Former N.L. Industries

Depew, NY

Remedial Action Plan

Prepared For:

Cascades Canada, Inc.
411 rue Marie-Victorin
Kingsey Falls, Quebec
Canada JOA 1BOA

December 2006

Tighe & Bond

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Tighe&Bond

Tighe & Bond, Inc. was retained by Norampac, Inc. (Norampac), to prepare this Remedial Action Work Plan (RAWP), as a voluntary action in accordance with the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program. The subject property is located at 3241 Walden Avenue in Depew, New York.

The preferred remediation strategy was developed in a final remedial investigation/feasibility study (RI/FS) report entitled "Remedial Investigation/Feasibility Study, Former NL Industries Site, 3241 Walden Avenue, Depew, New York," dated December 21, 2004. This RI/FS was prepared by XCG Consultants Ltd. The selected strategy was Alternative C1, which consists of excavating the impacted soil (containing more than 500 ppm of lead) situated in the western portion of the property and consolidating it in the central area. An asphalt parking lot will be constructed on top of the consolidated and compacted material. Alternative G would be utilized for any material which could not fit within the containment area. This alternative consists of chemically-fixating the soil, rendering it non-hazardous, and disposing it at a non-hazardous landfill.

The NYSDEC, in conjunction with the NYSDOH, issued a Decision Document in June 2005 identifying the preferred remedial action for the site. It was issued as a component of the Citizen Participation Plan. The Decision Document summarizes the RI/FS, summarizes the other alternative remedial actions and discusses the reason for the NYSDEC's preference.

During the completion of the final RI/FS report, the trucking yard located west of the building was completely paved with asphalt to provide a better driving surface for the trucks. This new paving will also act as a cover cap for impacted soil in the trucking yard. As such, the soil below the trucking yard, as well as the soil beneath the building and parking lot at the east side, will not be excavated. The rail siding adjacent to the south of the building will be capped with geotextile fabric and crusher run or clear stone. During the paving operation mentioned above, small gas cylinders were found and buried along the South side of the property. These cylinders will be removed and disposed of in an off-site recycling facility at the completion of this project.

The fill to be excavated at the western portion of the property is relatively shallow, and generally extends to depths ranging from approximately 2 to 3 feet (0.6 and 0.9 meters) below grade, and was present to as deep as 4 feet (1.2 meters) at one of the drilling locations. The underlying native soil consists of a silty clay unit. No significant quantities of groundwater are anticipated to be encountered within the excavation depth. Therefore, dewatering activities are not expected to be necessary.

Tighe & Bond will manage the project and serve as the lead engineer (Engineer) for this project. The remediation Contractor has not yet been selected. It is expected that

contract specifications will be prepared and issued for tender in the near future. The laboratory that will be conducting the analytical testing has not been determined. However, the laboratory selected will have the proper NYSDEC Certifications.

This section presents a brief summary of the property description, and its physical and environmental conditions. Details of the previous investigations are provided in the RI/FS report.

The subject property is located at 3241 Walden Avenue in Depew, New York, which is a suburb to the east of Buffalo. The property is situated on the south side of Walden Avenue, approximately 584.42 feet (178.1 meters) west of the centre line of Transit Road. The property is legally described as Part of Lot 68, Township 11, Range 7 of the Holland Land Company's Survey in the Village of Depew, Town of Cheektowaga, County of Erie. The site is currently occupied by Metro Waste Paper Recovery Inc. (Metro Waste), a member of Norampac.

The subject property is approximately 7.5 acres (3.04 hectares) in size. The site is located in a mixed commercial/industrial and residential area. Commercial/ industrial properties adjoin the east and west sides of the subject site. The properties located across the street, on the north side of Walden Avenue, are a mixture of residential and some commercial sites (e.g. restaurant). The south side of the property is bordered by railway tracks elevated on a berm, while a concrete mixing plant is situated further to the south. The topography of the subject property and immediate surrounding area has a generally flat grade. The property location and layout are shown on Figure 1. The facility is currently used to operate paper fibre recycling activities, and Tighe & Bond understands that it will continue to be used for industrial purposes.

The site has one main building located at the east side of the property. The building is estimated to occupy an area of approximately 63,400 ft^2 (5,890 m^2). The east side of the property is paved with asphalt for employee parking. A rail siding is adjacent to the south side of the building. A truck loading/unloading and trailer parking area is located west of the building. The trucking area was surfaced with gravel during the investigations and at the time of the completion of the final draft version of the RI/FS report (November 4, 2002), and is surrounded by a chain-link fence. In November 1999, the trucking yard was re-surfaced with new gravel. Norampac indicated that approximately 400 tons of gravel was imported to the site to provide a minimum cover of approximately 3 inches (0.08 meters). In December 2004, Metro Waste paved the trucking yard to provide a better driving surface for the daily trucks that enter the property to load and unload shipments. The existing granular surface was considered a sufficient sub-base and was graded prior to installing the asphalt, which consisted of 4.5 inches (0.1 meters) of binder and 1.5 inches (0.04 meters) of asphalt topcoat. In addition to the asphalt, a new concrete apron, approximately 6 inches thick (0.15 meters), was constructed adjacent to the west side of the building.

The area west of the fenced-off trucking yard, to the tree-covered area, is described as the central portion of the property, for the purpose of this report. This area is not used

for the paper fibre recycling activities and is currently vacant. The former lagoon and marsh area was located at the south side of the central undeveloped area. In July 1999, Norampac implemented an Interim Remedial Measures (IRM) program in the central portion of the property. The IRM consisted of constructing a hydroseeded-topsoil cover and erecting a chain link fence surrounding this area. These interim remedial measures were carried out to eliminate potential direct human exposure with the metals impacted fill, until a final remedial solution was developed.

The area between the central portion of the property and the west property line is defined as the west undeveloped area, for the purpose of this report. The west undeveloped area of the property is also vacant and is not used for on-site operations. This area is covered with imported fill, including construction debris (i.e. brick and large concrete fragments), and is partially occupied by heavy equipment and miscellaneous items stored by the adjacent business to the west.

2.1 SITE HISTORY

The site history was reviewed as part of a Limited Phase 1 Environmental Site Assessment (ESA) conducted by Tighe & Bond for Norampac. Details of the findings of this study are provided in Tighe & Bond's report entitled "Limited Phase 1 Environmental Site Assessment, Former N.L. Industries Site, 3241 Walden Avenue, Depew, New York," dated June 11, 1999. The site history is briefly summarized below.

Metro Waste Paper Recovery Inc. (Metro Waste), a member of Norampac, is currently operating paper fibre recycling activities at the subject property. The operations are limited to the east side of the property (i.e. as far west as the fenced-off trucking yard). Paper fibre recycling has been conducted on the site by various companies since 1974.

The subject property was first developed for industrial use in 1892. Past on-site activities have included brass foundry operations conducted between 1892 and 1972 (i.e. 80 years), smelting operations carried out in the early part of the century, and the processing of babbitt. These operations were performed by various companies, beginning with Buffalo Brass Company (Buffalo Brass) at the east side of the property. Magnus Metal Corporation (Magnus) acquired this portion of the subject property from Buffalo Brass in 1899 and continued the brass foundry operations until 1936. During the early-1900s, Empire Smelting Company conducted operations in the area of the current trucking yard. National Lead Company acquired the entire property from Magnus in 1936 and continued the brass foundry operations until 1972, when it vacated the site. The name Magnus remained with the company, and was called Magnus Metal, a Division of National Lead Company. National Lead Company eventually changed its name to NL Industries Inc.

Brass is an alloy of copper and zinc, and babbitt is formed from an alloy of various metals including lead and copper. In addition, antimony is a metallurgical component of babbitt. Waste produced by these operations, including the dredged material from the former settling lagoon, was apparently spread throughout the property. Waste foundry sands were also potentially disposed of on-site. These historical activities explain the elevated levels of lead, zinc, and copper detected in the fill material.

2.2 SITE CONDITIONS

2.2.1 Regional Geology

The regional geology of the study area was provided by a published soil survey document prepared by the United States Department of Agriculture (USDA). The subject property is located in Erie County, which is comprised of two physiographic provinces. The northern half and western edge of Erie County is situated in the Erie-Ontario lake plain province while the southern portion is comprised of the Allegheny Plateau province. The study area is located in the Erie-Ontario lake plain province.

With the exception of areas near the major drainage ways, the Erie-Ontario Plain has little significant relief and its topography is typical of an abandoned lakebed. The elevation slopes upwards to the south to southeast, starting from approximately 569 feet (173 meters) above mean sea level at the Lake Erie shoreline. The study area is situated at approximately 676 feet (206 meters) above mean sea level.

Erie County is underlain by bedrock of the Upper Silurian and the Middle and Upper Devonian periods. The bedrock formations are in bands with an east-west alignment. The oldest formations are located in the northern section of Erie County and become younger towards the south. Bedrock underlying the county is relatively flat, but dips approximately 50 feet per mile (25 meters per kilometers) to the southwest.

The City of Buffalo is underlain by the Onondaga Limestone, which is the lowest formation of the Devonian period in this area. The Hamilton Group is situated above and to the south of the Onondaga Limestone. This formation consists of shales and limestones in a band approximately 4 miles (6.4 kilometers) wide. Depew, which is a suburb to the east of Buffalo, is located near the border of the Onondaga Limestone and Hamilton Group.

The overburden soil is comprised of the Odessa silt loam, which is nearly level (0 to 3 percent slope) and is somewhat poorly drained. This soil contains a high clay content. The surficial layer is typically very dark greyish-brown silt loam less than 1 foot (0.3 meters) thick. The subsoil is a mottled pinkish-grey silty clay in the upper portion and mottled reddish-brown silty clay in the lower part. The substratum consists of a varved

reddish-brown, grey, or reddish-grey silty clay. This silty clay acts as a vertical migration barrier of contaminants present at surface.

