REMEDIAL ALTERNATIVES ANALYSIS (RAA) AND REMEDIAL ACTION WORK PLAN (RAWP)
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY
SOUTHERN PARCEL
JOHNSON CITY, NEW YORK
BCP SITE NUMBER C704048

by

Haley & Aldrich of New York
Rochester, New York

for

New York State Department of Environmental Conservation
Kirkwood, New York

File No. 30603-011
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New York State Department of Environmental Conservation
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Attention: Gary Priscott

Subject: Remedial Alternatives Analysis (RAA) and
Remedial Action Work Plan (RAWP)
Former Endicott-Johnson Ranger Paracord Facility – Southern Parcel
Johnson City, New York
BCP Site Number C704048

Ladies and Gentlemen:

Haley & Aldrich is pleased to submit this RAA and RAWP for the Ranger Paracord Southern Parcel. This work is being pursued under a Brownfield Cleanup Agreement (BCA) between Brownfield Cleanup volunteer Stella Ireland Road Associates, LLC ("Stella"), and the New York State Department of Environmental Protection (NYSDEC), which was executed by NYSDEC on 13 September 2005 for the above referenced site ("the Site").

The recent work summarized herein has been conducted in the context of planned retail redevelopment activities at the Site. The proposed Remedial Actions will be conducted concurrently with construction related to the retail development.

This document presents:

- A brief summary of the previous remedial investigations and more recent Supplemental Remedial Investigations conducted to-date, as background information.
- A description of the remedial goals for the Site.
- A description of remedial action alternatives and an evaluation of the alternatives in accordance with the criteria outlined in 6 NYCRR § 375-1.8 (f).
- The Remedial Action Work Plan.

Please do not hesitate to contact us should you have any questions or require additional information.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

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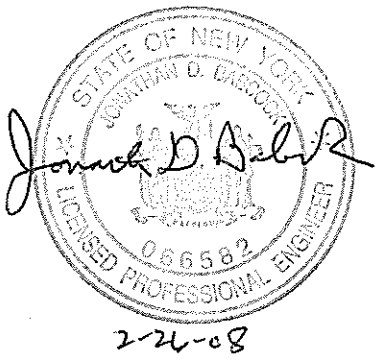

2-26-08

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Attachment: "Remedial Alternatives Analysis (RAA) and Remedial Action Work Plan (RAWP) Former Endicott-Johnson Ranger Paracord Facility. Johnson City, New York. BCP Site Number #C7074048"

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1. INTRODUCTION

1.1 Project Background

The work described herein is being conducted under a Brownfield Cleanup Agreement (BCA) between volunteer Stella Ireland Road Associates, LLC ("Stella"), and the New York State Department of Environmental Conservation (NYSDEC), which was executed by NYSDEC on 13 September 2005. Stella and the NYSDEC entered into the BCA under NYSDEC's Brownfield Cleanup Program (BCP).

The Former Endicott-Johnson Ranger Paracord property is a 28-acre parcel[1] located at CFJ Boulevard and Lester Avenue in Johnson City, New York (see Figure 1, Project Locus). Stella Ireland Road Associates, LLC purchased the entire Ranger Paracord facility ("the facility") from MHC Inc., ("MHC") in 2004 and conducted investigation and remediation at the northern 12-acre portion[2] known as the "Gannett parcel"under the BCP. The Gannett parcel was then sold to Gannett Satellite Information Network, Inc. ("Gannett"), and the parcel has since been redeveloped into a printing press facility for Gannett.

The Gannett parcel and an associated utility corridor known as the "NYSEG-Related Areas" were investigated and remediated under a separate BCA in conjunction with redevelopment. Stella, the Broome County Industrial Development Agency, and a Gannett entity received a Certificate of Completion for the Gannett parcel, with the exception of the "NYSEG-Related Areas," from the NYSDEC on 22 December 2006.[3] The remaining portion of the Ranger Paracord property, as shown on Figure 2, is known as the "Southern Parcel." This report addresses additional investigation activities associated with only the Southern Parcel. The Southern Parcel will be referred to herein as "the Site," and is shown on Figure 1, the Project Locus. The limits of the Southern Parcel are shown on Figure 2, Site Plan.

The recent investigations and proposed remedial work described herein have been/will be conducted in the context of a planned retail redevelopment at the Site.

1.2 Site History

Site history and results of past subsurface investigations were the basis for the scope of the Supplemental Remedial Investigation and are the predicates for Site Remedial Action Alternatives discussed in this report. Summary information for these elements is presented below. Documents and records reviewed are listed in the References section of this report.

Past use of the Site was assessed through a review of Sanborn Maps, aerial photographs, municipal records, and previous reports by Dames & Moore.

The Site area was developed with residential and industrial properties and railroad tracks as early as 1918. The Endicott-Johnson Corporation Shoe Manufacturing facility occupied the Site (and the adjacent Gannett Parcel) as early as 1918 through at least the late 1940s. Specific building histories as derived from the site history review and from Dames & Moore's interviews of former Endicott-Johnson employees follows. The former locations of the historical buildings are noted on Figure 2.

1 The actual size of the 28-acre parcel referred to herein is 27.41 acres.
2 The actual size of the 12-acre Gannett parcel referred to herein is 11.43 +/- acres.
3 NYSDEC and Stella anticipate that the NYSEG-Related Areas will be incorporated in the Certificate of Completion ultimately issued for the Southern Parcel.

- The Zing building was reportedly originally constructed in 1933 for use as the Paterson Farmer's Market. Historical sources indicate that the building was used for shoe manufacturing after the Farmer's Market closed in the 1970s. According to Dames & Moore, the building was vacated in 1989 and then used for storage.

- The Challenge building was originally constructed in 1919 as a fiberboard mill building. According to Dames & Moore, the fiber mill process entailed reprocessing corrugated cardboard and paper stock via pulverization and pressing. Additionally, Dames & Moore indicated that "leather re-tan operations" (drying leather shoe pieces) were conducted on the first and second floors of the building beginning in 1969 through the 1970s. The building was reportedly then used for miscellaneous storage.

- The Powerhouse building was originally constructed in 1912 as the power source for the Ranger Paracord complex and other offsite facilities. As reported by Dames & Moore, the building originally had three coal-fired boilers, later replaced in the 1970s by two No. 6 Fuel Oil boilers supplied by two 210,000-gallon aboveground storage tanks (ASTs). A switch-gear fire reportedly occurred in the second floor switch room in the 1970s. The powerhouse stopped serving as a power source in the late 1980s.

- The Mechanical building was originally constructed in 1923 and was originally referred to as the "Rubber Reclaim" building. Prior to the 1970s, scrap rubber such as old tires and rubber stock were brought to the building and recycled to produce a homogenous rubber, which was used to produce the "paracord" shoe sole. Later, the building was used as the service shops; vehicle maintenance shop and security division for all of the Endicott Johnson facilities. According to Dames & Moore, the building was vacated in 1990 and then was used for storage.

- The Pavilion was constructed in 1922 as a community dance hall, and was later leased out as a catering hall.

- The Pagoda (Pump House) building (depicted as "O" on Figure 2) was constructed around an on-site water supply well. The actual date of construction is unknown.

2. PREVIOUS SITE INVESTIGATIONS

2.1 Summary of Investigations Completed by Others

Subsurface explorations and chemical testing data obtained during previous assessments by Dames & Moore, MFG, Inc. ("MFG"), and Camp Dresser & McKee (CDM) indicated that elevated levels of a limited number of chemical compounds existed in soil at the Site. A Phase II Environmental Site Assessment and Cleanup Plan prepared by Dames & Moore in 1997 indicated that soils in several areas of the Southern Parcel contained elevated levels of Polycyclic Aromatic Hydrocarbons (PAHs), metals, and gasoline-related constituents. In the Cleanup Plan, Dames & Moore identified four areas within the Southern Parcel where remedial efforts were recommended ("Areas of Concern"), including soil removal and, in some cases, subsequent groundwater monitoring. (Two additional cleanup areas identified by Dames & Moore, known as "Area I" and "Area J," are located within the NYSEG-Related Area along the southern Site boundary, and were addressed during remediation of the Gannett Parcel.) The general locations of Dames & Moore's identified Areas of Concern are labeled as "I" through "N" on Figure 2. Area O, as shown on Figure 2, represents a water supply well that will be decommissioned as part of Southern Parcel work activities. Approximate locations of Southern Parcel explorations performed previously by Dames & Moore, MFG, and CDM are also shown on Figure 2.

With guidance from NYSDEC and NYSDOH, MFG completed additional subsurface investigations on behalf of MHC, following Dames & Moore's 1997 Cleanup Plan. Although the majority of MFG's explorations focused on the Gannett parcel, several explorations were conducted by MFG on the Southern Parcel in the vicinity of a now-dismantled electrical substation.

Subsequent to MFG's evaluation, CDM was engaged by Stella (then a prospective purchaser) to further review the data and develop recommendations for a revised redevelopment plan. Based on their review, CDM developed recommendations that revised the removal approach for the cleanup areas identified by Dames & Moore, and instead recommended the concept of in-place containment. CDM's approach was based on the following rationale: 1) the apparent absence of groundwater impacts; 2) the apparent absence of increased health risk; 3) the apparent absence of hazardous waste; and 3) the ability of site development to avoid excavation of the affected soil residuals and to contain the soil contamination in place.

For a more in depth discussion of the Site investigations conducted previously by others, refer to the Supplemental Investigation Work Plan dated October 2004 and the Supplemental Remedial Investigation Report dated July 2007 by Haley & Aldrich.

2.2 Summary of the Supplemental Remedial Investigation

A Supplemental Remedial Investigation (RI) was completed by Haley & Aldrich in December 2006 and follow-up RI activities requested by NYSDEC were completed by Haley & Aldrich in December 2007. The results of those investigations are included in the Supplemental Remedial Investigation (RI) Report dated July 2007 (which included a Conceptual Site Model), and the Revised Supplemental Remedial Investigation Addendum dated January 2008. The results of the soil, groundwater, and exposure assessments are summarized below. Summary tables of the soil and groundwater data collected during the remedial investigations are included as Tables 1 through 6.

Table 1 contains the New York State Soil Cleanup Objectives Commercial Use Criteria (SCOs), which is included in 6NYCRR § 375-6.8(b), and the NYSDEC Technical and Operational

Guidance Series Ambient Water Quality Standards and Guidance Values for water class GA (TOGS 1.1.1.), for comparison to the soil and water quality data presented in Tables 2 through 5.

Based on the results of the Supplemental Remedial Investigations, the compounds of potential concern at the Site have been identified as metals (arsenic, lead, copper) and PAHs. A summary of the investigations and results is as follows:

2.2.1 Soil

2.2.1.1 Areas of Concern

In order to collect data at the limits of the "Areas of Concern" identified by Dames & Moore, Haley & Aldrich installed via direct push methods sixteen (16) soil borings and collected forty-one (41) soil samples for various heavy metals and polycyclic aromatic hydrocarbons (PAHs) in areas L, M, and N (Figure 2) in December 2006. Haley & Aldrich also coordinated with the Broome County Landfill, and analyzed samples for additional compounds to obtain landfill approval for disposal of contaminated soil. Three (3) of the sixteen borings and samples were obtained at the same location as previous Dames & Moore boring locations and were analyzed for TCLP metals per the Broome County Landfill's request.

As stated in the Supplemental Remedial Investigation Report, analytical results indicated that the compounds detected in areas L, M, and N did not appear to be originating from distinct point sources, and were found in fill that is ubiquitous throughout the Site. The report concluded that the compounds are likely attributable to materials in the fill, and the exceedances are not localized as originally indicated by Dames & Moore.

2.2.1.2 Conceptual Site Model

A Site-wide assessment of soil analytical data was conducted in order to further understand the distribution of arsenic-impacted fill at the Site. Haley & Aldrich also reviewed historical and recent soil boring logs to evaluate a potential relationship between certain types of fill materials and the presence of compounds at concentrations exceeding SCOs (refer to the Conceptual Site Model dated July 2007 by Haley & Aldrich). Arsenic was used as a reference compound as it was found most prevalently onsite and in the same locations as other heavy metals encountered above SCOs.

The Conceptual Site Model concluded that the SCO exceedances detected at the Site appear to be related to the presence of ash and other debris dispersed in the fill in those certain areas of the Site.

A summary of the data analysis presented in the Conceptual Site Model is as follows:

- Of the 125 samples analyzed for arsenic, 43 exhibited concentrations of arsenic in excess of the NYSDEC SCO value of 16 mg/kg. This translates to approximately 34% of the samples exhibiting exceedances, with only 8% being exceedances of more than one order of magnitude above the SCO.

- All of the samples with soil data in excess of SCOs fell within boundaries of fill at the Site, with the exception of one sample in one boring. This evidence suggests that contaminants are present throughout the fill, and not likely present as a result a particular point source. Furthermore, it suggests that the soil contaminants are contained within the fill and not migrating into natural material.

- A more detailed assessment of the potential relationship between specific ash and cinder fill materials and SCO exceedances was completed based on a total of 54 borings with SCO exceedances. Logs were available for only 47 of the 54 borings with SCO exceedances. Based on a review of the 47 logs for the borings with SCO exceedances, ash and/or cinders were observed and recorded in 26 of the borings at the same depths as the sample that exceeded SCOs, and 31 of the 47 had ash and/or cinder observed within the boring. It is possible that ash and cinders were encountered in additional borings (in as many as 47 of the total 54 borings), given that the specific type of debris in the fill was not documented in the boring logs from Dames & Moore's 1995 explorations. Additionally, ash and cinders may have been observed in the borings that were not logged considering that cinders were documented in surrounding borings.

- Therefore, at least 55% (26 out of 47) and as much as 87% (47 out of 54) of the SCO exceedances can be attributed to the presence of ash and cinders associated with soil across the Site. It is possible that the percentages may be greater than reported above, but confirmation cannot be obtained due to variability in boring log descriptions.

2.2.2 Groundwater

Groundwater sampling was conducted at one temporary monitoring well in Area K (Figure 2) to evaluate the potential for impacts from gasoline-related volatile organic compounds (VOCs) related to a former 10,000-gallon gasoline underground storage tank (UST). In addition, groundwater sampling was conducted in November 2007 in areas L, M, N, and near two test pits (TP-1 and TP-2) that were installed as part of a May 2007 geotechnical evaluation completed by Hawk Engineering. The groundwater samples were analyzed for VOCs, PAHs, and Metals. Samples from the two wells near the test pits were analyzed for semi-volatile organic compounds (SVOCs). The results were compared to TOGS 1.1.1.

VOCs and PAHs/SVOCs were not detected in the groundwater at concentrations exceeding TOGS 1.1.1. Metals were not detected above TOGS 1.1.1. with the exception of iron, sodium, and one low level detection of selenium. Iron and sodium are naturally occurring in the subsurface, and were detected in all of the wells sampled, indicating that there is not a point source issue at the site and the presence of these metals is more likely a result of geologic (soil and rock type) influence rather than a localized anthropogenic source. Selenium is also a naturally occurring metal, and thus this single low detection of selenium is not an indication of a significant contamination source. Furthermore, though the turbidity of each metal sample submitted to the laboratory was recorded below 50 NTU, the samples were not filtered in the field or laboratory, and it is possible that detections of metals above TOGS 1.1.1. are a result of fine sediment entrained in the samples.

