Appendix 11

Port of Rochester Environmental Management Plan

LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Port of Rochester
Environmental Management Plan

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

July 2005

Relationships. Resources. Results.

Port of Rochester
Environmental Management Plan

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1.0 INTRODUCTION

The Port of Rochester has experienced a broad range of commercial, industrial, marine, and recreational development and redevelopment. Over the years these properties have left subsurface environmental impacts at the Site. Recent subsurface investigations were completed at the Port of Rochester in conjunction with the Port of Rochester Harbor Improvement and Harbor Ferry Terminal Project (2000-2004). These subsurface investigations identified:

- Various but limited areas of petroleum impacted soil and groundwater, and
- Widespread iron manufacturing ash/cinder and slag waste, and widespread miscellaneous fill materials such as bricks, concrete, and railroad ties.

During development and construction, the presence of these subsurface impacts and fill materials will require special handling procedures that are detailed in this Environmental Management Plan (EMP).

The Port of Rochester encompasses an area bounded on the north by Lake Ontario Beach State Park, on the east by the Genesee River, on the west by Lake Avenue, and on the south by land owned by CSX Transportation. In addition the Monroe County Boat Launch (likely to be purchased by the City of Rochester) will be included in this EMP. The City of Rochester is the owner of most of the parcels within the Port of Rochester. The location of the properties where this EMP applies is depicted on Figure 1.

The majority of the Port of Rochester Site is listed as a suspect fill site by the Monroe County Environmental Management Council (MCEMC), as it reportedly contains ash, cinder, and slag fill. Figure 2 depicts the approximate boundary of this MCEMC waste disposal site. The designation of the Port of Rochester Site as a waste disposal site by the MCEMC may impact future development as any new re-development plan may need to be reviewed and approved of by a state, county, and/or local governing body. Figure 3 depicts the Port of Rochester EMP study area. Developers and Contractors disturbing the subsurface at the Port of Rochester Site shall follow the procedures outlined in this EMP. No solid waste generated from the Port of Rochester Site may be physically removed from the Port of Rochester Site without the expressed written permission from the City of Rochester Division of Environmental Quality (DEQ) Project Manager. This procedure is presented in detail in Section 4.5.

2.0 OBJECTIVE

This EMP is intended to provide guidance regarding the characterization and management of subsurface impacted soil, groundwater, and man-made industrial derived fill materials generated during development activities at the Port of Rochester Site.

2.1 Applicability of Environmental Management Plan

This EMP applies to any owner, Planner, Developer, Contractor, utility Contractor, and municipal agency that disturb the subsurface at the Port of Rochester Site.

3.0 BACKGROUND AND SUPPORTING ANALYTICAL DATA

This EMP utilizes data gathered from the previous subsurface investigative reports and observations made during construction of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project. The reports utilized for reference are as follows:

- Phase I Environmental Site Assessment – Charlotte Port of Rochester, New York by Galson dated April 1999.
- Port of Rochester Harbor Improvement and Harbor Ferry Terminal - Phase II Environmental Site Assessment, Preliminary Site Characterization Report by LaBella Associates, P.C. dated May 31, 2001.
- Phase III Environmental Site Assessment: Remediation Closure Report – NYSDEC Spill Number 990601 - Area #1 by LaBella Associates, P.C. dated October 2002.
- Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal by Haley & Aldrich of New York dated January 22, 2001.

In addition to the above reports prepared for the Port of Rochester, several miscellaneous environmental documents were generated by LaBella Associates and the City of Rochester during construction of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project in regard to New York State Department of Environmental Conservation (NYSDEC) Spill #990601. The documents are:

- Phase II Environmental Site Assessment: Underground Storage Tank Closure Report – Soil Sampling and Analysis: Port of Rochester Orphan Tank Discovered September 2003 by LeCesse Constriction.
- Underground Storage Tank Removal, Excavation Closure Sampling and Groundwater Sampling Report - North Warehouse, Port of Rochester; Rochester New York: Remediation Closure Report dated January 2003;
- Memo - January 15, 2003, Vortex Excavation – Port of Rochester Parking Lot Improvements;
- Memo - February 17, 2004, Groundwater Sample Results – Future Underground Storage Tank Excavation, Port of Rochester – Fast Ferry Terminal, Rochester, New York;
- Memo – September 11, 2002, Questionable wastewater discharge relating to groundwater encountered and pumped at the South 24" sewer outfall trench; Beach Avenue and North Parking Lot Improvements Project – Port of Rochester; and
- Drawing showing approximate areas where these issues were addressed.
- Letter from the City of Rochester of NYSDEC Active Spill #990601 to the NYSDEC dated May 6, 2004.
- Letter from the NYSDEC of Spill #990601 to the City of Rochester dated June 14, 2004.

The documents were submitted to the NYSDEC in a letter from the City of Rochester Division of Environmental Quality ("City DEQ") to the NYSDEC dated May 6, 2004, requesting No Further Remedial Action regarding the above listed issues and that the NYSDEC close NYSDEC Spill #990601. The NYSDEC responded to the City DEQ in a letter dated June 14, 2004 and indicated the NYSDEC does not require further remedial work regarding Spill #9970601 at this time. A copy of this NYSDEC No Further Action letter is included in Appendix 1. It should noted that this letter applies only to previously identified petroleum releases at the Port of Rochester; and it does not apply to slag or any man-made fill materials.

These reports and miscellaneous environmental documents may be reviewed at the City of Rochester's Department of Environmental Services located at City Hall, Room 300B. These reports detail locations of impacted soil and groundwater and areas where man-made fill materials have been identified.

3.1 Supporting Analytical Data

Representative samples of slag material from the Port of Rochester have been analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), eight (8) Resource Conservation and Recovery Act (RCRA) Metals, cyanide, and Polychlorinated Biphenyls (PCBs). Results of analysis indicate that the slag material is not representative of hazardous waste. The only compounds detected in these slag samples were arsenic, cadmium, and barium. Arsenic was the only compound that appeared to be consistently elevated above eastern USA background levels as published in the NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046. Appendix 2 contains tables summarizing analytical results of the slag and man-made fill materials from samples referenced in the Port of Rochester Harbor Improvement and Harbor Ferry Terminal - Phase II Environmental Site Assessment, Preliminary Site Characterization Report by LaBella Associates, P.C. dated May 31, 2001.

In approximately 20 percent of the soil samples analyzed the levels of arsenic were elevated above the NYSDEC TAGM #4046 Eastern USA background levels and above the New York State Department of Health (NYSDOH) recommended level of 20 part per million (ppm). In addition to the elevated concentrations of arsenic there is the potential presence for elevated levels of additional heavy metals and SVOCs.

Table 1 below details sample locations and the associated arsenic concentrations that were considered representative of slag fill in areas in the area of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal Project (2000-2004).

Table 1
Arsenic Concentration of Slag Fill Material at the Port of Rochester

Sample Location	Arsenic Concentration (mg/Kg)	Exceed USA Eastern Background Concentration (2-12 mg/Kg)
Bourne TP #1	20.6	Yes
LBA TP #1	3.1	No
LBA TP #6 (4')	17.8	Yes
LBA TP #6 (white slag)	<6.23	No
LBA TP #6 (black slag)	17.5	Yes
LBA TP #8	52	Yes
LBA TP #9	<4.90	No
LBA TP #10	51.1	Yes
LBA TP #15	7.12	No
LBA TP #18	<4.40	No
HA #114	3.91	No
HA #116	2.81	No

Petroleum hydrocarbon related compounds from ash/cinders have been detected at the Port of Rochester Site. Analyses of the ash/cinders have typically detected low-levels of petroleum related SVOCs. In addition, petroleum hydrocarbon related compounds were detected in the soil and groundwater (not from ash/cinders) at intermittent locations in the vicinity of petroleum storage tanks, potential historical spills

from former railroad activities (e.g. locomotives and historical operations) at the Port of Rochester. Samples have typically detected low levels of VOCs and SVOCs.

In general, test results from soil samples taken as part of the Phase II Environmental Site Assessment; Preliminary Site Characterization Report prepared for the Port of Rochester Harbor Improvement and Harbor Ferry Terminal may be considered sufficient for waste characterization of slag, coal, cinders, railroad ballast, and ash (fill) that is present at the Port of Rochester Site.

Test results from subsurface Petroleum Impacted Media, not including slag, coal, cinders, railroad ballast, and ash, are included as Part of the Phase II Environmental Site Assessment. Tables summarizing the analytical results from the Phase II Environmental Site Assessment are included in Appendix 2. Existing test results are likely not sufficient for waste characterization of subsurface Petroleum Impacted Media.

The cumulative findings of these reports indicate a large portion of the Port of Rochester Site contains slag, ash and foundry waste. The layer of slag and foundry waste is found in an approximately 625,000 square foot area (Figure 4) and averages approximately 4-feet thick (Figures 4 and 5). Estimates of the total volume of slag, ash, and foundry waste indicate that approximately 93,000 cubic yards of this material is present at the Port of Rochester Site. The depth of current ground surface elevation to the slag layers varies widely over the Port of Rochester Site. The depth from ground surface to the slag layers in the outlying portions of the Port of Rochester Site ranges from 3 to 5-feet below ground surface, whereas depth from ground surface to slag layers in the center portion range from as little as 1-foot below the ground surface (Figure 5).

NYSDEC regulations regarding management of solid waste are contained in NYCCR Part 360. A provision has been included in Part 360 that allows for non-hazardous solid waste to be properly managed and replaced within the confines of an inactive solid waste site with NYSDEC approval. Proper management requires that care be taken in planning, monitoring, and testing of excavated waste and fill material to confirm that it is non-hazardous, and to allow proper replacement and re-use on-site. A letter from LaBella Associates, P.C. to the NYSDEC dated January 21, 2002 documented the NYSDEC's acceptance of the re-use of the man-made fill materials at the Port of Rochester Site. The NYSDEC approval of re-use of man-made fill materials was specifically for the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project. A copy of this letter in included in Appendix 1.

4.0 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been designed for development and construction activities at the Port of Rochester Site. This EMP pertains to earthwork activities that will disturb the subsurface at the Port of Rochester.

4.1 Identification of Solid Waste Impacted Media

Solid waste layers are present throughout the Port of Rochester as depicted on Figure 4 and cross sections of the slag fill material is depicted on Figure 5. The solid waste is generally present at depths immediately below the "topsoil" layer or pavement/sub-base layer, which varies in depth from 6 inches to 24 inches below ground surface. The logs of the borings, test pits, and monitoring wells depicted on Figure 4 are included in Appendix 3.

Fill materials present at the Port of Rochester Site include but are not limited to the following:

- Slag
- Railroad ties
- Railroad ballast
- Construction and Demolition debris from industrial uses
- Ash
- Cinders
- Railroad lines
- Coal

The presence of these fill man-made fill materials is generally from historical activities at the Port of Rochester Site. Figure 6 depicts historical buildings and structures formerly located at the Port of Rochester.

These fill materials are considered by the NYSDEC as solid waste that cannot be treated as Construction and Demolition (C&D) solid waste, due to the nature of its origin as a solid waste derived from an industrial source. The NYSDEC has indicated during prior re-development activities at the Port of Rochester that the NYSDEC would not approve of the disposal of this material at C&D debris landfills. The NYSDEC indicated during the previous Port of Rochester re-development activities that excavating the fill materials containing slag, coal, ash, cinders, railroad ties, railroad ballast, railroad lines, and C&D debris from industrial uses and placing these solid wastes into similar filled areas within the same site would be acceptable to the NYSDEC and in accordance with 6 NYCRR Part 360-1.7(b)(9). Alternatively, these materials can be disposed off site in a New York State (NYS) Part 360 permitted landfill.

Solid Waste Impacted Media can typically be visually identified by the presence of slag waste ranging in size from approximately 1 inch to 10 inches in diameter. A photographs taken of the slag waste during the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project is included in Appendix 4.

The media containing slag may also exhibit a sulfur odor. The off-gas from the disturbance of this slag waste has been sampled and analyzed. The analytical results indicate that the off-gasses do not represent a worker health and safety concern from Hydrogen Sulfide or VOCs for construction workers at the Site. Refer to letter report issued by LaBella Associates, P.C. to the City of Rochester dated January 24, 2004 and test results included in Appendix 1.

The presence of coal, cinders, railroad ballast and ash can be visually identified during excavation. If questions arise during identification of the solid waste the City DEQ and the Environmental Project Monitor (EPM) shall make the final determination, for the classification on how the spoils generated during the construction activities at the Site will be managed.

4.2 Identification of Petroleum Impacted Media

Petroleum Impacted Subsurface Media are known to be located at the Port of Rochester at locations depicted on Figure 4. There is a potential for additional areas of Petroleum Impacted Subsurface Media to be present at the Port of Rochester.

Petroleum Impacted Subsurface Media can be identified by the media exhibiting a petroleum-like odor, gray to black staining, and elevated readings of total VOCs on a Photo-Ionization Detector (PID). Groundwater impacted by petroleum may exhibit a petroleum odor or sheen. If questions arise during identification of Petroleum Impacted Media, the City DEQ and the EPM will make the final determination, for the classification on how the spoils generated during the construction activities at the Site will be managed.

The volatilization of contaminants present in Petroleum Impacted Media may represent a worker health and safety concern for construction workers at the Site. Refer to Section 8.0 of this EMP.

4.3 On-Site Management of Solid Waste Impacted Media and Petroleum Impacted Media

Solid Waste Impacted Media that is excavated should not be used as backfill in utility trenches. Solid Waste Impacted Media may be relocated on-site or legally disposed of at a NYS Part 360 Landfill. The re-location area of Solid Waste Impacted Media will be approved by the City DEQ and the EPM.

The staging of Solid Waste Impacted Media should be performed in a manner where it is segregated from non-Solid Waste Impacted Media. Staging locations of Solid Waste Impacted Media will be approved by the City DEQ and the EPM.

Prior to excavating in areas where solid waste is anticipated, the Contractor should remove the top layer of non–Solid Waste Impacted Media (i.e. topsoil, asphalt, etc.) as practicable and keep the material segregated from any Solid Waste Impacted Media. If the material is to be relocated for re-use on site, the Solid Waste Impacted Media should be covered with an impervious material (e.g. asphalt or concrete) or with a minimum of 24-inches of non-impacted soil or fill at residential locations or 12-inches of non-impacted soil or fill at commercial locations.

Subsurface Solid Waste Impacted Media is not allowed to leave the Port of Rochester work area without expressed written consent from the City DEQ and the EPM.

Solid (non-aqueous) Petroleum Impacted Media which cannot be separated shall be segregated into separate stockpiles and staged on and covered with one layer of 6-mil thick polyethylene sheeting at the end of each work day. The Contractor shall implement reasonable care to secure sheeting and maintain such stockpiles' integrity.

If necessary, liquid or aqueous Petroleum Impacted Media (i.e. groundwater) shall be pumped into a holding tank, approved of by the EPM.

Petroleum Impacted Media is not allowed to leave the Port of Rochester work area without expressed written consent from the City DEQ and the EPM.

Table 2 below details requirements and re-use of Solid Waste and Petroleum Impacted Media at the Port of Rochester Site.

Table 2
On-Site Re-Use Requirements

Material Classification	Material Description	Disposal / Re-use	On-Site Cover Requirements
Class 1	• Man-made fill materials including but not limited to slag, ash, cinders, railroad ballast and ties, etc. (Railroad ties cannot be re-used on-site in most situations) • Petroleum hydrocarbon related compounds that are less than the NYSDEC TAGM 4046 RSCO.	• Can be re-used at the Port of Rochester Site with NYSDEC approval. • If cannot be re-used at the Port of Rochester Site, must be legally disposed of at a NYS Part 360 landfill	Must be covered with 12 (commercial) or 24 (residential) inches with non-impacted soil or fill, or with asphalt or concrete paving.
Class 2	• Petroleum hydrocarbon related compounds that are above the NYSDEC TAGM 4046 RSCO.	• Cannot be re-used at the Port of Rochester Site without treatment. Must be legally disposed of at a permitted NYS Part 360 landfill.	Cannot be re-used on-Site. Must be staged on and covered with 6-mil polyethylene sheeting pending disposal at a NYS Part 360 landfill.

NOTE: NYSDEC TAGM RSCO 4046 denotes New York State Department of Environmental Conservation Technical and Administrative Guidance Manual 4046 Recommended Soil Cleanup Objective

4.4 Off-Site Disposal of Solid Waste and Petroleum Impacted Media

The City DEQ, as property owner, shall approve of all proposed Treatment, Storage and Disposal (TSD) facilities and waste transporters prior to use. Removal of any site materials shall be approved in writing by the City DEQ, including submission of completed Waste Profiles and Waste Manifests for signature by the City DEQ.

Copies of all waste disposal manifests, and landfill receipts shall be submitted to the City DEQ and the EPM by the Contractor within two (2) calendar days upon removal from the project location.

Solid Waste Impacted Media that cannot be re-used on-site and solid (non-aqueous) Petroleum Impacted Media that will not be treated on-site shall be transported off-site by a NYS Part 364 permitted vehicles to a NYS Part 360 Permitted Landfill approved by the City DEQ. The EPM shall perform all characterization testing.

Liquid or non-aqueous Petroleum Impacted Media shall be legally disposed of at a location approved of by the City DEQ. The EPM shall perform all characterization testing.

The Contractor shall not dispose of Solid Waste or Petroleum Impacted Media, environmental impacted media, C&D debris, or any on-site derived subsurface material without expressed written permission from the City DEQ Project Manager and the EPM.

4.5 Waste Stream Tracking

The EPM shall track the off-site disposal of each waste stream on an appropriate spread sheet tracking log to allow for accurate material quantification. An example of a Material Tracking spread sheet is included in Appendix 5.

4.6 Unknown Environmental Issues

This EMP includes procedures and protocols to manage known environmental subsurface impacts at the Port of Rochester. If unknown subsurface environmental impacts are encountered, the City DEQ and EPM will determine procedures and protocols to manage any additional environmental impacts.

5.0 IMPLEMENTATION OF EMP

During earthwork phases of construction activities at the Port of Rochester, it is recommended that an EPM be assigned to implement the EMP on a part time or full time basis. The responsibilities of the EPM with regard to the EMP are as follows:

- Working with the Developers and Construction Manager, and the City of Rochester Department of Environmental Services or City DEQ to pre-determine off-site disposal locations.
- Working with construction manager and City DEQ to determine re-location areas of Solid Waste Impacted Media.
- Working with Contractors to identify Solid Waste Impacted Media and Petroleum Impacted Solid Waste.
- Work with the City DEQ to characterize and approve off-site disposal of Solid Waste and Petroleum Impacted Media.
- Work with the Contractors to monitor excavations for evidence of environmental impairment.
- Direct the construction manager as to proper staging, covering, and containment of Petroleum Impacted Media.
- Sampling, analysis, and any additional waste stream profiling as required by a receiving NYS Part 360 landfill, or the NYSDEC.
- Implementation of the Health and Safety Plan (HASP) for the EPM and City DEQ personnel at the site. Contractors and other personnel working at the site are responsible for their own HASP (see Section 7.0).
- Implementation of the Community Air Monitoring Plan (CAMP) for the site (see Section 8.0).

6.0 DECONTAMINATION OF EQUIPMENT

All equipment used at the Site that comes in contact with Petroleum Impacted Media will require decontamination using clean water to wash off soil and water residue from construction activities. The Contractor shall construct a temporary decontamination pad that will be used to decontaminate the earthwork related equipment.

The decontamination pad shall be constructed of two layers of 6-mil reinforced polyethylene sheeting (or equivalent), with a sump, for the purposes of collecting wash water. Wash water shall be stored in 55-gallon drums, storage tanks or incorporated into tanks for treatment and proper disposal as determined by the EPM. Accumulated sediments shall be legally disposed of in accordance with all applicable regulations at a location approved by the City DEQ and the EPM.

The Contractor shall be responsible for all costs relating to legally disposing of the decontamination pad materials at a facility approved by the City DEQ and the EPM. All permits and waste disposal manifests shall be submitted to the City DEQ and the EPM for review and signature prior to shipment. All permits, waste disposal manifest, and receipts associated with decontamination pad materials disposal shall be submitted to the City DEQ and the EPM.

The Contractor shall provide potable water and high-pressure sprayers for decontamination activities.

Personal decontamination procedures shall follow the procedures set forth in the HASP and the Contractor shall supply a suitable container for disposal of personal protective equipment, such as a steel drum. Disposal of PPE is the responsibility of the Contractor.

7.0 HEALTH AND SAFETY PLAN (HASP)

This EMP contains a Site Specific HASP for the Port of Rochester developed by LaBella Associates, P.C. This HASP is designated for the EPM and City DEQ personnel only. A copy of this HASP is included in Appendix 6.

The LaBella Associates, P.C. HASP is included as an example, and contractors disturbing the subsurface at the Port of Rochester will need to develop and rely on their own HASP to manage health and safety issues associated with potential exposure to site chemicals of concern and any other potential issues.

8.0 COMMUNITY AIR MONITORING PLAN (CAMP)

This EMP contains a CAMP for earthwork portions of the Site development. This CAMP should be implemented when the subsurface media (i.e. Solid Waste and Petroleum Impacted Media) at the Port of Rochester Site has the potential to be disturbed. A copy of this CAMP is included in Appendix 7.

The EPM will be responsible to implement the CAMP and will direct the Contractor disturbing the subsurface at the Port of Rochester when abatement measures are required to mitigate particulate and VOC emissions. The Contractor shall implement these measures as directed by the EPM. The Contractor will be required to have a sufficient amount of water trucks, polyethylene sheeting, and other mitigative supplies staged and readily available at the site.

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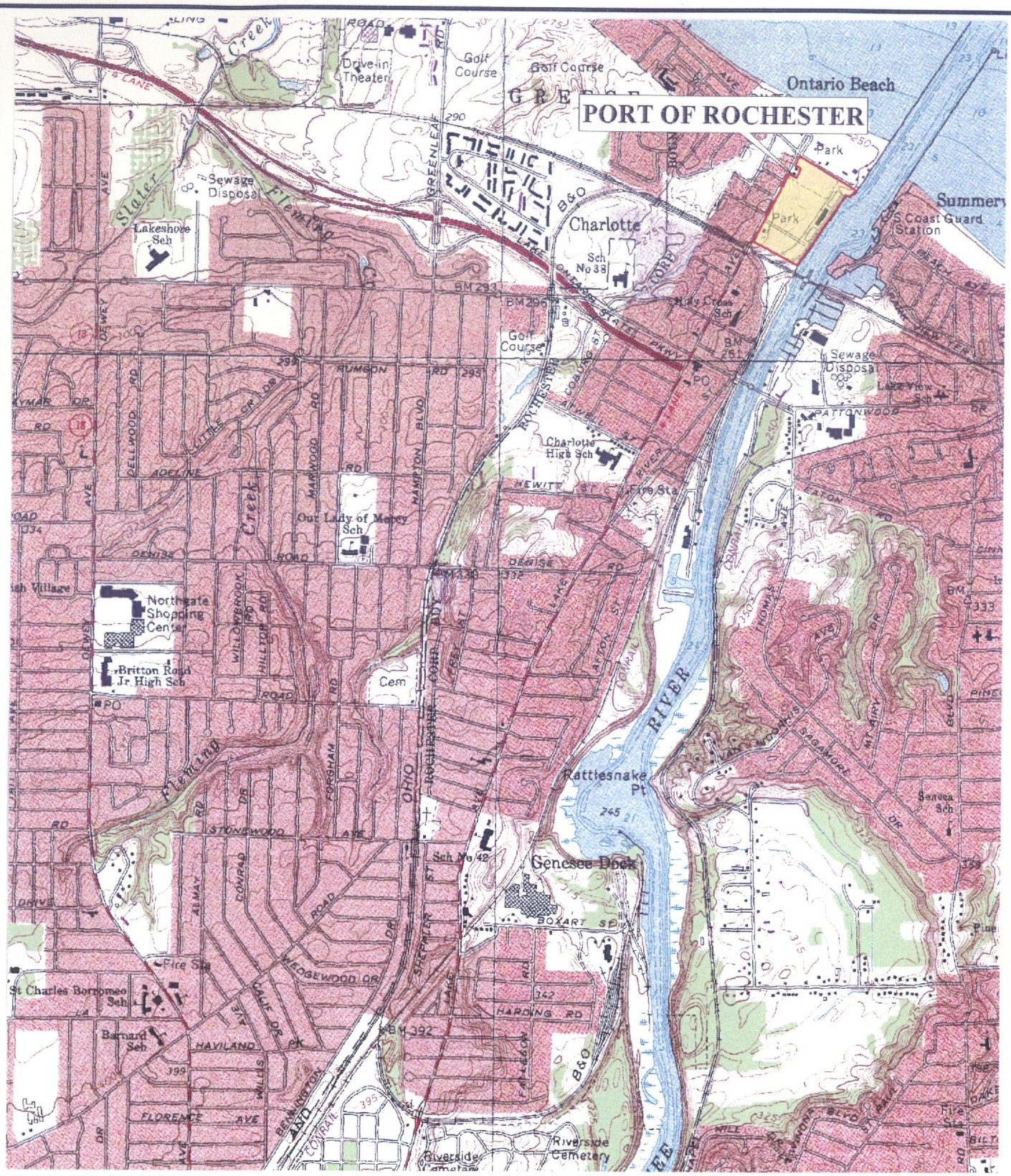
300 State Street
Rochester, New York 14614