The USDA document indicates that there is a perched water table in the upper part of the subsoil from December to May. The permeability in the subsoil and substratum is slow to very slow. This low permeability will hinder the lateral movement of any contaminants in the shallow groundwater flow direction. Groundwater in the area is not used for drinking purposes. The Village of Depew is serviced by municipal water, which is drawn from Lake Erie.

2.2.2 Site Geology

The site-specific geology was determined from the various Phase 2 ESAs conducted at the subject property, including the subsurface investigation carried out as part of the RI. The subsurface conditions at the various portions of the subject property are briefly summarized in this section. In general, the shallow soils across the site consist of varying types of soil overlying a native silty clay stratum. Bedrock was not encountered in any of the deep boreholes drilled across the entire site (26 feet was the deepest borehole). In this report, fill material is defined as surficial soils of varying grades, such as sand, gravel, silty sand, and sandy silt. Further, fill material that has been mixed with metal waste (e.g. foundry sands, smelting residues, babbitt residues, process water residues, etc.) produced from decades of historical on-site industrial operations is referred to as metal-impacted fill. In addition, soil containing mild hydrocarbon odours or residual concentrations is defined as hydrocarbon-impacted fill. The metal waste produced by the foundry operations, smelting operations, and processing of Babbitt, including the dredged material from the former settling lagoon and foundry sands, was apparently mixed and spread throughout the property. As a result, the fill material across the site, which was originally clean, became metal-impacted fill.

The metal-impacted fill encountered at the west side of the property consisted of sand and gravel fill mixed with silty clay, and the metal waste produced by the historical site operations. Brick and concrete fragments were also encountered in the metal-impacted fill. The depth of the metal-impacted fill at the west side of the site was generally between approximately 2 to 3 feet (0.6 and 0.9 meters) below grade, and was present to as deep as 4 feet (1.2 meters) at one of the drilling locations. The metal-impacted fill is underlain by a native silty clay stratum. Occasional pebbles and gravel are present in the silty clay. The consistency of this soil unit increased from very stiff to hard with depth, and became less hard as the depth approached the shallow water-bearing zone. The native silty clay was generally the same throughout the remaining parts of the property.

The metal-impacted fill at the central portion of the property consisted of silty and sandy grades of soil mixed with occasional gravel, and the metal waste from past on-site industrial operations. The depth of the metal-impacted fill typically ranged between approximately 2 to 3 feet (0.6 and 0.9 meters) below grade. The metal-impacted fill in the former lagoon consisted of saturated and very soft silty and sandy type of material. This material was likely the remaining accumulated sediment from the former lagoon, which was used as a settling basin for the past industrial process water. The bottom of the former lagoon extended to as deep as approximately 10 to 12 feet (3.0 to 3.7 meters) below ground surface. In the former marsh area, the metal-impacted fill was encountered to 4 feet (1.2 meters) below grade in both boreholes drilled. In addition to the metal impact, mild hydrocarbon odours were detected in the fill in the former marsh and lagoon. Both of these areas were saturated with perched water.

In the trucking yard, the metal-impacted fill encountered during the drilling programs consisted of sand and gravel at the surface. The metal-impacted fill became a mixture of sand, gravel, and silty clay with depth and was saturated with perched water. The depth of the metal-impacted fill in this area generally ranged between approximately 4 and 5 feet (1.2 and 1.5 meters) below grade, and was encountered as deep as 6 feet (1.8 meters). Mild hydrocarbon odours were detected in the metal-impacted fill at the south side of the trucking yard. As noted previously, the trucking yard was paved with asphalt, with some concrete adjacent to the building, in December 2004.

The parking lot at the east side of the property is surfaced with asphalt, approximately 3 inches (8 centimeters) thick on average. The depth of the underlying metal-impacted fill, which was comprised of coarse sand with gravel, ranged between approximately 1.5 and 2.5 feet (0.5 and 0.75 meters) below grade. The metal-impacted fill in the former basement used to store the oil tanks was present to approximately 10.5 to 11.5 feet (3.2 to 3.5 meters) below ground surface, where refusal was encountered. Mild hydrocarbon odours were detected in the metal-impacted fill within the former basement and the immediate surrounding area.

The overburden material along the rail siding consisted of rail ballast underlain by metal-impacted fill, which was comprised of sand and gravel, and silty clay mixed with metal waste from past on-site industrial operations. The metal-impacted fill was dark brown to black in colour and was saturated with perched water. A mild to moderate hydrocarbon odour and oily sheen was present in the metal-impacted fill in all boreholes advanced along the rail siding. The metal-impacted fill in the rail siding area was encountered at a depth ranging between approximately 3 to 4 feet (0.9 to 1.2 meters). The underlying silty clay stratum did not exhibit any visual or olfactory evidence of petroleum hydrocarbons.

The concrete floor slab was approximately 6 inches (15 centimeters) thick in most of the boreholes drilled inside the building. The underlying metal-impacted fill consisted of different grades of soil, including medium to coarse sand, with some silt and gravel,

mixed with metal waste from historical on-site industrial activities. Hydrocarbon odours and an oily sheen were encountered in four boreholes. The metal-impacted fill thickness below the building ranged between 4 and 8 feet (1.2 and 2.4 meters). The native silty clay below the metal-impacted fill was similar to the conditions found elsewhere on the property.

2.2.3 Site Hydrogeology

The hydrogeology at the site was determined by the installation of seven groundwater monitoring wells throughout the property. There are two different groundwater layers present beneath the site, and are separated by the top of the stiff native silty clay layer. Perched water was encountered in the fill material at various drilling locations; however, the natural shallow groundwater-bearing zone is situated in the native silty clay. The low hydraulic conductivity of the silty clay causes infiltrated surface water to remain "perched" in the fill layer. The perched water is not present in a continuous layer throughout the property. Rather, it is present at selected drilling locations. The upper portion of the silty clay is damp to moist and the consistency is stiff to hard (i.e. not saturated). This soil unit becomes soft and saturated at a greater depth (approximately 15 feet).

The monitoring wells were surveyed to a geodetic benchmark, which was provided by the New York State Department of Transportation. Based on water level measurements taken on two separate occasions, the shallow groundwater is estimated to flow in a northwesterly direction. Scajaquada Creek is located approximately 0.25 miles (0.4 kilometers) to the north of the subject site while Cayuaga Creek is situated approximately 0.62 miles (1.0 kilometers) to the south.

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

The nature and extent of contamination at the subject property were characterized by carrying out several investigations, beginning in 1998 and culminating with the completion of the final RI/FS report in December 2004. Previous investigations were also conducted by others in the mid-1980s, prior to XCG's studies.

NUS Corporation (NUS) conducted the first environmental investigation of the subject property for the United States Environmental Protection Agency (USEPA). NUS completed an off-site reconnaissance of the property in early-1986 and prepared a report entitled "Potential Hazardous Waste Site Preliminary Assessment, N.L. Industries, Inc., 3241 Walden Avenue, Depew, NY, EPA Site ID Number NYD980531636." On March 31, 1987, NUS conducted a site inspection, on behalf of the USEPA, and collected three sediment and four soil samples for laboratory analyses. Elevated concentrations of several polycyclic aromatic hydrocarbons (PAHs) and metals

(e.g. lead, copper, and zinc) were detected in the surficial soils. The results of this investigation are summarized in the NUS report entitled "Site Inspection Report, N.L. Industries/Buffalo Plant, Depew, New York," dated July 29, 1988.

In early 1998, NYSDEC approached Norampac regarding the elevated PAHs and metals detected at the subject property in 1987, and requested that Norampac carry out a subsurface investigation. Since that time, Tighe & Bond has completed a number of subsurface investigations, in addition to the aforementioned Limited Phase 1 ESA. These investigations are summarized as follows:

- "Draft, Limited Phase 2 Environmental Site Assessment, 3241 Walden Avenue, Depew, New York," February 10, 1999;
- "Draft, Limited Phase 2 Environmental Site Assessment, Former Oil Tanks Area, 3241 Walden Avenue, Depew, New York," February 10, 1999;
- "Draft, Additional Phase 2 Environmental Site Assessment, 3241 Walden Avenue, Depew, New York," May 18, 1999; and,
- "Draft, Off-Site Surficial Soil Investigation, 3241 Walden Avenue, Depew, New York," July 26, 1999.

Copies of these documents have been submitted to the NYSDEC. In addition to the above investigations, Tighe & Bond conducted additional surficial sampling in June 1999, primarily at the west undeveloped area with some sampling at the central undeveloped area and trucking yard; however, the analytical results of these samples were not summarized in a report.

2.3.1 Soil Quality

The analytical results of the extensive testing program have provided a clear indication of the lateral and vertical extent of metal impacts throughout the subject property. The hydrocarbon impacts, which are present to a lesser extent, were also clearly defined by the analytical results. A majority of the fill material at the property contains metals and lead in particular, at concentrations that exceeded the Technical and Administrative Guidance Memorandum (TAGM 4046) Cleanup Objectives or Eastern USA/New York State Background Values. In general, soil samples that contained elevated levels of lead also had high copper and zinc concentrations, which were the other two metals historically handled on-site. The Toxicity Characteristic Leaching Procedure (TCLP) results indicate that much of the metal-impacted fill exceeds the regulatory limit for lead in leachate.

The extent of soil contamination in the different sections of the property is briefly summarized below. Details of the analytical results are provided in the RI/FS report.

Central Undeveloped Area

The central undeveloped area consists of an open field with no structures. The former lagoon and marsh is located at the south side of this area. A small portion of the former lagoon is located in the trucking yard, but will be discussed in this section. In the summer of 1999, a surface cap consisting of imported topsoil and hydro-seed was placed over the central area as part of the IRM. In addition, a chain-link fence was placed around the perimeter to limit access to this area. For the purpose of this report, this fenced-in area is defined as the central undeveloped area.

