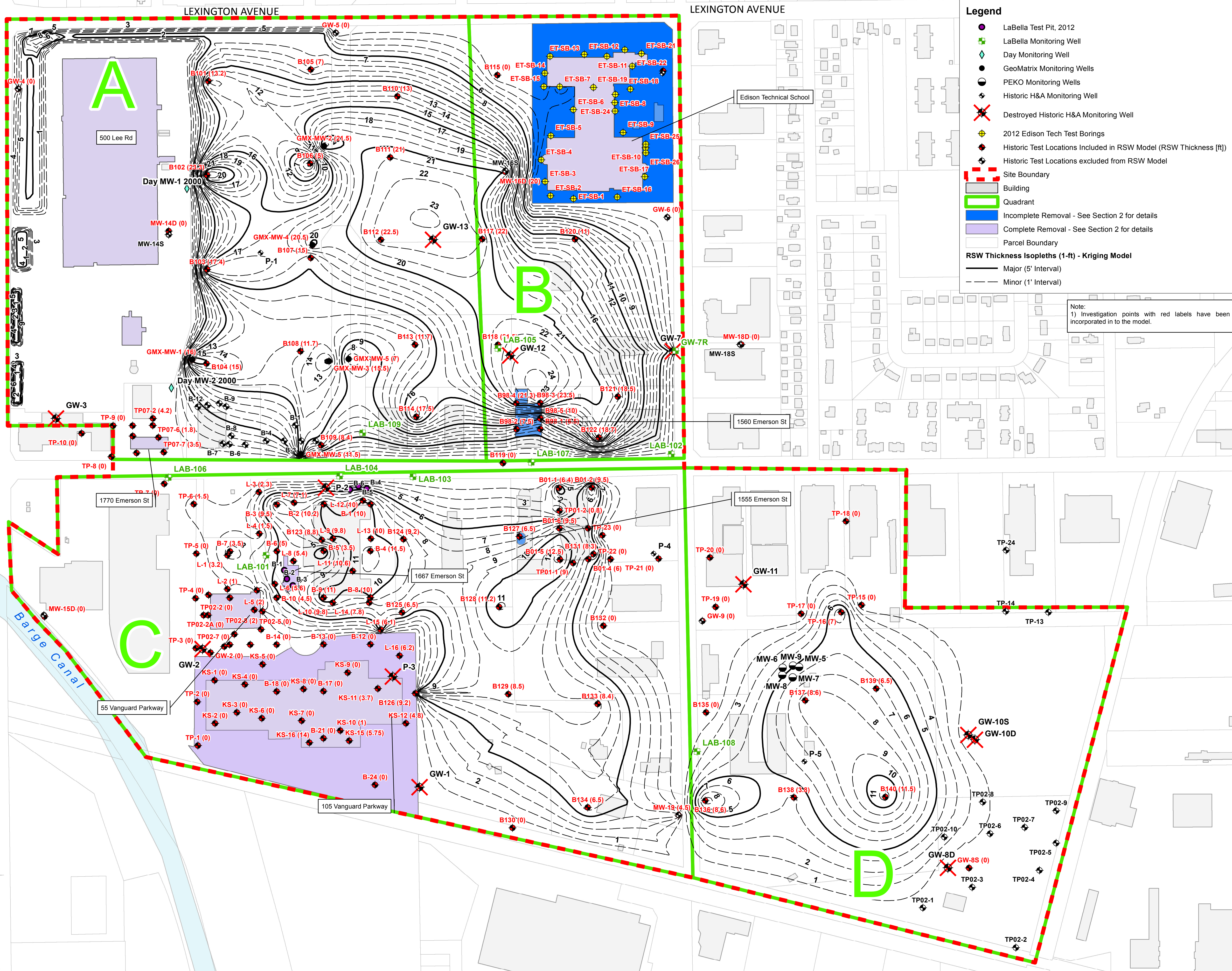
[210173]
[FIGURE 4]

FORMER EMERSON STREET
LANDFILL

GUIDANCE FOR WASTE-FILL MANAGEMENT DURING
SITE DEVELOPMENT ON THE FORMER EMERSON
STREET LANDFILL

CITY OF ROCHESTER

Historic Test Locations with Regulated Solid
Waste (RSW) Limits and Isoleths



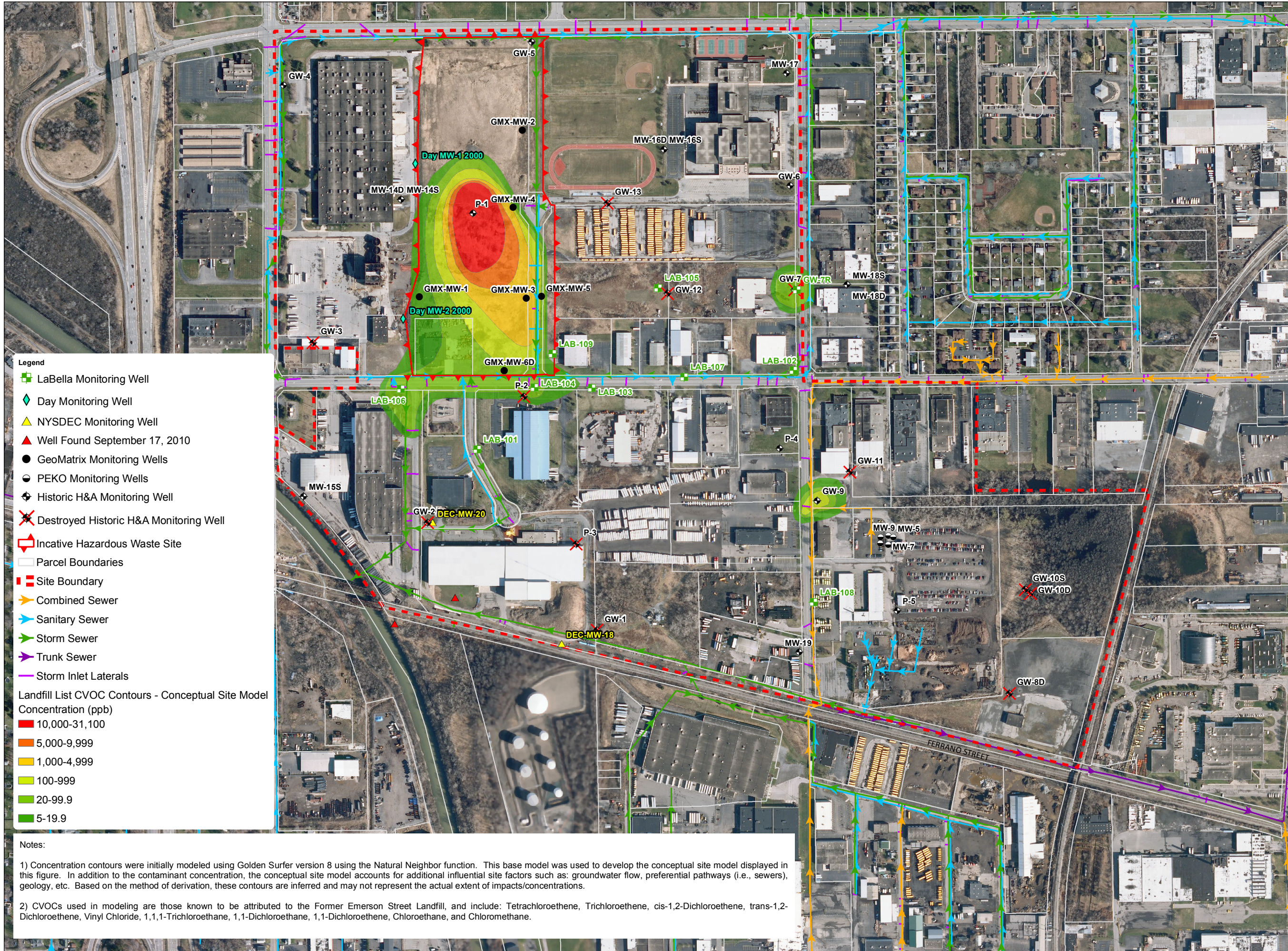
210173

FIGURE 5

**GUIDANCE FOR
WASTE-FILL MANAGEMENT
DURING SITE
DEVELOPMENT ON THE
FORMER EMERSON
STREET
LANDFILL**

CITY OF ROCHESTER

**CHLORINATED VOC
CONTAMINATION AREAS**



Legend

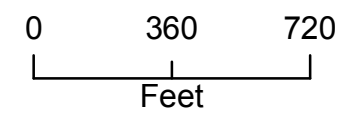
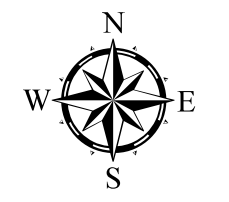
- LaBella Monitoring Well
- Day Monitoring Well
- NYSDEC Monitoring Well
- Well Found September 17, 2010
- GeoMatrix Monitoring Wells
- PEKO Monitoring Wells
- Historic H&A Monitoring Well
- Destroyed Historic H&A Monitoring Well
- Inactive Hazardous Waste Site
- Parcel Boundaries
- Site Boundary
- Combined Sewer
- Sanitary Sewer
- Storm Sewer
- Trunk Sewer
- Storm Inlet Laterals

**Landfill List CVOC Contours - Conceptual Site Model
Concentration (ppb)**

- 10,000-31,100
- 5,000-9,999
- 1,000-4,999
- 100-999
- 20-99.9
- 5-19.9

Notes:

- 1) Concentration contours were initially modeled using Golden Surfer version 8 using the Natural Neighbor function. This base model was used to develop the conceptual site model displayed in this figure. In addition to the contaminant concentration, the conceptual site model accounts for additional influential site factors such as: groundwater flow, preferential pathways (i.e., sewers), geology, etc. Based on the method of derivation, these contours are inferred and may not represent the actual extent of impacts/concentrations.
- 2) CVOCs used in modeling are those known to be attributed to the Former Emerson Street Landfill, and include: Tetrachloroethene, Trichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, Vinyl Chloride, 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, Chloroethane, and Chloromethane.



1 inch = 500 feet

[210173]

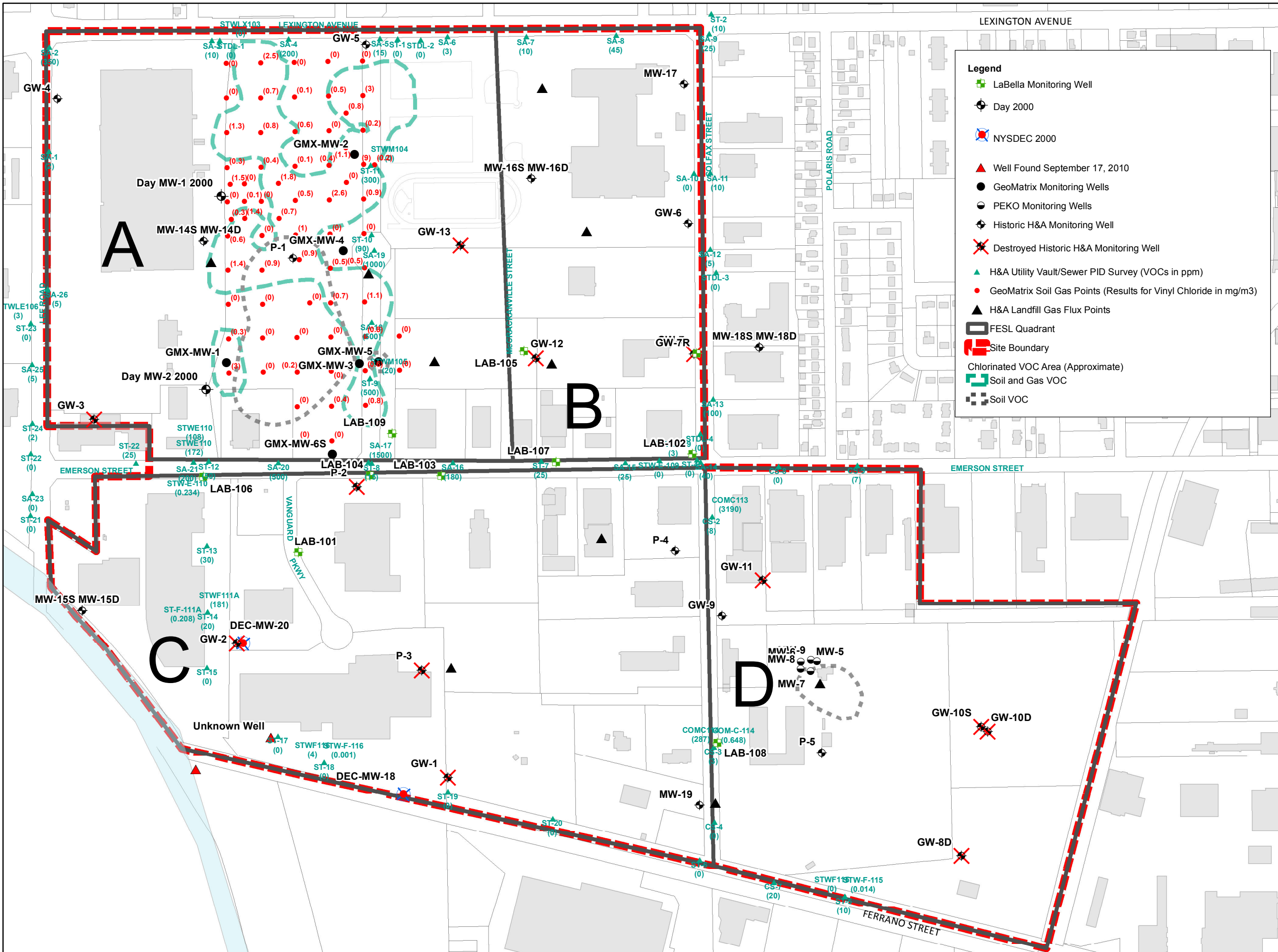
[FIGURE 6]

Path: J:\Rochester, City\210173 FES\Drawings\Report Figures\Fill Guidance Report 2013\Figure 4 - 2012.07.02.CIVOCmodel-11x17.mxd

**GUIDANCE FOR
WASTE-FILL MANAGEMENT
DURING SITE
DEVELOPMENT ON THE
FORMER EMERSON
STREET
LANDFILL**

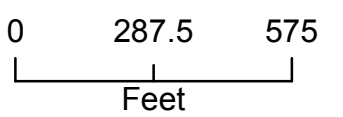
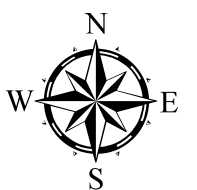
CITY OF ROCHESTER

**CHLORINATED VOC
CONTAMINATION IN
SOIL AND SOIL VAPOR**



Legend

- LaBella Monitoring Well
- ⊕ Day 2000
- ⊕ NYSDEC 2000
- ▲ Well Found September 17, 2010
- GeoMatrix Monitoring Wells
- PEKO Monitoring Wells
- ⊕ Historic H&A Monitoring Well
- ✗ Destroyed Historic H&A Monitoring Well
- ▲ H&A Utility Vault/Sewer PID Survey (VOCs in ppm)
- GeoMatrix Soil Gas Points (Results for Vinyl Chloride in mg/m³)
- ▲ H&A Landfill Gas Flux Points
- FESL Quadrant
- Site Boundary
- Chlorinated VOC Area (Approximate)
- Soil and Gas VOC
- Soil VOC



1 inch = 400 feet

[210173]
[FIGURE 7]

LaBELLA

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 1

Table 1
Vapor Intrusion Assessment Work Plan: Data Review, Site Screening and Site Prioritization

Summary of Relevant Documents Relating to the Former Emerson Street Landfill

1	Engineering Investigations at Inactive Hazardous Waste sites, Phase II Investigation, Emerson St Landfill, Site No. 828023. Addendum. New York State Department of Environmental Conservation. February 1990.
2	Review of the Emerson St Landfill City of Rochester Phase II Investigation Reports. Malcolm Pirnie. May 1990.
3	Proposed Emerson St Landfill Action Plan. City of Rochester. November 1990.
4	Health & Safety Plan Prepared for City of Rochester, NY, Emerson St Landfill. Severson Environmental Services. March 1992.
5	Delisting Petition for Properties Associated with the Former Emerson St Landfill Site. Haley & Aldrich of NY. April 1993.
6	Delisting Petition for the Former Emerson St Landfill Inactive Hazardous Waste Site. City of Rochester. August 1993.
7	Former Emerson Street Landfill Modified Remedial Investigation (Vol 1 through 4). Haley & Aldrich of NY. January 1994.
8	Test Pit and Soil Sampling Program Report, Former Emerson St Landfill. The Sear-Brown Group. May 1995.
9	Delisting Petition for Properties Associated with the Former Emerson Street Landfill Site. Haley & Aldrich of NY, July 1995.
10	Guidance for Waste-Fill Management During site Development, Former Emerson St Landfill. Haley & Aldrich of NY. July 1995.
11	Revision to the Guidance for Waste Fill Management During Site Development, Former Emerson St Landfill. Haley & Aldrich of NY. July 1997.
12	Health & Safety Plan for Site Construction. 1667 Emerson St. Labella Associates. November 1997.
13	Former Emerson Street Landfill, Sub-Slab Ventilation Guidance Document. Haley & Aldrich of New York. May 2000.
14	Former Emerson St Landfill Remedial Investigation Report for City of Rochester Parcels 4, 10, and 11. Labella Associates & Geomatrix Consultants. April 2001.
15	Former Emerson St Landfill Pre-Development Study – City of Rochester Parcels 4, 10, 11. Labella Associates & Geomatrix Consultants. November 2001.
16	Phase I Environmental Site Assessment. Undeveloped Land. 1695-1715 Emerson St. Day Environmental. June 2002.
17	Phase I Environmental Site Assessment, Undeveloped Land, 1695-1715 Emerson St. Day Environmental. October 2002.
18	Delisting Petition for Selected Parcels Associated with the Former Emerson St Landfill Site. Parcels 4 and 10. Labella Associates. December 2002.
19	Environmental Management Plan, 1695-1715 Emerson St (Parcel #2), Former Emerson St Landfill. Day Environmental. January 2003.
20	Fill Sorting Closure Report. Parcel 10A, Former Emerson St Landfill. Day Environmental. September 2004.
21	Phase II ESA Report. Proposed Lechase Facility Expansion, Parcel 10C, Former Emerson St Landfill and Lechase Emerson St Building. Bergmann Associates. February 2007.
22	Phase I Environmental Site Assessment Report. Parcel 10C, Former Emerson St Landfill, 1655 Lexington Ave. Bergmann Associates. February 2007.
23	Limited Phase II ESA Report. Parcel 10C Former Emerson St Landfill. Bergmann Associates. March 2007.
24	Phase I ESA – Portion of 500 Lee Road, Rochester, NY. Day Environmental. November 2007.
25	Former Emerson Street Landfill Sub-Slab Ventilation Guidance Document Update 2007. LaBella Associates. November 2007.
26	City of Rochester Emerson St Landfill Radioactive Waste Remediation Project, Final Report. Severson Environmental Services. Date Not Listed.
27	Record of Decision Chemical Sales Corporation Site Operable Unit #2, Off-Site Town of Gates, Monroe County Site Number 8-28-086. Department of Environmental Conservation, Division of Environmental Remediation. March 2001.

LaBELLA

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Rochester, New York 14614

Appendix 2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST PIT REPORT		TEST PIT NO. TP-9
					FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST				LOCATION: E.G. Sackett Co., Inc., Emerson St.	
LOCATION: ROCHESTER, NEW YORK				ELEVATION:	
CLIENT: CITY OF ROCHESTER				EXPLORATION DATE: 11 Dec. 1992	
CONTRACTOR: NOTHNAGLE DRILLING				H&A REP.: M. Beikirch	
EQUIPMENT USED: JOHN DEERE 310 BACKHOE					
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
-2-				Dark brown coarse to fine SAND, common cobbles, few boulders, damp. -FILL-	No OVA or radiation meter readings above background.
-4-				Same, more fine sand and silt, moist.	
		5.0		Gray-yellow-brown clayey SAND, some silt, common cobbles, wet.	Water seeping into test pit from ~ 5.0 to 6.0 ft.*
-6-		6.0		-FILL OR DISTURBED NATURAL MATERIALS-	
				Brown-tan clayey SILT, trace coarse to fine sand.	
-8-		8.0		-GLACIAL TILL-	
				Bottom of Test Pit at 8.0 ft.	
-10-					
-12-					
WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE		SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 9 feet	WIDTH 3 feet	DEPTH: 8.0 ft.
			BOULDERS		JAR SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft		BAG SAMPLES: ---
			Over 18" DIAMETER: No. = Vol. cu ft		WATER LEVEL: * Not Encountered
* Hrs after completed					TEST PIT NO. TP-9

DATE STARTED <u>8/5/88</u>	RECRA ENVIRONMENTAL, INC.	HOLE NO. <u>GW-3</u>
FINISHED <u>8/8/88</u>		SURFACE ELEV. <u>109.2</u>
SHEET <u>1</u> OF <u>1</u>	SUBSURFACE LOG	G.W. ELEV. <u>105.38</u>

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u>	LOCATION <u>EMERSON STREET LANDFILL</u>
<u>SITE #828023</u>	<u>ROCHESTER, NEW YORK</u>

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES		
				0	6	6	12				
				12	18	18	24				
1.5'		SB	1	2	4			Brown SILT and SAND, trace clay, little root material, dry, loose.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.		
				5	7						
5										At 5.3 ft.: Grades to SILT, some sand, trace gravel, moist.	Driller - Rocky Baye Assistant - Shawn Penrod
1.5'		SB	2	6	11					At 5.5 ft.: 1-2 in. wet silt layer.	
				20	25				Water level measured at 3.90 ft. on 11/9/88.		
10								At 10.3 ft.: Grades to fine to medium SAND, little clay, trace gravel, moist.	HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R meter = 12 micro-rem/hr. Auger drilling refusal at 13.0 ft.		
1.4'		SB	3	12	12						
				44	71						
1.1'		SB	4	13	34			[SILT and SAND] 13.2'			
15	REC 100% RQD 70%	NX	1	50/2'				Gray, fine textured dolomite, weathered horizontal fractures along bedding surfaces, some mottling, vuggy. White precipitate visible along fractures and in some vugs, slightly to highly reactive to HCl. Hardness ranged from soft to moderately hard depending on the extent of weathering.	NX core run 1 drilled from 13.2 ft. to 18.2 ft. on 8/5/88. Rotary drilled with 3 7/8 in. tri-cone bit from 13.2 ft. to 18.5 ft.		
20											
								[DOLOMITE BEDROCK] 18.5'			
25								Coring was done with a long ear 5 ft. NQ core barrel and a Series 2 bit.			
30									Boring Completed at 18.5 ft. G.W. Elevation taken on 12/16/88.		
35											

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

DATE STARTED <u>8/9/88</u> FINISHED <u>8/10/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-4</u> SURFACE ELEV. <u>107.9</u> G.W. ELEV. <u>99.42</u>
--	---	---

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
---	---

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.5'	SB	1	8	8			Light brown SILT and CLAY fill, little to some sand, trace to little gravel, glass, plastic, wood, and paper, dry, loose to medium dense in situ. At 8.0 ft.: Wet [FILL] 8.5' Weathered bedrock zone. 10.0'	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod HNU = 0 ppm Geiger Counter = 0 mr/hr. Micro R meter = 6-12 micro-rem/hr. Explosimeter = 100% LEI to a depth of about 2.0 ft. Seemed to be gas trapped below plastic liner. Auger drilling refusal at 10.0 ft.
	1.5'	SB	2	6	5				
	0.0'	SB	6	1	1				
	1.2'	SB	7	1	1				
10				34	44				
15	REC 88% RQD 15%	NX	1					Bedrock: Light gray, fine textured dolomite. Horizontal and vertical fractures, weathering apparent on fractured surfaces, white precipitate visible on fractures and in some vugs, slightly reactive to HCl. Soft to moderately hard depending on extent weathering. Drilling fluid return was lost during entire depth of coring. 20.0'	NX core run 1 and 2 drilled on 8/9/88. Rotary drilled with 3 7/8 in. tri-cone bit from 10.0 ft. to 20.0 ft. Coring was done with a long ear 5 ft. NQ core barrel and a long ear Series 2 drill bit. Split-barrel samples 3-5 were not included because a new location was needed due to the inability to penetrate the underlying material. Boring Completed at 20.0 ft. G.W. elevation taken on 12/16/88.
20	REC 98% RQD 43%	NX	2						
25									
30									
35									

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

DATE STARTED <u>8/11/88</u> FINISHED <u>8/12/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC.	HOLE NO. <u>GW-5</u> SURFACE ELEV. <u>96.2</u> G.W. ELEV. <u>87.02</u>
SUBSURFACE LOG		

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> SITE # <u>828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
--	---

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO.	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.8'	SB	1	6	6			Light brown SILT, some sand, some gravel, little assorted trash and organic debris, dry, medium dense. At 2.0 ft.: Loose in situ. At 6.0 ft.: Little gravel, trash is absent, moist. [FILL] 9.0'	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod HNU = 1 ppm - SB1-3 Explosimeter = 0% LEL Geiser Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Water level measured at 8.73' on 11/9/88. Auger drilling refusal at 10.0 ft. NX core run 1 drilled from 8.7 ft. - 13.7 ft. on 8/11/88. Rock fragments and cobbles were recovered from 8.7 ft. to 10.0 ft. NX Core run 2 drilled from 13.7 ft. - 18.7 ft. on 8/11/88. Begin to encounter water entering hole at approximately 14.0. Rotary drilled with 3-7/8 in. tri-cone bit from 10.0 ft. to 21.5 ft. Coring was done with a long ear 5 ft. NQ core barrel. Run 1 was drilled with a long ear Series 2 drill bit. Run 2 was drilled with a long ear 58-60 carat drill bit. Boring completed at 21.5 ft. G.W. elevation taken on 12/16/88.
	0.5'	SB	2	7	3				
	1.5'	SB	3	5	3				
	2.0'	SB	4	4	12				
10				10	20			Weathered bedrock zone 10.0'	
	REC 71% RQD 38%	RUN	1					Light gray fine textured dolomite, numerous horizontal fractures, large fracture at 13.2 ft. where drilling fluid was lost.	
15								Highly weathered zones from 14.0 ft. to 15.25 ft., slight drilling fluid loss. No precipitate or vugs present. Rock was soft at weathered zones to moderately hard.	
	REC 100% RQD 64%	RUN	2					[DOLOMITE BEDROCK] 21.5'	
20									
25									
30									
35									

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. MW-14S	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING						FILE NO. 70352-46 SHEET NO. 1 OF 1 LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	---	---	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	---	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	---	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	---	---	OTHER: Advanced augers to 12.0 ppm.			
					ELEVATION: 534.61			
					DATUM: NGVD			
					START: 28 May 1993			
					FINISH: 1 June 1993			
					DRILLER: S. Loranty			
					H&A REP: M. Corrigan			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5						Advanced augers to 12.0 ft. without split spoon sampling.		
10						Auger Refusal at 12.0 ft. Apparent Top of Competent Rock at 12.0 ft.		
15						Notes: 1. No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above background in breathing zone. 3. Set 6.0 in temporary casing to 12.0 ft. 4. Reamed with 3-7/8 in. tri-cone rollerbit from 12.0 ft. to 20.0 ft. and set 2.0 in. PVC monitoring well. 5. Installed monitoring well in completed borehole, see Groundwater Monitoring Well Report.		
20								
25								
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 12.0	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: ---		
						BORING NO.	MW-14S	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST BORING REPORT			BORING NO. MW-14D		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC ROCHESTER		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	NX	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	1-3/8	2-1/8	BIT TYPE: ---			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 12.5 ft.			
					ELEVATION: 534.81			
					DATUM: NGVD			
					START: 27 May 1993			
					FINISH: 1 June 1993			
					DRILLER: S. Loranty			
					H&A REP: M. Corrigan			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
		5	S1	0.0		Medium dense brown silty fine SAND, little coarse to medium sand, trace gravel, damp to dry.		
		7				-FILL-		
		8	20"/24"	2.0		Medium dense brown silty fine SAND, damp.		
		4	S2	2.0				
		5						
		5	23"/24"	4.0		Loose brown silty fine SAND, little gravel, damp to moist.		
		8						
		3	S3	4.0				
		4						
		4	3"/24"	6.0		Same, except moist to wet.		
		3						
		5	S4	6.0				
		3						
		5	20"/24"	8.0		-FILL-		
		3						
		6	S5	8.0		Medium dense brown silty fine SAND, little coarse sand, damp.		
		7						
		7	23"/24"	10.0		Medium dense brown silty fine SAND, moist to wet.		
		3						
		7	S6	10.0		-FILL-		
		8						
		50	15"/24"	12.0	11.5	Moderately hard, highly weathered, gray dolomitic MUDSTONE, moist. -ROCHESTER FORMATION-		
						Auger Refusal at 12.5 ft. Apparent Top of Competent Rock at 12.5 ft.		
						Notes:		
						1. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 1 ppm S4 = 13 ppm (10 ppm methane) S5 = 10 ppm (7 ppm methane) S6 = 1 ppm No OVA readings above background in the breathing zone.		
						2. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
						3. See Core Boring Report, page 2.		
						4. Installed monitoring well in borehole.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 12.5	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): 20.5	SAMPLES: 6S
							BORING NO. MW-14D	

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
							Began Coring at 12.5 ft.
	2	R1 12.5 19.6			MOD		Light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and small vugs throughout. Closely to very closely spaced partings. -ROCHESTER FORMATION- * RQD based on rock core recovered.
	3						
	2						
15	5		$\frac{87}{4}$	$\frac{102}{5^*}$			
	2						
	3						
	3						
	3						
20	3	R2 19.6	$\frac{35}{6}$	$\frac{100}{17}$		Core block at 19.6 ft.	
	3	22.5				Rough, vertical joints from 15.0 ft. to 15.7 ft. and from 17.9 ft. to 18.4 ft.	
	2	R3 22.5			MOD		Gypsum nodule at 24.2 ft.
	2						
	2						
25	2						
	2						
	2		$\frac{118}{76}$	$\frac{98}{63}$			
	2						
	2						
30	2				SL	Gypsum nodule, vug and parting at 27.8 ft.	
	2	32.5					
							Bottom of Boring at 32.5 ft.
35							Notes: 1. Lost 320 gallons during coring and reaming process.
40							
45							

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-1
 Project No. _____

Project Name EMERSON STREET

Date 8/1/89 start 8/1/89 finish

Client NYSDEC

Boring Location NE SECTOR - ROCHESTER PROD.

Driller AMERICAN AUGER

Total Depth 33.5'

Monitoring Instrument(s) HNU, CGI, NSA 360, DOSIMETER

Depth to Water 25.88

SAMPLE HAMMER

Hole Diameter .7'

Weight 4.5 lb

Ground Surface Elevation 548.2

Fall 7 in.

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL			Remarks
	0' to 6'	6' to 12'	12' to 18'	18' to 24'							f - fine	and - 35-50%	Remarks	
											m - medium	some - 20-35%		

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL		Remarks
	0' to 6'	6' to 12'	12' to 18'	18' to 24'							f - fine m - medium c - coarse	and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
											SET 2" PVC MONITOR WELL @ 33.5' 10' 20 SLOT SCREEN #2 SAND FROM 33.5-21.5 SCHED. 40 PVC RISER 3/8" BENTONITE PELLETS 21.5-19.5 70 GALS. BENTONITE SLURRY 2 BAGS HOLE PLUG ADDED PORTLAND CEMENT FROM 6' TO SURFACE PROTECTIVE STEEL CASING		

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. GW-13
Project No. 376-055

Project Name EMERSON STREET

Date 7/28/89
start _____ finish _____

Client NY'S DEC

Boring Location SCHOOLFIELD - NORTH END

Driller AMERICAN AUGER

Total Depth 29.8

Monitoring Instrument(s) ANAL. C.W.L. DISMETER, M&A

Depth to Water 22.14' BG.

SAMPLE HAMMER

Hole Diameter .7-.3'

Weight 140 lb

Ground Surface Elevation 536.5

Fall 30 in.