2.2.3 Exposure Assessment

The compounds of concern at the Site (metals [arsenic, lead, copper] and PAHs) have the theoretical potential to create health impacts in humans as a result of exposure from ingestion, dermal adsorption, and/or inhalation of fugitive dust. Refer to Appendix A-1 for a matrix summarizing the exposure potential for various compounds in the three main media (soil, groundwater, air) at the Site.

In addition, the Agency for Toxic Substances and Disease Registry (ATSDR) reports that metals such as lead, arsenic, and copper are "relatively immobile." Metals in general tend to remain bound in solid matrices in soil or sediment. Because of these tendencies, exposure from affected soil would tend to occur only as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil. Additionally, PAHs, as a group, are strongly hydrophobic, and therefore sorb to organic-based soil particles. Due to this strong sorption to soil, PAHs do not tend to dissolve easily into or migrate with groundwater. Exposure from affected soil would tend to occur only as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

It is anticipated that the proposed in-place cover remedy (See Section 6 Below) will preclude or greatly restrict exposure to the soils, thereby preventing a complete exposure pathway.

3. REMEDIAL PROJECT GOALS

The overall goal of the Brownfield Cleanup Program activities at the Site is to restore the property for beneficial reuse via commercial redevelopment in a manner that is protective of human health and the environment.

The remedial project goal is to eliminate or mitigate, to the extent feasible, significant threats to public health and the environment through the proper application of scientific and engineering principles, given the intended use of the Site.

One of the objectives of the remedial investigations described in Section 2 was to provide sufficient and adequate data for evaluation of remedial alternatives. The Data Usability Summary Reports (DUSR) and Quality Assessment/Quality Control (QA/QC) summaries contained in the Supplemental Remedial Investigation Report and Supplemental Remedial Investigation Addendum confirm that the data sets generated for the Site are usable for this purpose.

The data presented in Supplemental Remedial Investigation Report and Supplemental Remedial Investigation Addendum confirm that the compounds detected at the Site are there due to the presence of fill that is ubiquitous at the Site. Given this, the remedial goal is to reduce or eliminate exposure to the contaminants present in fill that are above SCOs.

4. DEVELOPMENT AND ANALYSIS OF REMEDIAL ACTION ALTERNATIVES

4.1 Possible Remedial Action Alternatives

Based on the nature and extent of contamination at the Site and the previously described objectives for the Site, the following five potential remedial action alternatives have been identified:

1. No Action

2. Treatment of fill materials to reduce contaminant concentrations to values less than SCOs.

3. Removal and offsite disposition of "hot spots," or areas with the highest levels of contamination, and/or those areas where contaminants exceed SCOs.

4. Removal and offsite disposition of all fill materials currently present onsite (*unrestricted use alternative*).

5. Cover of fill materials with clean material (defined in Section 6.5 below), building, and/or asphalt.

It is assumed that all five alternatives would require establishment of some form of institutional and engineering controls. These controls could include: an environmental easement restricting site use (for example, permitting only industrial or commercial uses and prohibiting extraction of onsite groundwater) and requiring maintenance of the approved remedy; and/or a Site Management Plan (SMP) will be required to manage future disturbances of Site soils.

4.2 Initial Evaluation of Alternatives

The applicability and feasibility of each of the five suggested remedies was initially evaluated qualitatively in the context of the project goals. Three of the five remedies were initially rejected. The rejected remedies and the rationale for their rejection are described as follows:

4.2.1 No Action

"No Action" would include no remediation or engineering controls. In lieu of remediation and engineering controls, institutional controls, which would include an environmental easement restricting site usage and prohibiting use of site groundwater would be implemented. Additionally, Site and Soils Management Plans would be implemented for management of soil during building expansion and earthwork.

While this alternative restricts the ingestion exposure pathway with respect to groundwater, it does not restrict ingestion, dermal absorption, or inhalation exposure to either onsite workers or future occupants with respect to soil and particulates in air (See Appendix A-1). Thus, given that the exposure pathways would not be adequately limited or removed, the "No Action" alternative was rejected.

4.2.2 Treatment of Onsite Fill Materials

Treatment of onsite fill materials could be conducted using a combination of in-situ stabilization (metals) and oxidation (PAHs). Following a complete treatment program, the metals would be stabilized, and the PAHs would be reduced to the extent practicable. Additionally, an environmental easement restricting site usage and prohibiting the use of groundwater would be implemented. Additionally, Site and Soils Management Plans would be implemented for management of soil during building expansion and earthwork. As a result, the exposure pathways (inhalation, dermal contact, and ingestion) would be reduced by rendering the metals immobile and decreasing the PAH concentrations onsite.

The treatment alternative is neither in accordance with the project goals nor the principal objective of the Brownfield Cleanup Program, which is to remediate "Brownfield" sites for reuse and redevelopment. Due to the immense cost and length of time required to treat all of the fill material on the Site, this would effectively prevent the redevelopment of the Site. Because there are no known point source locations of contaminants, all fill materials would need to be treated. According to typical industry cost ranges for stabilization and oxidation treatment technologies, the costs for treatment of this nature at the Site would range from $30 and $90 million.

Due to the length of time required to treat the soil, potential exposure pathways would continue to be present over the short-term. Furthermore, it is not anticipated that through treatment, all contaminants within the fill would be removed to below SCOs. While PAHs can be sufficiently removed via oxidation, metals cannot be removed, but would be bound within the soil. However, considering that the metals of concern at the Site are low mobility metals, and there is no evidence suggesting that the current contaminants are leaching into groundwater; stabilizing the metals would afford insignificant additional mitigation against groundwater contamination by metals. While these measures will address potential exposure pathways (Appendix A-1), they are not cost effective.

As per the reasons described above, the treatment alternative was rejected.

4.2.3 Removal of “Hot Spot” Soils

The removal of “Hot Spots” soils would consist of removing areas of fill materials where the highest concentrations of compounds of concern were present. Additionally, an environmental easement restricting Site usage and prohibiting usage of groundwater would be implemented. A Site and Soil Management Plan would also be implemented to manage soil during building expansion and earthwork.

The Hot Spot removal remedy was previously recommended by Dames & Moore as a result of their Phase II site investigations. However, as evidenced by the Supplemental Remedial Investigations and Conceptual Site Model completed by Haley & Aldrich, "hot spots" do not exist at the Site because soil contamination is ubiquitous throughout the Site fill. Given the absence of "hot spots," this method is not feasible, and the only option for removal is to remove all fill materials from the Site.

4.3 Final Evaluation of Alternatives

Further evaluation was conducted for the two remaining alternatives that were not initially rejected: Removal of All Fill Materials and Cover of Fill Materials.

Pursuant to Draft DER-10 Guidance and to 6NYCRR § 375, nine criteria are used to evaluate how the proposed remedy would be protective of public health and the environment:

1. Overall Protection of Human Health and the Environment
2. Compliance with Standards, Criteria and Guidance (SCGs)
3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility or Volume
5. Short-Term Effectiveness
6. Implementability
7. Cost
8. Community Acceptance
9. Land Use

As outlined in Draft DER-10 Guidance section 4.3 and in 6NYCRR § 375, Section 1.8(f), the applicant must evaluate remaining alternatives in comparison to the first seven criteria. Refer to Appendix A-2 for a summary of the evaluation of the two remaining alternatives - Removal of All Fill Materials and Cover of Fill Materials - compared to the criteria. A summary is as follows:

4.3.1 Removal of All Urban Fill Materials (Track 1 - Unrestricted Use)

This remedy, if completed, would result in the Site achieving Track 1: Unrestricted Use, as defined in 6NYCRR § 375 -3.7 (e)(1).

With respect to Overall Protection of Human Health and the Environment, the source of contamination would be removed from the Site with removal of all fill materials, resulting in incomplete exposure pathways (contact, inhalation, ingestion). Additionally, by removing the overall source of contamination, Standards, Criteria, and Guidance (SCGs) would be met. Though the compounds of concern at the Site are relatively immobile (PAHs, and low solubility metals), removing all fill materials would further reduce the toxicity, mobility, and volume of those compounds at the Site.

Because this remedy requires the excavation and offsite disposition of all fill materials, implementation of this remedy would take an immense amount of time and would occur at a great cost. It is anticipated that completion of this remedy would require approximately one to two years, and would cost at least several million dollars depending on landfill tipping fees and on the cost of importing clean fill. In addition, while a community air monitoring plan and dust control measures would be implemented as part of this remedy, this remedy would result in a large amount of soil disturbance both from excavation and truck traffic. Given the large amount of soil disturbance, there is potential for adverse impacts to Site workers and the surrounding community in the short-term from exposure to fugitive dust.

With respect to the development schedule for the Site, this remedy cannot be completed concurrently with development, therefore given the time required to complete it, this remedy would discourage and inhibit redevelopment of the Site and eliminate any incentive to complete the BCP remedy. In addition, it should be noted that completion of this method would necessitate large volumes of replacement fill, and would consume substantial volumes of offsite landfill capacity.

4.3.2 Cover of Fill Materials (Track 4 - Restricted Use)

This remedy, if completed, would result in the Site achieving Track 4: Restricted Use as defined in 6NYCRR § 375 -3.7 (e)(4).

Fill materials at the Site would be covered beneath a Demarcation Layer and clean cover (defined in Section 6.5 below), pavement, or the proposed building foundation. Clean cover material will be used as geotechnical surcharge within the building footprint and then re-graded across the Site to achieve necessary site grades. A minimum of 1-ft. of clean cover material will be placed at the Site, above the Demarcation Layer. In most areas, greater than 1-ft. of clean cover material will be placed to achieve Site grades, and 8 ft. of material will remain within the building footprint, which will preclude construction workers from encountering existing fill soils during construction. With the exception of the landscaped areas, the Site would be covered with either building foundation or asphalt paving.

The method described above would cover existing Site fill materials to eliminate exposure via inhalation, ingestion, and contact. Furthermore, though the compounds of concern at the Site are relatively immobile (PAHs, and low solubility metals), their mobility would be further inhibited by the presence of the cover system.

This remedy would provide both short and long-term effectiveness. Over the short-term, this remedy can be completed concurrently with site redevelopment and within several months of construction commencement. There is minimal soil disturbance required to complete this remedy. With the exception of limited areas of excavation that may be required as per construction specifications, it is not anticipated that large amounts of soil will be disturbed, nor large amount of particulates via dust being generated. In addition, during construction, dust control measures will be implemented (and, if necessary, a community air monitoring plan) to protect the workers and surrounding community.

Over the long-term, institutional controls will be implemented to supplement the engineering control (cover system) that will include a Site Management Plan as well as an environmental easement. The Site Management Plan will ensure long-term maintenance of the Site with respect to upkeep of the cover system and management of onsite soils. The environmental easement will restrict usage of the site to the purposes for which it will be redeveloped for (commercial use), will prohibit use of the groundwater. Provided the protective cover is maintained, and the environmental easement is adhered to, significant threat and exposure pathways will continue to be eliminated.

With respect to implementability and cost, as stated above, this remedy can be implemented concurrently with Site redevelopment. Special technologies will not be required to implement this remedy. The cost to implement this remedy is also relatively low ($10,000 to $50,000 for demarcation layer materials and clean fill) with respect to the other alternatives. In addition, the cost of the pavement portion of the cover system will be subsumed with overall project construction costs.

5. RECOMMENDED REMEDY

The recommended remedy for the Ranger Paracord Southern Parcel is Cover of Fill Materials. The rationale for this recommendation is as follows:

- Based on discussions with the NYSDEC and NYSDOH, this approach has been proposed throughout the investigation phases of this project and generally considered by all parties to be the most appropriate course of action. Furthermore, the Gannett Parcel adjacent to the north was remediated using a similar remedy. The Gannett Parcel received a Certificate of Completion from the NYSDEC on 21 December 2006.

- Given the proposed use of the property for a commercial shopping center, the alternatives analysis presented in Section 4, and considering that the onsite groundwater has not been impacted by the contaminants present in the fill, it is apparent that the unrestricted use option (removal) is not likely to be significantly more effective in protecting human health and the environment than the restricted use option (cover of fill materials).

- The selected remedy will be effective in protecting human health and the environment over the long and short-term. Additionally, it is cost effective and easily implemented. While the option for unrestricted use also is protective of human health and the environment, due to the very large cost and time required to remove all of the urban fill from the site, the invasive nature of such work causing the release of particulates, heavy truck traffic, and the necessity to bring onto the Site considerable amounts of outside fill, removal of fill materials is not practical considering the intended use of the Site.

- The selected remedy can occur concurrently with Site redevelopment, while the unrestricted use option would require approximately one to two years or more to complete independent of Site redevelopment. The unrestricted option would preclude site redevelopment, which is inconsistent with both the project goals and goals of the Brownfield Cleanup Program.

The proposed Remedial Action Work Plan for the Ranger Paracord Site that is aligned with the selected Cover of Fill Materials remedy is included in the Section 6 below.

6. REMEDIAL ACTION WORK PLAN (RAWP)

This RAWP outlines the necessary actions that will be taken at the Site that will be protective of human health and the environment, while also meeting the project goals as defined in Section 3 above. The key actions will be placement of a demarcation layer across the entire site, and application of clean soil cover outside buildings and paved areas (see Sections 6.2 and 6.4). In order to achieve the project goals and implement the selected remedial alternative, the following items will occur in conjunction with Site redevelopment.

6.1 Site Work Related to New Development

Site work related to new development at the Site and building construction consists of four components:

1. Demolition and removal of existing foundations and utilities – For details regarding the removal of the existing utilities and foundations onsite, refer to the Demolition Plan (C-1) included in Appendix B. In general, existing pipelines to be replaced or abandoned will be abandoned in place by filling the pipelines with lean concrete, flowable fill, or other equivalent measure, thus minimizing excavation into existing site fill. Where these utilities are beneath the future building footprint, they will be removed and the excavations will be backfilled.

   As currently planned, concrete slabs, foundations, and conduits will be broken up with a hoe ram and the concrete will be crushed for re-use as fill on site. The re-used material will be placed above the water table and beneath the demarcation layer.

2. Site grading and drainage – For details regarding plans for site grading and drainage, refer to the Grading and Drainage Plan (C-3) included in Appendix B. In terms of grading, there will be some existing material excavated from the western portion of the site, there will be approximately four feet of fill placed in the central portion of the site, and there will be approximately eight feet of fill placed in the eastern portion of the site beneath the building footprint. Additionally, approximately one foot of existing material will be cut from the former rubber storage area in the southeast corner of the property, to allow subsequent placement of the demarcation layer and clean soil cover, while maintaining existing grades. Spoils from the areas of cut and from trench excavations are planned to be placed in the central portion of the site, beneath the demarcation layer.

3. Utility installation – For details regarding the location and specifications for new utilities planned for the site, refer to the Utility Plan (C-4) included in Appendix B. New utility trenches will be backfilled with clean, imported soil materials. As currently planned, trench spoils will be re-used on site to meet grading requirements outside building footprints. In general, storm drains and sanitary sewers will be beneath the demarcation layer; gas, electric and telecommunications lines will be above the demarcation layer, and water lines may be either beneath or above the demarcation layer.

   For trenches which are excavated using sloped side walls, rather than by using structural support of trench walls, the demarcation layer will be placed to line the trench. If site soils are used to backfill the trench, a horizontal demarcation layer will be placed on the topmost surface of the on-site soils. Due to the generally deep placement of storm drains and sanitary sewers, trench boxes or other trench support will likely be needed, making it impractical to line the trench with a demarcation layer. Therefore horizontal demarcation layers will be placed within the backfill of those

utility trenches on the topmost surface of any on-site soils used to backfill the trench. Regardless of the site backfill material used, the horizontal demarcation layer shall be at least one foot below the finished grade, and clean fill shall be placed above the demarcation layer.