In the soil samples collected from the lagoon, the concentration of a number of metals exceeded the TAGM 4046 Cleanup Objectives or Eastern USA/New York State Background values (where no Cleanup Objectives or Site Background values exist), including arsenic, beryllium, mercury, cadmium, chromium, copper, iron, lead, nickel, and zinc. Of greatest concern are the significantly high concentrations of lead, and to a lesser extent copper and zinc, compared to the TAGM 4046 Cleanup Objectives or Eastern USA/New York State Background Values. The concentrations of lead were 1,600 parts per million (ppm), 86,000 ppm, 45,000 ppm and 45,000 ppm, compared to a typical range of 200 to 500 ppm in metropolitan areas (as identified in TAGM 4046). The high end typical value of 500 ppm was used as the Background Value for assessment.

Soil samples from the underlying native silty clay at these three borehole locations were analyzed to determine if the metals were migrating vertically downwards. The concentrations of lead in these three silty clay samples ranged between 18 ppm and 50 ppm, which were well below the Background Values found in metropolitan areas (as identified in TAGM 4046).

In the lagoon area, fill material samples also contained a number of metals that exceeded the TAGM 4046 Cleanup Objectives or Eastern USA/New York State Background values, including significantly high concentrations of copper, lead, and zinc. Lead concentrations in two boreholes were 7,900 and 5,200 ppm. The concentration of lead (41 ppm) in a silty clay sample from this area was well below the TAGM 4046 Background Value of 500 ppm.

Samples of the fill material from the former lagoon and marsh were also analyzed for volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs) to address a reported historical #2 fuel oil release located in this area. The concentration of acetone (0.32 ppm) slightly exceeded the TAGM 4046 Cleanup Objective of 0.2 ppm. However, this might be a laboratory artefact as acetone is commonly used for extraction purposes. The PAH results indicate that some low level residual fuel related impacts still remain in the former lagoon and marsh areas.

Soil samples were also collected from boreholes and surface sampling locations in the general central undeveloped area (i.e. beyond the former lagoon and marsh). Analytical results of the fill material from the boreholes in the general central undeveloped area indicated lead concentrations ranging from 4,700 ppm to 39,000 ppm, which exceed the TAGM 4046 Background Value (500 ppm). In nine of the ten surficial soil samples, the lead concentrations (2,600 ppm to 18,000 ppm) exceeded the Background Value.

Two native silty clay samples in the general central undeveloped area were analyzed for metals. The concentrations of lead ranged between 22 and 51 ppm, which is well below the Background Value of 500 ppm. These results further indicate that the native silty clay is acting as an effective barrier to vertical migration of metals.

Four fill material samples from the central undeveloped area were analyzed for TCLP metals analysis to determine the soil waste classification. The concentration of lead in the leachate extracted from each sample exceeded the regulatory level of 5 mg/L (ppm). The sample with the lowest total lead concentration (1,600 ppm) had a leachate lead concentration of 8.7 mg/L. The soil sample with the highest total lead concentration (86,000 ppm) had a leachate concentration of 210 mg/L.

West Undeveloped Area

The west undeveloped area is defined as the land extending from the fenced-in central area to the west property line. This area is essentially vacant with the exception of the storage of some heavy and miscellaneous equipment by the neighbouring business to the west.

Soil was collected from ten boreholes and eleven surface sampling locations. The soil quality in the west undeveloped area is somewhat different than in the central undeveloped area, as the lead concentrations in the fill varied throughout this section of the property. In three fill material samples, the lead concentrations were 11,000 ppm, 20,000 ppm, 8,400 ppm, which is significantly higher than the TAGM 4046 Background Value 500 ppm. In contrast, the lead levels in the fill material from four other boreholes were much lower and closer to the Background Value (520 ppm, 740 ppm, 880 ppm, and 210 ppm). The low and high concentrations of lead are not located in clearly defined areas. Rather, the elevated lead concentrations in the fill material are scattered sporadically throughout the west undeveloped area. This may be a result of random historical placement or grading of metal wastes. At ground surface, the lead concentrations are consistently below the TAGM 4046 Background Value and ranged between 89 ppm and 440 ppm.

The fill material samples from four samples were analyzed for TCLP metals to determine the soil waste classification. In the sample with total lead of 8,400 ppm, the concentration of lead in the extracted leachate was 17 mg/L (ppm), which exceeds the

regulatory level of 5 mg/L (6NYCRR Part 371, Section 371.3). Considering that the total lead concentrations in the fill material from two other samples were higher, the soil at these locations is also likely to be hazardous. The lead concentrations in leachate from the three other fill material samples submitted for TCLP testing were all below the laboratory method detection limit (MDL) of 0.022 mg/L. These samples had total lead concentrations of 740 ppm, 880 ppm, and 210 ppm. The TCLP analytical results indicate that the metal-impacted fill at the west undeveloped area exhibits both hazardous and non-hazardous characteristics. However, the fill material in the entire area is considered to be characteristically hazardous, given that the high lead concentrations in the fill material are present in a scattered pattern in this part of the property.

Samples of the native silty clay from four boreholes were analyzed to determine the vertical extent of metals impacts. The concentrations of lead (13 to 28 ppm) were much lower than the overlying fill material and significantly lower than the TAGM 4046 Background Value of 500 ppm.

Trucking Yard

The exterior operational area of the property is comprised of the trucking yard located adjacent to the west of the building and the rail siding situated along the south side. These two areas are connected and surrounded by a chain-link fence with gates. Trucks conduct loading and unloading activities along the west building wall, while trailers are regularly parked at the west side adjacent to the chain-link fence. Although rarely done, shipping and receiving activities may also be carried out by railway containers on the siding at the south side of the building.

The analytical results of fill material collected from the trucking yard were similar to those found in the central undeveloped area. Fill material samples from seven boreholes contained a number of metals which exceeded the TAGM 4046 Cleanup Objectives or Eastern USA/New York State Background Values. The concentrations of copper, lead, and zinc exceeded the TAGM 4046 values in all seven of these fill samples. The lead concentrations were 7,700 ppm, 31,000 ppm, 18,000 ppm, 25,000 ppm, 4,900 ppm, 19,000 ppm, and 2,300 ppm, which were well above the TAGM 4046 Background Value of 500 ppm. Two surface samples were collected at the north side of the trucking yard in April 1999. The lead concentrations for these two samples were 1,800 ppm and 5,400 ppm.

Petroleum hydrocarbon odours were detected in the fill material in two boreholes at the south side of the trucking yard. Samples of the fill material from these locations were analyzed for VOCs and PAHs. The concentrations of benzene and 1,2,4-trimethylbenzene in one sample were 0.018 ppm and 0.11 ppm, respectively. These levels marginally exceeded the STARS1 TCLP Alternative Guidance Values of 0.014 ppm and 0.1 ppm, respectively. The benzene concentration was, however, below the

STARS 1 Human Health Guidance Values and the TAGM 4046 Cleanup Objectives. In this sample, the concentrations of acetone (1.7 ppm) and methylene chloride (0.47 ppm) slightly exceeded the TAGM 4046 Cleanup Objectives of 0.2 ppm and 0.1 ppm, respectively. In the other sample containing petroleum odours, the concentrations of benzene (0.026 ppm), methylene chloride (0.71 ppm), and xylenes (0.145 ppm) slightly exceeded either the STARS1 TCLP Alternative Guidance Values or TAGM 4046 Cleanup Objectives. However, for both benzene and xylenes, the results were below the STARS1 human health protection Guidance Values. In both of these fill material samples, nine of the PAH parameters slightly exceeded the STARS1 TCLP Alternative Guidance Values, but in many cases were lower than the STARS1 Human Health Guidance Values and/or TAGM 4046 Cleanup Objectives.

The fill material from three boreholes was analyzed for TCLP metals to determine the soil waste classification in the trucking area. The concentrations of lead in the leachate were 21 mg/L (total lead was 7,700 ppm), 89 mg/L (total lead was 18,000 ppm), and 25 mg/L (total lead was 4,900 ppm). These concentrations exceeded the New York State regulatory level of 5 mg/L. Considering the high total lead concentrations in the other boreholes, all the fill material in the trucking yard is considered characteristically hazardous.

Similar to the undeveloped portions of the property, the analytical results of the underlying native silty clay in the trucking yard showed a significant decrease in the metal concentrations. Although a number of metals exceeded the TAGM 4046 Cleanup Objectives, the concentrations in the silty clay were more comparable to typical Eastern USA/New York State Background Values. The lead concentrations in the silty clay ranged from 16 ppm to 32 ppm.

Rail Siding

In the rail siding area, the concentrations of lead in the fill material from three boreholes (13,000 ppm, 7,700 ppm, and 1,900 ppm) were well above the TAGM 4046 Background Value of 500 ppm.

Petroleum hydrocarbon odours and an oily sheen were observed in the fill material under the rail siding. Soil samples from three boreholes were analyzed for VOCs and PAHs. In two samples, the concentrations of benzene, xylenes, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene exceeded the STARS1 TCLP Alternative Guidance Values. The concentration of toluene in one of the samples also exceeded the STARS1 TCLP Alternative Guidance Value. However, the benzene, xylenes, and toluene concentrations were all lower than both the STARS1 Human Health Guidance Values and TAGM 4046 Cleanup Objectives. In the third sample, the concentrations of xylenes and 1,2,4-trimethylbenzene were above the STARS1 TCLP Alternative Guidance Values, but were lower than the Human Health Guidance Value and TAGM 4046 Cleanup Objective for xylenes. The concentrations of methylene chloride in all

three of these fill material samples were above the TAGM 4046 Cleanup Objectives. In addition, at least twelve PAH parameters exceeded the STARS1 TCLP Alternative Guidance Values; however, many of these concentrations were below the STARS1 Human Health Guidance Values and/or TAGM 4046 Cleanup Objectives.

The fill material samples from two boreholes were analyzed for TCLP metals to determine the waste classification in the rail siding area. The concentrations of lead in the leachate were 100 mg/L (total lead was 7,700 ppm) and 1.1 mg/L (total lead was 1,900 ppm), which exceeds the regulatory level of 5 mg/L. Considering the relatively high total lead concentration in the third borehole (13,000 ppm), a majority of the fill material along the rail siding is expected to be characteristically hazardous.