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL		Remarks
	0' to 6'	6' to 12'	12' to 18'	18' to 24'							f - fine m - medium c - coarse	and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
0-2	4	8	10	10	-	1.3	1		M. DENSE DRY	1.8	PLANT MATERIAL, BROWN DRY SILTY SANDY LOAM MIXED GRAVEL BLACK SILTY ASH, SLAG, CINDERS GLASS	COHESIVE	
3-7	4	8	10	11	-	.4	2		M. DENSE MOIST		BLACK PLASTIC CINDERS, SILT, GLASS		
10-12	14	24	45	17	-	.8	3		DENSE DRY		DARK FRIABLE FILL (CANS, GLASS, WOOD, PLASTIC, ASH & LINDER) SOME SILT, FINE SAND, LESS DENSE @ 12'		
15-17	24	18	17	21	-	.9	4		DENSE DRY		DARK FRIABLE FILL (GLASS, PLASTIC, FABRIC, ASH, CINDERS) SOME PEBBLES - FINE SAND, SILT/1	COMPACT COHESIVE	
20-22	24	14	12	7	-	-	5		M. DENSE WET		NO RECOVERY - THROUGH FALLEN DEBRIS AUGER REFUSAL @ 21.2' BORING FROM 21. CORE BARREL PLUGGED		
									MIN	1			
										22			
									3.0	23			
									1.5	24			
									1.75	25		GREY FRACTURED DOLOMITE UNIFORM 95% RECOVERY	
									1.5	26			
									2.2	27		BOTTOM OF HOLE MEASURED @ 29.8'	
									1.5	28			
									2.0	29			

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	Remarks
	0' to 6'	6' to 12'	12' to 18'	18' to 24'								
												<p>SET 2" PVC MONITORING WELL @ 29.8'</p> <p>10' SCHED. 40 PVC SCREEN</p> <p>#2 SANDPAK TO 17.4'</p> <p>3/8" BENTONITE PELLETS TO 16.3'</p> <p>BENTONITE SLURRY TO 14'</p> <p>PORTLAND CEMENT TO SURFACE</p> <p>PROTECTIVE STEEL CASING</p>

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York		Log of Well No. LAB-109	
BORING LOCATION: West of 1640 Emerson Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothangle Drilling		DATE STARTED: 12/13/10	DATE FINISHED: 12/14/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 27.0 fbgs	SCREEN INTERVAL: 12.0-27.0 fbgs
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER:	FIRST COMPL. CASING: 2" PVC
SAMPLING METHOD: Geoprobe (direct push) 4' acetate sleeves		LOGGED BY: RM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES			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
	Sample No.	Sample	Blows/foot			
Surface Elevation: fmsl						
1					Topsoil	<p>flush-mount surface casing</p> <p>Cement/bentonite grout</p> <p>2" dia. schedule 40 PVC riser</p> <p>#00N Filter sand</p> <p>15' 0.010" slot schedule 40 PVC well screen</p> <p>Bedrock corehole reamed with 3 7/8" dia. to 27' bgs.</p>
2	1		NA	0	Red-brown SILT with little fine sand and little fine to medium angular gravel, moist throughout, no odors.	
3					ASH/FILL- Black sand with approximately 80% cinders, and 20% ash, trace glass, metal.	
4						
5						
6	2		NA	0		
7						
8						
9						
10	3		NA	0		
11						
12						
13					As above with some wood pieces, saturated.	
14	4		NA	0		
15						
16						
17						
18	5		NA	0	Brown fine to medium SAND, little silt, little fine angular gravel, saturated.	
19						
20					sampler refusal at 20.1 feet below ground surface. Advance 4 1/4" HSA to 22' bgs (1.8' into bedrock).	
21						
22					Begin HQ rock core at 22.0' bgs.	
23						
24					Run #1	
25					Depth: 22.0-26.5 'bgs	
26					Rec: 41" (76%)	
27					RQD: 4" (7%)	
28					Lithology: LOCKPORT FORMATION (Penfield Dolostone Member)	
29					Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occasional to frequent argillaceous partings and occasional shale interbeds. Zones of occasional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.	
30						
31						
32						
33						
34						
35					Rock core details:	
36					*closely spaced bedding plane joints throughout.	
37					*high angle joint at 24.9-25.1' bgs.	
38					*apparent void between 26 and 26.5' bgs. Approximately 60 gallons water loss in this zone.	
39						
40						

WELL_OVM FESL WELL LOGS 9-2010.GPJ (4/11)

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B101	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 13.0 ft. while standard sampling.		
					ELEVATION: ---		
					DATUM: ---		
					START: 13 May 1993		
					FINISH: 13 May 1993		
					DRILLER: S. Loranty		
					H&A REP: J. Marschner		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		7	S1	3.0		Medium dense dark brown to black ASH, and clayey SILT, some wood, glass, dry, -FILL-	
		5	19"/24"	5.0			
10		4	S2	8.0		Loose black ASH and dark brown clayey SILT, and organic material, some glass, cinders and/or coal, ceramic fragments, brick, damp. -FILL-	
		4	5"/24"	10.0			
15		5	S3	13.0	13.2	Loose black ASH with plastic, glass and organic material.-FILL- Medium dense gray and brown SILT with black laminae, damp. -LACUSTRINE/FLUVIAL-	
		9	19"/22"	14.8	13.8		
						Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE. -ROCHESTER FORMATION-	
						Bottom of Boring at 14.8 ft.	
Note:							
1. Backfilled borehole to ground surface with soil cuttings.							
2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 10 ppm (methane) S3 = 15 ppm (methane) No OVA readings above background in the breathing zone.							
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.							
WATER LEVEL DATA				SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			OVERBURDEN (LIN FT): 14.8	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
						SAMPLES: 3S	
						BORING NO.	B101

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B102	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			DATUM: ---
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			START: 13 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			FINISH: 13 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 23.5 ft. while standard sampling.			DRILLER: S. Loranty
								H&A REP: J. Marschner
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		7	S1	3.0	9.5	Dense brown SILT little coarse to fine sand, trace gravel with paper, plastic, carpet, dry.		
		13	24"/24"	5.0		-FILL-		
10		2	S2	8.0	9.5	Loose brown SILT, trace clay with glass, dry.		
		3	12"/24"	10.0		Dense ASH with charred wood.		
15		6	S3	13.0	9.5	Medium dense ASH, some brick, wood and brown silt with newspaper, plaster board, cardboard, damp.		
		8	9"/24"	15.0		-FILL-		
20		4	S4	18.0	9.5	Medium dense ASH with wood, damp.		
		6	2"/24"	20.0		Loose ASH and dark brown clayey SILT with wood, trace fabric, cardboard and glass, dry.		
25		100/.5	S5	23.0	23.3	Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE.		
			5"/6"	23.5		-ROCHESTER FORMATION-		
						Bottom of Boring at 23.5 ft.		
WATER LEVEL DATA						SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 23.5	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: 5S		
						BORING NO. B102		

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 3 ppm S2 = 10 ppm (methane) S3 = 18 ppm (methane) S4 = 100 ppm (methane) S5 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 submitted for TCLP metals and hazardous characteristics analyses. Sample S2 submitted for full TCLP analysis.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST BORING REPORT			BORING NO. B103		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 20.0 ft. while standard sampling.			
					ELEVATION: ---			
					DATUM: ---			
					START: 13 May 1993			
					FINISH: 13 May 1993			
					DRILLER: S. Loranty			
					H&A REP: J. Marschner			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
		3	S1	3.0	4.9	Loose brown sandy SILT, some gravel, trace organic material, dry. -FILL-		
5		3	8"/24"	5.0		Loose dark brown and gray ASH with plastic, wood, glass, metal slag, dry. -FILL-		
		3	S2	8.0	10	Medium dense dark gray-brown ASH, with metal, wood and silt, damp. -FILL-		
10		6	4"/24"	10.0		Medium dense black ASH with wood and sandy SILT, trace glass and plastic, damp. -FILL-		
		7	S3	13.0	15	Loose dark brown WOOD, trace metal slag and glass (ash) and brown silt, damp. -FILL-		
15		8	10"/24"	15.0		Very dense black ASH with wood, pieces of metal slag and wire, shale fragments, wet. Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE, wet. -ROCHESTER FORMATION-		
		3	S4	18.0	22.3	Bottom of Boring at 22.5 ft.		
20		3	6"/24"	20.0				
		100/.5	S5	22.0	22.5			
25			6"/6"	22.5				
WATER LEVEL DATA						SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 22.5	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: 5S		
						BORING NO. B103		

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 50 ppm (methane) S2 = 38 ppm (methane) S3 = 80 ppm (methane) S4 = 0 ppm S5 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B104	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			DATUM: ---
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			START: 13 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			FINISH: 13 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 20.0 ft. while standard sampling.			DRILLER: S. Loranty
								H&A REP: J. Marschner
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		10 9 8	S1 S1-A 18"/24"	3.0 5.0	4.5	Medium dense brown very fine SAND, some gravel size dolostone fragments, dry. -FILL-		
					6.5	Medium dense brown REFUSE, with glass, newspaper, plastic, dolostone fragments and very fine sand, dry. -FILL-		
10		22 24 14 100/.3	S2 6"/22"	8.0 9.8		Dense brown ASH with glass, plastic, dolostone fragments, sand to gravel size, paper, dry. -FILL-		
15		4 6 5 3	S3 6"/24"	13.0 15.0		Medium dense brown ASH with paper, plastic, cloth, glass, wood, dry. -FILL-		
20		--- --- 100/.4 100/.3	S4 6"/23" S5 4"/4"	18.0 19.9 20.0 20.3	19.5	Black ASH with metal, wood, plastic, dry. Hard, highly to completely weathered, brown to gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-		
						Bottom of Boring at 20.3 ft.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 20.3	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: 5S		
						BORING NO. B104		

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 12 ppm (methane) S2 = 48 ppm (methane) S3 = 55 ppm (methane) S4 = 16 ppm (methane) S5 = 4 ppm (methane) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above back-ground from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B105	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 13 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 13 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 18.2 ft. while standard sampling.		DRILLER: R. Bauer
							H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5	47	67	S1	3.0	16.5	Very dense REFUSE, with plastic, cardboard, wood metal, carpet, dry. -FILL-	
			4	4"/24"		5.0	
			7				
			9				
10	9	7	S2	8.0	16.5	Medium dense brown fine sandy SILT, with wood, moist. -FILL-	
			4	2"/24"		10.0	
15	1	3	S3	13.0	16.5	Loose brown fine sandy SILT, trace wire, moist to wet. -FILL-	
			8	15"/24"		15.0	
20	100/.2		S4	18.0	16.5	Dark gray-brown PEAT with shell fragments and clayey silt (MARL). -MARSH DEPOSIT-	
				2"/3"		18.2	
25						Bottom of Boring at 18.2 ft. Apparent Top of Rock at 18.2 ft.	
Notes:							
1. Backfilled borehole to ground surface with soil cuttings.							
2. OVA readings from sample screening noted as follows:							
S1 = 15 ppm (methane) S2 = 30-50 ppm (10 ppm methane)							
S3 = 100 ppm (45 ppm methane) S4 = 10 ppm (methane)							
No OVA readings above background in the breathing zone.							
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.							
4. Sample S1 submitted for TCLP metals and hazardous characteristics analyses.							
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 18.2
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 4S	
						BORING NO. B105	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 10 ppm (methane) S2 = 150 ppm (methane) S3 = 300-500 ppm (methane) S4 = 1000+ ppm (methane) S5 = 85 ppm (methane) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above back-ground from sample screening or in the breathing zone. 4. Sample S3 submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B107		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---	
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		DATUM: ---	
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 13 May 1993	
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 13 May 1993	
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 23.7 ft. while standard sampling.		DRILLER: R. Bauer	
							H&A REP: M. Corrigan	
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		11	S1	3.0	6.5	Medium dense brown fine sandy SILT, damp.		
		11						
		3	2"/24"	5.0			-FILL-	
		8						
10		9	S2	8.0	21.5	Loose black ASH, with wood, plastic, metal, wet.		
		5						
		4	5"/24"	10.0				
15		9	S3	13.0	21.5	Loose black ASH with wood, organic material, moist to wet.		
		5						
		3	3"/24"	15.0			-FILL-	
20		3	S4	18.0	21.5	Loose red-brown coarse to fine SAND, some glass, with wood, moist to wet.		
		4						
		5	6"/24"	20.0			-FILL-	
25		72	S5	23.0	21.5	Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE, dry.		
		100/.2	6"/8"	23.7			-ROCHESTER FORMATION-	
						Bottom of Boring at 23.7 ft.		
WATER LEVEL DATA						SAMPLE IDENTIFICATION		
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 23.7 ROCK CORED (LIN FT): --- SAMPLES: 5S	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER			BORING NO. B107

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 450 ppm (methane) S2 = 1000 ppm (methane) S3 = Submitted for analysis S4 = 20 ppm (5 ppm methane) S5 = 70 ppm (methane) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S3 and duplicate submitted for full TCLP analysis. Sample S4 submitted for TCLP metals, hazardous characteristics and TCL volatile organic analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B108	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted			DATUM: ---
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers			START: 14 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MJD: ---			FINISH: 14 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 18.8 ft. while standard sampling.			DRILLER: R. Bauer
								H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		18 24 14 11	S1	3.0	4.8	Observed red-brown SILT, some sand, little gravel, with clay to a depth of 2.7 feet in open borehole. -GLACIAL TILL DERIVED FILL-		
			18"/24"	5.0		Dense red-brown fine SAND, little gravel, little silt, with black ash layer at 4.8 ft. - 5.0 ft. -FILL-		
10		10 16 13 11	S2	8.0		Medium dense black ASH, with wood, wire, moist. (slight petroleum odor) -FILL-		
			2"/24"	10.0				
15		2 3 4 5	S3	13.0		Loose black ASH, with glass and ceramics, trace wire, moist to wet. (petroleum odor) -FILL-		
			15"/24"	15.0				
20		18 100/.3	S4	18.0	18.5	Hard brown clayey fine SAND, with glass, moist to wet. -DISTURBED NATIVE MATERIALS/FILL-		
			6"/9"	18.8		Very dense brown silty fine SAND, some gravel, little clay, moist to wet. -LACUSTRINE/FLUVIAL-		
Bottom of Boring at 18.8 ft.						Notes:		
						1. Backfilled borehole to ground surface with soil cuttings.		
						2. OVA readings from sample screening noted as follows: S1 = 500 ppm (200 methane) - (ash layer = 8-9 ppm methane) S2 = 1000+ (30 ppm methane) S3 = 300-400 ppm (210 ppm methane) S4 = 10 ppm methane No OVA readings above background in the breathing zone.		
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
						4. Sample S2 and duplicate submitted for TCLP metals and hazardous characteristics analyses. Sample 3 submitted for TCLP volatile organic analyses.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 18.8	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	SAMPLES: 4S
							BORING NO. B108	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B109	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: AC Rochester (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: --- DATUM: --- START: 14 May 1993 FINISH: 14 May 1993 DRILLER: S. Loranty H&A REP: J. Marschner
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 10.3 ft. while standard sampling.		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5	5	6	S1	3.0	8.4	Medium dense brown to black ASH, with glass, wood, dry. -FILL-	
			18"/24"	5.0			
			S2	8.0			
			24"/24"	10.0			
10	8	8	S3	10.0	10.0	Medium dense brown SILT, little gravel, damp to moist. -LACUSTRINE/FLUVIAL-	
			3"/24"	10.3			
Bottom of Boring at 10.3 ft.						Notes:	
1. Backfilled borehole to ground surface with soil cuttings.						2. OVA readings from sample screening noted as follows: S1 = 38 ppm methane S2 = 60 ppm methane -- ash = 22 ppm methane -- silt S3 = 10 ppm methane No OVA readings above background in the breathing zone.	
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.						4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses.	
WATER LEVEL DATA			SAMPLE IDENTIFICATION			SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.3
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
							SAMPLES: 3S
							BORING NO. B109

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B111	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Edison Technical & Occupational Education Center	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 24.3 ft. while standard sampling.		
					ELEVATION: ---		
					DATUM: 17 May 1993		
					FINISH: 17 May 1993		
					DRILLER: S. Loranty		
					H&A REP: J. Marschner		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
						6" of topsoil.	
		2	S1	3.0		Medium dense black ASH, with wood and glass, moist to wet.	
		4				-FILL-	
5		6	15"/24"	5.0			
		9					
		3	S2	8.0		Medium dense black ASH, and WOOD, with glass and brick, moist.	
		6	8"/24"	10.0			
10		7					
		9					
		2	S3	13.0		Medium dense black ASH, with wood, glass and brick, damp to moist.	
		6	12"/24"	15.0		-FILL-	
15		11					
		4					
		2	S4	23.0			
		3	15"/15"	24.3			
20		5					
		3					
					21.5	Loose brown-black SILT with organics. -MARSH DEPOSIT-	
						Loose gray-brown fine sandy SILT, moist. -RESIDUAL SOIL-	
						Hard, highly weathered gray, fine-grained DOLOSTONE. -LOCKPORT FORMATION-	
		5	S5	23.0	23.4		
		88	15"/15"	24.3	23.7		
25		100/.3			24.3	Bottom of Boring at 24.3 ft.	
WATER LEVEL DATA						SAMPLE IDENTIFICATION	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 24.3
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
						SAMPLES: 5S	
						BORING NO. B111	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 10 ppm (methane) S2 = 280 ppm (methane) S3 = 10 ppm (methane) S4 = 40 ppm (methane) S5 = 15 ppm (methane) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S4 was submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B112		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46			
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1			
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Edison Technical & Occupational Education Center			
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		DATUM: ---		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Auger		START: 8 June 1993		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 8 June 1993		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 22.5 ft. while standard sampling.		DRILLER: S. Loranty		
H&A REP: M. Corrigan									
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS			
5		2 4 6 8	S1 8"/24"	3.0 5.0		Medium dense black ASH, some gravel, with glass, metal, cinders and brick, moist. -FILL-			
10		6 7 5 3	S2 6"/24"	8.0 10.0		Same. -FILL-			
15		2 4 6 10	S3 3"/24"	13.0 15.0		Same, except moist to wet.			
20		5 6 4 7	S4 4"/24"	18.0 20.0		Medium dense black ASH, moist to wet. -FILL-			
25						Auger Refusal at 22.5 ft. Bottom of Boring at 22.5 ft.			
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY		
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 22.5		
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---		
						SAMPLES: 4S			
						BORING NO. B112			

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 20 ppm (methane) S2 = 1000+ ppm (400 ppm methane) S3 = 10 ppm (methane) S4 = 4 ppm (2 ppm methane) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S2 was submitted for TCL volatile organic analysis.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B113		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: U.D.C. (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted			
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 20.9 ft. while standard sampling.			
					ELEVATION: ---			
					DATUM: ---			
					START: 14 May 1993			
					FINISH: 14 May 1993			
					DRILLER: R. Bauer			
					H&A REP: M. Corrigan			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		32	S1	3.0	4.8	Dense brown clayey SILT, trace gravel and organic material with ASH layer containing glass fragments at 4.8 ft., moist to wet.		
		25	6"/24"	5.0		-FILL-		
10		10			16.5	-FILL-		
		9	S2	8.0		Loose black ASH, with metal and plastic, wet.		
15		6	5"/24"	10.0	20.9	-FILL-		
		3				Loose black ASH, with metal and plastic, wet.		
20		1	S3	13.0	20.9	-FILL-		
		2	5"/24"	15.0		Medium dense mottled brown-gray SILT, little sand, trace gravel moist.		
25		14	S4	18.0	20.9	-DISTURBED LACUSTRINE/FLUVIAL- OR RESIDUAL SOIL-		
		11	13"/24"	20.0		Bottom of Boring at 20.9 ft.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT):	20.9
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT):	---
						SAMPLES:	4S	
						BORING NO.	B113	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 1000+ ppm methane S2 = 1000+ ppm (200 ppm methane) S3 = 950 ppm methane S4 = 0.8 ppm methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S2 was submitted for TCL volatile organic analysis. Sample S3 was submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B114		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Laird Plastics (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---	
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		DATUM: ---	
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 17 May 1993	
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 17 May 1993	
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 23.5 ft. while standard sampling.		DRILLER: R. Bauer	
							H&A REP: M. Corrigan	
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		4 4 15 7	S1	3.0	4.0	Loose brown silty fine SAND, dry. -FILL-		
			2"/24"	5.0		Medium dense black iron-stained ASH with glass, moist. -FILL-		
			S2	8.0		Loose black ASH, with glass, cinders, wire, ceramic fragments, moist to wet. -FILL-		
			4"/24"	10.0		Very loose black ASH, with glass, metal, wet. -FILL-		
			S3	13.0		Loose black ASH, with ceramic fragments, glass, wire, trace gravel, wet. -FILL-		
10		4 5 4 3	4"/24"	10.0	21.5	Loose gray fine sandy SILT, with clay seams, wet. -LACUSTRINE/FLUVIAL-		
			S4	18.0		Bottom of Boring at 23.2 ft.		
15		WOH 1 1 2	4"/24"	15.0	21.5	Loose gray fine sandy SILT, with clay seams, wet. -LACUSTRINE/FLUVIAL-		
			S5	23.0		Bottom of Boring at 23.2 ft.		
			2"/2"	23.2		Bottom of Boring at 23.2 ft.		
20		3 3 4 7	S4	18.0	21.5	Loose gray fine sandy SILT, with clay seams, wet. -LACUSTRINE/FLUVIAL-		
			8"/24"	20.0		Bottom of Boring at 23.2 ft.		
25		50/.2	S5	23.0	21.5	Loose gray fine sandy SILT, with clay seams, wet. -LACUSTRINE/FLUVIAL-		
			2"/2"	23.2		Bottom of Boring at 23.2 ft.		
WATER LEVEL DATA						SAMPLE IDENTIFICATION		
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	SUMMARY	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		OVERBURDEN (LIN FT):	ROCK CORED (LIN FT):
							23.2	---
							SAMPLES:	5S
							BORING NO.	B114

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 8 ppm methane S2 = 5 ppm methane S3 = 2 ppm methane S4 = 30 ppm methane S5 = 0.3 ppm (H.S.) methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

BORING LOG



Bergmann
associates

BORING NUMBER: TEST BORING B-1

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
 Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-1
 Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
 Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
 Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
 Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
 Screened Interval: none Slot Size: none Well Type: none Sandpack: none
 Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
 Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER*			SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs	
	SAMPLE NUMBER					Background values at surface	
0	Depth	Sample	Recovery			PID = 0.6 ppr FID = 5 ppm	
5	0' - 3'	1	78%	1" Topsoil with roots at surface 5" of apparent landfill cap material = Silt and fine sand Landfill waste below 6" = Sand, gravel, glass at 3': waste = gravel, black ash, glass, metal	2' = 9 uR/Hr 3' = 19 uR/Hr 5' = 12 uR/Hr	2' = 0.6 ppm	2' = 14 ppm
	3' - 6'	2	53%			3' = 0.6 ppm	3' = 26 ppm
				Rock fragment at bottom of sample barrel		4' = 0.6 ppm	4' = 11 ppm
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	5' = 0.59 ppm	5' = 14 ppm
15						<u>SOIL GAS VALUES</u>	
20						Background at surface: PID = 0.6 ppr FID = 4.2 ppm	
25						Soil Gas Sample collected 5 ft PID=0.48 ppr FID = 2.3 % ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG



Bergmann
associates

BORING NUMBER: TEST BORING B-2

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
 Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-2
 Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
 Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
 Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
 Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
 Screened Interval: none Slot Size: none Well Type: none Sandpack: none
 Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
 Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER*			SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs	
	SAMPLE NUMBER					Background values at surface	
0	Depth	Sample	Recovery			PID = 0.6 ppm	FID = 10 ppm
	0' - 3'	1	67%	2" Topsoil with roots at surface 8" of apparent landfill cap material = Silt and fine sand Landfill waste below 6" = Brown Sand & Gravel		2' = 0.6 ppm	2' = 12 ppm
5	3' - 6'	2	78%	Same to 3.5 ft Below 3.5 ft: Black ash, glass, plastic mixed in sand Same waste to termination of boring at 6.0 feet	3'-6': 9 to 13 uR/Hr	4' = 1.5 ppm	4' = 15 ppm
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.4 ppm FID = 8 ppm	
15						Soil Gas Sample collected 5 ft PID=5.5 ppm FID = 4.12 % ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG



BORING NUMBER: TEST BORING B-3

PROJECT: LeChase Expansion at Emerson St. **Project No:** 7279.01 **Page No.** 1 of 1
Start Date: 01/25/07 **Finish Date** 1/25/2007 **Top of Well:** N/A **Boring No:** B-3
Driller: Jeff Schweitzer, Nothnagle Drilling **Boring Location:** Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates **Water Level (During Drilling):** Not encountered
Drilling Method: Geoprobe 6610DT Direct Push **Water Level (Post Drilling):** Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none **Slot Size:** none **Well Type:** none **Sandpack:** none
Seal: none **Weather Conditions:** cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER*			SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs	
	SAMPLE NUMBER					Background values at surface	
0	Depth	Sample	Recovery				
	0' - 3'	1	97%	2.5" Topsoil with roots at surface 11" of apparent landfill cap material = Silt & fine sand Landfill waste below 13" = Brown Sand & Gravel, Silt Saturated zone at 3.0 feet Same sand, gravel and silt to 4.0 feet 4.0 feet: Black ash, plastic, glass to termination at 6 ft	0'-3': 15 - 16 uR/Hr 5': 20 uR/Hr	4-6' = 0.7 ppm	4-6' = 70 ppm
5	3' - 6'	2	92%				
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.29 pp FID = 8.5 ppm	
15						Soil Gas Sample collected 5 ft PID=0.5 ppm FID = 7.8 % ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG



Bergmann
associates

BORING NUMBER: TEST BORING B-4

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
 Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-4
 Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
 Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
 Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
 Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
 Screened Interval: none Slot Size: none Well Type: none Sandpack: none
 Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
 Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER*			SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs	
	SAMPLE NUMBER					Background values at surface	
0	Depth	Sample	Recovery			PID = 0.64 pp FID = 1.4 ppm	
	0' - 3'	1	89%	2" Topsoil with roots at surface	0'=15 uR/Hr	2' = 0.65 ppm	2' = 0.41 ppm
				10" of apparent landfill cap material = Silt & fine sand	0'-2': 8 to 12 uR/Hr		
	3' - 6'	2	83%	Landfill waste below 13" = Brown Sand & Gravel, Silt	3'-6': 6 to 10 uR/Hr	4-6' = 0.7 ppm	4-6' = 70 ppm
5				Same sand and gravel to 4 feet			
				At 4 feet: ash, glass, rubber, silt in the waste			
				Continued to termination at 6.0 feet			
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	<u>SOIL GAS VALUES</u> Background at surface: PID=0.71 ppn FID = 1.47 ppm	
						Soil Gas Sample collected 5 ft PID=0.56 ppn FID = 14 % ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
15							
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG



Bergmann
associates

BORING NUMBER: TEST BORING B-13

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
 Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-13
 Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
 Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
 Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
 Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
 Screened Interval: none Slot Size: none Well Type: none Sandpack: none
 Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
 Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER*			SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs	
	Depth	Sample	Recovery			Background values at surface	
0	0' - 3'	1	92%	1" Topsoil with roots at surface 4" of apparent landfill cap material = Silt & fine sand Landfill waste below 5" = coarse sand and gravel	3' = 9 - 15 uR/Hr 6' = 11 - 15 uR/Hr 9' = 6-9 uR/Hr	PID = 0.1 ppm FID = 5.5 ppm	
5	3' - 6'	2	89%	same waste to 3.5'. Then black silt and ash, wet zone		2' = 0.3 ppm 3' = 0.3 ppm 4' = 0.2 ppm	2' = 4.6 ppm 3' = 7.3 ppm 4' = 9.5 ppm
10	6' - 9'	3	42%	6' - 9' : very soft black & brown mottled silt and fine sand		6' = 0.33 ppm 7-9'=0.21 ppm 7-9'=12.5 ppm	6' = 8.0 ppm
15				Boring terminated 9.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.5 ppm FID = 2.8 ppm Soil Gas Sample collected 5 ft PID=2.8 ppm FID=2,000 ppm ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow



Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-1
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 101.1 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

Site Pictures

TP07-1



Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
2	S-1	2'0"	TOPSOIL, ROOTMAT	0'5" Firm brown dry SAND, SILT and GRAVEL, trace brick, trace plastic, trace wood, trace metal
4			TOPSOIL	1'9" Firm tan brown moist SILT, little sand, trace clay, trace gravel, trace cobbles
6				24" boulder noted at 6'0"
8				9'0"
10				Test pit terminated at 9'0"
12				Notes: 1. Sides vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.



Test Pit Log

Project No. 3189.0 **Page** 1 **of** 1 **Test Pit No.** TP07-2
Project Name 500 Lee Road Addition, Rochester, New York 14606
Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
Elevation 99.7 ± **Weather** Sunny, 85° **Technician** S. Allen
Date Started 9/7/07 **Completed** 9/7/07 **Operator** Dominic
Backhoe Subcontractor F. Monte Enterprises **Equipment** Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
2			ROOTMAT FILL: Firm tan-brown moist SAND, SILT and GRAVEL, trace brick, trace organic, few cobbles	0'4"
4			Firm tan-brown moist SILT, little sand, trace clay	4'6"
6			Test pit terminated at 6'5"	6'5"
8				
10				
12				

Notes:

- Sides vertical.
- Dry on completion.
- Staked locations/elevations provided by Foundation Design, P.C.
- Location moved to southeast corner of building due to utility conflict.
- Existing building on caisson/grade beam.

Site Pictures

TP07-2





Foundation Design, P.C.

Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-3
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 101.5 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

Site Pictures

NO PHOTO

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
2			ROOTMAT	0'4"
			FILL: Firm tan-brown dry SAND, SILT and GRAVEL, trace concrete, trace brick, trace metal	
4	S-1	3'6"	TOPSOIL	2'6" 3'0"
			Firm tan-brown moist SILT, little sand	
6				
8				
10				9'0"
12				

Test pit terminated at 9'0"

Notes:

- Sides vertical.
- Dry on completion.
- Staked locations/elevations provided by Foundation Design, P.C.



Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-4
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 101.9 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

TP07-4

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
			TOPSOIL, ROOTMAT	0'4"
2			Firm to compact SAND, SILT and GRAVEL, numerous cobbles, trace metal	
			30" boulder noted at 2'6"	2'6"
4	S-1	3'0"	TOPSOIL with wood	3'7"
			Firm to compact brown moist SILT, little sand, trace clay, trace gravel	
6			Stiff tan-brown moist SILT and CLAY, trace sand	5'8"
8			Test pit terminated at 8'0"	8'0"
10				
12				

- Notes:
- Sides Vertical.
 - Dry on completion.
 - Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures





Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-6
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 101.2 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

Site Pictures

NO PHOTO

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
2			TOPSOIL/ROOTMAT FILL: Firm brown dry SAND, SILT and GRAVEL, numerous cobbles and boulders, trace metal	0'4"
4	S-1	4'0"	TOPSOIL Firm tan-brown moist SILT, little sand, little gravel	2'3" 3'3"
6			Firm tan-brown moist SILT, some sand, little gravel, few cobbles	4'6"
8			Refusal on apparent bedrock at 7'0"	7'0"
10				
12				

Notes:

- Sides vertical.
- Dry on completion.
- Staked locations/elevations provided by Foundation Design, P.C.



**Foundation
Design, P.C.**

Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-7
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 100.5 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

Site Pictures

NO PHOTO

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ROOTMAT _____ 0'4" Firm tan-brown dry SAND, SILT and GRAVEL, numerous cobbles
			TOPSOIL, trace wood _____ 2'6"
4	S-1	4'0"	Firm tan-brown moist SILT, little sand, little gravel _____ 3'6"
6			Firm tan-brown moist SILT, little to some sand, trace gravel _____ 4'6"
8			Refusal on apparent bedrock at 7'6" _____ 7'6"
10			
12			

Notes:

1. Sides vertical.
2. Dry on completion.
3. Staked locations/elevations provided by Foundation Design, P.C.



Test Pit Log

Project No. 3189.0 Page 1 of 1 Test Pit No. TP07-8
 Project Name 500 Lee Road Addition, Rochester, New York 14606
 Client Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614
 Elevation 100.5 Weather Sunny, 85° Technician S. Allen
 Date Started 9/7/07 Completed 9/7/07 Operator Dominic
 Backhoe Subcontractor F. Monte Enterprises Equipment Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications	Remarks
2			ROOTMAT Compact SAND, SILT and GRAVEL, trace concrete, trace brick, numerous cobbles	0'4"
4			Firm black moist SILT, some sand, trace organics (buried topsoil)	4'0"
6	S-1	5'0"	Firm to compact SILT, little to some sand, trace gravel, trace clay	6'0"
8			Refusal on apparent bedrock at 7'7"	7'7"
10				
12				

Notes:

- Sides Vertical.
- Dry on completion.
- Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

TP07-8



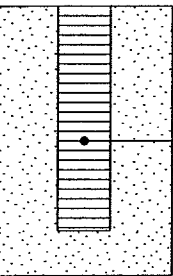
PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York		Log of Well No. GMX-MW-1	
BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/12/00	DATE FINISHED: 6/12/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 29.0 fbgs	SCREEN INTERVAL 19 to 29 fbgs
DRILLING EQUIPMENT: CME-75		DEPTH TO FIRST WATER:	COMPL. CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/foot				
Surface Elevation: fmsl							
1	1	X	49	0	Gravelly Silt (ML): dark red/brown, moist, 60% fines, 30% fine gravel, 10% fine sand, medium plasticity, soft, some rootlets -dry (0.6-0.9)		
2		X			WASTE: dark grey, dry, 70% fines, 20% fine gravel, 10% waste (plastic, paper), soft -dark grey/brown, moist		
3	2	X	32	0	Gravelly Silt (ML): dark red/brown, moist, 60% fines, 30% fine gravel, 10% fine sand, medium plasticity, soft, some rootlets		
4		X			WASTE: dark brown/black, moist, 60% fines, 20% waste (paper, wood, plastic, metal, etc.) 10% fine gravel		
5	3	X	10	2.4			
6		X					
7	4	X	20	1.3			
8		X					
9	5	X	17	1.3			
10		X			-strong odor with glass, paper, wire, wood		
11	6	X	11	6.3			
12		X					
13	7	X	69				
14		X					
15	8	X	7				
16		X					
17	9	X		0.2	-wet SILT with SAND (ML): greenish/brown, wet, 80% fines, 20% fine sand, high plasticity, soft 0.6 to 0.8 Waste as above (wire with fines)		
18		X			WASTE: dark brown/black, moist, 60% fines, 20% waste (wire, fines) 10% fine gravel		
19	10	X			-weathered bedrock		
20		X			LOCKPORT DOLOMITE: dark grey, fine grained, moderately hard, closely spaced moderately wide horizontal fractures		
21		X			-cavity, 1-2" in diameter (18.3-18.5)		
22		X			-angular fracture with trace silt and fine sand		
23		X			Run #1 (18-23): Recovery = 95% RQD = 48%		
24		X			-occasional vugs		
25		X					
26		X					
27		X			Run #2 (23-28): Recovery = 99% RQD = 72%		
28		X			-less horizontal fractures, trace chert filled vugs		
29		X			Run #3 (28-30): Core Recovery = 100% RQD = 98%		
30		X					

PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York		Log of Well No. GMX-MW-2	
BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/13/00	DATE FINISHED: 6/14/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 36.0 fbg	SCREEN INTERVAL: 25 to 35 fbg
DRILLING EQUIPMENT: CME-75		DEPTH TO FIRST COMPL.	CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs		RESPONSIBLE PROFESSIONAL: Richard Frappa	
DROP: 30"		REG. NO.	