4. Foundations and utilities beneath buildings and miscellaneous above-ground structures. After placement of the demarcation layer and overlying clean soil fill to meet subgrade elevations, excavations will be completed for installation of building foundations, utilities beneath the buildings and miscellaneous structures such as signs, fences, bollards, and light poles. In these cases, in some areas of the site, construction of these items may require excavation to depths past the demarcation layer. Penetration or removal of the demarcation layer at these locations will not alter the effectiveness of the demarcation layer as an engineering control. The demarcation layer will remain in place adjacent to these penetrations, and the area of penetrated or removed demarcation layer will be occupied by a structure that would preclude future excavations at those locations.

These construction components involve the excavation of existing fill materials (either prior to or following placement of the demarcation layer), and the importing of additional soil and materials from offsite sources. These earthwork activities will require soil management according to the Construction-Related Excavation Work Plan, which is provided in Appendix B. Haley & Aldrich will be onsite to observe and document the soil management measures associated with these activities.

6.2 Demarcation Layers

Before site improvements are constructed (building, pavement, landscaping – shown on Figure 4), a Tensar BX-1100 geotextile fabric (or approved substitute) will be placed across the entire Site. The fabric will serve as a "Demarcation Layer," which provides a visible distinction between cover material and pre-existing Site fill beneath it.

In addition to the fabric that will be placed across the entire site, the contractor will place a blaze orange construction fence (or approved substitute) as an additional Demarcation Layer in all landscaped areas to be constructed. The construction fence (or approved substitute) will be placed in rows, with gaps between rows not to exceed one foot, consistent with the NYSDEC-approved placement at the adjacent Gannett Parcel.

Construction drawings will reference the Demarcation Layer requirements as shown in the construction details on Figure 4. Haley & Aldrich will provide monitoring onsite during installation of the Demarcation Layers to observe and document contractor activities.

6.3 Placement of Geotechnical Surcharge Material

Subsequent to placement of the fabric Demarcation Layer across the Site, geotechnical surcharge material will be imported to the Site to prepare the building footprint for construction. Current plans call for approximately 12 ft. of surcharge material to be placed within the building footprint for a period of approximately 4 weeks. Refer to Figure 4 for the proposed building location.

6.4 Cover System

Clean cover includes soils, gravel, stone and/or other construction materials such as brick or concrete with contaminant levels that are equal to or below NYSDEC standards for unrestricted

use as identified in 6 NYCRR § 375-6.8(a). Cover can also include a building foundation and/or asphalt or concrete paving.

6.4.1 Clean Cover Material

The developer has proposed to import native quarry material (unprocessed run-of-bank gravel and processed Item 4 material) for surcharge purposes. The proposed source of the material is located on Route 12 in Chenango, New York, and is owned and operated by the earthwork contractor, Gorick Construction.

On 6 October 2004, in conjunction with the Gannett parcel redevelopment, Haley & Aldrich collected a representative soil sample from the same proposed source (sample identification "Gorrick Pit"). The "Gorrick Pit" sample was analyzed for VOCs, SVOCs, PCBs, and metals in order to evaluate whether it would be suitable for placement above the Demarcation Layer at the Gannett parcel. Analytical results, summarized herein in Table 7, indicated that compounds were not detected above SCOs. Accordingly, the material meets the definition of clean cover per 6 NYCRR § 375-6.8(a), and the developer plans to re-use the surcharge material as clean cover at the Site.

Subsequent to surcharging activities, approximately 4 ft. of the 12 ft. of surcharge material will be re-graded across the Site to achieve necessary site grades and to serve as clean cover material. As specified in 6 NYCRR § 375-3.8(4)(b), a minimum of 1-ft. of clean cover material will be placed at the Site, above the Demarcation Layer. In most areas, greater than 1-ft. of clean cover material will be placed to achieve Site grades, and 8 ft. of material will remain within the building footprint, which will preclude construction workers from encountering existing fill soils during construction.

Alternate sources of clean cover material are not currently proposed; however, Haley & Aldrich will provide documentation to the NYSDEC that clean cover material that is brought in from other offsite sources, if any, is acceptable for use at the Site.

6.4.2 Building Foundation and Pavement

Pursuant to 6 NYCRR § 375-3.8(4)(b), cover system components may also include a building foundation and asphalt or concrete paving. Accordingly, the building foundation and pavement will serve as components of the Site's cover system.

Subsequent to placement of clean cover materials described in Section 6.5.1, paving materials will be placed as shown on Figure 4.

6.5 Administrative/Institutional Controls

Administrative controls (sometimes referred to as "institutional" controls), including property use restrictions, have been identified by the NYSDEC for conclusion of the Brownfield Cleanup Agreement process. The following administrative controls are recommended to be part of the Site remedy:

- No use of groundwater without prior approval of NYSDEC.
- Preparation and implementation of a Site Management Plan, which will include:
  - A soil management plan to apply to potential future building expansion or subsurface work within the limits of the Site.

- An Operations, Maintenance & Monitoring (OM&M) Plan and Institutional & Engineering Controls Plan, which will describe the measures necessary to operate and maintain the engineering and institutional controls (i.e. – the cover system).

- No change in property use from the currently zoned use.

- Annual certification to NYSDEC that these controls are in place.

- Under the Brownfield Cleanup Program, any required administrative and/or engineering controls will be embodied in a recorded environmental easement, which will be enforceable both by NYSDEC and the Village of Johnson City. An easement will be prepared and filed with the Broome County Clerk's office.

6.6 Decommissioning of Water Supply Well

The water supply well located on the north side of the Site within the Pagoda Building (denoted on Figure 2 as Area O) will be decommissioned according to NYSDEC Division of Water "Water Supply Well Decommissioning Recommendations" dated December 2003, which is included in Appendix C of this report.

The Pagoda Building will need to be removed and transferred offsite prior to decommissioning the well.

6.7 Decommissioning Permanent Groundwater Monitoring Wells

Eight permanent groundwater monitoring wells are currently present onsite: HA-1 through HA-5, MW-1, MW-3, and MW-8. MW-2 was formerly present onsite, but could not be located. It is anticipated that this well was removed or destroyed during activities conducted in the NYSEG-related areas as part of the Gannett Parcel restoration.

The eight remaining wells will be decommissioned via removal of the screen and riser; grouting to the surface in areas that will be paved with cement grout; and grouting to within a few feet of surface grade with cement grout in areas that will be landscaped, if applicable. In the landscaped areas, the grout will be capped with clean cover and topsoil to facilitate planting.

7. SCHEDULE & REPORTING

7.1 Schedule

Remedial activities proposed herein will begin concurrently with Site preparation and redevelopment work, following the public comment period, and once NYSDEC and NYSDOH approval is received. NYSDEC and NYSDOH will be notified of the planned start date and duration, consistent with pre-notice provisions of the Brownfield Cleanup Agreement.

7.2 Reporting

A Final Engineering Report (FER) will be completed at the end of remedial activities. The FER will be completed under the direction and certification of a NYS Professional Engineer and will be submitted for NYSDEC and NYSDOH review. NYSDEC and NYSDOH will be notified as work is conducted at the Site to update work status, findings, and laboratory analytical results if applicable.

8. HEALTH & SAFETY PLAN

Haley & Aldrich has prepared a site-specific health and safety plan (HASP), using existing chemical data and site history information, in accordance with NYSDEC and NYSDOH guidelines. The HASP includes a description of health & safety protocols to be followed during remedy implementation, and is structured to allow modification based on the results of that work, if necessary. The HASP has been developed for use by Haley & Aldrich field staff and other personnel who will work at the site during planned investigation and remediation activities. A copy of the site-specific HASP is provided in Appendix D.

It is anticipated that dust control measures will be employed during remedy implementation, thereby eliminating the need for perimeter dust monitoring unless those control measures are ineffective at reducing fugitive dust on the site. Perimeter dust monitoring will be implemented during remedy implementation only if the dust control measures are not effective at preventing fugitive dust. The HASP has been modified to include provisions for community air monitoring (CAM). This plan requires, depending on site contaminants of concern, real-time monitoring particulates (i.e. dust) at the downward perimeter of each designated work area when certain activities are in progress. A copy of the NYSDOH generic CAM Plan is attached to our HASP in Appendix D.

9. REFERENCES

1. Topographic Map, Binghamton West Quadrangle, United States Geological Survey 7.5 minute series.

2. Site Plan taken from plan entitled "Proposed Development – Existing Site, Revised Property Areas – Johnson City, New York – November 21, 2003," by Newman Development Group, LLC.

3. Phase I Environmental Site Assessment, dated March 1993, by Dames & Moore

4. Phase II Environmental Site Assessment and Cleanup Plan, dated February 1997, by Dames & Moore

5. Summary Report February 2001 Investigation (Draft), dated March 2001, by Camp Dresser & McKee

6. Report on Former Endicott – Johnson Ranger Paracord Site, CFJ Boulevard and Lester Avenue, Johnson City New York, December 2003, by Haley & Aldrich of New York

7. Data Report Former Endicott-Johnson Ranger Paracord Facility, dated January 2004, by Vertex Engineering Services

8. Supplemental Investigation Work Plan, October 2005, by Haley & Aldrich of New York

9. Letter to the New York State Department of Environmental Conservation regarding "Former Endicott-Johnson Ranger Paracord Site, Southern Parcel Status and Update," dated 2 February 2006 from Haley & Aldrich of New York

10. Supplemental Investigation Results Summary, April 2007, by Haley & Aldrich of New York.

11. Supplemental Remedial Investigation (RI) Report, Former Endicott-Johnson Ranger Paracord Facility, Southern Parcel, Johnson City, New York. Dated July 2007, by Haley & Aldrich of New York.

12. Revised Report on Supplemental Remedial Investigation (RI) Report Addendum, Former Endicott-Johnson Ranger Paracord Facility, Southern Parcel, Johnson City, New York. Dated January 2008, by Haley & Aldrich of New York.

TABLE 1
SUMMARY OF REGULATORY AND BACKGROUND DATA FOR COMPARISON PURPOSES
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY- SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

	NYS TOGs - Standards and Guidance Values (mg/L)	NYSDEC TAGM 4046 Cleanup Criteria (mg/kg)	NYS SCO Criteria Residential (mg/kg)	NYS SCO Criteria Restricted Residential (mg/kg)	NYS SCO Criteria Commercial (mg/kg)	NYS SCO Criteria Industrial (mg/kg)	NYS SCO Criteria Protection of Ecological Resources (mg/kg)	NYS SCO Protection of Groundwater (mg/kg)	Johnson City Background (See Note 8) (mg/kg)
PAHs (mg/L)									
Acenaphthene	0.02	NS	100	100	**500**	1000	20	98	NS
Acenaphthylene	NS	NS	100	100	**500**	1000	NS	107	NS
Anthracene	0.05	NS	100	100	**500**	1000	NS	1000	NS
Benzo(a)anthracene	2.00E-06	NS	1	1	**5.6**	11	NS	1	NS
Benzo(a)pyrene	NS	NS	1	1	**1**	1.1	2.6	22	NS
Benzo(b)fluoranthene	2.00E-06	NS	1	1	**5.6**	11	NS	1.7	NS
Benzo(g,h,i)perylene	NS	NS	100	100	**500**	1000	NS	1000	NS
Benzo(k)fluoranthene	2.00E-06	NS	1	3.9	**56**	110	NS	1.7	NS
Chrysene	2.00E-06	NS	1	3.9	**56**	110	NS	1	NS
Dibenzo(a,h)anthracene	NS	NS	0.33	0.33	**0.56**	1.1	NS	1000	NS
Fluoranthene	0.05	NS	100	100	**500**	1000	NS	1000	NS
Fluorene	0.05	NS	100	100	**500**	1000	30	386	NS
Indeno(1,2,3-cd)pyrene	2.00E-06	NS	0.5	0.5	**5.6**	11	NS	8.2	NS
Naphthalene	0.01	NS	100	100	**500**	1000	NS	12	NS
Phenanthrene	0.05	NS	100	100	**500**	1000	NS	1000	NS
Pyrene	0.05	NS	100	100	**500**	1000	NS	1000	NS
SVOCS									
Napthalene	NS	13	100	100	**500**	1000	NS	12	ND-0.300 J
Acenaphthylene	NS	41	100	100	**500**	1000	NS	107	ND-0.190 J
Acenaphthene	NS	50	100	100	**500**	1000	20	98	ND-0.360 J
Fluorene	NS	50	100	100	**500**	1000	30	386	ND-0.330 J
Phenanthrene	NS	50	100	100	**500**	1000	NS	1000	0.030 J-2.700
Anthracene	NS	50	100	100	**500**	1000	NS	1000	ND-0.740
Fluoranthene	NS	50	100	100	**500**	1000	NS	1000	0.068 J-3.600
Pyrene	NS	50	100	100	**500**	1000	NS	1000	0.057 J-3.500
Benzo(a)anthracene	NS	0.224 or MDL	1	1	**5.6**	11	NS	1	0.032 J-1.700
Chrysene	NS	0.4	1	3.9	**56**	110	NS	1	0.055 J-2.000
Benzo(b)fluoranthene	NS	1.1	1	1	**5.6**	11	NS	1.7	0.060-2.200
Benzo(k)fluoranthene	NS	1.1	1	3.9	**56**	110	NS	1.7	0.020 J-0.820
Benzo(a)pyrene	NS	0.061 or MDL	1	1	**1**	1.1	2.6	22	0.30 J-1.600
Indeno(1,2,3-cd)pyrene	NS	3.2	0.5	0.5	**5.6**	11	NS	8.2	0.013 J-0.660
Dibenz(a,h)anthracene	NS	0.014 or MDL	0.33	0.33	**0.56**	1.1	NS	1000	0.015 J-0.190
Benzo(g,h,i)Perylene	NS	50	100	100	**500**	1000	NS	1000	0.013 J-0.600

TABLE 1
SUMMARY OF REGULATORY AND BACKGROUND DATA FOR COMPARISON PURPOSES
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY- SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

	NYS TOGs - Standards and Guidance Values (mg/L)	NYSDEC TAGM 4046 Cleanup Criteria (mg/kg)	NYS SCO Criteria Residential (mg/kg)	NYS SCO Criteria Restricted Residential (mg/kg)	NYS SCO Criteria Commercial (mg/kg)	NYS SCO Criteria Industrial (mg/kg)	NYS SCO Criteria Protection of Ecological Resources (mg/kg)	NYS SCO Protection of Groundwater (mg/kg)	Johnson City Background (See Note 8) (mg/kg)
Volatile Organic Compounds (mg/L)									
Acetone	0.05	NS	100.0	100.0	**500.0**	1000.0	2.2	0.05	NS
Metals (mg/kg)									
Arsenic	NS	7.5 or SB	16	16	**16**	16	13	16	3-12
Cadmium	NS	1 or SB	2.5	4.3	**9.3**	60	4	7.5	0.1-1
Chromium	NS	10 or SB	22	110	**400**	800	1	19	1.5-40
Copper	NS	25 or SB	270	270	**270**	10000	50	1720	1-50
Lead	NS	SB	400	400	**1000**	3900	63	450	200-500
Magnesium	NS	SB	NS	NS	**NS**	NS	NS	NS	NS
Mercury	NS	0.1	0.81	0.81	**2.8**	5.7	0.18	0.73	0.001-0.2
Nickel	NS	13 or SB	140	310	**310**	10000	30	130	0.5-25
Zinc	NS	20 or SB	2200	10000	**10000**	10000	109	2480	9-50

Notes:

1) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
2) NS= Not Specified
3) SB= site background
4) MDL= Method Detection Limit
5) J= approximate
6) NYS TOGS Standards obtained from NYS DEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June, 1998).
7) NYS SCO Criteria obtained from NYS DEC Remedial Program Soil Cleanup Objectives (6 NYCRR Subpart 375-6) (December, 2006)
   Note: Bolded commercial values apply to Ranger Southern Parcel Site
8) Background Concentrations:
   SVOC background derived from historical sample collection site background range.
   Metals background analysis using Eastern USA Background Concentrations.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
AREA K- FORMER 10,000 GALLON GASOLINE UST
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY- SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**HP-UST-1**	**KMW-1**
DEPTH (FT. BGS)	21-24	11-14
SAMPLE DATE	2/7/1995	12/7/2006
SAMPLE AREA	K	K
SAMPLED BY	D&M	H&A
PAHs (mg/L)		
Acenaphthene	--	ND(0.0095)
Acenaphthylene	--	ND(0.0095)
Anthracene	--	ND(0.0095)
Benzo(a)anthracene	--	ND(0.0095)
Benzo(a)pyrene	--	ND(0.0095)
Benzo(b)fluoranthene	--	ND(0.0095)
Benzo(g,h,i)perylene	--	ND(0.0095)
Benzo(k)fluoranthene	--	ND(0.0095)
Chrysene	--	ND(0.0095)
Dibenzo(a,h)anthracene	--	ND(0.0095)
Fluoranthene	--	ND(0.0095)
Fluorene	--	ND(0.0095)
Indeno(1,2,3-cd)pyrene	--	ND(0.0095)
Naphthalene	--	ND(0.0095)
Phenanthrene	--	ND(0.0095)
Pyrene	--	ND(0.0095)
Volatile Organic Compounds (mg/L)		
Acetone	ND(.002)	0.0015 J

Notes:

1) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
2) bgs = below ground surface
3) J= approximate
4) "--" = Sample not tested for corresponding compound.

TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA
AREA L- FORMER COAL STORAGE AREA - CS-8
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**CS-8A**	**CS-8B**	**CSA-8A**	**LSB-1(0-2)**	**LSB-1(2-4)**	**LSB-2(0-2)**	**LSB-2(2-4)**	**LSB-3(0-2)**	**LSB-3(2-4)**	**LSB-4(0-2)**
SAMPLE DEPTH	0.5-1 ft. bg.	1.5-2 ft. bg.	1-3 ft. bg.	0-2 ft. bg.	2-4 ft. bg.	0-2 ft. bg.	2-4 ft. bg.	0-2 ft. bg.	2-4 ft. bg.	0-2 ft. bg.
SAMPLE DATE	6/18/1993	6/18/1993	1/27/1995	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	L	L	L	L	L	L	L	L	L	L
SAMPLED BY	D&M	D&M	D&M	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)										
Arsenic	**541**	**31.2**	8.6	**310**	**34.9**	**394**	**30.6**	**174**	7.1	--
Mercury	0.27	0.15	ND(.12)	0.09	0.04	0.32	0.04	0.17	0.04	--
TCLP Metals (mg/L)										
Arsenic	--	--	--	--	--	--	--	--	--	ND(0.5)

Notes:

1) "--" = Sample not tested for corresponding compound.
2) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
3) Refer to Table 1 for comparison criteria:
   Bold text shows values that exceed NYSDEC Part 375 Commercial SCOs.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**CS-21**	**CS-21C**	**CSA-21A**	**CSA-21B**	**CSA-21C**	**MSB-1(0-0.5)**	**MSB-1(3-5)**	**MSB-1(5-7)**	**MSB-1(7-9)**	**MSB-1(9-11)**
SAMPLE DEPTH	3 ft. bg.	0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.
SAMPLE DATE	8/12/1993	8/12/1993	1/31/1995	1/31/1995	1/31/1995	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M	M	M
SAMPLED BY	D&M	D&M	D&M	D&M	D&M	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)										
Arsenic	**298**	12.0 J	**245**	**319**	**122**	--	5.9	4.7	4.5	**19.2**
Copper	30	113	--	--	--	32.7	--	--	--	--
Mercury	0.48	0.64	0.12	--	--	--	0.119	0.108	0.108	ND(0.045)
TCLP (mg/L)										
Arsenic	--	--	--	--	--	--	--	--	--	--

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**MSB-2 (0-0.5)**	**MSB-2 (3-5)**	**MSB-2 (5-7)**	**MSB-2 (7-9)**	**MSB-2 (9-11)**	**MSB-3 (0-0.5)**	**MSB-3 (3-5)**	**MSB-3 (5-7)**
SAMPLE DEPTH	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.
SAMPLE DATE	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M
SAMPLED BY	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)								
Arsenic	--	7.1	5.6	12.3	**29.2**	--	**43.6**	**101**
Copper	23.1	--	--	--	--	12.5	--	--
Mercury	--	ND(0.031)	ND(0.035)	ND(0.031)	0.059	--	ND(0.036)	ND(0.043)
TCLP (mg/L)								
Arsenic	--	--	--	--	--	--	--	--

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**MSB-3 (7-9)**	**MSB-3 (9-11)**	**MSB-4 (0-0.5)**	**MSB-4 (3-5)**	**MSB-4 (5-7)**	**MSB-4 (7-9)**	**MSB-4 (9-11)**	**MSB-5 Comp(3-9)**
SAMPLE DEPTH	7-9 ft. bg.	9-11 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.	3-9 ft. bg.
SAMPLE DATE	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M
SAMPLED BY	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)								
Arsenic	**99.3**	ND(1.2)	--	**74.3**	**48.6**	**11**	4.8	--
Copper	--	--	18.8	--	--	--	--	--
Mercury	0.096	ND(0.037)	--	0.18	0.066	0.091	ND(0.036)	--
TCLP (mg/L)								
Arsenic	--	--	--	--	--	--	--	ND(0.5)

Notes:

1) "--" = Sample not tested for corresponding compound.
2) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
3) J = Approximately
4) Refer to Table 1 for comparison criteria:
   Bold text shows values that exceed NYSDEC Part 375 Commercial SCOs.

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**CS-21**	**CS-21C**	**CSA-21A**	**CSA-21B**	**CSA-21C**	**MSB-1(0-0.5)**	**MSB-1(3-5)**	**MSB-1(5-7)**	**MSB-1(7-9)**	**MSB-1(9-11)**
SAMPLE DEPTH	3 ft. bg.	0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.
SAMPLE DATE	8/12/1993	8/12/1993	1/31/1995	1/31/1995	1/31/1995	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M	M	M
SAMPLED BY	D&M	D&M	D&M	D&M	D&M	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)										
Arsenic	**298**	12.0 J	**245**	**319**	**122**	--	5.9	4.7	4.5	**19.2**
Copper	30	113	--	--	--	32.7	--	--	--	--
Mercury	0.48	0.64	0.12	--	--	--	0.119	0.108	0.108	ND(0.045)
TCLP (mg/L)										
Arsenic	--	--	--	--	--	--	--	--	--	--

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**MSB-2 (0-0.5)**	**MSB-2 (3-5)**	**MSB-2 (5-7)**	**MSB-2 (7-9)**	**MSB-2 (9-11)**	**MSB-3 (0-0.5)**	**MSB-3 (3-5)**	**MSB-3 (5-7)**
SAMPLE DEPTH	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.
SAMPLE DATE	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M
SAMPLED BY	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)								
Arsenic	--	7.1	5.6	12.3	**29.2**	--	**43.6**	**101**
Copper	23.1	--	--	--	--	12.5	--	--
Mercury	--	ND(0.031)	ND(0.035)	ND(0.031)	0.059	--	ND(0.036)	ND(0.043)
TCLP (mg/L)								
Arsenic	--	--	--	--	--	--	--	--

TABLE 4
SUMMARY OF SOIL ANALYTICAL DATA
AREA M - FORMER COAL STORAGE AREA - CSA-21
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIG.	**MSB-3 (7-9)**	**MSB-3 (9-11)**	**MSB-4 (0-0.5)**	**MSB-4 (3-5)**	**MSB-4 (5-7)**	**MSB-4 (7-9)**	**MSB-4 (9-11)**	**MSB-5 Comp(3-9)**
SAMPLE DEPTH	7-9 ft. bg.	9-11 ft. bg.	0-0.5 ft. bg.	3-5 ft. bg.	5-7 ft. bg.	7-9 ft. bg.	9-11 ft. bg.	3-9 ft. bg.
SAMPLE DATE	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006	12/6/2006
SAMPLE AREA	M	M	M	M	M	M	M	M
SAMPLED BY	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Metals (mg/kg)								
Arsenic	**99.3**	ND(1.2)	--	**74.3**	**48.6**	**11**	4.8	--
Copper	--	--	18.8	--	--	--	--	--
Mercury	0.096	ND(0.037)	--	0.18	0.066	0.091	ND(0.036)	--
TCLP (mg/L)								
Arsenic	--	--	--	--	--	--	--	ND(0.5)

Notes:

1) "--" = Sample not tested for corresponding compound.
2) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
3) J = Approximately
4) Refer to Table 1 for comparison criteria:
   Bold text shows values that exceed NYSDEC Part 375 Commercial SCOs.

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA
AREA N-MECHANICAL BUILDING DRY WELLS
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**DW-1-1**	**DW-1-2**	**DW-1-3**	**DW-1-4**	**DW-2R**	**DW-3**	**DW2-PE1**	**DW3-PE1**	**DWP-PE1**	**DWP-PE2**	**NSB-1(0-3)**	**NSB-1(3-5)**
SAMPLE DEPTH	2-4 ft. bg.	2-4 ft. bg.	2-4 ft. bg.	DW-Base	DW-Base	DW-Base	2.5-3 ft. bg.	2.5-3 ft. bg.	2-2.5 ft. bg.	2-2.5 ft. bg.	0-3 ft. bg.	3-5 ft. bg.
SAMPLE DATE	6/17/1993	6/17/1993	6/17/1993	6/15/1993	6/15/1993	6/15/1993	1/24/1995	1/24/1995	1/25/1995	1/25/1995	12/7/2006	12/7/2006
SAMPLE AREA	N	N	N	N	N	N	N	N	N	N	N	N
SAMPLED BY	D&M	D&M	D&M	D&M	D&M	D&M	D&M	D&M	D&M	D&M	H&A	H&A
Semi-Volatile Organic Compounds (mg/kg)												
Napthalene	0.062 J	ND(.44)	0.110 J	ND(94)	0.530 J	4.1 J	0.084 J	ND(.51)	0.280 J	0.120 J	ND(9.6)	0.130 J
Acenaphthylene	0.068 J	ND(.44)	0.100 J	ND(94)	ND(2.3)	ND(22)	0.084 J	0.060 J	2.8	0.410 J	ND(9.6)	0.086 J
Acenaphthene	ND(.42)	0.040 J	0.066 J	ND(94)	0.530 J	ND(22)	0.100 J	ND(.51)	3.8	0.130 J	ND(9.6)	0.140 J
Fluorene	ND(.42)	0.087 J	0.094 J	ND(94)	0.57 J	ND(22)	0.130 J	ND(.51)	4.2	0.018 J	ND(9.6)	0.160 J
Phenanthrene	0.48	1.1	8.2	ND(94)	3.9	ND(22)	1.10 J	0.099 J	39	2.20 J	ND(9.6)	1
Anthracene	0.14 J	0.23 J	0.20 J	ND(94)	0.95 J	ND(22)	0.260 J	0.053 J	9.80 J	0.62	ND(9.6)	0.210 J
Fluoranthene	0.91	1.7	1	ND(94)	3.9	ND(22)	1.4	0.14 J	80	3.1	ND(9.6)	1.2
Pyrene	0.79	1.5	1	ND(94)	4.9	3.1 J	1.4	0.220 J	64	3.3	ND(9.6)	0.89
Benzo(a)anthracene	0.48	1.2	0.6 J	ND(94)	2.1 J	ND(22)	0.77	0.130 J	ND(.44)	1.5	ND(9.6)	0.510 J
Chrysene	0.82	1.9	1.1	9.5 J	3.1	2.3 J	0.85	0.200 J	47	1.6	ND(9.6)	0.580 J
Benzo(b)fluoranthene	0.67	1.3	0.8 J	ND(94)	2.7 J	ND(22)	0.77	0.220 J	**42**	1.5	ND(9.6)	0.510 J
Benzo(k)fluoranthene	0.39 J	0.88	0.53 J	ND(94)	1.7 J	ND(22)	0.460 J	0.150 J	39	2.1	ND(9.6)	0.480 J
Benzo(a)pyrene	0.42	**1.1**	0.620 J	ND(94)	**2.4 J**	ND(22)	0.61	0.140 J	**36**	**1.3**	ND(9.6)	0.390 J
Indeno(1,2,3-cd)pyrene	0.28 J	1.1	0.45 J	ND(94)	0.93 J	ND(22)	0.190 J	0.076 J	**15.0 J**	0.360 J	0.870 J	0.290 J
Dibenz(a,h)anthracene	0.099 J	0.54	0.17 J	ND(94)	0.36 J	ND(22)	ND(.55)	ND(.51)	**8.50 J**	0.160 J	ND(9.6)	0.130 J
Benzo(g,h,i)Perylene	0.21 J	0.96	0.37 J	ND(94)	1 J	ND(22)	0.160 J	0.074 J	14.0 J	0.380 J	1.20 J	0.380 J
Total Confident Conc. SVOCs	4.57	13.28	3.92		20.9		5.8		362.02	17.4	2.07J	7.086J
Metals (mg/kg)												
Arsenic	12.0 J	5.7 J	**18.2 J**	15.6 J	12.7 J	**20.6 J**	**21**	**43.7**	**17.5**	**21.4**	**17**	8.8
Cadmium	ND(.39)	ND(.41)	0.80 J	3.6 J	7.1	**14.4**	2.5	2.7	2.9	5.7	ND(.58)	ND(.6)
Chromium	61.6	48.5	143	65.3	35.9	70.2	178	149	30.4	37.2	19.3	34.1
Copper	112	27.8	**795**	**294**	223	**522**	**313**	**766**	104	163	38.7	48.6
Lead	283	25.7	438	750	765	717	343	390	194	441	32.1	1010
Magnesium	2070	1940	1850	2340	4930	6770	2100	1580	11200	2840	5490	3580
Mercury	0.48 J	0.26 J	0.36 J	0.92 J	ND(.14)	0.19	2.1	0.34	0.26	0.39	0.11	0.27
Nickel	17.2 J	18.8 J	30.6 J	46.7	43.9	74.6	*30.8*	17.9	25.7	45.2	18.3	26.2
Zinc	430 J	336 J	1070 J	887 J	1640 J	2240 J	1060	1170	662	1500	200	521
TCLP Metals												
Chromium	--	--	--	--	--	--	--	--	--	--	--	--
Lead	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 5
SUMMARY OF SOIL ANALYTICAL DATA
AREA N-MECHANICAL BUILDING DRY WELLS
FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY-SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**NSB-2(0-3)**	**NSB-2(3-5)**	**NSB-3(0-3)**	**NSB-3(3-5)**	**NSB-4(0-3)**	**NSB-4(3-5)**	**NSB-5(0-3)**	**NSB-5(3-5)**	**NSB-6(0-3)**	**NSB-6(3-5)**	**NSB-7 COMP(0-5)**
SAMPLE DEPTH	0-3 ft. bg.	3-5 ft. bg.	0-3 ft. bg.	3-5 ft. bg.	0-3 ft. bg.	3-5 ft. bg.	0-3 ft. bg.	3-5 ft. bg.	0-3 ft. bg.	3-5 ft. bg.	0-5 ft. bg.
SAMPLE DATE	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006	12/7/2006
SAMPLE AREA	N	N	N	N	N	N	N	N	N	N	N
SAMPLED BY	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A	H&A
Semi-Volatile Organic Compounds (mg/kg)											
Napthalene	1.70 J	5.7	ND(9)	ND(2.8)	0.620 J	0.062 J	2.2	ND(0.46)	ND(38)	ND(1.3)	--
Acenaphthylene	ND(7.7)	ND(1.6)	1.2 J	2.9	0.99 J	0.58 J	0.42 J	ND(0.46)	2.5 J	0.14 J	--
Acenaphthene	ND(7.7)	ND(1.6)	ND(9)	ND(2.8)	ND(9.1)	0.09 J	0.88 J	ND(0.46)	ND(38)	ND(1.3)	--
Fluorene	ND(7.7)	ND(1.6)	ND(9)	0.33 J	ND(9.1)	0.170 J	0.98 J	ND(0.46)	ND(38)	ND(1.3)	--
Phenanthrene	ND(7.7)	ND(1.6)	4.9 J	2.1 J	6.7 J	1.1	9.2	ND(0.46)	32.0 J	0.13 J	--
Anthracene	ND(7.7)	ND(1.6)	1.6 J	1.6 J	1.8 J	0.520 J	2.2	ND(0.46)	6.8 J	0.14 J	--
Fluoranthene	ND(7.7)	ND(1.6)	7.8 J	7.6	11	2.6	11	0.051 J	44	0.13 J	--
Pyrene	ND(7.7)	ND(1.6)	5.9 J	5.8	7.6 J	1.9	9	ND(0.46)	34.0 J	ND(1.3)	--
Benzo(a)anthracene	ND(7.7)	ND(1.6)	5.0 J	4.4	**5.9 J**	1.4	**6.1**	ND(0.46)	**23.0 J**	ND(1.3)	--
Chrysene	ND(7.7)	ND(1.6)	4.6 J	4.1	6.3 J	1.3	6.3	ND(0.46)	27.0 J	0.15 J	--
Benzo(b)fluoranthene	ND(7.7)	ND(1.6)	4.8 J	4.9	4.9 J	1.3	5	ND(0.46)	**21.0 J**	0.15 J	--
Benzo(k)fluoranthene	ND(7.7)	ND(1.6)	4.1 J	4.3	5.6 J	1.4	4.2	ND(0.46)	19.0 J	0.1 J	--
Benzo(a)pyrene	ND(7.7)	ND(1.6)	**5.3 J**	**5.9**	**5.6 J**	**1.6**	**5.1**	ND(0.46)	**22.0 J**	ND(1.3)	--
Indeno(1,2,3-cd)pyrene	ND(7.7)	ND(1.6)	3.0 J	4	3.2 J	0.820 J	2.7	ND(0.46)	**15.0 J**	0.19 J	--
Dibenz(a,h)anthracene	ND(7.7)	ND(1.6)	**0.840 J**	**1.0 J**	**1.1 J**	0.260 J	**1.1 J**	ND(0.46)	**5.7 J**	ND(1.3)	--
Benzo(g,h,i)Perylene	ND(7.7)	ND(1.6)	3.3 J	4.8	3.3 J	0.840 J	3	ND(0.46)	16.0 J	0.37 J	--
Total Confident Conc. SVOCs	1.7J	5.7	52.34J	53.73J	64.61J	15.9J	69.38J	0.051J	268J	1.5J	--
Metals (mg/kg)											
Arsenic	10	**65.5**	3.9	5.8	7.8	**22.1**	**17.9**	**17.9**	13.5	**51.6**	--
Cadmium	ND(.56)	0.79	ND(.55)	ND(.51)	ND(.52)	ND(.62)	0.84	0.87	1.2	2.6	--
Chromium	18.5	**595**	10.4	140	17.2	**3810**	152	123	43.2	120	--
Copper	31.7	**2590**	17.1	85	69.7	**491**	224	205	245	198	--
Lead	64.6	**2950**	9.3	13.1	50.2	624	428	348	101	944	--
Magnesium	4160	9100	38100	650	6770	2290	3730	3200	13300	1570	--
Mercury	0.11	0.05	0.08	0.04	0.06	0.12	0.59	0.22	0.12	0.43	--
Nickel	17.8	112	10.1	29.8	16.9	66	23.6	28.9	26	43.8	--
Zinc	261	1360	34.5	274	269	603	705	811	558	1240	--
TCLP Metals											
Chromium	--	--	--	--	--	--	--	--	--	--	ND(0.1)
Lead	--	--	--	--	--	--	--	--	--	--	ND(0.1)