The analytical results of the underlying silty clay samples along the rail siding were similar to those detected in other areas of the property, except for one location. The lead concentrations in two silty clay samples were 19 ppm and 15 ppm. The concentration of lead in the silty clay sample from the third borehole tested was 6,500 ppm. This was the only native silty clay sample of the 23 analyzed on the property that exceeded the TAGM 4046 Background Value. This one exceedance may simply represent contamination at the upper zone of the silty clay unit (i.e. at the fill and silty clay interface).

Parking Lot

Sampling in the parking lot was conducted to address two areas. The initial testing focussed on the south side of the parking lot. Three oil tanks were formerly stored in this area, two of which were located below grade in a concrete-lined basement. The second investigation was carried out from the centre to the north end of the parking lot to determine the general quality of the fill material underlying the asphalt.

Soil samples from two boreholes drilled at the south end of the parking lot were collected from the material used to backfill the former oil tanks basement. The concentration of lead was much lower in this fill than the fill located elsewhere on the property. Lead was detected in these two samples at 18 ppm and 8 ppm, respectively. These values were well below the typical high end Background Value found in metropolitan areas (500 ppm), as identified in TAGM 4046.

Two boreholes were drilled to the south-central and southwest of the former tank area. Lead was detected in these two samples at 1,500 ppm and 1,200 ppm, which exceeded the TAGM 4046 Background Value of 500 ppm.

A borehole drilled just north of the former oil tanks basement had a silty clay sample analyzed for lead. The concentration of lead in this sample (24 ppm) was well below the TAGM 4046 Background Value.

The fill material and native silty clay samples were also analyzed for VOCs and PAHs to address the reported, historical oil tank leaks. Soil samples were collected from two boreholes drilled within the former tank basement. Acetone was detected in these two samples at 0.4 and 0.24 ppm. In soil samples from three boreholes located beyond the former basement perimeter, the concentration of acetone was detected at 0.32 ppm, 0.28 ppm, and 0.74 ppm. The concentrations of acetone in these five samples slightly exceeded the TAGM 4046 Cleanup Objective of 0.2 ppm. However, this might be a laboratory artefact as acetone is commonly used for extraction purposes. The method blank analyzed with these samples contained a detectable concentration of acetone.

In all samples tested from the fill material, both from within and beyond the perimeter of the former oil tank basement, the concentrations of at least two of the PAH parameters exceeded the STARS1 TCLP Alternative Guidance Values; however, many of the results were below the STARS1 Human Health Guidance Values and/or TAGM 4046 Cleanup Objectives. These samples were analyzed from the same fill material samples which contained elevated metals concentrations.

Two boreholes were drilled in the north to central portions of the parking lot. Lead was detected in the fill material in these two boreholes at 22,000 ppm and 6,000 ppm, which exceeded the TAGM 4046 Background Value of 500 ppm.

One of these fill material samples was analyzed for TCLP metals to determine the waste classification in this area. The concentration of lead in leachate in this sample was 7.0 mg/L (total lead was 6,000 ppm), which slightly exceeds the regulatory level of 5 mg/L.

The underlying native silty clay samples from the boreholes in the north and central areas of the parking lot were analyzed to determine the vertical extent of metals impacts. Lead was detected in these two samples at 110 and 16 ppm.

Building

Borehole drilling through the building floor slab was the last phase of field investigations and was conducted as part of the RI to fill-in the data gap in this area of the property. The boreholes were placed at different sections of the building in an effort to develop a good understanding of the subsurface conditions beneath the structure.

Metals analyses were conducted in the fill material at seven locations. In the borehole located in the southeast area of the building, the fill material contained a lead concentration of 250 ppm, which is below the TAGM 4046 Background Value of 500 ppm. However, the lead concentrations in the fill material at the other locations (860 to 27,000 ppm) all exceeded the TAGM 4046 Background Value. Based on these results, a majority of the fill material beneath the floor slab is expected to contain elevated concentrations of lead above the TAGM 4046 Background Value.

Two native silty clay samples from beneath the building were chemically analyzed to determine if the metals were migrating vertically downwards. Similar to the results elsewhere on the property, the lead concentrations (25 ppm and 60 ppm) were well below the TAGM 4046 Background Value.

Trace hydrocarbon odours and a slight oily sheen were detected in four of the boreholes drilled through the floor slab. Samples of the fill material from these boreholes were analyzed for VOCs and PAHs. At two of these locations, the concentrations of acetone were 0.23 and 0.25 ppm, respectively. These values marginally exceed the TAGM 4046 Cleanup Objective of 0.2 ppm. The sample from one of the samples also contained concentrations of 1,2,4-trimethylbenzene (0.33 ppm) and 1,3,5-trimethylbenzene (0.14) that slightly exceeded the STARS1 TCLP Alternative Guidance Value (0.1 ppm for both parameters). In all four fill material samples, at least three PAH parameters were detected at concentrations above the STARS1 TCLP Alternative Guidance Values, but most results were below the STARS1 Human Health Guidance Values and/or TAGM 4046 Cleanup Objectives. Those organic parameters that did exceed the TAGM 4046 Cleanup Objectives were only slightly above the objectives. As such, the presence of residual petroleum nuisance characteristics beneath the building is not considered a significant concern and does not warrant any action.

Two native silty clay samples situated directly below the fill material were also analyzed for VOCS and PAHs. The concentration of acetone in one of the samples was 0.28 ppm, which marginally exceeded the TAGM 4046 Cleanup Objective. The concentration of benzene in this sample (0.019 ppm) slightly exceeded the STARS1 TCLP Alternative Guidance Value (0.014 ppm), but was below both the Human Health Guidance Value (24 ppm) and TAGM 4046 Cleanup Objective (0.06 ppm). The concentrations of PAH parameters were either below the laboratory's MDLs or detectable but well below the STARS1 TCLP Alternative Guidance Value.

Off-site Sediment Samples

Sediment from the outfall location at Scajaquada Creek, 0.25 miles north of the former N.L. Industries Site, was sampled in 2003. Elevated levels of lead were found in the sample, indicating that contaminated surface soil particles have migrated to the storm water drainage system are ultimately deposited at this outfall location.

2.3.2 Groundwater Quality

In 1998, a total of six water samples were submitted for analyses of various parameters including metals, PAHs, VOCs, and anions. One of these samples was collected from a historical well installed by an unknown party. This well was installed within the fill material of the former lagoon and has since been removed.

The samples from four monitoring wells (three in the central area and one in the trucking yard) were collected from the shallow water-bearing zone in the native silty clay layer. In all samples, the concentrations of magnesium exceeded the Technical and Operational Guidance Series (TOGS) 1.1.1 Guidance Value while sodium exceeded the TOGS 1.1.1 Standard. Considering that the site is located in an urbanized area, the high concentrations of sodium may be attributed to road salting during the winter season. In the well located in the west section of the central area, the concentration of lead was 30 parts per billion (ppb), which slightly exceeded the TOGS 1.1.1 Standard of 25 ppb.

The groundwater sample from the well installed by an unknown party was collected from perched water in the former lagoon. The concentration of copper (220 ppb) slightly exceeded the TOGS 1.1.1 Standard of 200 ppb. Manganese was detected at 1,100 ppb, which exceeded the TOGS 1.1.1 Standard of 300 ppb.

Other than acetone (13 ppb) in Tighe & Bond's well located in the lagoon, the concentrations of VOCs in this groundwater sample as well as the sample collected from the unknown well were below the laboratory's MDLs. The detectable concentration of acetone may be a laboratory artefact. The PAH analytical results in the well located at the north end of the central area and in the lagoon were all below the laboratory's MDLs. Although there was no visual or olfactory evidence of petroleum impact in the groundwater sample from the well located at the west section of the central area, a number of PAH parameters, including benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene, exceeded the TOGS 1.1.1 Guidance Values.

The concentration of all anions, with the exception of bromide in the well located in the trucking yard, were below the TOGS 1.1.1 Standards. Bromide in this well (2,600 ppb) slightly exceeded the TOGS 1.1.1 Guidance Value of 2,000 ppb.

In April 1999, a total of four groundwater samples (including a blind field duplicate) from three newly installed wells (one in the parking lot and two in the west undeveloped area) were submitted for analyses of metals.

The monitoring wells were installed in the native silty clay stratum. The concentrations of iron in the groundwater from the parking lot and the west section of the west undeveloped area were 390 ppb and 320 ppb, respectively. These values exceed the TOGS 1.1.1 Aesthetic Standard of 300 ppb. The concentrations of magnesium in the three monitoring wells ranged between 78,000 ppb and 130,000 ppb, which exceeds the TOGS 1.1.1 Guidance Value of 35,000 ppb. The concentrations of sodium (25,000 to 70,000 ppb) also exceeded the TOGS 1.1.1 Guidance Value of 20,000 ppb. Given that the site is located in an urbanized area, the high concentrations of sodium may be attributed to road salting during the winter season. The concentrations of lead in the

parking lot well (26 ppb) and the well situated at the south end of the west undeveloped area (27 ppb) marginally exceeded the TOGS 1.1.1 Standard of 25 μg/L.

In the third round of groundwater sampling, a total of eight groundwater (including a blind field duplicate) samples were collected from the seven monitoring wells. As requested by NYSDEC, four of these samples were analyzed for a full scan Target Compound List (TCL)/Target Analyte List (TAL) analysis. The TCL/TAL parameters included metals, VOCs, semi-VOCs, pesticides, and PCBs.

The analytical results of metals indicated elevated concentrations of iron, magnesium, and sodium. The concentrations of lead in all groundwater samples were below the TOGS 1.1.1 Standard, except for the well located at the west end of the central area (765 ppb). This elevated concentration may have been a result of excessive amounts of suspended solids in the water, as the turbidity at the time of sampling was relatively high (100 NTUs). Tighe & Bond made its best efforts to reduce the turbidity; however, the shallow water-bearing zone is situated in a silty clay soil. In any event, this elevated concentration of lead in the groundwater appears to be an isolated occurrence, based on the results of other testing throughout the property.

