MALCOLM PIRNIE

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December 12, 2007

Mr. Jaspal S. Walia, PE
Environmental Engineer
NYS Department of Environmental Conservation
Division of Environmental Remediation
Region 9
270 Michigan Ave.
Buffalo, NY 14202

Re Marilla Street Landfill Site
Landfill Reclamation Project
Site #915047
Field Investigation Work Plan

Dear Mr. Walia:

We have prepared this letter in response to your comment letter dated December 7, 2007 for the above referenced Field Investigation Work Plan. For your convenience, each comment is reiterated below (italics) followed by our response.

GENERAL COMMENTS

Comment 1: *Section 3.2.1: It is stated that Figure 3-1 depicts the proposed locations for 10 soil borings. No Figure 3-1 is included; this may refer to Figure 1-2?*

Response: The labels Figure(s) 1-2 (Site Plan) and 3-1 (Site Plan with Proposed Boring Locations) have been revised and both figures incorporated into the Work Plan.

Comment 2: *3.2.1.: Are samples SBE-01 and SBE-02 from Fill area East?*

Response: Yes, as shown on Figure 3-1, two proposed borings located in the Miscellaneous Debris Area east of Hopkins Street will be sampled.

Comment 3: *While it would seem reasonable to expect that the cap repair methods outlined in Section 3.3 will be able to restore the landfill cap to the original condition, i.e., the maximum barrier layer permeability of 10^{-7} cm/s, it is recommended that at least one Shelby tube sample of the reconstructed BL be collected to confirm this. This is particularly important if it turns out that the proposed reclamation project does not move forward, as we would want the reassurance that the cap was properly maintained.*

Response: Acknowledged, in order to verify the integrity of the landfill cover system, Section 3.3 of the Work Plan has been modified to read:

"Upon completion of excavation work, test pits will be backfilled minus the targeted fill materials and clean soil/fill supplemented as necessary to achieve desired elevation. The fill and soil/fill will be compacted using a vibrating plate tamper until an elevation of grade minus 30 inches is achieved. Once the desired fill elevation is achieved, the test pit excavations will be covered using the clay, topsoil and sod materials that were removed. The barrier clay layer will be applied in 6-inch lifts and re-compacted using the vibrating plate tamper. Subsequent to re-installation of the barrier layer, one representative Shelby tube sample will be collected for permeability analyses. Once the desired clay surface elevation and permeability results are achieved (grade minus 12 inches, permeability of 10^{-7} cm/s), the final 10-inches of top soil will be placed on top of the clay, graded to elevation of grade minus 2-inches and the sod replaced and rolled to match surrounding grade. The permeability of the clay layer will be verified through collection and analyses of one Shelby tube sample for each test pit."

Comment 4: *Any other disturbance to the landfill cover due to moving heavy equipment over the site should also be properly repaired in addition to just the test pit areas. During repairs of ruts or test pit patches of cap, extra clean fill may be required.*

Response: Breaches and/or disturbance of the landfill cover system due to heavy equipment traffic will be repaired using clay and topsoil from a clean, offsite source, as necessary.

Comment 5: *It is noted that no chemical analyses are proposed for the slag samples. It is suggested that at a minimum, samples be tested for pH and TCLP metals. This may be beneficial when evaluating the material under the Departments Beneficial Use Determination program.*

Response: Section 3.4 of the Work Plan has been revised to provide for the chemical analyses of soil samples as follows:

Test pit samples (one sample per test pit) will be analyzed for the following list of parameters:

- Specific gravity
- unit weight
- potential expansion
- pH
- TCLP metals

Copies of the revised Work Plan are included with this letter. If you have any questions concerning these responses, please contact us at (716) 667-0900.

Very truly yours,

MALCOLM PIRNIE, INC.

Kent R. McManus, PE
Senior Associate
Board Certified Environmental Engineer

ENCLOSURES

cc:
M. Doster, NYSDEC
D. Weiss, NYSDEC
E. Forget, NYSDEC
R. Palumbo, Steelfields
File: CC

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Steelfields LTD

11 State Street • Pittsford, NY 14534

Marilla Street Landfill Landfill Reclamation Field Investigation WORK PLAN

December 2007

Report Prepared By:

Malcolm Pirnie, Inc.

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MALCOLM PIRNIE

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1. Introduction

1.1. Purpose and Objective

The Marilla Street Landfill (Site) is a closed industrial solid waste landfill located in the City of Buffalo (see Figure 1-1) and owned by Steelfields LTD (Steelfields). A large percentage of the landfilled material consists of slag and associated by-products from iron and steel manufacturing processes. Some of the slag material may be reusable for construction purposes that include uses as subgrade and road subbase aggregate. Steelfields, plans to reclaim a portion of the Marilla Street Landfill to reuse some of the landfill contents for construction purposes while at the same time creating developable land on the Site. Steelfields is considering partnering with Lafarge North America (Lafarge) as a reclamation contractor.

This Landfill Reclamation Field Investigation Work Plan was prepared to describe the Site, its history, current regulatory status, and delineate a Field Investigation Work Plan designed to determine the suitability of in-situ slag materials for construction uses.

1.2. Steelfields LTD

Steelfields LTD was formed in 2002 to acquire a vacant industrial property located along the Buffalo River in Buffalo, New York. The property had previously been owned and operated by LTV Steel Company (formerly Republic Steel) and the Donner-Hanna Furnace Corporation for steel manufacturing and coke processing. In addition, Steelfields acquired a closed 100 acre solid waste disposal facility, also operated by the former owners, and known as the Marilla Street Landfill.

The LTV plant site property was originally sub-divided into the following four parcels totaling approximately 219 acres:

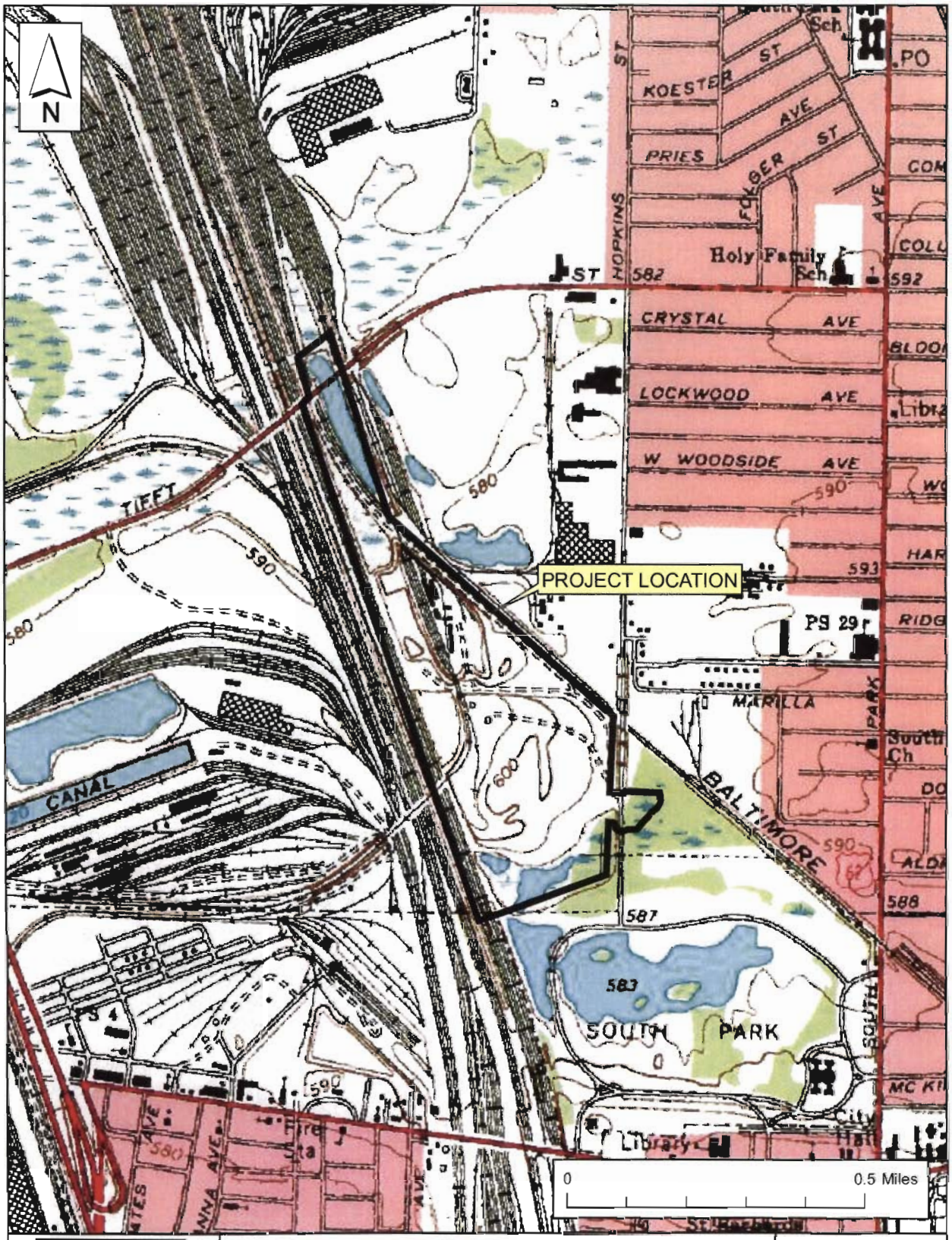
Area I - Former LTV Steel Plant parcel

Area II - former Donner-Hanna Coke Plant parcel

Area III - former LTV Steel Warehouse parcel

Area IV - former Donner-Hanna Coke Yard

Area IV was sold to Hydro-Air Components, Inc in July 2006. The remediation of that parcel was completed under the Brownfield Cleanup program. The final engineering reports for the Area IV remediation have been submitted to DEC.



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NOVEMBER 2007 5819002

SITE LOCATION
MARILLA STREET LANDFILL
BUFFALO, NEW YORK

FIGURE 1-1

The remediation of the remainder of the former plant site (Areas I, II and III) was completed by Steelfields in the autumn of 2007, pursuant to a Voluntary Cleanup Agreement with DEC. The final engineering reports relating to the completion of the Voluntary Cleanup Agreement and work plan have been submitted to DEC. Steelfields and Buffalo Urban Development Corporation (BUDC) have announced their intent to enter into an agreement for purchase of the Areas I, II and III by BUDC.

1.3. Lafarge North America

The Standard Slag Company and its successor, Lafarge North America, have produced and marketed steel industry slag products since the early 1900's. During the first 50 years, the company primarily operated "hot slag" facilities under contract to major steel companies. This involved taking the molten blast furnace slag from the furnaces and primarily making aggregate products for the construction industry. Some other uses of slag include; uses in cement manufacture and to impart select, customized properties to concrete structures; insulating wool products; and agricultural soil enhancement.

The company operated these "hot slag" sites in the Cleveland and Youngstown, Ohio areas; the Pittsburgh, Pa. area; Johnstown, Pa.; Mingo Junction, Ohio; Portsmouth, Ohio; Weirton, WV; St. Louis, Mo and Buffalo, NY.

During the late 1970's and early 1980's when steel plants began to close, Lafarge focused on the reclamation of slag landfills that were previously used by steel companies over the years to store excess slag. These select landfill sites contain air cooled blast furnace slag, granulated slag and steel slag for which products were developed according to physical properties of the materials.