Notes:

1) "--" = Sample not tested for corresponding compound.
2) ND = Not Detected above method detection limit. Detection limit shown in parentheses.
3) J = Approximately
4) Refer to Table 1 for comparison criteria:
   a) Bold text shows values that exceed TAGM 4046 criteria
   b) Red-bolded values exceed TAGM 4046 criteria and Background Concentrations.
   c) Yellow-highlighted cell values exceed DEC Part 375 criteria.

TABLE 6 - SUMMARY OF GROUNDWATER QUALITY DATA
SITE-WIDE (NOVEMBER 2007)
FORMER ENDICOTT-JOHNSON RANGER PARACORD - SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**NYSDEC**	Minimum/	**MW-101**	**MW-102**	**MW-103**	**MW-104**	**MW-105**
WELL SCREEN DEPTH (FT BGS)	**TOGS 1.1.1**	Instrument	5-15 ft	5-15 ft	6-16 ft	7-17 ft	7-17 ft
DEPTH TO GW (FT BGS)	VOC: µg/L	Detection	10.52 ft	10.43 ft	8.02 ft	7.08 ft	10.65 ft
SAMPLING DATE	SVOC: µg/L	Limits	11/19/2007	11/19/2007	11/19/2007	11/19/2007	11/19/2007
MATRIX	Metals: mg/L	(MDLs/IDLs)	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
VOCs (µg/L)							
Acetone	50	1.1	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
Benzene	1	0.12	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Bromodichloromethane	50	0.15	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Bromoform	50	0.69	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Bromomethane	5	0.3	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
2-Butanone	NA	1.2	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
Carbon Disulfide	NA	0.093	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Carbon Tetrachloride	5	0.2	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Chlorobenzene	5	0.13	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Chloroethane	5	0.3	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Chloroform	7	0.2	ND (1.00)	0.20 J	ND (1.00)	ND (1.00)	ND (1.00)
Chloromethane	NA	0.17	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Dibromochloromethane	50	0.15	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,1-Dichloroethane	5	0.12	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,2-Dichloroethane	0.6	0.23	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,1-Dichloroethene	5	0.27	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
cis-1,2-Dichloroethene	5	0.18	ND (1.00)	0.43 J	ND (1.00)	ND (1.00)	ND (1.00)
trans-1,2-Dichloroethene	5	0.15	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,2-Dichloropropane	1	0.24	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
cis-1,3-Dichloropropene	0.4	0.21	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
trans-1,3-Dichloropropene	0.4	0.21	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Ethylbenzene	5	0.11	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
2-Hexanone	50	0.83	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
Methylene Chloride	5	0.27	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
4-Methyl-2-pentanone	NA	0.45	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)	ND (5.00)
Styrene	5	0.14	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,1,2,2-Tetrachloroethane	5	0.24	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Tetrachloroethene	5	0.2	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Toluene	5	0.19	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
1,1,1-Trichloroethane	5	0.15	ND (1.00)	0.29 J	ND (1.00)	ND (1.00)	ND (1.00)
1,1,2-Trichloroethane	1	0.26	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Trichloroethene	5	0.32	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
Vinyl Chloride	2	0.24	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
o-Xylene	5	0.2	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
m,p-Xylene	5	0.19	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)	ND (1.00)
TOTAL VOCs:	NA	NA	ND	0.92 J	0.00 JB	ND	0.00 JB
SVOCs (µg/L)							
Acenaphthene	20	0.41	ND (11.00)	ND (9.80)	0.50 J	ND (9.40)	ND (9.40)
Acenapththylene	NA	0.33	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Anthracene	50	0.23	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzo(a)anthracene	0.002	0.24	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzo(a)pyrene	ND	0.28	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzo(b)fluoranthene	0.002	0.26	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzo(g,h,i)perylene	NA	0.27	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzo(k)fluoranthene	0.002	0.65	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Benzyl Alcohol	NA	0.67	--	--	--	ND (9.40)	ND (9.40)
Butyl Benzyl Phthalate	50	0.34	--	--	--	ND (9.40)	ND (9.40)
Di-n-butylphthalate	50	0.82	--	--	--	ND (9.40)	ND (9.40)
Carbazole	NA	0.43	--	--	--	ND (9.40)	ND (9.40)
Indeno(1,2,3-cd)pyrene	0.002	0.28	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)

SVOCs continued on Page 2

TABLE 6 - SUMMARY OF GROUNDWATER QUALITY DATA
SITE-WIDE (NOVEMBER 2007)
FORMER ENDICOTT-JOHNSON RANGER PARACORD - SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**NYSDEC**	Minimum/	**MW-101**	**MW-102**	**MW-103**	**MW-104**	**MW-105**
WELL SCREEN DEPTH (FT BGS)	**TOGS 1.1.1**	Instrument	5-15 ft	5-15 ft	6-16 ft	7-17 ft	7-17 ft
DEPTH TO GW (FT BGS)	VOC: µg/L	Detection	10.52 ft	10.43 ft	8.02 ft	7.08 ft	10.65 ft
SAMPLING DATE	SVOC: µg/L	Limits	11/19/2007	11/19/2007	11/19/2007	11/19/2007	11/19/2007
MATRIX	Metals: mg/L	(MDLs/IDLs)	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
SVOCs (ug/L)							
4-Chloroaniline	5	0.37	--	--	--	ND (9.40)	ND (9.40)
Bis(2-chloroethoxy)methane	5	0.63	--	--	--	ND (9.40)	ND (9.40)
Bis(2-chloroethyl)ether	1	0.6	--	--	--	ND (9.40)	ND (9.40)
2-Chloronaphthalene	10	0.21	--	--	--	ND (9.40)	ND (9.40)
2-Chlorophenol	NA	0.28	--	--	--	ND (9.40)	ND (9.40)
2,2'-oxybis(1-chloropropane)	NA	0.83	--	--	--	ND (9.40)	ND (9.40)
Chrysene	0.002	0.29	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Dibenz(a,h)anthracene	NA	0.37	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Dibenzofuran	NA	0.41	--	--	--	ND (9.40)	ND (9.40)
1,3-Dichlorobenzene	3	0.57	--	--	--	ND (9.40)	ND (9.40)
1,2-Dichlorobenzene	3	0.44	--	--	--	ND (9.40)	ND (9.40)
1,4-Dichlorobenzene	3	0.53	--	--	--	ND (9.40)	ND (9.40)
3,3'-Dichlorobenzidine	5	0.39	--	--	--	ND (9.40)	ND (9.40)
2,4-Dichlorophenol	5	0.33	--	--	--	ND (9.40)	ND (9.40)
Diethylphthalate	50	0.55	--	--	--	ND (9.40)	ND (9.40)
Dimethlyl Phthalate	50	0.45	--	--	--	ND (9.40)	ND (9.40)
2,4-Dimethylphenol	50	1.28	--	--	--	ND (9.40)	ND (9.40)
2,4-Dinitrophenol	10	13.73	--	--	--	ND (47.00)	ND (47.00)
2,4-Dinitrotoluene	5	0.51	--	--	--	ND (9.40)	ND (9.40)
2,6-Dinitrotoluene	5	0.52	--	--	--	ND (9.40)	ND (9.40)
Bis(2-ethylhexyl)phthalate	5	0.39	--	--	--	ND (9.40)	0.43 J
Fluoranthene	50	0.31	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Fluorene	50	0.39	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
Hexachlorobenzene	0.04	0.39	--	--	--	ND (9.40)	ND (9.40)
Hexachlorobutadiene	0.5	0.59	--	--	--	ND (9.40)	ND (9.40)
Hexachlorocyclopentadiene	5	0.59	--	--	--	ND (9.40)	ND (9.40)
Hexachloroethane	5	0.49	--	--	--	ND (9.40)	ND (9.40)
Isophorone	50	0.47	--	--	--	ND (9.40)	ND (9.40)
2-Methylnaphthalene	NA	0.21	--	--	--	ND (9.40)	ND (9.40)
4,6-Dinitro-2-methylphenol	NA	11.77	--	--	--	ND (47.00)	ND (47.00)
4-Chloro-3-methylphenol	NA	0.35	--	--	--	ND (9.40)	ND (9.40)
2-Methylphenol	NA	0.75	--	--	--	ND (9.40)	ND (9.40)
3+4-Methylphenol	NA	1.27	--	--	--	ND (9.40)	ND (9.40)
Naphthalene	10	0.43	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
2-Nitroanaline	5	13.76	--	--	--	ND (47.00)	ND (47.00)
3-Nitroanaline	5	5.63	--	--	--	ND (47.00)	ND (47.00)
4-Nitroanaline	5	12.22	--	--	--	ND (47.00)	ND (47.00)
Nitrobenzene	0.4	0.3	--	--	--	ND (9.40)	ND (9.40)
2-Nitrophenol	1*	0.58	--	--	--	ND (9.40)	ND (9.40)
4-Nitrophenol	1*	7.55	--	--	--	ND (47.00)	ND (47.00)
N-Nitrosodimethylamine	NA	0.58	--	--	--	ND (9.40)	ND (9.40)
N-Nitrosodiphenylamine	50	0.29	--	--	--	ND (9.40)	ND (9.40)
Di-n-octyl Phthalate	NA	0.41	--	--	--	ND (9.40)	ND (9.40)
Pentachlorophenol	1*	12.71	--	--	--	ND (47.00)	ND (47.00)
Phenanthrene	50	0.24	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	0.63 J
Phenol	1*	0.44	--	--	--	ND (9.40)	ND (9.40)
4-Bromophenyl-phenylether	NA	0.66	--	--	--	ND (9.40)	ND (9.40)
4-Chlorophenyl-phenylether	NA	0.49	--	--	--	ND (9.40)	ND (9.40)
N-Nitroso-di-n-propylamine	NA	1.19	--	--	--	ND (9.40)	ND (9.40)
Pyrene	50	0.36	ND (11.00)	ND (9.80)	ND (9.40)	ND (9.40)	ND (9.40)
1,2,4-Trichlorobenzene	5	0.41	--	--	--	ND (9.40)	ND (9.40)
2,4,6-Trichlorophenol	5	0.48	--	--	--	ND (9.40)	ND (9.40)
2,4,5-Trichlorophenol	5	0.36	--	--	--	ND (9.40)	ND (9.40)
TOTAL SVOCs:	NA	NA	ND	ND	ND	ND	1.06 J