Figures



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Scale: 1:24,000

FIGURE 1
Site Location Map

Port of Rochester
Rochester, New York

LABELLA

LaBella Project No 205182

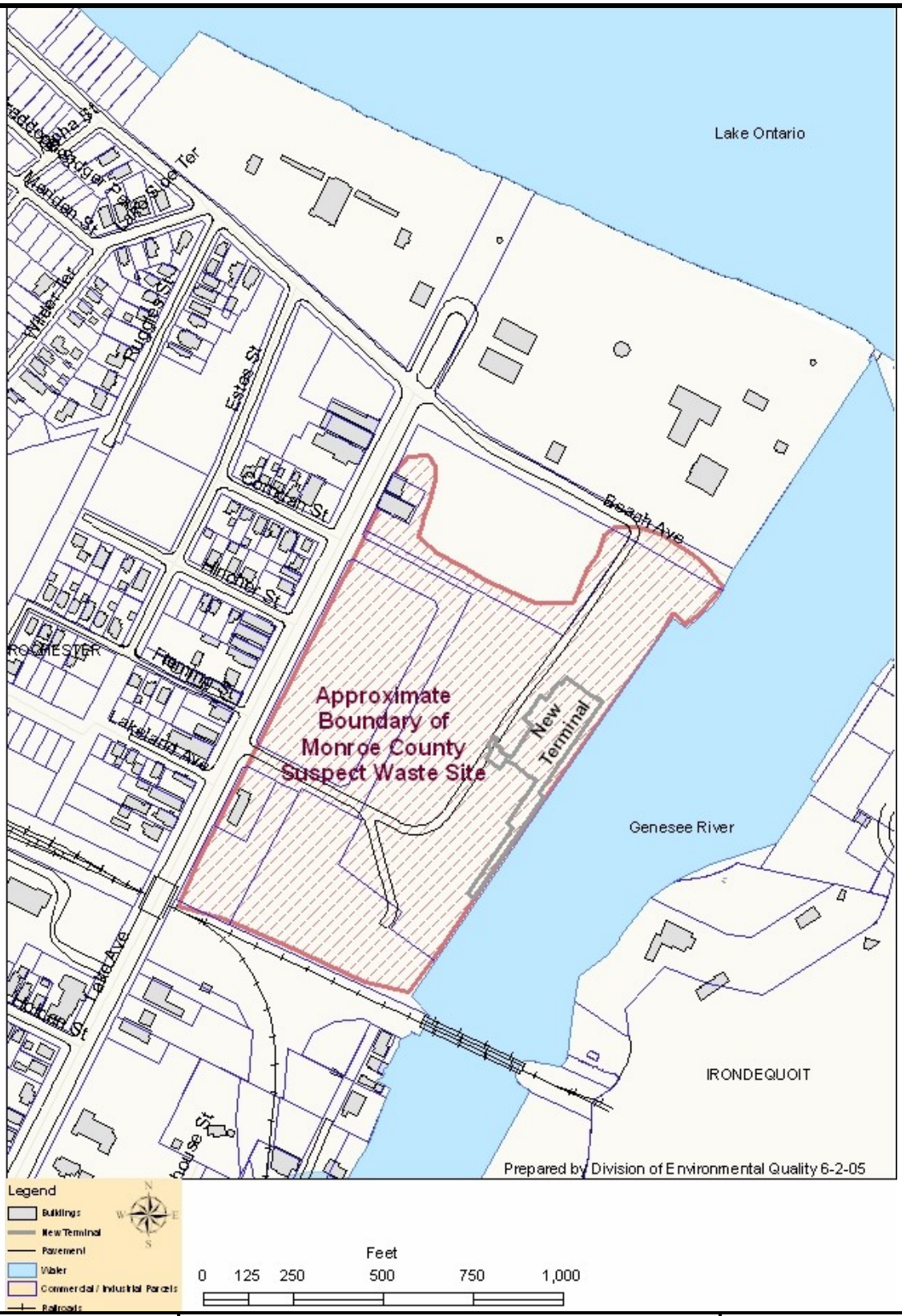

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FIGURE 2

Site Location Map of Monroe County Suspect Waste Site

Port of Rochester
Rochester, New York

LABELLA

LaBella Project No 205182

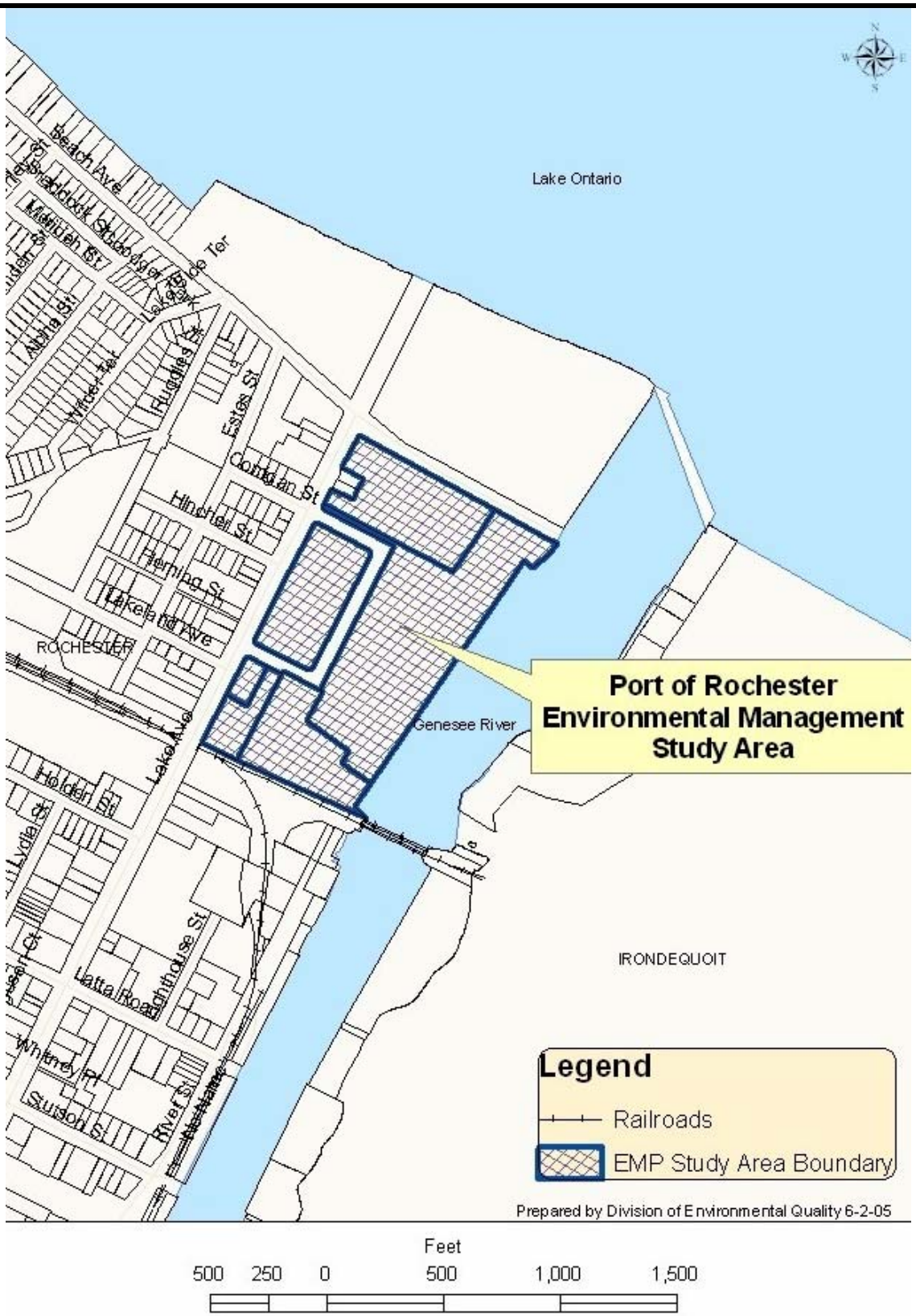

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FIGURE 3
Port of Rochester EMP Study Area

Port of Rochester
Rochester, New York

LABELLA

LaBella Project No 205182

LAKE AVENUE (99' R.O.W.)

GRID NORTH

FERRY STREET (66' R.O.W.)

CORRIGAN STREET (66' R.O.W.)

RIVER STREET (99' R.O.W.)

HINCHER STREET

CORRIGAN STREET

DENTZEL STREET

DROP-OFF LOOP

TERMINAL BUILDING

MONROE COUNTY BOAT LAUNCH PROPERTY

GENESEE RIVER FLOW

SLAG IMPAIRED. MAY CONTAIN 8 RCRA METALS AND/OR BASE NEUTRAL SVOCS ABOVE NYSDEC TAGM 4046 PUBLISHED BACKGROUND LEVELS.

PETROLEUM IMPAIRED GROUNDWATER ABOVE NYSDEC PART 703 GROUNDWATER STANDARDS

SOIL IMPAIRED WITH SEMI VOLATILE ORGANIC COMPOUNDS STARS AND 8 RCRA METALS ABOVE NYSDEC TAGM 4046 PUBLISHED BACKGROUND LEVELS. SPILL FILE INACTIVATED.

APPROXIMATE LOCATION OF ORPHAN UST. REMOVAL. SPILL FILE INACTIVATED.

APPROXIMATE LOCATION OF NEW USTS

SOIL IMPAIRED BY SVOC'S AND 8 RCRA METALS ABOVE NYSDEC STARS & TAGM 4046 PUBLISHED BACKGROUND LEVELS

APPROXIMATE LOCATION OF SEWER OUTFALL

APPROXIMATE LOCATION OF VORTEX SOIL REMOVAL. SPILL FILE INACTIVATED.

PETROLEUM IMPAIRED SOIL AND GROUNDWATER ABOVE NYSDEC STARS AND TAGM 4046 AND NYSDEC PART 703 GROUNDWATER STANDARDS. REMEDIATED, SPILL FILE INACTIVATED.

APPROXIMATE LOCATION OF UNDERGROUND TANK REMOVALS AT NORTH WAREHOSE. SPILL FILE INACTIVATED.

SOIL IMPAIRED WITH VOLATILE ORGANIC COMPOUNDS AND 8 RCRA METALS ABOVE NYSDEC STARS AND TAGM 4046 PUBLISHED BACKGROUND LEVELS. SPILL FILE INACTIVATED.

LBA BORING #31
LBA BORING #30 EL:279.09
LBA BORING #32 EL:278.71
GPMW#5 BORING #29 EL:278.76
LBA BORING #28 EL:277.47
HA BORING #107 EL:266.08
LBA TP#11
LBA TP#17
LBA TP#12
LBA MW#3 HA BORING #114 EL:261.92
LBA TP#13
LBA TP#16
LBA TP#9
LBA TP#10
LBA TP#20
LBA TP#5
LBA TP#18
LBA MW#2 HA BORING #117 EL:253.70
LBA TP#6
LBA TP#19
LBA TP#22
LBA TP#4
LBA TP#3
LBATP#2
HA BORING #102 EL:253.50
HA BORING #118 EL:252.78
B05-1
HA BORING #113 EL:270.80
B05-2
LBA TP#15
LBA TP#14
B05-4
HA BORING #122 EL:252.80
HA BORING #115 EL:253.68
HA BORING #116 EL:252.44
LBA TP#8
LBA TP#7
LBA MW#1 HA BORING #111 EL:251.83
LBA TP#1
LBA TP#21
B05-5
HA BORING #106 EL:250.79
HA BORING #103 EL:253.86
BOURNE TP#1
HA BORING #123 EL:253.64
LBA BORING #36 EL:250.25
LBA BORING #35
LBA BORING #34 EL:250.34
LBA BORING #37 EL:250.53
GPMW#6 BORING #31 EL:250.94
LBA BORING #33 EL:250.90
BOURNE TP#2A
BOURNE TP#2B
HA BORING #104 (ON CONC WALL) EL:254.25
HA BORING #120 EL:254.31
HA BORING #105 (ON CONC WALL) EL:253.96
HA BORING #119 EL:250.50
B05-3
BOURNE TP#3B
BOURNE TP#3A
BOURNE TP#4
HA BORING #101 EL:251.80

KEY

SOIL BORING AND MONITORING WELLS

MACHINE ADVANCED LABELLA TEST PITS (LBA TP)

MACHINE ADVANCED BOURNE TEST PITS (BOURNE TP)

APPROXIMATE EXTENT OF SLAG FILL

A A' CROSS-SECTION

NOTE: ALL LOCATIONS ARE APPROXIMATE.

NO.	REVISION	BY	DATE
1			
2			
3			
4			
5			
6			

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ROCHESTER, NY 14614
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PROJECT/CLIENT
PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN
CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE
SITE CHARACTERIZATION OF SUBSURFACE ENVIRONMENTAL ISSUES AT THE PORT OF ROCHESTER SITE

ISSUED FOR: FINAL

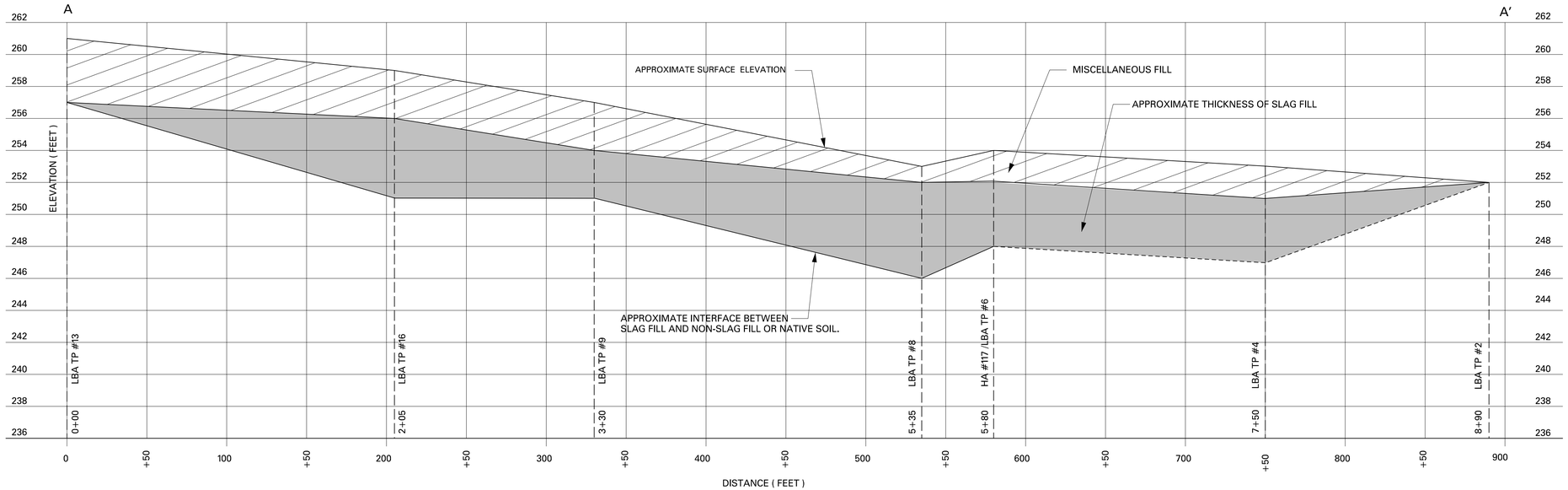
SCALE: 1" = 60'
DESIGNED BY: MFP
DRAWN BY: GK
REVIEWED BY: GRS
DATE: JULY 2005

PROJECT NUMBER
205182

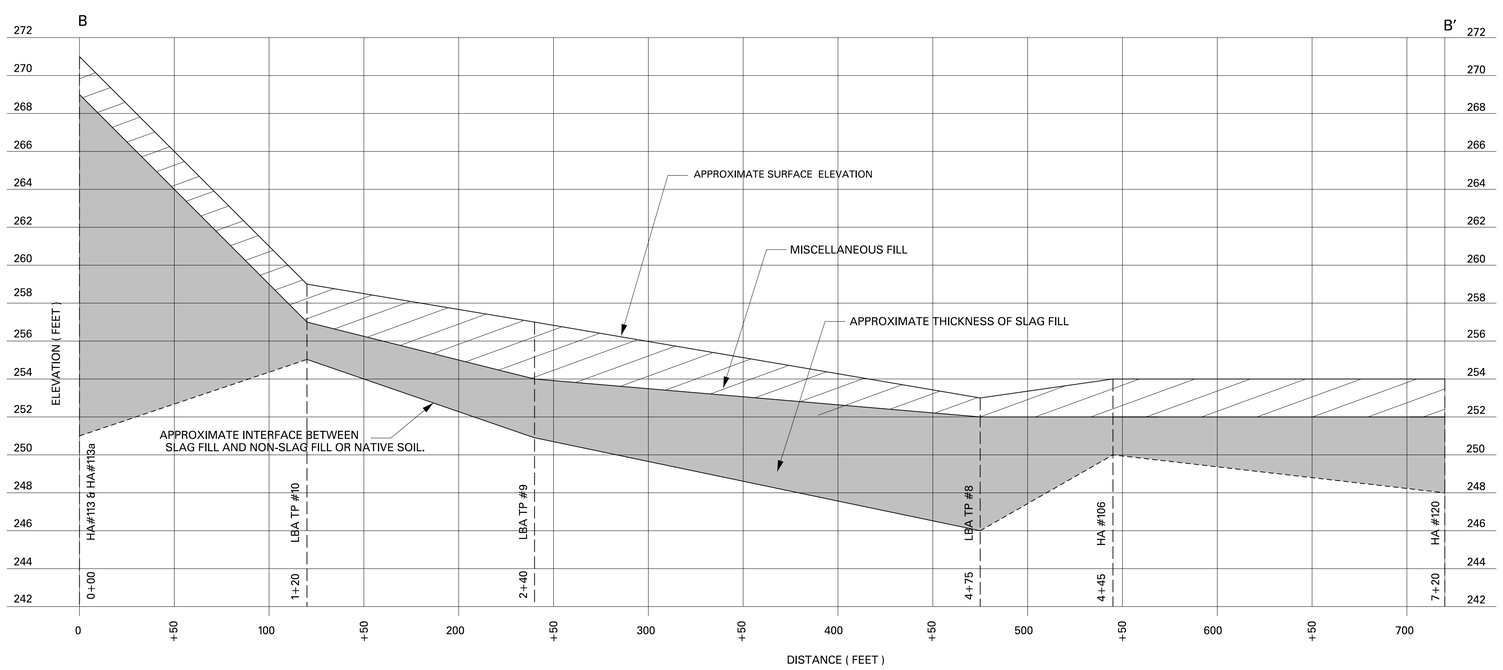
DRAWING NUMBER
FIG 4

SHEET OF 1

7/25/2005 9:04:59 AM n:\Rochester\DEQ\205182\sustain\FIGURE 4 071105.dgn



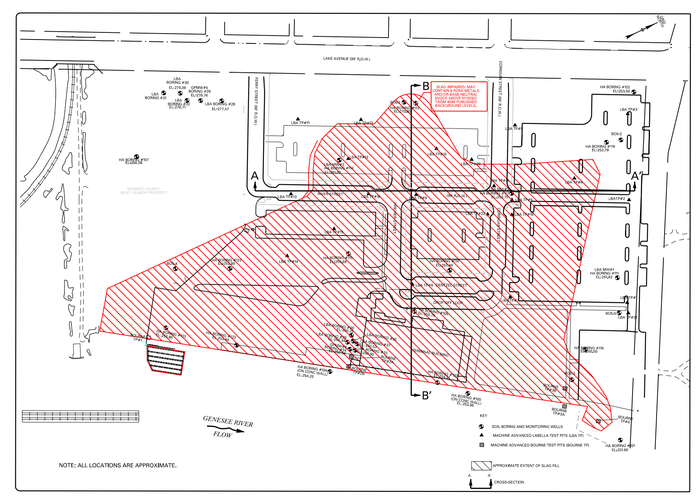
SECTION A-A'



SECTION B-B'

NOTES:

1. ALL ELEVATIONS AND DISTANCES ARE APPROXIMATE.
2. THICKNESS OF SLAG WAS DETERMINED FROM INFORMATION REFERENCED IN THE PORT OF ROCHESTER HARBOR IMPROVEMENT AND HARBOR FERRY TERMINAL PHASE II ENVIRONMENTAL SITE ASSESSMENT BY LABELLA ASSOCIATES, P.C. DATED MAY 31, 2001.
3. THICKNESS AND LOCATION OF SLAG FILL SHALL BE CONSIDERED APPROXIMATE, ESPECIALLY BETWEEN TEST BORINGS WHERE THICKNESS OF SLAG WAS INTERPOLATED.
4. THE APPROXIMATE THICKNESS OF SLAG FILL DOES NOT INCLUDE CONSTRUCTION AND DEMOLITION DEBRIS OR OTHER "NON-SLAG" FILL MATERIALS.
5. ELEVATIONS ARE REFERENCED TO THE CITY OF ROCHESTER DATUM.
6. DRAWINGS OF CROSS-SECTIONS ARE NOT INTENDED TO REPRESENT SUBSURFACE CONDITIONS BENEATH SLAG FILL.
7. DASHED LINE INDICATES THAT SLAG WAS STILL PRESENT AT THE END OF THE BORING, AND CONSEQUENTLY THE DEPTH OF SLAG CANNOT BE DETERMINED WITH CERTAINTY.



NO.	REVISION	BY	DATE
1			
2			
3			
4			
5			
6			

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT

PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN

CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE

CROSS-SECTION OF SLAG FILL MATERIAL

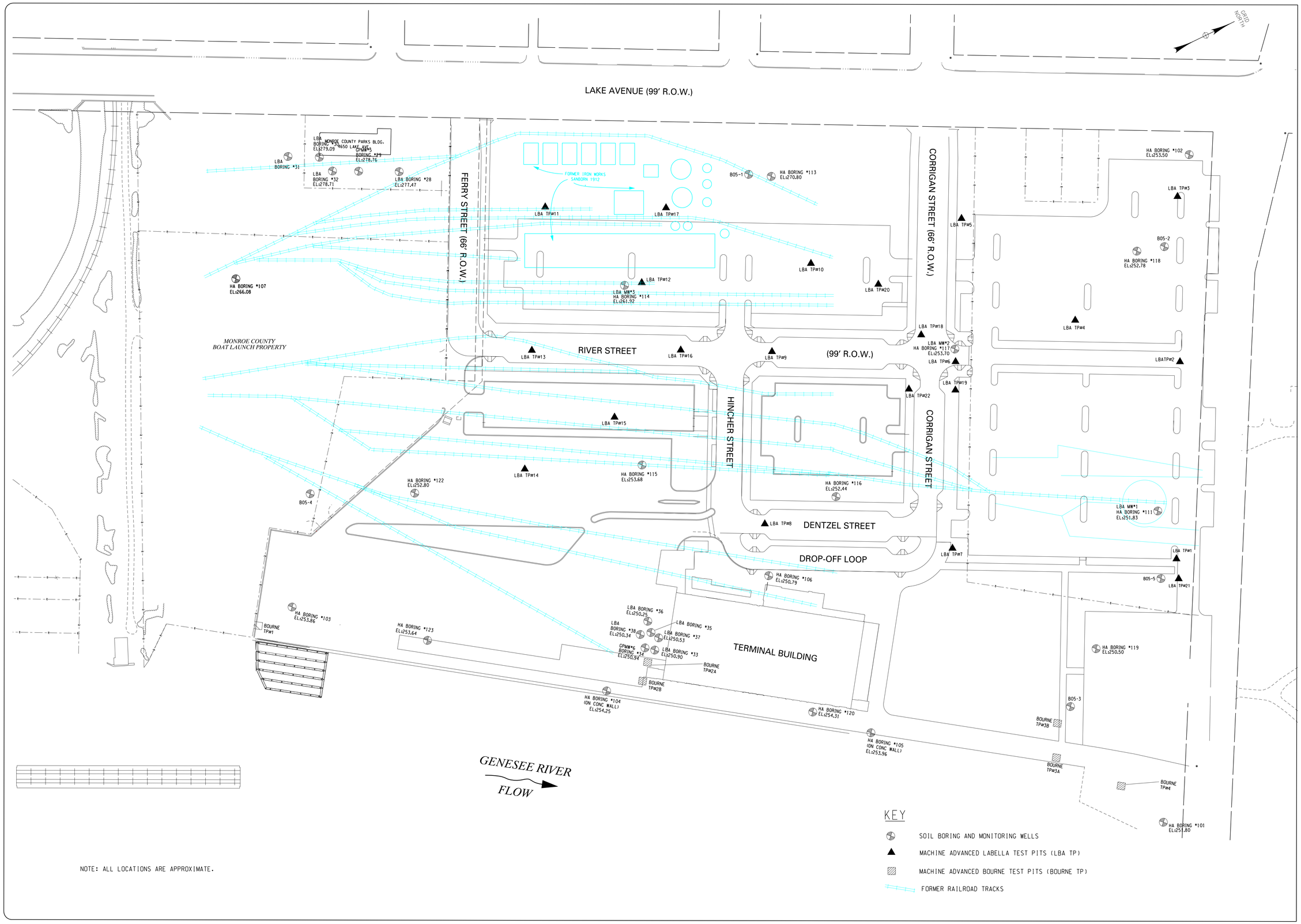
ISSUED FOR: FINAL

SCALE: 1" = 40'
DESIGNED BY: MFP
DRAWN BY: GK/RCN
REVIEWED BY: GRS
DATE: JULY 2005

PROJECT NUMBER
205182

DRAWING NUMBER
FIG 5

SHEET OF 1



NO.	REVISION	BY	DATE
1			
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4			
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6			

LABELLA Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT
PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN
CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE
SITE CHARACTERIZATION SAMPLE POINT LOCATION MAP OF PORT OF ROCHESTER WITH HISTORICAL BUILDINGS CIRCA 1912

ISSUED FOR: FINAL

SCALE:	1" = 60'
DESIGNED BY:	MFP
DRAWN BY:	GK
REVIEWED BY:	GRS
DATE:	JULY 2005

PROJECT NUMBER
205182

DRAWING NUMBER
FIG 6

SHEET OF 1

n:\Rochester DEO\205182\solation\FIGURE 6 071105.dgn 9:06:22 AM 7/25/2005

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

Appendix 1

Miscellaneous Letters

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Technical Support
6274 East Avon-Lima Road, Avon, New York 14414
Phone: (585) 226-2466 • **FAX:** (585) 226-8139
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

June 14, 2004

Mr. Joseph J. Biondolillo
Sr. Environmental Specialist
City of Rochester
Division of Environment Quality
30 Church Street
Room 300B
Rochester, New York 14614

Dear Mr. Biondolillo:

Re: NYSDEC Spill # 9970601
Port of Rochester
Lake Avenue
Rochester (C), Monroe County

Let this letter serve as follow up to both your May 24, 2004 submission and the June 8, 2004 meeting and site visit attended by this Department, the City of Rochester and LaBella Associates, regarding the above referenced spill location. Based upon the remedial work completed at the site, the information contained in the May 24, 2004 submission, previously submitted information and the current and expected future use of the property, the Department does not require any additional remedial work at this time. This spill has been removed from the Department's active files. However, be aware that this ruling does not preclude reactivation of this case should new information become available and/or an impact to receptors be discovered in the future.

If there are any questions or comments, feel free to contact me at either the above address or by telephone at 585-226-5438.

Sincerely,

Michael F. Zamiarski P.E.

Michael F. Zamiarski, P.E.
Environmental Engineer II
Bureau of Technical Support
Division of Environmental Remediation

cc: Greg Senecal, LaBella Associates, P.C.

LABELLA

LaBella Associates, P.C.
Engineering, Architecture,
Environmental Consulting, and Surveying

Sergio Esteban, P.E.
Michael W. Haley, L.S.
Robert A. Hasly, A.I.A.
Salvatore A. LaBella, P.E.
James R. McIntosh, P.E.
Michael S. Schaffron, P.E.

January 21, 2002

Dan David, P.E.
New York State Department of Environmental Conservation
Region 8 Solid Waste Division
6274 East Avon Lima Road
Avon, New York 14414

RECEIVED
JAN 23 2002
SOLID HAZARDOUS MATERIALS
REGION 8

RE: Port of Rochester, North Parking Lot/Beach Avenue Pedestrian Improvements
Northern Street Design and Construction Project
Port of Rochester, Rochester, New York
LaBella Project # 99150 Phase 2320

Dear Mr. David:

This letter is a follow up to our conversation on Monday, January 14, 2002, regarding the above referenced construction project.

During our conversation, we discussed the management of fill materials containing slag, coal, cinders, railroad ballast, and ash at the City of Rochester-Port of Rochester Redevelopment Project Site. This area of solid waste/fill encompasses approximately 13 acres on the north portions of the Site, and appears to be from historical filling associated with railroad terminals and sidings and a large iron foundry and blast furnace. The Port of Rochester Redevelopment Plan envisions paved parking lots and commercial development pads in this area of the project Site. See attached Figure.