The following is a list of some of the many slag landfill sites that have been reclaimed during the past 25 to 30 years:

Regional Examples

Brown Reserve near Pittsburgh, Pa. – This site was leased from a local Pittsburgh company who is a developer. The site is located next to the Century Three Mall and as Lafarge reclaimed portions of the site it was developed with stores and restaurants.

Cuyahoga Plant near Cleveland, Ohio – This site was leased from American Steel and Wire Company and the slag products marketed in the Cleveland area.

Gould Property near Mingo Junction, Ohio – This was a small site that was reclaimed and subsequently sold to an adjoining automobile salvage business.

Lordstown Slag near Youngstown, Ohio – This is a site where slag produced from steel making operations in the Youngstown area since the 1930's has been produced and marketed for the last 30+ years.

McDonald Slag near Youngstown, Ohio – This site was purchased from US Steel about 1980 and has been reclaimed and will be developed for another end use.

Salt Springs Road Site #1 in Youngstown, Ohio – This site was purchased from Republic/Jones & Laughlin Steel in the late 1970's and has since been depleted of the slag reserve. The property was sold to the City of Youngstown for commercial development. The site has been redeveloped with several businesses built.

Salt Springs Road Site #2 in Youngstown, Ohio – This site was purchased from US Steel about 1980 and has been an active site since the first Salt Springs Road Site was reclaimed.

Based on an initiative to reclaim landfilled slag sites, Lafarge has purchased additional sites not identified above that are planned for future development.

Local Examples (completed by others)

Bethlehem Steel in Buffalo, New York – BUD # 555-9-15 issued to Bethlehem Steel Corp. in 1998, reissued in 2006 to facilitate reclamation of slag materials for reuse as aggregate materials.

Roblyn Steel in Dunkirk, New York – BUD # 487-9-07 issued to Roblyn Steel, the project to reclaim slag for reuse as aggregate has not been implemented.

The regional and local examples of successfully reclaimed slag landfill sites shown above support the feasibility of slag landfill reclamation. Therefore, a determination was made that a Feasibility Study (FS) and associated work plan were not warranted.

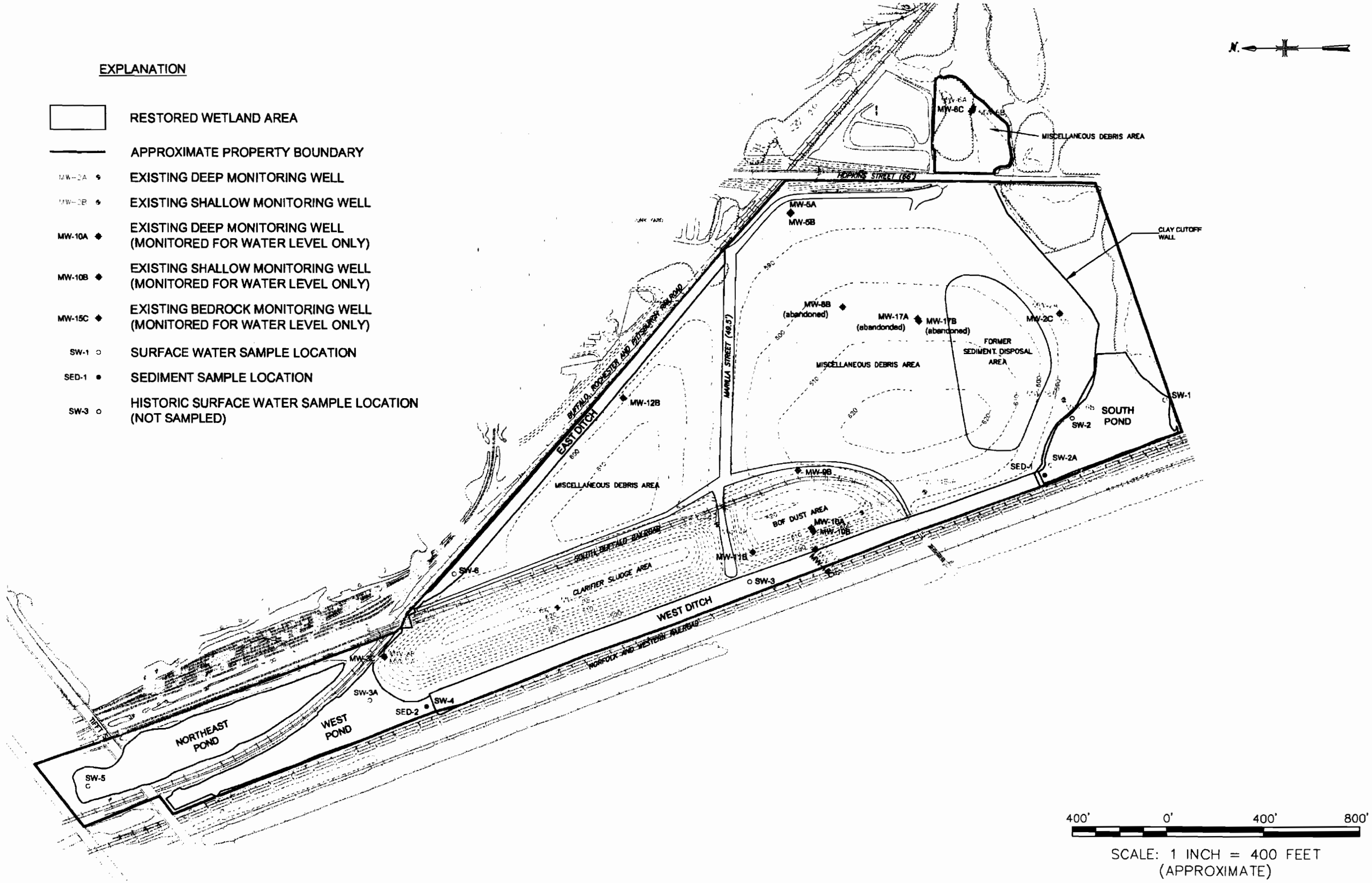
1.4. Site Description

The Marilla Street Landfill (the site) is approximately 80 acres in size and is located on an approximately 100 acre parcel of land located along Marilla and Hopkins Streets in the City of Buffalo, New York. Approximately 20 acres of the parcel are comprised of topographically low and wet areas, which have not been filled. Portions of the property south and west of the filled areas are presently NYSDEC designated wetlands (see Figure 1-2).

The landfill was historically operated as an above grade fill operation. In November 1980, some BOF precipitator dust generated at the Buffalo District Plant was analyzed and found to exceed the EP Toxic level for lead leachability and, therefore was placed in

EXPLANATION

- RESTORED WETLAND AREA
- APPROXIMATE PROPERTY BOUNDARY
- MW-2A — EXISTING DEEP MONITORING WELL
- MW-2B — EXISTING SHALLOW MONITORING WELL
- MW-10A — EXISTING DEEP MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- MW-10B — EXISTING SHALLOW MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- MW-15C — EXISTING BEDROCK MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- SW-1 — SURFACE WATER SAMPLE LOCATION
- SED-1 — SEDIMENT SAMPLE LOCATION
- SW-3 — HISTORIC SURFACE WATER SAMPLE LOCATION (NOT SAMPLED)



400' 0' 400' 800'

SCALE: 1 INCH = 400 FEET
(APPROXIMATE)

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STEELFIELDS, LTD.

LANDFILL RECLAMATION FIELD INVESTIGATION WORK PLAN
5819-002

SITE PLAN
MARILLA STREET LANDFILL, BUFFALO NY

MALCOLM PIRNIE, INC.

DECEMBER 2007

FIGURE 1-2

a segregated fill area from November 1980 until steel making operations were terminated at the Buffalo Bethlehem Steel Plant in June/July 1981. Coincidently, a segregated portion of the landfill designated as the Clarifier Sludge Area received slag particulate and sludge material from steel making operations. Both portions of the landfill identified as the BOF Dust and Clarifier Sludge Areas were closed during August/September 1990. Remaining areas of the landfill (Miscellaneous Debris Areas) have been closed in accordance with NYSDEC approved closure plans under 6NYCRR Part 360 regulations.

Due to the physical characteristics of the BOF Dust and Clarifier Sludge Areas as well as their location and topography, these areas will not be included in the reclamation plan.

2. PRELIMINARY SITE INVESTIGATION

2.1. Information Gathering Activities

2.1.1. Records Review

Malcolm Pirnie is very familiar with the Marilla Street Landfill through direct involvement with site investigation, design, and monitoring services performed for LTV Steel during the period of time from 1984 through 1998. Malcolm Pirnie's archived Marilla Street Landfill files were reviewed to become more familiar with the work performed over that time period. Recent monitoring reports (2005 and 2006), provided by Steelfields, were reviewed as was the New York State Department of Environmental Conservation (NYSDEC) Code of Rules and Regulations (CRR) subsection 360-2.18 *Landfill Reclamation.*

2.1.2. Site Inspection

On November 16, 2007 Malcolm Pirnie performed a site visit to observe the current status and condition of the site relative to the proposed field investigation activities. Observations were made of the size of each landfill cell, average and maximum slopes, accessibility to drilling and excavation equipment and condition of site roads and landfill covers. Site access was restricted by locked gates but the much of the site was visible from perimeter locations. All of the viewable site areas appeared properly capped and completely covered with grass. No evidence of slumping, leachate outbreaks or recent dumping was observed. Access to proposed drilling and excavation locations were observed keeping in mind potential slope considerations.

2.1.3. Interviews

The entire site is owned and managed by Steelfields LTD and has been managed by Steelfields and previous owners (LTV and Republic Steel) since 1930. Malcolm Pirnie will work closely with representatives of Steelfields, Lafarge and the NYSDEC region 9 staff familiar with the Site throughout this project. Given this cooperative working relationship and regular communications between the site owners, technical consultant, and regulators, formal interviews were not needed and therefore were not conducted.

2.2. Description of Landfill Areas and Contents

The Marilla Street Landfill site is situated on approximately 80 acres of a 100 acre parcel of land owned by Steelfields LTD, (see Figure 1-1). The 100 acre parcel is bordered on the south by the South Park Recreational Facility operated by Erie County, on the west by railroad tracks of the Norfolk and Western Railroad, and on the north and east by railroad tracks of the Buffalo, Rochester, and Pittsburgh Railroad.

Approximately 20 acres of the parcel are comprised of site roadways and topographically low and wet areas, which have not been filled. Based on site boring data, it appears that some portion of the site was originally a low wet area prior to landfilling. Portions of the property south and west of the filled areas are presently NYSDEC designated wetlands.

Based on the findings of a Solid Waste Management Facility Investigation Program (SWMFIP) conducted at the Marilla Street Landfill, a variety of wastes have been disposed at the site including: blast furnace and BOF (Basic Oxygen Furnace) slag, blast furnace and BOF precipitator dust, clarifier sludge, blast furnace bricks, tool scale, scrap wood, brick and construction debris. The landfill site was also used for material (slag) and construction debris disposal during shutdown and demolition of the Republic Steel Corporation's Buffalo Plant starting in 1981.