TABLE 6 - SUMMARY OF GROUNDWATER QUALITY DATA
SITE-WIDE (NOVEMBER 2007)
FORMER ENDICOTT-JOHNSON RANGER PARACORD - SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SAMPLE DESIGNATION	**NYSDEC**	Minimum/	**MW-101**	**MW-102**	**MW-103**	**MW-104**	**MW-105**
WELL SCREEN DEPTH (FT BGS)	**TOGS 1.1.1**	Instrument	5-15 ft	5-15 ft	6-16 ft	7-17 ft	7-17 ft
DEPTH TO GW (FT BGS)	VOC: µg/L	Detection	10.52 ft	10.43 ft	8.02 ft	7.08 ft	10.65 ft
SAMPLING DATE	SVOC: µg/L	Limits	11/19/2007	11/19/2007	11/19/2007	11/19/2007	11/19/2007
MATRIX	Metals: mg/L	(MDLs/IDLs)	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Metals (mg/L)							
Aluminum	NA	0.0171	0.268	0.283	ND (0.10)	--	--
Antimony	0.003	0.0079	ND (0.060)	ND (0.060)	ND (0.060)	--	--
Arsenic	0.025	0.0038	ND (0.010)	ND (0.010)	ND (0.010)	--	--
Barium	1	0.0088	ND (0.020)	0.0583	0.37	--	--
Beryllium	0.003	0.0002	ND (0.005)	ND (0.005)	ND (0.005)	--	--
Cadmium	0.01	0.0004	ND (0.005)	ND (0.005)	ND (0.005)	--	--
Calcium	NA	0.0604	315	258	81.2	--	--
Chromium	0.05	0.0006	ND (0.010)	ND (0.010)	ND (0.010)	--	--
Cobalt	0.005	0.002	ND (0.050)	ND (0.050)	ND (0.050)	--	--
Copper	0.2	0.0049	ND (0.020)	ND (0.020)	ND (0.020)	--	--
Iron	0.3	0.0132	**5.56**	**0.526**	**8.95**	--	--
Lead	0.05	0.0008	ND (0.005)	ND (0.005)	ND (0.005)	--	--
Magnesium	35	0.049	18.30	22.30	4.74	--	--
Manganese	0.3	0.0014	0.155 J	0.0566 J	0.136 J	--	--
Mercury	0.002	0.00001	ND (0.0002)	ND (0.0002)	ND (0.0002)	--	--
Nickel	NA	0.0016	ND (0.040)	ND (0.040)	ND (0.040)	--	--
Potassium	NA	0.269	7.7	13.1	ND (2.000)	--	--
Selenium	0.01	0.0037	ND (0.010)	**0.0204**	ND (0.010)	--	--
Silver	0.05	0.0007	ND (0.010)	ND (0.010)	ND (0.010)	--	--
Sodium	20	0.172	**26.2**	**53.3**	3.34	--	--
Thallium	0.004	0.0037	ND (0.010)	ND (0.010)	ND (0.010)	--	--
Vandium	0.014	0.0021	ND (0.050)	ND (0.050)	ND (0.050)	--	--
Zinc	5	0.0016	0.0293	0.0339	ND (0.020)	--	--

NOTES & ABBREVIATIONS:

NA :Not applicable

ND(2.5): Not detected; number in parentheses is the laboratory reporting limit

VOCs: Volatile Organic Compounds by EPA Method 8260B.

SVOCs: Semi-Volatile Organic Compounds by EPA Method 8270C.

Metals: TAL Metals by EPA Method 6010B.

Mercury analyzed via method EPA Method 7470A.

TOGS 1.1.1: New York State Department of Environmental Conservation Ambient Water Quality Standards and Guidance Values

*: 1 is the guidance value for total phenolic compounds.

1. **Bold** values indicate a detection equal to or greater than that of TOGS 1.1.1 Standards and Guidance Values.

2. MDLs and IDLs are based on data included in the Columbia Analytical Services (CAS) data ASP Category B data package dated 19 December 2007.

The dates of the recorded MDLs and IDLs are as follows: VOCs - 1/25/07; SVOCs - 7/6/07; Metals - 9/14/07.

TABLE 7 - SUMMARY OF SOIL QUALITY DATA
PROPOSED OFFSITE SOURCES OF FILL
POTENTIAL SOURCES OF OFFSITE FILL COMFIRMATION SAMPLES
JOHNSON CITY, NEW YORK

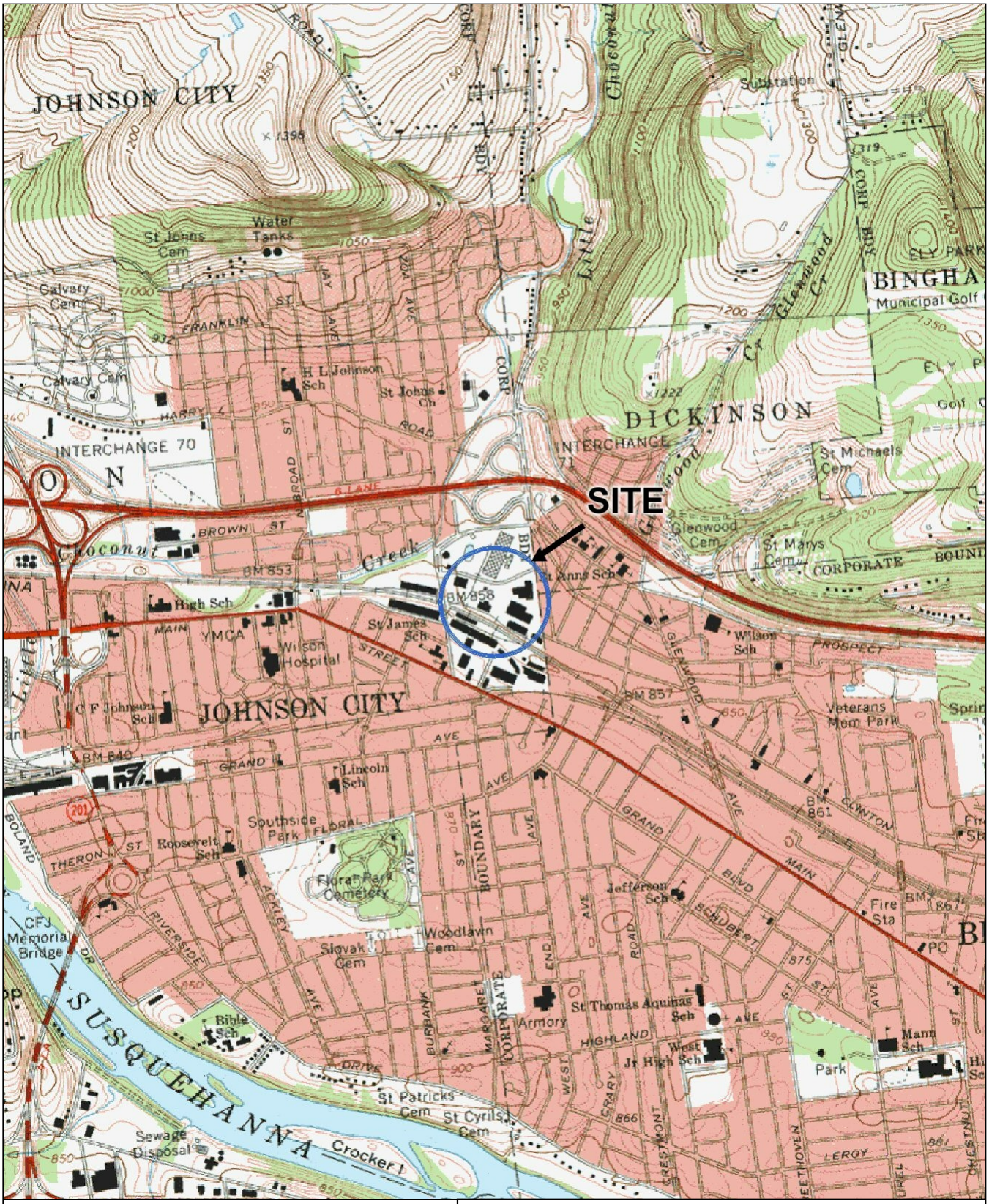
SAMPLE ID SAMPLE DATE SAMPLED BY LOCATION/DISPOSITION	**NYSDEC Soil Cleanup Objectives (Unresticted Use)** **mg/kg**	**Eastern USA Background Concentrations** **mg/kg**	**Gorrick Pit-1** [9] **10/6/2004** **H&A** **Offsite Fill**
Volatile Organic Compounds (mg/kg)			
Analytical Dilution			1.00
Total VOCs	NA	NA	ND
B/N Organic Compounds (mg/kg)			
Analytical Dilution			1.00
TOTAL B/N Organic Compounds			ND
B/N Tentatively Identified Compounds (mg/kg)			**Est. Conc.**
Dilution Factor			1.0
unknowns (total)	NA	NA	0.210 J
Total B/N TICs	NA	NA	0.210
Metals (mg/kg)			
Antimony	NA	NA	ND (6.29)
Arsenic	13 or SB	3 - 12	9.21
Beryllium	7.2	0 - 1.75	ND (0.624)
Cadmium	2.5 or SB	0.1 - 1	ND (0.524)
Chromium	30 or SB	1.5 - 40	15.3
Copper	50	1 - 50	23.5
Lead	63 or SB	200 - 500	17.9
Mercury	0.18 or SB	0.001 - 0.2	ND (0.0349)
Nickel	30	0.5 - 25	25.8
Selenium	3.9 or SB	0.1 - 3.9	ND (1.05)
Silver	2	NA	ND (1.05)
Thallium	NA	NA	ND (5.24)
Zinc	109 or SB	9 - 50	71.5
PCBs (mg/kg)	0.1	NA	ND

Notes:

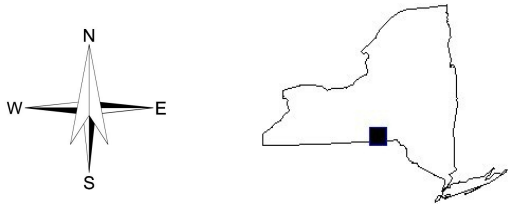
1. Only detected VOCs and SVOCs are shown under each analysis group.
2. NA = Not Applicable
3. Bold text = value exceeds NYSDEC Soil Cleanup Objectives for Unrestricted Use (6NYCRR Part 375-6.8(a)) criteria.
4. ND = Not Detected above laboratory detection limit. Laboratory detection limit shown in parentheses where applicable.

TABLE 7 - SUMMARY OF SOIL QUALITY DATA
PROPOSED OFFSITE SOURCES OF FILL
POTENTIAL SOURCES OF OFFSITE FILL COMFIRMATION SAMPLES
JOHNSON CITY, NEW YORK

5. SB = Site Background
6. J = Approximately
7. E = Estimated value
8. -- = Not Sampled.
9. The "Gorrick Pit-1" refers to the Gorick Pit. This was incorrectly spelled on the chain of custody.



SITE COORDINATES:42°6'57"N 75°56'52"W



U.S.G.S. QUADRANGLE: BINGHAMTON WEST, NY

HALEY & ALDRICH

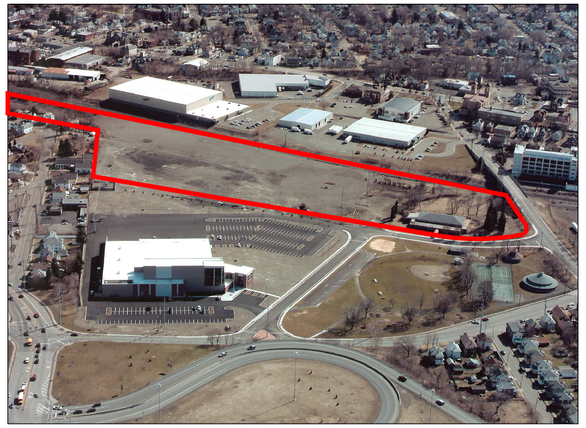
FORMER ENDICOTT-JOHNSON RANGER PARACORD SITE
SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

PROJECT LOCUS

SCALE: 1:24,000
FEBRUARY 2008

FIGURE 1

30603-011/Locus 1 1.PDF



AERIAL VIEW OF EJ RANGER PARACORD - SOUTHERN PARCEL
TAKEN 29 MARCH 2006

GANNETT PARCEL

ZING BUILDING (DEMOLISHED)

GANNETT DRIVE

E. J. PRIVATE ROAD

LESTER AVENUE

PAVILION (DEMOLISHED)
PROPOSED RETAIL B
14,000 S.F.
FF=851.00

FORMER WATER RESERVOIR

POWER HOUSE (DEMOLISHED)

MECHANICAL BUILDING (DEMOLISHED)

PROPOSED RETAIL A
132,222 SF
FF=852.00

CHALLENGE BUILDING (DEMOLISHED)

GARDEN CENTER
8,830 SF

29 Test Pits by others
June 1993.

ERIE LACKAWANNA RAILROAD

G:\PROJECTS\30603\011 (SOUTHERN PARCEL SUPPLEMENTAL INVESTIGATION)\SITE PLANS\2008 0125_SITEPLAN.DWG

LEGEND:

- Fence
- Approximate Southern Parcel Property Boundary
- Approximate Groundwater flow direction
- MW-8 — Approximate location of existing monitoring well. Value in parenthesis represents groundwater depth, see note 5.
- Approximate location of subsurface exploration, conducted previously by others.
- Approximate location of subsurface exploration, conducted previously by others, for which physical observations or field screening data was recorded, but from which lab data was not obtained.
- HPBG-3 — Approximate location of hydropunch, conducted previously by others.
- Approximate location of Soil Boring, conducted as part of the Supplemental Investigation by Haley & Aldrich, Inc., December 2006.
- Approximate location of Soil Boring, conducted by others June 2007.
- Approximate location of Test Pit, conducted by others June 2007.
- MW-101 — Approximate location of Monitoring Wells installed on 5 & 6 November 2007.
- NYSEG Related Areas
- I-N — "Hot Spot" Locations identified in Dames & Moore's 1997 Cleanup Plan.
- O — Existing Water Supply Well to be Decommissioned.

NOTES:

1. Water levels labeled on each of the monitoring wells (MW-1, MW-2, MW-3 and MW-8) are based on the most recent survey/sampling data available.
2. Grey Background features represent proposed site redevelopment.