I indicated to you that the fill materials containing slag, coal, cinders, railroad ballast, and ash had been sampled and analyzed, and that the material contained levels of arsenic above NYSDEC TAGM #4046 published Eastern USA background levels. Representative samples were submitted for TCLP analysis for metals. No TCLP failures were realized in the samples of slag and ash fill that were exposed to the toxicity leaching procedure. A copy of the Phase II Environmental Assessment: Preliminary Site Characterization Report was submitted to the NYSDEC Spills Group in 2001.

In two discreet areas, this material also contained levels of NYSDEC regulated Semi Volatile Organic (Polycyclic Aromatic Hydrocarbons) at levels slightly above NYSDEC TAGM #4046 guidance values. This condition was previously reported to the NYSDEC Region 8 Spills Group. The NYSDEC added the information to the existing spill file; NYSDEC Spill #990601. LaBella is currently addressing issues associated with these two areas with the NYSDEC Spills Group.

Upcoming construction activities that are anticipated to occur within the next year may disturb this layer of solid waste/fill are the re-grading and repaving of the Northern parking lots, and the construction of new roadways, parking lots, and associated utilities in the north central portion of the Site. See attached Figure.

You indicated that the department considers the above referenced materials as solid waste that could not be treated as a Construction and Demolition solid waste, due to the nature of its origin as a solid waste derived from an industrial source. Furthermore you indicated that the department would not approve of the disposal of this material at Construction and Demolition debris landfills.

300 State Street, Rochester, NY 14614 (716) 454-6110 FAX (716) 454-3066
20 Seneca Street, Hornell, NY 14843 (607) 324-0222 FAX (607) 324-7665
403 E. Main Street, Elkland, PA 16920 (814) 258-5673 FAX (814) 258-7118

Dan David, P.E.
January 21, 2002
Page 2

We discussed the option of excavating the fill materials containing slag, coal, cinders, railroad ballast, and ash and placing these solid wastes into other similar filled areas of the Site for use as additional fill. You indicated that this solid waste management option was acceptable to the Department and in accordance with 6 NYCRR Part 360-1.7(b)(9). You also indicated that the department would recommend particulate air monitoring and dust suppression measures as necessary during construction activities.

At this time, we anticipate proceeding with the on Site management of the above referenced solid waste in accordance with 6NYCRR Part 360-1.7(b)(9).

If you feel that this letter represents an accurate representation of our conversation and agreement, please sign in the space provided and return a copy of this letter to me via fax (585) 454-3066 to serve as documentation of our conversation and agreement.

Thank you for your assistance in this matter. If you have any questions, please do not hesitate to contact me at (585)-454-6110.

Sincerely,

LABELLA ASSOCIATES, P.C.

Gregory R. Senecal

Gregory Senecal, CHMM
Phase I &II Program Manager

Dan David

NYSDEC Region 8 ~~Solid Waste~~
Regional Solid & Hazardous Materials Engineer

While I don't believe we discussed monitoring specifically, acceptable "handling, relocation and disposal practices" must minimize the likelihood of either blowing dust or runoff of excavated materials.

Attachments

cc: S. Esteban; LaBella
S. Metzger; LaBella
R. VenVertloh; LaBella
C. Ecklund; LaBella
J. Biondolillo; City of Rochester
B. Price; City of Rochester

J2A21DPI

LABELLA

Engineering
Architecture
Environmental

LABELLA
Associates, P.C.

300 State Street, Suite 201, Rochester, NY 14614

Phone 585.454.6110
Fax 585.454.3066
www.labellapc.com

January 24, 2002

William M. Price, RLA
Project Manager
City of Rochester
DES/Engineering and Architecture
30 Church Street, Room 300B
Rochester, NY 14614-1279

Re: Worker Health and Safety Related to Excavation of Slag-Containing Materials
Port of Rochester Harbor Improvement and Harbor Ferry Terminal
City of Rochester ID #99021
NYSDOT PIN 4752.60 and 4752.62
LaBella Project No. 99150

Dear Mr. Price:

We have conducted testing to evaluate the potential for exposure to hazardous gases and vapors as a result of disturbing subsurface slag-containing materials during trenching operations.

Three test pits were excavated to a depth of approximately 6 feet. Slag-containing materials were encountered in each test pit. The sampling procedure consisted of placing an evacuated Silco Canister at the bottom of the pit immediately upon reaching the desired depth, and opening the sample valve. Sample duration was approximately 1 minute or less. The odor of hydrogen sulfide was detected in each test pit.

The Silco Canisters were sent to Performance Analytical, Inc. for sample analysis. The analytical methods applied to the samples include EPA Method TO-15 by GC/MS for Tentatively Identified Compounds (TICs) and GC/SCD Analysis for 20 sulfur compounds. Laboratory results are attached.

The sample results indicate that no sulfur or sulfide compounds were present above the method detection limit, which is in the part per billion range. Hydrogen sulfide is obviously present at concentrations above the odor threshold, but below the method detection limit. A series of light-weight organic com-pounds was detected in each sample. The detected compounds probably represent ambient concentrations of vehicle combustion emissions. They are present at concentrations well below hazardous levels.

Planned excavations of these soils will not present an inhalation hazard to construction workers in the vicinity of excavating.

As noted, the odor of hydrogen sulfide is detectable during active excavation and subsequent disturbance of the slag. As a result there is a possibility that the odor of hydrogen sulfide may present a community nuisance during construction but it is not expected to present a health hazard.

Very truly yours,

LABELLA ASSOCIATES, P.C.

Richard K. Rote, CIH

RKR/deh
Attachments
Cc: Sergio Esteban, LaBella Associates, P.C.
LaBella Project File No. 99150, Nos. 1 and 9
N/J2A24RR1

Performance Analytical Inc.
Air Quality Laboratory
A Division of Columbia Analytical Services, Inc.
An Employee Owned Company

South Pit

RESULTS OF ANALYSIS

Client: LaBella Associates, PC
Client Sample ID: South Pit
Client Project ID: 99150-2320

PAI Project ID: P2102852
PAI Sample ID: P2102852-001

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #01194

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.1 Pf 1 = 3.5
D.F. = 1.23

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.49	Propane	60	
4.90	Isobutane	20	
5.21	n-Butane	50	
6.30	2-Methylbutane	40	
6.82	n-Pentane	70	
6.98	C_5H_{10} Compound	20	
8.69	2-Methylpentane	20	
9.16	3-Methylpentane	20	
9.74	n-Hexane	30	
12.82	3-Methylhexane	10	
13.87	n-Heptane	20	
18.46	n-Octane	10	
20.91	m- & p-Xylenes	9	
26.60	$C_{10}H_{14}$ Aromatic Compound	10	
27.25	$C_{10}H_{14}$ Aromatic Compound	10	

T = Analyte is a tentatively identified compound, result is estimated.

Verified By: RG Date: 12/27/01

02852VOA.RD1 - TIC

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Performance Analytical Inc.

An Quality Laboratory
A Division of Columbia Analytical Services, Inc.
An Employee Owned Company

RESULTS OF ANALYSIS

South Pit

Client: **LaBella Associates, PC**
Client Sample ID: **South Pit**
Client Project ID: **99150-2320**

PAI Project ID: P2102852
PAI Sample ID: P2102852-001

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #01194

Date Collected: 12/11/01
Time Collected: 10:45
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:20
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.1 Pf 1 = 3.5

D.F.= 1.23

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the **laboratory detection limit**.

Verified By: RG Date: 12/27/01

3

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Performance Analytical Inc.

Air Quality Laboratory
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Middle Pit

RESULTS OF ANALYSIS

Client: LaBella Associates, PC
Client Sample ID: West Pit
Client Project ID: 99150-2320

PAI Project ID: P2102852
PAI Sample ID: P2102852-002

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #01203

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.1 Pf 1 = 3.5
D.F. = 1.23

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.50	Propane	60	
4.90	Isobutane	20	
5.22	n-Butane	50	
6.29	2-Methylbutane	30	
6.81	n-Pentane	50	
8.69	2-Methylpentane	10	
9.15	3-Methylpentane	10	
9.73	n-Hexane	20	
13.84	n-Heptane	10	
19.30	Hexamethylcyclotrisiloxane (Possible Artifact)	40	
20.91	m- & p-Xylenes	8	
24.79	Unidentified Siloxane (Possible Artifact)	10	
26.58	$C_{10}H_{14}$ Aromatic Compound	10	
27.24	$C_{10}H_{14}$ Aromatic Compound	10	
27.72	Unidentified Siloxane (Possible Artifact)	10	

T = Analyte is a tentatively identified compound, result is estimated.

Verified By: RG Date: 12/27/01

02852VOA.RD1 - TIC (2)

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Performance Analytical Inc.

Air Quality Laboratory
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An Employee Owned Company

Middle Pit

RESULTS OF ANALYSIS

Client: **LaBella Associates, PC**
Client Sample ID: **West Pit**
Client Project ID: **99150-2320**

PAI Project ID: P2102852
PAI Sample ID: P2102852-002

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #01203

Date Collected: 12/11/01
Time Collected: 11:00
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:40
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.1 Pf 1 = 3.5

D.F.= 1.23

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the **laboratory detection limit**.

Verified By: RG Date: 12/27/01

92852SVG RD1 - Sample (2)

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Performance Analytical Inc.
Air Quality Laboratory
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North Pit

RESULTS OF ANALYSIS

Client: LaBella Associates, PC
Client Sample ID: North Pit
Client Project ID: 99150-2320

PAI Project ID: P2102852
PAI Sample ID: P2102852-003

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #00600

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.3 Pf 1 = 3.5
D.F. = 1.21

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.49	Propane	10	
4.91	Isobutane	6	
5.21	n-Butane	10	
6.29	2-Methylbutane	10	
6.82	n-Pentane	10	

T = Analyte is a tentatively identified compound, result is estimated.

Verified By: RG Date: 12/27/01

02852VOA.RD1 - TIC (3)

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Performance Analytical Inc.
Air Quality Laboratory
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North Pit

RESULTS OF ANALYSIS

Client: **LaBella Associates, PC**
Client Sample ID: **North Pit**
Client Project ID: **99150-2320**

PAI Project ID: P2102852
PAI Sample ID: P2102852-003

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #00600

Date Collected: 12/11/01
Time Collected: 11:20
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:59
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.3 Pf 1 = 3.5

D.F.= 1.21

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the **laboratory detection limit**.

Verified By: RG Date: 1/24/02

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Performance Analytical Inc.
Air Quality Laboratory
A Division of Columbia Analytical Services, Inc.
An Employee Owned Company

Blank

RESULTS OF ANALYSIS

Client: LaBella Associates, PC
Client Sample ID: Method Blank
Client Project ID: 99150-2320

PAI Project ID: P2102852
PAI Sample ID: P011214-MB

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/14/01
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data Qualifier
	No Compounds Detected		

Verified By: RG Date: 12/27/01

02852VOA.RD1 - MBlank (TIC)

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Performance Analytical Inc.

Air Quality Laboratory
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Blank

RESULTS OF ANALYSIS

Client: **LaBella Associates, PC**
Client Sample ID: **Method Blank**
Client Project ID: **99150-2320**

PAI Project ID: P2102852
PAI Sample ID: P011213-MB

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 12/13/01
Time Analyzed: 11:36
Volume(s) Analyzed: 1.0 ml

D.F.= 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the **laboratory detection limit**.

Verified By: RG Date: 12/27/01

02852SVG.RD1 - MBlank

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LABORATORY REPORT

Client:	LABELLA ASSOCIATES, PC	Date of Report:	12/27/01
Address:	300 State Street, 2nd Floor	Date Received:	12/12/01
	Rochester, NY 14614	PAI Project No:	P2102852
Contact:	Mr. Richard Rote	Purchase Order:	Verbal
Client Project ID: 99150-2320		New York ELAP ID:	11221

Three (3) Silco Canister Samples labeled: "South Pit" "West Pit" "North Pit"

The samples were received at the laboratory under chain of custody on December 12, 2001. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

Sulfur Analysis

The samples were analyzed for twenty sulfur compounds per modified SCAQMD Method 307-91 and ASTM D 5504-98 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan.

Received By
LaBella Associates, P.C.
JAN 07 2002

Reviewed and Approved:

Wade Henton
Senior Chemist

Reviewed and Approved:

John Yokoyama
Operations Manager

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Tentatively Identified Compounds Analysis

The samples were also analyzed by combined gas chromatography/mass spectrometry (GC/MS) for tentatively identified compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of a Hewlett Packard Model 5972 GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column (RT_x-1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation

The results of analyses are given on the attached data sheets.

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Performance Analytical Inc.
Sample Acceptance Check Form

Client: LaBella Associates, PC Work order: P2102852

Project: / 99150-2320

Sample(s) received on: 12/12/01 Date opened: 12/12/01 by SM

Note: This form is used for all samples received by PAI. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		Yes	No	N/A
1	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
2	Were **sample containers** marked with client sample ID?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature NA °C			
	Blank Temperature NA °C			
9	Is pH (acid) **preservation** necessary, according to method/SOP or Client specified information	☐	☒	☐
	Is there a client indication that the submitted samples are **pH** (acid) preserved?	☐	☐	☒
	Were VOA vials checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒

Lab Sample ID	Required pH	pH (as received, if required)	VOA Headspace (Presence/Absence)
P2102852-001 South Pit			NA
P2102852-002 West Pit			NA
P2102852-003 North Pit			NA

Explain any discrepancies: (include lab sample ID numbers): _____

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

Appendix 2

Analytical Summary Tables from Phase II Environmental Site Assessment

The analytical data from the these characterization samples is detailed in the table below:

Bourne Test Pit Soil Sample Results (ug/kg)
USEPA Method 8270
Table 4

	Bourne TP#1 (Typical Fill)	Bourne TP#1 (Slag Waste)	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
Benzyl Alcohol	ND<890	ND<762	N/A	N/A
Bis (2-chloroethyl) ether	ND<356	ND<305	N/A	N/A
Bis (2-chloroisopropyl) ether	ND<356	ND<305	N/A	N/A
2-Chlorophenol	ND<356	ND<305	800	N/A
1,3-Dichlorobenzene	ND<356	ND<305	1,550	N/A
1,4-Dichlorobenzene	ND<356	ND<305	8,500	N/A
1,2-Dichlorobenzene	ND<356	ND<305	7,900	N/A
Hexachloroethane	ND<356	ND<305	N/A	N/A
2-Methylphenol	ND<356	ND<305	100	N/A
4-Methylphenol	ND<356	ND<305	900	N/A
N-Nitrosodimethylamine	ND<356	ND<305	N/A	N/A
N-Nitroso-di-n-propylamine	ND<356	ND<305	N/A	N/A
Phenol	ND<356	ND<305	30	N/A
Benzoic Acid	ND<890	ND<762	2,700	N/A
Bis (2-chloroethoxy) methane	ND<356	ND<305	N/A	N/A
4-Chloroaniline	ND<356	ND<305	220	N/A
4-Chloro-3-methylphenol	ND<356	ND<305	240	N/A
2,4-Dichlorophenol	ND<356	ND<305	400	N/A
2,6-Dichlorophenol	ND<356	ND<305	N/A	N/A
2,4-Dimethylphenol	ND<356	ND<305	N/A	N/A
Hexachlorobutadiene	ND<356	ND<305	N/A	N/A
Isophorone	ND<356	ND<305	4,400	N/A
2-Methylnapthalene	ND<356	ND<305	36,400	N/A
Napthalene	**945**	ND<305	13,000	200
Nitrobenzene	ND<356	ND<305	200	N/A
2-Nitrophenol	ND<356	ND<305	330	N/A
1,2,4-Trichlorobenzene	ND<356	ND<305	3,400	N/A
2-Chloroaphthalene	ND<356	ND<305	N/A	N/A
Acenaphthene	ND<356	ND<305	90,000	400
Acenaphthylene	ND<356	ND<305	41,000	N/A
4-Chlorophenyl phenyl ether	ND<356	ND<305	N/A	N/A
Dibenzofuran	ND<356	ND<305	6,200	N/A

Bourne Test Pit Soil Sample Results (continued)

USEPA Method 8270

	Bourne TP#1 (Typical Fill)	Bourne TP#1 (Slag Waste)	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
Diethyl phthalate	ND<356	ND<305	7,100	N/A
Dimethyl phthalate	ND<890	ND<762	2,000	N/A
2,4-Dinitrophenol	ND<356	ND<305	200	N/A
2,4-Dinitrotoluene	ND<356	ND<305	N/A	N/A
2,6-Dinitrotoluene	ND<356	ND<305	1,000	N/A
Flourene	365	ND<305	350,000	1,000
Hexachlorocyclopentadiene	ND<356	ND<305	N/A	N/A
2-Nitroaniline	ND<890	ND<762	430	N/A
3-Nitroaniline	ND<890	ND<762	500	N/A
4-Nitroaniline	ND<890	ND<762	N/A	N/A
4-Nitrophenol	ND<890	ND<762	100	N/A
2,4,6-Trichlorophenol	ND<356	ND<305	N/A	N/A
2,4,5-Trichlorophenol	ND<890	ND<762	100	N/A
4-Bromophenyl phenyl ether	ND<356	ND<305	N/A	N/A
Di-n-butyl phthalate	ND<356	ND<305	8,100	N/A
4,6-Dinitro-2-methylphenol	ND<890	ND<762	N/A	N/A
Flouranthene	**1,900**	ND<305	1,900,000	1,000
Hexachlorobenzene	ND<356	ND<305	1,400	N/A
N-nitrosodiphenylamine	ND<356	ND<305	N/A	N/A
Pentachlorophenol	ND<890	ND<762	1000	N/A
Anthracene	495	ND<305	700,000	1,000
Phenanthrene	ND<356	ND<305	220,000	1,000
Benzidine	ND<890	ND<762	N/A	N/A
Benzo (a) anthracene	835	ND<305	3,000	0.04
Bis (2-ethylhexyl) phthalate	ND<356	ND<305	435,000	N/A
Butylbenzylphthalate	ND<356	ND<305	122,000	N/A
Chrysene	**856**	ND<305	400	0.04
3,3'-Dichlorobenzidine	ND<356	ND<305	N/A	N/A
Pyrene	1,530	ND<305	665,000	1,000
Benzo (b) flouranthene	954	ND<305	1,100	0.04
Benzo (k) flouranthene	**1,470**	ND<305	1,100	0.04
Benzo (g,h,I) perylene	580	ND<305	800,000	0.04
Benzo (a) pyrene	919	ND<305	11,000	0.04
Dibenz (a,h) anthracene	ND<356	ND<305	165,000,000	1,000
Di-n-octylphthalate	ND<356	ND<305	120,000	N/A
Indeno (1,2,3-cd) pyrene	576	ND<305	3,200	0.04

All sample results and guidance values are listed in ug/kg =ppb

N/A - Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

As noted in the table above there were levels of NYSDEC regulated SVOC's detected in the fill sample from Bourne TP-1. The suite of SVOC's that were detected in the fill sample are consistent with the Polycyclic Aromatic Hydrocarbons. These levels and types of SVOC's may be beneath NYSDEC Soil Inactivation Site Specific Risk Based Guidance Valves, based on the fact that they all have very low volatilization factors. These risk-based calculations could be completed when more detailed development plans (i.e., final elevations, depth of filling, and future use of this portion of the Site) have been arrived at.

Bourne Test Pit Soil Sample Results (mg/kg)
8 RCRA Metals
Table 5

	Bourne TP#1 (Typical Fill)	Bourne TP#2 (Slag Waste)	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Cleanup Objectives
Arsenic	**20.6**	0.875	3-12	7.5 or SB
Barium	188	511	15-600	300 or SB
Cadmium	**191**	**2.84**	0.1-1	1 or SB
Chromium	**43**	<1.96	1.5-40	10 or SB
Lead	191	<9.80	*200-500	SB
Mercury	<0.103	<0.0690	0.001-0.2	0.1
Selenium	<1.08	<0.980	0.1-3.9	2 or SB
Silver	<1.08	<0.980	N/A	SB

* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm
N/A - Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values
SB= Site Background

Bourne Test Pit Soil Sample Results (mg/kg)
Cyanide Reactivity
Table 6

	Bourne TP#1 (Slag Waste)	Bourne TP#1 (Typical Fill)
Cyanide Reactivity	ND<1, Non-Reactive	ND<1, Non Reactive

All sample results and guidance values are listed in mg/kg=ppm
Bold denotes constituents above NYSDEC Guidance Values
ND = Not Detected
N/A = Not Applicable

As detailed in the table above no 8 RCRA metals were detected in the samples above method detection limits with the exception of cadmium and low levels of arsenic and chromium. The samples also tested non-reactive for cyanide reactivity.

Cadmium was elevated well above background levels in the fill sample, however the remaining 8 RCRA Metals were at or near Eastern USA Background levels in the fill and slag sample.

Fill and soil encountered in Bourne TP#2a exhibited evidence of petroleum hydrocarbon impairment, and was sampled and analyzed for petroleum related VOC's by USEPA Method 8021 STARS and for SVOC's by USEPA Method 8270 STARS. Bourne TP#2b was advanced approximately 20'-30'east, presumed to be hydraulically downgradient of Bourne TP#2a to aid in preliminary delineation of the discovered petroleum impairment. Evidence of petroleum impairment was not observed in Bourne TP#2b, indicating that the aerial extent of petroleum impacted soil and groundwater observed in the vicinity of Bourne TP#2a is limited.

The analytical data from the petroleum characterization sample from Bourne TP#2a is detailed in the table below:

Bourne Test Pit Sample Results (ug/kg)
USEPA Method 8021
Table 7

	Bourne TP#2a (5')	**NYSDEC STARS TCLP Alternative Guidance Value**	**NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality**
Methyl tert-Butyl Ether	ND<726	200	120
Benzene	**3,140**	14	60
Toluene	**992**	100	1,500
Ethylbenzene	**7760**	100	5,500
m,p-Xylene	**25,600**	100	1,200
o-Xylene	**5,910**	100	1,200
Isopropylbenzene	**1,680**	100	4,000
n-Propylbenzene	**6,770**	100	1,400
1,3,5-Trimethylbenzene	**13,500**	100	17,000
tert-Butylbenzene	ND<726	100	N/A
1,2,4-Trimethylbenzene	**48,000**	100	13,000
sec-Butylbenzene	**1,210**	100	24,000
p-Isopropyltoluene	**815**	100	10,000
n-Butylbenzene	ND<726	100	17,000
Naphthalene	**9,030**	200	13,000

All sample results and guidance values are listed in ug/kg = ppb
ND = Not Detected
N/A = Not Available
Bold denotes constituents above NYSDEC Guidance Values

Bourne Test Pit Soil Boring Sample Results (ug/kg)
USEPA Method 8270
Table 8

	Bourne TP#2a (5′)	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Clean Up Objectives to Protect Groundwater Quality
Napthalene	**3640**	200	13,000
Acenaphthene	ND<813	1000	90,000
Flourene	ND<813	1000	350,000
Flouranthene	ND<813	1000	1,900,000
Anthracene	ND<813	400	700,000
Phenanthrene	ND<813	1000	220,000
Benzo (a) anthracene	ND<813	0.04*	3,000
Chrysene	ND<813	0.04*	400
Pyrene	ND<813	1000	665,000
Benzo (b) flouranthene	ND<813	0.04*	1,100
Benzo (k) flouranthene	ND<813	0.04*	1,100
Benzo (g,h,l,)perylene	ND<813	0.04*	800
Benzo (a) pyrene	ND<813	0.04*	11,000
Dibenz (a,h) anthracene	ND<813	1000	165,000,000
Indeno (1,2,3-cd)pyrene	ND<813	0.04*	3,200

All sample results and guidance values are listed in ug/kg=ppb
N/A = Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above no SVOC's were detected in the sample above method detection limits. Petroleum related VOC's were detected at levels well above NYSEC recommended levels for VOC's in soils. Interpretation of the laboratory results by Paradigm Environmental Services, indicated that results were consistent with weathered kerosene, gasoline, or mineral spirits.

This area at the Site is referred to as Area #1 and is depicted in Figure 8.

Analytical data from the shared Bourne Test Pitting Study is included as Appendix 2.

Due to the desire not to delay Bourne's schedule, and because of repaving concerns, it was decided to continue characterization of this area of petroleum impaired soil and fill, during the geoprobe soil boring phase of the Site characterization.

The analytical data for 8 RCRA metals from the these characterization samples is detailed in the tables below:

LaBella Test Pit Soil Sample Results (mg/kg)

8 RCRA Metals (Total)

Table 10

	LBA TP#1 (0'-2')	LBA TP#6 (4')	LBA TP#6 (White Slag)	LBA TP#6 (Black Slag)	LBA TP#8 (2'-3')	LBA TP#9 (Red Slag)	LBA TP#10 (3')	LBA TP#15 (6'-8')	LBA TP#18 (Green Slag)	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Cleanup Objectives
Arsenic	3.1	**17.8**	<6.23	**17.5**	**52**	<4.90	**51.1**	7.12	<4.40	3-12	7.5 or SB
Barium	**909**	91.4	81	193	165	177	22.2	**657**	80.2	15-600	300 or SB
Cadmium	<0.483	0.64	<0.623	<0.535	0.584	<0.490	0.604	<0.382	<0.440	0.1-1	1 or SB
Chromium	5.9	6.77	2.24	11.8	15.4	3.04	3.72	17.8	1.41	1.5-40	10 or SB
Lead	38.6	76.3	<0.623	4.18	62.8	<0.490	5.33	3.29	<0.440	*200-500	SB
Mercury	<0.0735	0.141	<0.0878	0.0774	<0.0787	<0.0981	**0.24**	<0.593	<0.0760	0.001-0.2	0.1
Selenium	<4.83	<4.58	<6.23	<5.35	1.15	<4.90	<5.03	<3.82	<4.40	0.1-3.9	2 or SB
Silver	<1.93	<1.83	3.74	<2.15	<2.34	<1.96	<2.01	<1.53	1.76	N/A	SB

* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm.

Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm

N/A - Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

SB – Site Background

LaBella Test Pit Soil Sample Results (mg/L)
8 RCRA Metals (TCLP)
Table 11

	LBA TP#6 (White Slag)	LBA TP#6 (Black Slag)	LBA TP#8 (2'-3')	LBA TP#9 (Red Slag)	LBA TP#10 (5')	LBA TP#18 (Green Slag)	LBA TP#10 (13')	LBA TP#17 (8')	LBA TP#16 (2')	LBA TP#15 (6'-8')	NYSDEC Hazardous Waste Regulatory Levels for Toxicity Characteristic (mg/L)
Arsenic	<0.025	<0.025	<0.025	<0.025	0.05	<0.025	<0.025	<0.025	<0.025	<0.025	5
Barium	0.1	0.25	0.2	0.3	0.2	0.75	0.2	0.4	0.6	0.35	100
Cadmium	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	1
Chromium	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	5
Lead	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	5
Mercury	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.002	<0.002	<0.002	<0.002	<0.002	0.2
Selenium	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	1
Silver	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	5

All guidance values results are listed in mg/L = ppm
ND = Not Detected
N/A = Not Applicable
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above the levels of the 8RCRA Metals in the slag and ash fill samples was generally within Eastern USA Background Ranges as Published in NYSDEC TAGM #4046. In addition, none of the samples of slag and ash fill that were analyzed via the toxicity leaching procedure (TCLP) test exceeded NYSDEC Regulatory Levels.