2.3. Regulatory Status

The New York State Department of Environmental Conservation (NYSDEC) has determined that the entire Marilla Street Landfill Site is an inactive hazardous waste site, as that term is defined in ECL Section 27-1301(2). Consequently, the site has been listed in the Registry of Inactive Hazardous Waste Sites of New York as Site No. 915047 and the NYSDEC has classified the site as a Class "2". The NYSDEC defines a Class 2 site as a site that poses a significant threat to public health and/or the environment and requires action. LTV Steel, under an Order-on-Consent, undertook certain landfill closure activities, including:

- Preparation and implementation of a landfill closure plan pursuant to 6NYCRR Part 360 requirements;
- Planning and implementation of a Solid Waste Management Facility Investigation Program;
- Preparation and implementation of a post-closure maintenance and monitoring plan for the site.

The NYSDEC has requested Steelfields make relatively minor modification to the approved Post-Closure Monitoring and Maintenance Plan after which the NYSDEC intends to re-classify the Site as a Class 4 Site. Class 4 Sites, as defined by NYSDEC, are those sites that are properly closed but require continued management.

2.4. Monitoring System and Summary of Most Recent Monitoring Results

Post closure monitoring and maintenance is performed on an annual basis for groundwater, surface water, and sediment quality. Also, an inspection of the landfill is performed coincident with the annual sampling to document the condition of the landfill cover system.

2.5. Description of Landfill Areas

Of the five separate and distinct areas that comprise the Marilla Street Landfill site; only the Miscellaneous Debris Areas are being considered for reclamation. Listed in order of increasing land area, the Landfill is comprised of the following:

- Miscellaneous Debris Area – east side of Hopkins Street
- BOF Dust Area
- Clarifier Sludge Area
- Miscellaneous Debris area – north of Marilla Street
- Miscellaneous Debris Area – South of Marilla Street

2.5.1. Vertical and Horizontal Extent

The approximate vertical and horizontal extents of each of the five landfill areas are as follows:

- Miscellaneous Debris Area (East) (4 acres, maximum relief~10 feet)
- BOF Dust Area (6 acres, maximum relief ~ 30 feet)
- Clarifier Sludge Area (12 acres, maximum relief ~45 feet)
- Miscellaneous Debris Area North (14 acres, maximum relief ~35 feet)
- Miscellaneous Debris Area South (42 acres, maximum relief ~42 feet)

Figure 1-2 illustrates the five landfill areas with topographic contours.

2.5.2. Contents of Landfill Areas and Depth to Water Table

As described in the Solid Waste Management Facility Investigation Program report, (Malcolm Pirnie, May 1994) a variety of wastes have been disposed at the site including: blast furnace and BOF (Basic Oxygen Furnace) slag, blast furnace and BOF precipitator dust, clarifier sludge, blast furnace bricks, tool scale, scrap wood, brick and construction debris.

The landfill was operated as an above-grade fill operation. In November 1980, some BOF precipitator dust generated at the Buffalo District Plant was analyzed and found to exceed the EP Toxic level for lead leachability and, therefore was placed in a segregated fill area from November 1980 until steel making operations were terminated at the Buffalo Plant in June/July 1981.

The only known sources of waste material at the Marilla Street landfill are the former iron and steel making operations at the Buffalo Plant of the LTV Steel Company, previously Republic Steel Corporation. The Buffalo Plant operated several unit processes in the production of iron and steel products including:

- Blast furnace iron making.
- Basic oxygen furnace steelmaking.
- Primary rolling and hot forming.
- Sulfuric acid pickling.
- Solid wastes generated at the Buffalo Plant include three types of solid waste: slag, iron oxide wastes, and miscellaneous waste.

Very few records were kept concerning landfill operations. The types of waste deposited at various areas of the landfill are discussed below:

BOF Dust Area: The BOF Dust Area contains a mixture of BOF dust and BOF slag. The slag was used to prevent the dust particles from being dispersed by the wind. LTV personnel estimated that approximately 6000 tons of BOF dust was landfilled in the BOF Dust Area from November 1980 until June/July 1981. The total volume of wastes (slag and dust) has been estimated to be 136,000 cubic yards.

Clarifier Sludge Area: The Clarifier Sludge Area (CSA) contains primarily a mixture of clarifier sludge, BOF slag, and blast furnace slag. The sludge was generated by the Buffalo District Plant's wastewater treatment system. The slag was used to prevent the sludge from being dispersed by the wind. The total volume of waste in the CSA is estimated to be 531,000 cubic yards including the rubble/slag used in the construction of the railroad berm.

Miscellaneous Debris Areas (North and South): These areas contain non segregated waste materials, which primarily include a mixture of plant construction/demolition debris, railroad ties, refractory bricks, minus fines (viz. BOF slag less than 1/4 inch in size), minus fines (BOF slag 1/4 to 5/8 inch in size), BOF slag, and blast furnace slag. The combined volume of waste in these two areas was estimated to be 2,260,000 cubic yards in 1985; however, some slag was removed and some plant demolition debris was landfilled after 1985. The Miscellaneous Debris Area North was formerly called the Fine Refuse Area and during 1985 reportedly contained 712,000 cubic yards of material. Records indicate that 31,300 cubic yards were subsequently mined prior to the Area being closed.

Miscellaneous Debris Area East (Railroad Fill Area): This area reportedly contains slag deposited during construction of a railroad on the east side of Hopkins Street. The volume of waste in this area is estimated to be 14,500 cubic yards.

An evaluation of the waste/fill overburden materials identified in the area(s) of interest determined that the waste descriptions recorded on SWMFIP boring logs are consistent with the general descriptions of blast furnace and steel-making wastes. Black slag is interpreted to be BOF slag with a high iron content and high alkalinity. Gray slag is

interpreted to be blast furnace slag with low iron content and moderate alkalinity. Red, brown or black silt and sand is most likely desegregated slag material, iron oxide dust, sludge, or scale. Ash and cinders are most likely from coal fired boilers, which may have been used in the past. Refractory brick fragments most likely originated from furnace linings or ladles, which were used to handle molten iron or steel.

Analyses of the waste/fill included a Toxicity Characteristic Leaching Procedure (TCLP) performed on composite samples of waste/fill material. No waste samples from the Miscellaneous Debris Areas exhibited the toxicity characteristic for metals or organics.

Inorganic results are consistent with the reported disposal of steelmaking and iron making slag; and iron oxide dust, sludge and scale. High concentrations of calcium and iron coupled with low concentrations of aluminum indicate a predominance of steelmaking slag with lesser volumes of iron making slag. Elements that occur in the waste/fill at comparatively high concentrations relative to the underlying soils or to the mean concentration in eastern U.S. soils include antimony, barium, chromium, lead, manganese, zinc, vanadium, calcium, and iron. In general, with some exceptions, arsenic, beryllium, cadmium, cobalt, nickel, copper, mercury, selenium, silver, thallium, and cyanide were not detected or were detected at low concentrations.

Organic substances detected in the waste/fill material are polynuclear aromatic hydrocarbons with lesser quantities of phthalate esters. Phenolic compounds were detected at trace concentrations. Volatile organics that were detected include acetone, benzene, toluene, ethylbenzene, and carbon disulfide. Pesticides and PCBs were only detected periodically and then only at trace concentrations.

The organic substances detected in the waste/fill are found in coke and iron making residuals, and to a lesser degree in steel making residuals. Coke was not known to have been produced at the Buffalo District Plant and there has been no reported disposal of the direct by-products of coke making at the Marilla Street Landfill site. The concentrations of organic substances detected in the waste/fill are in the range of less than 1 mg/kg to 2-3 mg/kg. These are trace concentrations that likely originate from the combustion of coke in the iron-making processes.

Historical investigations completed in the Miscellaneous Debris Areas have established that the slag contents are potentially suitable for use as construction material based on chemical characteristics and contaminant concentrations. No further chemical characterization is considered necessary to evaluate the landfilled slag reclaimed from the Miscellaneous Debris Areas for potential use as construction material. A plan for chemical characterization of the reclaimed slag will be described in the Site Analytical Plan prepared as an element of the Landfill Reclamation Work Plan. Only a determination of the physical characteristics of the slag is necessary to determine its potential for use as construction material.

Depth to Water Table

Based on groundwater elevation measurements collected in May 2006 as part of the annual monitoring program, the depth to water table (shallow overburden groundwater) varies significantly relative to the thickness of the fill. The water table is nearest the ground surface in areas of lowest elevation, around the landfill perimeter where fill is thinnest. In areas of the landfill with lower elevations, groundwater is as shallow as five feet below the ground surface (bgs). Conversely, in areas with higher elevations, groundwater is measured as deep as 45 feet bgs. According to the 2006 annual monitoring report, groundwater depths and flow directions have been consistent since 1991. As illustrated on Figure 3 of the 2006 monitoring report, the water table is mapped as a broad dome beneath the site with an elevated water table centered beneath the largest landfill mass, the southernmost Miscellaneous Debris Disposal Area. At its highest point in May 2006, the water table was measured and determined to be at an elevation greater than 583 feet. As shown on Figure 3, the elevated water table is much flatter than the landfill surface, thus areas of the landfill with the higher elevations will have a proportionally greater volume of unsaturated fill material than those areas with lower elevations.

2.5.3. Groundwater Monitoring System

Currently, 16 groundwater monitoring wells are sampled annually as part of the Post Closure Monitoring and Maintenance. Nine wells are completed in the shallow overburden (B wells) and seven wells are completed in the deep overburden (A wells). Wells MW-6A and MW-6B are the upgradient wells for the shallow and deep monitored zones respectively. These wells are located on the easternmost Miscellaneous Debris Disposal Area.

2.6. Available Work Space for Reclamation

A separate Landfill Reclamation Work Plan (including identification of reclamation areas, the sequence of phased work , a characterization plan, and required work space areas) will be prepared if the results of this investigation support the initiative to reclaim and reuse the landfilled slag.

2.7. Post Reclamation Landfill Use Plans

A Post Reclamation Use Plan for portions of the site will be prepared if the results of this investigation indicate the slag contents can be used as construction material.