Groundwater from monitoring wells located the former lagoon, trucking yard, and west section of the west undeveloped area was also analyzed for VOCs, semi-VOCs, pesticides, and PCBs. The analytical results were either below the laboratory's detection limit or detectable but below the TOGS 1.1.1 Standards or Guidance Values.

Although there are some exceedances of the TOGS 1.1.1 Standards or Guidance Values, with respect to bromide, metals, and PAHs, these values were developed for groundwater that is used as a source of drinking water. The subject property and surrounding area is serviced by a municipal drinking water supply, which draws its water from a surface water body. The Erie County Water Authority indicated to Tighe & Bond that Lake Erie is the water source for water supplied to the Village of Depew. Since the subject property and surrounding land is situated in a well developed urbanized area, the use of water supply wells are not expected to exist in the study area. Mr. Brian Hourigan of the NYSDEC, Division of Water, indicated that its agency does not have a database of water supply wells installed in this area of New York State. Given that the minor exceedances of a few select compounds are based on drinking water standards and the subject property area does not use groundwater for potable purposes, these elevated concentrations are not considered to be a significant concern.

As such, groundwater remediation is not considered warranted. The media of concern on the subject property is the impacted fill and any remediation should focus on this area only.

The preparation and mobilization for remedial work to be conducted on the west undeveloped area and central undeveloped area include:

- Permits and Approvals
- Mobilization and Site Setup
- Temporary Facilities
- Contractors Temporary Facilities
- Engineer's Field Office
- Erosion and Sedimentation Control
- Health and Safety Plan / Community Air Monitoring Plan
- Equipment Decontamination
- Spill and Discharge Control
- Monitoring Well Abandonment
- Survey Requirements

These requirements are discussed further below.

3.1 PERMITS AND APPROVALS

It will be Norampac's responsibility to obtain approval of this RAWP from NYSDEC. The Contractor will be responsible for obtaining the necessary permits and approvals in order to properly carry out this RAWP. However, Tighe & Bond will provide technical support to the Contractor in obtaining these approvals. Currently, the following approvals are expected and will be sought:

- Local construction permits – It is expected that an excavation permit is not required from the Town of Depew. However, the Contractor will verify this with the Town officials. Traffic permits for the movement of heavy construction vehicles on and off the property will likely be required
- Landfill acceptance – There will be a quantity of excavated soil that will not fit under the consolidation/cap area. This excess soil will be disposed of off-site in an approved landfill. The Contractor will be responsible for obtaining the waste acceptance approval from the landfill. TCLP testing will need to be conducted to verify that it is hazardous or non-hazardous, and provided to the landfill
- CSX Transportation Inc. – The railway berm adjacent to the south, which is owned by CSX Transportation Inc. (CSX), is close enough to the excavation area that CSX will need to be contacted for input and possibly a permit. There

are known fibre optic lines along the railway berm. The Contractor shall be responsible for obtaining any necessary permits from CSX

- Traffic plan, and
- Others as identified by the Contractor.

3.2 MOBILIZATION AND SITE SETUP

The Contractor will be responsible for providing and mobilizing the necessary labour, equipment and materials to carry out the project. These resources will be used to conduct the following tasks:

- Establish site security and entry and exit protocols. Site security will be provided after work hours and on weekends (7 days per week)
- Handouts with contact information for all parties involved in the project will be prepared
- Place and install temporary office trailers and associated utilities
- Construct hoarding or chain-link fence around the north, south, and western edges of the west undeveloped area to prevent unauthorized site access. Hoarding will not be required in the central undeveloped area as it already contains a chain-link fence
- Establish a communications system including telephone, fax, two-way radios, and emergency warning systems
- Establish contamination, decontamination, and support zones. These areas will be clearly delineated and marked with barriers and signage
- Mobilize earth moving equipment
- Establish dust control operations and air monitoring locations
- Locate and mark underground utilities situated within the work area

Other requirements that are not listed above, but that are necessary for the successful performance of the project, will be provided the Contractor. The heavy construction equipment required for this project is expected to include track-mounted excavators, front end loaders, bulldozers and grading equipment, compaction equipment, dump trucks, and water trucks for dust control. Other equipment will include air monitoring devices, personnel safety gear, decontamination supplies, and field sampling equipment.

3.3 TEMPORARY FACILITIES

The Contractor will prepare a site plan showing the proposed areas where it will setup its temporary facilities, the location and alignment of trailers, avenues of ingress and egress to this area, and any other relevant details. If supplemental or other staging areas are required, this will be shown on the site plan for approval by the Engineer.

3.3.1 Employee Parking

Employees of the Contractor shall park personal vehicles on the streets near the subject property. The Contractor must obtain a permit from the Town of Depew to park on one of the nearby residential streets.

3.3.2 Availability and Use of Utility Services

It will be the Contractor's responsibility for providing all temporary utilities required to complete the project. These include electrical services, air conditioning, heating, lighting, telephone, potable water, and sanitation facilities. The Contractor will obtain the relevant services from the local utility provider in Depew, New York.

3.3.3 Bulletin Board, Project Sign, and Project Safety Plan

Prior to project start up, the contractor will setup a bulletin board displaying the Equal Employment Opportunity poster, and other information required by Federal laws. In addition, the Contractor will provide a sign stating that *Safety Is Our Priority* and lists the safe work practices and record for the site.

3.3.4 Protection and Maintenance of Traffic

The protection of the travelling public near the subject property is paramount. The Contractor shall minimize as much as possible the interference on public haul roads adjacent to the site (i.e. Walden Avenue). It will be the Contractor's responsibility to determine the weight restrictions on roads used in the travel route, and it will be the Contractor's responsibility to repair any damage that it causes to the roads.

While construction vehicles are entering and exiting the site, the Contractor shall maintain and protect the traffic on Walden Avenue. In accordance with State and local authorities having jurisdiction, the Contractor shall implement measures for the diversion and protection of traffic, including the use of watchmen and flagmen, erection of barricades, use of flashing light signs, and the placement of warning, danger, and direction signs.

The Contractor is responsible to render trucks free of dirt before leaving the site

3.3.5 Haul Roads

The Contractor will be responsible for constructing temporary access and haul roads within the site. The haul roads shall be built with suitable grades and widths, and be provided with lighting, signs, barricades, and distinctive markings for the safe moving of vehicles. Depending on the time of year, lighting may be necessary to provide proper visibility during work in the early hours of the morning or if the work extends into the early evening. The proposed locations and construction particulars of the haul roads shall be included in the site plan discussed above, and provided to the Engineer for review and approval. The Contractor will remove the temporary haul roads once the project is completed.

3.4 CONTRACTOR'S TEMPORARY FACILITIES

The Contractor shall erect and establish the necessary temporary facilities to allow the project to be performed safely and effectively. The Contractor's temporary facilities include, but are not limited, to the following.

3.4.1 Administrative Field Office

The Contractor will provide and maintain a field office trailer in the designated area shown on the site plan, as discussed above. All four corners of the trailer shall be securely anchored to protect the occupants inside (e.g. tipping during high winds). The trailer will be setup such that access meets all state and federal requirements.

The trailer should be large enough to accommodate Health and Safety, Construction Quality Control, and Site Supervisory personnel. The office area shall provide sufficient space and facilities for site project meetings. This would include a table and chairs for eight people, separate drawing table, and drawing storage areas. The contractor's office will also need to be provided with all necessary utilities, including electricity, two telephone lines with voice messaging, internet access, fax line, heating, air conditioning, bottled water, sanitation facilities, and showers for the workers.

3.4.2 Appearance of Trailers

The Contractor shall maintain a clean and neat appearance on the exterior of the office trailers.

3.4.3 Security Provisions

The Contractor will be responsible for providing adequate exterior security lighting, and will also retain the services of professional security guards for the site during non-working hours and on the weekends. A complete surrounding fencing may replace a

guard service during non-working hours and on the weekends. The Contractor will be responsible for the security of it own equipment and those of the Engineer, to the extent practicable.

3.4.4 Fuelling Stations

Heavy construction equipment will be re-fuelled on-site. As such, temporary aboveground storage tanks (ASTs) for diesel fuel will be located on-site throughout the project. The installation of the temporary ASTs shall be conducted in accordance with local, state, and federal requirements. The ASTs shall be provided with secondary spill containment with a capacity of at least 110% its volume. The Contractor shall provide spill response equipment in close proximity to the tanks, such as absorbent materials, booms, shovels, and waste containers, in case a spill does occur.

3.4.5 Cleanup and Site Restoration

The Contractor shall ensure that the work place be maintained in a neat order. Garbage, packing material, and other construction debris shall be collected daily and stored in a waste bin, which should be sent for off-site disposal on a regular basis. Mud and soil tracked onto paved surfaces on-site or on the public roadways shall be swept and cleaned immediately.

After the project is completed and all equipment and temporary facilities are removed, the Contractor shall restore the area to its original condition or better.

3.5 ENGINEER'S FIELD OFFICE

The Engineer will provide full-time on-site staff to provide directions, document the work, collect verification samples, and resolve project issues with the Contractor. Therefore, the Contractor shall provide the Engineer with a site office. The size of the trailer office shall be large enough to accommodate two full-time site staff members, sampling equipment and containers, and soil sample storage space. It shall be fully furnished with two desks and chairs, a drawing table, and a four-drawer filing cabinet. The office will also need to be provided with all necessary utilities, including electricity, two telephone lines with voice messaging, internet access, fax line, heating, air conditioning, bottled water, and sanitation facilities.

The contractor will also provide a table and two chairs for NYSDEC and NYSDOH field inspectors.

3.6 EROSION CONTROL

The *New York Guidelines for Urban Erosion and Sediment Control* (New York 1997) states that an erosion and sedimentation control plan must be prepared for construction sites greater than 5 acres in size. A formal plan will be prepared, since the excavation and consolidation/cap area is close to or slightly larger than 5 acres. Some erosion and sedimentation control measures that will be considered in this plan are discussed briefly below.