DEPTH (feet)	SAMPLES			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
	Sample No.	Sample	Blows/foot			
1	1		42	0	ORGANIC SILT (OL): dark brown, 70% fines, 20% fine gravel, 10% rootlets, medium plasticity, moist, firm, TOPSOIL	
2					SAND with GRAVEL (SW): dark grey/brown, moist, 70% fine sand, 20% fine gravel, 10% low plasticity fines, loose, iron stained	
3	2		6	1.5	WELL GRADED GRAVEL with SILT (GW-GM): light grey/white, dry, 70% coarse gravel, 20% fine gravel, 10% low plasticity fines, loose	
4					WASTE: brown, moist, 50% fine sand, 30% medium plasticity fines, 20% fine gravel with waste (glass, paper, metal), firm, strong odor	
5	3		6	2.5	WASTE: black, moist, 70% coarse sand, 20% fine gravel with waste (glass, plastic, paper, ceramic), 10% nonplastic fines, loose	
6					WASTE: light brown/tan, moist, 60% fines, 20% fine sand, 5% fine gravel, 5% waste (as above), medium plasticity, firm	
7	4		8	2.9	-strong odor with paper, glass, string, wire, metal, etc.	
8					WASTE: black, wet, 60% fine sand, 20% fine gravel, 10% coarse gravel, 10% waste (paper, wood), loose	
9	5		9	2.7	-wood, glass	
10					-wet, purple foundary sand, wood, paper, plastic	
11	6		8	0.7		
12						
13	7		4	1.7		
14						
15	8		9	0.2		
16						
17	9		49			
18					WASTE as above, wet (wood, paper, plastic, glass)	
19	10		9	1.0		
20					-black, wet, more organics (peat-like), wood, foundary sand, plastic, paper	
21	11		6	1.0		
22					WASTE: dark grey, wet, 60% fines, 35% fine sand, 5% rootlets (at waste native contact), medium plasticity, grades from soft to firm	
23	12			0	SILT and FINE SAND (ML-SP): dark grey, wet, 50% fines, 50% fine sand, low plasticity, firm, NATIVE	
24					-weathered bedrock	
25					ROCHESTER SHALE: dark grey, moderately hard, several horizontal fractures	
26					LOCKPORT DOLOMITE: dark grey, calcite filled vugs, several horizontal fractures, occassional angular fracture, fine grained	
27					Run #1 (24-29) Recovery = 90% RQD = 34%	
28					-fewer horizontal fractures	
29						
30						

WELL_OVM 5976MW2.GPJ (3/01)

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/ foot				
31							 <p>Screen, 2" 0.010-slot PVC</p>
32							
33							
34						-angular fracture	
35						Run #2 (29-34) Recovery = 94% RQD = 54%	
36						-occasional vugs	
37						Run #3 (34-36) Recovery = 95%, RQD = 76%	
38							
39							
40							
41							
42							
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PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-3

BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/14/00	DATE FINISHED: 6/15/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 30.5 fbg	SCREEN INTERVAL: 19 to 29 fbg
DRILLING EQUIPMENT: CME-75		DEPTH TO FIRST WATER:	COMPL. CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.</small>	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
Surface Elevation: fmsl						
1	1	X	29	0.0	GRAVELLY SILT (ML): dark brown, moist, 60% fines, 30% fine gravel, 5% coarse gravel, 5% rootlets, soft, TOPSOIL	<p style="text-align: right;">Cement</p> <p style="text-align: right;">Grout</p> <p style="text-align: right;">Bentonite Pellets</p> <p style="text-align: right;">Sand Ricci #00</p> <p style="text-align: right;">Screen, 2" 0.010-slot PVC</p>
2		X			WELL GRADED GRAVEL with SAND and SILT: light grey/white, dry, 70% coarse gravel, 20% fine sand, 10% low plasticity fines, loose	
3	2	X	19	0.0	WASTE: dark brown grading to black, moist, 70% fine sand, 10% fine gravel, 10% nonplastic fines, 10% waste (wood, glass, rope, paper), loose	
4		X			-brown, wood with coarse gravel	
5	3	X	22	0.2	-black, foundary sand (glass, wood, paint chip)	
6		X				
7	4	X	2	0.9		
8		X			-brick, foundary brick, paper, foundary sand, glass	
9	5	X	7	17.7		
10		X			-coarse gravel in shoe	
11	6	X	9	0.2		
12		X				
13	7	X	14	7.0	WASTE: black, moist, 60% medium sand, 30% waste (glass, paper, ash), 10% fine gravel, loose	
14		X			-wet	
15	8	X	5	5.5	SILTY SAND (SM): dark greenish/grey, wet, 70% fine sand, 30% low plasticity fines, soft	
16		X			-grades to brownish grey, wet, 50% fine sand, 30% low plasticity fines, 10% fine gravel, 10% coarse gravel, soft-firm, 5% reworked waste	
17	9	X		0.0	-weathered bedrock	
18		X				
19		X			LOCKPORT DOLOMITE: dark grey, fine grained, moderately hard, closely spaced horizontal fractures, occassional angular to vertical fractures, trace fine sand and fines in fractures	
20		X				
21		X			Run #1 (18.5-23.5) Recovery = 96% RQD = 21%	
22		X			-occassional vugs, cavities, horizontal fractures, and angular fracture	
23		X			Core Recovery = 99%	
24		X			RQD = 27% (poor)	
25		X				
26		X				
27		X				
28		X			Run #2 (23.5-28.5) Recovery = 93% RQD = 30%	
29		X				
30		X				

PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-3 (cont'd)

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/ foot				
31						Run #3 (28.5-30.5) Recovery = 93% RQD = 30%	
32							
33							
34							
35							
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37							
38							
39							
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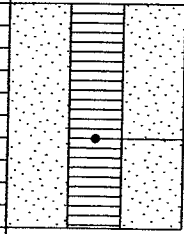
PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-4

BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/15/00	DATE FINISHED: 6/16/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 35.0 fbg	SCREEN INTERVAL: 26 to 35 fbg
DRILLING EQUIPMENT: CME-75		DEPTH TO FIRST WATER:	COMPL. CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.</small>	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot			
Surface Elevation: fmsl						
1	1		22	0.0	SANDY ORGANIC SOIL (OL/OH): dark red/brown, moist, 60% fines, 20% fine sand, 10% fine gravel, 10% rootlets, soft, medium plasticity, TOPSOIL (coarse gravel in shoe)	<p style="text-align: right;">Cement</p> <p style="text-align: right;">Grout</p> <p style="text-align: right;">Bentonite Pellets</p> <p style="text-align: right;">Sand Ricci #00</p>
2					-black	
3	2		18	0.0	WASTE: moist, plastic, paper, wood, glass, loose	
4					GRAVELLY SILT (ML): dark grey, moist, 60% fines, 30% fine gravel, 5% fine sand, firm	
5	3		14	0.0	WASTE foundary sand, glass, moist	
6					-black, moist, wood, plastic, glass	
7	4		12	0.0		
8						
9	5		48	0.7	WASTE: dark red/brown, moist, 80% fine sand, 20% fine gravel, firm, with waste (black, moist, plastic, glass, paper, metal, etc.)	
10						
11	6		5	0.3		
12						
13	7		2	0.0		
14						
15	8		30	0.0		
16					-black foundary sand in waste	
17	9		7	0.0		
18					-moist to wet, loose	
19	10		7	0.0		
20					-wet	
21	11		11	0.0		
22						
23	12			0.0	Organic Soil (OL/OH): black, moist, 90% fines, 10% rootlets, soft, low plasticity, PEAT	
24					0.9 to 1.1 DK grey, moist, 80% fines, 20% fine sand, firm, low plasticity	
25					SILT WITH SAND (ML): dark grey, moist, 80% fines, 20% fine sand, low plasticity, firm	
26					SANDY SILT (ML): dark grey, wet, 65% fine sand, 35% low plasticity fines, firm	
27					LOCKPORT DOLOMITE: dark grey, fine grained, numerous horizontal fractures, few angular and vertical fractures	
28						
29						
30						

WELL_OVM 5976MW4.GPJ (3/01)

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/ foot				
31						-highly weathered (25.0-25.3) Run #1 (25-30) Recovery = 96% RQD = 16%	
32						-occasional vugs, fines and fine sand within some fractures	
33						-very fractured, water loss (31-32)	
34							
35						-very fractured, water loss (34-35) -Run #2 (30-3) Recovery = 88% RQD = 56%	
36							
37							
38							
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PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-5

BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 10/16/00	DATE FINISHED: 10/16/00
DRILLING METHOD: HSA/HQ core		TOTAL DEPTH: 31.0 fbg	SCREEN INTERVAL: 21 to 31 fbg
DRILLING EQUIPMENT: CME-75		DEPTH TO FIRST WATER: 10 ft	COMPL. CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES		OVPM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Blows/foot			
Surface Elevation: fmsl					
1	SS-1	14		ORGANIC SILT (OL/OH): reddish brown 5YR 3/1, moist, 60% fines, 30% fine sand, 10% organic matter medium plasticity	<ul style="list-style-type: none"> → Cement → 8" diameter borehole (HSA) (0-16.5) → Cement/Bentonite Grout (0-16) → 2" diameter PVC riser (+2-21) → Bentonite (16-19) → 4" diameter corehole (16.5-31.0) → Screen, 2" 0.010-slot PVC → Sand #00N (19-31)
2				SILT and FINE SAND (SM-ML) dark reddish brown 5YR 3/4, dry, 45% fine sand, 45% medium plasticity fines, 10% gravel, fill	
3	SS-2	8		-dry to moist, concrete pieces	
4					
5	SS-3	10			
6					
7	SS-4	5		SAND and WASTE (SW): reddish black 2.5YR 2.5/1/1, dry to moist, 50% sand, 50% waste material (grass, metal pieces, etc), fill	
8				-moist, glass pieces, gravel	
9	SS-5	72			
10					
11	SS-6	7		WELL GRADED GRAVEL with SILT and SAND (GW-GM): reddish black 2.5YR 2.5/1/1, moist to wet, 50% gravel, 20% sand, 10% low plasticity fines, 20% waste material (glass, metal pieces, etc), fill	
12				SILT (ML): dark grey 5YR 3/1, wet to saturated, 90-100% fines, 0-10% fine sand, 0-5% waste material (plastic pieces), high plasticity, fill	
13	SS-7	39			
14				SILT and CLAY with GRAVEL (CL-ML): light olive grey 5Y 6/2, dry, 80% fines, 20% gravel, high plasticity, hard, native, [TILL]	
15	SS-8	>100			
16				BEDROCK: LOCKPORT DOLOMITE: dark grey, fine grained, moderately hard, numerous horizontal fractures, few angular and vertical fractures, occasional calcite filled vugs and viens	
17	SS-9	>100			
18					
19					
20					
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PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-6

BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 10/17/00	DATE FINISHED: 10/18/00
DRILLING METHOD: HSA/NX core/rollerbit		TOTAL DEPTH: 42.0 fbgs	SCREEN INTERVAL: fbgs
DRILLING EQUIPMENT: CME-75		DEPTH TO WATER: 10 ft	FIRST COMPL. CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES			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
	Sample No.	Sample	Blows/foot			
Surface Elevation: fmsl						
1	SS-1		24		ORGANIC SILT (OL/OH): dark grey 10YR 4/1, moist, 70% fines, 20% fine sand, 10% organic matter, medium plasticity, soft	<p style="text-align: right;">Cement</p> <p style="text-align: right;">8" diameter borehole (HSA) (0-12)</p> <p style="text-align: right;">Cement/Bentonite Grout (0-12)</p> <p style="text-align: right;">2" diameter PVC riser (+2-23)</p> <p style="text-align: right;">Bentonite (13-16)</p> <p style="text-align: right;">Sand 00N (16-23)</p> <p style="text-align: right;">2" diameter PVC riser (+2-37)</p> <p style="text-align: right;">2" diameter 10-slot PVC screen (18-23)</p> <p style="text-align: right;">6" diameter borehole (wet rotary rollerbit) (12-42)</p> <p style="text-align: right;">Bentonite (24-35)</p>
2					SILT and FINE SAND (SM-ML): dark yellowish brown 10YR 4/4, dry, 40-45% fine sand, 40-45% medium plasticity fines, 10-20% gravel, occasional red brick pieces, firm, fill	
3	SS-2		13			
4						
5	SS-3		5		SILT (ML): dark bluish grey 2 FOR GLEY 4/1, moist, 75% fines, 10% fine sand, 15% wood pieces, decayed wood, glass pieces, etc, medium plasticity, fill	
6						
7	SS-4		6		SILT (ML): very dark greyish brown 2.5Y 3/2, moist, 80% fines, 10-15% gravel, 5-10% fine sand, medium plasticity, fill	
8					-grades to olive brown 2.5Y 4/3, moist, wood pieces present	
9	SS-5		7		SILT with CLAY (ML-CL): greyish brown 2.5Y 5/2, moist, 90-95% fines, 5-10% gravel, trace rootlets, high plasticity, fill	
10						
11	SS-6		7		SANDY SILT (ML): brown and black, wet to saturated, 60% fines, 25% fine sand, 15% gravel, trace wood pieces, high plasticity, soft	
12						
13					SILT and CLAY with GRAVEL (CL-ML): light grey 2.5Y 5/2, dry, 90-95% fines, 5-10% gravel, trace rootlets, high plasticity, hard, native, [TILL]	
14					BEDROCK: LOCKPORT DOLOMITE: dark grey, fine grained, moderately hard, horizontal bedding, numerous horizontal fractures, few angular and vertical fractures, occasional calcite filled vugs and viens	
15					-horizontal fractures with secondary mineralization/staining (12.3, 12.4, 12.6, 13.2)	
16					-calcite vug, 0.5" diameter	
17						
18						
19						
20						
21						
22						
23						
24					-lose 50% of water return	
25						
26						
27					-lose all water return briefly	
28						
29						
30						

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/ foot				
31						-calcite filled vug 1" diameter	<p>6" diameter borehole (wet rotary rollerbit) (12-42)</p> <p>Bentonite (24-35)</p> <p>Sand 00N (35-42)</p> <p>2" diameter 10-slot PCV screen (37-42)</p>
32					-calcite vug, 0.5" diameter, lose all water return		
33					-calcite vein along horizontal fracture		
34							
35							
36							
37							
38							
39					-calcite filled vug/horizontal vein		
40					-horizontal fracture with calcite		
41							
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DATE STARTED <u>8/16/88</u> FINISHED <u>8/17/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC.	HOLE NO. <u>GW-6</u> SURFACE ELEV. <u>99.3</u> G.W. ELEV. <u>84.19</u>
SUBSURFACE LOG		

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER		DESCRIPTION	NOTES
				0	6		
				12	18		
5	1.8'	SB	1	5	30	Light brown fine SAND and SILT, trace gravel, dry, grades to brown-gray and becomes dense at 0.5 ft.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr.
			27	27			
	1.2'	SB	2	5	2	At 5.0 ft.: Gray-black SILT, some clay, grading to brown SILT, some sand, very dense, moist at approximately 5.5 ft.	
				50/2		[SILT and SAND] 9.0'	
10	0.4'	SB	3	50		Upper 0.5' highly fractured, penetrated by split barrel sampler. Light gray fine textured dolomite, many horizontal and vertical fractures. Some show intense weathering and rock is quite crumbly. Drilling is much easier than in wells towards the South and West, rock is considerably softer and more weathered. Few vugs are present. Water table located at approximately 14.5'. Drilling fluid return was lost during the entire length of Coring.	Auger drilling refusal at 9.0 ft. NX core run 1 and 2 drilled on 8/16/88 NX core run 3 drilled on 8/17/88 Coring done with a long ear 5.0 ft. NQ core barrel and a 58-60 carat bit. Rotary drilled with a 3-7/8 in. tri-cone bit from 9.0 ft. - 23.7 ft.
	REC 90% RQD 0%	NX	1				
15	REC 96% RQD 8%	NX	2				
20	REC 97% RQD 8%	NX	3			[DOLOMITE BEDROCK] 23.7'	
25							Boring completed at 23.7 ft. G.W. elevation taken on 12/16/88.
30							
35							

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

DATE STARTED <u>8/15/88</u>	RECRE ENVIRONMENTAL, INC.	HOLE NO. <u>GW-7</u>
FINISHED <u>8/16/88</u>		SURFACE ELEV. <u>100.6</u>
SHEET <u>1</u> OF <u>1</u>	SUBSURFACE LOG	G.W. ELEV. <u>88.02</u>

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u>	LOCATION <u>EMERSON STREET LANDFILL</u>
<u>SITE #828023</u>	<u>ROCHESTER, NEW YORK</u>

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0-6		6-12			
				0	6	6	12		
5	1.5'	SB	1	6	17	11	4	Light brown SAND and GRAVEL fill, little glass, metal and ash, dry, medium dense. [FILL] 4.0'	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod Transition approximated at 4.0 ft. by auger drilling resistance and inspection of cuttings. HNU = Only reading was 2ppm in Augers at 9.5 ft. Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R meter = 4-6 micro-rem/hr. Auger drilling refusal at 10.0 ft. after run 1 NX core run 1 drilled from 9.5 ft. to 14.5 ft. on 8/15/88. NX core run 2 drilled from 14.5 ft. to 17.5 ft. on 8/15/88. Coring was done with a long ear 5 ft. NQ core barrel and a 58-60 caret bit. Rotary drilled with a 3-7/8 in. tri-cone bit from 10.0 ft. to 19.5 ft. Boring completed at 19.5 ft. G.W. elevation taken on 12/16/88.
	2.0'	SB	2	10	14	16	23	Brown SILT, some sand, little red sandstone gravel, dry, medium dense to dense	
10	1.7'	SB	3		8	18	50	At 5.5 ft.: Moist [SILT] 9.0'	
	0.4'	SB	4	50				Weathered bedrock zone 10.0'	
15	REC 93% RQD 15%	NX	1					Gray dolomite, many horizontal fractures, two short vertical fractures perpendicular to bedding surfaces, Rock is soft at weathered surfaces to moderately hard. Numerous vugs, some containing white precipitate highly reactive to HCl. Slight drilling fluid loss during run 2. Water Table encountered at approximately 13.5 ft. [DOLOMITE BEDROCK] 19.5'	
	REC 89% RQD 24%	NX	2						
20									
25									
30									
35									

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. MW-16S	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Edison Tech. & Occupational Education Center (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		ELEVATION: 544.02	
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		DATUM: NGVD	
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		START: 17 May 1993	
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 24.0 ft.		FINISH: 17 May 1993	
							DRILLER: S. Loranty	
							H&A REP: J. Marschner	
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5						<p>Advanced augers to 24.0 ft. without split spoon sampling.</p> <p>Notes:</p> <ol style="list-style-type: none"> No OVA readings above background in the breathing zone. No explosimeter radioactivity meter readings above background in breathing zone. Set 6.0 in. temporary casing to 24.0 ft. Reamed with 3-7/8 in tri-cone rollerbit to 35.0 ft. and set 2.0 in. PVC well. Installed monitoring well in borehole, see Groundwater Monitoring Well Report. 		
10								
15								
20								
25								
						Auger Refusal at 24.0 ft. Apparent Top of Competent Rock at 24.0 ft.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 24.0	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: ---		
						BORING NO. MW-16S		

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. MW-16D	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 3	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Edison Tech. and Occupational Education Center (See ELEVATION: 544.20 Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	NX	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	2-1/8	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MJD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 23.7 ft.		
DATE		WATER LEVEL DATA		SAMPLE IDENTIFICATION		SUMMARY	
TIME		DEPTH (FT) TO:		O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon		OVERBURDEN (LIN FT): 23.7	
ELAPSED TIME (HR)		BOTTOM OF CASING	BOTTOM OF HOLE			ROCK CORED (LIN FT): 20.0	
						SAMPLES:	12S
						BORING NO.	MW-16D
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
		2	S1	0.0		Medium dense brown coarse to fine sandy SILT, some gravel, with trace glass, plastic, asphalt, and foam rubber, with root fibers from 0-.5 ft., damp.	
		6	24"/24"	2.0		-FILL-	
		7				Medium dense brown silty GRAVEL, some coarse to fine sand, little clay, dry.	
		3	S2	2.0			
		5	24"/24"	4.0			
		18					
		22	S3	4.0		Medium dense brown coarse to fine SAND, damp.	
5		8	24"/24"	6.0	5.8	-FILL-	
		12					
		18	S4	6.0		Medium dense black ASH, with glass and metal, moist.	
		6	6"/24"	8.0		Loose black ASH, with metal, wood and glass, damp.	
		3				-FILL-	
		5	S5	8.0		Medium dense black ASH, with metal, glass, plastic and wood, damp.	
		6	6"/24"	10.0			
10		13					
		9	S6	10.0		Loose black ASH, with wood, glass and metal, moist to wet.	
		3	4"/24"	12.0			
		5					
		6	S7	12.0		Same, except medium dense.	
		6	2"/24"	14.0			
		8					
15		6	S8	14.0		Same.	
		2	6"/24"	16.0		-FILL-	
		4					
		2	S9	16.0		Same, except with trace brick fragments.	
		4	6"/24"	18.0			
		2					
		8	S10	18.0		Same, except trace metal and wood.	
		1	1"/24"	20.0			
20		3			20.0	Very loose black fine sandy SILT, with organic material, wet.	
		2	S11	20.0		Same.	
		1	3"/24"	22.0		-MARSH DEPOSIT-	
		1					
		100/.2	S12	22.0	22.2	Moderately hard, highly weathered, gray, fine-grained, dolomitic MUDSTONE. -ROCHESTER FORMATION-	
			1 1/2"	22.2			
25						Auger Refusal at 23.7 ft. Apparent Top of Competent Rock at 23.7 ft.	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 20 ppm (methane) S3 = 10 ppm (methane) S4 = 45 ppm (methane) S5 = Submitted for laboratory analysis S6 = 100 ppm (methane) S7 = 30 ppm (methane) S8 = 35 ppm (methane) S9 = 30 ppm (methane) S10 = 10 ppm (methane) S11 = 20 ppm (methane) S12 = 5 ppm (methane) No OVA readings above background in the breathing zone. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. Sample S5 submitted for TCLP metals and hazardous characteristics analysis. See Core Boring Report, page 3. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
	2	25.0					Began Coring at 25.0 ft. Moderately hard, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and vugs. Closely to very closely spaced, horizontal, argillaceous partings. -ROCHESTER FORMATION- Smooth, planar, high angle joint from 25.1 ft. to 25.3 ft. Rough, planar, vertical joint from 26.8 ft. to 27.0 ft.
	2	R1	$\frac{119}{69}$	$\frac{99}{58}$	MOD		
	2						
	2						
	2						
30	2						
	2						
	2						
	2						
	2						
	2	35.0					
35	3	35.0					Intersecting smooth, planar, moderately dipping, and high angle joints at 30.6 ft.
	3	R2	$\frac{118}{91}$	$\frac{98}{76}$	MOD		
	3						
	3						
	3						
40	3						
	3						
	3						
	3						
	3						
	3	45.0					
45							Bottom of Boring at 45.0 ft.
							Notes: 1. Lost 1,225 gallons of water during coring and reaming process.
50							
55							
60							

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING	FILE NO. 70352-46 SHEET NO. 1 OF 2 LOCATION: Edison Tech. and Occupational (See Education Center Plan) ELEVATION: 526.26 DATUM: NGVD START: 16 June 1993 FINISH: 17 June 1993 DRILLER: S. Loranty H&A REP: M. Corrigan
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ITEM	CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES
TYPE INSIDE DIAMETER (IN) HAMMER WEIGHT (LB) HAMMER FALL (IN)	Auger 4-1/4 --- ---	S 1-3/8 140 30	NX 2-1/8 --- ---	RIG TYPE: CME-75, Truck-Mounted BIT TYPE: 4-1/4 in. I.D. H.S. Augers DRILL MUD: --- OTHER: Advanced augers to 15.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2	S1	0.0	.5	Loose brown SILT, little coarse to fine sand, trace gravel, damp. -TOPSOIL-
		10	24"/24"	2.0		
		20				Dense red-brown fine sandy SILT, little coarse to medium sand, trace gravel, dry. -FILL-
		14	S2	2.0		
		10	24"/24"	4.0		Same, except damp.
		20				
		10	S3	4.0	4.0	Medium dense red-brown fine sandy SILT, little coarse to medium sand, trace organic material, damp. -BURIED SUBSOIL-
		11	24"/24"	6.0	4.5	
		6			5.5	Same. -FLUVIAL DEPOSITS-
		11	S4	6.0		
		100/.4	5"/15"	6.4		Completely to highly weathered, gray, fine-grained, dolomitic MUDSTONE, damp. -ROCHESTER FORMATION-
		49	S5	8.5		Same.
		100/.2	8"/8"	9.2		
		26	S6	10.0		Same.
		100/.3	9"/19"	10.8		
		100/.2	S7	12.0		No Recovery.
			NR	12.2		
		100/.2	S8	14.0		Same. -ROCHESTER FORMATION-
			2"/2"	14.2		
						Auger refusal at 15.0 ft. Apparent top of competent rock at 15.0 ft.
						Notes: 1. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 10 ppm (methane) S4 = 6 ppm (methane) S5 = 0 ppm S6 = 0 ppm S7 = 0 ppm S8 = 0 ppm No OVA readings above background in the breathing zone. 2. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 3. See Core Boring Report, page 2. 4. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.

WATER LEVEL DATA					SAMPLE IDENTIFICATION	SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 15.0 ROCK CORED (LIN FT): 10.0 SAMPLES: 8S
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
							BORING NO. MW-17

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
	2	15.0					Began coring at 15.0 ft.
	2	R1	$\frac{120}{59}$	$\frac{100}{49}$	MOD		Moderately hard, moderately weathered, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color banded. Trace pits throughout. Closely to very closely spaced, horizontal, argillaceous partings. -ROCHESTER FORMATION- Smooth, planar, low angle joints at 18.8, 18.9, and 19.1 ft.
	2						
	2						
	2						
	2						
20	2						
	2						
	2						
	2						
	2	25.0					Bottom of Boring at 25.0 ft.
							Note: 1. Lost 300 gallons of water during coring and reaming process.
30							
35							
40							
45							
50							

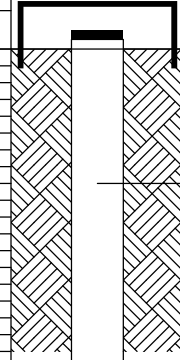
H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST BORING REPORT			BORING NO. MW-18S		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: PEKO (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Augers	---	---	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	---	---	BIT TYPE: 4/14 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	---	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	---	---	OTHER: Advanced augers to 8.0 ft.			
					ELEVATION: 531.84			
					DATUM: NGVD			
					START: 25 May 1993			
					FINISH: 26 May 1993			
					DRILLER: S. Loranty			
					H&A REP: J. Marschner			
DEPTH (FT)	WELL POINT PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5						-FILL-		
10								
15						Notes:		
						1. No OVA readings above background in the breathing zone.		
						2. No explosimeter or radioactivity meter readings above background in the breathing zone.		
						3. Set 6.0 in. temporary casing to 8.0 ft.		
						4. Reamed with 3-7/8 in. tri-cone rollerbit to 17.7 ft.		
						5. Installed monitoring well in completed borehole.		
20								
25								
WATER LEVEL DATA						SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod	T Thin Wall Tube	OVERBURDEN (LIN FT): 8.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER			
5/21/93	1023		19.0	19.0	dry	U Undisturbed Sample	SAMPLES: ---	
5/21/93	1400		19.0	19.0	dry	S Split Spoon		BORING NO. MW-18S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST BORING REPORT			BORING NO. MW-18D		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: PEKO (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	NX	RIG TYPE: Gus Peck, 750-C			
INSIDE DIAMETER (IN)		4-1/4	1-3/8	2-1/8	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 7.8 ft.			
					ELEVATION: 531.96			
					DATUM: NGVD			
					START: 20 May 1993			
					FINISH: 25 May 1993			
					DRILLER: K. Busch			
					H&A REP: M. Corrigan			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
		6	S1	0.0		Medium dense brown silty fine SAND, some coarse to medium sand, little gravel, with roots, dry.		
		9						
		20	15"/24"	2.0		Very dense brown coarse to fine SAND, little gravel, little silt, dry.		
		26			3.4	-FILL-		
		17	S2	2.0				
		43						
		29	13"/24"	4.0	4.0	4" layer of asphalt, dry.		
		11				3" layer of brick, dry. -FILL-		
		6	S3	4.0				
		5						
		8	10"/24"	6.0		Medium dense brown gravelly coarse to fine SAND, little silt, damp.		
		15				-GLACIAL TILL-		
		6	S4	6.0				
		15	14"/17"	7.4		Very dense brown coarse to fine sandy GRAVEL, little silt, damp.		
		50/.4				-GLACIAL TILL-		
						Auger Refusal at 7.8 ft. Apparent Top of Competent Rock at 7.8 ft.		
						Notes:		
						1. See Core Boring Report, page 2.		
						2. OVA readings from sample screening noted as follows: S1 = 1 ppm (methane) S2 = 0 ppm S3 = 1 ppm (methane) S4 = 0 ppm No OVA readings above background in the breathing zone.		
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
						4. Installed monitoring well in completed borehole, see Groundwater Monitoring Well Report.		
WATER LEVEL DATA						SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 7.8	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): 18.8	
						SAMPLES: 4S		
						BORING NO. MW-18D		

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
							Began Coring at 7.9 ft.
10	10	7.9					Light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color banded. Trace pits throughout.
	10						-ROCHESTER FORMATION-
	10				MOD	10.5	Highly weathered, rough, stained, high angle joint from 7.9 ft. to 9.7 ft.
	10	R1	96 45	91 42			Light to medium gray, fine-grained, thin-bedded, DOLOSTONE, very thinly color-banded. Trace pits throughout. Secondary gypsum seams in closely to very closely spaced partings.
	10						-LOCKPORT FORMATION-
15	10						
	7						
	7	16.7					Core block at 16.7 ft.
	10	16.7					Highly weathered vertical joints from 15.8 ft. to 16.0 ft., and from 16.5 ft. to 16.8 ft.
	10						
20	10	R2	118 103	98 86	MOD		
	10						
	10						
	10						
	10						
25	10						
	10						
	10	26.7					Core block at 26.7 ft.
							Bottom of Boring at 26.7 ft.
							Notes:
30							1. Reamed with 5-7/8 in. tri-cone rollerbit from 7.9 ft. to 20.5 ft.
							2. Set 4.0 in. PVC to 20.0 ft.
							3. Reamed with 3-7/8 in. tri-cone rollerbit from 20.0 ft. to 30.0 ft.
							4. Lost 400 gallons during coring and reaming process.
35							
40							

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	Remarks
	0' to 6'	6' to 12'	12' to 18'	18' to 24'								
									3 MIN	25		FILL TAKING ON WATER NONE RETURNING FROM HOLE STEEL BRASS, METAL PIECES IN CORE BARREL
									2.5m	26		
									3 MIN	27		FULL 5' RECOVERY
									2.0	28		GREY DOLOMITE - CARBONATE
									1.5	29		PRECIPITATES BETWEEN FRACTURES
									1.5	30		
									2.0	31		
									2.5	32		2" PVC MONITOR WELL SET AT 32' 10' SLHED. 40 PVC SCREEN #2 SAND TO 18.3' BENTONITE PELLETS TO 17.36' BENTONITE SLURRY TO 3' PORTLAND CEMENT TO SURFACE PROTECTIVE STEEL COLLAR

BORING LOCATION: 535 Colfax Street (in road)	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothangle Drilling	DATE STARTED: 12/13/10	DATE FINISHED: 12/14/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 19.0 fbgs	SCREEN INTERVAL: 9-19 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER:	FIRST: COMPL. CASING: 4" steel
SAMPLING METHOD: not sampled	LOGGED BY: RM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: REG. NO.
		RM

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
					Surface Elevation: fmsl		
1					TOPSOIL		
2					<p>Advance air knife without sampling to refusal at approximately 7.0' bgs. Air knife cuttings consist of brown silt with some medium-fine angular gravel, little fine sand. Trace fill material (rubber). Moist throughout. No odors encountered.</p>	 <p>flush-mount surface casing</p>	<p>4" permanent steel casing to 9.0' bgs</p>
3							
4							
5							
6							
7							
8							
9					Run #1 Depth: 9.0-14.0 'bgs Rec: 47" (78%) RQD: 0" (0%)		
10					Run #2 Depth: 14.0-19.0 'bgs Rec: 53" (88%) RQD: 8" (13%)		
11					<p>Lithology: LOCKPORT FORMATION (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occasional to frequent argillaceous partings and occasional shale interbeds. Zones of occasional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.</p> <p>Rock coring details: *Severely fractured "rubble" zones 9.0-9.2', 11.0-11.2, 15.7-16.7' bgs. *very closely spaced bedding plane joints 9.0-14.0' *planar, vertical joint 10.7-11.5' *irregular vertical joint 13.3-13.6'. *severely fractured rubble zone 17.5-17.7'.</p>		
12							
13							
14							
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Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98-1
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER

Client: Foundation Design, PC

Elevation: 99.8

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. Kahn

Start: 11.03.98

Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		11	11			21	1	0'0"-2'0"	ASPHALT 0'3" STONE ROAD BASE 0'6" MISC. FILL MATERIAL C/O ASH, GLASS, CINDERS SILT, SAND AND GRAVEL
5				10	6				
		50/5				50/5	2	5'0"-5'5"	FILL MATERIAL C/O SILT, SAND AND GRAVEL AND ROCK FRAGMENTS AUGURING VERY ROUGH FROM 5' TO 7' REFUSAL 7'0"
10									
									BORING TERMINATED @ 7'0" NOTES: ELEVATIONS PROVIDED BY OTHERS
15									
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98-2
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER

Client: Foundation Design, PC

Elevation: 100.1

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. Kahn

Start: 11.03.98

Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

C	Blows on Sampler				N	Sample		Soil and Rock Information
	0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
0	4	7	15	50/3	22	1	0'0"-1'9"	TOPSOIL AND MISC. FILL MATERIAL C/O GLASS, ASH, SILT SAND AND GRAVEL
5								
	50/2				50/2	2	5'0"-5'2"	MISC. FILL MATERIAL C/O CONCRETE, WIRE, ASH, SILT, SAND AND GRAVEL AUGURING VERY ROUGH FROM 4' TO 7'6" REFUSAL 7'6"
10								
								BORING TERMINATED @ 7'6"
15								
								NOTES: ELEVATIONS PROVIDED BY OTHERS MOVED APPROX 8' AND RESTARTED BORE HOLE DESIGNATED AS B98-2A, REFUSAL AT 4'6"
20								
25								
30								
35								

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive _____ Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98-3
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER

Client: Foundation Design, PC

Elevation: 100.7

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. Kahn

Start: 11.03.98

Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		6	7			20	1	0'0"-2'0"	TOPSOIL AND ORGANIC MATTER WITH FILL MIXED IN BRICK, ASH, GLASS, SILT, SAND AND GRAVEL 2'0"
		23	25						
5				50/3		75/9	2	2'0"-3'3"	FILL MATERIAL CONSISTING OF BRICK, GLASS, ASH, SILT SAND AND GRAVEL 4'0"
		6	6						
				10	11	16	3	5'0"-7'0"	MISC. FILL MATERIAL C/O ASH, METAL, SILT, SAND AND GRAVEL
		10	6						MISC FILL
10				6	8	12	4	7'0"-9'0"	MISC. FILL C/O ASH, METAL AND GLASS
		20	25						
				12	6	37	5	10'0"-12'0"	MISC FILL C/O ASH, METAL, GLASS AND RUBBER
		4	2						
15				6	6	8	6	12'0"-14'0"	MISC. FILL C/O ASH, METAL, GLASS ETC.
		8	6						
				5	6	11	7	15'0"-17'0"	NO RECOVERY- BLACK SATURATED
20									
		4	5						
				7	8	12	8	20'0"-22'0"	NO RECOVERY- BLACK SATURATED
25									AUGER REFUSAL @ 23'6" 23'6"
									BORING TERMINATED @ 23'6"
30									NOTES: ELEVATIONS PROVIDED BY OTHERS
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98-4
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
 Client: Foundation Design, PC
 Elevation: 100.7
 Water Level - Casing In: _____
 Below Surface - Casing Out: _____

Geologist: _____
 Driller: S. Kahn
 Start: 11.03.98
 Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		3	7			21	1	0'0"-2'0"	TOPSOIL AND ORGANIC MATTER WITH FILL MIXED IN BRICK, ASH, GLASS, SILT, SAND AND GRAVEL 2'0"
		14	50/4			64/10	2	2'0"-2'10"	MISC. FILL MATERIAL C/O SLAG, ASH, GLASS, BRICK METAL, WIRE, SILT, SAND AND GRAVEL BURIED ASPHALT LAYER BETWEEN 3'AND 5'
5		10	27			45	3	5'0"-7'0"	MISC. FILL MATERIAL C/O ASH, METAL, SILT, SAND AND GRAVEL
		4	3			6	4	7'0"-9'0"	MISC. FILL C/O ASH, METAL AND GLASS
10		6	6			9	5	10'0"-12'0"	MISC FILL C/O ASH, METAL, GLASS
		3	2			7	6	12'0"-14'0"	MISC. FILL C/O ASH, METAL, GLASS
15		1	1			2	7	15'0"-17'0"	MISC. FILL
		12	18			68/10	8	20'0"-21'4"	ROCK LODGED IN SHOE PIECE SPOON AND AUGER REFUSAL @ 21'4"
25									BORING TERMINATED @ 21'4"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98 5
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER

Client: Foundation Design, PC

Elevation: 100.5+/- (EST)

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. Kahn

Start: 11.03.98

Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	Blows on Sampler				N	Sample		Soil and Rock Information
	0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
								AUGURED THROUGH MISC. FILLS FROM SURFACE TO 7'0"
5								
	27	24						
10			22	20	48	1	7'0"-9'0"	MISC. FILL WOOD
						2	8'0"-9'0"	GRAB SAMPLE FROM AUGERS-- BLACK PULPY WOOD WITH SILT
	3	2						10'0"
			4	6	6	3	10'0"-12'0"	LOOSE BLACK BROWN SILT, LITTLE FINE TO VERY
	36/0				36/0		13'0"-13'0"	FINE SAND AND ROOTS AND STEMS
15								AUGER REFUSAL @ 13'0"
								BORING TERMINATED @ 13'0"
20								NOTES: ELEVATIONS PROVIDED BY OTHERS
25								
30								
35								

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B98 6
 Job No.: 98149
 Page: 1 of 1
 Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER

Client: Foundation Design, PC

Elevation: 100.5+/- (EST)

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. Kahn

Start: 11.03.98

Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
									AUGURED THROUGH MISC. FILLS FROM SURFACE TO 5'6", GRINDING FROM 4'10" AUGER REFUSAL @ <u>5'6"</u> BORING TERMINATED @ 5'6" NOTES: ELEVATIONS PROVIDED BY OTHERS AUGER PROBE ONLY- NO SAMPLES TAKEN
5									
10									
15									
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. Ea. Blow

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B115	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Edison Tech. and Occupational Education Center (See ELEVATION: --- Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 10.0 ft. while standard sampling.		
START: 11 June 1993							
FINISH: 11 June 1993							
DRILLER: S. Loranty							
H&A REP: M. Corrigan							
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		7	S1	3.0	6.5	6 in. of topsoil.	
		11	24"/24"	5.0		Medium dense brown coarse to fine sandy SILT, some gravel, with glass, metal and brick, damp. -FILL-	
		11					
		19					
10		8	S2	8.0		Medium dense red-brown fine sandy SILT, some coarse to medium sand, trace gravel, damp. -LACUSTRINE/FLUVIAL-	
		10	24"/24"	10.0		Bottom of Boring at 10.0 ft.	
		11				Notes:	
		12				1. Backfilled borehole to ground surface with soil cuttings.	
						2. OVA readings from sample screening noted as follows: S1 = 800 ppm (methane) S2 = 0 ppm No OVA readings above background in the breathing zone.	
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
						4. Sample S1 submitted for TCLP metals and hazardous characteristics analyses.	
WATER LEVEL DATA			SAMPLE IDENTIFICATION			SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B-115	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 40 ppm (methane) S2 = 18 ppm (methane) S3 = 7 ppm (methane) S4 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B118	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 2	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: UDC (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50 Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 14 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 14 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 23.4 ft. while standard sampling.		DRILLER: R. Bauer
							H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		16	S1	3.0		Medium dense black ASH, with glass, metal slag, trace wood, moist to wet. -FILL-	
		11	6"/24"	5.0			
10		46	S2	8.0		Medium dense black ASH, little gravel, with glass, cinders or coal, metal, ceramic fragments, moist.	
		28	15"/24"	10.0			
15		10	S3	13.0		Medium dense iron-stained black ASH, with cinders, charred wood, and glass, trace metal, damp. -FILL-	
		12	15"/24"	15.0			
20		13	S4	18.0		Medium dense black ASH, with glass, metal, cinders, wet. -FILL-	
		10	10"/24"	20.0			
25		100/.4	S5	23.0	21.5	Very dense gray SILT, with clay seams or pockets, wet. -LACUSTRINE/FLUVIAL-	
			5"/5"	23.4			
						Bottom of Boring at 23.4 ft.	
WATER LEVEL DATA						SAMPLE IDENTIFICATION	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	SUMMARY
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
						OVERBURDEN (LIN FT): 23.4	
						ROCK CORED (LIN FT): ---	
						SAMPLES: 5S	
						BORING NO. B118	

H&A OF NEW YORK, ROCHESTER, NEW YORK
 Consulting Geotechnical Engineers,
 Geologists and Hydrogeologists

TEST BORING REPORT

BORING NO. B118
 FILE NO. 70352-46
 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 200+ ppm methane S2 = 300 ppm methane S3 = 1000+ ppm methane S4 = 6 ppm methane S5 = 0.2 ppm methane (H.S.) No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B119	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Emerson St. R.O.W. (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 17 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 17 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 11.0 ft. while standard sampling.		DRILLER: R. Bauer
							H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		10	S1	3.0	6.5	Medium dense brown coarse to fine sandy GRAVEL, little silt, trace ceramic fragments. -FILL-	
		11	4"/24"	5.0			
10		12	S2	8.0	9.0	Hard, highly weathered, gray, fine-grained DOLOSTONE, dry. -LOCKPORT FORMATION-	
		10		12"/12"			
15		38				Bottom of Boring at 11.0 ft.	
		50/.5					
20						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. No OVA, explosimeter or radioactivity meter readings above background noted from sample screening or in the breathing zone.	
25							
WATER LEVEL DATA						SAMPLE IDENTIFICATION	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
						OVERBURDEN (LIN FT):	11.0
						ROCK CORED (LIN FT):	---
						SAMPLES:	2S
						BORING NO.	B119

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B121	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Batty & Hoyt (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 19.5 ft. while standard sampling.			
					ELEVATION: ---			
					DATUM: ---			
					START: 17 May 1993			
					FINISH: 17 May 1993			
					DRILLER: S. Loranty			
					H&A REP: J. Marschner			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		3 2	S1	3.0	6.5	Loose black iron-stained ASH with glass, cinders and plastic, dry. -FILL-		
			14"/24"	5.0				
10		2 2	S2	8.0	8.8	Loose dark gray and brown mottled SILT and ASH, little coarse to fine sand, trace glass, with organic material and buried topsoil. -FILL-		
			18"/24"	10.0		Loose gray-brown fine sandy SILT, trace coarse to medium sand and gravel, moist. -FILL-		
15		3 2	S3	13.0	11.5	Loose black ASH with glass, cinders and wood, moist. -FILL-		
			12"/24"	15.0		Same. -FILL-		
20		55 42	S4	18.0	18.4	Hard, highly weathered, gray, fine-grained DOLOSTONE. -LOCKPORT FORMATION-		
			16"/18"	19.5		Bottom of Boring at 19.5 ft.		
25		100/.5			19.5	Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 25 ppm methane S2 = 15 ppm methane S3 = 20 ppm methane S4 = 28 ppm methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT):	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		19.5	
						ROCK CORED (LIN FT):	---	
						SAMPLES:	4S	
						BORING NO.	B121	

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING	FILE NO. 70352-46 SHEET NO. 1 OF 2 LOCATION: Batty & Hoyt (See Plan)
--	---

ITEM	CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES	
TYPE INSIDE DIAMETER (IN) HAMMER WEIGHT (LB) HAMMER FALL (IN)	Auger 4-1/4 --- ---	S 1-3/8 140 30	--- --- --- ---	RIG TYPE: CME-75, Truck-Mounted BIT TYPE: 4-1/4 in. I.D. H.S. Augers DRILL MUD: --- OTHER: Advanced augers to 20.0 ft. while standard sampling.	ELEVATION: --- DATUM: --- START: 17 May 1993 FINISH: 17 May 1993 DRILLER: S. Loranty H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		15 16	S1 3"/24"	3.0 5.0		Medium dense dark gray-brown ASH and SILT with glass and wood, damp. -FILL-
10		7 4	S2 6"/24"	8.0 10.0		Same. -FILL-
15		22 20	S3 1"/24"	13.0 15.0		Medium dense black ASH with glass, metal slag and fabric, moist. -FILL-
		4 18 24 40	S4 16"/24"	15.0 17.0		Dense black ASH with glass, wood and other organic material, one piece of wire and metal slag, moist. -FILL-
20		8 10	S5 16"/24"	18.0 20.0	18.7	Same. Medium dense gray silty fine SAND, trace clay, wet. -LACUSTRINE/FLUVIAL-
25						Bottom of Boring at 20.0 ft.