2.8. Justification of Proposed Field Investigation

A field investigation of the Marilla Street Landfill is required to collect samples of the slag fill material for confirmation of the physical suitability for the planned reuse of the

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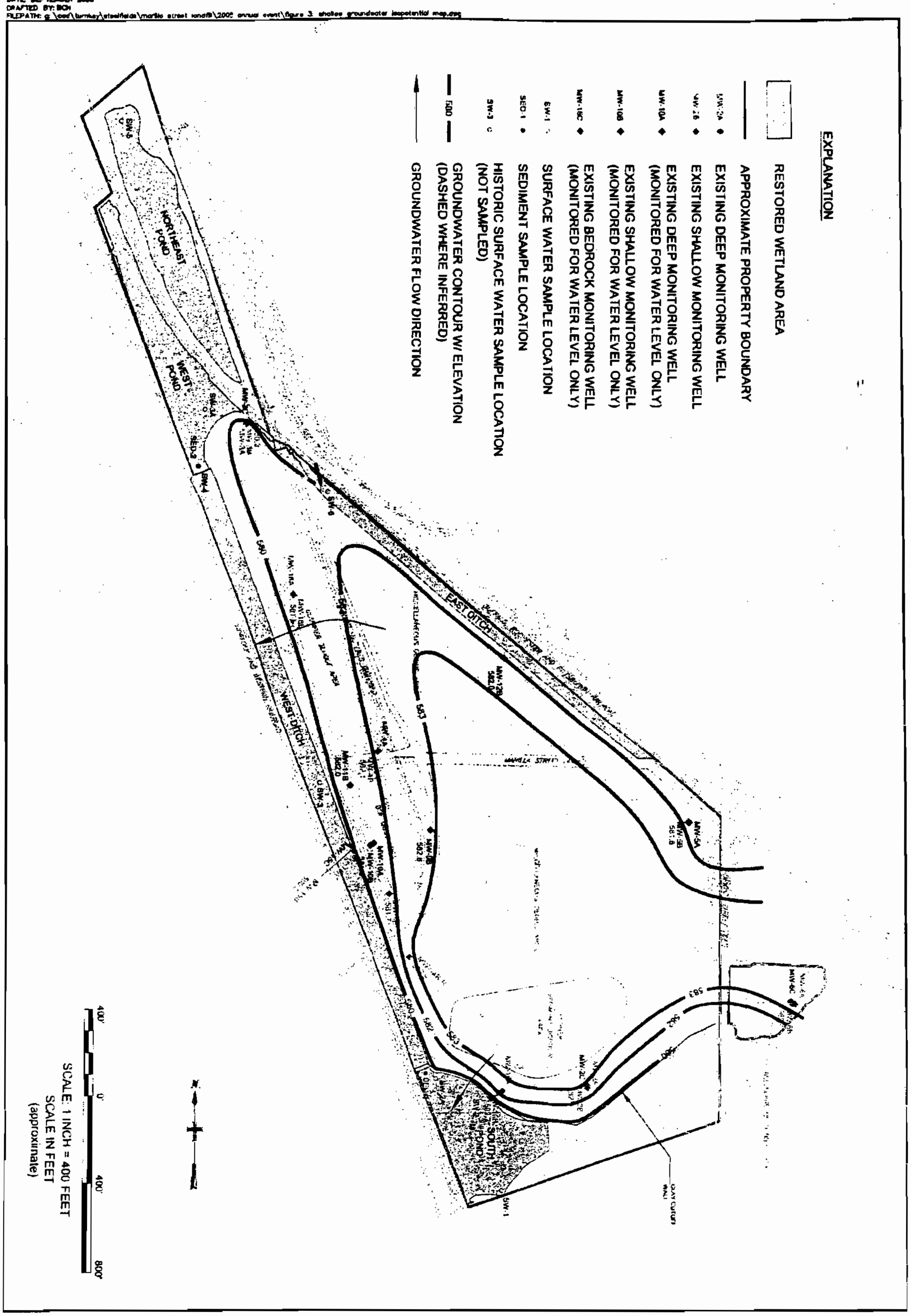


FIGURE 3	SHALLOW GROUNDWATER ISOPOTENTIAL MAP ANNUAL MAINTENANCE & MONITORING REPORT MARILLA STREET LANDFILL BUFFALO, NEW YORK PREPARED FOR STEELFIELDS, LTD.	MALCOLM PIRNIE

slag as a construction material. Reclamation and use of the slag material will create opportunities for redevelopment of portions of the Landfill Site.

3. FIELD INVESTIGATION WORK PLAN

3.1. Objective

The primary objective of the planned field investigation is to collect samples of the slag materials to confirm their viability for reuse as construction material. Related data to be obtained from the investigation includes; type and distribution of the various fill materials within the landfill areas and depth to groundwater.

3.2. Proposed Sampling

Up to ten borings and five test pit excavations will be advanced into the fill material to characterize the fill material at select locations. Information obtained from the borings will be used to select the locations of the excavations from which samples of slag material will be collected for analysis.

3.2.1. Borings

Ten borings will be advanced using rotary drilling methods to visually characterize the fill material at select locations. Four and one quarter inch inner diameter hollow stem augers will be advanced to the depth of the water table. Two inch outer diameter split spoon samplers will be advanced ahead of the augers at two-foot intervals using standard penetration methods (ASTM D1586-99) continuously from ground surface to the water table.

Boring locations were selected based on historical evidence of the contents of each landfill area as well as the current cover slope and location relative to potential future operations and developments. The 10 proposed soil borings will be located as follows:

- Miscellaneous Fill Area North – 3 borings (SBN – 01 to SBN-03)
- Miscellaneous Fill Area South – 5 borings (SBS – 01 to SBS-05)
- Miscellaneous Fill Area North – 2 borings (SBE – 01 and SBE-02)

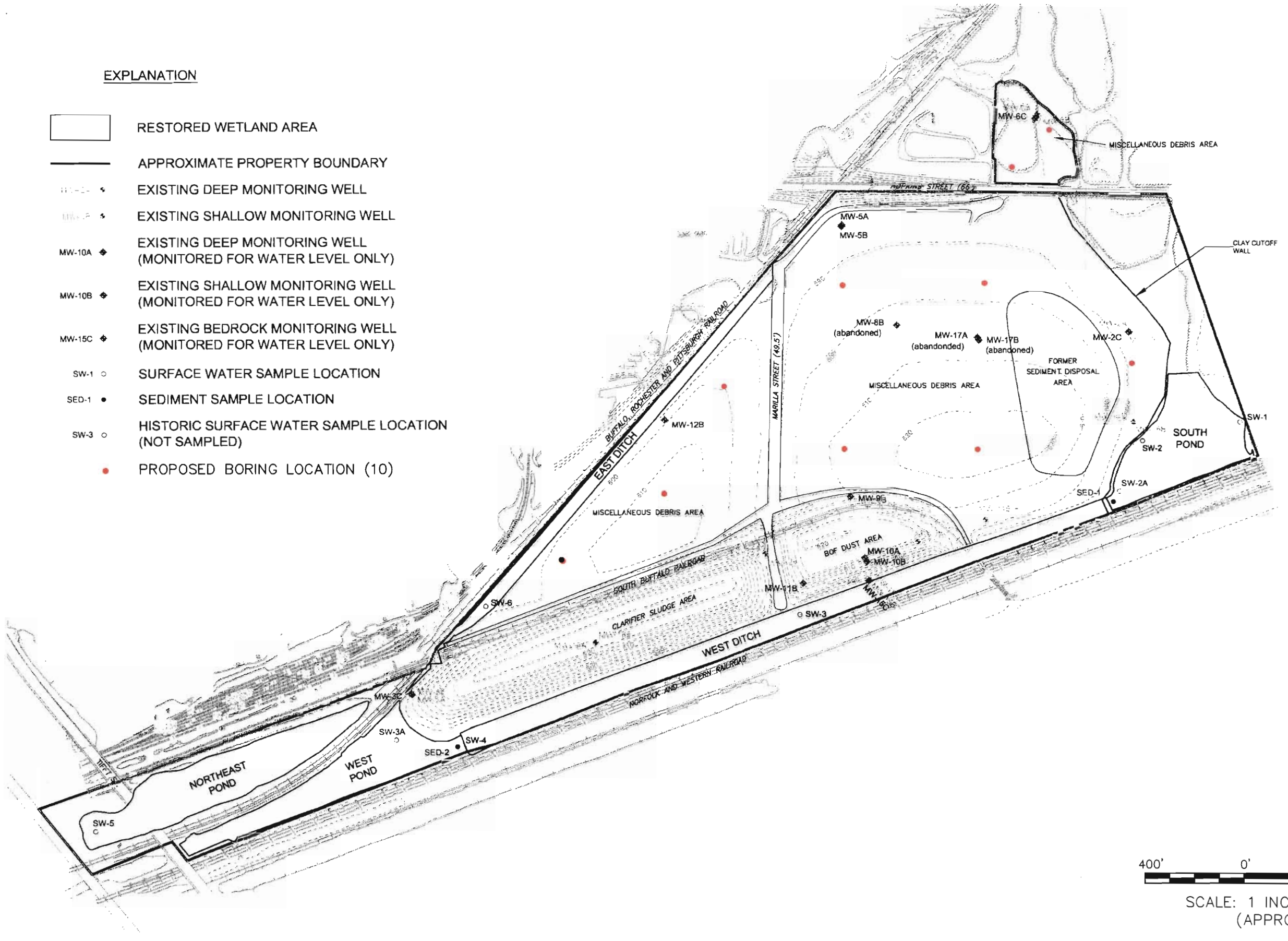
Figure 3-1 depicts the landfill areas with proposed boring locations.

3.2.2. Test Pit Excavation and Sampling

Based on information collected from the borings, up to five test pits will be excavated to collect samples of the landfill contents for physical characterization of the slag. An excavator capable of digging through large hard fill a minimum of 13 feet deep will be

EXPLANATION

- RESTORED WETLAND AREA
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING DEEP MONITORING WELL
- EXISTING SHALLOW MONITORING WELL
- MW-10A — EXISTING DEEP MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- MW-10B — EXISTING SHALLOW MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- MW-15C — EXISTING BEDROCK MONITORING WELL (MONITORED FOR WATER LEVEL ONLY)
- SW-1 — SURFACE WATER SAMPLE LOCATION
- SED-1 — SEDIMENT SAMPLE LOCATION
- SW-3 — HISTORIC SURFACE WATER SAMPLE LOCATION (NOT SAMPLED)
- PROPOSED BORING LOCATION (10)



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STEELFIELDS, LTD.

LANDFILL RECLAMATION FIELD INVESTIGATION WORK PLAN
5819-002

SITE PLAN WITH PROPOSED BORING LOCATIONS
MARILLA STREET LANDFILL, BUFFALO NY

MALCOLM PIRNIE, INC.
DECEMBER 2007
FIGURE 3-1

used to dig into the fill material to remove sufficient volume for sample analysis. Material not removed for sample analyses will be returned to the excavation.

3.3. Landfill Cover System Repair

The landfill cover system consists of 18-inches of compacted clay and 12 inches of top soil. Borings will be drilled through the landfill cover and into the fill material for sample collection. Upon completion of each boring, the fill materials removed will be returned to the boring from which it came and the cover interval will be repaired using 18 inches of cement bentonite grout followed by 12 inches of top soil (that which was removed).

Where test pits are excavated, the cover material will be removed in layers and segregated for later use. First, the grass and upper 2" of top soil cover will be removed using a sod cutter for later re-placement. The underlying 10 inches of top soil will be removed and placed on 6 mil poly sheeting. The 18-inch compacted clay layer will also be removed and segregated on poly sheeting for later reuse. Upon completion of excavation work, test pits will be backfilled minus the targeted fill materials and clean soil/fill supplemented as necessary to achieve desired elevation. The fill and soil/fill will be compacted using a vibrating plate tamper until an elevation of grade minus 30 inches is achieved. Once the desired fill elevation is achieved, the test pit excavations will be covered using the clay, topsoil and sod materials that were removed. The barrier clay layer will be applied in 6-inch lifts and re-compacted using the vibrating plate tamper. Subsequent to re-installation of the barrier layer, one representative Shelby tube sample will be collected for permeability analyses. Once the desired clay surface elevation and permeability results are achieved (grade minus 12 inches, permeability of 10^{-7} cm/s), the final 10-inches of top soil will be placed on top of the clay, graded to elevation of grade minus 2-inches and the sod replaced and rolled to match surrounding grade. The permeability of the clay layer will be verified through collection and analysesof one Shelby tube sample from each test pit.

3.4. Analyses

Samples will be analyzed for the following list of parameters:

- Specific gravity
- unit weight
- potential expansion
- pH
- TCLP metals

3.5. Project Management

The organizational structure proposed for the field investigation is described below. In addition to the personnel identified below, support for the project will be provided by additional personnel from Malcolm Pirnie as required. Coordination of project activities and a majority of the work on this project will be performed by staff from Malcolm Pirnie's Buffalo, New York office. The responsibilities of key staff positions are summarized as follows:

Kent McManus, P.E., the Project Manager, will be responsible for the day-to-day management of the project including the allocation of technical resources, development of work plans, and coordination of project activities and personnel. Mr. McManus will be responsible for maintaining a clear definition of and adherence to the NYSDEC approved scope, schedule, and budget.