N E S W

0 150 300
SCALE IN FEET

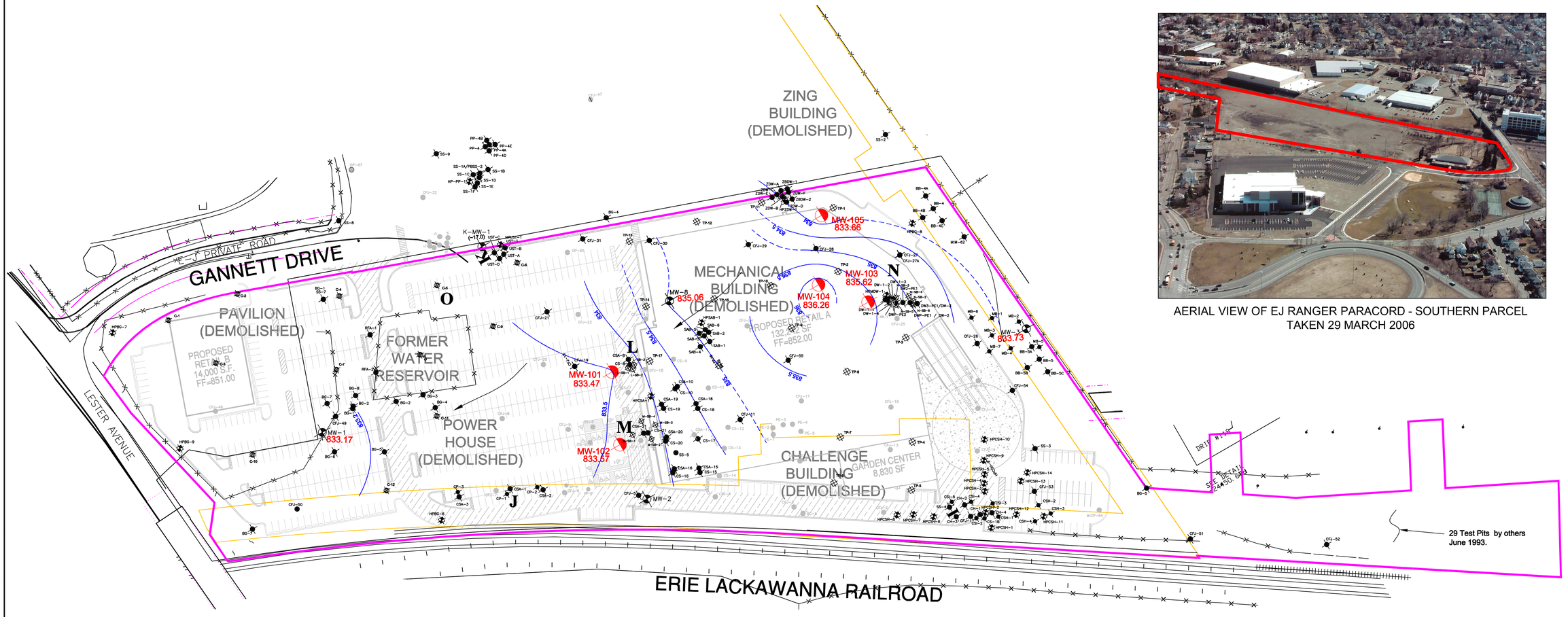
HALEY & ALDRICH

FORMER ENDICOTT- JOHNSON RANGER PARACORD SITE
SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SITE PLAN

SCALE: AS SHOWN
FEBRUARY 2008

FIGURE 2



AERIAL VIEW OF EJ RANGER PARACORD - SOUTHERN PARCEL
TAKEN 29 MARCH 2006

LEGEND:

- Fence
- Approximate Southern Parcel Property Boundary
- Approximate Groundwater flow direction
- MW-8 835.06 — Approximate location of existing monitoring well. Value in red represents groundwater elevation, see note 1.
- Approximate location of subsurface exploration, conducted previously by others.
- Approximate location of subsurface exploration, conducted previously by others, for which physical observations or field screening data was recorded, but from which lab data was not obtained.
- HPBG-3 — Approximate location of hydropunch, conducted previously by others.
- Approximate location of Soil Boring, conducted as part of the Supplemental Investigation by Haley & Aldrich, Inc., December 2006.
- Approximate location of Soil Boring, conducted by others June 2007.
- Approximate location of Test Pit, conducted by others June 2007.
- MW-101 833.47 — Approximate location of Monitoring Wells installed on 5 & 6 November 2007 with groundwater elevation, see note 1.
- NYSEG Related Areas
- I-N — "Hot Spot" Locations identified in Dames & Moore's 1997 Cleanup Plan.
- O — Existing Water Supply Well to be Decommissioned.

NOTE:

1. Groundwater elevations labeled on the monitoring wells are based on water depths collected on 6 December 2007.
2. Grey Background features represent proposed site redevelopment.

N E S W

0 150 300
SCALE IN FEET

HALEY & ALDRICH

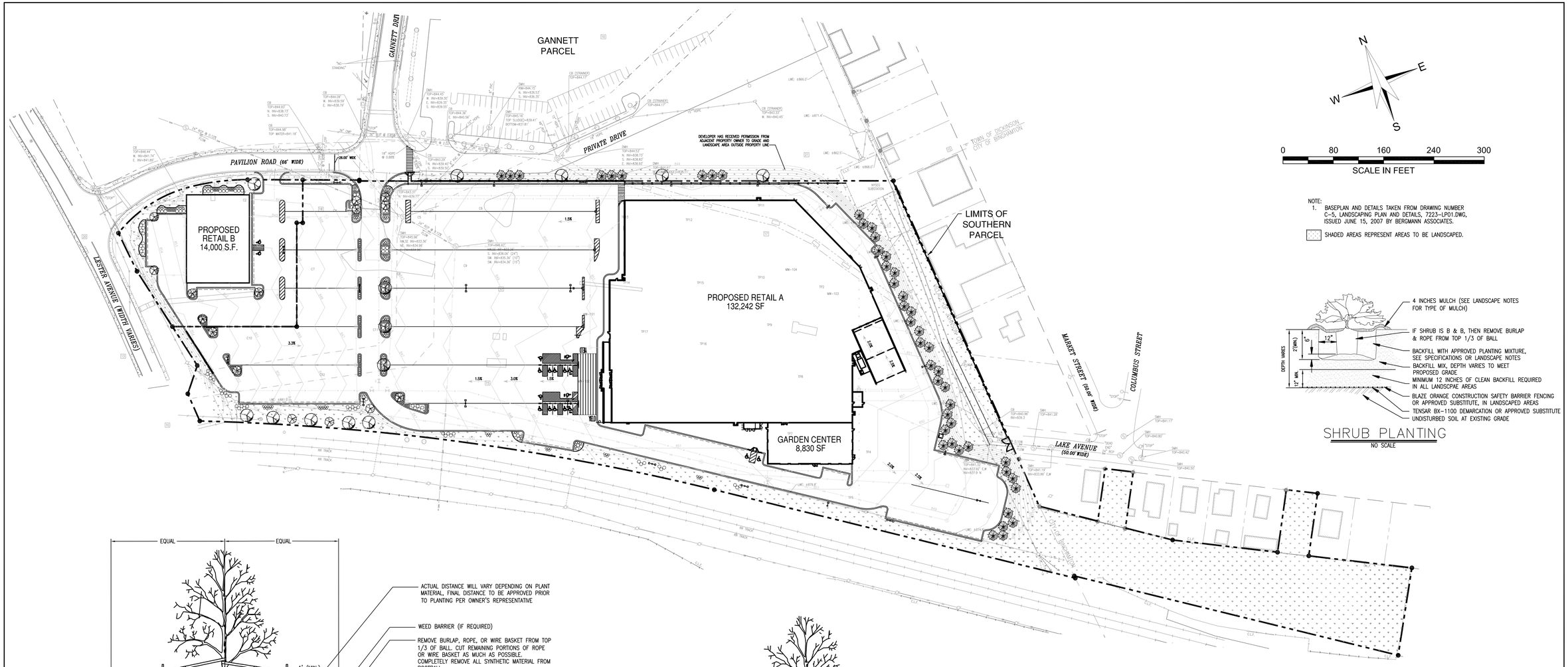
FORMER ENDICOTT- JOHNSON RANGER PARACORD SITE
SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

SITE PLAN - WITH GROUNDWATER CONTOURS

SCALE: AS SHOWN
FEBRUARY 2008

FIGURE 3

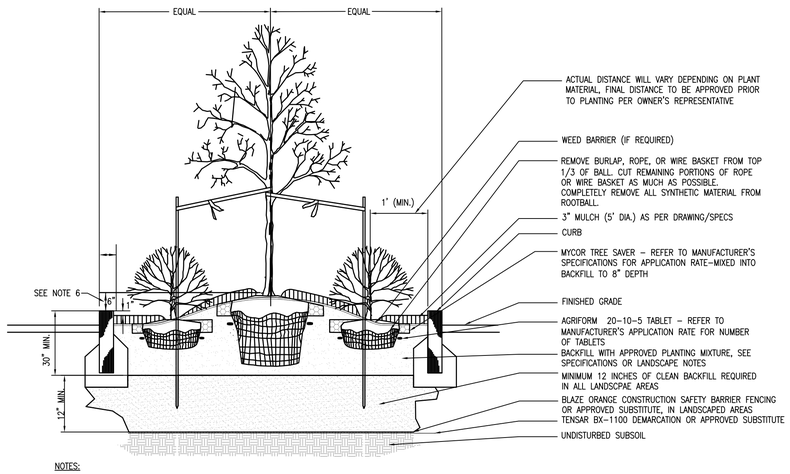
G:\PROJECTS\30603011 (SOUTHERN PARCEL SUPPLEMENTAL INVESTIGATION)\SITE PLANS\2007 1127_SITEPLAN_GW CONTOURS.DWG



NOTE:
1. BASEPLAN AND DETAILS TAKEN FROM DRAWING NUMBER C-5, LANDSCAPING PLAN AND DETAILS, 7223-LP01.DWG, ISSUED JUNE 15, 2007 BY BERGMANN ASSOCIATES.

SHADED AREAS REPRESENT AREAS TO BE LANDSCAPED.

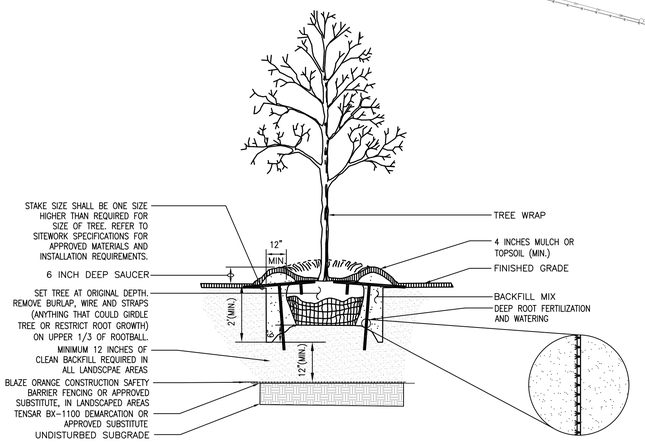
SHRUB PLANTING
NO SCALE



NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS, INORGANIC MATERIAL AND LARGE STONES WITHIN THE CURBED ISLAND AND RECEIVE APPROVAL FROM THE OWNER'S REPRESENTATIVE PRIOR TO FILLING WITH APPROVED PLANTING MIX TO A MINIMUM DEPTH OF 30".
2. TREES AND SHRUBS WITHIN THE CURBED ISLAND SHALL BE INSTALLED AS PER SPECIFIC PLANT DETAIL.
3. WEED BARRIER, IF REQUIRED, WILL BE AS PER THE SPECIFICATIONS.
4. FOR TREES LESS THAN 4" CAL., INSTALL STAKING AS PER DECIDUOUS TREE PLANTING LESS THAN 4" CAL. DETAIL.
5. FOR TREES GREATER THAN 4" CAL., INSTALL GUYING AS PER DECIDUOUS TREE PLANTING GREATER THAN 4" CA. DETAIL.
6. BERM HEIGHT SHALL BE 6" MIN. UNLESS OTHERWISE NOTED ON GRADING PLAN.

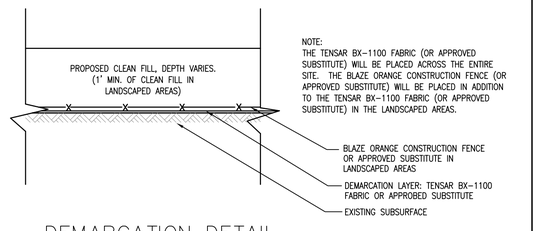
TYPICAL PARKING LOT ISLAND SECTION
NO SCALE



NOTES:

1. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.
2. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.
3. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT
4. BRANCHING HEIGHT TO A.A.N. STANDARDS

TREE PLANTING
NO SCALE



NOTE:
THE TENSAR BX-1100 FABRIC (OR APPROVED SUBSTITUTE) WILL BE PLACED ACROSS THE ENTIRE SITE. THE BLAZE ORANGE CONSTRUCTION FENCE (OR APPROVED SUBSTITUTE) WILL BE PLACED IN ADDITION TO THE TENSAR BX-1100 FABRIC (OR APPROVED SUBSTITUTE) IN THE LANDSCAPED AREAS.

DEMARCATION DETAIL
NO SCALE

HALEY & ALDRICH

FORMER ENDICOTT-JOHNSON RANGER PARACORD SITE
SOUTHERN PARCEL
JOHNSON CITY, NEW YORK

PROPOSED REDEVELOPMENT PLAN AND DETAILS

SCALE: AS SHOWN
FEBRUARY 2008

FIGURE 4

G:\PROJECTS\306031011 (SOUTHERN PARCEL SUPPLEMENTAL INVESTIGATION)\SITE PLANS\LANDSCAPING PLAN AND DETAILS2.DWG

APPENDIX A

Analysis Matrices (Qualitative Exposure Assessment; Alternatives Analysis)

Appendix A-1 - Qualitative Exposure Assessment
Former Endicott-Johnson Ranger Paracord Facility
Southern Parcel
Johnson City, New York
File Number: 30603-011

Media	Compounds of Concern	Potential Exposure Pathways			Potentially Affected Parties	Potential Mechanism
		Ingestion	Absorption	Inhalation		
Soil	PAHs; Heavy Metals (Arsenic, Lead, Copper)	✓	✓	✓	Site workers; Residents; Future site occupants	**Ingestion:** Could become a potential exposure pathway if the soils are exposed to the surface andcome in contact with hands and food and are then consumed.
						Absorption: Could become a potential exposure pathway if the soils are exposed at the surface and come in direct contact with skin.
						Inhalation: Could become an exposure pathway if the soils are exposed at the surface and the soil is allowed to dry and be disturbed, and dust particulates are inhaled.
Groundwater	Low levels of naturally occurring metals (Iron, Sodium, Selenium)	✓	✓	NC	Workers; Residents; Future site occupants	**Ingestion:** Could be a potential exposure pathway if untreated groundwater is used for drinking water or brought to the surface for other uses (e.g. - irrigation, construction)
						Absorption: Could be a potential exposure pathway if groundwater is brought to the surface (e.g. - irrigation, construction), comes into contact with skin, and is absorbed through the skin.
						Inhalation: Not a likely exposure pathway
Air (Vapor Only)	NONE	NC	NC	NC	Workers; Residents; Future site occupants	**Ingestion:** Not a likely exposure pathway
						Absorption: Not a likely exposure pathway
						Inhalation: Not a likely exposure pathway

Notes & Abbreviations:

1. NC: Not anticipated to be a complete exposure pathway.
2. The compounds of concern are those that through analysis have been detected at a concentration above Soil Cleanup Objectives (SCOs) at one or more location.