The subject property and nearby surrounding lands are relatively flat, with the exception of the railway berm adjacent to the south of the property. The majority of surface water (i.e. rainfall) that contacts the excavation area (west undeveloped area) will be contained below grade, within the excavation itself. Thus, no significant erosion and off-site migration of sediment is expected to occur in the excavation area. However, a silt fence shall be installed on the chain-link fence (if this is installed instead of hoarding), as the filter fabric would assist in mitigating wind and dust.

Also, the excavated soil will be consolidated in the central undeveloped area and raised to a height of approximately 6 feet (1.8 meters) above grade. As such, there may potentially be some erosion along the side slopes (approximately 3H:1V) during the placement and compaction stages. The side slopes will eventually be covered with sod or hydro-seeded to provide stability but until that time, some erosion may occur on the uncovered slopes. Therefore, silt fencing shall be installed along the north, south and east sides of the consolidation area (the west side would be adjacent to the excavation).

3.7 HEALTH ANS SAFETY PLAN/COMMUNITY AIR MONITORING PLAN

The following section details the requirements for preparing and implementing a Site-Specific Health and Safety Plan (HASP). The Contractor shall develop and submit the following for review and approval by the Engineer prior to commencing any field work.

- Corporate health and safety program
- Site-specific HASP
- Worker training certification and medical clearance
- Air monitoring logs
- Equipment decontamination plan
- Spill containment and control plan

3.7.1 Regulatory Requirements

The Contractor shall carry out this project in compliance with all applicable federal, state, and local safety and occupational health legislation. This includes, but is not limited to, Occupational Health and Safety Administration (OSHA) standards, 29 Code of Federal Regulations (CFR) 1910.120, "*Hazardous Waste Site Operations and Emergency Response*," and 29 CFR 1926.65 "*Hazardous Waste Site Operations and Emergency Response*." In situations where this RAWP, applicable legislation, criteria, and referenced documents differ, the most stringent requirements shall apply.

3.7.2 Safety and Health Program

According to OSHA Standard 29 CFR 1910.120(b) and 29 CFR 1926.65(b), an employer is required to develop and implement a Health and Safety Program for employees performing hazardous waste operations. The requirements of the OSHA Standards and the employer's overall Health and Safety Program shall be incorporated into the site-specific HASP.

3.7.3 Site-Specific Health and Safety Plan

The Contractor shall prepare a site-specific HASP that covers the work to be conducted and the types of contaminants present on-site (e.g. lead). The Contractor will need to designate an on-site full-time staff member as the Health and Safety Manager. This person shall be responsible for implementing the HASP, identify any issues of concern as the project proceeds, and make recommendations to modify the HASP to address the health and safety problems.

The Contractor shall provide the HASP to the Engineer within 21 days of Notice to Proceed, or an agreed upon schedule. The Engineer will then provide comments within 7 days, and the Contractor will revise the Plan and re-submit it for final approval. No site work shall commence until the Engineer is satisfied and approves the HASP. A copy of this Plan shall be kept in both the Contractor's and Engineer's site office at all times. Any modifications to the HASP, to address new health and safety issues that arise as the project proceeds, shall only be made after agreement between the Engineer, Site Superintendent, and the Health and Safety Manager.

The HASP shall address requirements outlined in 29 CFR 1910.120(b) and 29 CFR 1926.65(b) and include, at a minimum, the following issues:

- Health and safety organization
- Site description and hazard evaluation
- Health and safety risk or hazard analysis

- Provisions for employee training
- Use of personal protective equipment
- Medical surveillance requirements
- Air monitoring requirements
- Site control measures
- Personnel and equipment decontamination procedures
- Standard operating work practices
- Confined space entry procedures
- Emergency response procedures
- First aid procedures
- Temperature extremes monitoring
- Emergency phone numbers, and
- Location of closest hospital

The HASP shall identify action levels and procedures to deal with the following situations:

- Implementation of engineering controls and work practices
- Upgrade or downgrade in level of personal protective equipment (PPE)
- Work stoppage and/or emergency evacuation of on-site personnel
- Prevention and/or minimization of public exposures to hazards created by site activities

The site-specific HASP shall outline the minimum PPE required for the different levels of protection (i.e. B, C, and D). Action levels will need to be identified for when the level of protection requires upgrade or downgrade (e.g. from Level D to Level C). The Contractor shall provide all site workers with the appropriate PPE. Respirators used in this project must be approved by the National Institute for Occupational Safety and Health (NIOSH). The HASP shall outline procedures for fit-testing of respirators, cleaning, maintenance, inspection, and storage of PPE.

The HASP shall establish an air monitoring program to ensure that worker exposure to airborne contaminants is minimized. At a minimum, real-time dust monitoring equipment shall be installed in the breathing zone of the work area and along the downwind perimeters of the work area. The action level for particulates will be in accordance with the NYSDEC document entitled "TAGM 4031, Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites,

dated October 27, 1989." The RAWP shall establish corrective actions to take when the trigger level is exceeded (e.g. dust suppression by spraying water).

3.7.4 Community Air Monitoring Plan

In addition to the site-specific HASP, Tighe & Bond shall prepare a Community Air Monitoring Plan (CAMP) to protect off-site receptors, such as residential occupants and workers at commercial facilities. This is a requirement of the New York State Department of Health (NYSDOH) for contaminated soil and excavation and handling activities. The CAMP shall include real-time monitoring of particulate downwind of the work areas.

At a minimum, the CAMP shall include the following:

- Monitoring locations – Air monitoring equipment shall be placed at three locations along the property line downwind from the work areas that generate dust. Also, one monitor shall be placed in the upwind location. The CAMP shall describe the rationale for the locations of each monitor and outline procedures for relocating the monitors when the prevailing wind direction changes. In order to accomplish this, a portable weather station will be installed on-site to continuously record the wind direction and velocity
- Monitoring – Tighe & Bond shall conduct particulate monitoring during all soil excavation, handling, placement, and compaction activities. The Contractor shall identify the type of equipment and methods to be used in carrying out the monitoring activities
- Action and Response Levels – The CAMP shall identify the action and response levels for particulate detected during monitoring. The response actions established in the CAMP will then be carried out to control the dust concentrations before resuming the soil excavation and handling work
- Documentation – The CAMP shall establish a procedure for recording and documenting all measurements taken by the air monitors. The records shall be provided to the Engineer, NYSDEC, and NYSDOH when requested

3.8 EQUIPMENT AND PERSONNEL DECONTAMINATION

The site-specific HASP shall establish procedures for decontaminating personnel, vehicles, and heavy construction equipment. Prior to leaving the exclusion zone, equipment and workers that comes into contact with contaminated soil shall be decontaminated.

3.9 SPILL AND DISCHARGE CONTROL

The HASP shall outline a Spill and Discharge Control Plan for responding to accidental releases of potentially hazardous materials. This Plan shall include, but not be limited, to the following:

- Preventive Measures: The HASP shall outline procedures and equipment required to prevent the accidental discharge of waste resulting from site operations, which could contaminate soil, water, atmosphere, equipment, or other materials.
- Emergency Measures: The Contractor shall provide the necessary equipment and personnel to contain any spills and to remove the spilled substances and associated impacted media. The Contractor will be responsible for the disposal of the collected material, at its expense.
- Decontamination Measures: The Contractor shall provide the necessary equipment and personnel to decontaminate structures, equipment, or material affected by a spill. The Contractor will be responsible for the disposal of decontamination residues, at its expense.

Notification Procedures: The Contractor shall immediately report the spill to the Engineer, the National Response Center, and NYSDEC.

3.10 MONITORING WELL ABANDONMENT

There are a number of monitoring wells located in the planned excavation area (west undeveloped area) and consolidation/cap area (central undeveloped area). These monitoring wells will be abandoned before excavation work commences. The well abandonment work will be conducted in accordance with NYSDEC's *Groundwater Monitoring Well Decommissioning Procedures* (NYSDEC 2003).

The monitoring wells proposed for abandonment are summarized as follows:

- MW98-1
- MW98-2
- MW98-3
- MW99-2
- MW99-3

3.11 SURVEY REQUIREMENTS

The Contractor will be responsible surveying requirements to ensure the proper execution of this project. At a minimum, the surveying requirements include the following:

- Existing conditions, such as property boundaries and topographic contours
- Survey control throughout the execution of the project
- The development of a site survey map to identify the property subject to environmental easements
- Establishing a verification sampling grid in the excavated area, and
- Preparing as-built drawings, depicting final excavation contours, final backfill contours, and layout and elevations of the cover cap/truck parking lot

The Contractor shall only retain New York-registered professional surveyors for surveying contours to determine quantities for payment purposes. The Contractor may conduct interim surveying during the course of the project. The surveyor shall establish benchmarks as required to perform the work to the lines and grades on the drawings. The benchmarks will be tied into the New York State Plane coordinate datum.

SECTION 4 REMEDIAL ACTIVITIES FOR WEST AND CENTRAL UNDEVELOPED AREAS

Tighe&Bond

The scope of work required to complete the soil remediation work in the west and central undeveloped areas is summarized as follows:

- Prepare permit applications and obtain approvals
- Select and obtain approval for off-site soil disposal at a permitted facility
- Delineate work areas
- Decommission monitoring wells
- Install hoarding or chain-link fencing along the north, south, and west boundaries of the west undeveloped area
- Install air monitoring equipment to determine real-time dust concentrations, and implement mitigative measures if the action levels are exceeded
- Excavate impacted fill material in the west undeveloped area to the top of the native silty clay unit
- Clean the sediment from the sewer pipe that extends from the site to the outfall at Scajaquada Creek and properly dispose of the accumulated sediment in accordance with NYSDEC regulations
- Remove demolition debris (e.g. concrete slabs and brick) present in the fill material and dispose of it an approved off-site facility
- Remove buried gas cylinders from South side of property and dispose of in an off-site metal recycling facility
- Transport excavated soil to the central undeveloped area for placement and compaction
- Conduct compaction testing on each lift
- Install cover cap over the consolidated and compacted material
- TCLP testing shall be conducted to verify that the soil is hazardous or non-hazardous solid waste for off-site disposal
- Collect verification soil samples from the walls and base of the excavation and submit them for laboratory analyses of lead. The lead concentrations will be compared to NYSDEC's TAGM criteria of 500 ppm
- Continue excavation in areas that contain lead concentrations above 500 ppm and collect additional samples for laboratory analysis of lead. The process will continue until the concentration of lead is below 500 ppm
- Backfill and compact clean imported clean fill material in the excavation area, and

Place a cover cap in the rail siding using geotextile fabric and clear stone.