Jim Richert, Deputy Project Manager, will manage the field investigations and reporting during the project. He will interact with the Project Manager and other team members and support staff to complete and document the scope of work.

John Hilton, Field Geologist, will implement the field investigations and reporting tasks during the project. He will interact with the Deputy Project Manager and other team members to complete and document the work activities.

3.6. Schedule

Upon approval of this work plan by both Steelfields and the NYSDEC, Malcolm Pirnie will mobilize to begin field work within two weeks, contingent on the availability of the drilling subcontractor. The field program is anticipated to take approximately two weeks and analysis of samples another two weeks, assuming standard turn-around-time.

Submittal of the Field Investigation Report would be one week from the date of receipt of the final analytical data.

3.7. Contingency Plan

A Contingency Plan will be prepared prior to initiation of land reclamations activities. The Contingency Plan will include a description of the courses of action which should be taken in responding to events that may occur during reclamation activities. The plan will describe actions to be taken with respect to personnel safety, on-site personnel injury, fires, explosion, landfill gases, dust, litter, odor, noise, vectors, and excavation and release of hazardous or toxic materials. The contingency plan will address hazard evaluation and protection from potential hazards, including, engineering controls, personal protection equipment, and air monitoring techniques. The plan will also include

designation of exclusion, decontamination, and support zones, decontamination procedures, on-site communication procedures, and emergency procedures.

3.8. Site Safety Plan

A Site-Specific Health and Safety Plan for the Field Investigation is provided in Appendix A of this Work Plan. Reclamation activities are anticipated to be significantly different than site investigation activities and are not yet fully defined. Therefore, the Health and Safety Plan will be modified to include protocols for the reclamation work prior to its implementation.

4. FIELD INVESTIGATION REPORT

Upon completion of the field investigation, a Field Investigation Report (FIR) will be prepared. The FIR will not include a feasibility study. As described in Section 1.3, there are a number of documented regional and local examples of successful slag landfill reclamation projects. Also, the planned Southtowns Connector project will create a large demand for subgrade and road subbase material. Consequently, the feasibility of reclaiming the Miscellaneous Debris Areas of the Marilla Street Landfill will be based solely on the physical characteristics of the slag contents and its potential use as construction material- primarily as subgrade and road subbase material. The FIR will include but may not be limited to the following:

- A Field Investigation Summary and Findings
- A Determination of the Suitability of the Site for Reclamation
- An Estimate of Reclamation and Closure Costs, if Suitable
- An Impact Assessment

SITE SPECIFIC HEALTH AND SAFETY PLAN

MALCOLM PIRNIE

SECTION 1: GENERAL INFORMATION AND DISCLAIMER		PROJECT NUMBER:	5819-002
PROJECT NAME:	Field Investigation of Marilla Street Landfill	CLIENT NAME:	Steelfields, Ltd.
PROJECT MANAGER:	Kent McManus	PROJECT LEADER:	Kent McManus
PREPARED BY:	Jim Richert	DATE:	11/23/07

NOTE: This site specific Health and Safety Plan - Short Form (HASP-SF) has been prepared for use by **Malcolm Pirnie, Inc.** employees for work at this site / facility. **The plan is written for the specific site / facility conditions, purposes, tasks, dates and personnel specified, and must be amended and reviewed by those personnel named in Section 4 if these conditions change.** Malcolm Pirnie, Inc. is not responsible for its use by others.

Subcontractors shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations. In accordance with 1910.120(b)(1)(iv) and (v), Malcolm Pirnie, Inc. will inform subcontractors of the site / facility emergency response procedures, and any potential fire, explosion, health, safety or other hazards by making this Site Specific Health and Safety Plan and site information obtained by others available during regular business hours. All contractors and subcontractors are responsible for: (1) developing their own Health and Safety Plan, including a written Hazard Communication Program and any other written hazard specific or safety programs required by federal, state and local laws and regulations, that details subcontractor tasks, potential or actual hazards identified as a result of a risk analysis of those tasks, and the engineering controls, work practices and personal protective equipment to be utilized to minimize or eliminate employee exposure to the hazard; (2) providing their own personal protective equipment; (3) providing documentation that their employees have been health and safety trained in accordance with applicable federal, state and local laws and regulations; (4) providing evidence of medical surveillance and medical approvals for their employees; and (5) designating their own site safety officer responsible for ensuring that their employees comply with their own Health and Safety plan and taking any other additional measures required by their site activities.

Providing a copy of this Malcolm Pirnie plan to subcontractors, does not establish, nor is it intended to establish a "joint employer" relationship between the Contractor and Malcolm Pirnie. This allowance does not establish, nor is it intended to establish, a direct or indirect employer/employee relationship with subcontractor's employees.

THIS SITE SPECIFIC HASP MUST BE REVIEWED AND APPROVED BY CORPORATE HEALTH AND SAFETY FOR ONE OR MORE OF THE FOLLOWING CONDITIONS: IF AN UPGRADE TO "LEVEL C" OR ABOVE IS ANTICIPATED; A PERMIT REQUIRED CONFINED SPACE ENTRY OR ENTRY INTO AN EXCAVATION IS ANTICIPATED; SAMPLING OF UNKNOWN DRUMS AND/OR IN UNKNOWN CONDITIONS IS ANTICIPATED, OR IF THERE MAY BE RADIATION LEVELS GREATER THAN 0.5 mR (500μR)/HOUR.

SECTION 2: EMERGENCY INFORMATION

(A) LOCAL RESOURCES	SERVICE NAME	TELEPHONE NUMBER
EMERGENCY MEDICAL SERVICES	911	911
HOSPITAL (Map attached)	Mercy Hospital – 565 Abbott Road, Buffalo	716/828-2666 Emergency Dept.
FIRE DEPARTMENT	Buffalo Fire Department	911
POLICE / SECURITY	Buffalo Police Department	911
HAZMAT/ SPILL / OTHER RESPONSE	911	911

(B) CORPORATE RESOURCES

MALCOLM PIRNIE 24 / 7 EMERGENCY / INCIDENT TELEPHONE NUMBERS		(800) 478-6870 (24 HOURS)
CORPORATE HEALTH AND SAFETY **	CHARLES J. MYERS, CIH, CHMM	(914) 641-2610 WHI
FIER PROJECTS	JANE WEBER, CET	(914) 641-2559 WHI
MUNI/WEG/CMRT PROJECTS	LAURA LEE-CASEY,	(914) 641-2707 WHI
CORPORATE HEALTH PHYSICIST	LES SKOSKI	(201) 398-4377 NNJ
WORKERS COMP / OSHA LOG	LAURA LEE-CASEY, CHST, CET, EMT-P	(914) 641-2707 WHI
LEGAL DEPARTMENT **	JERRY CAVALUZZI	(914) 641-2950 WHI

**** TO BE NOTIFIED IN CASE OF ACCIDENT**

SECTION 3: PROJECT INFORMATION

(A) SITE / FACILITY INFORMATION:

SITE NAME: Marilla Street Landfill

ADDRESS: Marilla and Hopkins Streets

TOWNSHIP/ COUNTY: City of Buffalo, New York

☐ FEDERAL ☐ STATE

SITE CLIENT CONTACT: Richard A. Palumbo

PHONE NUMBER: 585-899-6032

SITE SAFETY CONTACT: John Hilton

716/667-6636

☐ MUNICIPAL / REGIONAL ☒ PRIVATE

(B) SITE CLASSIFICATION: (check all that apply)

☐ HAZARDOUS (RCRA)	☐ UST / LUST	☐ REFINERY
☐ HAZARDOUS (CERCLA / STATE)	☐ BROWNFIELD	☐ WTP / WWTP
☐ CONSTRUCTION	☐ CHEMICAL PLANT	☐ OTHER:
☒ LANDFILL (NON-HAZARDOUS)	☐ MANUFACTURING	
☐ ACTIVE	☒ INACTIVE	

(C) TYPE OF FIELD ACTIVITY

☐ HAZARDOUS WASTE	☐ SOLID WASTE	☐ CONSTRUCTION
☐ HYDROGEOLOGY	☐ ENVIRONMENTAL	☐ AIR / ODOR
☐ WASTE WATER	☐ WATER	☒ OTHER: Landfill reclamation

(D) FIELD OBJECTIVES (Check all that apply)

☐ PRE-JOB VISIT	☐ AUDIT	**SAMPLING:**	
☒ CONTRACTOR OVERSIGHT	☐ OTHER:	☐ AIR	☐ SEDIMENT
☐ CONSTRUCTION MGMT		☐ SURFACE WATER	☐ SURFACE SOIL
☐ INSPECTION		☐ GROUND WATER	☐ LANDFILL
☐ INVESTIGATION SURVEY		☐ WASTE WATER	☒ OTHER
		☐ WASTE STREAM	Landfilled slag waste

DATE(S) OF FIELD ACTIVITIES: December 2007 and/or January 2008

(E) FIELD TASKS

MALCOLM PIRNIE TASKS

M1. Logging of Auger borings

M2. Logging and sampling of Test Pit Excavations

M3. Direction and documentation of Repair of Landfill Cover

M4.

TASKS PERFORMED BY OTHERS

01. Drilling using Hollow stem augers and split spoons

02. Excavating into the landfill

03. Placement and compaction of landfill soil cover materials

04.

SECTION 4: PROJECT SAFETY ORGANIZATION, HEALTH AND SAFETY TRAINING, AND MEDICAL MONITORING

(A) PROJECT HEALTH AND SAFETY ROLES, RESPONSIBILITIES AND COORDINATION

PROJECT OFFICER	The Project Officer (PO) is ultimately responsible for project performance. The PO seeks and gets appropriate approvals for risk management decisions (e.g. from Regional/Practice Director(s), Legal Council, Corporate Health and Safety), and selects and effective and qualified project team. The PO supports the Project Manager or Deputy Project Manager with appropriate resources.
PROJECT MANAGER DEPUTY PROJECT MANAGER	The Project Manager (PM) has the responsibility for executing the project in accordance with the scope of work and good engineering practice. The PM will supervise the allocation of resources and staff to implement specific aspects of this HASP and may delegate authority to expedite and facilitate any application of the program. The PM implements and executes an effective program of site-specific personnel protection and accident prevention. The Project Manager reports to the Project Officer. Deputy Project Managers (DPM) are assigned all duties and responsibilities of the Site Safety Officer in his/her absence.
CORPORATE HEALTH & SAFETY	Corporate Health and Safety is responsible for Malcolm Pirnie's overall Health and Safety Program and provides project guidance on air monitoring methodology, data interpretation and assistance in determining appropriate project engineering controls, work practices, and personal protective equipment. Corporate Health and Safety also reviews,and approve HASPs in accordance with Section 1.
SITE SAFETY OFFICER ALTERNATE SITE SAFETY OFFICER (S)	The Site Safety Officer (SSO) is responsible for interpreting and implementing the site health and safety provisions set out in this HASP, and will guide the efforts of field team personnel in their day-to-day compliance with this HASP. The SSO has the ability and authority to make necessary changes or additions to this HASP and provide technical assistance to field team personnel on problems relating to worksite safety. The SSO has the authority to correct safety-related deficiencies in materials or practice and to call a Project STOP in the most serious cases. Alternate Site Safety Officer (ASSO) is assigned all duties and responsibilities of the Site Safety Officer in his/her absence.
PUBLIC INFORMATION OFFICER:	The Public Information Officer (PIO) is responsible for all public, press and other news media request for information, and is the only person authorized to provide such information
SITE RECORDKEEPER:	The Site Recordkeeper is responsible for the documentation of all related heath and safety data documentation, including but not limited to metrological data, instrument calibration, accident and injury reports, and air monitoring data.
FIELD TEAM LEADER:	The Field Team Leader (FTL) is responsible for leading "on-site" activities of field team personnel, and to ensure field team personnel perform only those tasks that have been identified in this HASP.
FIELD TEAM PERSONNEL	Field personnel have the following health and safety responsibilities: • Implement the procedures set forth in the HASP; • Take all reasonable precautions to prevent injury to themselves and their fellow employees; and • Perform only those tasks that they believe they can do safely, and immediately report any accidents and/or unsafe conditions in accordance with Section 1.