WATER LEVEL DATA					SAMPLE IDENTIFICATION	SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 20.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 5S	
						BORING NO. B122	

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						<p>Notes:</p> <ol style="list-style-type: none"> 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 2 ppm methane S3 = 15 ppm methane S4 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S4 and duplicate were submitted for TCLP metals and hazardous characteristics analyses. 5. Used 3 in. O.D. split-spoon sampler to recover sample for laboratory analysis.

PROJECT: FESL SUI INVESTIGATION		LOCATION E' Log of Well No. LAB-102	
BORING LOCATION: NW corner of Colfax & Emerson		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: NOTHABLE	DATE STARTED: 9/27/10	DATE FINISHED:	
DRILLING METHOD: 4 1/4" Ø HSA	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: CME PSD	DEPTH TO FIRST WATER:	COMPL:	CASING:
SAMPLING METHOD: 4" Acetate sleeves (macrocell)	LOGGED BY: MBL		
HAMMER WEIGHT: 140#	DROP: AUTHAMMER	RESPONSIBLE PROFESSIONAL: BM	REG. NO.:

DEPTH (feet)	SAMPLES				OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast, consistency, structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blow/ Foot				
0-18'	1	20				SP-SM 1042 074 Dry (silt w/ fine sand & little fine subangular) dry throughout	brick fragments & coal fragments returned in cuttings silt @ 6.5' bgs RAD = Bkgcd throughout overburden
1.8'	2					weathered shale fragments w/ matrix as above At, moist, Macrocell (retinal) @ 5.0' bgs little calcite in sampling shoe dolomite	
8'	NA	NA	NA	NA		* Advance 4 1/4" Ø HSA to 11.5' bgs. Agcs grinding evenly throughout. limestone (dolomite) fragments returned in cuttings.	
12'						* set 4" Ø steel casing @ 11.5' bgs (2.5' into rock)	
14'						Begin NK core run @ 1' bgs	⇒ Drill rate ~ 1-1.5 min/ft.
16'						Result 1 11.5 - 21.5' bgs REC: 114" / 10.0 ⇒ 95% RAD: 27" / 9.5' ⇒ 34% (36%)	- loose ~ 10g of water during core run.
17'						HARD, grey limestone w/ shale interbeds. Fragments breakage along shale bedding plane partings. Few small (5-10mm) wags throughout. Few weathered fractures where shale is weathered to clay - Calcite precip. on lower fracture @ 17' bgs. No vertical fracturing observed (all appear to be mechanical breaks).	- remove ~ 20g of water with drill rig no. 90 pump. water entering complete after it's pumped dry. Recovering quickly -
24'							* NK core hole resumed to 3 7/8" Ø with roller bit.
26'							
28'							

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York		Log of Well No. LAB-102	
BORING LOCATION: NW Corner of Colfax and Emerson St intersection		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 21.5 fbg	SCREEN INTERVAL: 11.5-21.5 fbg
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler		LOGGED BY: MAC	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/foot				
1						Surface Elevation: fmsl	<p>flush-mount surface casing</p> <p>4" permanent steel casing to 11.5' bgs</p> <p>Cement/bentonite grout</p> <p>Bedrock</p> <p>Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1		NA	0	Brown silt with fine sand and little fine subrounded gravel, trace brick and coal fragments, dry throughout.		
3							
4	2		NA	0			
5					sampler refusal at 5.0' bgs		
6					advance 4 1/4" dia HSA to 11.5' bgs through bedrock.		
7							
8							
9					Begin NX Core run at 11.5' bgs.		
10					Run #1		
11					Depth: 11.5-21.5 'bgs		
12					Rec: 114" (95%)		
13					RQD: 43" (36%)		
14					Lithology: LOCKPORT FORMATION		
15					(Penfield Dolostone Member)		
16					Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occasional to frequent argillaceous partings and occasional shale interbeds. Zones of occasional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.		
17							
18							
19							
20							
21							
22							
23					Rock coring details:		
24					*closely space partings 11.5-16' bgs.		
25					*short high angle joint at 14.3'		
26					*rough vertical joint at 14.5-15'		
27					*severely weathered seam at 15.4'		
28					*highly fractured zone at 18-18.3'		
29					*severely weathered seam at 18.7'.		
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

LABELLA

Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Subsurface Investigation

FESL

City of Rochester, New York

BORING

SHEET

JOB #

CHKD. BY:

LAB 105

1 OF 2

210173

CONTRACTOR: Nothnagle Drilling Co.

DRILLER: Kevin / Tom

LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: 44' behind DP in weeds

GROUND SURFACE ELEVATION

DATUM

START DATE: 9/27/10

END DATE:

TYPE OF DRILL RIG: CME track mt. ATV

AUGER SIZE AND TYPE: 4.25 -inch ID Hollow-stem

OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons

ROCK DRILLING METHOD: HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	N O T E S
	BLOWS /6"	NO.	DEPTH (FEET)	N-VALUE /RQD(%)	RECOVERY (FEET)				
1	7 13 13	S-1	0-2		1.4		grass atop brownish gray silty clay f/c gravel, sand tr. brick (ASU)	11-19 uR/hr 0.1 ppm S	
2	14 5	S-2	2-4		1.3		dark brown clayey silty f gravel split water and c gravel @ 4'	10-13 uR/hr 0.2 ppm S	
3	5 4	X	X	X	X	X			
4	2 2	S-3	4-6		1.2	5' @	med br to dr. gray silty clay f gravel atop black FESL ash	12-19 uR 23 peaks 0.4 ppm S	
5	4	X	X	X	X	X			
6	10 16 20	S-4	6-8		1.7		all FESL ash black glass cinders f gravel	10-15 uR/hr 0.2 ppm S	
7	14 12 5	S-5	8-10		0.8		similar to above metal & ceramics	11-13 uR 0.2 ppm S	
8	20 6 4	S-6	8-12		1.4		similar to above w/ some gray ash	12-16 uR 0.1 ppm S	
9	16 21 31	S-7	12-14		0.6		aa	0.5 8-10 uR	
10									
11									
12									
13									
14									
15									
16									

LEGEND

- S - SPLIT SPOON SOIL SAMPLE
- M - MACROCORE SOIL SAMPLE
- C - ROCK CORE SAMPLE

NOTES:

10 uR/hr + 0.1 ppm PID below to 15'

GENERAL NOTES:

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING #

CONTRACTOR: Nothnagle Drilling Co.
DRILLER:
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: END DATE: DATUM

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE: 4.25 -inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: NX & HQ Water Rotary Coring

H needs

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (FEET)	SAMPLE					DEPTH (FEET)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	N-VALUE / ROD(%)	RECOVERY (FEET)				
1	13 12	14-16			0		14-18 debris in shoes		
2	10						black FESL ash		
3	5	16-18			0		9-10 MR @ 7-0.4 ppm		
4	5 3	18-20			0.1		black FESL ash	0.02	8-10 MR
5	2								
6	3	20-22			0				
7	4 3								
8	4				0.2		saturated black	0.2 ppm	
9	4	22-24					clayey FESL ash	10-12 µk	
10	3						plastic		
11	13 10	24-26						0.3 ppm	
12	10							15-20 µk	
13	16 50/6	26-28 27'					saturated black FESL Ash	10-12 µk	
14							gray clay @ 26.5'-27'	0.1 ppm	
15							spine refusal @ 27'		
16							auger refusal		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
2" prewell installed to 30' (15' screen)
Advanced roller bit to 30.0' @ 27.7'

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING #

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York		Log of Well No. LAB-105	
BORING LOCATION: 60 McCrackenville Street (East end of lot)		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 27.7 fbgs	SCREEN INTERVAL: 13.9-30.0 fbgs
DRILLING EQUIPMENT: CME 55 ATV		DEPTH TO WATER:	FIRST COMPL. CASING: 2" PVC
SAMPLING METHOD: 2" dia. Split Spoons		LOGGED BY: KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.:

DEPTH (feet)	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
	Sample No.	Sample				
Surface Elevation: fmsl						stick-up protective casing
1	1		7	0.1	FILL- brownish grey silty clay with fine to coarse gravel and sand. Trace brick.	
2			13			
3	2		5	0.2	black FESL ash with glass, clinker and fine gravel at 5.0'.	Cement/bentonite grout
4			5			
5	3		2	0.4	saturated at 22' bgs.	2" dia. schedule 40 PVC riser
6			2			
7	4		10	0.2	saturated at 22' bgs.	Bentonite Seal
8			12			
9	5		5	0.2	saturated at 22' bgs.	#00N Filter sand
10			20			
11	6		24	0.1	saturated at 22' bgs.	15' 0.010" slot schedule 40 PVC well screen
12			80			
13	7		100/0.6	0.5	saturated at 22' bgs.	
14			20			
15	8		16	0.4	saturated at 22' bgs.	
16			12			
17	9		8	0.2	saturated at 22' bgs.	
18			8			
19	10		3	0.2	saturated at 22' bgs.	
20			2			
21	11		5	0.2	saturated at 22' bgs.	
22			4			
23	12		4	0.2	saturated at 22' bgs.	
24			4			
25	13		13	0.3	saturated at 22' bgs.	
26			10			
27	14		9	0.1	gray clay between 26.5 and 27' bgs. Spoon and auger refusal at bedrock surface at 27.0' bgs. Advance 3 7/8" roller bit to 30.0' bgs.	
28			7			
29			8		LOCKPORT FORMATION (Penfield Dolostone Member)	
30			16			
31			50/0.6		LOCKPORT FORMATION (Penfield Dolostone Member)	
32						
33					LOCKPORT FORMATION (Penfield Dolostone Member)	
34						
35					LOCKPORT FORMATION (Penfield Dolostone Member)	
36						
37					LOCKPORT FORMATION (Penfield Dolostone Member)	
38						
39					LOCKPORT FORMATION (Penfield Dolostone Member)	
40						

PROJECT: <u>FES SVI Investigation</u>		Log of Well No. <u>LAB-07</u>	
BORING LOCATION: <u>1560 Emerson St</u>		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: <u>NOTHMABLE</u>		DATE STARTED: <u>7/28/07</u>	DATE FINISHED:
DRILLING METHOD: <u>4 1/2" HSA</u>		TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT: <u>CME 850</u>		DEPTH TO WATER:	FIRST COMPL CASING:
SAMPLING METHOD: <u>4" bucket samples</u>		LOGGED BY: <u>MAR</u>	
HAMMER WEIGHT: <u>140#</u>	DROP: <u>Ann</u>	RESPONSIBLE PROFESSIONAL:	REG. NO.

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. with HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blow/ Foot			
0-1.0'	1	20	1.0	0.0	(ML) silt w/ fine rounded gravel, dry (topsoil)	
1.0-2.0'					Angular ls bedrock gravel with fine silt/clay matrix (fill) (loose, dry fine gravel)	
2.0-3.0'	2	5	1.0	5.0	dry gray to black silt w/ fine to med sand & gravel. Moist, firm, slight petroleum hydrocarbon odor	* sample LAB-107 5-6.5' collected @ 14:00
3.0-4.0'					broken ls bedrock fragments, coarse to fine sand, size particles loose, dry. Appearance of slotted bedrock (sewer trench?)	
4.0-5.0'	3	5	1.0	0.0		
5.0-6.0'	4	5	1.0	0.0		
6.0-7.0'						
7.0-8.0'						
8.0-9.0'						
9.0-10.0'						
10.0-11.0'						
11.0-12.0'						
12.0-13.0'						
13.0-14.0'						
14.0-15.0'						
15.0-16.0'						
16.0-17.0'						
17.0-18.0'						
18.0-19.0'						
19.0-20.0'						
20.0-21.0'						
21.0-22.0'						
22.0-23.0'						
23.0-24.0'						
24.0-25.0'						
25.0-26.0'						
26.0-27.0'						
27.0-28.0'						

sampler retrieval @ 16.0' bgs
 suspect TOR @ 12' bgs due to appearance of slotted water
 advance 3" w/ roller bit to 19' bgs
 Run #1 19-29' bgs
 REC. 10"/10" = 100%
 RQD: 3.5"/10" = 35%
 shale interbeds. frequent shaly shale partings throughout. several small 5-10mm vugs of calcite precipitation throughout.

4" open casing installed @ 18.5'
 20' Besta NX core run @ 19.0' bgs.
 22' Zone verified. @ 19.5'
 24' Drill pipe ~ 2 min/ft.
 26' * loose ~ 500g total during core w/ roller bit @ 26'
 * pup used from hole after completion

127% soil 20% (silt)
 Rec 118" 93%
 RQD 84" 70%

Log of Well No. LAB-107

BORING LOCATION: 1560 Emerson Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/28/10	DATE FINISHED: 9/29/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 29.0 fbg	SCREEN INTERVAL: 19.0-29.0 fbg
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler		LOGGED BY: MAC	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.:

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/foot				
Surface Elevation: fmsl							
1					0	Topsoil. Silt with fine sand (ML) and some fine, rounded gravel, dry.	<p>flush-mount surface casing</p> <p>4" permanent steel casing to 19.0' bgs</p> <p>Cement/bentonite grout</p> <p>Bedrock</p> <p>Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1		NA			Angular limestone bedrock gravel within fine sand/ silt matrix (fill), loose, dry throughout.	
3							
4							
5					5.0	Dark gray to black silt with fine to medium sand and gravel (fill). moist, firm, slight petroleum-hydrocarbon type odor at 6.0' bgs.	
6	2		NA				
7							
8							
9							
10	3		NA		0		
11							
12							
13							
14	4		NA		0	Broken limestone bedrock fragments (gravel to sand-sized particles), loose, dry, appearance of blasted bedrock.	
15							
16						sampler refusal at 16.0' bgs.	
17						Advanced roller bit to 19.0' bgs	
18							
19						Begin NX bedrock core at 19.0' bgs.	
20							
21						Run #1	
22						Depth: 19.0-29.0 'bgs	
23						Rec: 118" (98%)	
24						RQD: 84" (70%)	
25						Lithology: LOCKPORT FORMATION	
26						(Penfield Dolostone Member)	
27						Light to medium gray, fine-grained, medium-bedded	
28						moderately hard to hard, siliceous Dolostone, with	
29						occasional to frequent argillaceous partings and	
30						occasional shale interbeds. Zones of occasional pits	
31						and vugs are present. Secondary crystallization (calcite or	
32						gypsum) infilling of bedding planes, joints and vugs is	
33						common.	
34						Rock coring details:	
35						*irregular cracks at 19.8' bgs	
36						*vertical joint at 23.1-23.4'	
37						*severely weathered seam at 26.7'	
38							
39							
40							



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-01
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.2	No Change
2	VOC @ 3 ft	75%	Ash @ 3 ft	Gravel and Silt ft Saturated @ 4	0	0.3	
4				Silty Clay	0	0.1	
6		80%		Refusal @ 7.3	0	0.2	
8					0		
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 7.3 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-02
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.2	No Change
2	VOC @ 3 ft	100%		Gravel and Silt Silt Loamy Silt	0 0 0	0.2 0.3	
4				Loamy Silt	0 0	0.4 0.2	
6		100%		Refusal @ 6.9 ft	0 0	0.1	
8							
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 6.9 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-03
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.1	No Change
2	VOC & Full from 3.5 to 4.5 feet	75%		Gravel and Silt	0	0.3	
4				Silt	0	0.4	
6		90%		Trace Mix Cinders @ 3.5 to 4.5 ft	0	0.4	
8				Silty Clay	0	0.1	
10				Refusal @ 7.6 ft	0	0.2	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 7.6 ft		NOTES: 10 ft off wall CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	
				GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-04
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.1	No Change
2		60%		Gravel and Silt Silt Silty Clay @ 3 ft	0	0.4	
4				Silt and gravel 4 ft	0	0.1	
6	VOC @ 7.5 ft	85%		Saturated @ 7 ft	0	0.1	
8				ft	0		
10							
12							
16							
20				Refusal @ 7.8			

WATER LEVEL DATA			DEPTH (FT) 7.8 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-05
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.1	No Change
2		75%		Gravel and Silt Sandy Silt 1 to 3 ft Clayey Silt	0 0	0.1 0.1	
4	VOC @ 4.5ft			Trace Ash and Ciders from 4 to -6 ft	0 0	0.1 0.1	
6		75%		Silty Clay	0 0	0.1 0.1	
8				Refusal @ 8.4 ft	0	0.1	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 8.4 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-06
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.2	No Change
2	TCLP from 3 to 4.5 ft	60%		Clayey Silt	0	0.1	
				Clayey Silt			
4				Misc Ash @ ~ 3ft @ from 3.5 to 4.5 ft Trace Cinders	0	0.3	
6	VOC @ 7.5 ft	85%		Silt and gravel	0	0.2	
				Silty clay	0	0.1	
8				Refusal @ 8 ft			
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 8 ft			NOTES: No GW	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-07
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.4	No Change
	Full (1/4)			Silt/ash/gravel/glass/cinders from ~1 to 4 ft			
2	Full (1/4)	40%			0	0.4	
	Full (1/4)				0	0.4	
4	Full (1/4)			Silt	0	0.1	
					0		
6	VOC @ 6 ft	35%		Silt	0	0.1	
					0		
8				Clayey Silt - Moist from 7 to 11.1 ft	0	0.1	
					0		
10				Refusal @ 11.1 ft	0	0.1	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 8 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-08
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.3	No Change
2	Full (1/4)	50%		Silt and gravel	0	0.4	
				Distinct layer of cinders/slag @ 3 ft to 4 ft	0	0.3	
4	Full (1/4) VOC @ 4 ft			Trace silt/gravel/cinders from 4 ft to 6 ft	0	0.3	
6	Full (1/4)	75%		Clayey Silt 6 to 8 ft	0	0.2	
8	Full (1/4)	100%		Trace silt/gravel/cinders from 8 ft to 9.6 ft Refusal @ 9.6 ft	0	0.2	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 9.6 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-09
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.3	No Change
2		75%		Trace Silt/gravel/ash/cinder from 0.5 to 10 ft	0	0.3	
4					0	0.3	
6		100%			0	0.3	
8	VOC @ 8 ft				0	0.2	
10		60%		Clayey Silt from 10 to 12.6 ft	0	0.2	
12		100%		Refusal @ 12.6 ft	0	0.2	
16							
20							

WATER LEVEL DATA			DEPTH (FT) 12.6 ft		NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	
				GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-10
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.3	No Change
2		60%		Silt and gravel Crushed stone Clayey Silt	0 0	0.2 0.2	
4	VOC @ 4.5 ft			Clayey Silt - PID hits around 4.5 feet	6 31 13.6	0.2	
6		85%		Silt and gravel	0 0	0.1	
8				Refusal @ 7.7 ft		0.1	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 7.7 ft			NOTES: No GW	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-11
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.1	No Change
2		70%		Silty Clay and stone	0	0.1	
4					0	0.1	
6		90%			0	0.1	
8				Silty clay and stone - moist at 9 ft	0	0.1	
10		100%			0	0.1	
12	VOC @ 11ft						
16							
20				Refusal @ 11.1 ft	0	0.1	

WATER LEVEL DATA			DEPTH (FT) 11.1 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-12
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.1	No Change
2		40%		Silty and stone	0	0.2	
4					0	0.1	
6		25%			0	0.2	
8	VOC @ 8 ft			Silty and stone - moist at 8 ft	0	0.3	
10		90%		Refusal @ 10.7 ft	0	0.1	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 10.7 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-13
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.4	No Change
	Full (1/4)			Trace Silt/ash/cinders to 5 ft			
2	Full (1/4)	80%			0	0.5	
	Full (1/4)				0	0.3	
4	Full (1/4)				0	0.4	
	Full (1/4)				0		
6	VOC @ 6 ft	80%		Silt 5 to 7 ft	0	0.3	
					0		
8				Silty clay 7 to 10.9 ft	0	0.3	
					0		
10		60%		Refusal @ 10.9 ft	0	0.3	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 10.9 ft			NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-14
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Grass	0	0	No Change
2		55%		Loamy Silt	0	0.2	
4	VOC @ 4.5ft			Stone/silt/trace cinders from 2 to 4 ft	0	0.1	
6		80%		clayey silt and stone	0	0	
8					0	0.2	
10		100%		Refusal @ 10.8 ft	0	0	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 10.8 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0%	
						CO = 0 ppm	
						H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-15
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Grass	0	0.1	No Change
2	Full (1/4)	95%		Silt and stone with ash and trace cinders mixed sporatically from 0.5 to 10.5 ft	0	0.2	
4	Full (1/4)				0	0.1	
6		95%			0	0.1	
8	Full (1/4)				0	0.2	
10	VOC @ 9.5ft	95%		Clay @ 10.5 ft - moist just above the clay	0	0.2	
12	Full (1/4)				0	0.2	
16							
20				Refusal @ 11.6 ft	0	0.2	

WATER LEVEL DATA			DEPTH (FT) 11.6 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-16
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.2	No Change
2	Full (1/4)	40%		Silt and gravel	0	0.2	
4	Full (1/4)				0	0.3	
6	VOC @ 5ft Full (1/4)	75%		Saturated Silt @ 4 ft	0	0.2	
8	Full (1/4)			Refusal @ 7.1 ft	0	0.2	
10							
12							
16							
20							

			DEPTH (FT) 7.1 ft		NOTES: GW @ 4ft
WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			
					CH4 = 0% CO = 0 ppm H2S = 0 ppm

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-17
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0	VOC @ 1.5ft			Grass	0	0.1	No Change
2	TCLP 1.5 to 4	95%		Mostly silt with some gravel and trace cinders	0	0.1	
4				Mostly silt with some gravel and trace cinders	0	0.3	
6		90%			0	0.2	
8				Refusal @ 7.7 ft	0	0.1	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 7.7 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-18
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.1	No Change
2		80%		Silt and gravel	0	0.1	
4	VOC @ 4ft			Small amount of trace cinder @ 4 ft	0	0.2	
6		100%			0	0.2	
8				Refusal @ 6.4 ft	0	0.1	
10							
12							
16							
20							

DEPTH (FT)				6.4 ft	NOTES: No Moisture
WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			
					CH4 = 0% CO = 0 ppm H2S = 0 ppm

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-19
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.1	No Change
2		50%		Silt and gravel	0	0.1	
4	Full (1/4)			Clayey silt with trace cinders from 4 to 6 ft	0	0.2	
6	Full (1/4) VOC @ 6.5ft	60%		Silt and gravel	0	0.3	
8	Full (1/4)			Silt and gravel	0	0.3	
10	Full (1/4)	100%		Refusal @ 9.1 ft	0	0.2	
12							
16							
20							

			DEPTH (FT)	9.1 ft	NOTES: No moisture
WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			CH4 = 0% CO = 0 ppm H2S = 0 ppm

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-20
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowia START DATE: 12/11/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Grass Gravel	0	0.1	No Change
2	VOC @ 2ft	50%		Silt and stone from 1 to 9 ft	0	0.1	
4					0	0.2	
6		60%			0	0.1	
8				Trace cinders at approximately 9 ft	0	0.2	
10		100%		Clayey Silt @ 10 ft 10.5 ft	0	0.1	Refusal @
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT)	10.5 ft	NOTES: Moist @ 8 ft
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
					CH4 = 0% CO = 0 ppm H2S = 0 ppm

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-21
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/12/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0	Full (1/4)			Grass	0	0.1	No Change
2	Full (1/4) Full (1/4) Full (1/4) Full (1/4)	50%		Silt Cinders ~ 1.5 ft Misc trace cinders and silt from 2 to 6 ft	0 0 0	0.1 0.2	
4					0 0	0.2	
6		60%		Moist silt from 6 to 11.2 ft	0 0	0.3	
8	VOC @ 8 ft				0 0	0.1	
10		100%		Refusal @ 11.2 ft		0.1	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 11.2 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-22
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/12/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Concrete	0	0.1	No Change
2		25%		Silt with misc. stone	0	0.2	
4	VOC @ 4ft			Silt with misc. stone	0	0.2	
6	TCLP 4 to 8ft	55%			0	0.1	
8					0	0.1	
10		50%		Refusal @ 11.2 ft		0.2	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 11.2 ft			NOTES:	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-23
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/12/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.2	No Change
2		75%		Silt and Gravel	0	0.2	
				Sand @ ~ 2.8 ft	0	0.2	
4				Refusal @ 3.2 ft	0	0.1	
6							
8							
10							
12							
16							
20							

				DEPTH (FT)	3.2 ft	NOTES: No sample CH4 = 0% CO = 0 ppm H2S = 0 ppm
WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
DATE	TIME	ELASPED TIME				

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-24
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/12/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0	No Change
	Full (1/4)			Silt and gravel			
2		60%		Silt and trace cinders @ ~ 2ft to 8 ft	0	0	
	Full (1/4)				0	0.1	
4					0	0.2	
	Full (1/4)				0		
6		85%			0	0.1	
	Full (1/4)				0		
8	VOC @ 8 ft			Silt (moist) @ 8 ft	0	0.1	
					0		
10		50%		Refusal @ 8.5 ft		0.1	
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT)	8.5 ft	NOTES: CH4 = 0% CO = 0 ppm H2S = 0 ppm
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	
				GROUNDWATER ENCOUNTERED	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
 ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
 Edison Tech

BORING: ET-SB-25
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
 DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
 LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
 AUGER SIZE AND TYPE: INSIDE DIAMETR:
 OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0	No Change
2		50%		Silt and gravel Silt Dark stained silt and gravel - PID @ ~ 3ft	0 1.3 7.8 0.2	0 0.2	
4	Full @ 3ft			Silt and stone	0	0.2	
6		100%			0 0	0.1	
8				Refusal @ 7.7 ft		0.2	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT)	7.7 ft	NOTES: No GW CH4 = 0% CO = 0 ppm H2S = 0 ppm	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING		GROUNDWATER ENCOUNTERED

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-26
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella BORING LOCATION: Rochester, NY
DRILLER: Trec GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: Jason Jaskowial START DATE: 12/10/2012 END DATE

TYPE OF DRILL RIG: Track Mount DRIVE SAMPLER TYPE:
AUGER SIZE AND TYPE: INSIDE DIAMETR:
OVERBURDEN SAMPING METHOD: Direct Push OTHER:

DEPTH	SAMPLE			VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE				
0				Asphalt	0	0.1	No Change
2		50%		Silt and gravel Silt Dark stained silt and gravel @ ~ 3ft	0	0.1	
4				Silt and stone	0	0.2	
6		100%			0	0.1	
8				Refusal @ 8.1 ft		0.2	
10							
12							
16							
20							

WATER LEVEL DATA			DEPTH (FT) 8.1 ft			NOTES: No sample	
DATE	TIME	ELASPED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	CH4 = 0% CO = 0 ppm H2S = 0 ppm	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 1
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	3.2		0.2	Topsoil Brown SILT, little f Sand, moist, no odor	0	0	
2			2.3	Gray to Black SILT and Cinders, moist, petroleum odor	10	2	
4	1.0	Grab-4' Comp-2.5'-5'		Bottom of Boring at 5 Feet Below the Ground Surface	17.2	4	
6			6				
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 1



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 2
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	3.2		0.2	Topsoil		0	
				Brown SILT, little f Sand, moist, no odor	0		
			1.0	Dark Brown SILT, intermixed with glass and cinders, petroleum odor	2.3		
2				-increasing amount of cinders from 2'-5'		2	
					8		
4						4	
	1.0	Grab-4' Comp-1'-5'			10		
6				Bottom of Boring at 5 Feet Below the Ground Surface		6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 2



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 3
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	3.2		0.2	Topsoil		0	
				Brown SILT, little f Sand, moist, no odor	0		
			1.2	Brown SILT and mf SAND, intermixed with glass pieces, and trace amounts of ash and cinders, petroleum odor	3.5		
2			2.4	Dark Brown to Black SILT and SAND, intermixed with Cinders, some Glass, little Ash, petroleum odor	9.7	2	
4	1.0	Grab-4' Comp-1'-5'				4	
					18.4		
6				Bottom of Boring at 5 Feet Below the Ground Surface		6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 3



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 4
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION: DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	2.5	Grab-2.5' Comp-1'-2.5'	0.2	Topsoil Brown SILT, little f Sand, moist, no odor	0	0	
			1.2	Brown to Dark Brown SILT, little f Sand, intermixed with glass, cinders, and ash	0.2		
2					1.4	2	
4				Bottom of Boring at 2.5 Feet Below the Ground Surface		4	
6						6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 4



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 5
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	2.9		0.2	Topsoil Brown SILT, little f Sand, moist, no odor	0	0	
			1.1	Brown to Dark Brown SILT and mf SAND, intermixed with glass, trace amounts of cinders and ash	2.3		
2			2.2	Dark Brown to Gray SILT and mf SAND, intermixed with glass, ciners, little ash	8	2	
4	1.2	Grab-6' Comp-1'-9'				4	
6						10	
8	0.2					6	
10				Bottom of Boring at 9 Feet Below the Ground Surface		8	
12						10	
14						12	
16						14	
						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 5



300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT

Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 6
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental BORING LOCATION: TIME: TO
DRILLER: Eric Winters GROUND SURFACE ELEVATION DATUM:
LABELLA REPRESENTATIVE: MFP START DATE: 29-Oct-2012 END DATE: 29-Oct-2012

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT DRIVE SAMPLER TYPE: Macrocore
AUGER SIZE AND TYPE: NA INSIDE DIAMETER: 1.8-inch
OVERBURDEN SAMPLING METHOD: Direct Push OTHER:

DEPTH (FEET)	SAMPLE			VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0	2.5	Grab-2.5' Comp-1'-2.5'	0.2	Topsoil		0	
			1.0	Brown SILT, little f Sand, moist, no odor	0		
2				Brown to Dark Brown SILT, little f Sand, intermixed with glass, cinders, and ash	0	2	
4				Bottom of Boring at 2.5 Feet Below the Ground Surface		4	
6						6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

GENERAL NOTES

- STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 % little = 10 to 20% c - coarse ND = Non Detect
some = 20 to 35% trace = 1 to 10% m = medium BGS = Below the Ground Surface
f = fine NA = Not Applicable

BORING: B - 6

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-1
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.

Client: FOUNDATION DESIGN PC

Elevation: ~~536.8~~ 539.8

Geologist: _____

Water Level - Casing In: _____

Driller: S. KAHN

Below Surface - Casing Out: _____

Start: 4/23/01

Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		2	7					TOPSOIL AND ORGANIC MATTER 0'6"	
				9	11	16	1	0'0"-2'0" MISC. FILL MATERIAL C/O MOIST CINDERS, GLASS, SILT, SAND & GRAVEL	
		10	18						
				18	16	36	2	2'0"-4'0" MISC FILL MOIST (CONCRETE NOTED) HEAVY FILL	
5		32	50/3			82/8	3	4'0"-4'9" FILL MATERIAL SILT, SAND & GRAVEL DRY	
		50/5				50/5	3	6'0"-6'5" VERY DENSE BROWN DRY F-VF SAND, SOME C-F GRAVEL, LITTLE SILT (POSSIBLE FILL) 6'5" (AUGER REFUSAL @ 6'6") SEE NOTES	
10									
								BORING TERMINATED @ 8'6"	
15								NOTES: ELEVATIONS PROVIDED BY OTHERS DRILLED TWO ADDITIONAL BORINGS IN VICINITY TO VERIFY REFUSAL (5' AND 6'1" RESPECTIVLY) GRINDING SMOOTH FROM 4'-6'1" ACTED LIKE BEDROCK	
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-2
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.

Client: FOUNDATION DESIGN PC

Elevation: 533.05 (536.1)

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. KAHN

Start: 4/23/01

Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		40	28			45	1	0'0"-2'0"	ASPHALT 0'3"
		11	7	15	17	13	2	2'0"-4'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, SILT, SAND & GRAVEL MISC FILL SATURATED (SLAG NOTED)
5		3	3	6	7	5	3	4'0"-6'0"	LOOSE FILL SATURATED
		6	4	2	2	7	4	6'0"-8'0"	LOOSE FILL SATURATED
10		2	3	3	3	6	5	8'0"-10'0"	LOOSE SATURATED PROBABLE FILL 9'6"
		1	4	5	6	9	6	10'0"-12'0"	LOOSE GREY BROWN SATURATED SILT AND FINE TO VERY FINE SAND, LITTLE ORGANIC MATTER
		5	7	8	11	15	7	12'0"-14'0"	FIRM GREY SATURATED
15		8	9	9	50/3	18	8	14'0"-15'9"	FIRM GREY SATURATED 15'9" (SPOON BOUNCING @ 15'9")
20									
									BORING TERMINATED @ 15'9"
25									NOTES: ELEVATIONS PROVIDED BY OTHERS
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-3
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.