The laboratory results for total metals from these slag and ash fill samples were consistently low. This is somewhat unusual because slag and ash fill typically contain elevated levels of metals. In order to verify that Paradigm Laboratories analytical results were accurate, one slag and ash fill sample was split and was submitted to Columbia Analytical Services, Rochester, New York for analysis. The results of this quality control analysis are as follows:

Split Soil Sample Results (HA Boring # 116, 2'-4') (mg/kg)
8 RCRA Metals (Total)
Table 12

	Paradigm Environmental Services	Columbia Analytical	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Soil Cleanup Objectives
Arsenic	2.81	<1.09	3-12	7.5 or SB
Barium	238	212	15-600	300 or SB
Cadmium	<0.390	<0.544	0.1-1	1 or SB
Chromium	3.75	3.45	1.5-40	10 or SB
Lead	<0.389	<1.09	*200-500	SB
Mercury	<0.053	<0.0544	0.001-0.2	0.1
Selenium	4.77	1.5	0.1-3.9	2 or SB
Silver	2.73	<1.09	N/A	SB

* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm
N/A - Not Applicable
All test pits are 0"-12" depth
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values
SB – Site Background

The levels of metals detected in the split sample from both laboratories are similar, and verify that the levels of metals reported in the samples from the Site are not caused or skewed by laboratory error.

During the excavation of LBATP #6 a petroleum like sheen was observed emanating from the layers of slag and floating on the standing groundwater in the test pit. No odor could be detected from this groundwater or the slag. In addition, no elevated PID readings were detected from either the water or the slag. One grab sample of the groundwater and a sample of the slag that appeared to be leaching the sheen to the groundwater were obtained for laboratory analysis. The slag grab sample was analyzed for SVOC's by USEPA Method 8270. The groundwater grab sample from the test pit was analyzed for Total Petroleum Hydrocarbons by NYSDOH Method 310.13. The analytical result for total petroleum hydrocarbons analysis was non-detect.

Two additional samples from the test pitting study were submitted for laboratory analysis. Both of these samples were obtained from shallow layers of black cinder like fill. The first sample was obtained from LBATP #1 at a depth of 0'-2'. The second sample was obtained from LBATP #10 at a depth of 3'.

The SVOC results for the three samples are detailed in the following table.

LaBella Test Pit Soil Sample Results (ug/kg)
USEPA Method 8270
Table 13

	LBA TP#1 (0'-2')	LBA TP#10 (3')	LBA TP#6 (4')	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
Benzyl Alcohol	ND<908	ND<795	ND<921	N/A	N/A
Bis (2-chloroethyl) ether	ND<363	ND<318	ND<368	N/A	N/A
Bis (2-chloroisopropyl) ether	ND<363	ND<318	ND<368	N/A	N/A
2-Chlorophenol	ND<363	ND<318	ND<368	800	N/A
1,3-Dichlorobenzene	ND<363	ND<318	ND<368	1550	N/A
1,4-Dichlorobenzene	ND<363	ND<318	ND<368	8500	N/A
1,2-Dichlorobenzene	ND<363	ND<318	ND<368	7900	N/A
Hexachloroethane	ND<363	ND<318	ND<368	N/A	N/A
2-Methylphenol	ND<363	ND<318	ND<368	100	N/A
4-Methylphenol	ND<363	ND<318	ND<368	900	N/A
N-Nitrosodimethylamine	ND<363	ND<318	ND<368	N/A	N/A
N-Nitroso-di-n-propylamine	ND<363	ND<318	ND<368	N/A	N/A
Phenol	ND<363	ND<318	ND<368	30	N/A
Benzoic Acid	ND<363	ND<795	ND<921	2700	N/A
Bis (2-chloroethoxy) methane	ND<363	ND<318	ND<368	N/A	N/A
4-Chloroaniline	ND<363	ND<318	ND<368	220	N/A
4-Chloro-3-methylphenol	ND<363	ND<318	ND<368	240	N/A
2,4-Dichlorophenol	ND<363	ND<318	ND<368	400	N/A
2,6-Dichlorophenol	ND<363	ND<318	ND<368	N/A	N/A
2,4-Dimethylphenol	ND<363	ND<318	ND<368	N/A	N/A
Hexachlorobutadiene	ND<363	ND<318	ND<368	N/A	N/A
Isophorone	ND<363	ND<318	ND<368	4400	N/A
2-Methylnapthalene	ND<363	ND<318	ND<368	36,400	N/A
Napthalene	**945**	ND<318	ND<368	13,000	200
Nitrobenzene	ND<363	ND<318	ND<368	200	N/A
2-Nitrophenol	ND<363	ND<318	ND<368	330	N/A
1,2,4-Trichlorobenzene	ND<363	ND<318	ND<368	3400	N/A
2-Chloroaphthalene	ND<363	ND<318	ND<368	N/A	N/A
Acenaphthene	ND<363	ND<318	ND<368	90,000	400
Acenaphthylene	ND<363	ND<318	ND<368	41,000	N/A
4-Chlorophenyl phenyl ether	ND<363	ND<318	ND<368	N/A	N/A
Dibenzofuran	ND<363	ND<318	ND<368	6200	N/A
Diethyl phthalate	ND<363	ND<318	ND<368	7100	N/A
Dimethyl phthalate	ND<908	ND<795	ND<921	2000	N/A
2,4-Dinitrophenol	ND<363	ND<318	ND<368	200	N/A
2,4-Dinitrotoluene	ND<363	ND<318	ND<368	N/A	N/A
2,6-Dinitrotoluene	ND<363	ND<318	ND<368	1000	N/A
Flourene	365	ND<318	ND<368	350,000	1,000
Hexachlorocyclopentadiene	ND<363	ND<318	ND<368	N/A	N/A
2-Nitroaniline	ND<908	ND<795	ND<921	430	N/A

LaBella Test Pit Soil Sample Results (continued)
USEPA Method 8270

	LBA TP#1 (0'-2')	LBA TP#10 (3')	LBA TP#6 (4')	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
3-Nitroaniline	ND<908	ND<795	ND<921	500	N/A
4-Nitroaniline	ND<908	ND<795	ND<921	N/A	N/A
4-Nitrophenol	ND<908	ND<795	ND<921	100	N/A
2,4,6-Trichlorophenol	ND<363	ND<318	ND<368	N/A	N/A
2,4,5-Trichlorophenol	ND<908	ND<795	ND<921	100	N/A
4-Bromophenyl phenyl ether	ND<363	ND<318	ND<368	N/A	N/A
Di-n-butyl phthalate	ND<363	ND<318	ND<368	8100	N/A
4,6-Dinitro-2-methylphenol	ND<908	ND<795	ND<921	N/A	N/A
Flouranthene	**1900**	ND<318	**2590**	1,900,000	1,000
Hexachlorobenzene	ND<363	ND<318	ND<368	1400	N/A
N-nitrosodiphenylamine	ND<363	ND<318	ND<368	N/A	N/A
Pentachlorophenol	ND<908	ND<795	ND<921	1000	N/A
Anthracene	495	ND<318	ND<368	700,000	1,000
Phenanthrene	**1900**	ND<318	554	220,000	1,000
Benzidine	ND<908	ND<795	ND<921	N/A	N/A
Benzo (a) anthracene	**835**	ND<318	**1990**	3000	0.04
Bis (2-ethylhexyl) phthalate	ND<363	ND<318	ND<368	435,000	N/A
Butylbenzylphthalate	ND<363	ND<318	ND<368	122,000	N/A
Chrysene	**856**	ND<318	**1950**	400	0.04
3,3'-Dichlorobenzidine	ND<363	ND<318	ND<368	N/A	N/A
Pyrene	**1530**	ND<318	**2970**	665,000	1,000
Benzo (b) flouranthene	**954**	ND<318	**3790**	1100	0.04
Benzo (k) flouranthene	**1470**	ND<318	**2610**	1100	0.04
Benzo (g,h,I) perylene	**580**	ND<318	**2240**	800,000	0.04
Benzo (a) pyrene	**919**	ND<318	**1700**	11,000	0.04
Dibenz (a,h) anthracene	ND<363	ND<318	630	165,000,000	1,000
Di-n-octyl phthalate	ND<363	ND<318	ND<368	120,000	N/A
Indeno (1,2,3-cd) pyrene	**576**	ND<318	**2220**	3200	0.04

All sample results and guidance values are listed in ug/kg = pbb
ND = Not Detected
N/A = Not applicable
Bold denotes constituents above NYSDEC Guidance Values

As noted in the table above there were levels of NYSDEC regulated SVOC's detected in the soil samples from LBATP #1 at 0'-2' and from LBATP #6 at 4' that exceed NYSDEC STARS Guidance values for SVOC's. The suite of SVOCS that were detected are the Polycyclic Aromatic Hydrocarbons. These levels and types of SVOC's may be beneath NYSDEC Spill Inactivation Site Specific Risk Based Guidance Values, based on the fact that they all have very low volatilization factors, and some are even solids at ambient temperatures. These risk-based calculations could be completed when more detailed development plans (ie. Final elevations, depth of filling, and future use of this portion of the Site) have been arrived at.

With the exception of layers of slag, ash, and cinders no other visible contamination, elevated PID readings, or other indications of evidence of impairment were encountered during the soil-boring program.

The analytical data from the shallow characterization samples analyzed for the 8 RCRA Metals is detailed in the table below:

Haley & Aldrich Soil Boring Sample Results (mg/kg)
8 RCRA Metals (Total)
Table 15

	HA Boring #102 (0'-2')	HA Boring #107 (0'-2')	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	HA Boring #111 (2'-4')	HA Boring #112 (0'-2')	HA Boring #114 (2'-4')	HA Boring #116 (2'-4')	HA Boring #121 (0'-2')	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives
Arsenic	3	4.19	10.3	6.19	1.95	**52.5**	3.91	2.81	5.76	3-12	7.5 or SB
Barium	77.8	23.3	82.6	106	27.8	92.1	245	238	42.8	15-600	300 or SB
Cadmium	0.651	<0.599	**1.39**	0.7	0.434	**1.7**	<0.575	<0.39	<1.01	0.1-1	1 or SB
Chromium	8.7	8.6	17.6	12.2	8.3	29.9	5.06	3.75	12.5	1.5-40	10 or SB
Lead	5.04	26.4	129	79	7.51	102	19	<0.389	15.6	*	SB
Mercury	<0.047	<0.066	<0.073	0.173	<0.080	0.169	<0.089	<0.053	<0.0908	0.001-0.2	0.1
Selenium	<0.407	<0.375	<0.534	<0.5	<0.361	1.43	2.65	4.77	<0.522	0.1-3.9	2 or SB
Silver	1.06	1.8	1.94	1.7	1.08	3.23	2.76	2.73	1.25	N/A	SB

* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm.
Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.
All sample results and guidance values are listed in mg/kg=ppm
N/A - Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values
SB – Site Background

As detailed in the table above shallow soil samples from the boring generally exhibited low levels of the 8 RCRA metals, that are consistent with Eastern USA Background Levels as published in NYSDEC TAGM #4046. One sample exhibited elevated arsenic well above TAGM Cleanup Objectives and background, and two soil samples slightly exceeded TAGM Cleanup Objectives for Cadmium.

The analytical data from the shallow characterization samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

Haley & Aldrich Soil Boring Sample Results (continued)
USEPA Method 8260

	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
sec-Butylbenzene	ND<10.2	ND<8.07	24,910	100
p-Isopropyltoluene	ND<10.2	ND<8.07	10,570	100
n-Butylbenzene	ND<10.2	ND<8.07	17,620	100
Naphthalene	ND<25.4	ND<20.2	13,000	200

All sample results and guidance values are listed in ug/kg=ppb
ND = Not Detected
N/A = Not Available
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above shallow soil samples from the soil borings that were analyzed for VOC's by USEPA 8260+STARS did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the shallow characterization samples analyzed for PCB's by USEPA Method 8080 is detailed in the table below:

Haley & Aldrich Soil Boring Sample Results (ug/L)
PCB Analysis (USEPA Method 8080)
Table 17

	HA Boring #110 (0'-2')	HA Boring #111 (2'-4')	HA Boring #114 (2'-4')	HA Boring #117 (2'-4')	NYSDEC TAGM 4046 Soil Clean Up Objective to Protect Groundwater Quality
PCB 1016	ND	ND	ND	ND	10,000
PCB 1221	ND	ND	ND	ND	10,000
PCB 1232	ND	ND	ND	ND	10,000
PCB 1242	ND	ND	ND	ND	10,000
PCB 1248	ND	ND	ND	ND	10,000
PCB 1254	ND	ND	ND	ND	10,000
PCB 1260	ND	ND	ND	ND	10,000

All sample results and guidance values are listed in ug/L=ppb
ND= Not Detected
N/A = Not Applicable
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above shallow soil samples from the soil borings that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the shallow characterization samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

Haley & Aldrich Soil Boring Sample Results (ug/kg)
USEPA Method 8270
Table 18

	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	HA Boring #111(2'-4')	HA Boring #114 (2'-4')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater Quality
Napthalene	**585**	ND<1590	ND<327	ND<343	200	13,000
Acenaphthene	ND<360	ND<1590	ND<327	ND<343	1000	90,000
Flourene	369	ND<1590	ND<327	ND<343	1000	350,000
Flouranthene	**5590**	ND<1590	ND<327	ND<343	1000	1,900,000
Anthracene	**958**	ND<1590	ND<327	ND<343	400	700,000
Phenanthrene	**3460**	ND<1590	ND<327	ND<343	1000	220,000
Benzo (a) anthracene	**3480**	ND<1590	ND<327	ND<343	0.04*	3,000
Chrysene	**4050**	ND<1590	ND<327	ND<343	0.04*	400
Pyrene	**10,200**	ND<1590	ND<327	ND<343	1000	665,000
Benzo (b) flouranthene	**5240**	ND<1590	ND<327	ND<343	0.04*	1,100
Benzo (k) flouranthene	**2990**	ND<1590	ND<327	ND<343	0.04*	1,100
Benzo (g,h,i) perylene	**1270**	ND<1590	ND<327	ND<343	0.04*	800,000
Benzo (a) pyrene	**2980**	ND<1590	ND<327	ND<343	0.04*	11,000
Dibenz (a,h) anthracene	444	ND<1590	ND<327	ND<343	1000	165,000,000
Indeno (1,2,3-cd) pyrene	**1260**	ND<1590	ND<327	ND<343	0.04*	3,200

All sample results and guidance values are listed in ug/kg=ppb
N/A = Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table three of the four shallow soil samples from the soil borings that were analyzed for SVOC's by USEPA 8270+STARS did not exhibit levels of the targeted analytes above method detection limits.

One shallow sample from SB #109 exhibited elevated levels of NYSDEC regulated SVOC's above NYSDEC Guidance Values for soils. SB #109 was advanced in the south portion of the Site to the east of River Street along the Genesee River. The general area where SB #109 was advanced consists of a cinder and grass covered area that is used to store boats. The levels of SVOC's in this area are present at levels, which could represent a human health concern during construction activities. This area may warrant further characterization and possible remedial measures and/or engineering controls if future development plans involve this portion of the Site.

This area is designated as Area #4 and is depicted on Figure 9.

Analytical data generated from the Haley & Aldrich shared Soil Boring Study is included as Appendix 6.

VId. Groundwater Monitoring Wells

Fieldwork:

During the shared geotechnical and environmental soil boring program three of the soil borings were converted groundwater monitoring wells. Monitoring well locations were chosen based on the location of REC's from the Phase I ESA and on information that was gathered as a part of the test pitting study.

The location for the three monitoring wells were as follows:

- Location of historical railroad turntable from Phase I ESA; LBAMW #1
- In the area where slag had exhibited a sheen during the test pitting study; LBAMW #2
- Immediately topographically downgradient of former foundary at the Site; LBAMW #3

Monitoring wells were constructed in accordance with the monitoring well methodology section of the report. All of the wells were constructed with 10' screen sections, and were screened to intersect with the top of the water table (approximately 5'-10' below ground surface).

Monitoring well construction diagrams are included as Appendix 5.

Groundwater flow direction in this northern area (north of the east/west CSX Row) of the Site is to the east with a horizontal gradient of 0.028.

The analytical data from the groundwater samples analyzed for the 8 RCRA Metals is detailed in the table below:

Groundwater Monitoring Well Results (mg/L)
8 RCRA Metals
Table 19

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Arsenic	<0.005	0.009	0.019	0.025
Barium	**1.11**	0.178	0.233	1
Cadmium	<0.005	<0.005	<0.005	0.01
Chromium	0.028	0.026	0.036	0.05
Lead	**0.038**	0.022	**0.029**	0.025
Mercury	<0.0002	<0.0002	<0.0002	0.002
Selenium	<0.005	**0.015**	<0.005	0.01
Silver	<0.010	<0.010	<0.01	0.05

All sample results and guidance values are listed in mg/L = ppm
N/A = Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Standards

As detailed in the table above, groundwater samples from the three monitoring wells exhibited low levels of the 8 RCRA metals that are generally below the NYSDEC Part 703 Groundwater Standards or exceed the standard only by a very small concentration.

The analytical data from the groundwater samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

Groundwater Monitoring Well Results (ug/L)
USEPA Method 8260
Table 20

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Bromodichloromethane	ND<2.00	ND<2.00	ND<2.00	50*
Bromomethane	ND<2.00	ND<2.00	ND<2.00	5
Bromoform	ND<2.00	ND<2.00	ND<2.00	50*
Carbon Tetrachloride	ND<2.00	ND<2.00	ND<2.00	5
Chloroethane	ND<2.00	ND<2.00	ND<2.00	5
2-Chlorotheyl Vinyl Ether	ND<2.00	ND<2.00	ND<2.00	N/A
Chloroform	ND<2.00	ND<2.00	ND<2.00	7
Dibromochloromethane	ND<2.00	ND<2.00	ND<2.00	50*
1,1-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	5
1,2-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	5
1,1-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A
trans-1,2-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A
1,2-Dichloropropane	ND<2.00	ND<2.00	ND<2.00	5
cis-1,3-Dichloropropene	ND<2.00	ND<2.00	ND<2.00	5
trans-1,3-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	5
Methylene chloride	ND<5.00	ND<5.00	ND<5.00	5
1,1,2,2-Tetrachloroethane	ND<2.00	ND<2.00	ND<2.00	5
Tetrachloroethene	ND<2.00	ND<2.00	ND<2.00	N/A
1,1,1-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	5
1,1,2-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	5
Trichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A
Vinyl Chloride	ND<2.00	ND<2.00	ND<2.00	2
Benzene	ND<0.700	ND<0.700	ND<0.700	1.0
Chlorobenzene	ND<2.00	ND<2.00	ND<2.00	5
Ethylbenzene	ND<2.00	ND<2.00	ND<2.00	5
Toluene	ND<2.00	ND<2.00	ND<2.00	5
m,p-Xylene	ND<2.00	ND<2.00	ND<2.00	5
o-Xylene	ND<2.00	ND<2.00	ND<2.00	5
Sytrene	ND<2.00	ND<2.00	ND<2.00	5
Acetone	ND<10.0	ND<10.0	ND<10.0	50*
Vinyl Acetate	ND<5.00	ND<5.00	ND<5.00	N/A
2-Butanone	ND<5.00	ND<5.00	ND<5.00	N/A
4-Methyl-2-pentanone	ND<5.00	ND<5.00	ND<5.00	N/A

Groundwater Monitoring Well Results (continued)
USEPA Method 8260

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
2-Hexanone (MEK)	ND<5.00	ND<5.00	ND<5.00	50*
Carbon Disulfide	ND<2.00	ND<2.00	ND<2.00	N/A
Methyl tert-Butyl Ether	ND<2.00	ND<2.00	ND<2.00	10
Isopropylbenzene	ND<2.00	ND<2.00	ND<2.00	5
n-Propylbenzene	ND<2.00	ND<2.00	ND<2.00	5
1,3,5-Trimethylbenzen	ND<2.00	ND<2.00	ND<2.00	5
tert-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	ND<2.00	5
sec-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<2.00	5
n-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
Naphthalene	**15.2**	ND<5.00	ND<5.00	10

All sample results and guidance values are listed in ug/L=ppb
ND = Not Detected
N/A = Not Available
Bold denotes constituents above NYSDEC Guidance Values
* = Guidance Value

As detailed in the table above groundwater samples from the three monitoring wells that were analyzed for VOC's by USEPA 8260+STARS did not exhibit levels of the targeted analytes above method detection limits. One exception was the compound napthalene in LBA MW #1. Napthalene was detected in this sample at 15 ug/L, however; the level of napthalene in the sample only exceeds the NYS Section 703 Groundwater standard by 5 ug/l. This low level of napthalene detected most likely corresponds to the detected level of napthalene in shallow soils from LBA TP#1, and may be associated with the historical use of this area of the Site as a railroad turntable.

This level of naphthalene will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the Site when more definite redevelopment plans have been arrived at for the Site.

The analytical data from the groundwater samples analyzed for PCB's by USEPA Method 8080 is detailed in the table below:

Groundwater Monitoring Well Results (ug/L)
PCB Analysis (USEPA Method 8080)
Table 21

	LBA MW#1	LBA MW#3	NYSDEC Part 703 Groundwater Standard
PCB 1016	ND	ND	0.1
PCB 1221	ND	ND	0.1
PCB 1232	ND	ND	0.1
PCB 1242	ND	ND	0.1
PCB 1248	ND	ND	0.1
PCB 1254	ND	ND	0.1
PCB 1260	ND	ND	0.1

All sample results and guidance values are listed in ug/L=ppb
ND= Not Detected
N/A = Not Applicable
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above groundwater samples from the two monitoring wells that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the groundwater samples analyzed for NYSDEC regulated Semi VOC's by USEPA Method 8270 STARS is detailed in the table below:

Groundwater Monitoring Well Results (ug/L)
USEPA Method 8270
Table 22

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Napthalene	**11.2**	ND<10.0	ND<10.0	10
Acenaphthene	ND<10.0	ND<10.0	ND<10.0	20
Flourene	ND<10.0	ND<10.0	ND<10.0	50
Flouranthene	ND<10.0	ND<10.0	ND<10.0	50
Anthracene	ND<10.0	ND<10.0	ND<10.0	50
Phenanthrene	ND<10.0	ND<10.0	ND<10.0	50
Benzo (a) anthracene	ND<10.0	ND<10.0	ND<10.0	0.002 (ND)
Chrysene	ND<10.0	ND<10.0	ND<10.0	0.002 ND)
Pyrene	ND<10.0	ND<10.0	ND<10.0	50
Benzo (b) flouranthene	ND<10.0	ND<10.0	ND<10.0	0.002 (ND)

Groundwater Monitoring Well Results (ug/L)
USEPA Method 8270
Table 22 (continued)

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Benzo (k) flouranthene	ND<10.0	ND<10.0	ND<10.0	0.002
Benzo (g,h,I) perylene	ND<10.0	ND<10.0	ND<10.0	5
Benzo (a) pyrene	ND<10.0	ND<10.0	ND<10.0	.002(ND)
Dibenz (a,h) anthracene	ND<10.0	ND<10.0	ND<10.0	50
Indeno (1,2,3-cd) pyrene	ND<10.0	ND<10.0	ND<10.0	0.002

All sample results and guidance values are listed in ug/L=ppb
N/A - Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above groundwater samples from the three monitoring wells that were analyzed for SVOC's by USEPA 8270 did not exhibit levels of the targeted analytes above method detection limits, with the exception of the presence of naphthalene detected in MW#1. Napthalene was detected in MW#1 at a level of 11.2 ug/L.

This low level of Napthalene most likely corresponds to the detected level of Napthalene in shallow soils from LBA TP#1, and may be associated with the historical use of this area of the Site as a railroad turntable.

This exceeds NYSDEC Part 703groundwater standards by 1.2ug/L, but will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the site when more definitive redevelopment plans have been arrived at for the site.

Based on the analytical results from the monitoring well study in the northern portion of the Site there does not appear to be a Site wide impairment or remedial concern with regard to groundwater and future development of the Site.

Analytical data from the groundwater monitoring study is included as Appendix 7.

VIe. Hand Tool Advanced Test Pit Shallow Soil Sampling Study

Fieldwork:

In July and August 2000 LaBella Associates P.C. excavated ten shallow test pits, across the southern portion of the Site. These shallow test pit locations were selected to begin characterization of shallow soils along CSX Railroad property and other cinder base parking lot areas. Test pits were advanced at approximate 200′-250′ intervals along these areas

LaBella excavated the shallow test pits and gathered information from the test pits in accordance with the Hand tool advanced Test Pits and soil sampling methodology detailed in Section IV of the report.

Direct-Push Geoprobe Soil Borings (continued)

Soil Boring Number	Location	Observation/Evidence of Impairment	Sample and Analytical Method
B -42 (GPMW -8) destroyed	West of CSXROW; East of RG&E Substation;	Medium sand and gravel, cinders to 4' BGS Compacted silt and clay to 14' BGS Saturated at 9'-10' BGS No Evidence of impairment or elevated PID readings	B-42-(0'-4'BGS) 8 RCRA Totals by USEPA 6010;PCB's by USPEA 8080

The analytical data from the geoprobe soil boring samples analyzed for the 8RCRA Metals is detailed in the table below:

LaBella Geoprobe Soil Sample Results (mg/kg)

8 RCRA Metals (Total)

Table 26

	B-13 (4'-8')	B-19 (0'-1')	B-20 (0'-1)	B-20 (1'-4')	B-21 (0'-1')	B-21 (1'-4')	B-22 (0'-1')	B-23 (0'-1')	B-23 (1'-4')	B-34 (4'-5.5')	B-41 (0'-4')	B-42 (0'-4')	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives
Arsenic	4.51	**217**	**20.4**	8.88	**140**	**16.5**	**91.2**	**55.1**	5.57	<0.367	6.97	6.8	3-12	7.5 or SB
Barium	60.6	109	129	61.9	63.1	72.9	179	72.1	93.8	12.7	80.2	59.4	15-600	300 or SB
Cadmium	0.564	<0.508	**1.45**	<0.480	<0.503	<0.554	<0.558	<0.507	<0.416	13.1	0.655	<.414	0.1-1	1 or SB
Chromium	18.4	9.32	11.8	10.2	15.7	7.41	15.5	7.98	14.2	9.38	17.4	9.44	1.5-40	10 or SB
Lead	73.4	107	177	77.4	91.3	80.9	127	496	10.2	15	14.8	7.51	*	SB
Mercury	0.357	0.164	0.06	<0.054	0.233	<0.045	0.138	1.08	<0.060	0.088	0.06667	<0.0881	0.001-0.2	0.1
Selenium	<0.502	3.06	1.36	0.664	<0.503	1.31	2.31	6.44	0.542	<0.367	<0.518	<.414	0.1-3.9	2 or SB
Silver	4.7	2.11	3.02	1.49	2.65	<1.11	2.22	2.46	1.22	1.79	1.94	1.21	N/A	SB

* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm
N/A - Not Applicable
All test pits are 0"-12" depth
ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

Soil samples selected for laboratory analysis were generally selected at a depth at or in close proximity to the water table. As detailed in the table above the soil samples from the soil borings that were analyzed for VOC's by USEPA 8260 plus STARS did not exhibit levels of the targeted analytes above method detection limits with the exception of chlorbenzene in sample B-18 at a depth of 4'-8' BGS. This compound was detected at a level of 55.1 ug/kg, the corresponding soil cleanup objective as published in NYSDEC TAGM 4046 is 1700 ug/kg. As such, the detection of chlorobenzene in this soil sample does not appear to represent a remedial concern at this portion of the Site.