(B) PROJECT TEAM - The following Malcolm Pirnie personnel are designated to carry out the stated project job functions on site. THE SITE SAFETY OFFICER, OR A DESIGNATED ALTERNATE WILL BE ON-SITE DURING **ALL** SITE ACTIVITIES. (NOTE: One person may carry out more than one job function.)

PROJECT MANAGER:	Kent McManus
PROJECT OFFICER:	Scott MacFabe
SITE SAFETY OFFICER:	John Hilton
ALTERNATE SAFETY OFFICER(S):	Jim Richert
	Adam Mazenauer
PUBLIC INFORMATION OFFICER:	NA
SITE RECORDKEEPER:	John Hilton
FIELD TEAM LEADER:	John Hilton
FIELD TEAM PERSONNEL:	John Hilton

The following subcontractors and governmental agencies have been informed by Malcolm Pirnie of emergency response procedures, and any potential fire, explosion, health, safety or other hazards of the site / facility by making this Site Specific Health and Safety Plan and site information obtained by others available during regular business hours. Subcontractors and governmental agencies shall be solely responsible for the health and safety of their employees and shall comply with all applicable laws and regulations as described in **Section 1** of this plan.

SUBCONTRACTOR(S):	Driller of Soil Borings (TBD)
	Excavator of test pits (TBD)
FEDERAL AND STATE AGENCY REPS:	NYSDEC (TBD)
OTHER AGENCY REPS:	

(C) HEALTH AND SAFETY TRAINING, MEDICAL MONITORING, AND FIT TESTING PROGRAM

The following project staff is included in the Malcolm Pirnie Health and Safety Training and Medical Monitoring programs. The details of these programs can be found in the Health and Safety Policies and Written Programs. (NOTE: At least one CPR/First Aid Trained person must be on-site during HAZWOPER and confined space entry activities.)

	HAZWOPER TRAINING				OTHER TRAINING								
NAME	INITIAL (DATE)	8HR (DATE)	MGR (DATE)	DOT (DATE)	CSE (DATE)	CPR / First Aid / BBP (DATE)			MEDICAL (DATE)	FIT TEST MAKE	SIZE	TYPE	(DATE)
John Hilton	06/89	05/07	06/89			07/03	07/05	06/02	07/08	NOR	SML	FF	05/07
Jim Richert	09/88	05/07	06/03			12/04	07/05	06/02	10/08	NOR	M-L	FF	05/07
Adam Mazenauer	05/06	09/07			05/07				05/07				

SECTION 5: HAZARD ANALYSIS

(A) **ACTUAL OR POTENTIAL PHYSICAL HAZARDS** – (Check all that apply to Malcolm Pirnie activities)

- ☐ ANIMALS / PLANTS
- ☐ ASBESTOS / LEAD
- ☐ CHEMICAL EXPOSURE (See Section 5B/5C)
- ☐ CONFINED SPACE (See Section 12)
- ☐ DEMOLITION
- ☒ DRILLING
- ☐ DRUM HANDLING
- ☒ DUST, HARMFUL
- ☐ DUST, NUISANCE
- ☐ ELECTRICAL
- ☒ EXCAVATIONS (See Section 13)
- ☒ EXTREME COLD (See Section 10)
- ☐ FALL, >6' VERTICAL
- ☐ FALLING OBJECTS
- ☐ HEAT STRESS
- ☒ HEAVY EQUIPMT
- ☐ HEAVY LIFTING
- ☐ HOT WORK
- ☐ HUNTING SEASON
- ☐ IMMERSION
- ☐ IONIZING RADIATION
- ☐ LIGHT RADIATION (i.e., Welding, High Intensity)
- ☐ LIMITED CONTACT
- ☐ MOVING PARTS (LO / TO)
- ☐ NOISE (> 85 dB)
- ☐ NON-IONIZING RADIATION
- ☐ OVERHEAD OBJECTS
- ☐ POWERED PLATFORMS
- ☐ POOR VISIBILITY
- ☐ ROLLING OBJECTS
- ☐ SCAFFOLDING
- ☐ SHARP OBJECTS
- ☒ STEEP / UNEVEN
- ☐ TERRAIN
- ☐ TRAFFIC (STRUCK BY)
- ☐ OTHER: _____

(B) **PRESENCE OF HAZARDOUS MATERIALS STORED OR USED ON SITE** ☐ YES By Client / Owner ☐ YES By Malcolm Pirnie (See Section 11) ☒ NO

(CHECK ALL THAT APPLY)

TYPE

- ☐ EXPLOSIVES
- ☐ COMPRESSED GASES
- ☐ FLAMMABLE / COMBUSTIBLE LIQUIDS
- ☐ FLAMMABLE / REACTIVE SOLIDS
- ☐ OXIDIZERS
- ☐ TOXIC / INFECTIOUS
- ☐ RADIOACTIVE
- ☐ CORROSIVE
- ☐ MISCELLANEOUS
- ☐ HAZARDOUS WASTE (Stored)

(C) **CHEMICAL HAZARDS OF CONTAMINANTS INFORMATION**

(1) IDENTIFIED CONTAMINANTS - Known or suspected hazardous/toxic materials (attach historical information, physical description, map of contamination and tabulated data, if available)

SUBSTANCES INVOLVED	CHARACTERISTICS	MEDIA	ESTIMATED CONCENTRATIONS	LOWEST PEL, or TLV
Lead		WS		☐ PPM ☐ mg/m^3
Chromium		WS		☐ PPM ☐ mg/m^3
		WS		☐ PPM ☐ mg/m^3

Media types: GW (ground water), SW (surface water), WW (wastewater), AIR (air), SL (soil), SD (sediment), WL (waste, liquid), WS (waste, solid), WD (waste, sludge), WG (waste, gas), OT (other).

Characteristics: CA (corrosive, acid), CC (corrosive, caustic), IG (ignitable), RA (radioactive), VO (volatile), TO (toxic), RE (reactive), BIO (infectious), UN (unknown), OT (other, describe

(2) DESCRIBE POTENTIAL FOR CONTACT WITH EACH MEDIA TYPE FOR EACH OF THE MPI TASKS LISTED IN SEC 3 (E):

MPI TASK	ROUTE OF EXPOSURE (INHAL/INGEST/CONTACT/ABSORB)	POTENTIAL FOR CONTACT (HIGH / MEDIUM / LOW)	METHOD OF CONTROL
M1	Inhalation/contact	Med	Air monitoring/gloves, coveralls
M2	Inhalation/contact	med	Air monitoring/gloves, coveralls
M3	Inhalation/contact	low	Air monitoring/gloves, coveralls

The Site Safety Officer will brief the MPI field team on symptoms and signs of overexposure to chemical hazards

SECTION 6: SITE CONTROL MEASURES

(A) WORK ZONES - EXCAVATIONS, DRILLING OPERATIONS, AND HEAVY EQUIPMENT

John Hilton has been designated to coordinate access control and security for Malcolm Pirnie operations on site. It is a Malcolm Pirnie policy that Malcolm Pirnie personnel will not enter trench or excavated areas without approval of Corporate Health and Safety. A safe perimeter has been established at the boundary of any excavation and/or a safe distance from excavators, drill rigs and other heavy equipment.

These boundaries are identified by: Fenced property area, hazard warning tape and/or traffic cones.

No unauthorized person should be within this area.

(B) WORK ZONES - CONTAMINATION

The prevailing wind conditions are West/North West A wind direction indicator is used to determine daily wind direction. The Command Post is located upwind from the Exclusion Zone or at a sufficient distance to prevent exposure should a release occur.

Control boundaries have been established and Exclusion Zone(s) (the contaminated area) have been identified. (Attach site map)

These boundaries are identified by: Hazard warning tape and/or traffic control cones.

No unauthorized person should be within this area.

SECTION 7: SAFETY PROCEDURES / EQUIPMENT REQUIRED

Identify all procedures and equipment needed to eliminate or minimize exposure to hazards identified in Section 5.

- ☒ AIR MONITORING EQUIPMENT (See Section 9)
- ☒ BARRIER TAPE
- ☐ COMMUNICATIONS - ONSITE
- ☒ COMMUNICATIONS - OFFSITE (i.e., cell/digital phones if no other means)
- ☐ CONFINED SPACE PROGRAM & EQUIPMENT (See Section 12)
- ☐ EYE WASH
- ☐ EMERGENCY SHOWERS
- ☐ EMERGENCY AIR HORN
- ☐ FALL PROTECTION PROGRAM & EQUIPMENT
- ☐ FIRE EXTINGUISHER(S) - ABC
- ☒ FIRST AID KIT / BBP KIT
- ☐ FLOTATION DEVICE (USCG)
- ☐ GFCI EXTENSION CORDS
- ☐ HARNESS(S) / LIFELINE(S)
- ☐ INSECT / TICK REPELLANT
- ☐ HUNTING SEASON
- ☐ LADDER(S)
- ☐ LIGHTING - HAND HELD
- ☐ LIGHTING - FIXED / EMERGENCY
- ☐ LOCKOUT/TAGOUT PROGRAM & EQUIPMENT
- ☐ MSDSs – ATTACHED (See Section 11)
- ☐ MSDSs - FACILITY / OTHERS
- ☒ PPE - PHYSICAL HAZARDS (See Section 15)
- ☒ PPE - CHEMICAL HAZARDS (See Section 15)
- ☐ RESPIRATORY PROTECTION PROGRAM & EQUIPMENT (APR) (See Section 15)
- ☐ RESPIRATORY PROTECTION PROGRAM & EQUIPMENT (SAR) (See Section 15)
- ☒ TRAFFIC CONES
- ☐ VENTILATION EQUIPMENT
- ☐ OTHER:

SECTION 8: COMMUNICATIONS AND SAFE WORK PRACTICES

(A) COMMUNICATIONS - ONSITE

Whenever possible, communications between site personnel should be face-to-face. When verbal communications is not possible, radio communications shall be established.