Client: FOUNDATION DESIGN PC

Elevation: 539.48 536.2

Water Level - Casing In: _____

Below Surface - Casing Out: _____

Geologist: _____

Driller: S. KAHN

Start: 4/23/01

Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
								ASPHALT 0'2"	
		6	3					CONCRETE 0'8"	
				3	2	6	1	CRUSHED STONE 1'0"	
		2	1					MISC FILL C/O GLASS, ASH, CINDERS, BRICK, SILT SAND AND GRAVEL	
5				1	1	2	2	MISC. FILL SATURATED	
		1	1					MISC FILL SATUARED 6'6"	
				1	23	2	3	LOOSE MUSTARD BROWN SATURATED SILT, SOME VERY FINE SAND	
10								AUGERED TO REFUSAL @ 8'2"	
								BORING TERMINATED @ 8'2"	
15								NOTES: ELEVATIONS PROVIDED BY OTHERS	
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-4
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.
 Client: FOUNDATION DESIGN PC
 Elevation: 533.72 536.8
 Water Level - Casing In: _____
 Below Surface - Casing Out: _____

Geologist: _____
 Driller: S. KAHN
 Start: 4/23/01
 Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		5	6					TOPSOIL AND ORGANIC MATTER 0'3"	
				7	7	13	1	0'0"-2'0" MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, SILT, SAND & GRAVEL	
		17	11					2'0"-4'0" MISC FILL MOIST	
				14	14	25	2		
5		5	5					4'0"-6'0" LOOSE FILL SATURATED (POOR RECOVERY) 6'0"	
				3	4	8	3	LOOSE BLCK GREY SATURATED MEDIUM TO FINE	
		2	2					6'0"-8'0" SAND, SOME SILT AND CLAY AND M-F GRAVEL 8'4"	
				2	4	4	4	8'0"-8'5" ROCK FRAGMENTS 8'5"	
10		5	50/0					(AUGER REFUSAL @ 8'6")	
								BORING TERMINATED @ 8'6"	
15								NOTES: ELEVATIONS PROVIDED BY OTHERS	
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-5
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.
 Client: FOUNDATION DESIGN PC
 Elevation: 536.76 539.0
 Water Level - Casing In: _____
 Below Surface - Casing Out: _____

Geologist: _____
 Driller: S. KAHN
 Start: 4/23/01
 Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler				N	Sample		Soil and Rock Information
		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		4	5					TOPSOIL AND ORGANIC MATTER & FILL MIX 0'9"	
				11	8	16	1	0'0"-2'0"	
		11	11					MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, CONCRETE SILT, SAND & GRAVEL	
				9	6	20	2	2'0"-4'0"	
5		7	3					MISC FILL SATURATED	
				3	4	6	3	4'0"-6'0"	
		5	4					LOOSE FILL SATURATED (POOR RECOVERY)	
				3	2	7	4	6'0"-8'0"	
		5	7					LOOSE FILL SATURATED	
10				6	4	13	5	8'0"-10'0"	
		4	4					NO RECOVERY (BASKET IN USE)	
				7	9	11	6	10'0"-12'0"	
		25	50/4			75/10	7	12'0"-12'10"	
15								MISC. FILL SATURATED 12'6"	
								VERY DENSE BROWN WET FINE TO VERY FINE SAND AND SILT, SOME ROCK FRAGMENTS 12'10"	
								(SPOON BOUNCING @ 12'10")	
20									
25									
30									
35									

BORING TERMINATED @ 12'10"

NOTES: ELEVATIONS PROVIDED BY OTHERS

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

Target Drilling Company
 1850 Lakeville Road
 Avon, New York 14414

Test Boring No.: B01-6
 Job No.: 302
 Page: 1 OF 1
 Report Date: 4/23/01

Project: PRINTING METHODS INC., EMERSON ST.
 Client: FOUNDATION DESIGN PC
 Elevation: 536.83 539.9
 Water Level - Casing In: _____
 Below Surface - Casing Out: _____

Geologist: _____
 Driller: S. KAHN
 Start: 4/23/01
 Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

C	Blows on Sampler				N	Sample		Soil and Rock Information
	0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
0	4	8						TOPSOIL AND ORGANIC MATTER <u>0'3"</u>
			9	9	17	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, WOOD, METAL, SILT, SAND & GRAVEL
	9	8						MISC FILL MOIST
			9	6	17	2	2'0"-4'0"	
5	10	7						
			7	5	14	3	4'0"-6'0"	MISC. FILL MOIST
	2	1						
			3	4	4	4	6'0"-8'0"	NO RECOVERY
	4	4						
10			3	4	7	5	8'0"-10'0"	<u>LOOSE MISC. FILL SATURATED</u> <u>9'6"</u>
	5	12						LOOSE MUSTARD BROWN WET SILT, SOME VERY FINE SAND
			13	13	25	6	10'0"-12'0"	<u>FIRM BROWN WET</u> <u>12'0"</u>
	17	15						COMPACT BROWN WET SILT AND FINE TO VERY FINE SAND, LITTLE MEDIUM TO FINE GRAVEL
15	13	14						COMPACT BROWN MOIST TO WET
			17	20	31	8	14'0"-16'0"	
	16	20						
			29	52	49	9	16'0"-18'0"	DENSE RED BROWN MOIST
	38	58						
20	90/6		55	55	108	10	18'0"-20'0"	<u>VERY DENSE RED BROWN MOIST</u> <u>20'0"</u>
								(SPOON BOUNCING @ 20'0") BORING TERMINATED @ 20'0"
								NOTES: ELEVATIONS PROVIDED BY OTHERS
25								
30								
35								

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. _____ Ea. Blow
 N=No. of Blows to Drive Spoon _____ with _____ lb. wt. _____ Ea. Blow

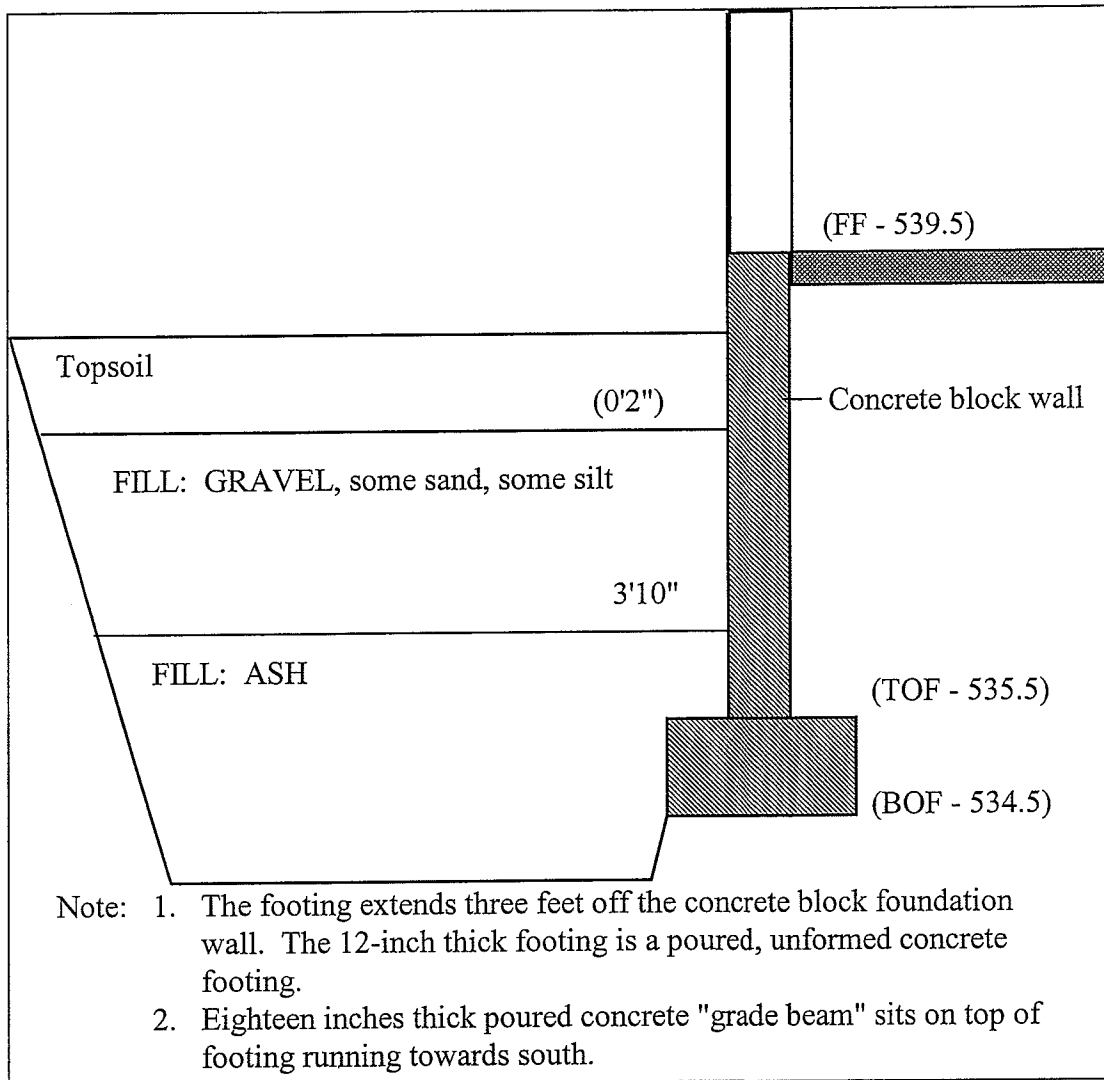
Test Pit Log

Project No. 1-2421.0 Page 1 of 1 Test Pit No. TP01-1
 Project Name Printing Methods, Inc. Additions, 1525 Emerson St. Rochester, New York
 Client Gary C. Sylvester Architects, 452 Lee Road, Rochester, New York 14606
 Elevation _____ Weather 60° Sunny Inspector J. Netzband
 Date Started 04/30/01 Completed 04/30/01 Operator D. Richards
 Backhoe Subcontractor DiBattisto Construction Equipment Case 580 Backhoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL and ROOTS _____ 0'6" FILL: Firm brown moist SAND, some silt
2			_____ 1'7" FILL: Loose to firm black moist ASH, with cans, glass, springs, pipe, brick, tile
4			
6			
8			Saturated below 7'6"
10			_____ 9'0" Test pit terminated at 9'0"
12			
14			Notes: 1. Sides caved below 7'6". 2. Water constant at 7'6".

Test Pit Log

Project No.	1-2421.0	Page	1	of	1	Test Pit No.	TP01-2
Project Name	Printing Methods, Inc. Additions, 1525 Emerson St. Rochester, New York						
Client	Gary C. Sylvester Architects, 452 Lee Road, Rochester, New York 14606						
Elevation		Weather	60° Sunny		Inspector	J. Netzband	
Date Started	04/30/01	Completed	04/30/01		Operator	D. Richards	
Backhoe Subcontractor	DiBattisto Construction				Equipment	Case 580 Backhoe	



Not to Scale

DATE STARTED <u>8/2/88</u> FINISHED <u>8/4/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-1</u> SURFACE ELEV. <u>102.7</u> G.W. ELEV. <u>77.85</u>
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PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.0'	SB	1	13	25			Brown SAND and GRAVEL fill, dense, dry occasional cobbles encountered down to bedrock.	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
								Grades to... Very dense.	Auger drilling refused at 6.4 ft. SB-3 from 6.4-6.9 ft. revealed bedrock fragment in sampler. Take 2 ft. core then back into unconsolidated material, resume auger drilling.
	1.8'	SB	2	28	39				
				26	31				
10	0.5'	SB	4	77				[FILL] 10.0'	Auger drilling refusal at 10.0 ft.
	REC 88%	NX	2					Light to dark gray, fine textured dolomite, numerous horizontal fractures, some show iron staining, intense weathering evident on some fractured surfaces, calcite and gypsum precipitates located on weathered surfaces and vugs.	NX core runs 2-5 drilled on 8/3/88. Rotary drilled with 3-7/8 in. tri-cone bit from 10-28.5 ft. Coring was done with a long ear 5.0 ft. NQ core barrel.
	RDQ 25%								
15	REC 100%	NX	3						
	RDQ 44%								
20	REC 98%	NX	4					At 14.0 ft.: Some drilling fluid return was lost.	Runs 1-3 were drilled using a 58-60 carat drill bit.
	RDQ 77%							Water table encountered at approximately 20.5 ft.	Runs 4-5 were drilled using a Series 2 drill bit.
25	REC 90%	NX	5					At 24.0 ft.: Several vertical fractures, possible water producing zone.	
	RDQ 68%								
30								[DOLOMITE BEDROCK] 29.0'	Boring completed at 29.0 ft.
									Groundwater Elevation taken on 12/16/88.
35									

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

DATE STARTED <u>8/18/88</u> FINISHED <u>8/19/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-2</u> SURFACE ELEV. <u>98.2</u> G.W. ELEV. <u>74.99</u>
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PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
---	---

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	2.0'	SB	1	8	16			Dark brown organic SILT, trace gravel, grading to light brown fine SAND and SILT, dry, medium dense. At 4.0 ft.: Some gray clay. At 5.0 ft.: Moist. [SAND and SILT] 7.5'	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod Augering becomes easier at 2.5 ft. HNU = 5-10 ppm on SB-3, possibly due to moisture.
				13	16				
	2.0'	SB	2	6	10				
	1.4'	SB	3	4	8				
	1.0'	SB	4	6	28				
10	REC 100% RQD 100%	NX	1	50				Light gray fine textured dolomite, moderately hard, little weathering, few horizontal fractures, some 4-6" vertical fractures present. At 12.5 ft.: Few vugs, some light and dark gray mottling. At 17.5 ft.: Some white precipitate present which is highly reactive to HCl, some yellow precipitate observed which appears to contain sulfur (drilling fluid begins to have a sulfurous odor). At 19.5 ft.: Encountered water table At 23.0 ft.: Core exhibits increased fracture density and weathering, apparent transmissive zone.	Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. NX core run 1 drilled on 8/18/88. Rotary drilled with 4.5 in. tri-cone bit from 7.5 ft. to 12.5 ft. NX core runs 2-4 drilled on 8/19/88. Coring was done using a long ear 5 ft. NQ core barrel. Run 1 was drilled with a 58-60 carat bit.
	REC 100% RQD 100%	NX	2						
	REC 100% RQD 100%	NX	3						
25	REC 100% RQD 97%	NX	4					[DOLOMITE BEDROCK] 28.0'	Run 2-4 were drilled with a Series 8 bit.
30								Boring completed at 28.0 ft.	
35								G.W. elevation taken on 12/16/88.	

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. MW-15S	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Monroe County Resource Recovery Facility (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	---	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	---	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	---	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	---	---	OTHER: Advanced augers to 10.3 ft.		
ELEVATION: 532.81		DATUM: NGVD					
START: 4 June 1993		FINISH: 7 June 1993					
DRILLER: S. Loranty		H&A REP: M. Corrigan					
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5						Advanced augers to 10.3 ft. without split spoon sampling.	
10						Auger Refusal at 10.3 ft. Apparent Top of Competent Rock at 10.3 ft.	
15						Notes: 1. No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above background in breathing zone. 3. Set 6.0 in temporary casing to 10.3 ft. 4. Reamed with 5-7/8 in. tri-cone rollerbit to 15.0 ft. and grouted 4.0 in. PVC casing. 5. Reamed with 3-7/8 in. tri-cone rollerbit from 15.0 ft. to 31.0 ft. 6. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.	
20							
25							
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.3
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: ---	
						BORING NO.	MW-15S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST BORING REPORT			BORING NO. MW-15D		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING						FILE NO. 70352-46 SHEET NO. 1 OF 2 LOCATION: Monroe County Resource Recovery Facility (See Plan) ELEVATION: 532.87 DATUM: NGVD START: 2 June 1993 FINISH: 4 June 1993 DRILLER: S. Loranty H&A REP: M. Corrigan		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE INSIDE DIAMETER (IN) HAMMER WEIGHT (LB) HAMMER FALL (IN)		Auger 4-1/4 --- ---	S 1-3/8 140 30	NX 2-1/8 --- ---	RIG TYPE: CME-75, Truck-Mounted BIT TYPE: 4-1/4 in. I.D. H.S. Augers DRILL MUD: --- OTHER: Advanced augers to 10.1 ft.			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
		7 20 18 14 10 7 6 6 7 16 8 2 1 2 8 11 100/.2	S1 15"/24" S2 6"/24" S3 8"/24" S4 20"/24" S5 2"/2"	1.0 3.0 3.0 5.0 7.0 7.0 9.0 9.2	2.0 6.8 8.5	<p>Augered through asphalt.</p> <p>Medium dense brown gravelly coarse to fine SAND, trace coal, damp. -FILL-</p> <p>Dense gray GRAVEL, little coarse to fine sand, dry. Medium dense brown coarse to fine SAND, little gravel, damp.</p> <p>Medium dense brown coarse to fine SAND, little gravel, damp.</p> <p>Medium dense brown coarse sandy GRAVEL, some silt, damp. -FILL-</p> <p>Loose red-brown fine SAND, trace coarse sand, trace silt, damp. -FLUVIAL-</p> <p>Hard, highly weathered, gray, fine-grained, DOLOSTONE. damp. -LOCKPORT FORMATION-</p> <p>Auger Refusal at 10.1 ft. Apparent Top of Competent Rock at 10.1 ft.</p> <p>Notes:</p> <ol style="list-style-type: none"> OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 0 ppm S4 = 0 ppm S5 = 0 ppm No OVA readings above background in breathing zone. No explosimeter or radioactivity meter readings above background from sample screening or in breathing zone. See Core Boring Report, page 2. Installed monitoring well in borehole, See Groundwater Monitoring Well Report. 		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.1 ROCK CORED (LIN FT): 30.0 SAMPLES: 5S	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER			
							BORING NO.	MW-15D

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
	2	10.3					Began Coring at 10.3 ft.
	2	R1	$\frac{117}{84}$	$\frac{98}{70}$	MOD	25.4	Hard, light to medium gray, fine-grained thin-bedded, DOLOSTONE, very thinly color-banded. Trace pits, vugs. Secondary gypsum seams in closely spaced partings.
	2						
	2						
	2						
15	2						
	2						
	2						
	2						
	2	20.3			SL		-LOCKPORT FORMATION- Rough, planar vertical joint from 12.0 ft. to 12.5 ft. Vug at 13.0 ft., 0.1 ft. wide. Rough, high angle stepped joint at 12.7 ft. Secondary gypsum seams and partings below 17.4 ft.
	2	R2	$\frac{116}{112}$	$\frac{97}{93}$	SL	25.4	Moderately hard, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and vugs throughout. Closely to very closely spaced horizontal argillaceous partings.
	2						
	2						
	2						
25	2						
	2						
	2						
	2						
	2	30.3					-ROCHESTER FORMATION-
	2	R3	$\frac{123}{117}$	$\frac{103}{95^*}$	SL	25.4	* RQD based on rock core recovered.
	2						
	2						
	2						
35	2						
	2						
	2						
	2						
	2	40.3					Bottom of Boring at 40.3 ft.
							Notes: 1. Lost 2,950 gallons of water during coring and reaming process.
45							

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. MW-19	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION					FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER					SHEET NO. 1 OF 2		
CONTRACTOR: NOTHNAGLE DRILLING					LOCATION: Browning-Ferris Ind. (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	NX	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	2-1/8	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 11.3 ft.		
ELEVATION: 530.97							
DATUM: NGVD							
START: 24 May 1993							
FINISH: 26 May 1993							
DRILLER: S. Loranty							
H&A REP: J. Marschner							
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
		2	S1	0.0		Medium dense brown silty fine SAND, little gravel, little coarse sand, dry. -FILL-	
		9			1.5		
		16	15"/24"	2.0		Medium dense black ASH, with glass, metal slag, dry.	
		14					
		2	S2	2.0		Loose black and gray ASH with glass, moist.	
		4					
		4	15"/24"	4.0			
		4					
5		1	S3	4.0		Very loose dark gray ASH with silt, trace fine sand, roots, glass fragments.	
		1			6.0	-FILL-	
		1	8"/24"	6.0			
		1					
		5	S4	6.0		Medium dense gray fine sandy GRAVEL, some silt, damp.	
		10				-GLACIAL TILL-	
		15	6"/24"	8.0			
		34					
		12	S5	8.0		Very dense gray sandy GRAVEL, wet.	
		25				-GLACIAL TILL-	
10		36	18"/24"	10.0	10.0		
		38					
		22	S6	10.0		Hard, highly weathered, gray-brown, fine-grained DOLOSTONE.	
		35	12"/18"	11.5	11.5	-LOCKPORT FORMATION-	
		100/.5				Auger Refusal At 11.5 ft. Apparent Top of Competent Rock at 11.5 ft.	
Notes:							
1. OVA readings from sample screening noted as follows: S1 = 40 ppm (5 ppm methane) S2 = 250 ppm (140 ppm methane) S3 = 400 ppm (110 ppm methane) S4 = 120 ppm (30 ppm methane) S5 = 100 ppm (30 ppm methane) S6 = 100 ppm (30 ppm methane)							
No OVA readings above background in breathing zone.							
2. No explosimeter or radioactivity meter readings above background from sample screening or in breathing zone.							
3. See Core Boring Report, page 2.							
4. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.							
WATER LEVEL DATA				SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 11.5 ROCK CORED (LIN FT): 10.0 SAMPLES: 6S
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		
5/24/93	1045		11.5 ft.	11.5 ft.	4.5 ft.		BORING NO. MW-19

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD		WEATH- ERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			IN.	%			
	5						Began Coring at 11.5 ft.
	5	11.5 R1 12.0	$\frac{5}{5}$	$\frac{83}{83}$			Hard, slightly weathered, gray-brown, fine-grained DOLOSTONE. Trace pits and stylolites.
	7						
	4	12.0					-LOCKPORT FORMATION-
15	5						Smooth, low angle, undulating joints at 12.6, 12.7 and 16.3 ft.
	7		$\frac{114}{94}$	$\frac{100}{82}$	SL		Rough, low angle, undulating joint at 20.0 ft.
	5	R2					Horizontal partings at 12.2, 14.0, 15.1 and 19.3 ft.
	6						Smooth, planar, low angle joint at 16.1 ft.
	5						Smooth, planar, high angle joint at 18.6 ft.
20	4						Vugs at 18.1 ft.
	2	21.5					
							Bottom of Exploration at 21.5 ft.
25							
30							
35							
40							
45							

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-1
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.2 **Weather** Cloudy, 30° **Inspector** J. Metzger
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Bob
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" Firm orange, brown, black & grey mottled FILL - 90% cinders & ash, 10% glass, scrap metal, wire, brick & cobbles
4			TOPSOIL 3'2" 3'10"
6			Firm yellow brown moist SILT, some sand 5'10"
8			Compact light brown moist SILT, some sand, little gravel, few cobbles
10			
12			Refusal on bedrock at 10'10" 10'10"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-2
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.3 **Weather** Cloudy, 30° **Inspector** J. Nezhad
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm black moist ASH & CINDER FILL, trace glass, scrap metal <hr style="border: 0.5px solid black;"/> TOPSOIL <hr style="border: 0.5px solid black;"/>
4			Firm yellow brown moist SILT, some sand, little gravel, few cobbles
6			Compact below 5'0"
8			
10			
12			<hr style="border: 0.5px solid black;"/> Refusal on bedrock at 11'4"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-3
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.7 **Weather** Cloudy, 30° **Inspector** J. Metz
Date Started 4/6/95 **Completed** 4/6/95 **Operator** T. ...
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3" Firm brown orange and black mottled FILL - 95% ash & cinders, 5% glass & tires
4			Firm dark brown TOPSOIL 2'6"
6			Firm light brown to grey moist SILT, some sand 4'3" Compact below 6'0"
8			24" diameter boulder at 7'0"
10			Dense below 9'0"
12			12'2"
14			Refusal on bedrock at 12'2" Notes: 1. Sides near vertical 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 2 **Test Pit No.** L-4
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.1 **Weather** Cloudy, 30° **Inspector** J. [unclear]
Date Started 4/7/95 **Completed** 4/7/95 **Operator** [unclear]
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Black damp ASH & CINDERS, little glass <hr style="width: 80%; margin-left: auto; margin-right: 0;"/> TOPSOIL 1'5" <hr style="width: 80%; margin-left: auto; margin-right: 0;"/> 1'10"
4			Firm yellow brown moist SILT, some sand, little gravel, few cobbles, few boulders to 24" diameter
6			
8			
10			
12			
14			14'0"

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-5
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation _____ **Weather** Cloudy, 30° **Inspector** J. Nezband
Date Started 4/7/95 **Completed** 4/7/95 **Operator** _____
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Black ASH & CINDERS <hr style="width: 80%; margin-left: auto; margin-right: 0;"/> GLASS & BOTTLES <hr style="width: 80%; margin-left: auto; margin-right: 0;"/>
4			TOPSOIL <hr style="width: 80%; margin-left: auto; margin-right: 0;"/> Firm yellow brown moist SILT, some sand, trace gravel
6			
8			Few cobbles & boulders below 7'0"
10			
12			<hr style="width: 80%; margin-left: auto; margin-right: 0;"/> Refusal on bedrock at 10'7"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-6
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.4 **Weather** Cloudy, 30° **Inspector** J. Netter
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Tom
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, trace organic 0'3" Firm black, orange brown moist FILL - 80% cinders & ash, 20% glass, wood, scrap metal, possible asbestos
4			
6			5'8"
8			Firm grey brown moist SILT, some sand
10			9'9"
12			Refusal on bedrock at 9'9"
14			Notes: 1. Sides near vertical 2. Slight seepage at 5'8" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-8
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 537.4 **Weather** Cloudy, 30° **Inspector** J. Neeland
Date Started 4/6/95 **Completed** 4/6/95 **Operator** T. ...
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'2" Firm black orange brown moist FILL - 75% cinders & ash, 25% glass, scrap metal, rock slabs, wood, pipes, paint
4			
6			Firm yellow brown moist SILT, some sand 5'6"
8			
10			Refusal on bedrock at 7'10" 7'10"
12			
14			Notes: 1. Sides sloughed above 5'6" 2. Water flowing at 5'6", 25-50 gallon/minute 3. Odor noted 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-9
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.9 **Weather** Cloudy, 30° **Inspector** J. Nezzand
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" Firm grey damp ASH, trace metal, glass, ceramics, plastic
4			
6			4'8" Firm black wet FILL - ash, wood, cobbles, boulders, glass, scrap metal
8			
10			
12			10'1" Refusal on bedrock at 10'1"
14			Notes: 1. Sides caved below 6'0" 2. Water level at 6'0" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-10
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.8 **Weather** Cloudy, 30° **Inspector** L. Metzger
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Tom
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm brown CINDER & ASH FILL with glass
			2'5"
4			Firm grey ASH FILL
			4'3"
6			Firm black FILL - 40% wood, bottles, scrap metal, bed springs, plastic bag, blasted rock fragments, 60% ash & cinders
8			
10			
			9'10"
12			Test pit terminated at 9'10"
14			Notes: 1. Sides caved below 4'3" 2. Water level constant at 6'2" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-11
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.2 **Weather** Cloudy, 30° **Inspector** J. Netzband
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT Firm orange brown to black mottled CINDERS & ASH FILL with glass, brick & plastic <div style="text-align: right;">2"</div>
4			Firm black FILL - 50% ash & cinders, 50% wood, bed springs, pipe, brick, scrap metal, glass, cobbles, boulders <div style="text-align: right;">2'4"</div>
6			
8			
10			
12			Refusal on bedrock at 10'8" <div style="text-align: right;">10'8"</div>
14			Notes: 1. Sides caved below 6'6" 2. Water level constant at 8'0" 3. Elevations provided by The Sear-Brown Group, Inc.

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Test Pit Log

Project No. 2-1407.1 Page 1 of 1 Test Pit No. L-12
 Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
 Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
 Elevation 537.9 Weather Cloudy, 30° Inspector J. Netzhond
 Date Started 4/6/95 Completed 4/6/95 Operator Todd
 Backhoe Subcontractor The Nichols Team Equipment Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm brown, black and grey damp ASH & CINDER FILL, trace glass, trace brick, trace scrap metal
4			3'0"
6			Firm black to grey moist FILL - 65% ASH & CINDERS, 35% scrap metal, glass, wood
8			5'0"
10			Firm black saturated WOOD, (branches & lumber), trace tile pipe
12			10'0"
14			Firm grey moist SILT, some sand
			11'8"
			Test pit terminated at 11'8"
			Notes: 1. Sides caved badly below 3'0" 2. Odor noted from 3 to 5 feet; 0.2 ppm on HNu meter 3. Possible bedrock at bottom of hole, too much water in hole to be certain. 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-13
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.5 **Weather** Cloudy, 30° **Inspector** J. Neenan
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

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Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm orange brown, black & grey mottled FILL - 85% cinders & ash, 15% glass, scrap metal & plastic
4			
6			Firm grey to black wet FILL - 70% cinders & ash, 30% glass, scrap metal, wood, plastic, rubber tires, brick 4'9"
8			
10			Firm yellow brown moist SILT, some sand 10'0"
12			Refusal on bedrock at 12'7" 12'7"
14			Refusal on bedrock at 12'7" Notes: 1. Sides caved below 4'9" 2. Water level at 8'4" on completion 3. Odor noted - Hnu reading 0.9 ppm from 5 to 10 feet 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-14
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.1 **Weather** Cloudy, 30° **Inspector** J. [unclear]
Date Started 4/6/95 **Completed** 4/6/95 **Operator** [unclear]
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" Firm orange brown, black, white & grey mottled ASH FILL - trace glass
4			4'0"
6			Firm black moist FILL - 60% ash & cinders, 40% wood, floor tile, pipe, scrap metal
8			8'1"
10			Firm grey moist SILT, some sand
12			11'1" Refusal on bedrock at 11'1"
14			Notes: 1. Sides vertical and not stable 2. Slight seepage at 8'1" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-15
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.7 **Weather** Cloudy, 30° **Inspector** J. Metzland
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm ASH & CINDER FILL, trace wood, trace brick
4			
6			lumber pocket at 5'3" 6'1"
8			TOPSOIL with bent over brush 7'0" Firm grey wet SILT, some sand, few cobbles & boulders to 36" diameter
10			9'8"
12			Refusal on bedrock at 9'8"
14			Notes: 1. Sides vertical, not stable 2. Slight seepage at 6'1" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-16
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.1 **Weather** Cloudy, 30° **Inspector** J. Net
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Load
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

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Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Compact dark brown damp blasted ROCK FRAGMENTS
4			Firm orange brown grey black mottled damp CINDER & ASH FILL, trace blasted rock fragments & glass 2'7"
6			
8			
10			Firm grey moist SILT, some sand 8'9"
12			Refusal on bedrock at 11'5" 11'5"
14			Notes: 1. Sides caved below 5'0" 2. Water flowing at 8'9" about 25 to 50 gallon/minute 3. Elevations provided by The Sear-Brown Group, Inc.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-1 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown fine SAND, little silt, very few cobbles, with a gray clayey layer from 0.9 ft. to 1.1 ft. -FILL-	No OVA or radiation meter readings above background.
		1.1		Same, trace plastic, paper, wood, dispersed through fill. -FILL-	
		1.5		Highly weathered, gray DOLOMITE. -LOCKPORT FORMATION-	
2		2.0		Moderately weathered, gray, fine grained DOLOMITE. -LOCKPORT FORMATION-	
		4.5		Bottom of Test Pit at 4.5 ft.	
4					
6					
8					
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			6 feet	3 feet		DEPTH: 4.5 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: Not Encountered
* Hrs after completed						TEST PIT NO. TP-1

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists		TEST PIT REPORT	TEST PIT NO. TP-2 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown and black silty fine SAND, moist.	No OVA or radiation meter readings above background.
			1.0	-FILL-	
2			2.0	Same, trace plastic, paper and metal (cans) from 1.0 ft. to 2.0 ft. dispersed through fill. -FILL-	
				Brown and black silty fine SAND, little gravel, trace gray clay, moist.	
				-FILL OR DISTURBED NATURAL MATERIALS-	
			8.0	Highly weathered, gray DOLOMITE. -LOCKPORT FORMATION-	
			8.5	Apparent Top of Competent Bedrock and Bottom of Test Pit at 8.5 ft.	Water level in test pit at 8.5 ft.*
					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			8 feet	3.5 feet		DEPTH: 8.5 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: 8.5 ft.*
* Hrs after completed						TEST PIT NO. TP-2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-3 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Brown coarse to fine sandy GRAVEL, trace metal, wood, and concrete from 1.0 ft. to 1.5 ft. Concrete slab at the surface at the north end of the test pit.	No OVA or radiation meter readings above background except as noted below.
			3.0	-FILL- Gray and black mottled silty CLAY, trace organic material.	Water seeping in at - 3.0 ft.* OVA reading at ~ 4.5 ft. to 5.0 ft. in clay with organic material = 25 ppm.
			7.0	-FILL OR DISTURBED NATURAL MATERIAL- Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	Water level in test pit at 7.0 ft.*
10					
12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY	
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:	
			7 feet	3.5 feet		7.0 ft.	
			BOULDERS			JAR SAMPLES:	---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES:	---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL:	7.0 ft.*
* Hrs after completed						TEST PIT NO.	TP-3

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-4 FILE NO. 70352-44
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PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2			1.5	Gray-brown coarse to fine sandy GRAVEL, with roots. -FILL-	No OVA or radiation meter readings above background.
4			7.5	Brown silty coarse to fine SAND, some gravel, damp. -GLACIAL TILL-	
6				Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	
8					
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY	
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:	
			7 feet	3 feet		7.5 ft.	
			BOULDERS			JAR SAMPLES:	---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES:	---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL:	Not Encountered
* Hrs after completed						TEST PIT NO.	TP-4

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-5 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			1.0	Gray-brown coarse to fine sandy GRAVEL. -FILL-	No OVA or radiation meter readings above background.
2				Brown silty coarse to fine SAND, some gravel.	
4				-GLACIAL TILL-	
6			6.5	Apparent Top of Bedrock and Bottom of Test Pit at 6.5 ft.	Water level in test pit at 6.5 ft.*
8					
10					
12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			7 feet	3.5 feet		DEPTH: 6.5 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: 6.5 ft.*
* Hrs after completed						TEST PIT NO. TP-5

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-6 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: W. Street ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Dark brown organic SILT, little coarse to fine sand, with trace plastic and paper from 1.0 ft. to 1.5 ft. -FILL-	No OVA or radiation meter readings above background. Water seeping into test pit at 3.5 ft.*
		2.5		Dark brown organic SILT overlying yellow-brown mottled tan and gray clayey SILT. -BURIED SOIL-	
4		3.0		Brown silty coarse to fine SAND, some gravel.	
6			7.0	-GLACIAL TILL-	
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	
10					
12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			5 feet	3.5 feet		DEPTH: 7.0 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: * Not Encountered
* Hrs after completed						TEST PIT NO. TP-6

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-7 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Monroe Cty. Resource Recovery Facility, Emerson St. ELEVATION: EXPLORATION DATE: 14 Dec. 1992 H&A REP.: M. Corrigan	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
-2- -4- -6- -8- -10- -12-			1.5	Red-brown silty coarse to fine SAND, little gravel. -FILL-	No HNu or radiation meter readings above background. Water seeping in at 3.5 ft.*
				Gray-black clayey SILT, with organic material, wood, roots, also numerous boulders (rocky fill).	
			4.0	-FILL- Gray-brown mottled red and brown silty fine SAND.	
			7.0	-LACUSTRINE/ALLUVIUM- Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			5 feet	3.5 feet		DEPTH: 7.0 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: * Not Encountered
* Hrs after completed						TEST PIT NO. TP-7

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-21 FILE NO. 70352-44
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PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Federal Stamping 1455 Emerson St. ELEVATION: EXPLORATION DATE: 11 Dec. 1992 H&A REP.: M. Corrigan
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
1	B1	1.0		Brown gravelly coarse to fine SAND, with brick, concrete, paper and plastic at ~ 1.5 ft.	OVA reading = 2 to 9 ppm from test pit soil.
2					No radiation meter readings above background.
3	S1	3.0			
4					
5					
6			6.0	-FILL- Apparent Top of Bedrock and Bottom of Test Pit at 6.0 ft.	Water level in test pit at 6.0 ft.*
7					
8					
9					
10					
11					
12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY	
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:	
			7 feet	3.5 feet		6.0 ft.	
			BOULDERS			JAR SAMPLES:	1
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES:	1
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL:	6.0 ft.*
* Hrs after completed						TEST PIT NO.	TP-21

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-22 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Federal Stamping 1455 Emerson St. ELEVATION: EXPLORATION DATE: 11 Dec. 1992 H&A REP.: M. Corrigan	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
-2				Brown coarse to fine sandy GRAVEL, common cobbles and boulders (rocky fill), trace silt and clay, trace brick fragments.	No OVA readings or radiation meter readings above background.
-4				-FILL or DISTURBED BEDROCK-	
-6			5.0	Apparent Top of Bedrock and Bottom of Test Pit at 5.0 ft.	Water level in test pit at 5.0 ft.*
-8					
-10					
-12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY	
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:	
			6 feet	3.5 feet		5.0 ft.	
			BOULDERS			JAR SAMPLES:	---
			8" to 18" DIAMETER:	No. = Vol.	cu ft	BAG SAMPLES:	---
			Over 18" DIAMETER:	No. = Vol.	cu ft	WATER LEVEL:	5.0 ft.*
* Hrs after completed						TEST PIT NO.	TP-22