Additional samples were analyzed for NYSDEC STARS Memo #1 VOC's at several areas of the Site where previous investigation indicated the presence of a gasoline release, and at areas where REC's identified in the Phase I ESA were related to gasoline tanks. The analytical data from the geoprobe soil boring samples analyzed for gasoline related VOC's by USEPA Method 8021 is detailed in the table below:

LaBella Geoprobe Sample Results (ug/kg)

USEPA Method 8021

Table 28

	B-15 (4'-8')	B-25 (4'-8')	B-27 (4'-8')	B-31 (8'-12')	B-33 (4'-8')	B-34 (4'-5.5')	B-36 (4'-5.5')	B-37 (4'-8')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Clean Up Objective to Protect Groundwater Quality
Methyl tert-Butyl Ether	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	200	120
Benzene	ND<11.3	ND<8.38	ND<12.3	10.1	ND<10.1	ND<1,330	ND<10.2	ND<10.1	14	60
Toluene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,500
Ethylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	5,500
m,p-Xylene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,200
o-Xylene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,200
Isopropylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	4,000
n-Propylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	14,000
1,3,5-Trimethylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	17,000
tert-Butylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	N/A
1,2,4-Trimethylbenzene	16.4	ND<8.38	ND<12.3	ND<8.33	ND<10.1	**32,300**	ND<10.2	ND<10.1	100	13,000
sec-Butylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	24,000
p-Isopropyltoluene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	10,000
n-Butylbenzene	ND<11.3	ND<8.38	ND<12.3	ND<8.33	ND<10.1	**2,730**	ND<10.2	ND<10.1	100	17,000
Naphthalene	ND<56.7	ND<41.9	ND<61.7	ND<41.7	ND<50.3	**7,150**	ND<50.8	ND<50.7	200	13,000

All sample results and guidance values are listed in ug/kg = ppb

ND = Not Detected

N/A = Not Available

Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above the soil samples from the soil borings that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the geoprobe soil boring samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

LaBella Geoprobe Soil Boring Sample Results (ug/kg)
USEPA Method 8270
Table 30

	B-1 (8'12')	B-4 (8'-12')	B-13 (4'-8')	B-15 (4'-8')	B-25 (4'-8')	B-27 (4'-8')	B-31 (8'-12')	B-40 (8'-12')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater Quality
Napthalene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	200	13,000
Acenaphthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	90,000
Flourene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	350,000
Flouranthene	ND<318	ND<335	490	ND<372	ND<348	ND<387	ND<349	ND<352	1000	1,900,000
Anthracene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	400	700,000
Phenanthrene	ND<318	ND<335	460	ND<372	ND<348	ND<387	ND<349	ND<352	1000	220,000
Benzo (a) anthracene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	3,000
Chrysene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	400
Pyrene	ND<318	ND<335	542	ND<372	ND<348	ND<387	ND<349	ND<352	1000	665,000
Benzo (b) flouranthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	1,100
Benzo (k) flouranthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	1,100
Benzo (g,h,I) perylene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	800,000
Benzo (a) pyrene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	11,000
Dibenz (a,h) anthracene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	165,000
Indeno (1,2,3-cd) pyrene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	3,200

All sample results and guidance values are listed in ug/kg= ppb
N/A = Not Applicable
ND = Not Detected
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above only one of the soil samples from the soil borings that were analyzed for SVOC's by USEPA 8270+STARS exhibited levels of the targeted analytes above method detection limits.

were flouranthene at 490 ug/kg, phenanthrene at 460 ug/kg, and chrysene at 542 ug/kg. The corresponding soil guidance value as published in NYSDEC STARS Memo #1 is 1000 ug/kg for all three compounds. As such, the detected level of these compounds in this soil sample do not appear to represent a remedial concern at this portion of the Site.

Analytical data generated from the LaBella geoprobe soil boring study are included as Appendix 11.

VIg. Geoprobe Groundwater Monitoring Wells

Fieldwork:

During the geoprobe soil boring program eight of the soil borings were converted groundwater monitoring wells. Monitoring well locations were chosen based on the location of REC's from the Phase I ESA and on information that was gathered during previous portions of the investigation.

The location for the eight monitoring wells were as follows:

GPMW# 1. Latta Road ROW Adjacent to Erdle Tool & Die
GPMW# 2. River Street ROW Adjacent to Tapecon
GPMW# 3. River Street ROW Adjacent to Pelican Marina UST Field
GPMW# 4. 490 River Street Adjacent to UST
GPMW# 5. Ontario Park Maintenance Bldg. Adjacent to UST's
GPMW# 6. In between City Warehouses
GPMW# 7. West of CSX ROW/East of RG&E Substation
GPMW# 8. West of CSX ROW/East of RG&E Substation (destroyed)

The locations of the eight monitoring wells are depicted on Figures 2 & 3.

Monitoring wells were constructed in accordance with the monitoring well methodology section of the report. All of the wells were screened to intersect with the top of the water table.

Geoprobe monitoring well construction diagrams are included as Appendix 10.

Groundwater flow direction in the northern area of the Site is to the east with a horizontal gradient of 0.028. Groundwater flow direction in the southern area of the Site is to the east with a horizontal gradient of 0.018.

Groundwater elevations, flow directions, and contours are illustrated on Figures 6&7.

The analytical data from the groundwater samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

LaBella Geoprobe Groundwater Monitoring Well Results (ug/L)
USEPA Method 8260
Table 31

	GP MW-1/B-2 46 Latta	GP MW-2/B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
Bromodichloromethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
Bromomethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Bromoform	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
Carbon Tetrachloride	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Chloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5

LaBella Geoprobe Groundwater Monitoring Well Results (continued)
USEPA Method 8260

	GP MW-1/B-2 46 Latta	GP MW-2 /B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
2-Chlorotheyl Vinyl Ether	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Chloroform	ND<2.00	ND<2.00	ND<2.00	ND<2.00	7
Dibromochloromethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
1,1-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,2-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,1-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
trans-1,2-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
1,2-Dichloropropane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
cis-1,3-Dichloropropene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
trans-1,3-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Methylene chloride	ND<5.00	ND<5.00	ND<5.00	ND<5.00	5
1,1,2,2-Tetrachloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Tetrachloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
1,1,1-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,1,2-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Trichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Vinyl Chloride	ND<2.00	ND<2.00	ND<2.00	ND<2.00	2
Benzene	ND<0.700	ND<0.700	**1.25**	ND<0.700	1.0
Chlorobenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Ethylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Toluene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
m,p-Xylene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
o-Xylene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Sytrene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Acetone	**109**	ND<10.0	ND<10.0	ND<10.0	50*
Vinyl Acetate	ND<5.00	ND<5.00	ND<5.00	ND<5.00	N/A
2-Butanone	50.1	ND<5.00	ND<5.00	ND<5.00	N/A
4-Methyl-2-pentanone	ND<5.00	ND<5.00	ND<5.00	ND<5.00	N/A
2-Hexanone (MEK)	24.6	ND<5.00	ND<5.00	ND<5.00	50*
Carbon Disulfide	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Methyl tert-Butyl Ether	ND<2.00	ND<2.00	ND<2.00	ND<2.00	10
Isopropylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
n-Propylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,3,5-Trimethylbenzen	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5

LaBella Geoprobe Groundwater Monitoring Well Results (continued)
USEPA Method 8260

	GP MW-1/B-2 46 Latta	GP MW-2 /B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
tert-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
sec-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
n-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Naphthalene	ND<5.00	ND<5.00	ND<5.00	ND<5.00	10

All sample results and guidance values are listed in ppb=ug/L
ND = Not Detected
N/A = Not Available
Bold denotes constituents above NYSDEC Guidance Values
* = Guidance Value

As detailed in the table above groundwater samples from the four monitoring wells that were analyzed for VOC's by USEPA 8260+STARS in general did not exhibit levels of the targeted analytes above method detection limits.

One exception consisted of the compounds acetone, 2-butanone, and 2-hexanone (MEK) in GPMW #1. None of these compounds are regulated groundwater contaminants in New York State. There are recommended levels for acetone and 2-Hexanone (MEK) for drinking water. Because the groundwater at the Site is not used a source of potable water, and because the compounds present are not otherwise regulated, the presence of these compounds does not appear to represent a remedial concern at the Site.

Benzene was detected in the groundwater sample from GPMW #5 at a level of 1.25 ug/l. This level of Benzene in the sample only exceeds the NYSDEC Part 703 Groundwater standard by 0.25 ug/l. This level of benzene will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the Site when more definite redevelopment plans have been arrived at for the Site.

Additional groundwater samples were analyzed for limited NYSDEC VOC's associated with gasoline releases at several areas of the Site. This limited VOC scan was selected at areas where previous investigation indicated the presence of a gasoline release, and at areas where REC's identified in the Phase I ESA were related to gasoline tanks. The analytical data from the geoprobe monitoring well groundwater samples analyzed for gasoline related VOC's by USEPA Method 8021 is detailed in the table below:

LaBella Geoprobe Groundwater Monitoring Well Results (ug/kg)
USEPA Method 8021
Table 32

	GP MW-3/B-17	GP MW-4/B-26	GP MW-6/B-34	NYSDEC Part 703 Groundwater Standards
Methyl tert-Butyl Ether	**81.5**	ND<2.00	ND<20.0	10
Benzene	ND<0.70	ND<0.70	**100.0**	1.0
Toluene	ND<2.00	ND<2.00	ND<20.0	5
Ethylbenzene	ND<2.00	ND<2.00	**309.0**	5
m,p-Xylene	ND<2.00	ND<2.00	**90.5**	5
o-Xylene	ND<2.00	ND<2.00	**22.7**	5
Isopropylbenzene	ND<2.00	ND<2.00	**79.0**	5
n-Propylbenzene	ND<2.00	ND<2.00	**190.0**	5
1,3,5-Trimethylbenzene	ND<2.00	ND<2.00	**55.8**	5
tert-Butylbenzene	ND<2.00	ND<2.00	ND<20.0	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	**1160.0**	5
sec-Butylbenzene	ND<2.00	ND<2.00	**33.1**	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<20.0	5
n-Butylbenzene	ND<2.00	ND<2.00	**99.2**	5
Naphthalene	ND<5.00	ND<5.00	**200.0**	10

All sample results and guidance values are listed in ug/kg=ppb
ND = Not Detected
N/A = Not Available
Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above, numerous gasoline constituents were detected in the groundwater sample from GPMW #6. These compounds were detected at levels well above the Part 703-Groundwater Standards as published in NYSDEC STARS Memo #1. This monitoring well was installed to add definition to the petroleum release discovered at this area of the Site during the Bourne Test Pitting Study see Section (VIa).

Methyl tert-Butyl Ether (MTBE) was detected in the groundwater sample from GPMW #3. This level of MTBE is 71.5 ug/L above the Part 703 groundwater standards as published in NYSDEC STARS Memo #1. This level of MTBE will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the Site then more definite redevelopment plans have been arrived at for the Site.

The presence of MTBE in this well suggests a potential release from the nearby Pelican Marina underground storage tank field. This privately owned tank field is located approximately 40 feet to the west and hydraulically upgradient of GPMW #3.

The analytical data from the geoprobe monitoring well groundwater samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

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

Appendix 3

Boring, Test Pit, and Monitoring Well Logs

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. **300 STATE STREET** **Rochester, New York 14614**	TEST PIT #1 PROJECT # 99150 DATE: 1/11/00
PROJECT: Port of Rochester LOCATION: **South Test Pit for Bourne** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			Blacktop	0 ppm no odor
1			Gravel/Sub-base	
2				0 ppm no odor
3			cinders/fill mixed with foundry slag byproducts (blue with sulfur odor)	0 ppm no odor
4				
5				0 ppm no odor
6			beginning of angled pour	0 ppm no odor
7			tie-back	0 ppm no odor
			groundwater level up to approx 7.5'	
8			concrete deck	0 ppm no odor
9				0 ppm no odor
10			concrete deck	0 ppm no odor
11				0 ppm no odor
12			Test pit terminated at approx. 11'+/-	
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

20'x20'x11'

TEST PIT #1

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #2a PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #2a** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Blacktop Gravel/Sub-base	0 ppm no odor
2				0 ppm no odor
3			silt/cinders and misc. fill	0 ppm no odor
4			start of petroleum odor in fill	
5				no instrument medium/strong odor
6			tie- back/concrete dead man groundwater at approx 5.5'	no instr. - stronger petrol. Odor
7				on west side of sheet piles
8			test pit terminated at approximately 7.5'-8'	no instrument no odor
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	20'x20'x11'
* Hrs. after completion			

TEST PIT #2a

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. **300 STATE STREET** **Rochester, New York 14614**	TEST PIT #2b PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #2b** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Blacktop	0 ppm no odor
2			gravel	0 ppm no odor
3			silt/cinders with some gravel	0 ppm no odor
4			foundry slag	
5				0 ppm no odor
6				0 ppm no odor
7			saturated zone at 6.5-7' but test pit stayed ahead of standing water	
8				slight odor but no screen 0 ppm
9			test pit terminated at approximately 8.5'	
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	20'x20'x11'

* Hrs. after completion

TEST PIT #2b

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #3A PROJECT # 99150 DATE: 1/12/00
PROJECT:	Port of Rochester			
LOCATION:	**Bourne Test Pit #3A**			ELEVATION:
CLIENT:	City of Rochester			
CONTRACTOR:	Hickory Hills			LABELLA REP: DEP
EQUIPMENT:	Backhoe			
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			former rail lines still in place under blacktop	0 ppm no odor
2				0 ppm no odor
3			fine sand fill	0 ppm no odor
4				
5			fine sand fill	0 ppm no odor
6				0 ppm no odor
7				
8			last 3" +/- of sand is darkly stained (gray/black)	0 ppm no odor
9			concrete slab concrete slab	
10			concrete slab concrete slab	
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #3B PROJECT # 99150 DATE: 1/12/00
PROJECT:	Port of Rochester			
LOCATION:	**Bourne Test Pit #3B**			ELEVATION:
CLIENT:	City of Rochester			
CONTRACTOR:	Hickory Hills			LABELLA REP: DEP
EQUIPMENT:	Backhoe			
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Blacktop former rail lines still in place under blacktop	0 ppm creosote odor
2			former/active electrical conduit	0 ppm no odor
3			layer of concrete	0 ppm no odor
4			fine sand - light brown	
5				0 ppm no odor
6				0 ppm no odor
7				
8			last 3" +/- of sand is darkly stained (gray/black)	0 ppm no odor
9			concrete slab concrete slab	
10			concrete slab concrete slab	
11			14' west of retaining wall	
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. **300 STATE STREET** **Rochester, New York 14614**	TEST PIT #4 PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #4** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm no odor
1			silt and topsoil	
				0 ppm no odor
2			fine sand and silt with some foundry slag	
3				0 ppm no odor
4			fine sand and silt with some foundry slag	
				0 ppm no odor
5				
6			fine sand and silt with some foundry slag	0 ppm no odor
7				
8			fine sand and silt with some foundry slag	0 ppm no odor
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	20'x20'x11'

* Hrs. after completion

TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #1 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: Parking Lot at Railroad turntable CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red/black cinders, misc. fill	
				0 ppm no odor
2			medium/coarse brown sand	
3			railroad ties	0 ppm no odor
4				
			water infiltration (perched? Actual water table?)	0 ppm no odor
5				
6			running sand/GW at 6'	0 ppm no odor
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #1

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #2 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red silt/sand with gravel	
				0 ppm no odor
2			gray medium/coarse sand	
3			medium gravel	0 ppm no odor
			perched?/actual groundwater	
4				
				0 ppm no odor
5				
			standing groundwater	
6				0 ppm no odor
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	
* Hrs. after completion			TEST PIT #2

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #3 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red silt/sand with gravel	
			brown/gray sand	0 ppm no odor
2				
3				0 ppm no odor
4				
5				0 ppm no odor
6			some gravel	0 ppm no odor
				0 ppm no odor
7			running sand/groundwater	
8				0 ppm no odor
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #4 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			white concrete	
			miscellaneous fill	0 ppm no odor
2				
			some blue slag (sulfur odor)	
3			red silt/sand	0 ppm no odor
4			brown medium sand	
			layer of dense slag	0 ppm no odor
5				
6			standing water	0 ppm no odor
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #4

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #5 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm no odor
1			silt/sand with some gravel	
				0 ppm no odor
2			brown sand	
3				0 ppm no odor
4			silt/sand with some clay	
				0 ppm no odor
5				
6				0 ppm no odor
7				0 ppm no odor
8			clay	0 ppm no odor
9			fine sand with some gravel	
				0 ppm no odor
10				
			some sandstone	
11				0 ppm no odor
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #5

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #6 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	
1			red silt gravel	
			miscellaneous fill	
2			blue sulfur slag	
			miscellaneous fill	
3				
4			termination at 4' due to slag	
5			miscellaneous white slag	
				at third location
6			groundwater with sheen	
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #6

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #7 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm sulfur odor
1			miscellaneous silt/gravel	
				0 ppm sulfur odor
2			blue slag	
			miscellaneous fill- brick/slag/concrete	
3				0 ppm sulfur odor
4			black layer	
				0 ppm sulfur odor
5			water	
6				0 ppm sulfur odor
7			miscellaneous fill	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #7

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #8 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm sulfur odor
1			miscellaneous fill - slag/brick	
				0 ppm sulfur odor
2				
			black fine ash/silt	
3				0 ppm sulfur odor
			slag miscellaneous fill	
4				
				0 ppm sulfur odor
5			groundwater	
6				0 ppm sulfur odor
7			miscellaneous fill	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #8

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #9 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			grass sand	0 ppm sulfur odor
2				0 ppm sulfur odor
3			red slag - miscellaneous fill	0 ppm sulfur odor
4			and blue slag	
5				0 ppm sulfur odor
6			ash	0 ppm sulfur odor
7				0 ppm sulfur odor
8				
9				0 ppm sulfur odor
10				0 ppm sulfur odor
11			standing water (no sheen)	0 ppm sulfur odor
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #9

TEST PIT REPORT

LABELLA ASSOCIATES, P.C.
300 STATE STREET
Rochester, New York 14614

TEST PIT #10
PROJECT # 99150
DATE: 2/28/00

PROJECT: Port of Rochester
LOCATION:
CLIENT:
CONTRACTOR: Hickory Hills
EQUIPMENT: Backhoe

ELEVATION:
LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS Attempt 1	Attempt 2	Attempt 3	Attempt 4	REMARKS
			grass	grass	grass	grass	0 ppm sulfur odor
1			sand/silt	sand/silt	gravel	silt/fill	
				red and blue slag		red silt/fill	0 ppm sulfur odor
2					concrete		
3			concrete slab			black cinders/fill	0 ppm sulfur odor
4				large frags			
5				concrete slab		brown sand	0 ppm sulfur odor
6							0 ppm no odor
7						gray fine sand	0 ppm no odor
8						very firm brown sand	
9							0 ppm no odor
10							0 ppm no odor
11						no standing water	0 ppm no odor
12							
13						hard sand/till	0 ppm no odor

WATER LEVEL						GENERAL NOTES
DATE	TIME*	DEPTH				
* Hrs. after completion						TEST PIT #10

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #11 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			grass silt/sand - brown (some debris and concrete slabs)	0 ppm no odor
2				0 ppm no odor
3				0 ppm no odor
4				
5				0 ppm no odor
6				0 ppm no odor
7				0 ppm no odor
8				
9				0 ppm no odor
10				0 ppm no odor
11			gray silt (dense) and clay	0 ppm no odor
12				
13				0 ppm no odor

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #11

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #12 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS 1st attempt	DESCRIPTION OF MATERIALS 2nd attempt	REMARKS
			grass	grass	
1			brick/rock fragments	silt	
				miscellaneous slag	
2			miscellaneous fill		
3			blue/red slag		
4					
				brick	
5			concrete slab	concrete slab	
6					
7					
8					
9					
10					
11					
12					
13					

WATER LEVEL

DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #12

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #13 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel/sub-base	0 ppm no odor
1			silt/sand with gravel	
				0 ppm no odor
2			firm/dense hard fine sand	
3			brick/concrete	0 ppm no odor
4			brown sand	
				0 ppm no odor
5				
6				0 ppm no odor
7				0 ppm no odor
8			black cinders	
				0 ppm no odor
9				
10			concrete slab	0 ppm no odor
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #13

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #14 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			gravel/sub-base miscellaneous fill (blue slag, gravel, sand, brick)	0 ppm no odor
2				0 ppm sulfur odor
3				0 ppm sulfur odor
4				
5				0 ppm sulfur odor
6				0 ppm sulfur odor
7			standing water	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	
* Hrs. after completion			TEST PIT #14

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #15 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			gravel/sub-base silt/sand gravel (fill)	
2			concrete slab	
3			miscellaneous slag (white)	
4			miscellaneous slag (iron)	
5				
6				
7				
8				
9				
10			water	
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #15

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #16 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			gravel silt/sand	fill 0 ppm sulfur odor
2				0 ppm sulfur odor
3			miscellaneous slag	0 ppm sulfur odor
4				
5				0 ppm sulfur odor
6				0 ppm sulfur odor
7				0 ppm sulfur odor
8			silty-clay (native)	
9				0 ppm no odor
10				0 ppm no odor
11				0 ppm no odor
12				
13				0 ppm no odor

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #16

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #17 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	
1			topsoil/silt	0 ppm no odor
			medium brown sand/silt	
2				0 ppm no odor
3			gray-blue silty clay	
4				0 ppm no odor
5				0 ppm no odor
6				
7				0 ppm no odor
8				0 ppm no odor
9				0 ppm no odor
10				0 ppm no odor
11				0 ppm no odor
12				
13				0 ppm no odor

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #17

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #18 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel	
1			silt/sand - gravel	0 ppm sulfur odor
2				0 ppm sulfur odor
3			miscellaneous slag white, blue and green	
4				0 ppm sulfur odor
5				0 ppm sulfur odor
6				
7			standing water	0 ppm sulfur odor
8				0 ppm sulfur odor
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	
* Hrs. after completion			TEST PIT #18

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #19 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			grass silt/sand	
2				
3				
4			dense slag - white/blue	
5			standing water - some sheen	
6				
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #19

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #20 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
1			grass silt/sand/topsoil	0 ppm	no odor
2			red coarse sand - waste fill	0 ppm	no odor
3				0 ppm	no odor
4				0 ppm	no odor
5			brown silt/fine sand	0 ppm	no odor
6			no slag (rocks)		
7				0 ppm	no odor
8				0 ppm	no odor
9					
10				0 ppm	no odor
11				0 ppm	no odor
12				0 ppm	no odor
13					

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #20

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #21 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
			asphalt - 2"	0 ppm	no odor
1			gravel		
			gray medium-fine sand	0 ppm	no odor
2					
				0 ppm	Creosote odor
3					
				0 ppm	Creosote odor
4					
5			railroad ties	0 ppm	Creosote odor
6			concrete slab		
				0 ppm	Creosote odor
7					
8					
9					
10					
11					
12					
13					

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #21

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #22 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
1			gravel silt/sand fill	0 ppm	no odor
2				0 ppm	no odor
3			miscellaneous slag fragments (blue/white)	0 ppm	sulfur odor
4				0 ppm	sulfur odor
5				0 ppm	sulfur odor
6			concrete/slag layer - hoe ram		
7			standing water with sheen	0 ppm	sulfur odor
8					
9					
10					
11					
12					
13					

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #22

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-101**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation	ft	Datum		Boring Location
Item	Casing	Sampler	Core Barrel	Rig Make & Model
Type	HAS	SS	NX	☑ Truck ☐ Tripod ☑ Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	2	☐ ATV ☐ Geoprobe ☐ Winch
Hammer Weight (lb)	--	140		☐ Track ☐ Air Track ☐ Roller Bit
Hammer Fall (in)	--	30		☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		50.5					
							Competent red sandstone with interbedded gray sandstone.
			3.4/5.0	68			QUEENSTONE FORMATION
	Avg. 3-4						
5	minutes						
	per foot						
			3.45/5.0	69			Highly fractured 8.0 ft. to 10.0 ft.
		60.5					
10							
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	50.5
Rock Cored (linear ft)	10
Samples	14S
BORING NO.	HA-102

Form #3002

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-101a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	7-Jun-00

Elevation 251.8 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: [x] Truck [ ] Tripod [x] Cat-Head [ ] ATV [ ] Geoprobe [ ] Winch [ ] Track [ ] Air Track [ ] Roller Bit [ ] Skid [ ] _____ [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						
						Augered to 5.0 ft.
5		5 5 3 5	S6 14"/24"	5.0 7.0		Loose gray brown fine to medium SAND, trace silt, organics, moist. ALLUVIUM
						Augered to 10.0 ft.
10		4 4 3 2	S7 16"/24"	10.0 12.0		Same, except wet.
15		1 9 7 7	S8 23"/24"	15.0 17.0		Medium dense gray brown fine to coarse SAND, some coarse gravel, wet.
20		11 10 11 14	S9 20"/24"	20.0 22.0		Same.
25		12 3 4 3	S10 20"/24"	25.0 27.0		Same, except loose.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	115
Rock Cored (Linear ft)	---
Number of Samples	18S
BORING NO.	HA-101a

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-101a

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		9 4 4 3	S11 22"/24"	30.0 32.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet. ALLUVIUM
35		2 1 2 2	S12 23"/24"	35.0 37.0		Same, except very loose.
40		1 1 2 3	S13 22"/24"	40.0 42.0		Very loose gray brown fine sandy SILT, little clay, organics, wet.
45		1 2 2 3	S14 18"/24"	45.0 47.0		Same, except no organics.
50		1 2 2 2	S15 20"/24"	50.0 52.0		Same.
55		1 2 3 5	S16 20"/24"	55.0 57.0		Same.
60		1 3 4 4	S17 20"/24"	60.0 62.0		Loose gray brown SILT, little clay, trace sand, wet.
65		1 2 2 4	S18 23"/24"	65.0 67.0		Same.
						(Augered to bedrock)
70						

FILE NO. 70819-000 BORING NO. HA-101a

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.
HA-101a

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(Augered to bedrock - No samples recovered)
75						
80						
85						
90						
95						
100						
105						
110						

FILE NO.	70819-000	BORING NO.	HA-101a

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.
HA-101a

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(Encounter Change in drilling conditions)
						(Auger refusal)
115						Bottom of Exploration of 115.0 ft.
120						
125						
130						
135						
140						
145						
150						