In case of radio communications failure, or when respiratory protection is in use, the following hand signals will be used:

OK; I AM ALL RIGHT; I UNDERSTAND	THUMBS UP
NO; NEGATIVE	THUMBS DOWN
NEED ASSISTANCE	BOTH HANDS ON TOP OF HEAD
DANGER - NEED TO LEAVE AREA, NO QUESTIONS	GRIP PARTNERS WRIST WITH BOTH HANDS
HAVING DIFFICULTY BREATHING	HANDS TO THROAT

(B) COMMUNICATIONS - OFF SITE

If applicable, telephone communication to the Command Post should be established as soon as practical.

Telephone numbers that can be used to reach the command post are: _____ and _____

(C) SAFE WORK PRACTICES

1. A "BUDDY SYSTEM" IN WHICH ANOTHER WORKER IS CLOSE ENOUGH TO RENDER IMMEDIATE AID WILL BE IN EFFECT. CLIENTS AND/OR CONTRACTORS MAY SERVE AS A "DESIGNATED BUDDY."
2. WHERE THE EYES OR BODY MAY BE EXPOSED TO CORROSIVE MATERIALS, SUITABLE FACILITIES FOR QUICK DRENCHING OR FLUSHING SHALL BE AVAILABLE FOR IMMEDIATE USE (SEE SECTION 7).
3. DO NOT KNEEL ON THE GROUND WHEN CHEMICAL PROTECTIVE CLOTHING IS BEING USED.
4. IF DRILLING EQUIPMENT IS INVOLVED, HAVE A CURRENT UTILITY SURVEY, AND KNOW WHERE THE 'KILL SWITCH' IS.
5. CONTACT WITH SAMPLES, EXCAVATED MATERIALS, OR OTHER CONTAMINATED MATERIALS MUST BE MINIMIZED.
6. ALL ELECTRICAL EQUIPMENT USED IN OUTSIDE LOCATIONS, WET AREAS OR NEAR WATER MUST BE PLUGGED INTO GROUND FAULT CIRCUIT INTERRUPTER (GFCI) PROTECTED OUTLETS (SEE SECTION 7).
7. IN THE EVENT OF TREACHEROUS WEATHER-RELATED WORKING CONDITIONS (I.E., THUNDERSTORM, LIMITED VISIBILITY, EXTREME COLD OR HEAT) FIELD TASKS WILL BE SUSPENDED UNTIL CONDITIONS IMPROVE OR APPROPRIATE PROTECTION FROM THE ELEMENTS IS PROVIDED.
8. SMOKING, EATING, CHEWING GUM OR TOBACCO, OR DRINKING ARE FORBIDDEN EXCEPT IN CLEAN OR DESIGNATED AREAS.
9. USE OF CONTACT LENSES NEAR CHEMICALS OR DURING USE OF RESPIRATORY PROTECTION IS PROHIBITED AT ALL TIMES.
10. GOOD HOUSEKEEPING PRACTICES ARE TO BE MAINTAINED.
11. SITE / FACILITY SPECIFIC SAFE WORK PRACTICES:

_____

_____

_____

SECTION 9: ENVIRONMENTAL MONITORING ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

(A) The following environmental monitoring instruments shall be used on site at the specified intervals and recorded in the site logbook. (NOTE: If monitoring period is "OTHER", monitoring schedule will be attached to this plan.)

EQUIPMENT	MONITORING PERIOD				ACTION LEVEL
☐ Combustible Gas Indicator	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ O_2 Meter	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Toxics: ☐ CO ☐ H_2S	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Other: _____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ PID (Lamp_____eV)	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ FID					
☐ Colorimetric tubes:					
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Radiation: ☐ α ☐ β ☐ gamma	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Respirable Dust Meter	☒ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Noise Meter	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
☐ Other:	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	
_____	☐ Continuous	☐ Hourly	☐ x Day	☐ Other	

(B) Monitoring equipment is to calibrated according to manufacturers' instructions. Record calibration data and air concentrations in the Health and Safety on-site log book.

(C) Recommended Action Levels for Upgrade or Downgrade of Respiratory Protection, or Site Shutdown and Evacuation. These are average values. Consideration should be given to the potential for release of highly toxic compounds from the waste or from reaction by-products. Levels are for persistent (> 10 min) breathing zone measurements in non-confined spaces. **For unexpected conditions, stop all work and contact Corporate Health and Safety.**

<u>Oxygen Levels</u>	
Less than 19.5%	Level B necessary for work to start / continue. Consider toxicity potential.
19.5% to 23.5%	Work may start / continue. Investigate changes. Continuous monitoring.
Greater than 23.5%	PROHIBITED WORK CONDITION
<u>Flammability / Explosive Hazards</u>	
Less than 10% of LEL	Work may start / continue. Consider toxicity potential.
10% to 25% of LEL	Work may start / continue. Continuous monitoring.
Greater than 25% of LEL	PROHIBITED WORK CONDITION.
<u>Uncharacterized Airborne Organic Vapors or Gases</u>	
Background*	Work may start / continue. Continue to monitor conditions.
Up to 5 meter units (m.u. or "ppm") above background	Level C necessary for work to start / continue. Continuous monitoring. Use Colorimetric tubes to characterize vapors.
Up to 50 m.u. above background	Level B necessary for work to start / continue. Continuous monitoring.
Greater than 50 m.u.	PROHIBITED WORK CONDITION.
*** Off-site clean air measurement**	
<u>Characterized Airborne Organic Vapors or Gases</u>**	
Up to 50% of TLV, or PEL or REL	Work may start / continue. Continue to monitor conditions.
Up to 25 times the TLV, or PEL or REL	Level C necessary for work to start / continue. Continuous monitoring.
Up to 500 times the TLV, or PEL or REL	Level B necessary for work to start / continue. Continuous monitoring.
Greater than 500 times the TLV, or PEL or REL	PROHIBITED WORK CONDITION.
**** Use mixture calculations (% allowed = $\sum C_N EL_N$) if more than one contaminant is present.**	
<u>Radiation</u>	
Less than 0.5 mR/Hour (500 μR)	Work may start / continue. Continue to monitor conditions.
Up to 1 mR/Hour above background	Work may start / continue with Radiation Safety Officer present on site.
Greater than 1 mR/Hour above background	PROHIBITED WORK CONDITION.

SECTION 10: PERSONAL MONITORING ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

(A) PERSONAL EXPOSURE SAMPLING (Consider if high levels of noise or high concentrations of lead, mercury or arsenic are present)

The following personal monitoring will be in effect on site: _____

A copy of personal monitoring results is to be sent to Corporate Health and Safety for inclusion in the Employee's Confidential Exposure Record File.

(B) HEAT / COLD STRESS MONITORING

The expected air temperature will be 10 to 35 °F. If it is determined that cold stress monitoring is required (mandatory for heavy exertion in PPE at temperatures under 40°F or wind chill equivalent), the following procedures shall be followed (describe procedures in effect, for cold stress i.e., appropriate clothing, shelter breaks):

Wear warm clothing
Take warming breaks as needed to stay work
Drink warm, non-alcoholic and non-caffeinated drinks

SECTION 11: HAZARD COMMUNICATION PROGRAM ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

If chemicals are introduced to the site by Malcolm Pirnie (e.g., decontamination liquids, preservatives, etc.), a copy of the Malcolm Pimie Hazard Communication Program and Material Safety Data Sheets (MSDSs) of chemicals introduced by Malcolm Pimie to the site is attached to this plan. The Site Safety Officer will review this information with all field personnel prior to the start of the project, and will inform other employers (e.g., Owner, Contractor and Subcontractors) the availability and location of this information. The Comprehensive List of Chemicals introduced by Malcolm Pirnie to this site is:

All chemicals being introduced to the site, hazardous/potentially hazardous samples prepared at the site, and/or any hazardous materials previously sent to the site, **that will be stored at the site or will be transported from the site by common carrier**, will be packaged, labeled and identified as hazardous materials in accordance with U.S. Department of Transportation (DOT) and/or International Air Transport Association (IATA) regulations by a trained HazMat employee.

(NOTE: At multi-employer sites, the Site Safety Officer will obtain information, if applicable, on hazardous chemicals other employers may produce or introduce to the job site to which Malcolm Pirnie employees may be exposed, including the location of their written hazard communication program(s), labeling program(s), and Material Safety Data Sheet(s).

SECTION 12: CONFINED SPACE ENTRY ☒ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

If a permit-required confined space entry will be made on site, a copy of the Malcolm Pirnie Confined Space Entry Program, and a completed Malcolm Pirnie Confined Space Pre-Entry Inspection Check List will be attached to this plan. A Confined Space Entry Permit must be completed and posted outside the confined space prior to entry, and the entry will follow the Malcolm Pirnie Confined Space Entry written program. Permits are to be saved and logged with project documentation.

SECTION 13: EXCAVATION SAFETY ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

Excavations being created in order to accomplish Malcolm Pirnie tasks or in progress during Malcolm Pirnie inspection of other activities or tasks, shall be shored or slopped or otherwise protected to prevent accidental collapse prior to entry, in accordance with Subpart F of 29 CFR 1926. It is Malcolm Pirnie policy that Malcolm Pirnie personnel will not enter trench or excavated areas without approval of Corporate Health and Safety. If an entry into an excavation by Malcolm Pirnie personnel is necessary, a Excavation Plan identifying the Competent Person and the protective measure to be used (i.e., sloping, shoring, trench box) will be attached to this plan.

SECTION 14: DECONTAMINATION PROCEDURES ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

Personnel and equipment leaving the Exclusion Zone shall be thoroughly decontaminated. The Site Safety Officer is responsible for monitoring adherence with this decontamination plan.

A High pressure Hot water decontamination protocol shall be used with the following decontamination stations:

(1) Contractor will "steam Clean" down-hole equipment prior to down-hole equipment leaving the site. Decon fluids will be allowed to infiltrate into the landfill surface.

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(Other)

The following decontamination equipment is required:

☐ Decon Pad (Plastic Sheet) ☐ Dry Brushes ☐ Buckets Other High pressure hot water pressure washer, generator, water source.

☐ Trash Cans/Bags ☐ Wet Brushes ☐ Hose / Spray

Will be used as the decontamination solution

SECTION 15: PERSONAL PROTECTIVE EQUIPMENT

TASK *	RESPIRATORS& CARTRIDGE[1]	USE ** (See Section 16)	CLOTHING ***	GLOVES	BOOTS	OTHER
M1	NA		N/S	Co, N	SL	HH, G
M2	NA		N/S	Co, N	SL	HH, G
M3	NA		N/S	Co, N	SL	HH, G

* Same as Section 3E

**UP = Upgrade
CONT = Continuous

*** **NOTE:** PPE use will be in accordance with Malcolm Pirnie's Health and Safety Policy and Written Programs.

CODES:

RESPIRATORS[1]	CARTRIDGES[1]	CLOTHING	GLOVES[2]	BOOTS	OTHER
HF = Half Face APR	P = Particulate	N/S = No Special	Co = Cotton	SL = Leather Safety	HH = Hard Hat [3]
FF = Full Face APR	OV = Organic Vapors	C = Coveralls	Le = Leather [3]	H = Hip (Fireman)	G = Safety Glasses [3]
ESCBA = Escape Bottle	AG = Acid Gas	T = Tyvek	L = Latex	O = Latex overboots	GP = Glare Protection
SAR = Airline	Mult = Multi-Gas/Vapor	Sx = Saranex	N = Nitrile		GI = Goggles - Impact
SCBA = SCBA	Other	PT = PE Tyvek	B = Butyl		GS = Goggles - Splash
			Neo = Neoprene		FS = Face Shield
			V = Viton		HP = Hearing Protection [3]
			PVC = Polyvinyl Chloride		RV = Reflective Vests [3]
			PVA = Polyvinyl Alcohol		**[3] Should be considered for all field jobs**
			Other:		

[1] - List all that apply, i.e., FF w/ OV/AG/P

[2] - Use same codes for clothing and boots of same material

Respiratory protection will be upgraded under the following conditions:

If particulates in the breathing zone exceed ug/cubic meter (sustained) above background levels **Not Applicable**

NA The following cartridge change out schedule is to be followed onsite (attach any calculations to plan):

SECTION 16: EMERGENCY ACTION PLAN

The following standard emergency response procedures will be used by onsite personnel. The Site Safety Officer shall be notified of any onsite emergencies and be responsible for ensuring that the appropriate procedure are followed.