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-23 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Federal Stamping 1455 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
-2	B1	2.5	4.0	Gray-black gravel and cobble size rock fragments (rocky fill). Petroleum odor, and staining (sheen) along sides of pit and in water at bottom of pit. Sheen also seen on gravel.	OVA readings = 0 to 20 ppm above background. No radiation meter readings above background.
-4				-FILL or DISTURBED BEDROCK-	Water level in test pit at 3.5 ft.*
-6				Apparent Top of Bedrock and Bottom of Test Pit at 4.0 ft.	
-8					
-10					
-12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			6 feet	3.5 feet		DEPTH: 4.0 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: 1
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: 3.5 ft.*
* Hrs after completed						TEST PIT NO. TP-23

CONTRACTOR: **Nothnagle Drilling Co.**
 DRILLER:
 LABELLA REPRESENTATIVE: **K.R. Miller**

BORING LOCATION: **Vanguard Pkwy**
 GROUND SURFACE ELEVATION: **DATUM**
 START DATE: **9/29/10** END DATE:

TYPE OF DRILL RIG: **ATV CME tracked**
 AUGER SIZE AND TYPE: **4.25-Inch ID Hollow stem**
 OVERBURDEN SAMPLING METHOD: **Standard 2" ID Split-spoons**
 ROCK DRILLING METHOD: **NX & HQ Water Rotary Coring**

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	VALUE / RQD(%)	RECOVERY (FEET)				
17		R-2	13.5 - 18.5	53.75 / 90%	58.75 / 98%	18.5'	caliche deposit @ 18.5'		
18							Run 2 (cont.)		
19							horiz. frags @ 33", 33.5", 38" 52"		
20							many to several horiz + vert. frags		
21		R-3	18.5' - 23.5'	58" / 94%	62" / 100%	23.5'	from 45" to 49" but likely caused by drilling		
22							Run 3 loss of ~10 gal coring water		
23							rock similar to above although slightly darker gray (med to dk gray hard dolostone)		
24							quartz/caliche deposit @ 1.5" to 2"		
25							horiz frags @ 2", 4" (vert 2 horiz frags 4" to 6" but appear related to drilling)		
26							10.25", 36", 47", 54.5" (quartz/caliche in 4" frac)		
27									
28									
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LEGEND
 S - SPLIT SPOON SOIL SAMPLE
 M - MACROCORE SOIL SAMPLE
 C - ROCK CORE SAMPLE

NOTES:
 loss of ~25 gal coring water
 Kevin says "nice slump"

GENERAL NOTES:
 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

PROJECT: FESL SVI Investigation		Log of Well No. LAB-108	
BORING LOCATION: South Side of [unclear] (Amesbury)		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: NOTHWAULE		DATE STARTED: 9/27/10	DATE FINISHED:
DRILLING METHOD: 4 1/4" Ø HSA		TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 830		DEPTH TO WATER:	FIRST COMPL. CASING:
SAMPLING METHOD: 4" Acetate spoons		LOGGED BY: MAE	
HAMMER WEIGHT: 140	DROP:	RESPONSIBLE PROFESSIONAL:	REG. NO.:

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. with HCl geo. Inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
2	1	M	Bygl	✓	0-0.5' brown (10% to 25%) fines sand (MC) w/ fine fine sand. Dry, loose	* collect vce sample from 5.5-6.0' bgs @ 12:00
4					0.5-1.0' - AA w/ wood and debris / ls gravel	
6	2	M	Bygl	✓	1.0-1.3' - waste stack coal, chinks, bricks, Ash material, plastic, glass	
8					2-0.5 AA	
10					1.0-1.5 10% 4/4 silt w/ some fs (WAMME)	
12					top sampler (re-bored) @ 6.5' bgs (borehole) from, becoming wet @ ~ 6.3' bgs	
14					* Advance 4 1/4" HSA to 9' bgs. Install 4" Ø permanent casing at 9' bgs.	
16						
18						
20						
22						
24						
26						
28						
30						

W-1 (Blank)

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: *Kevin / Tom*
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: *1575 Emerson S side Emerson S of Lot 1*
GROUND SURFACE ELEVATION DATUM
START DATE: *9/28/10* END DATE: *9/28/10*

TYPE OF DRILL RIG: *ATV CME tracked*
AUGER SIZE AND TYPE: *4.25-inch ID Hollow stem*
OVERBURDEN SAMPLING METHOD: *Standard 2" ID Split spoons*
ROCK DRILLING METHOD: *NX & HQ Water Rotary Coring*

DEPTH (Feet)	SAMPLE				DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 16"	NO.	DEPTH (FEET)	N-VALUE / ROD(%)				
9								
10		R-1	9.5-10.1	0" / 0%	10.0" / 33%	Run #1 hard med to lt. gray dolostone nearly horiz fractures @ 0.5" - 1.5", 3", 5", 6.25", 8.25", 9" + 10.5" (betw 9.975" highly fractured) w/ vert. C		
12						Run #2 same rock as above highly frac 2.25" to 3" horiz fracs: 4.25", 5.5", 7", 8.5", 10", 13.5" highly frac. 15.5" - 17" horiz. frac @: 19" 23", 26", 29", and 46.5"		
13		R-2	10.1-14.1	21" / 48.75%	48.75" / 100%			
14								
15		R-3	14.1-19.1	37" / 60%	60" / 100%	Run #3 same rock as above vert./horiz fracs from 1" to 6" horiz fracs: 9", 13.5", 16", 19", 20", 22", 26.5", 28", 30.5", 40", 44", 46", 49.5", 54", 58", 59" w/ 45° frac from 54" to 55.5"		
16								
17								
18								
19								
20		R-4	19.1-24'	43" / 59.5" / 72%	59.0" / 99%	Run #4 same rock as above but perhaps med to dk gray horiz fracs: 2", 4", 5.5", 13", 13.75", 18.75", 19.5", 26", 31" w/ 10w & frac @ 31.5", 36", 39", 43", 51.5", 57"		
21								
22								
23								
24						EOB @ 24' BG		
15						lost a total of ~ 10 gal of coring water		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
4" casing (steel) set @ 9' BG
Run 1 cut short to Δ coring bit from "superficial" to "impregnated"

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

11684 Emerson

PROJECT: <u>FRESH SWL investigation</u>		LOCATION "B" Log of Well No. LAB-104	
BORING LOCATION: <u>Side of Emerson @ McCombville</u>		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: <u>NOTHWALE</u>	DATE STARTED: <u>9/29/10</u>	DATE FINISHED:	
DRILLING METHOD: <u>4 1/2" HSA</u>	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: <u>CME 850</u>	DEPTH TO FIRST WATER: <u>6-7'</u>	COMPL:	CASING:
SAMPLING METHOD: <u>4" Airline Shovels</u>	LOGGED BY: <u>MME</u>		
HAMMER WEIGHT: <u>140#</u>	DROP: <u>Auto</u>	RESPONSIBLE PROFESSIONAL: <u>BM</u>	REG. NO.:

DEPTH (feet)	SAMPLES				OWN Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot				
2	1	NA				0-24" Browns (100% silt) (plast, dry, loose - 6"-24" - waste/fill - brown silt (mo) w/ fine sand, trace ash, brick, glass, coal clinker coal shales. Moist throughout trace fine washed gravel.	* sand LAB-104 11-12' collected at 1400.
6	2	NA				0-6" AA 6"-10" - gray shale / ls bedded fragments 10"-1.5' saturated; AA (6"-10") w/ brown silt w/fin. loose throughout	
10	3	NA				no fine sand - no shales - dark gray to light tan/brown - slight silty color. Moist bottom 2.5' of sample	* hole voided with 3 1/2" collar bit to 24" logs.
12						<u>NATIVE</u> sampler refusal. no sample 12.0 - 12.24' 12.24' * advance xxxx 4" Ø permanent steel casing to 14' logs.	* Drill rate ~ 2 min/ft. * NO water loss * HOLE Flushed with potable water to remove drill cuttings, well pumped dry & allowed to recover.
14						9/28/10 - Begin <u>NX</u> core log @ 14' logs	OPEN 3 7/8" COREHOLE 14-24'
16						Run # 1 14-24'	
18						REC: 10' / 10' 119" - 99%	
20						RQD: 32' / 10' 42" - 35%	
22						Loss: hole pack dolomite(?)	
24						Has gray limestone w/ shale interbeds frequent mechanical breaks along shale beds throughout, few small 1-2mm vugs throughout large vug w/ calcite precipitation - open horizontal fractures prevalent where shale interbeds dominate. No vert. fractures	all vert. fractures in core are mech. breaks.

W-1 (Blank)

1769 Emerson

PROJECT: FEL SUC INVESTIGATION		LOCATION: 740 Log of Well No. LAB-106	
BORING LOCATION: SW CORNER of 1769 Emerson		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: NOTORABLE	DATE STARTED: 7/25/10	DATE FINISHED:	
DRILLING METHOD: 4 1/4" Ø HSA	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: CME 551	DEPTH TO WATER:	FIRST COMPL.	CASING:
SAMPLING METHOD: 4' Acute screws	LOGGED BY:		
HAMMER WEIGHT: 140 lb	DROP: Auto	RESPONSIBLE PROFESSIONAL:	REG. NO.:

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. with Cl. geo. Inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot			
0					Surface Elevation:	
2	1	3-2	RAO Wegl	Ø	0-1.0' (MC) brown silt & fs. base, clay (topsoil). 10YR 5/4	
4					1.0-2.2' fill brown fs w/ silt, trace brick pieces, coarse angular limestone/fr. gravel, base, dry -	
6					→ Azon strength obstacle	
8	2	1-0	Wegl	Ø	→ loose gravel fill (AA) sampler boundary	
10					Ⓢ 5-5' logs. Azon grinding every 10' 5-5' logs.	*NO ANALYTICAL SAMPLE COLLECTED
12					* install 4" Ø perm. casing to 10.5' logs	
14						
16						
18						
20						
22						
24						
26						

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: W St. & Emerson "A"
GROUND SURFACE ELEVATION: _____ DATUM: _____
START DATE: 9/29/10 END DATE: _____

TYPE OF DRILL RIG: ATV CME
AUGER SIZE AND TYPE: 4.25 Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: NX & HQ Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	VALUE / ROD (%)	RECOVERY (FEET)				
11.0		R-1	10.5 - 15.5	55" / 92%	59.5" / 99%	11" to 12"	Run 1 med gray hard Dolostone w/ calcite? soln. cavities @ 11" to 12" 21" to 22" and 44" horiz frags @ 13", 14", 31", 40", & 52" low X frac @ 48"		C
12.0									
13.0									
14.0					60.75"		water return near 100%		
15.0					100%				
16.0				60" / 98%	61" / 100%		rock similar to above but no obvious soln. cavities horiz frags @ 14", 30.25", 51.75" & 56.25"		C
17.0									
18.0		R-2	15.5 - 20.5				water return near 100%		
19.0									
20.0							rock similar to above but perhaps slightly darker (med to dk gray, hard Dolostone) horiz. frags @		
21.0									
22.0			20.5 - 25.5	100% / 58" / 94%	100% / 60"		12" & 49" soln cavity (calcite?) @ 59"		C
23.0		R-3					water return near 100%		
24.0									
25.0									
26.0									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: casing set 2' into rock @ 10.5' BG by others

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA

Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Subsurface Investigation

FESL
City of Rochester, New York

BORING LAB 106
SHEET 2 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.

BORING LOCATION: ~~W St. + Emerson~~ "A"

DRILLER: Kevin

GROUND SURFACE ELEVATION

DATUM

LABELLA REPRESENTATIVE: K R Miller

START DATE: 9/29/10

END DATE: 9/29/10

TYPE OF DRILL RIG: ATV CME Tracked

AUGER SIZE AND TYPE: ~~4.25~~ Inch ID Hollow-stem

OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons

ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	N-VALUE / RQD(%)	RECOVERY (FEET)				
26									
27		R-4	25.5	58.0	61"		Run 4 rock similar to above 1/2 horiz. frac @ 3.5" (water bearing?) horiz frac @ 15", 41", & 51"		
28			30.5	94%					
29									
30							loss of 10-15 gal of water during run 4		
31									
6							EOR @ 30.5' BG		
7									
8									
9									
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12									
13									
14									
15									
16									

Initial well development post-install - well developed using r/z pump for ~ 1 hr - 35 gal extracted; fairly clear water post initial development

LEGEND

- S - SPLIT SPOON SOIL SAMPLE
- M - MACROCORE SOIL SAMPLE
- C - ROCK CORE SAMPLE

NOTES:

GENERAL NOTES:

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING #

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-3
 Project No. 576-005

Project Name EMERSON STREET

Date 7/31/89
start finish

Client NYSDEC

Boring Location SOUTH-BEHIND TRUCKING YARD

Driller AMERICAN AUGER

Total Depth 30.5'

Monitoring Instrument(s) HNU, CGI, MSA, DOSIMETER

Depth to Water 17.26 BG

SAMPLE HAMMER

Hole Diameter .1'-.3'

Weight lb

Ground Surface Elevation 542.6

Fall in.

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL		Remarks
	0' to 6"	6' to 12"	12' to 18"	18' to 24"							f - fine m - medium c - coarse	and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
									DRY	.2	DARK BROWN SILTY SANDY SOIL SIMILAR TO (TOP SOIL - LOAM)		
										1	COBBLES - ROCKS - BRICKS		
										3.5	MIXED SOIL, SAND, GRAVEL		
											DRILLING BECAME EASIER - LESS DENSE		
									MOIST	12	DARK BROWN - GREY SILT MIXED W/ GLASS		COHESIVE
										15	REFUSAL ON AUGER		
											USED HD CORE FROM 15		
											15-15.5 VERY LOOSE MUDDY CUTTINGS		
								MIN	ft				
								1.5	15.5		REMOVED .5' CONCRETE CORE		
								3.5	16.5				
								2.5	17.5				
								2.5	18.5				
								2.4	19.5				
								2.5	20.5		PUMPED HOLE - NO WATER ENTERED		
								1.5	21.5				
								2.0	22.5		DOLOMITE - GREY		
								2.5	23.5		FEW FRACTURES - VERY COMPETENT		
								2.75	24.5		PUMPED HOLE - 2 FEET OF RECOVERY		
								3.0	25.5				

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-4
Project No. 576-005

Project Name EMERSON STREET

Date 8/2/89 8/2/89
start finish

Client NYSDEC

Boring Location CENTRAL AREA - FEDERAL STAMPING

Driller AMERICAN AUGER

Total Depth 16'

Monitoring Instrument(s) HNUW CEL DOSIMETER, MSA

Depth to Water 8.41' BG.

SAMPLE HAMMER

Hole Diameter .7.3'

Weight - lb

Ground Surface Elevation 533.5

Fall - in.

Depth	BLOWS ON SAMPLER				Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
	0' to 6"	6' to 12"	12' to 18"	18' to 24"								
											f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	
											NO SPLIT SPLOON SAMPLES REQ. AUGERED THROUGH BROWN SANDY, SILTY COVER MATERIAL ROOTS, GLASS, NAILS ON SURFACE DARK BROWN - GREY SILTY SAND W/ ANGULAR GRAVEL FEW INTERMITTENT COBBLE ZONES REFUSAL @ 6.0' - HD CORING GREY DOLOSTONE - INTERMITTENT FRACTURE W/SOME CLAY INFILLINGS * PVC MONITOR WELL INSTALLED 2 SAND TO 5' 10' 2" PVC WELL SCREEN 3/8" BENTONITE PELLET SEAL TO 3' PORTLAND CEMENT TO SURFACE PROTECTIVE STEEL CASING	COHESIVE
								Moist				
								MIN	14.			
								3.25	7.0			
								3.5	8.0			
								2.0	9.0			
								3.25	10.0			
								2.75	11.0			
								1.75	12.0			
								2.5	13.0			
								3.0	14.0			
								3.5	15.0			
								2.0	16.0			

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: E side of Vanguard Pkwy
GROUND SURFACE ELEVATION: _____ DATUM: _____
START DATE: 9/27/10 END DATE: _____

TYPE OF DRILL RIG: CME track mtd
AUGER SIZE AND TYPE: 4.25 -Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: HQ Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	N O T E S
	BLOWS / 6"	NO.	DEPTH (FEET)	N-VALUE / RQD(%)	RECOVERY (FEET)				
0.7	5	S-1	0-2		1.7'	0.7	grass/topsoil atop flc gravel (flu)	0.2 ppm	
1.4	10						med. br. to lt. br. clayey S&T w/ flc gravel & sand	10-15 µR/hr	
3.5	12	S-2	2-4		1.4'	3.5	grayish br. clayey S&T similar to above but reddish br.	0.1 ppm	
4.9	8						w/ more clay	15-20 µR/hr	
6.4	10	S-3	4-6		1.5'	6.4	brownish gray clay, tr. s&t very plastic	0.1 ppm	
8.0	4							15-20 µR/hr peak 22 µR/hr	
10.5	50/6	S-4	6-6.4		poor 20.5'	10.5	spoon/auger refusal @ 6.4 similar to above and rock fragments	0.1 ppm	
12.1							5-7/8" roller bit to 8.5' @ 9/27 - begin coring @ 8:30 9/29	15-20 µR/hr peak 21 µR/hr	
13.5		R-1	8.5-13.5		60" 5' 100%	13.5	Run 1 lt. to med gray Dolostone small 1/2" quartz intrusion or calcite deposit low & frac @ 1" : 45° frac from 1.5" to 6" low & frac @ 9.5"; horiz frags @ : 12", 15.5", 20"	0.1 ppm	8.7' C
14.9							22.5", 31.5", 38.5", 41.5" (infilled w/ silt), 47.5", 48", 56" (1.5" to 6" may be caused by drilling)		
16.4		R-2	13.5-			16.4	Run 2 lost ~ 15 gal coring water possible water bearing fracture @ ~ 16' rock similar to above cavity @ 20.5 horizontal fractures @ : 6", 11", 15.5", 19", 23.5", 29" (see page 2)		

2.1 socket

LEGEND

- S - SPLIT SPOON SOIL SAMPLE
- M - MACROCORE SOIL SAMPLE
- C - ROCK CORE SAMPLE

NOTES:

below 0.1-0.2 ppm PID (Lab mini Rne)
10-15 µR/hr. Ludlum meter (Ashtead) Lite

GENERAL NOTES:

- STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

CONTRACTOR: **Nothnagle Drilling Co.**
 DRILLER:
 LABELLA REPRESENTATIVE: **K.R. Miller**

BORING LOCATION: **Vanguard Pkwy**
 GROUND SURFACE ELEVATION: **DATUM**
 START DATE: **9/29/10** END DATE:

TYPE OF DRILL RIG: **ATV CME tracked**
 AUGER SIZE AND TYPE: **4.25-Inch ID Hollow stem**
 OVERBURDEN SAMPLING METHOD: **Standard 2" ID Split-spoons**
 ROCK DRILLING METHOD: **NX & HQ Water Rotary Coring**

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

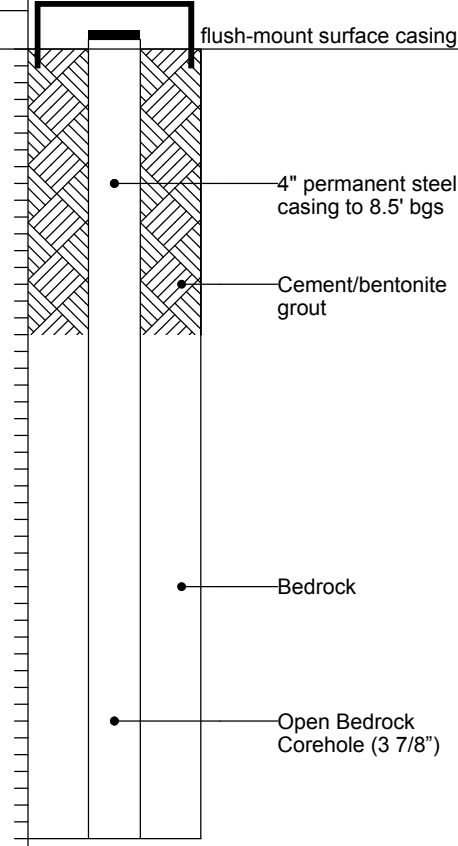
DEPTH (Feet)	SAMPLE					SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	VALUE / RQD(%)	RECOVERY (FEET)			
17		R-2	13.5 - 18.5	53.75 / 90%	58.75 / 98%	caliche deposit @ 18.5'		
18						Run 2 (cont.)		
19						horiz. frags @ 33", 33.5", 38" 52"		
20		R-3	18.5 - 23.5	58" / 94%	62" / 100%	Run 3 loss of ~10 gal carry water		
21						rock similar to above although slightly darker gray (med to dk gray hard dolostone)		
22						quartz/caliche deposit @ 1.5" to 2"		
23						horiz frags @ 2", 4" (vert 2 horiz frags 4" to 6" but appear related to drilling)		
24						10.25", 36", 47", 54.5" (quartz/caliche in 4" frac)		
9						EOB @ 23.5' BG		
10								
11								
12								
13								
14								
15								
16								

LEGEND
 S - SPLIT SPOON SOIL SAMPLE
 M - MACROCORE SOIL SAMPLE
 C - ROCK CORE SAMPLE

NOTES:
 loss of ~25 gal carry water
 Kevin says "nice slump"

GENERAL NOTES:
 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING LOCATION: East Side of Vanguard Pkwy	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 23.5 fbg	SCREEN INTERVAL: 8.5-23.5 fbg
DRILLING EQUIPMENT: CME 55 ATV	DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 2" dia. Split Spoons	LOGGED BY: KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM
		REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot			NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
Surface Elevation: fmsl							
1	1	X	5	0.2	Brown to reddish brown silty clay with fine to coarse gravel and trace fine sand. Medium plasticity.	 <p style="font-size: small;">flush-mount surface casing</p> <p style="font-size: small;">4" permanent steel casing to 8.5' bgs</p> <p style="font-size: small;">Cement/bentonite grout</p> <p style="font-size: small;">Bedrock</p> <p style="font-size: small;">Open Bedrock Corehole (3 7/8")</p>	
2	2	X	8	0.1			
3		X	10				
4		X	12				
5	3	X	3	0.1			
6	4	X	4	0.1	Sampler and auger refusal at 6.4' bgs. Advanced 5 7/8" roller bit to 8.5' bgs. Begin HQ Core run at 8.5' bgs. Run #1 Depth: 8.5-13.5 'bgs Rec: 60" (100%) RQD: 28" (42%) Run #2 Depth: 13.5-18.5 'bgs Rec: 58.75" (98%) RQD: 53.75" (90%) Run #3 Depth: 20.5-23.5 'bgs Rec: 62" (100%) RQD: 58" (94%)		
7			50/0.6				
8							
9							
10							
11							
12							
13							
14							
15							
16							
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PROJECT: FESL SVI Investigation		Log of Well No. LAB-10B	
BORING LOCATION: South Side of [unclear] (Amesbury)		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: NOTHWAULE		DATE STARTED: 9/27/10	DATE FINISHED:
DRILLING METHOD: 4 1/4" Ø HSA		TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 830		DEPTH TO WATER:	FIRST COMPL. CASING:
SAMPLING METHOD: 4" Acetate sleeves		LOGGED BY: MAE	
HAMMER WEIGHT: 140	DROP:	RESPONSIBLE PROFESSIONAL:	REG. NO.:

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. with HCl geo. Inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
2	1	M	Bygl	Ø	0-0.5' brown (10% to 25%) fines sand (MC) w/ fine fine sand. Dry, loose	* collect vial sample from 5.5-6.0' bgs @ 12:00
4					0.5-1.0' - AA w/ wood and debris / ls gravel 1.0-1.3' - waste stack coal, chinks, bricks	
6	2	M	Bygl	Ø	0-0.5' AA Ash material, plastic, glass	
8					1.0-1.5' 10% 4/4 silt w/ some fs (WAMME)	
10					top sampler (re-bored) @ 6.5' bgs (borehole) from, bearing out @ ~ 6.3' bgs	
12					* Advance 4 1/4" HSA to 9' bgs. Install 4" Ø permanent casing at 9' bgs.	
14						
16						
18						
20						
22						
24						
26						
28						
30						

W-1 (Blank)

CONTRACTOR: Notnagle Drilling Co.
DRILLER: *Kevin / Tom*
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: *1575 Emerson S side Emerson S of Land*
GROUND SURFACE ELEVATION DATUM
START DATE: *9/28/10* END DATE: *9/28/10*

TYPE OF DRILL RIG: *ATV CME tracked*
AUGER SIZE AND TYPE: 4.25-inch ID Hollow stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split spoons
ROCK DRILLING METHOD: *NX & HQ* Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE				DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	N O T E S
	BLOWS / 16"	NO.	DEPTH (FEET)	N-VALUE / ROD(%)				
9								
10		R-1	9.5-10.1	0" / 0%	10.0" / 33%	Run #1 hard med to lt. gray dolostone nearly horiz fractures @ 0.5" - 1.5", 3", 5", 6.25", 8.25", 9", 10.5" (betw 9.975" highly fractured) w/ vert. C		
12						Run #2 same rock as above highly frac 2.25" to 3" horiz fracs: 4.25", 5.5", 7", 8.5", 10", 13.5" highly frac. 15.5" - 17" horiz. frac @: 19" 23", 26", 29", and 46.5"		
13		R-2	10.1-14.1	21" / 48.75%	48.75" / 100%			
14								
15			14.1-19.1	37" / 60"	60" / 100%	Run #3 same rock as above vert./horiz fracs from 1" to 6" horiz fracs: 9", 13.5", 16", 19", 20", 22", 26.5", 28", 30.5", 40", 44", 46", 49.5", 54", 58", 59" w/ 45° frac from 54" to 55.5"		
16								
17		R-3						
18								
19								
20			19.1-24.1	43" / 59.5"	59.5" / 99%	Run #4 same rock as above but perhaps med to dk gray horiz fracs: 2", 4", 5.5", 13", 13.75", 18.75", 19.5", 26", 31" w/ 10w & frac @ 31.5", 36", 39", 43", 51.5", 57"		
21								
22		R-4	24.1					
23								
24						EOB @ 24' BG		
15						lost a total of ~ 10 gal of coring water		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
4" casing (steel) set @ 9' BG
Run 1 cut short to Δ coring bit from "superficial" to "impregnated"

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING LOCATION: 1575 Emerson Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 24.0 fbg	SCREEN INTERVAL: 9.1-24.0 fbg
DRILLING EQUIPMENT: CME 55 ATV	DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 2" dia. Split Spoons	LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM
		REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		Surface Elevation: fmsl	
1						Topsoil (ML) brown silt and fine sand, some weathered shale/limestone gravel, loose, dry.	<p style="font-size: small;">flush-mount surface casing</p> <p style="font-size: small;">4" permanent steel casing to 9.1' bgs</p> <p style="font-size: small;">Cement/bentonite grout</p> <p style="font-size: small;">Bedrock</p> <p style="font-size: small;">Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1	X	NA	0		Fill- (FESL Ash) Ash, black coal pieces, clinker, brick plastic, glass	
3							
4							
5	1	X	NA	0		NATIVE brown silt (ML) and some fine sand, moist, firm, becoming saturated at 6.3' bgs. sampler refusal at 6.5' bgs.	
6							
7							
8						Advance 4 1/4" HSA to 9.1' bgs.	
9						Begin HQ Core run at 9.1' bgs.	
10						Run #1	
11						Depth: 9.1-10.1 'bgs	
12						Rec: 10" (83%)	
13						RQD: 0" (0%)	
14							
15						Run #2	
16						Depth: 10.1-14.1 'bgs	
17						Rec: 49" (102%)	
18						RQD: 21" (43%)	
19							
20						Run #3	
21						Depth: 14.1-19.1 'bgs	
22						Rec: 60" (100%)	
23						RQD: 37" (62%)	
24							
25						Run #4	
26						Depth: 19.1-24.0 'bgs	
27						Rec: 59" (99%)	
28						RQD: 43" (72%)	
29							
30						Lithology: LOCKPORT FORMATION	
31						(Penfield Dolostone Member)	
32						Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occasional to frequent argillaceous partings and occasional shale interbeds. Zones of occasional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.	
33							
34						Rock coring details:	
35						*closely spaced partings 9.1-12' bgs	
36						*rubby seam at 10.0'	
37						*severely weathered seams at 10.3-10.5'	
38						*short vertical joint at 11.5'	
39						*rough vertical joints at 14.1-14.5', 14.8-15.2'	
40						*short irregular vertical joint at 18.7-18.8'	
						*rough low angle joint at 21.7'	

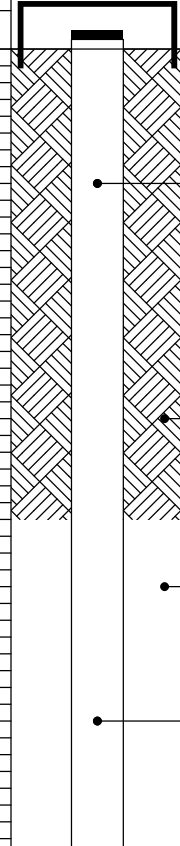
11684 Emerson

PROJECT: <u>FRESH SWL investigation</u>		LOCATION "B" Log of Well No. LAB-104	
BORING LOCATION: <u>Side of Emerson @ McCombville</u>		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: <u>NOTHWALE</u>	DATE STARTED: <u>9/29/10</u>	DATE FINISHED:	
DRILLING METHOD: <u>4 1/2" HSA</u>	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: <u>CME 850</u>	DEPTH TO FIRST WATER: <u>6-7'</u>	COMPL:	CASING:
SAMPLING METHOD: <u>4" Airline Shovels</u>	LOGGED BY: <u>MME</u>		
HAMMER WEIGHT: <u>140#</u>	DROP: <u>Auto</u>	RESPONSIBLE PROFESSIONAL: <u>BM</u>	REG. NO.:

DEPTH (feet)	SAMPLES				OWN Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot				
2	1	NA				0-24" Browns (100% silt) (plast, dry, loose - 6"-24" - waste/fill - brown silt (fine) w/ fine sand, trace ash, brick, glass, coal clinker coal shreds. Moist throughout trace fine washed gravel.	* sample LAB-104 11-12' collected at 1400.
6	2	NA				0-6" AA 6"-10" - gray shale / ls bedded fragments 10"-1.5' saturated; AA (6"-10") w/ brown silt w/fin. loose throughout	
10	3	NA				no fine sand - no shales - dark gray to light tan/brown - slight silty color. Moist bottom 2.5' of sample	* hole voided with 3 1/2" collar bit to 24' logs.
12						<u>NATIVE</u> sampler refusal. no sample 12.0 - 12.24' ref * advance xxxx 4" permanent steel casing to 14' logs.	* Drill rate ~ 2 min/ft. * NO water loss
14						9/28/10 - Begin <u>XX</u> core log @ 14' logs	* HOLE Flushed with potable water to remove drill cuttings, well pumped dry & allowed to recover.
16						Run # 1 14-24' REC: 10' / 10' 119" - 99% RQD: 32' / 10' 42" - 35% LITH: well sorted dolomite(?)	all vent. fractures in core are mech. breaks.
18						Has gray limestone w/ shale interbeds frequent mechanical breaks along shale beds throughout, few small 1-2mm vugs throughout large vug w/ calcite precipitation - open horizontal fractures prevalent where shale interbeds dominate. No vert. fractures	OPEN 3 1/2" COREHOLE 14-24'
20							
22							
24							

W-1 (Blank)

BORING LOCATION: 1684 Emerson Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 24.0 fbg	SCREEN INTERVAL: 14.0-24.0 fbg
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler	LOGGED BY: MAC	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM
		REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: fmsl	
1						Topsoil (ML) brown silt and fine sand, loose, dry.	 <p style="font-size: 0.8em;">flush-mount surface casing</p> <p style="font-size: 0.8em;">4" permanent steel casing to 14.0' bgs</p> <p style="font-size: 0.8em;">Cement/bentonite grout</p> <p style="font-size: 0.8em;">Bedrock</p> <p style="font-size: 0.8em;">Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1		NA	0	Fill: brown silt with fine sand (ML), trace ash, brick, glass, coal clinker, coal cinders. Trace fine rounded gravel. Moist throughout.		
3							
4							
5						grey shale and limestone bedrock gravel	
6	2		NA	0	Fill, as above. Saturated		
7							
8							
9							
10	3		NA	0	NATIVE dark grey to light tan-brown fine sand with silt (ML), soft, saturated top 6", slight septic odor.		
11							
12	4		NA	0	sampler refusal at 12.2' bgs.		
13							
14						Advanced roller bit to 14.0' bgs.	
15							
16						Begin NX bedrock core at 14.0' bgs.	
17							
18						Run #1	
19						Depth: 14.0-24.0 'bgs	
20						Rec: 119" (99%)	
21						RQD: 42" (35%)	
22						Lithology: LOCKPORT FORMATION	
23						(Penfield Dolostone Member)	
24						Light to medium gray, fine-grained, medium-bedded	
25						moderately hard to hard, siliceous Dolostone, with	
26						occasional to frequent argillaceous partings and	
27						occasional shale interbeds. Zones of occasional pits	
28						and vugs are present. Secondary crystallization (calcite or	
29						gypsum) infilling of bedding planes, joints and vugs is	
30						common.	
31						Rock coring details:	
32						*moderately closely spaced partings throughout	
33						*vertical joint at 17.8-18.0' bgs	
34						*rough high angle joint at 18.3-18.6'	
35						*vug with secondary gypsum at 21.7'	
36						*severely weathered, intersecting high angle joints at	
37						22.4-22.5'	
38						*rough vertical joint at 21.7-22.0'	
39						*occasional pits and vugs throughout.	
40							

1769 Emerson

PROJECT: FEL SUC INVESTIGATION		LOCATION: 740 Log of Well No. LAB-106	
BORING LOCATION: SW CORNER OF W 6 E 30 N		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: NOTORABLE	DATE STARTED: 7/25/10	DATE FINISHED:	
DRILLING METHOD: 4 1/4" Ø HSA	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: CME 551	DEPTH TO WATER:	FIRST COMPL.	CASING:
SAMPLING METHOD: 4' Acetate slivers	LOGGED BY:		
HAMMER WEIGHT: 140 lb	DROP: Auto	RESPONSIBLE PROFESSIONAL:	REG. NO.:

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. with HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot			
0					Surface Elevation:	
2	1	3-2	RAO		0-1.0' (MC) brown silt & fs. base, clay (topsoil). 10YR 5/4	
4					1.0-2.2' fill brown fs w/ silt, trace lime pieces, coarse angular limestone/fr. gravel, base, dry -	
6					→ Azon strength obstacle	
8	2	1-0	RAO		→ loose gravel fill (AA) sampler boundary	
10					Ⓢ 5-5' logs. Azon grinding every 10' 5-5' logs.	*NO ANALYTICAL SAMPLES COLLECTED
12					* install 4" pvc casing to 10.5' logs	
14						
16						
18						
20						
22						
24						
26						

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: W St. & Emerson "A"
GROUND SURFACE ELEVATION: _____ DATUM: _____
START DATE: 9/29/10 END DATE: _____

TYPE OF DRILL RIG: ATV CME
AUGER SIZE AND TYPE: 4.25 Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: NX & HQ Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	VALUE / ROD (%)	RECOVERY (FEET)				
10.5 - 15.5	R-1	10.5 - 15.5	55" / 92%	59.5" / 99%	59.5" / 60"	Run 1 med gray hard Dolostone w/ calcite? soln. cavities @ 11" to 12" 21" to 22" and 44" horiz frags @ 13", 14", 31", 40", & 52" low X frag @ 48"		C	
13						water return near 100%			
15.5 - 20.5	R-2	15.5 - 20.5	60" / 98%	61" / 100%	60" / 61"	rock similar to above but no obvious soln. cavities horiz frags @ 14", 30.25", 51.75" & 56.25"		C	
20.5 - 25.5	R-3	20.5 - 25.5	58" / 94%	60"	60"	rock similar to above but perhaps slightly darker (med to dk gray, hard Dolostone) horiz frags @ 12" & 49" soln cavity (calcite?) @ 59" water return near 100%		C	

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: casing set 2' into rock @ 10.5' BG by others

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA

Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Subsurface Investigation

FESL
City of Rochester, New York

BORING LAB 106
SHEET 2 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.