FILE NO.	70819-000	BORING NO.	HA-101a

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-102**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation 253.5 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		28 19 16 14	S1 16"/24"	0.0 2.0		Medium dense brown and black silty fine to coarse SAND, little rock fragments, dry. FILL
		9 8 6 5	S2 14"/24"	2.0 4.0		Medium dense brown silty fine to coarse SAND, trace coarse gravel, dry.
		5 5 3 3	S3 2"/24"	4.0 6.0		Same, rock obstruction in bottom of spoon.
5		1 2 3 1	S4 15"/24"	6.0 8.0	6.0	Loose gray brown fine to coarse SAND, wet. ALLUVIUM
		4 18 15 17	S5 17"/24"	8.0 10.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
10		22 48 58 45	S6 2"/24"	10.0 12.0		Very dense brown fine to coarse SAND, moist.
15		54 100/.4	S7 8"/11"	15.0 15.9	15.0	Very dense gray brown silty fine to coarse SAND, some gravel, moist. GLACIAL TILL
20		100/.4	S8 4"/5"	20.0 20.4		Very dense brown silty fine to coarse SAND, some gravel. Red sandstone in bottom of spoon, moist.
25		19 91 100/.3	S9 12"/18"	25.0 26.3		Very dense gray brown silty fine to coarse SAND, some gravel, moist.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
30-May		2			17.5

Sample ID

O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Summary

Overburden (Linear ft)	50.5
Rock Cored (Linear ft)	10
Number of Samples	14S
BORING NO.	HA-102

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-102**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		10 100/.3	S10 7"/10"	30.0 30.8		Very dense gray brown silty fine to coarse SAND, little rock fragments, wet. GLACIAL TILL
35		19 60 100/.3	S11 16"/16"	35.0 36.3		Very dense silty fine to coarse SAND, some gravel, trace clay, wet.
40		15 100/.4	S12 10"/11"	40.0 40.9		Same.
45		20 100/.1	S13 6"/8"	45.0 45.6	45.0	Very dense red brown silty fine to coarse SAND, trace clay, moist. WEATHERED ROCK
50		100/.5	S14	50.0 50.5	50.5	Same, with little clay. Began rock coring at 50.5 ft.
						Competent, red sandstone with interbedded gray sandstone. QUEENSTONE FORMATION
55						
						Highly fractured 58.8 ft. to 60.5 ft.
60						Bottom of Exploration at 60.5 ft.
65						
70						

FILE NO.	70819-000	BORING NO.	HA-102

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	31-May-00

Elevation 253.86 ft | Datum City | Boring Location See Bring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	1-7/8
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME-55 Truck Mount

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		8 11 11 15	S1 15"/24"	0.0 2.0	2.0	Medium dense gravelly coarse to fine sand, little silt, dry. FILL
		13 18 11 7	S2 10"/24"	2.0 4.0		Medium dense dark brown coarse to fine SAND, some gravel, little silt, dry. FILL
5		9 8 4 6	S3	4.0 6.0		Same. Moist to wet beginning at 5.5 ft. FILL
		3 5 8 50/0.0	S4 4"/18"	6.0 7.5		Same, wet. FILL Noted refusal and suspected cobble at 7.5 ft.
		5 7 9 4	S5 6"/24"	8.0 10.0		Same, except black. FILL
10		7 9 10 15	S6	10.0 12.0		Medium dense black coarse to fine sandy GRAVEL, little silt, wet. FILL
		62 26 29 9	S7 12"/24"	12.0 14.0		Same, except very dense, gray-black. FILL Driller noted sulphur-like odor in sample. See Note on Page 2 of 4.
15						Auger Refusal at 14.0 ft. Boring moved 18.0 ft. west of original location.
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	14
Rock Cored (Linear ft)	--
Number of Samples	7S
BORING NO.	HA-103

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	1-Jun-00

Elevation 253.86 ft | Datum City | Boring Location See Boring Location Plan

Rig Make & Model CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		A				(Offset 18 west of original location)
		U				
		G	See Samples for 0-14 ft. in Boring HA-103			
		E				
		R				
5		11		5.0		Medium dense brown black fine to coarse SAND, little silt, dry.
		14				
		7				FILL
		4		7.0		
		A				
		U				
		G				
		E				
		R				
10		9		10.0		Dense black brown fine to coarse SAND, little silt, slag fragments, wet.
		19				
		22				
		20		12.0		
		7	S8	14.0		Same, except medium dense.
		11				
15		15				
		12	14"/24"	16.0		
		8		16.0		
		3	No Recovery			
		6				
		7		18.0		
		8	S9	18.0		Medium dense black brown silty fine to coarse SAND, wet.
		10				
		8				ALLUVIUM
		6	6"/24"	20.0		
20						
		5	S10	24.0		Loose gray brown fine sand SILT, wet.
		3				
25		3				
		4	2"/24"	26.0		
		2	S11	29.0		Loose gray fine sand SILT, some clay, organics, moist.
		3				
30		3	12"/18"	30.5		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	7
Rock Cored (Linear ft)	--
Number of Samples	19S
BORING NO.	HA-103a

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103a**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1 3 3 4	S12 12"/24"	34.0 36.0		Loose gray fine sand SILT, some clay, organics, moist. ALLUVIUM
35						
		2 2 4 4	S13 23"/24"	39.0 40.0		Loose gray silty fine to coarse SAND, trace ogranics, moist.
40						
		2 4 4 5	S14 22"/24"	44.0 46.0		Loose gray brown fine to medium sandy SILT, little clay, organics, moist.
45						
		2 2 3 3	S15 22"/24"	49.0 51.0		Same.
50						
		2 2 3 5	S16 23"/24"	54.0 56.0		Same.
55						
		2 2 3	S17 22"/24"	59.0 61.0		Same.
60						
		4 4 7 7	S18 22"/24"	64.0 66.0		Medium dense gray brown fine to medium sandy SILT, little clay, organics, moist.
65						
		7 10 10 10	S19 17"/24"	69.0 71.0		Bottom of Exploration at 71.0 ft.
70						

FILE NO. 70819-000 BORING NO. HA-103a

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-104**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	13-Jun-00
DRILLER	L. TODD	DATE FINISHED	13-Jun-00

Elevation 254.25 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						Mudline 19.0 ft below top of seawall.
0						
						Sunk augers 4.0 ft below mudline.
		WOR WOR WOR 1	S1 11"/24"	4.0 6.0		Very loose gray brown silty coarse to fine SAND.
5						ALLUVIUM
		WOR WOR WOR WOR	S2 20"/24"	9.0 11.0		Same as above.
10						
		1 3 3 5	S3 24"/24"	14.0 16.0		Loose gray brown sandy fine to medium SILT, organics, wet.
15						
		3 5 5 9	S4 20"/24"	19.0 21.0		Same as above.
20						
		2 2 4 6	S5 24"/24"	24.0 26.0		Same as above.
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Summary

Overburden (Linear ft)	31
Rock Cored (Linear ft)	--
Number of Samples	68
BORING NO.	HA-104

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-104**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S6	29.0		Loose gray fine to medium sandy SILT, organics, wet.
		2	24"/24"	31.0		ALLUVIUM
		4				Bottom of Exploration at 31.0 ft.
		5				
35						
40						
45						
50						
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-104

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-105**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	13-Jun-00
DRILLER	L. TODD	DATE FINISHED	13-Jun-00

Elevation 253.96 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 Truck Mount

- [x] Truck
- [ ] Tripod
- [ ] ATV
- [ ] Geoprobe
- [ ] Track
- [ ] Air Track
- [ ] Skid
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type
- [x] Safety
- [ ] Doughnut

Casing [ ] Driven [ ] Spun

Drill Mud
- [ ] Bentonite
- [ ] Polymer
- [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						15.0 ft to Mudline from Top of Seawall
0						-Sunk augers 3.0 ft below mudline-
		WOR	S1	3.0		Very loose gray brown sandy SILT, wet
		WOR				
		WOR				ALLUVIUM
		WOR	14"/24"	5.0		
5						
		WOR	S2	6.0		Very loose gray brown silty coarse to fine SAND, wet.
		WOR				
		WOR				
		WOR	14"/24"	8.0		
		WOR	S3	8.0		Same as above.
		WOR				
		WOR				
		WOR	16"/24"	10.0		
10						
15		WOR	S4	15.0		Loose gray brown silty coarse to fine SAND, wet.
		WOR				
		5				
		7	15"/24"	17.0		
20		2	S5	20.0		Loose gray brown sandy SILT, organics.
		2				
		7				
		7	24"/24"	22.0		
25		WOH	S6	25.0		Same as above.
		2				
		5				
		7	20"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	32
Rock Cored (Linear ft)	--
Number of Samples	7S
BORING NO.	HA-105

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.
HA-105

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1	S7	30.0		Loose gray brown sandy SILT, organics.
		3				
		3				ALLUVIUM
		6		32.0		
						Bottom of Exploration at 32.0 ft.
35						
40						
45						
50						
55						
60						
65						
70						

FILE NO.	70819-000	BORING NO.	HA-105

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-106**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	1-Jun-00
DRILLER	L. TODD	DATE FINISHED	1-Jun-00

Elevation 250.79 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck
- [ ] Tripod
- [ ] ATV
- [ ] Geoprobe
- [ ] Track
- [ ] Air Track
- [ ] Skid
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type
- [x] Safety
- [ ] Doughnut

Casing [ ] Driven [ ] Spun

Drill Mud
- [ ] Bentonite
- [ ] Polymer
- [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		Augered				
		3 4 7	S1 11"/18"	0.5 2.0		Medium dense brown silty fine to coarse SAND, some rock fragments, dry. FILL
		8 5 5 7	S2 12"/24"	2.0 4.0		Medium dense red brown silty fine to coarse SAND, trace rock fragments, moist.
		4 12 17 15	S3 16"/24"	4.0 6.0		Medium dense black brown fine to coarse SAND, little silt, wet. ALLUVIUM
5		20 37 31 36	S4 12"/24"	6.0 8.0		Same, except very dense.
		44 28 24 12	S5 6"/24"	8.0 10.0		Same.
10		5 3 5 6	S6 8"/24"	10.0 12.0		Loose gray brown fine to coarse SAND, little silt, wet.
		3 3 6 5	S7 12"/24"	12.0 14.0		Same, except trace rock fragments.
15		6 12 14 14	S8 11"/24"	14.0 16.0		Medium dense gray brown fine to coarse SAND, little silt, wet.
		4 3 4 2	S9 3"/24"	19.0 21.0		Loose gray fine sand SILT, little clay, moist.
20						
		2 2 2 4	S10 15"/24"	24.0 26.0		Same, except very loose.
25						
		1 2 3	S11 17"/24"	29.0 31.0		Loose gray brown fine to medium sand SILT, little clay, organics, moist.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	41
Rock Cored (Linear ft)	--
Number of Samples	13S

BORING NO. HA-106

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-106

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2 3 3 4	S12 20"/24"	34.0 36.0		Loose gray brown fine to medium sand SILT, little clay, organics, moist, ALLUVIUM
35						
		1 2 3 4	S13 22"/24"	39.0 41.0		Same.
40						Bottom of Exploration at 41.0 ft.
45						
50						
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-106

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-107**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	26-May-00
DRILLER	L. TODD	DATE FINISHED	26-May-00

Elevation 266.08 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0					0.5	ASPHALT
		5 11 21	S1 7"/18"	0.5 2.0		Medium dense black brown fine to coarse SAND, some gravel, dry. FILL
		13 18 14 11	S2 16"/24"	2.0 4.0		Medium dense brown fine to coarse SAND, damp.
5		5 22 22 30	S3 17"/24"	4.0 6.0		Dense brown black fine to coarse SAND, little silt, brick, damp.
		14 11 14 12	S4 20"/24"	6.0 8.0		Same, except medium dense.
		4 6 6 7	S5 18"/24"	8.0 10.0		Medium dense brown orange fine to coarse SAND, moist.
10						
		1 2 3 3	S6 21"/24"	13.0 15.0	13.0	Loose brown gray fine sand SILT, trace to little clay, trace organics, moist. ALLUVIUM
15						
		2 3 4 5	S7 24"/24"	18.0 20.0		Same.
20						
		7 35 37 21	S8 22"/24"	23.0 25.0	23.0	Very dense gray brown silty SAND, some gravel. Pockets of brown fine to coarse SAND, wet. GLACIAL TILL
25						
		22 24 26 26	S9 20"/24"	28.0 30.0		Same.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
26-May		0.5			18

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	49.0
Rock Cored (Linear ft)	5.0
Number of Samples	13S
BORING NO.	HA-107

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-107

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		15 39 41 40	S10 19"/24"	33.0 35.0		Very dense gray brown fine silty sand, little gravel, wet. GLACIAL TILL
35						
		16 26 39 43	S11 17"/24"	38.0 40.0		Same.
40						
		25 65 100/.4	S12 16"/17"	43.0 44.4		Very dense gray brown fine sandy SILT, trace clay, little gravel, wet.
45						
		24 100/.5	S13 11"/12"	48.0 49.0		Same, except pocket of red brown fine to coarse SAND, some rock fragments, wet.
					49.0	Began Rock Coring at 49.0 ft.
50						
						Competent red sandstone with interbedded gray sandstone.
					54.0	Bottom of Exploration at 54.0 ft.
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-107

Form #3001

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-107**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	26-May-00
DRILLER	L. TODD	DATE FINISHED	26-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: [x] Truck [ ] Tripod [x] Cat-Head [ ] ATV [ ] Geoprobe [ ] Winch [ ] Track [ ] Air Track [ ] Roller Bit [ ] Skid [ ] _____ [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD (in)	Recovery RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		49.5					0-2 ft. Highly fractured.
	Avg. 4 ft.						
			1.9/5.0	38			Competent red sandstone with interbedded gray sandstone.
	per						QUEENSTONE FORMATION
	minute						
5		54.5					
10							
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)
Rock Cored (linear ft)
Samples

BORING NO. HA-107

Form #3002

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-111**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	23-May-00
DRILLER	L. TODD	DATE FINISHED	23-May-00

Elevation 251.83 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0			No sample		0.5	ASPHALT
					1.0	CRUSHED STONE
		3	S1	1.0		Loose gray brown silty fine to coarse SAND, pocket of black fine to coarse
		3	5"/12"	2.0		SAND, dry.
		5	S2	2.0		Medium dense gray brown fine to coarse SAND, little silt, wet.
		6				FILL
		7				
		6	8"/24"	4.0		
		9	S3	4.0		Medium dense gray brown green (mottled) silty fine to coarse SAND, some fine
		4				gravel, wood, moist. Water in borehole at 3.9 ft.
5		19				
		21	12"/24"	6.0		
		19	S4	6.0		Dense gray brown gravelly SAND, wet. Rock Obstruction in shoe.
		19				
		27				
		32	16"/24"	8.0		
		21	S5	8.0		Very dense gray brown fine to coarse SAND, some fine gravel, wet.
		24				
		26				
		25	20"/24"	10.0		
10		10	S6	10.0	10.0	Medium dense gray brown fine to coarse SAND.
		15				
		14				ALLUVIUM
		19	17"/24"	12.0		
15		4	S7	15.0		Loose gray brown fine to coarse SAND, some fine to coarse gravel, moist.
		6				
		3				
		3	14"/24"	17.0		
20		1	S8	20.0		Very loose gray brown fine sand SILT, wood, natural laminations in soils, moist.
		1				
		2				
		2	18"/24"	22.0		
25		1	S9	25.0		Very loose gray brown fine sand SILT, little clay, wood.
		1				
		1				
		1	24"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
23-May	10	0.75			3.9

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	58.5
Rock Cored (Linear ft)	5
Number of Samples	14S
BORING NO.	HA-111

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-111

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1 2 2 3	S10 24"/24"	30.0 32.0		Very loose gray brown fine sand SILT, little clay, root structures, wood, moist.
						ALLUVIUM
35		2 2 2 2	S11 24"/24"	35.0 37.0		Same, except some clay.
40		2 2 2 6	S12 24"/24"	40.0 42.0	42.0	Very loose gray-green fine sand SILT, root structures, red fine to coarse sand in shoe, moist.
						GLACIAL TILL
45		70 33 8 12	S13 16"/24"	45.0 47.0	46.0	Dense red brown SILT, little clay, gray green fractured sandstone.
50		100/.2				No Recovery.
55		100/.2	S14 2"/3"	55.0 55.3	55.0	Very dense red, brown fractured sandstone, red brown silt, wet.
						WEATHERED BEDROCK
						Auger Refusal at 58.5 ft.; began rock coring.
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-111

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.
HA-111

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						Competent red sandstone with interbedded gray sandstone.
						QUEENSTON FORMATION
						Bottom of Exploration at 63.5 ft.
65						Monitoring well installed in adjacent borehole. See Installation Report for LBA-MW1
70						
75						
80						
85						
90						
95						
##						

FILE NO.	70819-000	BORING NO.	HA-111

Form #3001

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-111**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	23-May-00
DRILLER	L. TODD	DATE FINISHED	23-May-00

Elevation	ft	Datum		Boring Location					
Item	Casing	Sampler	Core Barrel	Rig Make & Model					Drill Mud
Type	HAS	SS	NX	☑ Truck	☐ Tripod	☑ Cat-Head	Hammer Type		☐ Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	☐ ATV	☐ Geoprobe	☐ Winch	☑ Safety		☐ Polymer
Hammer Weight (lb)	–	140		☐ Track	☐ Air Track	☐ Roller Bit	☐ Doughnut		☑ None
Hammer Fall (in)	–	30		☐ Skid	☐ _____	☐ Cutting Head	Casing	☐ Driven	☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		58.5					
	5						Competent red sandstone with interbedded gray sandstone.
	5						QUEENSTONE FORMATION
	3						
	4						
	5	63.5					
5							
10							
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft) _____

Rock Cored (linear ft) _____

Samples

BORING NO. HA-111

Form #3002

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. LBA-MW1

Boring No. HA-111*

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/24/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El. Not Surveyed ft

EL Datum Not Surveyed

Location North Parking Lot

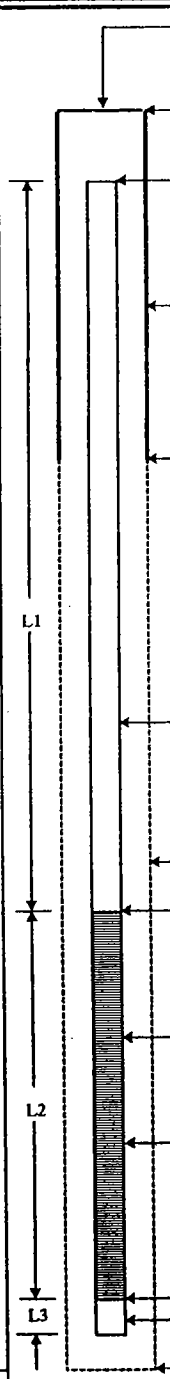
☐ Guard Pipe

☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Gray brown silty fine to coarse SAND. Some gravel, wood, wet.	Sand/Grout

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock	Roadway Box	
Height/Depth of top of guard pipe/roadway box above/below ground surface	–	ft
Height/Depth of top of riser pipe above/below ground surface	0.3	ft
Type of protective casing:	None	
Length	–	ft
Inside Diameter	–	in
Depth of bottom of guard pipe/roadway box	–	ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.0	2.5

Type of riser pipe:		
Inside diameter of riser pipe	2.0	in
Type of backfill around riser	Quartz Sand	
Diameter of borehole	4-1/4	in
Depth to top of well screen	3.0	ft
Type of screen	SCHEDULE 40 PVC	
Screen gauge or size of openings	0.010	in
Diameter of screen	2.0	in
Type of backfill around screen	Quartz Sand	
Depth of bottom of well screen	13.0	ft
Bottom of Silt trap	–	ft
Depth of bottom of borehole	14.0	ft

3 ft	+	10 ft	+	0 ft	=	13 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: Well installed 4 ft. west of Boring HA-111. Hole was blind augered to 14.0 ft. per Greg Senegal of Labella Associates

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-113**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation 270.8 ft	Datum City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		1 2 3 3	S1 16"/24"	0.0 2.0		Loose brown silty fine SAND, organics, dry.
		3 2 2 2	S2 14"/24"	2.0 4.0		Very loose brown red silty fine to coarse SAND, little rock fragments, slag, dry. FILL
		3 4 5 7	No Recovery 2"/24"	4.0 6.0		No Recovery
5		7 5 4 4	S3 15"/24"	6.0 8.0		Loose brown red silty fine to coarse SAND, little rock fragments, slag, dry.
		4 100/.4	S4 4"/24"	8.0 8.9		Same. Obstruction at 8.3 ft.
10						Note: Moved 4.0 ft. to south. Blind augered to 10.0 ft. and hit auger refusal again. Moved again 10.0 ft. south of second boring. See Boring HA-113a.
15						
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	27.0 ft.
Rock Cored (Linear ft)	--
Number of Samples	8S
BORING NO.	HA-113

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-113a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation 270.8 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck
- [ ] Tripod
- [ ] ATV
- [ ] Geoprobe
- [ ] Track
- [ ] Air Track
- [ ] Skid
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						
						(Blind augered to 10.0 ft.) See Boring HA-113
5						
10		1 2 3 3	S5 3"/24"	10.0	12.0	Loose brown red silty fine to coarse SAND, little rock fragments, slag, moist. FILL
						(Slag obstruction in spoon)
15		7 11 11 14	S6 1"/24"	15.0	17.0	
					20.0	
20		3 14 36 50	S7 22"/24"	20.0	22.0	Very dense gray brown silty fine to coarse SAND, some gravel, pockets of clayey silt, moist. GLACIAL TILL
25		30 76 98 100/.3	S8 22"/24"	25.0	27.0	Same as above.
						Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	27.0 ft.
Rock Cored (Linear ft)	--
Number of Samples	8S
BORING NO.	HA-113a

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-114**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	25-May-00
DRILLER	L. TODD	DATE FINISHED	25-May-00

Elevation 261.92 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck
- [ ] Tripod
- [ ] ATV
- [ ] Geoprobe
- [ ] Track
- [ ] Air Track
- [ ] Skid
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type:
- [x] Safety
- [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud:
- [ ] Bentonite
- [ ] Polymer
- [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		1 7 12 6	S1 6"/24"	0.0 2.0		Medium dense brown sandy SILT, brick, dry. FILL
		6 7 3 5	S2 8"/24"	2.0 4.0		Medium dense brown black sandy SILT, brick, slag, dry.
		8 15 7 8	S3 10"/24"	4.0 6.0		Same.
5		35 22 16 50/.3	S4 12"/24"	6.0 8.0		Medium dense brown black silty SAND, brick, slag, dry.
		12 17 100/.4	S5 9"/24"	8.0 10.0		Same, except some rock fragments.
10		100/.3	S6	10.0 10.3		Concrete Obstruction (offset 6' south of initial location, see log HA-114a)
15						
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	25.0
Rock Cored (Linear ft)	--
Number of Samples	10S

BORING NO. HA-114

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-114a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	25-May-00
DRILLER	L. TODD	DATE FINISHED	25-May-00

Elevation 261.92 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						
						Blind Augered to 12.0 ft. (See Boring Log HA-114)
5						
10						
		20 97 90 29	S7 13"/24"	12.0 14.0		Very dense gray black blue gravelly SAND, slag, wet. FILL
		3 5 8 12	S8 16"/24"	14.0 16.0	14.0	Medium dense gray brown clayey SILT, moist. ALLUVIUM
15						
		7 17 20 21	S9 18"/24"	19.0 21.0	19.0	Medium dense brown silty fine to coarse SAND, some gravel, wet. GLACIAL TILL
20						
		87 100/.4	S10 10"/24"	24.0 24.9		Very dense gray brown fine to coarse SAND, some gravel, wet.
25						Bottom of Exploration at 25.0 ft.
						Monitoring well installed in completed borehole. See Installation Report for LBA-MW3.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	25
Rock Cored (Linear ft)	--
Number of Samples	T0S

BORING NO. HA-114a

Form #3000

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. LBA-MW3

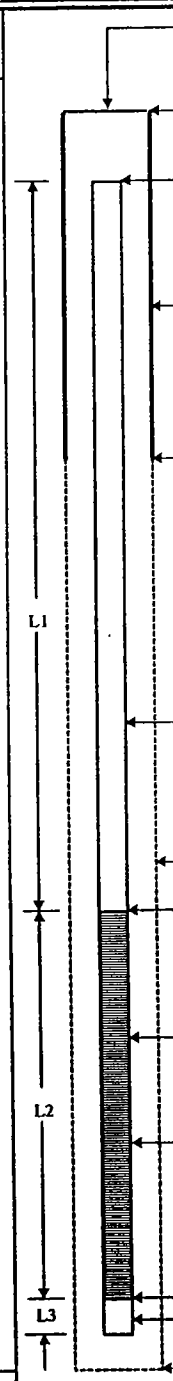
Boring No. HA-114a

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/25/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El.	Not Surveyed ft	Location	North Parking Lot
El. Datum	Not Surveyed		

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Gray brown silty SAND, slag, brick	Bentonite/ Quartz Sand



(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Type of protective cover/lock: Roadway Box

Height/Depth of top of guard pipe/roadway box above/below ground surface: – ft

Height/Depth of top of riser pipe above/below ground surface: 0.3 ft

Type of protective casing: None

Length: – ft

Inside Diameter: – in

Depth of bottom of guard pipe/roadway box: – ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.0	12.0

Type of riser pipe: PVC

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser: Bentonite Chips

Diameter of borehole: 4-1/4 in

Depth to top of well screen: 15.0 ft

Type of screen: SCHEDULE 40 PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: Quartz Sand

Depth of bottom of well screen: 25.0 ft

Bottom of Silt trap: – ft

Depth of bottom of borehole: 25.0 ft

Riser Pay Length (L1)	+	Length of screen (L2)	+	Length of silt trap (L3)	=	Pay length
14.7 ft	+	10 ft	+	0 ft	=	24.7 ft

COMMENTS:

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-115**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	25-May-00
DRILLER	L. TODD	DATE FINISHED	25-May-00

Elevation 253.68 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						CRUSHED STONE
		14 54 34 42	S1 16"/24"	2.0 4.0		Very dense black blue gray silty fine to coarse SAND, brick, slag, dry.
						FILL
		28 48 23 20	S2 14"/24"	4.0 6.0		Same, except moist.
5						
		12 13 12 8	S3 7"/24"	6.0 8.0		Medium dense brown-black sandy ROCK FRAGMENTS, wet.
		7 7 7 14	S4 4"/24"	8.0 10.0		Same.
10		10 5 6 6	S5 4"/24"	10.0 12.0		Same.
		12 8 12 8	S6 6"/24"	12.0 14.0		Same.
15						
		2 2 3 3	S7 10"/24"	19.0 21.0		Loose brown-gray sandy SILT, organics, wet.
20						ALLUVIUM
		3 4 3 3	S8 10"/24"	24.0 26.0		Same.
25						Bottom of Exploration at 26.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	26
Rock Cored (Linear ft)	–
Number of Samples	8S
BORING NO.	HA-115