(A) EVACUATION

All work activities are suspended and the site is to be EVACUATED IMMEDIATELY, when there is a threat to life or health as determined by individual good judgment, i.e. fire, hazardous chemical spill, dangerous gas leak, severe weather (i.e., tornado); or when notified by other site / facility staff and local fire or police officials.

If an evacuation is called for, the emergency alarm system for weather-related, medical, fire and other evacuation emergencies is:

3 long blows on car horn.

Evacuation from the Exclusion Zone should whenever possible occur through the decontamination line. In those situations where egress in this manner cannot occur, the following emergency escape routes have been designated (document on map if possible):

Once evacuated off site, all staff should gather at At the SW corner of the intersection of Hopkins and Tifft Streets which is a minimum of 250 feet away from the incident

(B) FIRE OR EXPLOSION

Upon discovery of a fire or an explosion, the above-designated emergency signal shall be sounded and all personnel shall assemble at the decontamination line. The fire department is to be notified and all personnel moved to a safe distance (minimum 250') from the involved area.

If a person's clothing should catch fire, burning clothing may be extinguished by having the individual drop to the floor and roll. If necessary, physically restrain the person and roll them around on the floor to smother the flames. Use a fire blanket or extinguisher if one is readily available and you have been trained in its use. Call emergency medical services if not already done so.

If a person's clothing should become saturated with a chemical, douse the individual with water from the nearest safety shower if available. Consult the chemical Material Safety Data Sheets (MSDSs) for further information. Call emergency medical services if indicated by the MSDSs.

NEVER RE-ENTER THE SITE / FACILITY until the emergency has been declared over and permission to re-enter has been given by site / facility health and safety staff or local fire or police officials. If any staff is unaccounted for, notify an individual in charge.

(C) MEDICAL EMERGENCY

If you discover a medical emergency and are by yourself, CALL OUT FOR HELP. When someone arrives, tell them to call for help. If no one comes or you know you are alone, provide whatever care you can for 1 minute, then make the call yourself. (See Section 2)

Upon notification of an injury in the Exclusion Zone, the designated emergency signal shall be sounded. All site personnel shall assemble at the decontamination line. The SSO or alternate should evaluate the nature of the injury, and the affected person should be decontaminated to the extent possible prior to movement to the Support Zone. The onsite CPR/FA personnel shall initiate the appropriate first aid, and contact should be made for an ambulance (and other emergency services as needed) and with the designated medical facility (if required). No persons shall reenter the Exclusion Zone until the cause of the injury or symptoms is determined.

The hospital is 5 minutes from the site. Ambulance response time is ~10 minutes. Elaine Young of Mercy Hospital was contacted on 11 23 2007 and briefed on the situation, the potential hazards, and the substances involved. When IDLH conditions exist, arrangements should be made for onsite standby of emergency services.

A map for directions to the nearest hospital is attached to this plan. If not, the directions are: Take Hopkins north to Tifft street, turn Rt on Tifft to McKinley Pkwy, turn Rt on McKinley, Turn at second left (Lorraine Ave). Mercy Hospital is just up Lorraine Ave on the right.

(D) SAFETY EQUIPMENT FAILURE

If any other equipment (i.e., air monitoring) on site fails to operate properly, the FTL and/or SSO shall be notified to determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the work area until the situation is evaluated and appropriate actions taken.

(E) FOLLOW UP

In all situations, when an on site / facility emergency results in evacuation of the work area, or a "large spill" has occurred, staff shall not resume work until:

- The conditions resulting in the emergency have been corrected;
- The hazards reassessed by the SSO and Corporate Health and Safety;
- The HASP has been reviewed by the SSO and Corporate Health and Safety; and
- Site personnel have been briefed on any changes in the HASP by the SSO.

SECTION 17: SPILL CONTAINMENT / CONTROL ☐ THIS SECTION NOT APPLICABLE TO SITE ACTIVITIES

For most chemicals introduced to the worksite, or under control of Malcolm Pirnie employees, spills of chemicals would be considered incidental and would be controlled in the immediate area of the spill. Such spills shall be handled utilizing precautions appropriate for the chemical characteristics specified in the MSDS for the chemical including spill control methods and selection and use of minimum personal protective equipment.

For chemicals introduced to the worksite, or under control of Malcolm Pirnie employees, that would cause a "large spill" (greater than 55 gallons), a copy of the appropriate Emergency Response Guidebook (ERG) guide shall be attached to this plan, and a spill response contractor shall be identified in Section 2.

SECTION 18: EMPLOYEE ACKNOWLEDGEMENTS

PLAN REVIEWED BY: DATE

Project Manager: Kent McManus _____

Project Leader: John Hilton _____

Local H&S Coordinator: Dean DiScenza _____

Corporate H & S _____

I acknowledge that I have read the information on this HASP, attached Material Safety Data Sheets (MSDSs), DOT Emergency Response Guides, and Health and Safety Programs.
I understand the site / facility hazards as described and agree to comply with the contents of the plan.

EMPLOYEE (Print Name)

VISITOR (Print Name)

ATTACHED DOCUMENTS

- ☐ MSDS(s)
- ☐ Hazard Communication Written Program
- ☐ Confined Space Entry Written Program
- ☐ DOT ERG Guides
- ☐ Site Map
- ☐ Personal Protective Equipment Written Program
- ☐ Excavation Safety Plan
- ☐ Respiratory Protection Program
- ☒ Hospital Directions
- ☐ Emergency Action Plan
- ☐ Evacuation Routes
- ☐ Cartridge Change Out Calculations
- ☐ Other

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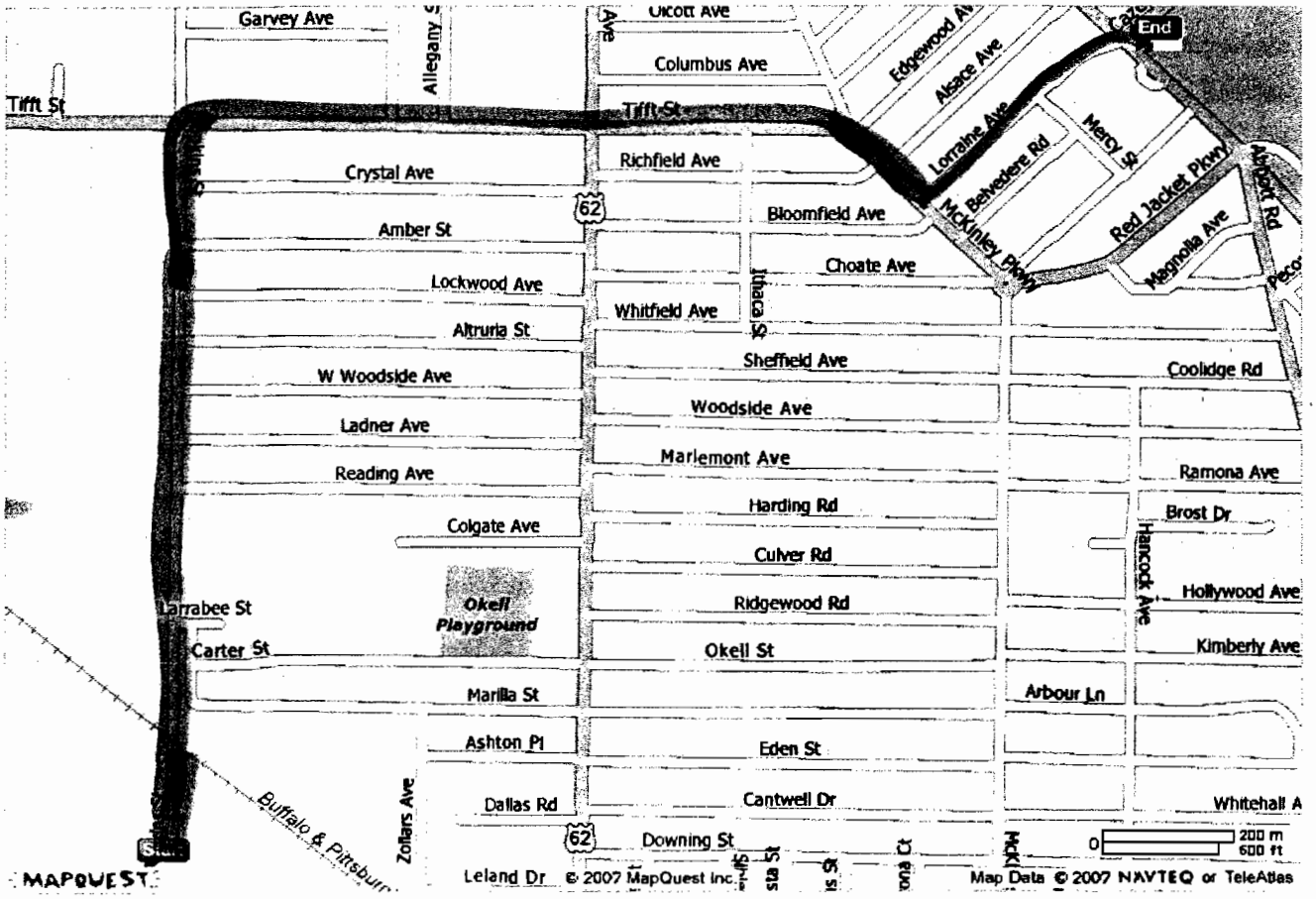

Sorry! When printing directly from the browser your map may be incorrectly cropped. To print the entire map, try clicking the **"Printer-Friendly"** link at the top of your results page.

MAPQUEST.
An AOL Company

START **Hopkins St & Marilla St**
Buffalo, NY 14220, US

END **Mercy Hospital:** 716-826-7000
565 Abbott Rd, Buffalo, NY 14220, US

Total Est. Time:
6 minutes

Total Est. Distance:
1.87 miles

Maneuvers		Distance
START	**1:** Start out going NORTH on HOPKINS ST toward LARRABEE ST.	0.7 miles
	2: Turn RIGHT onto AMBER ST.	0.4 miles
	3: Turn LEFT onto S PARK AVE / US-62.	<0.1 miles
	4: Turn RIGHT onto BLOOMFIELD AVE.	0.3 miles
	5: Turn LEFT onto MCKINLEY PKWY.	<0.1 miles
	6: Turn RIGHT onto LORRAINE AVE.	0.2 miles
	7: Turn RIGHT onto ABBOTT RD / CR-4.	<0.1 miles
END	**8:** End at **Mercy Hospital:** 565 Abbott Rd, Buffalo, NY 14220, US	

Total Est. Time: 6 minutes **Total Est. Distance:** 1.87 miles