4.1 SOIL EXCAVATION (BY THE CONTACTOR)

The soil excavation and management methodology was described in the RI/FS report. In brief, the bulk of the excavated material will be consolidated on-site, with the balance of the soil disposed of off-site at an approved landfill.

Fill material with lead concentrations above 500 ppm in the western portion of the site (west undeveloped area and west half of the central undeveloped area) will be excavated and brought to the containment area. The fill material in the west undeveloped area contains a substantial amount of demolition debris (concrete slabs and brick). This material will need to be separated from the soil (with a screener if necessary) before the soil is transported to the consolidation area.

No soil excavation will be conducted along the rail siding as it is still currently used. As such, the rail siding will be capped with pavement.

Prior to conducting the excavation and handling of soil, the Contractor will prepare the work area as follows:

- Delineate work zones;
- Contact the utility location services to identify and mark all public utilities; and,
- Install filter fabric on chain-link fences surrounding the property to mitigate wind and dust.

4.2 CONFIRMATORY SAMPLING AND ANALYSIS (BY THE ENGINEER)

The Engineer will conduct soil sampling for laboratory analyses of lead to confirm that the remaining soil meets the cleanup criteria (500 ppm for lead), and to determine if additional excavation is required. Samples will be collected from both the walls and base of the excavation. The Engineer will establish a grid in the excavated areas. The grid will be approximately 30 feet by 30 feet, creating individual sub-areas of 2,500 ft^2.

In each sub-area, one composite sample from five locations within the sub-area will be collected and analyzed for lead. If necessary, excavation will continue in the sub-areas that exceed the cleanup criteria of 500 ppm. The Engineer should approve the backfill and no area should be backfilled prior to this approval.

4.3 OFF-SITE SOIL DISPOSAL

Based on the current rough volume estimates and the conceptual design, there will be a quantity of excavated fill material that will not fit under the consolidation cap. This soil will need to be disposed of at an approved landfill. The Engineer will sample this soil to confirm the landfill type hazardous or non-hazardous. Only those soils that do not fit under the consolidation cap will be characterized for off-site disposal. If excess soils are generated, they will be segregated into 1,000 CY piles. One composite sample will be collected from each pile for analysis of TCLP and ultimate waste classification. If during excavation and consolidation, some unusual type of waste material is found (i.e. discoloured material, gas cylinders NAPL, etc.), NYSDEC should be notified. A field decision will be made, by the engineer at that time whether or not the material should be consolidated or disposed of off-site.

The Contractor shall be responsible for the transportation and off-site disposal of soil and other excavated material. As described above, this will consist of excess soil that cannot fit under the consolidation cap and demolition debris. The Contractor shall designate one person to act as the Transportation and Disposal Coordinator (TDC). If the soil and/or demolition debris is classified as non-hazardous waste, the Contractor will dispose of it in an approved RCRA Subtitle D landfill (non-hazardous). For soil and/or demolition debris classified as hazardous waste, the Contractor will dispose of in RCRA subtitle C landfill (hazardous waste).

4.3.1 Transportation and Disposal Coordinator

The TDC will be the primary point of contact for transportation, disposal, and regulatory matters associated with waste management. The TDC's responsibilities will include, but not limited to, the following:

- Determination of proper shipping names
- Identification of markings, labelling, and placard requirements
- Completion of appropriate waste profiles, bills of lading for non-hazardous waste, and hazardous waste manifests
- Obtaining disposal facility weigh slips, and
- Other environmental documentation as required by local, state, and/or federal laws

The TDC shall have at least one year experience in the management and transportation of contaminated soil and waste. The TDC shall coordinate the transportation and disposal activities with the Engineer's on-site representative.

The Contractor shall carry out its waste management activities in accordance with the requirements stated in the applicable local, state, and federal laws and regulations. It is the Contractor's responsibility to keep up-to-date with the legislation, as the requirements are amended regularly.

The transportation of hazardous wastes shall be conducted with the manifests, in accordance with 40 CFR 263 and any other applicable local or state laws. The Department of Transportation 49 CFR regulations shall also be followed in transporting wastes. The Contractor shall provide the Engineer with the relevant information of the waste transporter to be used, including EPA ID numbers, names, locations, and telephone numbers. Bills of lading will be used in the shipping of non-hazardous waste.

4.4 BACKFILL IN WEST AREA (BY THE CONTRACTOR)

Backfilling and compaction activities will be conducted to restore the original surface.

The excavation area will be backfilled with clean imported soil. The Contractor shall identify its fill source to the Engineer. Representative soil samples from this source will be collected for laboratory testing of metals to verify that it is not contaminated. The off-site borrow fill sources will be sampled at a frequency of one sample per 1,000 CY, unless the source is virgin soil. The analytical results will be compared to the TAGM 4046 criteria. All tested parameters must be below the applicable criteria for it to be accepted for use at the subject property. The future use of the western area of the property is unknown at this time. As such, the level of compaction is not expected to be as stringent as that to be done in the consolidation area. After completion of the backfilling and compaction activities, the western section of the property and the side slopes of the consolidation area will be hydro-seeded.

4.5 CONTAINMENT AREA

The suitable excavated soil from the west area will be confined in this area. The containment area occupies the east half of the central undeveloped area and the west portion of the current trucking yard (just west of the truck scale). The consolidated materials will be placed in lifts and compacted. A geo-synthetic liner (GSL) cap will be placed over the entire consolidated soil (i.e. top and side slopes). A ramp will be constructed from the trucking yard to the top of the containment area to allow access for parking. The height of the consolidated materials prior to cap construction will be 6 feet (1.8 meters). The length of cap construction, under this design concept, would be approximately 300 feet. This configuration creates a parking area of just over 1 acre. A guide rail will be installed around the asphalt parking area for protection of the side slopes from the trucks.

The top of the containment area will be graded for drainage and paved. Drainage will be directed towards the storm sewers on-site. The pavement cross-section will consist of 12 inches (0.3 meters) of suitable sub-base overlain by a 6-inch thick asphalt cap on top of the containment area. The 18 inches (0.45 meters) of cover material, plus the 6 feet (1.8 meters) of consolidated impacted fill, results in a total height of 7.5 feet. The side slopes will be covered with 12 inches (0.3 meters) of suitable sub-base, and 6 inches (0.15 meters) of topsoil and grass, over the GSL. As described previously, the trucking yard was paved in December 2004, and was graded to drain properly into a new storm sewer.

The NYSDEC and the Engineer will provide oversight throughout the project to make certain that the work is completed in accordance with this RAWP and contract specifications. However, the Contractor will ultimately be responsible for the quality of the work completed and as such, shall develop and put into place a quality control system. The Contractor's site superintendent will be responsible for implementing the quality control system to ensure that the construction activities are completed at a high level of quality and that the project schedule is maintained. Unless approved by the Engineer, the site superintendent shall be on-site at all times to oversee and direct its workers.

The Contractor and its subcontractors will follow and conform with all construction documents and the HASP. The Contractor shall be responsible for providing quality control, while the Engineer will provide quality assurance. The Engineer will immediately notify NYSDEC of any matters not in compliance with the HASP, construction documents, or schedule. Work will cease immediately if this should occur, and will not re-commence until the Engineer and the Contractor can resolve the matter.

5.1 RESPONSIBILITIES

The parties involved with this remediation project consist of the Owner, NYSDEC, NYSDOH, the Engineer, and the Contractor. The responsibilities and authority of each organization in the context of this project are described in this section.

5.1.1 Owner

Norampac is the owner of the subject property and at this time, will be responsible for the permitting, design, and construction of the project. Norampac is still attempting to obtain a signed cost-sharing agreement with NL Industries Inc. (NL), the previous owner which caused the contamination. The specific roles and level of authority between Norampac and NL will be determined when (and if) this agreement takes place. It will be the owner's (and/or previous owner's) responsibility to provide assurance to NYSDEC that the remedial work was completed in accordance with the construction documents.

5.1.2 NYSDEC

NYSDEC is the lead regulatory agency involved with this project, and will review and approve the construction documents. In this role, NYSDEC will also have the authority to accept or reject any change requests once the construction activities have commenced. NYSDEC will have direct lines of communication between both the Owner and the Engineer. Throughout and at the completion of the project, NYSDEC

will review the work and associated documentation to confirm that it was completely properly.

NYSDOH will also be involved with this project. NYSDOH's role may include verifying compliance with the CAMP and performing random inspections of the work activities.

5.1.3 Engineer

Tighe & Bond will act as the Project Engineer and will provide quality assurance personnel.

Tighe & Bond's main responsibility will be to provide engineering and technical support for Norampac during the remedial activities. In this role, Tighe & Bond will provide full-time site personnel to monitor and document the construction work and provide responses to the Contractor regarding any enquiries as they arise. Tighe & Bond will also be responsible for identifying and documenting any deviations from the contract documents. These issues will be brought to the attention of the contractor immediately and request that they be corrected.

Tighe & Bond's Project Manager will be responsible for reviewing any proposed changes to the construction documents. Upon review of the proposed revisions, the Project Manager will forward the requests to Norampac and NYSDEC for review and approval.

Tighe & Bond will provide quality assurance personnel to perform verification activities to verify that the work is carried out in conformance with the construction documents. The personnel will include a quality assurance officer and a quality assurance inspector. The quality assurance inspector will inform the quality assurance officer of any deviations from the construction documents. If should occur, the quality assurance officer has the authority to stop any construction work.