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-116

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 252.4 ft | Datum City | Boring Location See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head ☐ ATV ☐ Geoprobe ☐ Winch ☐ Track ☐ Air Track ☐ Roller Bit ☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						0.4 ft. TOPSOIL
0		4	S1	0.0		Medium dense black blue silty fine to coarse SAND, slag, dry.
		16				FILL
		19				
		24	11"/24"	2.0		
		22	S2	2.0		Same, except wet.
		12				
		21				
		11	12"/24"	4.0		
		42	S3	4.0		Same.
		25				
5		10				
		20	8"/24"	6.0		
		14	S4	6.0		Medium dense brown fine to coarse SAND, slag.
		12				
		4				
		2	10"/24"	8.0	8.0	
		3	S5	8.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
		5				
		8				
		10	8"/24"	10.0		
10		18	S6	10.0		Same.
		7				
		4				ALLUVIUM
		6	8"/24"	12.0		
15		1	S7	15.0		Loose gray brown fine sand SILT, organics, moist.
		2				
		3				
		3	3"/24"	17.0		
20		2	S8	20.0		Very loose gray brown fine sand SILT, little clay, organics, moist.
		1				
		3				
		3	16"/24"	22.0		
25		1	S9	25.0		Same.
		1				
		2				
		3	18"/24"	27.0		
						Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	27
Rock Cored (Linear ft)	--
Number of Samples	9S

BORING NO. HA-116

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-116

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 252.4 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck
- [ ] Tripod
- [x] Cat-Head
- [ ] ATV
- [ ] Geoprobe
- [ ] Winch
- [ ] Track
- [ ] Air Track
- [ ] Roller Bit
- [ ] Skid
- [ ] _____
- [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						0.4 ft. TOPSOIL
0		4 16 19 24	S1 11"/24"	0.0 2.0		Medium dense black blue silty fine to coarse SAND, slag, dry. FILL
		22 12 21 11	S2 12"/24"	2.0 4.0		Same, except wet.
		42 25 10 20	S3 8"/24"	4.0 6.0		Same.
5		14 12 4 2	S4 10"/24"	6.0 8.0		Medium dense brown fine to coarse SAND, slag.
		3 5 8 10	S5 8"/24"	8.0 10.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
10		18 7 4 6	S6 8"/24"	10.0 12.0		Same. ALLUVIUM
15		1 2 3 3	S7 3"/24"	15.0 17.0		Loose gray brown fine sand SILT, organics, moist.
20		2 1 3 3	S8 16"/24"	20.0 22.0		Very loose gray brown fine sand SILT, little clay, organics, moist.
25		1 1 2 3	S9 18"/24"	25.0 27.0		Same. Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	27
Rock Cored (Linear ft)	--
Number of Samples	9S
BORING NO.	HA-116

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-117**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	24-May-00
DRILLER	L. TODD	DATE FINISHED	24-May-00

Elevation 253.7 ft | Datum City | Boring Location See Boring Location Plan

Rig Make & Model CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ _____

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		2 4 7 8	S1 8"/24"	0.0 2.0		Medium dense brown sandy SILT, organics, dry.
		10 9 20 30	S2 9"/24"	2.0 4.0		Medium dense brown blue silty SAND, foundry, debris, dry. FILL
5		13 34 53 50/.4	S3 14"/24"	4.0 6.0		Very dense blue-black gray sandy SILT, brick, slag, moist.
		62 100/.4	S4 7"/10"	6.0 8.0		Same, except wet.
		6 13 15 15	S5 9"/24"	8.0 10.0	10.0	Medium dense black-blue silty ROCK FRAGMENTS, wet.
10		13 20 7 4	S6 12"/24"	10.0 12.0		Medium dense sandy SILT, little clay, organics, moist.
		2 5 19 19	S7 12"/24"	12.0 14.0		Medium dense black-gray silty fine to coarse SAND, some fine gravel, moist. ALLUVIUM
15						
		2 5 6 7	S8 14"/24"	19.0 21.0		Medium dense gray-brown sandy SILT, little gravel, wood, organics, moist.
20						
		3 3 4 4	S9 17"/24"	24.0 26.0		Same.
25						Bottom of Exploration at 26.0 ft.
						Monitoring well installed in completed borehole. See Installation Report for LBA-MW2.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	26
Rock Cored (Linear ft)	--
Number of Samples	9S
BORING NO.	HA-117

Form #1000

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. LBA-MW2

Boring No. HA-117

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/24/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El. Not Surveyed ft

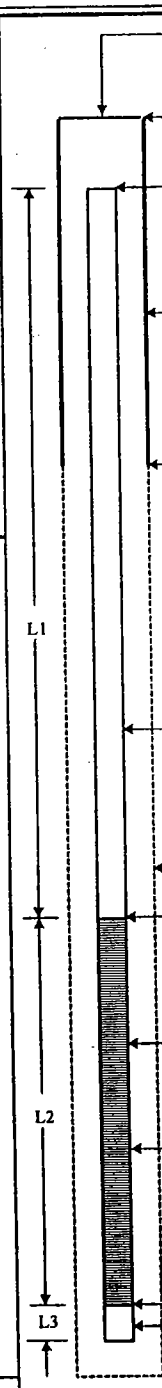
El. Datum Not Surveyed

Location

☐ Guard Pipe

☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Black brown silty SAND, slag, brick, gravel.	Quartz Sand (17 ft. bgs.)
	Bentonite (17 ft. to 26 ft.)



(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Type of protective cover/lock	Roadway Box
Height/Depth of top of guard pipe/roadway box above/below ground surface	-- ft
Height/Depth of top of riser pipe above/below ground surface	0.3 ft
Type of protective casing:	None
Length	-- ft
Inside Diameter	-- in
Depth of bottom of guard pipe/roadway box	-- ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.0
Bentonite Seal	0.0	4.0

Type of riser pipe:	PVC
Inside diameter of riser pipe	2.0 in
Type of backfill around riser	Quartz Sand
Diameter of borehole	4-1/4 in
Depth to top of well screen	5.0 ft
Type of screen	SCHEDULE 40 PVC
Screen gauge or size of openings	0.010 in
Diameter of screen	2.0 in
Type of backfill around screen	Quartz Sand
Depth of bottom of well screen	15.0 ft
Bottom of Silt trap	15.0 ft
Depth of bottom of borehole	26.0 ft

5 ft	+	10 ft	+	0 ft	=	15 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS: Bottom of borehole seal from 26.0 ft. to 17.0 ft. b.g.s. using Bentonite Chips.

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-118**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	8-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation 242.78 ft | Datum City | Boring Location See Boring Location Plan | Rig Make & Model CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ _____

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		9	S1	0.5		Medium dense black brown red silty fine to coarse SAND, brick, some rock fragments, dry.
		18 9	13"/18"	2.0	2.0	FILL
		7 12	S2	2.0		Medium dense brown silty fine to coarse SAND, moist. ALLUVIUM
		9 8	12"/24"	4.0		
		4 4	S3	4.0		Loose gray brown silty fine to medium SAND, organics, moist.
5		3 3	12"/24"	6.0		
10		6 14	S4	10.0		Medium dense gray fine to coarse SAND, little silt, little gravel, wet.
		12 4	16"/24"	12.0		
15		3 1	S5	15.0		Very loose brown organic SILT, moist.
		1 4	16"/24"	17.0		
					20.0	
20		4 16	S6	20.0		Medium dense gray brown silty fine to coarse SAND, some gravel, moist. GLACIAL TILL
		19 22	20"/24"	22.0		
25		28 100/.4	S7 10"/10"	25.0	25.9	Very dense brown silty fine to coarse SAND, some gravel, moist.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
5/8/2000		0.5			9.1

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	51
Rock Cored (Linear ft)	--
Number of Samples	12S
BORING NO.	HA-118

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-118

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
			S8	30.0		Very dense brown silty fine to coarse SAND, some gravel, moist.
		100/.4	3"/5"	30.4		
35		18	S9	35.0		Same, except gray brown.
		77				
		100/.5	12"/18"	36.5		
40		36	S10	40.0		Same.
		66				
		98				
		87	12"/24"	42.0		
45		100/.5	S11	45.0		Same, except trace rock fragments.
			3"/6"	45.5		
50		100/.4	S12	50.0		Very dense red silty sandstone rock fragments.
			4"/5"	50.5		
						Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						

FILE NO. 70819-000 | BORING NO. HA-118

Form #1001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-119

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 250.52 ft	Datum City	Boring Location	See Boring Location Plan
		Rig Make & Model	CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig: [x] Truck [ ] Tripod [ ] ATV [ ] Geoprobe [ ] Track [ ] Air Track [ ] Skid [ ] _____

[x] Cat-Head [ ] Winch [ ] Roller Bit [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		44 66	S1 3"/12"	1.0 2.0		Very dense brown gravelly fine to coarse SAND, dry. FILL
		10 10	S2	2.0		Medium dense brown silty fine to medium SAND, little silt, wet.
		6 7	14"/24"	4.0		ALLUVIUM
		1 7	S3	4.0		Medium dense brown gray, fine to coarse SAND, little silt, wet.
5		7 7	16"/24"	6.0		
		8 12	S4	6.0		Medium dense gray brown fine to coarse SAND, some silt, little rock fragments, wet.
		20 25	10"/24"	8.0		
		5 14	S5	8.0		Medium dense gray brown gravelly fine to coarse SAND, trace silt, wet.
10		25 50	20"/24"	10.0		
		14 3	S6	14.0		Loose gray brown sandy SILT, wet.
15		3 3	18"/24"	16.0		
		3 3	S7	19.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.
20		3 3	20"/24"	21.0		
		6 2	S8	24.0		Loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
25		3 2	15"/24"	26.0		
		1 1	S9	29.0		Same.
30		3	14"/24"	31.0		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	51
Rock Cored (Linear ft)	–
Number of Samples	13S

BORING NO. HA-119

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-119

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
		1 2 3 3	S10 17"/24"	34.0 36.0		Loose gray brown fine sand SILT, trace clay, organics, moist.
35						
		1 2 3 3	S11 22"/24"	39.0 41.0		Same.
40						
		1 2 3 3	S12 24"/24"	44.0 46.0		Loose, gray fine sand SILT, trace clay, organics.
45						
		1 2 2 4	S13 18"/24"	49.0 51.0		Same.
50						Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-119

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-120**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	8-Jun-00
DRILLER	L. TODD	DATE FINISHED	9-Jun-00

Elevation 254.31 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		6 10 20	S1 10"/18"	0.5 2.0		Medium dense gray to black fine to coarse SAND, some rock fragments, dry. FILL
		5 5 7 9	S2 12"/24"	2.0 4.0		Medium dense black to red brown silty fine to coarse SAND, some rock fragments, dry.
		6 3 3 2	S3 12"/24"	4.0 6.0	6.0	Same, except loose.
5		1 1 1 1	S4 7"/24"	6.0 8.0		Very loose brown silty fine to medium SAND, trace rock fragments, moist. ALLUVIUM
		1 1 1 2	S5 3"/24"	8.0 10.0		Same, except wet.
10		1 1 3 4	S6 18"/24"	10.0 12.0		Very loose gray brown silty fine to coarse SAND, little gravel, wet.
		5 5 5 12	S7 16"/24"	12.0 14.0		Same, except some gravel.
		6 6 5 8	S8 14"/24"	14.0 16.0		Medium dense gray brown silty fine to coarse SAND, little gravel, wet.
15						
20		1 2 2 3	S9 14"/24"	20.0 22.0		Same, except very loose.
25		3 1 2 1	S10 14"/24"	25.0 27.0		Very loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	52
Rock Cored (Linear ft)	--
Number of Samples	15S

BORING NO. HA-120

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-120

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1 1 2 2	S11 18"/24"	30.0 32.0		Very loose gray brown fine to medium sandy SILT, trace clay, organics, moist. ALLUVIUM
35		1 1 2 2	S12 24"/24"	35.0 37.0		Same.
40		1 3 3 3	S13 24"/24"	40.0 42.0		Same.
45		1 2 4 3	S14 22"/24"	45.0 47.0		Same.
50		H 2 2 2	S15 24"/24"	50.0 52.0		Same. Bottom of Exploration at 52.0 ft.
55						
60						
65						
70						

FILE NO.	70819-000	BORING NO.	HA-120

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-122**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	31-May-00

Elevation 252.8 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	1-7/8
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME-55 Truck Mount

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ] _____
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [x] Cutting Head

Hammer Type:
- [x] Safety
- [ ] Doughnut

Casing: [ ] Driven [ ] Spun

Drill Mud:
- [ ] Bentonite
- [ ] Polymer
- [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
					0.3	TOPSOIL
0		7 8 10 8	S1 14"/24"	0.0 2.0		Medium dense dark brown, coarse to fine sand, little cinders, little gravel.
						FILL
		6 6 5 5	S2 10"/24"	2.0 4.0		Same.
		3 3 2 2	S3 0"/24"	4.0 6.0		No Recovery.
5		2 3 2 2	S4 2"/24"	6.0 8.0		Loose dark brown coarse to fine sand, some gravel, trace silt, wet.
		2 2 3 21	S5 18"/24"	8.0 10.0		Same.
10		1 2 6 10	S6 14"/24"	10.0 12.0		Same.
		26 24 10 9	S7 20"/24"	12.0 14.0		
					13.2	Dense blue-gray gravel, little coarse to fine sand, wet.
		3 2 1 3	S8 16"/24"	14.0 16.0	14.3	Very loose brown ORGANICS, trace sand, trace silt, wet.
15					15.5	Very loose gray-brown fine clayey SILT, some sand, little organics, moist.
						ALLUVIUM
20		1 2 1 2	S9 24"/24"	20.0 22.0		Same, except little fine sand.
25		2 2 2 3	S10 20"/24"	25.0 27.0		Same.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	37
Rock Cored (Linear ft)	5
Number of Samples	12S
BORING NO.	HA-122

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-122

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S11	30.0		Loose gray-brown clayey SILT, little fine sand, little organics, moist.
		3				
		3				
		3	24"/24"	32.0		ALLUVIUM
35		1	S12	35.0		
		6			36.0	
		8				Medium dense brown-red coarse to fine sandy SILT, some gravel, little clay, damp
		30	15"/24"	37.0	37.0	to moist. GLACIAL TILL
						Observed auger refusal at 37.0 ft. Begin coring at 37.0 ft. See Core Boring Report.
40						
						Bottom of Exploration at 42.0 ft.
45						
50						
55						
60						
65						
70						

FILE NO.	70819-000	BORING NO.	HA-122

Form #1001

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-122**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: [x] Truck [ ] Tripod [x] Cat-Head [ ] ATV [ ] Geoprobe [ ] Winch [ ] Track [ ] Air Track [ ] Roller Bit [ ] Skid [ ] _____ [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
						37.0	Begin Coring at 37.0 ft.
		37.0					Moderately soft, moderately weathered red-brown-green mottled fine grained, very thin to thin bedded SANDSTONE with close to very close weathered shaley partings.
		R1	48/35	80/58	MOD		QUEENSTON FORMATION
40							
		42.0				42.0	Bottom of Boring at 42.0 ft.
45							
50							
55							
60							
65							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	37
Rock Cored (linear ft)	5
Samples	T2S
BORING NO.	HA-122

Form #3002

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-123**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	5-Jun-00
DRILLER	L. TODD	DATE FINISHED	6-Jun-00

Elevation 253.64 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ _____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Casing: ☐ Driven ☐ Spun

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(0.3 ft. TOPSOIL)
0		4 8 8 8	S1 8"/24"	0.0 2.0		Medium dense brown gray sandy SILT, little coarse gravel, dry. FILL
		8 7 8 8	S2 13"/24"	2.0 4.0		Medium dense brown red silty fine to coarse SAND, trace fine gravel, dry.
5		5 4 3 3	S3 16"/24"	4.0 6.0		Same, except moist.
		2 2 2 2	S4 20"/24"	6.0 8.0		Loose brown red silty fine to coarse SAND, trace fine gravel, wet.
		1 4 8 9	S5 16"/24"	8.0 10.0		Medium dense black brown silty fine to coarse SAND, wood, wet.
10		5 5 2 2	S6 0"/24"	10.0 12.0		No Recovery.
		5 5 5 3	S7 0"/24"	12.0 14.0		No Recovery.
		5 4 1 3	S8 19"/24"	14.0 16.0		Loose gray brown silty fine to coarse SAND, some organics, moist.
15						ALLUVIUM
		2 2 2 2	S9 10"/24"	19.0 21.0		Loose gray brown clayey SILT, little sand, moist.
20						
		1 2 2 2	S10 14"/24"	24.0 26.0		Same, except little clay.
25						
		2 2 4	S11 15"/24"	29.0 31.0		Same.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O	Open End Rod
T	Thin Wall Tube
U	Undisturbed Sample
S	Split Spoon Sample
G	Geoprobe

Summary

Overburden (Linear ft)	114
Rock Cored (Linear ft)	2
Number of Samples	24S
BORING NO.	HA-123

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-123

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
		2 2 2 4	S11 20"/24"	34.0 36.0		Very loose gray brown fine to medium sand SILT, trace clay, organics, moist.
35						ALLUVIUM
		1 2 2 3	S12 14"/24"	39.0 41.0		Same.
40						
		1 2 2 3	S13 19"/24"	44.0 46.0		Very loose gray silty fine to medium SAND, moist.
45						
		1 2 3 4	S14 20"/24"	49.0 51.0		Loose gray fine sand SILT, trace clay, organics, moist.
50						
		1 1 3 3	S15 20"/24"	54.0 56.0		Same.
55						
		1 2 5 4	S16 20"/24"	59.0 61.0		Same.
60						
		3 1 4 5	S17 24"/24"	64.0 66.0		Loose gray fine sand SILT, trace clay organics, moist.
65						
		WOH 5 7 8	S18 22"/24"	69.0 71.0		Same, except medium dense.
70						

FILE NO.	70819-000	BORING NO.	HA-123

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-123

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		4 5 8 9	S19 22"/24"	74.0 76.0		Medium dense gray fine sandy SILT, trace clay, organics moist. ALLUVIUM
75						
		2 5 7 9	S20 23"/24"	79.0 81.0		Same.
80						
		5 5 8 9	S21 20"/24"	84.0 86.0		Same.
85						
		5 5 8	S22 21"/24"	89.0 91.0		Medium dense gray brown silty medium to fine SAND, trace clay, moist.
90						
		WOR WOR WOR 5	S23 22"/24"	94.0 96.0		Very loose gray brown silty medium to fine SAND, trace clay, moist.
95						
		5 7 8 9	S24 22"/24"	99.0 101.0		Same, except medium dense.
100						
		WOR WOR WOR WOR	S25 24"/24"	104.0 106.0		Same, except very loose.
105						
		3 5 5 12	S26 23"/24"	109.0 111.0		Medium dense gray brown silty fine to medium SAND, trace clay, pockets of rock fragments, moist.
110						

FILE NO. 70819-000 BORING NO. HA-123

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-123

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						ALLUVIUM
					114.0	
		100/.2	S27 2"/3"	114.0 114.2		Very dense sandy ROCK FRAGMENTS. WEATHERED BEDROCK
115						Began rock coring 114.0 ft.
						Bottom of Exploration at 116.0 ft.
120						
125						
130						
135						
140						
145						
150						

FILE NO. 70819-000 BORING NO. HA-123

Form #3001

LABELLA ASSOCIATES, P.C. 3[illegible]TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 28 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/22/00 END DATE 8/22/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel and sub-base				
1								dry	0 ppm	
						light brown medium/fine sand				
2								dry	0 ppm	
						dark brown sand/gravel/slag				
3						silver/black		moist	0 ppm	
						brick				
4						no recovery		moist		
						brick fragments/sand (dark brown)				
5						cinders		moist	0 ppm	
						light brown silty clay		moist	10 ppm	
7						slag		moist	0.5 ppm	
						light brown clay				
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9						gray/green clay				
						black cinders/slag		saturated/moist	0 ppm	
10										
						light brown/gray silt/fine sand		saturated/moist	0 ppm	
11						very compacted				
								saturated/moist	0 ppm	
12										
						very compacted silt with some clay		saturated	0 ppm	
13										
						gray -> brown		saturated	0 ppm	
14										
								saturated	0 ppm	
15										
								saturated	0 ppm	
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: North end of parks building

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	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 29/MW-5 SHEET 1 OF 1 JOB # 99150 CHKD. BY:tms

ACTOR: Marcor
LER: Jim
LABELLA REPRESENTATIVE: DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/22/00 END DATE 8/22/00

TYPE OF DRILL RIG: Geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel sub-base			flush mount road box	
1						medium brown sand		dry	Bentonite seal 0'-1' 0 ppm	
2								dry/moist	0 ppm	
									quartz sand pack 1'-12'	
3						dark brown sand and gravel		dry	0 ppm	
									1" PVC well 2'-12'	
4								dry		
						dark brown sand/gravel				
5								dry	0 ppm	
						blue gray slag/brick			48 ppm	
						dark brown/black sand and cinders/gravel		dry		
7									0 ppm	
						light brown silt - compacted				
8								dry		
						light brown silt				
9								moist	0 ppm	
10								moist	0 ppm	
11									0 ppm	
								moist		
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: near door of parks building
Mw at center of building approximately 40' East of maintenance shop

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. 30[illegible] STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 30 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel				
1								dry	0 ppm	
						medium brown sand				
2								dry	0 ppm	
						slag/brick/fill/sand				
3								dry	0 ppm	
4								dry		
						medium brown sand - coal, iron ore chips, some conglomerate, shell fragments				
5								dry	0 ppm	
						slag/brick				
						layer of ash/slag		dry	0 ppm	
7						brown and black silt with fine sand, some slag waste and rock fragments		moist	0 ppm	
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9								saturated/moist	0 ppm	
10						brown firm silt with clay		saturated/moist	0 ppm	
11								saturated/moist	0 ppm	
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5' - start over approximately 3' west, also refusal, start over approximat 10' north, then 3' west of that
Sixth attempt approximately 45' east of park structure

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. 3[illegible]TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 31 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel				
1						brown silt with fine-medium sand		dry	0 ppm	
						mixed with gravel/rock fragments				
2								dry	0 ppm	
3								dry/moist	no odor 17 ppm	
						gray/brown silt/fine sand				
4								dry/moist	3 ppm	
						brown medium sand				
5								moist	0 ppm	
						brown->red/rust fill - slag waste - iron				
						"filling"/stained silt		moist	0 ppm	
7						brown silt/fine sand with some clay		moist	0 ppm	
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9						brown silt/fine sand				
								saturated/moist	0 ppm	
10										
						brown silt/fine sand with some clay		saturated/moist	0 ppm	
11										
								saturated	0 ppm	
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: downgradient (approx. 12') from AST's

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. 30[illegible] STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 32 SHEET 1 OF JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						blacktop				
1						gravel sub-base		moist		
2						brown medium sand		moist	0 ppm	
3								moist	0 ppm	
4								moist		
5						gray silt/fine sand		saturated	0 ppm	
						mixed fill & slag, silt/sand wih brick frags		saturated	0 ppm	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: MW @ center of building approx. 40' east of maint. Shop
rejected 1st attempt at 6'

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. TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 33 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
1						asphalt/gravel		dry	0 ppm	
2						coarse sand/gravel		dry	0 ppm	
3						blue slag		dry/moist	0 ppm	
4						medium gravel		moist	0 ppm	
5						slag (blue/gray) red gravel		moist	0 ppm	
						brown/black gravel		moist	0 ppm	
7						brown silt		moist	0 ppm	
8						gray silt (some clay)		moist/saturated	0 ppm	
9						red gravel (shell chips)		saturated/moist saturated	0 ppm 0 ppm	
10						gray/brown silt dark brown organic		saturated	0 ppm	
11						fine gray sand		saturated	0 ppm	
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: eastern most point between 2 warehouses

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	PROJECT Port of Rochester Between 2 Warehouses	BORING # 34/MW-6 SHEET 1 OF 1 JOB # 99150 CHKD. BY:tms

C RACTOR: Marcor
LER: Jim
LABELLA REPRESENTATIVE: DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG: Geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
									flush mount road box	
1						gravel sub-base		dry	Bentonite seal 0.5'-2.5'	
						slag				
2								moist	33 ppm	
						medium-coarse sand			quartz sand pack 2.5'-5.5'	
3						some odor - gray stained		moist	67 ppm	
						gravel			1" PVC solid riser 0'-3.5'	
4								moist		
5						gravel		moist/saturated		
						red slag black/stained gravel			1" PVC Well	2000 ppm
						gravel			screen 3.5'-5.5'	(high)
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

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. TATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 35 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel				
1						brown sand (medium - coarse)			0 ppm	
2						gravel/sand			0 ppm	
3						gray silt			400 ppm (last 4" only)	
4						no recovery				
5									100 ppm	
						gravel/blue slag			140 ppm	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

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. 30[illegible] E STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 36 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
1						gravel sub-base		moist	0 ppm	
2						coarse/medium brown sand			0 ppm	
3						rock fragments		moist	0 ppm	
4						no recovery		moist		
5						brown gravel		saturated	0 ppm	
7						black gravel		saturated	0 ppm	
8						coarse sand		saturated	0 ppm	
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

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. 3[illegible]TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 37 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						black top				
1						gravel		moist	0 ppm	
2						brown silt with rock fragments and blue slag		moist	0 ppm	
3								moist/saturated	0 ppm	
4						rust/red silt/sand				
5						red/brown fill, foundation waste, some slag mixed with sand		saturated	0 ppm	
7						brown silt/fine sand -firm		saturated saturated	0 ppm	
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: x36
x38 x35 x37
x34 (mw) x33

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. 30[illegible]E STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 38 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
1						black top sub-base		moist	0 ppm	
2						brown-black silt/medium sand with gravel; slag and rock frags		moist	0 ppm	
3								moist/saturated	0 ppm	
4										
5								saturated	0.3 ppm	
7						blue slag fragments rejected		saturated	0.5 ppm	
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND

S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED 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

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-2
Job No..: 5505
Page: 1 OF 1
Report Date: 5/10/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.6
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/10/2005
Completed: 5/10/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information	
0										
		2	1						TOPSOIL AND ORGANIC MATTER	0'6"
				3	7	4	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL	
		11	12						FOUNDRY SAND AND SLAG	
				11	6	23	2	2'0"-4'0"	FILL MATERIAL (SAME)	
5		6	6							4'6"
				5	4	11	3	4'0"-6'0"	MEDIUM GREY GREEN MOIST TO WET CLAYEY	
		3	3						SILT, TRACE VF SAND	
				3	7	6	4	6'0"-8'0"	MEDIUM GREY GREEN MOIST TO WET	7'0"
		5	2							
10				4	4	6	5	8'0"-10'0"	LOOSE GREY SATURATED M-VF SAND, LITTLE	
									M-F GRAVEL AND ORGANIC MATTER	
									(MUDDED BORING FROM 10' TO TERMINATION)	
15										
		4	4							
				5		9	6	15'0"-16'6"	LOOSE GREY SATURATED (MORE ORGANICS-	
									WOOD)	
20										18'0"
		3	3							
				3		6	7	20'0"-21'6"	MEDIUM DARK BROWN SATURATED ORGANIC SILT	
										23'0"
25										
		2	4							
				5		9	8	25'0"-26'6"	MEDIUM GREEN BROWN SATURATED SILT, SOME	
									M-F GRAVEL, LITTLE VF SAND, TRACE CLAY	
									(AUGERS STIFFENED @ 27'6")	
30									(VERY SLOW PENETRATION)	
		56/6				56/6		30'0"-30'6"	NO RECOVERY	
		50/2				50/2	9	33'6"-33'8"	VERY DENSE GREY BLACK ROCK FRAGMENTS	
									AUGER REFUSAL @	34'4"
35									BORING TERMINATED @ 34'4"	