BORING LOCATION: ~~W St. + Emerson~~ "A"

DRILLER: Kevin

GROUND SURFACE ELEVATION

DATUM

LABELLA REPRESENTATIVE: K R Miller

START DATE: 9/29/10

END DATE: 9/29/10

TYPE OF DRILL RIG: ATV CME Tracked

AUGER SIZE AND TYPE: ~~4.25~~ Inch ID Hollow-stem

OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons

ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH (Feet)	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FEET)	N-VALUE / RQD(%)	RECOVERY (FEET)				
26									
27		R-4	25.5	58.0	61"		Run 4 rock similar to above 1/2 horiz. frac @ 3.5" (water bearing?) horiz frac @ 15", 41", & 51"		
28			30.5	94%					
29									
30							loss of 10-15 gal of water during run 4		
31									
6							EOR @ 30.5' BG		
7							Initial well development post-install - well developed using r/z pump for ~ 1 hr - 35 1/2 gal extracted; fairly clear water post initial development		
8									
9									
10									
11									
12									
13									
14									
15									
16									

LEGEND

- S - SPLIT SPOON SOIL SAMPLE
- M - MACROCORE SOIL SAMPLE
- C - ROCK CORE SAMPLE

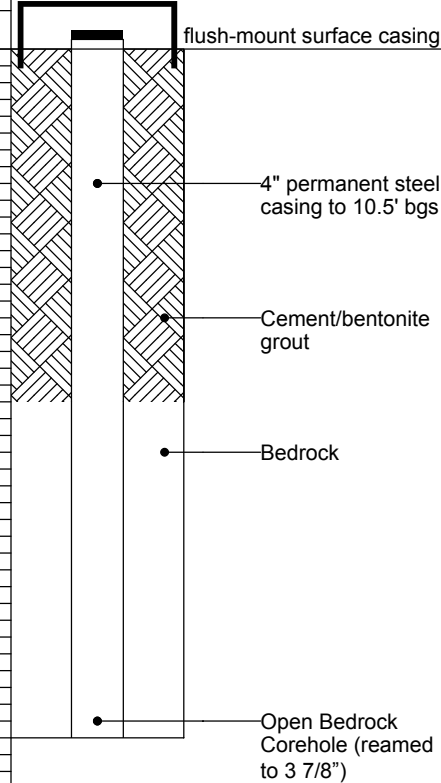
NOTES:

GENERAL NOTES:

- 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
- 2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

BORING #

BORING LOCATION: 1769 Emerson Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/29/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 30.5 fbg	SCREEN INTERVAL: 10.5-30.5 fbg
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER:	FIRST: COMPL.:
SAMPLING METHOD: 4' Macrocore Sampler	LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: REG. NO. RM

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
Surface Elevation: fmsl							
1						Topsoil (ML) brown silt and fine sand, loose, dry.	 <p style="font-size: small;">flush-mount surface casing</p> <p style="font-size: small;">4" permanent steel casing to 10.5' bgs</p> <p style="font-size: small;">Cement/bentonite grout</p> <p style="font-size: small;">Bedrock</p> <p style="font-size: small;">Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1		NA		FILL- brown fine sand with silt, trace brick pieces, angular limestone shale gravel, loose, dry.		
3					Auger through obstacle between 4.0 and 5.0' bgs.		
4					loose, gravel fill as above.		
5					Sampler refusal at 8.5' bgs.		
6					Advance 4 1/4" HSA to 10.5' bgs.		
7	2		NA		Begin HQ Core run at 10.5' bgs.		
8					Run #1		
9					Depth: 10.5-15.5 'bgs		
10					Rec: 59.5" (99%)		
11					RQD: 55" (92%)		
12					Run #2		
13					Depth: 15.5-20.5 'bgs		
14					Rec: 61" (100%)		
15					RQD: 60" (98%)		
16					Run #3		
17					Depth: 20.5-25.5 'bgs		
18					Rec: 60" (100%)		
19					RQD: 58" (94%)		
20					Run #4		
21					Depth: 25.5-30.5 'bgs		
22					Rec: 61" (100%)		
23					RQD: 58" (94%)		
24					Lithology: LOCKPORT FORMATION		
25					(Penfield Dolostone Member)		
26					Light to medium gray, fine-grained, medium-bedded		
27					moderately hard to hard, siliceous Dolostone, with		
28					occasional to frequent argillaceous partings and		
29					occasional shale interbeds. Zones of occasional pits		
30					and vugs are present. Secondary crystallization (calcite or		
31					gypsum) infilling of bedding planes, joints and vugs is		
32					common.		
33					Rock coring details:		
34					*cavities (0.1' dia.) at 11.1' and 12.2' bgs		
35					*vertical joint at 12.8-13'		
36							
37							
38							
39							
40							

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-1
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 533.5 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL, little roots, 1-4 foot diameter boulder
2			1'2" Compact red-brown damp SILT, some fine sand, some gravel, little cobbles, few boulders (Probable fill)
4			
6			4'5" Compact to dense red-brown moist SILT, some fine sand, little gravel, few cobbles, few boulders
8			7'8" Refusal at 7'8"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

Test Pit Log

Project No. 2599.0 **Page** 1 **of** 1 **Test Pit No.** KS-2
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 529.5 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-24-02 **Completed** 10-24-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, trace asphalt
4			2'6" Compact to dense brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
6			4'6" Refusal at 4'6"
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-3
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 530.1 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL, little roots
2			11" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			3'0" Refusal at 3'0"
6			
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-4
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 532.8 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots <hr style="width: 80%; margin-left: auto; margin-right: 0;"/> Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4	S-1	3'6"	Hard digging below 4'
6			
8			
10			<hr style="width: 80%; margin-left: auto; margin-right: 0;"/> Refusal on bedrock at 8'0"
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-5
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 535.1 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			TOPSOIL, little roots
2			_____ 1'0" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			Grades to dense below 4'
6			
8			_____ 8'0"
10			Refusal at 8'0"
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-6
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 529.9 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots _____ 1'0" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			_____ 4'0" Refusal at 4'0"
6			
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-7
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 532.1 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL, little roots, few cobbles, few boulders (surface)
2			_____0'8" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			
6			_____4'9" Refusal on bedrock at 4'9"
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-8
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 532.8 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			TOPSOIL, little roots, few cobbles, few boulders (surface) <hr/> 1'0" Firm grey damp SILT, trace sand <hr/> 1'9" Compact to dense red-brown mottled moist SILT, little fine sand, little gravel, few cobbles
4	S-1	3'0"	
6			Hard digging below 5'
8			<hr/> 7'0" Refusal on bedrock at 7'0"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-9
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 533.4 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
			TOPSOIL, little roots, few cobbles (surface)
2			_____ 1'1" Compact tan damp SILT, some fine sand, little gravel, few cobbles, few boulders
4	S-1	4'0"	Grades to dense, moist below 4'
6			Hard digging below 5'
8			_____ 6'5" Refusal at 6'5"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-10
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 536.9 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			BLASTED ROCK FRAGMENTS, trace concrete baluster, trace tire _____ 1'0" to 2'0" TOPSOIL, little roots _____ 1'9" Firm brown moist TOPSOIL FILL, little roots, trace plastic, few cobbles
4			_____ 3'0" Compact to dense red-brown damp SILT, some fine sand, little gravel few cobbles, few boulders Hard digging below 4'
6	S-1	4'6"	Grades to little cobbles below 6'
8			
10			_____ 8'10" Refusal at 8'10"
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 2 Test Pit No. KS-11
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 541.0 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-24-02 Completed 10-24-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL _____ 1'2" Compact brown moist SILT, little gravel, little shot rock, trace sand, trace concrete, plastic, wood, brick, metal (FILL)
4			_____ 3'8" Firm black moist TOPSOIL, little organic, little wood, trace glass, few boulders to 36 inches in diameter (FILL)
6	S-1	6'0"	
8			
10			
12	S-2	12'0"	_____ 10'6" Firm brown moist SILT, little gravel, trace sand, few cobbles, few boulders
14			_____ 14'0"

Test Pit Log

Project No. 2599.0 Page 1 of 1 Test Pit No. KS-12
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 536.4 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			Firm black moist TOPSOIL, little ash, glass, plastic, bottles, trace tire, one rusted/decomposed 50 gallon drum (slight odor noted, no detectable reading on the Mini-Rae) (FILL)
4			
6	S-1	5'6"	4'10" Firm tan moist SILT, trace clay, trace sand, trace gravel, few cobbles
8			8'0"
10			Refusal at 8'0"
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.



Test Pit Log

Project No. 2599.0 Page 1 of 2 Test Pit No. KS-13
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 547.3 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
2			Firm brown moist SAND, some gravel, trace silt (FILL)
4			1'0" to 3'0" Firm black moist TOPSOIL, little organic, wood, plastic, concrete pieces, asphalt, cobbles (FILL)
6			
8			
10			
12			
14			



Test Pit Log

Project No. 2599.0 Page 2 of 2 Test Pit No. KS-13
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 547.3 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications
			Remarks
16			Test pit terminated at 14'0" in fill Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.
18			
20			
22			
24			
26			
28			



Test Pit Log

Project No. 2599.0 Page 1 of 2 Test Pit No. KS-15
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 544.2 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Firm brown to grey mottled moist to wet 80% silt, sand, gravel 20% rock fragments, logs, concrete fragments, carpet, brick 3' diameter topsoil pocket noted at 3'
4			
6			5'9" BLASTED ROCK FRAGMENTS
8			
10			9'10" TOPSOIL
12			10'6" Compact red-brown moist SILT, some fine sand, little gravel
14			14'0"



SOIL • ROCK • EXPLORATION • INSTRUMENTATION

Test Pit Log

Project No. 2599.0 Page 2 of 2 Test Pit No. KS-16
 Project Name Klein Steel Facility, Emerson Street, Rochester, New York
 Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
 Elevation 544.8 Weather Overcast, 40° Inspector E. Ashley
 Date Started 10-23-02 Completed 10-23-02 Operator John
 Backhoe Subcontractor Arrow Contracting, Inc. Equipment CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
16			Test pit terminated in the fill at 14'0" Notes: 1. Sides sloughed from surface while excavating. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.
18			
20			
22			
24			
26			
28			

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B123	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: U.D.C (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			DATUM: ---
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			START: 14 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			FINISH: 14 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8 ft. while standard sampling.			DRILLER: S. Loranty
								H&A REP: J. Marschner
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		5 3 2	S1 20"/24"	3.0 5.0		Loose brown iron-stained ASH, granular with medium to fine sand-size particles, with glass and cinders, trace wood, dry. -FILL-		
10		5 55 100/.3	S2 12"/18"	8.0 9.3	8.8 9.3	Same, except with brick, some silt, damp. -FILL- Hard, highly weathered, gray-brown, fine-grained, DOLOSTONE, wet. -LOCKPORT FORMATION-		
						Bottom of Boring at 9.3 ft.		
15						Notes:		
20						1. Backfilled borehole to ground surface with soil cuttings.		
						2. OVA readings from sample screening noted as follows: S1 = 10 ppm methane S2 = 2 ppm methane in fill material and non-detect in native materials No OVA readings above background in the breathing zone.		
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
25						4. Sample S1 (and duplicate) and portion of S2 was submitted for TCLP metals and hazardous characteristics analyses.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 9.3	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: 2S		
						BORING NO. B123		

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B124	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Yellow Freight (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		---	S	---	RIG TYPE: CME-75, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		---	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		START: 14 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 14 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8.0 ft.		DRILLER: S. Loranty
							H&A REP: J. Marschner
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		4	S1	3.0	9.2	Loose brown to black ASH, with glass and fine gravel-size slag, trace twigs and roots, dry. -FILL-	
		3	14"/24"	5.0			
10		5	S2	8.0	9.2	Loose brown to black ASH, with wood and brick, damp. -FILL-	
		6	11"/24"	10.0		Hard, highly weathered, gray-brown, fine grained, DOLOSTONE. -LOCKPORT FORMATION-	
						Bottom of Boring at 10.0 ft.	
Notes:							
1. Borehole backfilled to ground surface with soil cuttings.							
2. OVA readings from sample screening noted as follows: S1 = 2 ppm methane S2 = 6.5 ppm methane							
No OVA readings above background in breathing zone.							
3. No explosiometer or radioactivity meter readings above background from sample screening or in the breathing zone.							
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B124	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B126		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: DeCarolus Trucking (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted			
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8.0 ft. while standard sampling.			
					ELEVATION: ---			
					DATUM: ---			
					START: 17 May 1993			
					FINISH: 17 May 1993			
					DRILLER: S. Spring			
					H&A REP: J. Marschner			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		4 4 3 3	S1	3.0	9.2	Loose red-brown to black ASH with glass, metal slag and cinders. -FILL-		
			20"/24"	5.0				
10		2 2 1 100/.5	S2	8.0	9.2	Loose black ASH with glass, piece of rubber. -FILL-		
			10"/24"	10.0				
						Mottled brown fine SAND, overlying hard, highly to completely weathered, gray-brown, (fine-grained DOLOSTONE) -RESIDUAL SOIL ABOVE LOCKPORT FORMATION-		
						Bottom of Boring at 10.0 ft.		
						Notes:		
						1. Backfilled borehole to ground surface with soil cuttings.		
						2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 3 ppm methane from ASH 0 ppm in SAND No OVA readings above background in the breathing zone.		
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
						4. S1 submitted for full TCLP analyses.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0	ROCK CORED (LIN FT): ---
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER			
							SAMPLES: 2S	
							BORING NO.	B-126

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B127	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION					FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER					SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING					LOCATION: Abrasive Tool (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		---	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		---	1-3/8	---	CASING TYPE: 4-1/4 in. I.D. H.S. Auger		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8.0 ft.		
ELEVATION: ---							
DATUM: ---							
START: 17 May 1993							
FINISH: 17 May 1993							
DRILLER: S. Loranty							
H&A REP: J. Marschner							
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		3 3 2	S1 18"/24"	3.0 5.0	6.5	Loose dark brown and red-brown ASH with glass, metal slag, and charred newspaper, dry. -FILL-	
10		100/.1	S2 2"/2"	8.0 8.1	8.1	Hard, highly weathered, gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-	
						Bottom of Boring at 8.1 ft.	
Notes:							
1. Borehole backfilled to ground surface with soil cuttings.							
2. No OVA, explosimeter, or radioactivity meter readings above background were detected in fill materials or in the breathing zone.							
WATER LEVEL DATA				SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 8.1
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
							SAMPLES: 2S
							BORING NO. B127

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B128	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: DeCarolis Trucking/ Yellow Freight	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		---	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		
INSIDE DIAMETER (IN)		---	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 11.2 ft.		
					ELEVATION: ---		
					DATUM: ---		
					START: 16 May 1993		
					FINISH: 16 May 1993		
					DRILLER: R. Bauer		
					H&A REP: M. Corrigan		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		6 5 5 4	S1 4"/24"	3.0 5.0		Loose black ASH, with iron staining, trace glass and cinders (with air bubbles), wet. -FILL-	
10		2 1 3 4	S2 3"/24"	8.0 10.0		Very loose black ASH, trace glass and fine gravel, wet. -FILL-	
15						Auger Refusal at 11.2 ft. Bottom of Boring at 11.2 ft.	
20						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 35 ppm methane S2 = 70 ppm methane 1000 + ppm methane in borehole No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
25							
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 11.2 ft.
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B128	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B129	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: DeCarolis Trucking (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 10.0 ft. while standard sampling.		
					ELEVATION: ---		
					DATUM: ---		
					START: 17 May 1993		
					FINISH: 17 May 1993		
					DRILLER: S. Loranty		
					H&A REP: J. Marschner		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		5	S1	3.0		Loose black ASH with glass, brick, wood, white cinders and paper, damp. -FILL-	
		3	12"/24"	5.0			
10		2	S2	8.0	8.5	Same, except wet. -FILL- Loose gray fine SAND, wet. -LACUSTRINE/FLUVIAL-	
		2	18"/24"	10.0	9.6		
15		100/.5				Moderately hard, highly weathered, gray, fine-grained DOLOSTONE, wet. -LOCKPORT FORMATION- Bottom of Boring at 10.0 ft.	
20						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 8 ppm methane S2 = 5 ppm methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses. Sample S1 was taken with a 3 in. split spoon sampler.	
25							
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT):
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		10.0
						ROCK CORED (LIN FT):	---
						SAMPLES:	2S
						BORING NO.	B-129

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B130	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION					FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER					SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING					LOCATION: City of Rochester Ferrano St. R.O.W. (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mount		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 5.0 ft. while standard sampling.		
			ELEVATION: ---			DATUM: ---	
			START: 18 May 1993			FINISH: 18 May 1993	
			DRILLER: S. Loranty			H&A REP: M. Corrigan	
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		5 10 12	S1 24"/24"	3.0 5.0		Medium dense brown fine SAND, little subrounded gravel, little coarse to medium sand, moist. -FLUVIAL-	
						Bottom of Boring at 5.0 ft.	
						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. No OVA, explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 5.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 1S	
						BORING NO. B-130	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B132	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: DeCarolus Trucking (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		START: 17 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 17 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 10.0 ft. while standard sampling.		DRILLER: R. Bauer
							H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
						No readings from radiation meter or explosimeter. * 1000 ppm methane in borehole.	
5		11 14	S1 15"/24"	3.0 5.0	6.5	Medium dense gray-black silty fine SAND, some coarse sand, little gravel, with ash, trace glass, moist to wet. -FILL-	
10		9 12 13 19	S2 12"/24"	8.0 10.0		Medium dense gray-brown silty fine SAND, trace coarse sand, wet. -LACUSTRINE/FLUVIAL-	
						Bottom of Boring at 10.0 ft.	
						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 100 ppm methane S2 = 100 ppm methane OVA reading was 1000+ ppm methane in the borehole. No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B-132	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B133	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: DeCarolis Truck Rental, Inc. (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		---	S	---	RIG TYPE: Truck Mounted, CME-75		
INSIDE DIAMETER (IN)		---	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MJD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: ---		
					ELEVATION: ---		
					DATUM: ---		
					START: 17 May 1993		
					FINISH: 17 May 1993		
					DRILLER: S. Loranty		
					H&A REP: J. Marschner		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		3 2 2	S1 10"/24"	3.0 5.0		Very loose black ASH with glass, metal slag, ceramic fragments, wood and what appears to be cardboard or dry wall. -FILL-	
					8.4	Same.	
10		3 4 3 100/.3	S2 16"/21"	8.0 9.8		Very dense gray-brown mottled red and yellow silty CLAY, some sand, wet. -GLACIAL TILL (SUBSOIL)-	
						Bottom of Boring at 9.8 ft.	
						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 2 ppm (methane) No OVA readings above background in breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 9.8 ft.
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B133	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B134	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: Browning-Ferris Ind. (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		---	S	---	RIG TYPE: CME-75, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		---	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		START: 18 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 18 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: ---		DRILLER: S. Loranty
							H&A REP: M. Corrigan
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		11 11 7	S1 15"/24"	3.0 5.0	6.5	Medium dense black ASH or CINDERS with possible coal fragments, moist, uniform fine sand size particles. -FILL-	
10		3 4 5 9	S2 18"/24"	8.0 10.0		Loose gray-brown fine SAND, trace coarse to medium sand, wet. -LACUSTRINE/FLUVIAL-	
						Bottom of Boring at 10.0 ft.	
						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 25 ppm (methane) S2 = 0 ppm 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0 ft.
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B134	

DS-4

DATE
 STARTED 11-19-79
 FINISHED 11-19-79
 SHEET 1 OF 1



EMPIRE SOILS INVESTIGATIONS, INC.

HOLE NO. B-1
 SURF ELEV. 537.36
 G W DEPTH See Note

SUBSURFACE LOG

PROJECT Outer Loop Industrial Park

LOCATION Rochester, New York

DEPTH	SAMPLE NO	BLOWS ON SAMPLER				BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	2	3	4			
0	1	1	3			TOPSOIL 2"	Note #1: Groundwater information: Boring complete, Casing @ 10.0' 12:00-Augers in Water @ 6.5' 12:10-Augers out Water @ 6.5'	
	11	5		14		Fill: Black CINDERS, little grass, paper, ash, silt, wood gravel		
	2	4	3					
		3	2		6			
5	3	1	2					
		1	1		3			
	4	1	1			(Moist-Loose to Firm) 10.0'		
		1	1		2			
	5	1	1					
10		1	2		2			
	6	50/.0 No Recovery					Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured w/a soft, weathered shaley zone from 10.8 to 12.0'	
						Bottom of Hole @ 15.0'		
							Run #1 10.0'-15.0' Recovered 90%	

N = No blows to drive 2 "spoon 12" with 140lb pin wt. falling 30" per blow.
 C = No blows to drive 1 "casing 3 1/4" with 140lb weight falling 30" per blow.
 METHOD OF INVESTIGATION 3 1/4" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
 STARTED 11-21-79
 FINISHED 11-21-79
 SHEET 1 OF 1



EMPIRE SOILS INVESTIGATIONS, INC.
SUBSURFACE LOG

HOLE NO. B-3
 SURF ELEV. 537.94
 G.W. DEPTH. See Note #

PROJECT Outer Loop Industrial Park LOCATION Rochester, NY

DEPTH (ft)	SAMPLE NO.	BLOWS ON SAMPLER					BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	2	3	4	5			
0	1	2	6					Fill: Brown ASH & GLASS, Some Silt, Some fine Sand -grades Some Glass, trace wood -grades little wood -grades wet, SILT & fine SAND, Some Ash (Damp to wet-Loose to Firm) 9.5' Brown SILT & fine SAND, trace embedded fine gravel -grades little fine to medium gravel, little medium to coarse sand (TILL) (Damp-Very Compact) Auger Refusal @ 15.5'	Note #1: Groundwater information: Boring Complete, Casing @ 15.0', Water @ 11.0' * No Recovery
		8	8			14			
5	2	6	6						
		3	4			9			
5	3	6	6						
		3	2			9			
10	4*	2	2						
		2	1			4			
10	5	4	11						
		14	15			25			
15	6	17	24						
		27	25			51			
15	7	20	21						
		8	112/.5						
20									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
 C = No. blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.
 METHOD OF INVESTIGATION 3 1/4" HSA Casing

CLASSIFICATION Visual By
Laboratory Technician

DS-4

DATE
 STARTED 11-19-79
 FINISHED 11-19-79
 SHEET 1 OF 1



EMPIRE SOILS INVESTIGATIONS, INC.

HOLE NO. B-4
 SURF ELEV. 539.28
 C. W. DEPTH See Note #1

SUBSURFACE LOG

PROJECT Outer Loop Industrial Park LOCATION Rochester, NY

DEPTH (ft)	SAMPLE NO	BLOWS ON SAMPLER				BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		U	6	12	18			
0	1	3	7				TOPSOIL 2" Fill: Black CINDERS, Some Brick, Some Wood, little glass, ash, silt (Damp) - grades and BRICK, Some Silt	Note #1: Groundwater information: Boring Complete, Casing @ 14.0', 3:00 p.m., Augers in, No free water in boring 3:10 p.m., Augers out, Water @ 8.5' (Damp to Moist-Loose to Firm) 11.5' Brown SILT, SAND, GRAVEL (Wet-Loose) 12.0' Auger Refusal @ 14.0'
		9	5		16			
5	2	5	4				-grades little brick, little silt -grades moist @ 6:0' -grades Some Wood, little garbage - grades and WOOD	
		4	3		8			
10	3	2	2					
		2	3		4			
	4	2	2					
15		2	7		4			
	5	1	1					
		1	3		2			
20	6	2	3					
		3	3		6			

N = No. blows to drive 2 "spoon 12" with 140 lb pin wt. falling 30" per blow.
 C = No. blows to drive "casing" with _____ lb. weight falling _____" per blow.
 METHOD OF INVESTIGATION 3 1/2" HSA Casing

CLASSIFICATION Visual By
Laboratory Technician

DS-4

DATE
 STARTED 11-20-79
 FINISHED 11-20-79
 SHEET 1 OF 1



EMPIRE SOILS INVESTIGATIONS, INC.
SUBSURFACE LOG

HOLE NO. B-5
 SURF ELEV. 536.42
 G.W. DEPTH See Note #1


PROJECT Outer Loop Industrial Park LOCATION Rochester, NY

DEPTH-FT	SAMPLE NO	BLOWS ON SAMPLER				BLOW IN CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
		0-6	6-12	12-18	18-24			
0	1	5	8				Fill: Brown SILT, Some Wood, trace fine gravel, trace glass - grades and ASH, little gravel - grades and WOOD, trace gravel - decomposed rock (Damp-Loose to Very Compact) 6.8'	Note #1: Groundwater information: Boring complete, Casing @ 6.6', Water @ 2.0' Note#2: Top of Rock @ 6.6'
		8	4		16			
	2	2	1					
		1	1		2			
5	3	2	2					
		2	7		4			
	4	47	100		.1			
10								Run #1: 6.6'-9.8' Recovered 100%
15								

N = No. blows to drive 2 "spoon 12" with 140 lb pin wt. falling 30 "per blow
 C = No. blows to drive "casing" with _____ lb. weight falling _____ "per blow.
 METHOD OF INVESTIGATION: 3 1/2" HSA Casing

CLASSIFICATION Visual By
Laboratory Technician

DS-4

DATE STARTED <u>11-19-79</u> FINISHED <u>11-19-79</u> SHEET <u>1</u> OF <u>1</u>	 EMPIRE SOILS INVESTIGATIONS, INC. SUBSURFACE LOG	HOLE NO: <u>B-7</u> SURF ELEV <u>538.25</u> C W DEPTH <u>See Note #1</u>
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PROJECT Outer Loop Industrial Park LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLE #					BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
			1	2	3	4	5			
		1	3	5				Fill: Black CINDERS, Some Silt, little glass, wood, paper, ash, gravel (Damp-Loose) 3.5'	Note #1: Ground-water information: Boring complete, Casing @ 11.5', No free water in boring @ completion. Augers out, no free water	
			5	7		10				
		2	7	9						
			11	54		20				
5		3	19	14				Brown SILT, Some fine Sand (Damp-Firm to Compact) 5.5'		
			20	22		34				
		4	8	12				Brown fine SAND & SILT, little fine gravel		
			16	23		28				
		5	42	34						
10			27	42						
		6	34	50	86	136				
								(Damp-Compact to Very Compact)		
15								Auger Refusal @ 13.5'		

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow
 C = No blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.
 METHOD OF INVESTIGATION 3 1/4" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
 STARTED 11-28-79
 FINISHED 11-28-79
 SHEET 1 OF 1



EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-17
 SURF. ELEV. 532.36
 G.W. DEPTH See Note #1

PROJECT Outer Loop Industrial Park LOCATION Rochester, NY

DEPTH-FT	SAMPLE NO	BLOWS ON SAMPLER				BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		0-6"	6-12"	12-18"	18-24"			
	1	1	1			TOPSOIL 6"	Note #1: Ground-water information: Boring complete, Casing @ 6.0', No free water in boring at completion.	
		6	8		7	Brown SILT & fine SAND, trace fine gravel		
	2	14	14			- grades little fine gravel, boulder		
		19	24		33	(Damp-Loose to Compact) 5.0'		
5	3	21	22			Red-Brown SILT & fine SAND, Some fine to medium GRAVEL, little medium to coarse sand (Till)		
	4	39	42			- possible rock (Damp-Very Compact)		
		49	100/.1	91		Auger Refusal @ 7.6'		
10								

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
 C = No. blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.
 METHOD OF INVESTIGATION: 3 1/2" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DATE STARTED <u>8/30/88</u> FINISHED <u>9/1/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-8D</u> SURFACE ELEV. <u>96.5</u> G.W. ELEV. <u>92.25</u>
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PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> SITE # <u>828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.7'	SB	1	2	9	28	50/3'	Brown SAND and SILT, little clay, moist, dense. Grades to brown-gray SAND, trace gravel. At 6 to 6.5 ft. brown, fine SAND, trace red sandstone gravel, saturated. <div style="text-align: right;">[SAND] 7.0'</div>	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod HNU = 0 ppm Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Explosimeter = 0% LEL Auger drilling refusal at 7.0 ft. NX core run 1 and 2 drilled on 8/31/88. NX core run 3 and 4 drilled on 9/1/88. Rotary drilled with 4-1/2 in. tri-cone bit from 7 ft. - 14ft. Coring was done with a long ear 5 ft./NQ core barrel and a Series 8 bit.
	1.3'	SB	2	18	33	23	22		
10	REC 93% RQD 24%	NX	1					Gray, fine textured dolomite, many horizontal fractures. Rust staining on fractures at 8.5 ft. Some vertical fractures to 14 ft. Few small vugs present. Rock becomes less fractured and moderately hard with depth. Slight drilling fluid loss during Run 3. <div style="text-align: right;">[DOLOMITE BEDROCK] 24.0'</div>	
15	REC 100% RQD 73%	NX	2						
20	REC 98% RQD 66%	NX	3						
25	REC 99% RQD 85%	NX	4						
30								Boring Completed at 24.0 ft. G.W. elevation taken on 12/16/88.	
35									

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

DATE STARTED <u>9/1/88</u> FINISHED <u>9/2/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-8S</u> SURFACE ELEV. <u>96.0</u> G.W. ELEV. <u>92.24</u>
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PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDEILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.8'	SB	1	10	9			Brown SAND and SILT, little clay, moist, dense. Grades to brown-gray SAND, trace gravel. At 6 to 6.5 ft. brown, fine SAND, trace red sandstone gravel, saturated. [SAND] 7.0'	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Auger drilling refusal at 7.0 ft. NX core run 1 drilled on 9/1/88. Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit. Rotary drilled with 3-7/8 in. tri-cone bit from 7 ft. to 12.0 ft. Boring Completed at 12.0 ft. G.W. elevation taken on 12/16/88.
10	REC 95% RQD 40%	NX	1						
15								[DOLOMITE BEDROCK] 12.0'	
20									
25									
30									
35									

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

DATE STARTED <u>8/22/88</u> FINISHED <u>8/24/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC. SUBSURFACE LOG	HOLE NO. <u>GW-9</u> SURFACE ELEV. <u>100.2</u> G.W. ELEV. <u>84.11</u>
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PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
1.25'		SB	1	7	10				
				32	50/1'		Brown SILT, some sand, some gravel, occasional cobble and boulder sized sandstone and dolomite rock fragments, dry, dense		Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
5	REC 79% RQD 14%	NX	1				[SILT with Rock FRAGMENTS] 5.0'		Driller - Lee Penrod Assistant - Shawn Penrod
10	REC 99% RQD 12%	NX	2				Gray fine textured dolomite, highly fractured, fractures oriented horizontally, vertically and at 45 degrees to coring axis. Rock is soft to moderately hard depending on extent of weathering. Rust staining on fractured surfaces at 8.0 ft. Some mottling beginning at 9.5 ft. At 10.0 ft.: Yuggy with small amount of white precipitate.		HNU = a reading of 2-3 ppm was observed over the drilling fluid during run 3. Explosimeter = 0 % LEL Geiger Counter = 0 mr/hr. Micro R Meter = 5-7 micro-rem/hr. Auger drilling refusal at 5.0 ft.
15	REC 100% RQD 10%	NX	3				Water table encountered at approximately 15.0 ft.		
20	REC 93% RQD 52%	NX	4				At 21 ft.: Begin to lose some drilling fluid.		NX core run 1 drilled on 8/22/88. NX core run 2-5 drilled on 8/23/88.
25	REC 99% RQD 58%	NX	5				From 22 ft. to 27 ft.: Weathering decreases and rock is less fractured.		Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit. Rotary drilled with a 3-7/8 in. tri-cone bit from 5.0 to 26.0 ft.
							[DOLOMITE BEDROCK] 27.0'		Boring completed at 27.0 ft.
30									G.W. elevation taken on 12/16/88.
35									

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

DATE STARTED <u>8/24/88</u> FINISHED <u>8/25/88</u> SHEET <u>1</u> OF <u>1</u>	RECRA ENVIRONMENTAL, INC.	HOLE NO. <u>GW-10S</u> SURFACE ELEV. <u>99.1</u> G.W. ELEV. <u>96.68</u>
SUBSURFACE LOG		

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u> <u>SITE #828023</u>	LOCATION <u>EMERSON STREET LANDFILL</u> <u>ROCHESTER, NEW YORK</u>
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DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	12	18		
				3	7	15	24		
5	1.0'	SB	1	3	7			Black organic SILT some brown-gray clay, dry. Grades to brown medium SAND, moist.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
				7	6				
	1.3'	SB	2	6	9			At 6.0 ft.: Fine SAND, well graded, saturated. At 7.5 ft.: Some silt, trace gravel.	Driller - Lee Penrod Assistant - Shawn Penrod
				16	28			[SAND, SILT and CLAY] 8.0'	
10	REC 100% RQD 63%	NX	1					Gray, fine textured dolomite, soft to moderately hard. Numerous horizontal and vertical fractures. Becomes vuggy at 10.0 ft. Mottling starts at about 11.5 ft. Becomes highly weathered and soft near base.	HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Auger drilling refusal at 8.0 ft. NX core run 1 drilled on 8/24/88.
15								[DOLOMITE BEDROCK] 13.0'	
20									Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit.
25									Rotary drilled with a 3-7/8 in. tri-cone bit from 8-13 ft.
30									Boring completed at 13.0 ft.
35									G.W. elevation taken on 12/16/88.