The quality assurance inspector's responsibilities are summarized as follows:

- Perform site inspections to ensure that the work is completed in accordance with the construction documents
- Verify that samples requiring testing are submitted to qualified laboratories
- Document the findings of all site inspections, tests, and monitoring activities
- Report deviations from the construction documents to the quality assurance officer, and
- Confirm that any corrective measures are implemented properly

The quality assurance officer's responsibilities are summarized as follows:

- Review the construction documents to ensure that they are clear and complete, such that the work can be carried out with minimal uncertainties
- Schedule quality assurance inspections
- Confirm that the monitoring equipment used is appropriate and has been properly calibrated
- Verify that the test data, inspection, and monitoring activities have been properly documented and that their results meet the requirements of the construction documents
- Provide Norampac with quality assurance updates, identify deficiencies and variances, and provide recommendations to correct such issues, and
- Ensure that any changes in testing equipment, personnel, or procedures do not negatively affect the inspection process

A Site Management Plan (SMP) will be developed and submitted with the Construction Close-out or Final Engineering Report, by Tighe & Bond. The SMP will include the OM&M Plan, the Soil/Fill Management Plan and Institutional Controls (Environmental Easements).

5.1.4 Contractor

The Contractor will be responsible for conducting the remedial activities in accordance with the construction documents. The Contractor's Project Manager will communicate and coordinate their work with Tighe & Bond's quality assurance officer and inspector.

5.2 SITE MEETINGS

Quality assurance meetings will be held on-site at least once per week. It is expected that the meeting attendees will generally include the Contractor's Project Manager, Tighe & Bond's quality assurance officer and/or inspector, Health and Safety Officer, and Tighe & Bond's Site Engineer. Representatives of NYSDEC and Norampac may also attend the meetings when required.

Additional meetings may be held, as deemed necessary, to discuss issues such as project progress and scheduling, unexpected site conditions causing problems and delays, and deviations from the construction documents. The quality assurance officer or inspector will take minutes of meetings and distribute them to all attendees.

A number of institutional controls are anticipated to be established as part of the completion of this RAWP. Certain restrictions and requirements will be imposed for different sections of the property. The planned institutional controls are summarized as follows:

- Any breach of the cover system (except the interior concrete floor), including for the purposes of construction or utilities work, must be replaced or repaired using an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. The repaired area must be covered with clean soil and reseeded or covered with impervious product such as concrete or asphalt
- Control of surface erosion and run-off of the entire property at all times, including during construction activities. This includes proper maintenance of the vegetative cover established on the property
- Site soil that is excavated and is intended to be removed from the property must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives
- Any excavated material is to be handled in accordance with the Soil/Fill Management Plan, developed by the Engineer, as part of the Site Management Plan (SMP)
- Soil excavated at the site may be reused as backfill material on-site provided it contains no visual or olfactory evidence of contamination, and it is placed beneath a cover system component in the confined area. Excavated soil at the site shall not be reused as backfill in the remediated area on the west side of the property (i.e. west of the capped containment area)
- Any off-site fill material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination.. The off-site borrow fill sources will be sampled at a frequency of one sample per 1,000 CY, unless the source is virgin soil. The sample should be analyzed for target compound list (TCL) volatile organic compounds (VOCs), semi-VOCs (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and target analyte list (TAL) metals plus cyanide. The soil will be acceptable for use as cover material provided that all parameters meet the NYSDEC recommended soil cleanup objectives included in TAGM 4046
- Prior to any construction activities, workers are to be notified of the site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with

all applicable local, state, and federal regulations to protect worker health and safety

- The Owner shall complete and submit to the Department an annual report by January 31th of each year. Such annual report shall contain certification that the institutional controls put in place, as specified in the restrictive covenants for the site, are still in place and functioning as designed, have not been altered and are still effective; that the remedy and protective cover have been maintained; and that the conditions at the site are fully protective of public health and the environment; and
- Environmental Easements will be implemented to limit the future use of the property to business, commercial, or industrial development, and will be included in the SMP

Tighe & Bond and Norampac will implement a Citizen Participation Plan in accordance with the requirements described in NYSDEC's "*Citizen Participation in New York's Hazardous Waste Site Remediation Program: A Guidebook*," dated June 1998. Tighe & Bond will coordinate with NYSDEC to produce a Fact Sheet to inform the local residents and businesses of the upcoming remedial work.

Norampac and Tighe & Bond will prepare a draft Fact Sheet and will submit to NYSDEC for finalization and approval. The Fact Sheet will provide a brief summary of activities conducted to date on the subject property and the proposed remedial activities outlined in this RAWP. The final Fact Sheet will be distributed by Norampac to the local public before field work commences.

Unauthorized parties, such as the general public and media, will not be allowed to enter the site during work hours. Should these parties have any questions regarding the work, additional copies of the Fact Sheet will be available on-site and will be provided to these individuals.

As part of the remedial activities, a number of groundwater monitoring wells will be properly decommissioned in the west and central undeveloped areas. These specific wells are summarized in Section 3.10. Upon completion of the construction work, Norampac will submit a groundwater monitoring plan to NYSDEC for approval. The number and location of monitoring wells will be included in the OM&M Plan. Although the groundwater in the area has not been impacted and it is not used for potable purposes, Norampac has agreed to implement a regular groundwater monitoring program for several years until NYSDEC determines that the program can be terminated.

The project schedule will comply with the legal agreement between NYSDEC and Norampac. The primary tasks to be completed in this project are summarized in order below:

- Submit RAWP - August 2006
- Receive approved RAWP from NYSDEC – January 2007
- Prepare bidder specifications and request bids – February 2007
- Prepare permit applications and obtain approvals - Winter 2007
- Conduct remedial activities, including soil excavation, consolidation, compaction, construction of cap in central area, capping rail siding, and backfill western portion of property – Spring/Summer 2007
- Commence groundwater sampling program - Fall 2007
- Terminate groundwater sampling program - Upon NYSDEC approval

As the construction work nears conclusion, Tighe & Bond and NYSDEC will conduct a thorough site inspection to verify that all work is completed in accordance with the construction documents. Any reasonable deficiencies or outstanding work identified by NYSDEC, will be documented and brought to the attention of the Contractor to take action.

Once the field work is completed to the satisfaction of NYSDEC, the Contractor will demobilize all its equipment and temporary facilities. Tighe & Bond will then prepare a draft report describing the field activities conducted throughout the project. The report will be prepared and signed by a Professional Engineer, stating that the work was performed in accordance with the RAWP and other construction documents. The draft report will be provided to NYSDEC for review. Tighe & Bond will then address comments from NYSDEC and issue the report in final form. This final close-out or Engineering Report will be prepared as per DER-10 Technical Guidance.

Tighe & Bond prepared this Remedial Action Work Plan (RAWP) for 3241 Walden Avenue, Depew, New York, on behalf of Norampac, Inc., as a voluntary action in accordance with the New York State Department of Environmental Conservation Brownfield Cleanup Program.

The proposed activities in this RAWP are based upon the available information collected to date about the subject property. As such, Tighe & Bond cannot be held responsible for environmental conditions at the property that were not apparent from the available information.

The scope of this report is limited to the matters expressly covered. This report is prepared for the sole benefit of Norampac, Inc. and may not be relied upon by any other person or entity without the written authorization of Tighe & Bond. Any use or reuse of this document, by parties other than Norampac, Inc., is at the sole risk of those parties.

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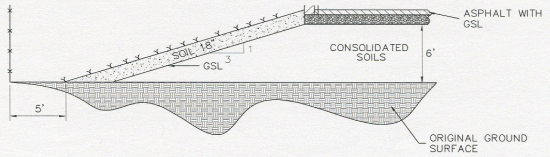
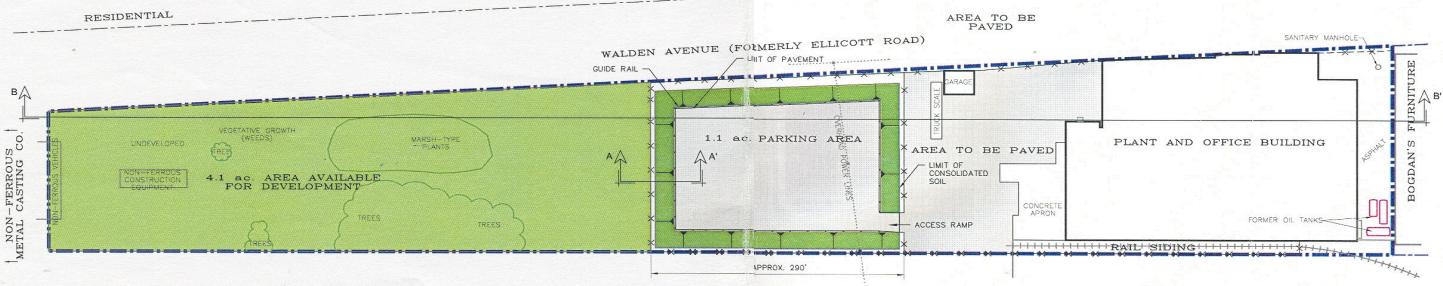
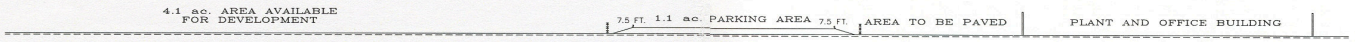
APPENDIX A

SITE DRAWING



SECTION A-A'





SECTION B-B'

HORIZONTAL AND VERTICAL SCALES 1:1

LEGEND:

PROPERTY BOUNDARY

FENCE

60 0 60 120

SCALE IN FEET

Scale:	1" = 60'
Digitized By:	C.T.R.
Drawn By:	P.S.G.
Checked By:	C.T.R.
Project Mgr.:	C.T.R.
Project No.:	2002-927-00
Dwg No.:	2002927-07
Issued:	

ALTERNATIVE #2
ON-SITE MANAGEMENT

PLATE:

Advanced GeoServices Corp.
Chadds Ford Business Campus, Rts. 202 & 1
Brandywine One, Suite 202
Chadds Ford, Pennsylvania 19317

J:\Norampac\drawings\2002-927-00\2002927-07.dwg

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