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-3
Job No..: 5505
Page: 1 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information	
0										
		10	21						TOPSOIL AND ORGANIC MATTER	0'5"
				12	13	33	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL AND SLAG	
		7	8							
				15	16	23	2	2'0"-4'0"	FILL MATERIAL C/O SILT,SAND AND GRAVEL,	
5		7	10						TOPSOIL, SLAG AND FOUNDRY SAND	5'0"
				8	7	18	3	4'0"-6'0"	STIFF GREY BROWN MOIST MOTTLED SILT,	
		8	8						LITTLE CLAY	6'0"
				12	10	20	4	6'0"-8'0"	FIRM GREY SATURATED M-VF SAND, TRACE SILT	
10										
		3	5							
				8		13	5	10'0"-11'6"	FIRM GREY SATURATED (LITTLE M-F GRAVEL)	
15									(MUDDED BORING FROM 15' TO TERMINATION)	
		5	5							
				4		9	6	15'0"-16'6"	LOOSE GREY SATURATED	
20										
		4	4							
				4		8	7	20'0"-21'6"	LOOSE GREY SATURATED (MARL NOTED)	21'2"
									MEDIUM GREY SATURATED SILT, SOME VF SAND	23'0"
25										
		1	2							
				3		5	8	25'0"-26'6"	MEDIUM GREY SATURATED ORGANIC SILT	
30										
		2	1							
				2		3	9	30'0"-31'6"	SOFT GREY SATURATED	
35										

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-3
Job No.. 5505
Page: 2 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
35		W/R	W/H						
				2		2	10	35'0"-36'6"	SOFT GREY SATURATED (LESS ORGANICS)
40		W/H	2						
				2		4	11	40'0"-41'6"	SOFT GREY SATURATED (MORE ORGANICS)
45		W/H	W/H						
				W/H		W/H	12	45'0"-46'6"	VERY SOFT GREY SATURATED
50		W3/H	2						
				2		4	13	50'0"-51'6"	SOFT DARK GREY SATURATED (LESS ORGANICS MARL NOTED)
55		W/H	3						
				4		7	14	55'0"-56'6"	MEDIUM DARK GREY SATURATED
60		W/H	2						
				3		5	15	60'0"-61'6"	MEDIUM DARK GREY SATURATED
65		1	3						
				4		7	16	65'0"-66'6"	MEDIUM DARK GREY SATURATED
70									

N=No. of Blows to 2" Spoon 12" with 140 30" 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.: B05-3
Job No..: 5505
Page: 3 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
70		1	4						
				4		8	17	70'0"-71'6"	MEDIUM DARK GREY SATURATED (SANDIER)
75									
		2	2						
				2		4	18	75'0"-76'6"	SOFT DARK GREY SATURATED
80									
		1	2						
				1		3	19	80'0"-81'6"	SOFT DARK GREY SATURATED
85									(AUGERED TO 100' REMAINED SOFT)
90									
95									
100									100'0"
105									BORING TERMINATED @ 100'0"

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-4
Job No..: 5505
Page: 1 OF 2
Report Date: 5/6/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 254.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/6/2005
Completed: 5/6/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information	
0										
		7	7						TOPSOIL AND ORGANIC MATTER	0'5"
				7	7	14	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL LITTLE ASPHALT AND SLAG	
		13	13							
				10	9	23	2	2'0"-4'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL AND SLAG	
5		7	7							
				4	4	11	3	4'0"-6'0"	FILL MATERIAL C/O MOIST FOUNDRY SAND	
		4	10							
				20	20	30	4	6'0"-8'0"	FILL MATERIAL C/O FOUNDRY SAND	7'8"
		15	10							
10				15	22	25	5	8'0"-10'0"	FILL MATERIAL C/O SATURATED SLAG	
		21	12							
				21	18	33	6	10'0"-12'0"	FILL MATERIAL C/O SATURATED SLAG	
		7	10							
				9	4	19	7	12'0"-14'0"	FILL MATERIAL C/O SATURATED SLAG	
15		3	3							15'0"
				4	6	7	8	14'0"-16'0"	MEDIUM GREY SATURATED SILT, TRACE ORGANIC NODULES	15'8"
		6	5							
				5	5	10	9	16'0"-18'0"	MEDIUM BLACK MOIST PEAT LIKE MATERIAL	
20									(MUDDED BORING FROM 18' TO TERMINATION)	
		2	3							
				3	4	6	10	20'0"-22'0" SHELBY TUBE	MEDIUM BLACK GREY WET TO SATURATED INTERBEDDED SILT AND PEAT LIKE MATERIAL MEDIUM GREY SATURATED	24'0"
25		2	4							
				3	4	7	11	24'0"-26'0"	MEDIUM DARK GREY WET ORGANIC SILT, TRACE CLAY	28'0"
30										
		2	2							
				2		4	12	30'0"-31'6"	MEDIUM GREY SATURATED SILT, LITTLE CLAY, TRACE VF SAND SEAMS (NO ORGANICS)	
35										

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-4
Job No.: 5505
Page: 2 OF 2
Report Date: 5/6/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 254.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/6/2005
Completed: 5/6/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
35		7	8						35'6"
				9		17	13	35'0"-36'6"	FIRM RED WET SILT, SOME C-F GRAVEL, WEATHERED ROCK AND VF SAND
40									AUGER REFUSAL @ 39'2"
									BORING TERMINATED @ 39'2"
45									
50									
55									
60									
65									
70									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-5
Job No.. 5505
Page: 1 OF 2
Report Date: 5/11/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 252.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/11/2005
Completed: 5/11/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information	
0										
		7	19						TOPSOIL AND ORGANIC MATTER	0'7"
				23	28	42	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL BRICK, WOOD AND SLAG	
		13	14							
				15	19	29	2	2'0"-4'0"	FILL MATERIAL (SAME)	3'0"
5		6	4						COMPACT BROWN MOIST M-VF SAND	3'6"
				4	4	8	3	4'0"-6'0"	LOOSE GREY SATURATED M-VF SAND, TRACE ORGANICS (WOOD)	
		2	4							
				7	4	11	4	6'0"-8'0"	FIRM GREY SATURATED	
		12	4							
10				18	29	22	5	8'0"-10'0"	FIRM GREY SATURATED (LITTLE C-F GRAVEL)	
										12'0"
									(MUDDED BORING FROM 15' TO TERMINATION)	
		2	7							
15				11		18	6	13'6"-15'0"	FIRM GREY SATURATED C-F SAND AND GRAVEL (LITTLE SILT LAYERED)	
										17'0"
20										
		W/H	2							
				2		4	7	20'0"-21'6"	SOFT GREY SATURATED CLAYEY SILT, LITTLE ORGANICS	
25										
		W/H	2							
				2		4	8	25'0"-26'6"	SOFT GREY WET	
30										
		2	3							
				4		7	9	30'0"-31'6"	MEDIUM GREY WET	
35										

N=No. of Blows to 2" Spoon 12" with 140 30" 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.: B05-5
Job No..: 5505
Page: 2 OF 2
Report Date: 5/11/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 252.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/11/2005
Completed: 5/11/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
35		2	2						
				2		4	10	35'0"-36'6"	SOFT GREY WET (TRACE ORGANICS)
40		W/H	2						
				2		4	11	40'0"-41'6"	SOFT GREY WET TO SATURATED (TRACE ORGANICS)
45		1	1						
				1		2	12	45'0"-46'6"	VERY SOFT GREY SATURATED (TRACE MARL)
50		1	2						
				2		4	13	50'0"-51'6"	SOFT GREY WET (WOOD NOTED AND SLIGHTLY MORE CLAY)
55		3	3						
				5		8	14	55'0"-56'6"	MEDIUM GREY WET TO SATURATED (MORE ORGANICS-- TRACE WEATHERED SHALE) (VERY SLOW PENERATION FROM 58')
60		82/6				82/6	15	60'0"-60'6"	VERY DENSE RED WEATHERED SHALE 60'6"
									BORING TERMINATED @ 60'6"
65									
70									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt 30" 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.: B05-7
Job No..: 5505
Page: 1 OF 1
Report Date: 5/10/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: ~~272~~. 272.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/9/2005
Completed: 5/9/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information	
0		14	10						TOPSOIL AND ORGANIC MATTER	0'5"
				18	50/0	28	1	0'0"-1'6"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL AND CRUSHED STONE	
		50/4				50/4	2	3'0"-3'4"	FILL MATERIAL CONCRETE	4'0"
5										
		14	13							
				15	18	28	3	5'0"-7'0"	COMPACT BROWN MOIST SILT AND VF SAND	
		9	13							
10				14	14	27	4	8'0"-10'0"	COMPACT BROWN MOIST SILT, TRACE VF SAND	
										12'0"
15										
		7	8							
				9		17	5	15'0"-16'6"	STIFF GREY MOIST SILT, LITTLE CLAY	16'6"
20									BORING TERMINATED @ 16'6"	
									NOTE: ADDITIONAL 1'6" DRILLED AT THIS LOCATION-- HEAVY FILLS MOVED BORING 3'	
25										
30										
35										

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

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

Appendix 4

Photographs of Slag Fill

Typical view of slag fill at the Port of Rochester.

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

Appendix 5

Example of Material Tracking Spreadsheet

PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN
WASTE STREAM TRACKING FORM

	DATE	TRUCKING COMPANY	TRUCK I.D.	TRUCK LISCENSE PLATE NO.	MANIFEST NO.	TYPE OF WASTE STREAM	WASTE DISPOSAL LOCATION	TIME TRUCK OFF-SITE	LANDFILL TICKET NO.
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

SHEET ____ OF ____

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

Appendix 6

Example of Health & Safety Plan

Port of Rochester
Site Health and Safety Plan

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

June 2005

Port of Rochester
Site Health and Safety Plan

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

June 2005

Table of Contents

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	750	2.5	13	20,000	Sweet	13	9.69
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1(1)	10	1.3	7.9	Ca	Pleasant	4.7	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.2	NA	NA	700	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100	100	1.0	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
Ideno (1,2,3-cd) pyrene		065	NA	NA	Ca	Na	Na	Na
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Napthalene	10, Skin	10	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	100	100	0.9	9.5	2,000	Sweet	2.1	8.82
1,2,4-Trimethylbenzene	NA	25	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	Distinct	2.4	NA
Xylenes (o,m,p)	100	100			1,000	Sweet	1.1	8.56
Metals								
Arsenic	0.01	0.2	NA	NA	100, Ca	Almond		NA
Barium	0.5	0.5	NA	NA	1,100			NA
Cadmium	0.2	0.5	NA	NA				NA
Chromium	1	0.5	NA	NA				NA
Lead	0.05	0.15	NA	NA	700			NA
Mercury	0.05	0.05	NA	NA	28	Odorless		NA
Selenium	0.2	0.02	NA	NA	Unknown			NA
Silver	0.01	0.01	NA	NA				NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

SITE HEALTH AND SAFETY PLAN

Project Title:	Port of Rochester
Project Number:	205182
Project Location (Site):	Port of Rochester, Rochester, New York 14608
Project Manager:	Gregory R. Senecal, CHMM
Plan Approval Date:	_____
Plan Review Date:	_____
Site Safety Supervisor:	Michael Pelychaty
Site Contact	Michael Pelychaty
LaBella Safety Director	Richard Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	Level to moderately sloping, encompassing approximately 5 +/- acres
Site Environmental Information Provided By:	Prior Environmental Reports by H&A of New York, Day Environmental, LaBella Associates, P.C., etc.
Air Monitoring Provided By:	LaBella Associates
Site Control Provided By:	To Be Determined

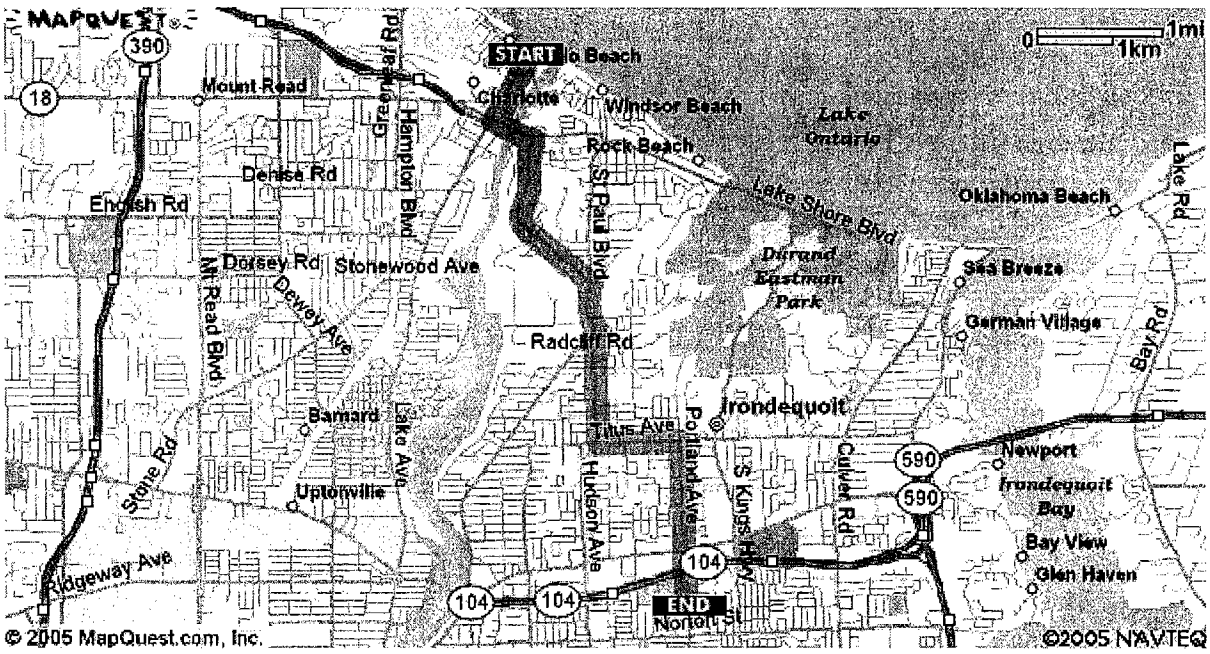
EMERGENCY CONTACTS

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Rochester General Hospital	585-922-4000
Poison Control Center:	Finger Lakes Poison Control	585-275-3232
Police (local, state):	City of Rochester Police Department	911
Fire Department:	City of Rochester Fire Department	911
Site Contact:	Michael Pelychaty	585-451-6225
Agency Contact	NYSDEC – To Be Determined MCDOH – To Be Determined NYSDOH – To Be Determined	
Project Manager	Gregory R. Senecal, CHMM LaBella Associates, P.C.	Direct: 585-295-6243 Cell: 585-752-6480
Safety Supervisor	Michael Pelychaty LaBella Associates, P.C.	Direct: 585-295-6253
LaBella Associates Safety Director	Richard Rote, CIH LaBella Associates, P.C.	Direct: 585-295-6241

MAP AND DIRECTIONS TO THE MEDICAL FACILITY
ROCHESTER GENERAL HOSPITAL

Directions

1:	Start out going NORTHWEST on CORRIGAN ST toward LAKE AVE.
2:	Turn LEFT onto LAKE AVE.
3:	Turn LEFT onto STUTSON ST.
4:	STUTSON ST becomes PATTONWOOD DR/CR-99.
5:	Turn RIGHT onto POW MIA MEMORIAL AVE/THOMAS AVE/CR-124.
6:	Turn RIGHT onto ST PAUL BLVD/CR-122.
7:	Stay STRAIGHT to go onto COOPER RD/CR-116.
8:	Turn LEFT onto TITUS AVE/CR-91.
9:	Turn RIGHT onto PORTLAND AVE/CR-114.
10:	End at Rochester General Hospital, **1425 Portland Ave** Rochester, NY 14621-3001



1.0 INTRODUCTION

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the earthwork construction at the port of Rochester. The requirements of this HASP are applicable to all LaBella Associates personnel and their authorized visitors at the work site. This document's Environmental Management Plan (EMP), and the Community Air Monitoring Plan (CAMP), are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

2.0 RESPONSIBILITIES

The HASP presents guidelines to minimize the risk of injury, to project personnel, and to provide rapid response in the event of injury. The LaBella Associates HASP is applicable only to activities of LaBella personnel and their authorized visitors. The LaBella Associates Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 ACTIVITIES COVERED

The activities covered under this HASP are limited to the following:

- Observation and inspection of construction activities
- Environmental Monitoring
- Collection of samples
- Assistance with the on-Site management of excavated soil and fill.

4.0 WORK AREA ACCESS AND SITE CONTROL

The general contractor will have primary responsibility for work area access and site control.

5.0 POTENTIAL HEALTH AND SAFETY HAZARDS

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by LaBella Associates personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A safety orange vest, hard hat, and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavation can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches.

Protective Action:
LaBella Associates personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. LaBella Associates personnel must receive approval from the LaBella Project Manager to enter an excavation for any reason. Subsequently, LaBella personnel are to receive authorization for entry from the Site Safety Officer.

LaBella Associates personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation or construction work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The LaBella Associates Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The First Aid supplies will be kept in the work trailer. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the LaBella Project Manager. Serious injuries are to be reported immediately (see Section 9.0 - Emergency Action Plan).

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. LaBella Associates employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring performed by LaBella Associates (see Section 8.0) of the work area will be performed at least every 30 minutes or more often using a Photoionization Detector (PID) or a Flame Ionization Detector (FID). LaBella Associates personnel are to leave the work area whenever PID or FID measurements of ambient air exceed 25 ppm consistently for a 15 minute period.

6.0 DECONTAMINATION PROCEDURES

Upon leaving the work area, LaBella Associates personnel shall decontaminate footwear as needed. Under normal work conditions detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. LaBella Associates personnel should be prepared with a change of clothing whenever on site.

LaBella will use the contractor's disposal container for disposal of PPE.

7.0 PERSONAL PROTECTIVE EQUIPMENT

Conditions requiring a level of protection greater than Level D are not expected at this work site. Typical safety equipment identified in company safety and health procedures is required, i.e., hard hat, safety glasses, orange vest, rubber nitrile sampling gloves, splash resistant coveralls, construction grade boots, etc. Additional site-specific personal protective equipment is not necessary when working under the conditions of this plan.

8.0 AIR MONITORING

The LaBella Associates representative/EPM will utilize a PID to screen the ambient air in the work areas (excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs). Work area ambient air will generally be monitored downwind of the excavation or earthwork area in the general breathing zone

Air monitoring of the work areas will be performed at least every 30 minutes or more often using a photoionization Detector (PID). LaBella Associates personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period.

LaBella personnel may re-enter the work areas wearing a ½ face respirator with organic vapor cartridges for an 8-hour duration when VOC concentrations average between 25-50 ppm. Organic vapor cartridges are to be changed after each 8-hour of use. If PID readings are sustained at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered.

At all times, the Site Safety Officer has authority over actions of LaBella Associates personnel and their guests at the site and his or her requests for evacuation are to be heeded without delay. Skin and clothing should be rinsed with clean water if chemical exposure has occurred as a result of splash or spill. Contaminated clothing must be removed; LaBella personnel should bring a change of clothes to the site. Water repellant suits will be provided to help prevent contamination of clothing. Medical attention should be provided if skin irritation has occurred. Please refer to Table 1 outlining chemical compounds detected in recent soil samples at the proposed Port of Rochester.

9.0 EMERGENCY ACTION PLAN

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

LaBella Associates employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

10.0 MEDICAL SURVEILLANCE

LaBella Associates will provide medical surveillance to all LaBella employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

11.0 EMPLOYEE TRAINING

LaBella personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

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

Appendix 7

Community Air Monitoring Plan

Port of Rochester
Community Air Monitoring Plan for Earthwork Construction Activities

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

June 2005

Port of Rochester
Community Air Monitoring Plan for Earthwork Construction Activities

Location:

Port of Rochester
Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality
30 Church Street
Room 300B
Rochester, New York 14614

LaBella Project No. 205182

June 2005

Table of Contents

1.0 INTRODUCTION

This Community Air Monitoring Plan (CAMP) has been prepared by LaBella Associates on behalf of the City of Rochester Department of Environmental Quality (DEQ). This CAMP addresses potential Volatile Organic Vapor (VOC) and particulate emissions that may occur during the earthwork portion of construction activities at the Port of Rochester. The Port of Rochester encompasses approximately 26 acres in the City of Rochester, Monroe County, New York 14612 (see Figure 1) herein after referred to as the "Site."

Potential future earthwork construction activities are covered by this CAMP. Low levels of VOCs, semi-VOCs, and metals have been detected in the soil, fill, and groundwater at the Site. The volatilization of organic compounds through disturbance of soil and groundwater at the Site can potentially result in nuisance odors or health threats to the neighborhood in the immediate vicinity of the Site. Inorganic compounds, present in dust, could potentially be disturbed during earthwork construction activities. This CAMP describes daily air monitoring activities intended to identify and control environmental conditions presenting the potential for neighborhood exposure to ambient airborne hazards resulting from fugitive emissions during earthwork construction activities at the Site.

Pursuant to the New York State Department of Environmental Conservation (NYSDEC) Technical Administrative Guidance Manual (TAGM) #4031 – Fugitive Dust Suppression and particulate Monitoring Program at Inactive Hazardous Waste Sites, (HWR-89-4031), this CAMP addresses methods that will be utilized to monitor particulate (dust) levels at the perimeter of, and within the work areas (excavation, soil staging, and soil grading areas) of the Site. If elevated levels of particulate emissions are encountered, this CAMP identifies the procedures that will be employed to mitigate elevated particulate levels.

Perimeter air monitoring procedures for VOCs are also included in this CAMP. VOC monitoring of the work areas (excavation, soil staging, and soil grading areas) of the Site will also be conducted per the Health and Safety Plan (HASP).

2.0 METHODOLOGY

This CAMP has been designed for construction activities at the Port of Rochester. The CAMP pertains primarily to earthwork activities that disturb, man-made fill, soil and groundwater at the Port of Rochester. Previously completed soil investigations have indicated that petroleum soil and groundwater impairment is not significant or wide spread and located at intermittent locations. Fill containing metals is typically located throughout the Port of Rochester. No significant vapor emissions are expected. However, the following procedures will be implemented to monitor and, if necessary, mitigate the potential migration of fugitive particulate and/or VOC emissions at the Site.

2.1 Site Perimeter Monitoring

Each day of field work during the intrusive earthwork, a wind sock or flag will be used to monitor wind direction in the work areas (excavation, soil staging, and soil grading areas). Based upon daily wind conditions three temporary monitoring points, one up and two down wind of the work areas, will be identified at the perimeter of the Site or field work area.

Real time particulate monitoring will be performed utilizing aerosol monitors capable of measuring particulate concentrations of Particulate Matter 10 µm in size (PM_{10}) or less. VOC monitoring will be performed with a Photo-ionization Detector (PID) equipped with at 10.6 eV lamp. Sufficiently wet Site conditions, such as after precipitation, may temporarily eliminate the need for particulate monitoring.

Each day, prior to the commencement of the intrusive earthwork work, background concentrations of particulate and VOCs will be measured and recorded as 5 minute averages at the identified upwind and downwind locations with the typical construction equipment engines and any other gas/diesel engines operating on Site.

Afterward, measurements will be recorded at approximate 30 minute intervals. The recorded 5 minute averages will be used to determine the difference in value between upwind and downwind particulate and VOC concentrations. Work will be temporarily halted and engineering controls, as per Section 2.3 or 2.5, will be implemented if the difference between the upwind and downwind particulate measurements exceed 100 µg/m³, or downwind VOC readings exceed upwind readings by 5 parts per million (ppm). It should be noted that downwind VOC readings will be adjusted for engine exhaust. If work is required to be temporarily halted, the Contractor will be required to implement dust suppression methods or other means to control dust and VOCs.

2.2 Work Area Monitoring

In addition to monitoring the perimeter of the work Site for VOCs and particulates, the immediate work areas (excavation, staging, and grading areas) will be monitored for VOCs as per the HASP developed for this project. Real time readings from the Work Area Perimeters will be observed and recorded as 5 minute averages at 30 minute intervals. If measurements exceed 25 ppm, as a 5 minute average, the requirements of Section 2.4 will be implemented.

2.3 Fugitive Dust Control

If the monitoring at the Site Perimeter, as described in Sections 2.1, indicates an upwind/downwind difference in fugitive particulate emissions greater than 100 µg/m³, the contractor will be required to implement dust control measures that may include the following methods:

- Apply water on haul roads.
- Wetting equipment and excavation faces.
- Restricting vehicle speeds to 10 mph.
- Hauling material in properly tarped containers.
- Spraying water in buckets during excavation and dumping.
- Reducing excavation size and/or number of excavations.

The contractor will be required to have a water truck or equivalent equipment on site for dust suppressions methods.

2.4 Minor Vapor Emission Response Plan

If any single Work Area Perimeter ambient air reading of total VOCs exceeds 25 ppm in the ambient air above background, as a 5 minute average, continuous Site Perimeter air monitoring shall be conducted at the downwind monitoring location.

Work activities may continue if total organic vapors in the ambient air are less than 25 ppm over background at the Work Area Perimeter, provided that the organic vapor levels measured at the Site Perimeter remain below 5 ppm over background.

Work activities may need to be modified as per the HASP if VOC measurements remain at 25 ppm or above in the ambient air at the Work Area Perimeter. See the HASP for further details.

All work activities must be halted and the Major Vapor Emission Response Plan (Section 2.5) will be implemented immediately if organic vapor levels exceed 5 ppm in the ambient air, as a 5 minute average, over background at the Site Perimeter.

2.5 Major Vapor Emission Plan

Engineering controls to abate the VOC emissions source will immediately be put into effect if total organic vapor levels in the ambient air exceed 5 ppm above background at the Site Perimeter. These engineering controls may include:

- Vapor suppression utilizing foam vapor suppressants, polyethylene sheeting, or water.
- Backfilling of excavations.
- Covering emission sources with stockpiled materials.

If the measures taken to abate the emission source are ineffective and the total organic vapor readings continue at 5 ppm or above background for more than 15 minutes at the Site Perimeter, then the following actions shall be placed into effect.

- Occupants of the residential and commercial buildings will be advised to stay inside their respective structure and to close all windows.
- All personnel listed in the Emergency Contacts section of the HASP for this project will be contacted.
- The Site Safety Supervisor will immediately contact the local authorities and advise them of the circumstances.
- Continuous air monitoring will be conducted at the Site Perimeter and 1 minute average measurements will be recorded every 15 minutes. Air monitoring may be halted or modified by the Site Safety Supervisor when two successive measurements are below 5 ppm.

If readings remain elevated above 5 ppm over background for a period of 60 minutes the Site Safety Officer will request that local authorities evacuate the occupants of the buildings.