CLASSIFICATION VISUAL METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

DATE STARTED <u>8/25/88</u>	RECRA ENVIRONMENTAL, INC.	HOLE NO. <u>GW-10D</u>
FINISHED <u>8/29/88</u>		SURFACE ELEV. <u>99.3</u>
SHEET <u>1</u> OF <u>1</u>	SUBSURFACE LOG	

PROJECT <u>NYSDEC PHASE II INVESTIGATION</u>	LOCATION <u>EMERSON STREET LANDFILL</u>
<u>SITE #828023</u>	<u>ROCHESTER, NEW YORK</u>

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER				DESCRIPTION	NOTES
				0	6	6	12		
				12	18	18	24		
5	1.3'	SB	1	19	21			Black organic SILT some brown-gray clay, dry. Grades to brown medium SAND, moist.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-7 micro-rem/hr. Auger drilling refusal at 8.0 ft.
	0.8'	SB	2	31	48			At 6.0 ft.: Fine SAND, well graded, saturated. At 7.5 ft.: Some silt, trace gravel.	
	0.6'	SB	3	50/3'	13			[SAND, SILT, and CLAY] 8.0'	
				50/1'					
10	REC 94% RQD 48%	NX	1					Gray fine textured dolomite, numerous horizontal fractures, few vertical fractures to 4 in. Numerous vuggy zones, intense weathering at some fractured areas. White precipitate present in some vugs and on some fractured surfaces. Rock gets harder with depth except for areas of intense weathering.	Rotary drilled with 4 1/2 in. tri-cone bit from 8 ft. to 10 ft. Then core NX-1 from 10 ft. to 14 ft. and finish rotary drilling to 14 ft. on 8/26/88.
15	REC 100% RQD 58%	NX	2					Some drilling fluid loss at 13-14 ft.	
20	REC 98% RQD 79%	NX	3					[DOLOMITE BEDROCK] 13.0'	
25									Boring completed at 24.0 ft. G.W. elevation taken on 12/16/88.
30									
35									

CLASSIFICATION <u>VISUAL</u>	METHOD OF INVESTIGATION <u>ASTM D1586-84, D2113-83</u>
LOG DEVELOPED BY <u>ROBERT STEINER</u>	

SCALE IN FEET		SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
0						
2		S1	2.0		Brown silty fine SAND, with cobbles, logs, bricks and boulders, moist.	OVA reading = 30 ppm @ 0 ft. to 2.0 ft.
					Dark brown sandy SILT, some clay, with C&D debris, moist.	No radiation meter readings above back-ground.
					-FILL-	
4				4.0	Light brown silty fine SAND, with cobbles and brick fragments, wet.	Water level in test pit at 4.0 ft.*
					Same, with brick fragments. -FILL-	
				7.0	Brown coarse to medium SAND, little silt, few cobbles, wet.	
					-FILL OR DISTURBED NATURAL MATERIALS-	
				9.0	Apparent Bedrock and Bucket Refusal at 9.0 ft. Bottom of Test Pit at 9.0 ft.	
10						
12						
						* - See Note #3 on Subsurface Exploration Key.
WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:
			8 feet	3.0 feet		9.0 ft.
			BOULDERS			JAR SAMPLES:
			8" to 18" DIAMETER:	No. = Vol.	cu ft	1
			Over 18" DIAMETER:	No. = Vol.	cu ft	BAG SAMPLES: ---
* Hrs after completed						WATER LEVEL: 4.0 ft.*
						TEST PIT NO. TP-13

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST PIT REPORT		TEST PIT NO. TP-14 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE				LOCATION: Ben-Mer Mfg. 1255 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Beikirch	
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
-			1.5	Dark brown clayey organic SILT, with brick and plywood fragments. -TOPSOIL-	No OVA or radiation meter readings above background. Water level in test pit at 4.0 ft.*
				Brown silty SAND, some clay, with cobbles and boulders, moist.	
			8.0	Tan to brown clayey SILT, some sand and gravel, common cobbles, wet. Same with brick fragments. -FILL-	
				Same, bedrock fragments present.	
				Light brown sandy SILT, trace clay, wet. -GLACIAL TILL-	
9.0	Bottom of Test Pit at 9.0 ft.				
-2-					
-4-					
-6-					
-8-					
-10-					
-12-					* - See Note #3 on Subsurface Exploration Key.
WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE		SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 8 feet	WIDTH 3 feet	DEPTH: 9.0 ft.
			BOULDERS		JAR SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft		BAG SAMPLES: ---
			Over 18" DIAMETER: No. = Vol. cu ft		WATER LEVEL: 4.0 ft.*
* Hrs after completed					TEST PIT NO. TP-14

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-15 FILE NO. 70352-44
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PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Jada Precision Plastics Co., 1335 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
0			0.5	Dark brown clayey organic SILT. -TOPSOIL-	No radiation meter readings above background. OVA readings from 20 to 1000+ ppm from soil at a depth of - 3.0 to 5.0 ft.
2	S1	3.0		Gray and black fine sandy SILT, little gravel, trace brick and ceramics to ~ 5.0 ft.	
4	S2	5.0			
6			7.5	-FILL-	
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			7 feet	3.5 feet		DEPTH: 7.5 ft. JAR SAMPLES: 2
			BOULDERS			BAG SAMPLES: --- WATER LEVEL: Not Encountered
			8" to 18" DIAMETER: No.	= Vol.	cu ft	
			Over 18" DIAMETER: No.	= Vol.	cu ft	TEST PIT NO. TP-15
* Hrs after completed						

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-16 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Alton Mfg., Inc. 1365 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2			0.5	Gray fine GRAVEL (Crusher run).	No OVA readings or radiation meter readings above background.
				Brown silty coarse to fine SAND, some gravel, with large brick, concrete, and wood fragments.	
4			7.0	-FILL-	Water seeping into test pit at 7.0 ft.*
				Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	
6					* - See Note #3 on Subsurface Exploration Key.
8					
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			6 feet	3 feet		DEPTH: 7.0 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: 7.0 ft.*
* Hrs after completed						TEST PIT NO. TP-16

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-17 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B		LOCATION: Alton Mfg., Inc. 1365 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	Gray fine GRAVEL (Crusher run).	2 to 10 ppm OVA reading from soil at a depth of -2.0 ft. No radiation meter reading above back-ground.
-2-	S1 S2	2.0		Brown silty coarse to fine SAND, little gravel, very few cobbles and boulders (rocky fill), trace brick. Slight petroleum odor noted from test pit soils.	
				-FILL-	
-4-			4.0	Apparent Top of Bedrock and Bottom of Test Pit at 4.0 ft.	
-6-					
-8-					
-10-					
-12-					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			5 feet	3.5 feet		DEPTH: 4.0 ft.
			BOULDERS			JAR SAMPLES: 2
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: Not Encountered
* Hrs after completed						TEST PIT NO. TP-17

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-18 FILE NO. 70352-44
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PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Jada Precision Plastics Co., 1335 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Brown silty coarse to fine SAND, few cobbles and boulders with trace asphalt, and brick. -FILL-	No OVA or radiation meter readings above background.
			3.0	Dark brown organic SILT, with roots. -BURIED TOPSOIL-	
4			3.5	Brown coarse to fine SAND, some silt, little gravel, trace clay.	
6				-GLACIAL TILL-	
8			7.5	Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	Water level in test pit at 7.5 ft.*
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			7 feet	3.5 feet		DEPTH: 7.5 ft.
			BOULDERS			JAR SAMPLES: ---
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: 7.5 ft.*
* Hrs after completed						TEST PIT NO. TP-18

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-19 FILE NO. 70352-44
PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE	LOCATION: Peko Precision Prods., Inc., 1425 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Beikirch	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
0				Dark brown silty fine SAND, common cobbles, trace clay, with bricks and C&D debris, moist. Road gravel at 1.0 ft. to 3.0 ft. with tiles, piece of plastic wrap and metal can.	No OVA or radiation meter readings above background except as noted below.
2					
	S1	3.0			OVA reading= 3 to 4 ppm.
4			4.0	-FILL-	
				Light brown-tan silty fine SAND, common cobbles, with clayey pockets or lenses, concrete and asphalt-like material, moist. Same, except more clay.	
6					
				-FILL-	
8			8.0		
			8.5	Brown coarse to fine SAND, some silt, little gravel, trace clay. -GLACIAL TILL-	
				Apparent Bedrock, Bucket refusal at 8.5 ft. Bottom of Test Pit at 8.5 ft.	
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			8 feet	3 feet		DEPTH: 8.5 ft.
			BOULDERS			JAR SAMPLES: 1
			8" to 18" DIAMETER: No.	= Vol.	cu ft	BAG SAMPLES: ---
			Over 18" DIAMETER: No.	= Vol.	cu ft	WATER LEVEL: Not Encountered
* Hrs after completed						TEST PIT NO. TP-19

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-20 FILE NO. 70352-44
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PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Peko Precision Prods., Inc., 1425 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2	S1	2.5		Brown and black silty coarse to fine SAND, some gravel with brick, wire, metal to 5.5 ft.	OVA reading = 5 ppm from soil sample at a depth of ~ 2.5 ft. Readings in breathing zone checked. Up to 10 ppm near propane gas tank ~ 20 ft. from excavation. No OVA or radiation meter readings above background from test pit.
4				-FILL-	
6			5.5	Light brown fine sandy SILT.	
			6.5	-LACUSTRINE/ALLUVIUM-	
8				Apparent Top of Bedrock and Bottom of Test Pit at 6.5 ft.	
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		
			7 feet	3.5 feet		DEPTH: 6.5 ft. JAR SAMPLES: 1 BAG SAMPLES: --- WATER LEVEL: Not Encountered
			BOULDERS			
			8" to 18" DIAMETER: No.	= Vol.	cu ft	
			Over 18" DIAMETER: No.	= Vol.	cu ft	TEST PIT NO. TP-20
* Hrs after completed						

110-210 Colfax St.

PROJECT: PESL SUI investigation		LOCATION: 110-210 Colfax St.	
BORING LOCATION: City of Rock. Maintenance Facility		ELEVATION AND DATUM: OK	
DRILLING CONTRACTOR: NOTH/A/OLE		DATE STARTED: 9/27/10	DATE FINISHED:
DRILLING METHOD: 4 1/4" Ø HSA		TOTAL DEPTH:	SCREEN INTERVAL:
DRILLING EQUIPMENT: CME FSD		DEPTH TO WATER:	FIRST COMPL. CASING:
SAMPLING METHOD: 4 1/4" Ø HSA		LOGGED BY: wpc	
HAMMER WEIGHT: 100	DROP: 30"	RESPONSIBLE PROFESSIONAL: BM	REG. NO.:

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast. consistency, structure, cementation, react. w/HCl geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blow/ Foot			
0					Surface Elevation:	
2	1	2.0'	5/8"	Ø	0-6" - Brown loam soil, moist, firm	
4					6"-2.0' Asst/Fill - shale broken fragments, porcelain, glass, ash, coal chunks, coal fragments, wood, moist, no odor	
6	2	1.5'	5/8"	Ø	AA within brown s/silt matrix, little binder. No odor	
8						
10	3	1.0'	2 1/2"	Ø	AA - base (low recovery)	
12	4				<div style="border: 1px solid black; padding: 5px; display: inline-block;"> sampler blowing (checked) @ 130' Ast </div> x advance 4 1/4" Ø HSA to 130' & install 4" Ø permanent steel casing.	
14						
16						
18						
20						
22						
24						
26						
28						

PROJECT: **FESL SUI Sampling** PAGE 2 of 2 (Location "6" Log of Well No. **Lab-107** (cont.))

DEPTH (feet)	SAMPLES			OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plastic consistency, structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot			
					<p>Begin Nt core run @ 15.0' bp after rollerbitting just to 15.0' bp.</p> <p>Run #1: 15.0' - 25.0' bp</p> <p>Rec: 9.5' / 10' = 95%</p> <p>Rec: 6.8' / 9.5' = 72%</p> <p>LITH: Has grey limestone with shale interbeds (interbeds generally < 5mm thickness) several horizontal fractures w/ iron staining throughout. Few local ^{subvert} horizontal fractures between 5.5' - 5.8' open sub vert fractures @ 9.7' - 10' of Run #1. Mild dolomitization between 5.0' & 6.0'. Core exhibits moderate stylolite pressure between 1.5' of core.</p>	<p>Drill rate ~ 1.5 mi/ft. (first 5.0' of run #1)</p> <p>Drill rate slows to 2-2.5 mi/ft second 5.0' of run #1</p> <p>* lose ~ 15-20 gal of water in first 1.0' of run #1 (30 g total for hole)</p> <p>3 7/8" rollerbit to 25' bp</p> <p>* Remove ~ 50g of water from borehole w/ Drill Rig Mop-up Pump.</p> <p>* well overruns slowly ~ 2.5' recovery in 1 hour (from day)</p>
					<p>Rec 118" / 98%</p> <p>Rec 72" / 60%</p>	

W-2 (Blank)

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York		Log of Well No. LAB-108	
BORING LOCATION: 110-210 Colfax Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/29/10	DATE FINISHED: 9/30/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 25.0 fbg	SCREEN INTERVAL: 15.0-25.0 fbg
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER:	FIRST COMPL. CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler		LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.:

DEPTH (feet)	SAMPLES				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
	Sample No.	Sample	Blows/foot				
1						Brown topsoil, moist, firm	<p>flush-mount surface casing</p> <p>4" permanent steel casing to 15.0' bgs</p> <p>Cement/bentonite grout</p> <p>Bedrock</p> <p>Open Bedrock Corehole (reamed to 3 7/8")</p>
2	1		NA	0	ASH/FILL- Shale bedrock fragments, procelain, glass, ash, coal clinker, coal fragments, loose, moist, no odors.		
3							
4							
5							
6	2		NA	0	As above, within brown fine-sand/silt matrix. Little brick, no odors.		
7							
8							
9							
10	3		NA	0			
11							
12	4		NA	0	refusal at 13.0' bgs (sampler bouncing)		
13							
14					Advanced roller bit to 15.0' bgs.		
15					Begin NX bedrock core at 15.0' bgs.		
16							
17					Run #1		
18					Depth: 15.0-25.0 'bgs		
19					Rec: 118" (98%)		
20					RQD: 72" (60%)		
21					Lithology: LOCKPORT FORMATION		
22					(Penfield Dolostone Member)		
23					Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occasional to frequent argillaceous partings and occasional shale interbeds. Zones of occasional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.		
24							
25							
26							
27							
28					Rock coring details:		
29					* highly fractured zone, intersecting, planar, moderately dipping to high angle joints between 15 and 16.3' bgs		
30					* short fractured zone at 16.7', 17.3-17.5', 18.9-19.2', 19.7-19.9', 10.0-21.1'		
31					*vertical cracks, pits, vugs at 21-22'		
32					* high angle joints at 22.2-22.5', 22.8-23.0'		
33							
34							
35							
36							
37							
38							
39							
40							

WELL_OVM FESL WELL LOGS 9-2010.GPJ (11/10)

Test Pit Log

Project No. 2-2570.0 **Page** 1 **of** 1 **Test Pit No.** TP02-1
Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
Elevation 527.0 Est. **Weather** Sunny 75° **Inspector** Jay Goggin
Date Started 07/26/02 **Completed** 07/26/02 **Operator** Doug
Backhoe Subcontractor Re-Surface Inc. **Equipment** Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3" Washed No. 1 and No. 2 STONE 0'6" FILL: TOPSOIL, barrel bands, gravel silt, clay, wood
4			2'6" TOPSOIL
6			4'6" Compact gray green wet SAND and SILT, little gravel
8			7'0" Refusal on fractured rock 7'0"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage at rock. 3. Test pit elevation estimated to the nearest half foot from the site plan.

Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-2
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 526.0 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			ORGANIC MAT 0'5"
			Run of bank sand and gravel, and crusher-run stone 1'1"
2			FILL: ASH, grades to topsoil
			3'2"
4			Firm gray green moist SILT 4'0"
			Compact tan red moist SAND, some gravel, some silt 4'9"
6			Test pit terminated at 4'9"
8			
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Dry on completion. 3. Test pit elevation estimated to the nearest half foot from the site plan.



Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-3
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 528.0 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			<u>ASPHALT</u> 0'3.5" FILL: Run of Bank sand and gravel, and crusher run stone (building side), black ash, rock, metal, wood, cmu concrete, perforated drain tile at 3'10"
4			
6			
8			Refusal on rock at 7'0"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Flowing water at 3'10"±, static water level at 3'10" on completion. 3. Test pit elevations estimated to the nearest half foot from the site plan.



Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-4
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 531.0 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: 50% Run of Bank sand and gravel 50% SILT
4			2'8" FILL: Black ASH, plastic, wood, rock, few cobbles/boulders, blends to black topsoil
6			4'0" Firm to compact moist tan red SAND, some silt, little gravel, few cobbles
8			Broken rock below 6'
10			8'0" Refusal on fractured rock at 8'0"
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage 6'8". 3. Test pit elevations estimated to the nearest half foot from the site plan.

Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-5
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 532.0 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			<u>ORGANIC MAT</u> 0'3"
2			FILL: Gray and brown SILT, some gravel, some wood, little concrete, brick, ash, incompletely stripped topsoil 1'9" Compact to dense moist SILT, some sand, little gravel, trace roots, trace clay
4			3'5" Compact to dense red-tan moist SAND, little gravel, little silt/clay, few cobbles, few boulders, random clay with green varved pockets
6	S-1	5'0"	
8			Cobbles and boulders increase below 7'
10			9'9" Refusal on rock at 9'9"
12			
14			Notes: 1. Sides slough below 5' on completion at 9:35 A.M. Sides slough below 4'6" at 12:00 P.M. 2. Dry on completion at 9:35A.M. test pit had 5" of water at 12:00 P.M. before backfilling. 3. Test pit elevation estimated to the nearest half foot from the site plan.

Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-6
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 530.5 Est. Weather Cloudy 70° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			ASPHALT 0'3" Run of bank gravel, some asphalt 0'9" Compact black moist TOPSOIL _____ 1'10"
2			Compact brown with red mottling moist SILT, some gravel, trace sand, trace roots _____ 2'11"
4			Compact red moist SILT, some fine sand _____ 3'7"
6			Grades to and rock/gravel below 6'
8			_____ 7'11" Refusal on rock at 7'11"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage at 7'10". 3. Test pit elevations estimated to the nearest half foot from the site plan.

Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-7
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 532.5 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			FILL: GRAVEL, silt, brick, concrete
2			1'5"
			TOPSOIL
4			3'3"
			Compact tan moist-wet SAND, little gravel, little silt, trace clay seams, root stain
6	S-1	4'5"	5'6"
			Refusal on rock at 5'6"
8			
10			
12			
14			Notes: 1. Sides vertical and stable on completion at 9:55 A.M. Little running sand below 5' at 11:50 A.M. before backfilling. 2. Water seepage at rook at 9:55 A.M. 7" of water at 11:50A.M.. 3. Test pit elevations estimated to the nearest half foot form the site plan.



Test Pit Log

Project No. 2-2570.0 Page 1 of 1 Test Pit No. TP02-8
 Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
 Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
 Elevation 532.5 Est. Weather Sunny 75° Inspector Jay Goggin
 Date Started 07/26/02 Completed 07/26/02 Operator Doug
 Backhoe Subcontractor Re-Surface Inc. Equipment Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT, little topsoil, grass and roots 0'3" FILL: 75% BRICK, soil, ash, wood, metal (R-Bar) 25% COBBLES and boulders
4	S-1	4'0"	TOPSOIL 2'11" 3'7" Dense tan moist SILT, some sand, little gravel, trace roots, and staining
6			Grades to some gravel and a few cobbles below 5'
8			
10			10'0" Refusal on rock. at 10'0"
12			
14			Notes: 1. Sides slough below 8'6" and 7'0" after 5min. 2. Running water and sands at 9'6" at 9:00A.M., 12" of water in test pit at 11:45A.M before backfilling. 3. Test pit elevations estimated to the nearest half foot from the site plan.



Test Pit Log

Project No. 2-2570.0 **Page** 1 **of** 1 **Test Pit No.** TP02-9
Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
Elevation 532.0 Est. **Weather** Sunny 75° **Inspector** Jay Goggin
Date Started 07/26/02 **Completed** 07/26/02 **Operator** Doug
Backhoe Subcontractor Re-Surface Inc. **Equipment** Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Construction debris, concrete, wood, wire spool ends to 3'0" diameter, 2'x2'x3' concrete (footing like), rock, brick, metal, wire, asphalt, trace ash, cobbles, and boulders
4			4'6"
6			TOPSOIL Compact gray moist to wet SILTY CLAY, some sand
8			7'0"
10			Compact red brown moist SAND, some gravel, little silty clay Refusal on rock at 9'4"
12			
14			Notes: 1. Sides vertical and stable on completion at 10:10A.M., little running sands below 8' at 11:50. 2. Seepage at rock, 8" of water at 11:50A.M. 3. Test pit elevations estimated to the nearest half foot from the site plan.

Test Pit Log

Project No. 2-2570.0 **Page** 1 **of** 1 **Test Pit No.** TP02-10
Project Name Flower City Transfer Station, 200 Ferrano, Street, Rochester, New York
Client Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534
Elevation 530.0 Est. **Weather** Sunny 75° **Inspector** Jay Goggin
Date Started 07/26/02 **Completed** 07/26/02 **Operator** Doug
Backhoe Subcontractor Re-Surface Inc. **Equipment** Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
			ORGANIC MAT 0'3"
2			FILL: Compact brown moist SILT, little gravel, little sand, few cobbles, few boulders, 20" diameter trace wood, ash, brick, trace topsoil and roots 1'3"
4			Compact dense tan SAND, some silt, little gravel, few cobbles, few boulders, trace fine roots (Wet sand and gravel pocket at 3'4" - 4'3" with wet silt/clay inclusions 3"-6" diameter)
6			5'7" Compact red tan SILT, some sand, some gravel, few cobbles and small boulders
8			
10			8'3" Refusal on rock at 8'3"
12			
14			Notes: 1. Sides vertical and stable on completion at 9:15A.M. Sloughing, caving, and running sands below 3'6", test pit 6' deep at 11:40A.M. before backfilling. 2. Dry on completion at 9:15A.M. 7" of water at 11:40A.M. 3. Test pit elevations estimated to the nearest half foot from the site plan.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B135	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: City of Rochester Colfax St. Complex (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES			
TYPE		---	S	---	RIG TYPE: Diedrich D-50, Truck-mount			
INSIDE DIAMETER (IN)		---	1-3/8	---	BIT TYPE: 2-1/2 in. I.D. H.S. Augers			
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---			
HAMMER FALL (IN)		---	30	---	OTHER: ---			
					ELEVATION: ---			
					DATUM: ---			
					START: 14 May 1993			
					FINISH: 14 May 1993			
					DRILLER: R. Bauer			
					H&A REP: M. Corrigan			
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS		
5		3 2 2 3	S1 15"/24"	3.0 5.0	6.5	Soft brown clayey SILT, little sand, moist. -DISTURBED NATIVE MATERIAL OR FILL-		
10		50 50/.2	S2 5"/8"	8.0 8.7		Very dense brown clayey GRAVEL, some coarse to fine sand, damp to moist. -GLACIAL TILL- Bottom of Boring at 8.7 ft.		
15						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. No OVA, explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
20								
25								
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 8.7 ft.	
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---	
						SAMPLES: 2S		
						BORING NO. B135		

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT			BORING NO. B137		
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46			
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1			
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: City of Rochester Auto Pound (See Plan)			
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES				
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted				
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers				
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---				
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8.0 ft. while standard sampling.				
					ELEVATION: ---				
					DATUM: ---				
					START: 14 May 1993				
					FINISH: 14 May 1993				
					DRILLER: S. Spring				
					H&A REP: J. Marschner				
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS			
5		5	S1	3.0		Loose brown to black ASH with wood, cinders and glass, damp.			
		2	24"/24"	5.0		-FILL-			
		6			8.4	Same.			
10		8	S2	8.0		Medium dense red-brown silty fine SAND, wet.			
		9	24"/24"	10.0	9.5	-FLUVIAL-			
		12				Medium dense red-brown coarse to fine SAND, little silt and gravel (dolostone fragments).			
						-ABLATION TILL/FLUVIAL-			
						Bottom of Boring at 10.0 ft.			
15						Notes:			
						1. Backfilled borehole to ground surface with soil cuttings.			
						2. OVA readings from sample screening noted as follows: S1 = 1000+ ppm (800 ppm methane) S2 = 600 ppm methane No OVA readings above background in the breathing zone.			
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.			
20						4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses.			
25									
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY		
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0		
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---		
						SAMPLES: 2S			
						BORING NO. B137			

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. 8138	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION						FILE NO. 70352-46	
CLIENT: CITY OF ROCHESTER						SHEET NO. 1 OF 1	
CONTRACTOR: NOTHNAGLE DRILLING						LOCATION: City of Roch. Colfax Street Complex (See Plan)	
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 8.0 ft. while standard sampling.		
					ELEVATION: ---		
					DATUM: ---		
					START: 14 May 1993		
					FINISH: 14 May 1993		
					DRILLER: S. Spring		
					H&A REP: J. Marschner		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
		1	S1	3.0	3.8	Very loose brown ASH with glass, damp.	
5		1	12"/24"	5.0		Very loose mottled brown silty CLAY, trace coarse to fine sand, damp. -FLUVIAL SUBSOIL-	
		4	S2	8.0	6.5	Dense red-brown silty coarse to fine SAND, some subround gravel, wet. -ABLATION TILL/FLUVIAL-	
10		15	16"/24"	10.0		Bottom of Boring at 10.0 ft.	
		21				Notes:	
		27				1. Backfilled borehole to ground surface with soil cuttings.	
						2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 10 ppm methane No OVA readings above background in the breathing zone.	
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
						4. Sample S1 (ash) was submitted for TCLP metals and hazardous characteristics analyses.	
WATER LEVEL DATA			SAMPLE IDENTIFICATION			SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 10.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 2S	
						BORING NO. B138	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B139	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION					FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER					SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING					LOCATION: City of Rochester Auto Pound (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		ELEVATION: ---
TYPE		Auger	S	---	RIG TYPE: CME-75, Truck-Mounted		DATUM: ---
INSIDE DIAMETER (IN)		4-1/4	1-3/8	---	BIT TYPE: 4-1/4 in. I.D. H.S. Augers		START: 14 May 1993
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		FINISH: 14 May 1993
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 13.0 ft. while standard sampling.		DRILLER: S. Spring
							H&A REP: J. Marschner
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		3	S1	3.0	6.5	Medium dense black ASH, with glass, cinders (possible coal fragments), damp. -FILL-	
		5	6"/24"	5.0			
10		2	S2	8.0	13.3	Loose black clayey SILT with wood, roots and other organic material, damp. -MARSH DEPOSIT-	
		2	24"/24"	10.0			
15		12	S3	13.0		Same, except wet. Hard, highly to completely weathered, gray-brown, fine-grained, DOLOSTONE, wet. -LOCKPORT FORMATION-	
		15	18"/24"	15.0			
		20			Bottom of Boring at 15.0 ft.		
		100/.5			Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 850 ppm (500 ppm methane) S2 = 70 ppm (50 ppm methane) S3 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.		
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 15.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 3S	
						BORING NO. B-139	

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists				TEST BORING REPORT		BORING NO. B140	
PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION					FILE NO. 70352-46		
CLIENT: CITY OF ROCHESTER					SHEET NO. 1 OF 1		
CONTRACTOR: NOTHNAGLE DRILLING					LOCATION: City of Rochester Colfax Street Complex (See Plan)		
ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLING EQUIPMENT & PROCEDURES		
TYPE		Auger	S	---	RIG TYPE: Diedrich D-50, Truck-Mounted		
INSIDE DIAMETER (IN)		2-1/4	1-3/8	---	BIT TYPE: 2-1/4 in. I.D. H.S. Augers		
HAMMER WEIGHT (LB)		---	140	---	DRILL MUD: ---		
HAMMER FALL (IN)		---	30	---	OTHER: Advanced augers to 4.0 ft. while standard sampling.		
					ELEVATION: ---		
					DATUM: ---		
					START: 14 May 1993		
					FINISH: 14 May 1993		
					DRILLER: R. Bauer		
					H&A REP: M. Corrigan		
DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS	
5		15	S1	3.0	11.5	Medium dense black ASH, with glass, cinders, trace wood and charred paper, wet. -FILL-	
		11	6"/24"	5.0			
10		2	S2	8.0	11.5	Loose black ASH with glass, cinders, slag, and wood, trace brown silty clay, moist. -FILL-	
		3	3"/24"	10.0			
15		13	S3	13.0	11.5	Completely weathered, very dense, red-brown to gray DOLOSTONE-- weathered to silty fine SAND, little gravel (dolostone fragments), wet. -RESIDUAL SOIL- Bottom of Boring at 14.0 ft.	
		100/.5	6"/12"	14.0			
20						Notes:	
						1. Backfilled borehole to ground surface with soil cuttings.	
						2. OVA readings from sample screening noted as follows: S1 = 7 ppm methane S2 = 9 ppm (5 ppm methane) S3 = 0 ppm No OVA readings above background in the breathing zone.	
						3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.	
WATER LEVEL DATA					SAMPLE IDENTIFICATION		SUMMARY
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO:			O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT): 14.0
			BOTTOM OF CASING	BOTTOM OF HOLE	WATER		ROCK CORED (LIN FT): ---
						SAMPLES: 3S	
						BORING NO. B-140	

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Appendix 3

Former Emerson Street Landfill

Table
Groundwater Analytical Results
Sampling Events: July, August, October, December 2010

Sample ID: Lab Sample Number: Sample Collection Date: Dilution Factor:	Part 703 Groundwater Standards (ug/L)	GMX-MW-1 B2986-01 July 14, 2010 1	GMX-MW-2 B2986-02 July 13, 2010 1	GMX-MW-3 B2986-03 July 13, 2010 1 & 20	GMX-MW-4 B2986-04 July 13, 2010 1	GMX-MW-5 B2986-05 July 13, 2010 1	GMX-MW-6S B2986-17 July 13, 2010 1	GMX-MW-6D B2986-18 July 14, 2010 1 & 20	P-5 B2986-08 July 14, 2010 1	MW-7 B2986-09 July 14, 2010 1	MW-5 B2986-10 July 14, 2010 1	GW-5 B2986-11 July 14, 2010 1	P-1 B2986-12 July 14, 2010 1, 200 & 1000	GW-6 B3444-01 August 26, 2010 1	MW-17 B3444-02 August 26, 2010 1	MW-16S B3444-08 August 26, 2010 1	MW-16D B3444-09 August 26, 2010 1	
Chlorinated VOCs																		
1,1,1-Trichloroethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Tetrachloroethene	5.0	<1 U	<1 U	1.9	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	5200 D	<1 U	<1 U	<1 U	<1 U	<1 U
Trichloroethene	5.0	5.5	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	3200 D	<1 U	<1 U	<1 U	<1 U	<1 U
cis-1,2-Dichloroethene	5.0	3.4	<1 U	870 D	<1 U	2.4	1.3	<1 U	<1 U	<1 U	<1 U	<1 U	24000 D	<1 U	<1 U	<1 U	<1 U	<1 U
trans-1,2-Dichloroethene	5.0	<1 U	<1 U	17	<1 U	<1 U	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	77	<1 U	<1 U	<1 U	<1 U	<1 U
Vinyl Chloride	2.0	<1 U	<1 U	930 D	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	1400 D	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-Dichloroethane	5.0	<1 U	2.2	50	1.5	2.7	13	<1 U	<1 U	<1 U	<1 U	<1 U	67	<1 U	<1 U	<1 U	<1 U	1.1
1,1-Dichloroethene	5.0	<1 U	<1 U	5.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	44	<1 U	<1 U	<1 U	<1 U	<1 U
Chloroethane	5.0	<1 U	<1 U	160 D	<1 U	3.5	74	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloromethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	0.6 J	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Chlorinated VOCs		8.9	2.2	2,035.6	1.5	8.6	89.5	0.0	0.0	0.6	1.2	0.0	33,988.0	0.0	0.0	0.0	0.0	1.1
Petroleum Related VOCs																		
Benzene	1.0	<1 U	<1 U	20	<1 U	<1 U	3.2	520 D	<1 U	<1 U	<1 U	<1 U	6.2	<1 U	<1 U	<1 U	<1 U	<1 U
Toluene	5.0	<1 U	<1 U	24	<1 U	<1 U	<1 U	300 D	<1 U	<1 U	<1 U	<1 U	13	<1 U	<1 U	<1 U	<1 U	<1 U
Ethyl Benzene	5.0	<1 U	<1 U	5.8	<1 U	<1 U	<1 U	19	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
m/p-Xylenes	5.0	<2 U	<2 U	15	<2 U	<2 U	<2 U	130	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
o-Xylene	5.0	<1 U	<1 U	11	<1 U	<1 U	<1 U	36	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal BTEX		0.0	0.0	75.8	0.0	0.0	3.2	1,005.0	0.0	0.0	0.0	0.0	19.2	0.0	0.0	0.0	0.0	0.0
Methyl tert-butyl Ether	10.0	<1 U	<1 U	140 D	<1 U	<1 U	54	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
2-Butanone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	21	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Carbon Disulfide	60.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	6.4	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Cyclohexane	Not Listed	<1 U	<1 U	5.3	<1 U	<1 U	<1 U	85	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Methylcyclohexane	Not Listed	<1 U	<1 U	8.5	<1 U	<1 U	<1 U	42	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Acetone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	330	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,1,2-Trichlorotrifluoroethane	5.0	<1 U	<1 U	18	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-Trichlorobenzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Isopropylbenzene	5.0	<1 U	<1 U	3.3	<1 U	<1 U	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Other VOCs		0.0	0.0	175.1	0.0	0.0	54.0	485.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total VOCs		8.9	2.2	2,286.5	1.5	8.6	146.7	1,490.9	0.0	0.6	1.2	0.0	34,007.2	0.0	0.0	0.0	0.0	1.1
Final Stabilized ORP (mV)		18	-280	-202	-276	-315	68	-86	-162	-162	-211	-112	-83	-110	-130	-179	-270	
Final Stabilized DO (mg/L)		8.04	0.00	0.00	0.00	0.00	NR	2.50	0.39	0.63	0.54	0.03	1.01	3.64	3.94	6.75	4.79	

D - Denotes results from initial dilution

D - Denotes results from secondary dilution (dilution factor of 1000)

Denotes results exceed the Part 703 Groundwater Standards

Former Emerson Street Landfill

Table
Groundwater Analytical Results
Sampling Events: July, August, October, December 2010

Sample ID:	Part 703 Groundwater Standards (ug/L)	LAB-101 B3962-01 October 20, 2010 1	LAB-102 B3962-03 October 20, 2010 1	LAB-103 B3962-05 October 19, 2010 1	LAB-104 B3962-06 October 20, 2010 1	LAB-105 B3962-07 October 19, 2010 1	LAB-106 B3962-08 October 20, 2010 1	LAB-107 B3962-09 October 19, 2010 1	LAB-108 B3962-11 October 19, 2010 1	LAB-101 B4508-01 December 9, 2010 1	P-4 B4508-04 December 9, 2010 1	MW-19 B4508-05 December 9, 2010 1	GW-9 B4508-09 December 9, 2010 1	LAB-109 B4646-02 December 29, 2010 1	GW-7R B4646-05 December 29, 2010 1
Chlorinated VOCs															
1,1,1-Trichloroethane	5.0	<1 U	<1 U	<1 U	1.3	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Tetrachloroethene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Trichloroethene	5.0	<1 U	<1 U	<1 U	1.1	<1 U	0.73 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	3.8
cis-1,2-Dichloroethene	5.0	1	<1 U	1.2	2.2	<1 U	1.1	<1 U	<1 U	<1 U	<1 U	<1 U	45	<1 U	53
trans-1,2-Dichloroethene	5.0	<1 U	<1 U	<1 U	1.7	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	2.8
Vinyl Chloride	2.0	<1 U	<1 U	1.3	3.8	<1 U	2.1	<1 U	<1 U	<1 U	<1 U	<1 U	67	<1 U	11
1,1-Dichloroethane	5.0	<1 U	<1 U	<1 U	45	<1 U	38	<1 U	<1 U	<1 U	<1 U	<1 U	3.8	<1 U	<1 U
1,1-Dichloroethene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloroethane	5.0	<1 U	<1 U	<1 U	11	<1 U	5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloromethane	5.0	<1 U	1.9	<1 U	<1 U	<1 U	<1 U	1.6	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Chlorinated VOCs		1.0	1.9	2.5	66.1	0.0	48.4	1.6	0.0	0.0	0.0	0.0	115.8	0.0	70.6
Petroleum Related VOCs															
Benzene	1.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Toluene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Ethyl Benzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
m/p-Xylenes	5.0	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	2.3	<2 U	<2 U	<2 U	<2 U	<2 U
o-Xylene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal BTEX		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0
Methyl tert-butyl Ether	10.0	<1 U	<1 U	<1 U	1.7	<1 U	0.87 J	<1 U	<1 U	<1 U	<1 U	0.61 J	1.6	<1 U	<1 U
2-Butanone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Carbon Disulfide	60.0	1.2	1.6	2	<1 U	<1 U	<1 U	1.3	1.9	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Cyclohexane	Not Listed	<1 U	<1 U	<1 U	0.73 J	<1 U	0.72 J	<1 U	<1 U	2.4	<1 U	<1 U	<1 U	<1 U	<1 U
Methylcyclohexane	Not Listed	<1 U	<1 U	<1 U	1.2	<1 U	0.67 J	<1 U	0.82 J	5.5	<1 U	<1 U	<1 U	<1 U	<1 U
Acetone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	3.4 J	<5 U	<5 U	<5 U	<5 U
1,1,2-Trichlorotrifluoroethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-Trichlorobenzene	5.0	<1 U	<1 U	<1 U	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Isopropylbenzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Other VOCs		1.2	1.6	2.0	4.8	0.0	2.3	1.3	2.7	7.9	3.4	0.6	1.6	0.0	0.0
Total VOCs		2.2	3.5	4.5	70.9	0.0	50.7	2.9	2.7	10.2	3.4	0.6	117.4	0.0	70.6
Final Stabilized ORP (mV)		-253	-322	-179	-319	-296	-300	-245	-362	-110	34	-128	-89	-167	-21
Final Stabilized DO (mg/L)		7.09	5.98	9.35	5.83	8.09	7.16	7.80	6.96	1.24	2.37	1.84	1.83	2.11	3.14

D - Denotes results from initial dilution
D₂ - Denotes results from secondary dilution (dilution factor of 100)
Denotes results exceed the Part

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Appendix 4

Appendix

New York State Department of Health Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the

work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m³ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m³ of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

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Appendix 1B

Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.
3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:
 - (a) Objects to be measured: Dust, mists or aerosols;
 - (b) Measurement Ranges: 0.001 to 400 mg/m³ (1 to 400,000 :ug/m³);
 - (c) Precision (2-sigma) at constant temperature: +/- 10 :g/m³ for one second averaging; and +/- 1.5 g/m³ for sixty second averaging;
 - (d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
 - (e) Resolution: 0.1% of reading or 1g/m³, whichever is larger;
 - (f) Particle Size Range of Maximum Response: 0.1-10;
 - (g) Total Number of Data Points in Memory: 10,000;
 - (h) Logged Data: Each data point with average concentration, time/date and data point number
 - (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
 - (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
 - (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
 - (l) Operating Temperature: -10 to 50° C (14 to 122° F);
 - (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.
4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.
5. The action level will be established at 150 ug/m³ (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m³, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m³ above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m³ continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM₁₀ at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

- (a) Applying water on haul roads;
- (b) Wetting equipment and excavation faces;
- (c) Spraying water on buckets during excavation and dumping;
- (d) Hauling materials in properly tarped or watertight containers;
- (e) Restricting vehicle speeds to 10 mph;
- (f) Covering excavated areas and material after excavation activity ceases; and
- (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m³ action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.