Appendix A-2 - Alternatives Analysis Matrix (Final Evaluation)
Former Endicott-Johnson Ranger Paracord Facility
Southern Parcel
Johnson City, New York
File Number: 30603-011

	Cover Fill Materials	Remove All Fill Materials
Overall Protection of Human Health and the Environment	In-place containment of soils with levels of contamination greater than commercial SCOs provides protection against contact, inhalation and/or ingestion type pathways. Groundwater at the site is not used for drinking water, and analyses indicate that soil quality has had no significant adverse effects on groundwater quality. Thus, there will be no complete exposure pathways after the remedy is implemented, so the remedy succeeds in protecting human health and the environment.	The removal of all fill materials onsite would remove the source contamination onsite, thereby removing the exposure pathways with respect to contact, inhalation, or ingestion. Thus, the remedy succeeds in protecting human health and the environment.
Compliance with Standards, Criteria, and Guidance (SCGs)	Residual contamination left in place, including levels above and below commercial Soil SCOs, will be contained beneath pavement, building and/or landscaped areas to prevent exposure. Groundwater at the site generally meets NYSDEC Ambient Water Quality Criteria with the exception of limited metals that are naturally occurring.	SCGs would be met if all fill soils were removed. Removing the fill materials will remove the main source of contamination. Removing fill soils would not significantly change groundwater quality, however, as groundwater at the site generally meets NYSDEC Ambient Water Quality Criteria with the exception of limited metals that are naturally occurring. Given that groundwater is not affected by the contaminants found in the soil,removing all fill materials will not provide a greater benefit than capping the existing fill materials with a cover system.
Long-Term Effectiveness and Permanence	The implementation of a Site Management Plan and an Environmental Easement will provide long-term remedy effectiveness. Significant threats and exposure pathways will be limited or removed, and the engineering controls (demarcation layer; cover) are both adequate and reliable. Provided the protective cover is maintained, significant threats and exposure pathways will continue to be limited.	The removal of all fill materials would remove the source of contamination on site. This removal coupled with the implementation of a Site Management Plan and Environmental Easement would provide long-term remedy effectiveness. Significant threats and exposure pathways would be limited or removed.
Reduction of Toxicity, Mobility, or Volume	While the compounds of concern (PAHs, and relatively low solubility metals) have low mobility as demonstrated by their relative absence in groundwater, their mobility will be further reduced with the use of a cover system. Toxicity of biodegradable PAHs will also be attenuated over time.	While the compounds of concern (PAHs, and relatively low solubility metals) have low mobility as demonstrated by their relative absence in groundwater, their mobility as well as their toxicity and volume will be further reduced by the removal of the fill material.

Appendix A-2 - Alternatives Analysis Matrix (Final Evaluation)
Former Endicott-Johnson Ranger Paracord Facility
Southern Parcel
Johnson City, New York
File Number: 30603-011

	Cover Fill Materials	Remove All Fill Materials
Short-Term Effectiveness	Given that this remedy can be completed concurrently with construction, which can commence shortly following approval of this report, implementation of this remedy can be completed within several months. Because a majority of the fill materials will be contained in-place, with the exception of isolated areas of soil potentially requiring excavation as per construction specifications, very few soils will be disturbed, and large amounts of dust are not anticipated to be generated. This remedy therefore is likely to provide very good short-term effectiveness. In addition, during construction, a dust supression plan will be implemented to protect the works and surrounding community. If dust suppression is not effective, a community air monitoring plan will be put in place.	Because this remedy requires the characterization and disposition of all fill materials on site, the time to implement this remedy would be upwards of one to two years independent of construction and site redevelopment. Large amounts of particulate dust would likely be generated as a result of both soil characterization (drilling) and removal (excavation, large amounts of truck traffic). While dust control measures (and potentially a community air monitoring plan) would be implemented as part of this remedy, the potential for adverse affects to workers and the surrounding community is significantly greater from this remedy than for a containment in-place remedy, where very little fill would be disturbed.
Implementability	In-place containment of soils can be implemented in conjunction with site development using coventional construction equipment and permitted disposal facilities where applicable. Specialized or new technologies will not be employed to implement the remedy.	Removal of fill materials does not require new technologies or specialized equipment; however given the immense amount of time required to characterize all portions of the fill, receive proper permitting, and perform removal and disposition to approved landfills (as required), this remedy cannot be completed concurrently with construction, and would inhibit redevelopment of the Site. Additionally, this method would necessitate large volumes of replacement fill, and would consume substantial volumes of offsite landfill capacity.
Cost	The cost of pavement is subsumed within the construction costs. Additional costs for demarcation layer material and clean fill within landscaped areas are anticipated to be between $10 and $50 thousand.	Based on experience at other sites, and cost estimates provided by Dames & Moore for the Ranger Paracord Facility, it is anticipated that characterization, removal, and offsit dispostion of all fill materials would cost between $5 million and $10 million. Such an expense could not be sustained by the Applicant and would result in abandonment of the BCP and redevelopment project.

APPENDIX B

Construction Detail Drawings and Construction-Related Excavation Work Plan

FORMER ENDICOTT-JOHNSON RANGER PARACORD FACILITY – SOUTHERN PARCEL
JOHNSON CITY, NEW YORK
BCP SITE NUMBER C704048

REMEDIAL ALTERNATIVES ANALYSIS AND REMEDIAL ACTION WORK PLAN

CONSTRUCTION-RELATED EXCAVATION WORK PLAN

by

Haley & Aldrich of New York
Rochester, New York

for

Stella Ireland Road Associates, LLC
Vestal, NY

File No. 30603-011
February 2008

1. PURPOSE AND APPLICABILITY

This Excavation Work Plan (Work Plan) was prepared to be used by the Site owner and contractors that will be conducting construction related excavations associated with redevelopment activities at the **Former Endicott-Johnson Ranger Paracord Facility – Southern Parcel, Johnson City, New York** (the Site), shown on Figure 1.

1.1 Purpose

The purpose of this Work Plan is to present procedures to be followed for management of soils excavated during site redevelopment activities, which provide protection of worker health and safety, and protection of human health and the environment. The Work Plan is intended to serve as a companion to the Remedial Action Work Plan (RAWP) to which the Work Plan is appended.

As indicated in the overall Remedial Action Work Plan, the Site is underlain by fill soils containing metals and polyaromatic hydrocarbons (PAHs) at concentrations above Brownfield Cleanup Program (BCP) recommended Soil Cleanup Objectives (SCOs) for unrestricted site use (6 NYCRR Part 375-6). A remedy consisting of engineering and institutional controls has been recommended for the Site, and it is the owner's intent to install the proposed engineering controls concurrent with Site redevelopment activities.

1.2 Applicability

The recommended Site remedy includes placement of a Demarcation Layer and a minimum of 1 ft. of clean cover material (cover system) over the existing Site fill. Certain construction-related activities, including demolition and/or removal of remaining concrete slabs and certain remaining above-ground features, such as fences, railroad tracks, and miscellaneous foundations, utility work, and site grading, will be conducted prior to placement of the Demarcation Layer and clean cover material. This Work Plan is applicable to excavations in all areas of the Site during those activities, prior to placement of the Demarcation Layer. This Work Plan does not apply to excavations that may be conducted within the clean cover after the Demarcation Layer is in place, or to excavations that may occur in the future after redevelopment activities are complete. Excavations conducted within the clean fill do not require a Work Plan, and a separate Soil Management Plan will be prepared and submitted as part of the Final Engineering Report for the Site to address potential future excavations within existing Site fill beneath the Demarcation Layer.

2. PRE-EXCAVATION ACTIVITIES

Certain pre-excavation activities are required as part of this Work Plan.

2.1 Pre-Excavation Activities and Notifications

2.1.1 Remedial Action Work Plan Review

Prior to conducting excavations, it is recommended that involved Contractors review the Remedial Action Work Plan to familiarize themselves with current Site conditions.

2.1.2 Agency Notification

The owner (or designee) must prepare written notification to New York State Department of Environmental Conservation, Division of Environmental Remediation, Region 7, 1679 Route 11, Kirkwood, NY 13795 (Attention: Gary Priscott). Notification must be made 7 calendar days prior to the start of work. The notification must include:

- A description of the work to be performed,
- Expected dates for performing the work,
- A statement that the Former Endicott-Johnson Ranger Paracord Facility - Southern Parcel Excavation Work Plan will be followed during the course of the work,
- A statement that a Health & Safety Plan for the work has been prepared by the Contractor and will be followed according to OSHA regulation 29 CFR 1910.120,
- A statement that Air Monitoring will be performed in conformance with the overall Remedial Action Work Plan.

2.1.3 Obtain Permits

The Owner and/or involved contractors must obtain any permits or approvals needed from the Village of Johnson City, Broome County or other municipal or regulatory agencies for the work to be performed.

2.1.4 Underground Utility Clearance and Notification

Agencies such as the Underground Facilities Protection Organization (**UFPO**) at 800-962-7962 (Dig Safely New York) and others as may be required to properly to mark out existing utilities facilities shall be contacted prior to excavation work. Both public and private utilities and facilities must be identified.

2.1.5 Health & Safety Plan

As indicated in the Remedial Action Work Plan, some fill soils at the Site contain concentrations of compounds above recommended SCOs. Chemicals of potential concern at the Site have been identified as metals (arsenic, lead, copper) and polycyclic aromatic hydrocarbons (PAHs). Based on experience with previous excavation activities at the Site and at the adjacent parcel, it is also possible that areas of residual petroleum stained soils could be encountered at the Site. There may be volatile organic chemicals (VOCs) encountered associated with petroleum residuals. Therefore, Health & Safety planning is required to address instances where such fill and/or stained soils may be encountered during construction-related activities. Health and safety planning should also give consideration to other construction related issues, such as, but not limited to, trenching safety (as is required under OSHA regulations 29 CFR 1926), or other construction-related OSHA regulations.

A written Site-specific Health & Safety Plan (conforming to 29 CFR 1926.65) shall be developed by the Contractor for construction activities. The Health & Safety Plan should include information specific to the Site, specific construction tasks to be performed, and the potential for exposure for site workers and uncontrolled public access areas where potential for exposure may exist. The HASP must provide for healthy and safe conduct of site tasks by on-Site personnel and site visitors.

At minimum the HASP shall include:

- Pre-work Health and Safety Briefing Documentation
- Worker Training Requirements (consistent with OSHA requirements under 29 CFR 1926.65). Refer to 20 CFR 1926.65(e) for specific training requirements.
- Project information: Location of project, organizations performing the work, site owner contact information, excavation contractor contact information
- Site Description
- Scope of Work
- Hazard Assessment (Chemical and Physical)
- Protective Measures (Personal Protective Equipment, Work Zone Safety)
- Air Monitoring Plan and Equipment
- Decontamination Procedures
- Contingency Plan (for emergencies)

2.1.6 Air Monitoring Plan

At minimum, the following Air Monitoring Plan (AMP) shall be implemented at the Site. The Contractor is required to perform air monitoring for its own activities, in conformance to the Contractor's HASP

2.1.6.1 Worker Health and Safety

Periodic air monitoring for VOCs in the breathing zone shall be required during ground intrusive activities in fill soils that exhibit petroleum staining. Periodic air monitoring shall be performed at approximately 15 minute intervals. Periodic air monitoring is also required for non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring well. Periodic monitoring during sample collections, for example, would consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or disturbing soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location.

Continuous air monitoring for VOCs in the breathing zone is required for all ground intrusive activities in soils exhibiting petroleum saturation. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, underground utility installation, test pitting or trenching, and the installation of soil borings or monitoring wells. Continuous air monitoring shall also be implemented where periodic air monitoring indicates the need (see Response Levels).

VOC Monitoring, Response Levels, and Actions

The monitoring work will be performed using a photo-ionization detector (PID) or flame-ionization detector (FID) with alarm capabilities to measure volatile organic vapors including VOC constituents known or suspected to be present. The equipment must be calibrated at least daily in accordance with manufacturer requirements with an appropriate calibration gas.

All readings must be recorded on a Record of Field Monitoring Log form and be available for State (DEC and DOH) personnel to review.

If, during periodic monitoring, the concentration of total organic vapors exceeds 5 parts per million (ppm) above background, then continuous monitoring shall be implemented. If the ambient air concentration of total organic vapors exceeds 5 parts per million (ppm) above background for longer than 15 minutes, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

If total organic vapor levels of the work area persist for longer than 15 minutes at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 feet) is below 5 ppm over background.

If the organic vapor level is above 25 ppm at the perimeter of the work area as indicated by the equipment alarm, activities must be shut down pending evaluation and implementation of additional corrective actions to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 feet) is below 5 ppm over background.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the excavation areas in the exclusion zone. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicated exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the localized PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that the local PM-10 particulate concentrations do not

exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, the PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume proved that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust generation.

If the PM-10 particulate concentration exceeds 5 mg/m^3 in the work zone, workers will be required to upgrade their personal protective equipment to Level C (full-face respirator).

All readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review.

2.1.6.2 Community Air Monitoring Plan

Community air monitoring for particulates shall be performed as described below. Due to the deminimus potential for VOC emissions, and because the work area will be monitored for VOCs, as described above, the Community Air Monitoring Plan (CAMP) does not include VOC monitoring.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicated exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (ug/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate concentrations do not exceed 150 ug/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 ug/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume proved that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 ug/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (NYSDEC and NYSDOH) personnel to review.

2.1.7 Imported Backfill Quality Verification

It is our understanding that the Gorick Pit, described in Section 6 of the Remedial Action Work Plan, has been proposed as the source for imported clean backfill and cover material. Existing chemical data documentation for the Gorick Pit indicating the material meets NYSDEC criteria for "clean" fill has been previously provided to NYSDEC.

Any additional 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 contamination. Analytical testing of backfill materials imported to the site shall consist of:

- EPA Method 8260 (Target Compound List VOCs)
- EPA Method 8270 (Target Compound List SVOCs)
- EPA Method 6010 (Target Analyte List metals)
- EPA Method 8082 (PCBs)

Samples shall be collected and submitted for testing at a frequency of approximately one test per 1,000 cubic yards of material, and when there is a change in the source material. Testing shall be performed by a laboratory certified under the NYS Department of Health Environmental Laboratory Approval Program. (A list of certified laboratories is provided at http://www.wadsworth.org/labcert/elap/comm.html).

Suitable material must not contain compounds at levels greater than NYSDEC standards for unrestricted use as identified in 6 NYCRR Part 375-6.8(a). The results of chemical analysis of the proposed imported soil and basis for acceptance must be provided to NYSDEC. In the case of topsoil, the requirements for acceptability may be relaxed, provided the borrow source is determined to be from outside urban areas and has been inspected to determine that no obvious sources of contamination may exist which could adversely impact the soil quality.

3. EXCAVATION AND SOIL MANAGEMENT PROCEDURES

This section describes excavated soil management and soil re-use and disposal requirements.

3.1 Excavation Area Management

The area of excavation shall be marked to prevent access by unauthorized personnel or vehicles. A decontamination station for workers and for vehicles shall be established, so that people and equipment are clean before leaving the site. Appropriate construction safety measures shall be employed and the HASP and CAMP shall be implemented.

3.2 Material Types

The following types of material may be encountered at the Site during excavation activities:

- Type A: Typical Site Fill – Fill materials containing debris including brick, glass, ash, cinders.
- Type B: Site Fill with Residual Impacts – Typical Site fill material with residual petroleum staining.
- Type C: Petroleum-saturated Site fill
- Type D: Rubber Scrap Material – layers of black rubber remnants interspersed within Site fill.

The following sections describe procedures for management of material encountered at the Site during excavation.

3.3 Type A, B, and D Material Management

Consistent with practices approved by NYSDEC for work at the adjacent Gannett Parcel, material Types A, B, and D may be left-in place if they are encountered but are not required to be excavated for construction purposes. Material Types A, B, and D that are left in-place must be ultimately covered using the cover system described in Section 6.4 of the Remedial Action Work Plan.

Material Types A, B, and D that are excavated for construction purposes may be temporarily stockpiled and then re-used on-Site if they are re-used in places above the mean high-water table (El. 837.5) and beneath the cover system.

In addition, debris from excavations that is structurally unsuitable for site backfill (wood, wire, metal, large pieces of masonry, etc) must be taken off Site and disposed at a permitted facility.

3.4 Type C Material Management

If material Type C is encountered, it must be managed differently than material Types A, B, and D, in according with the following practices:

1. Visually identify the extent of Type C material within and adjacent to the planned excavation.
2. Excavate from the extents identified, and stockpile.

3. Obtain chemical data for off-site disposal as required by the proposed acceptance facility.
4. Transport the material off-Site in accordance with all local, State, and Federal laws and regulations.
5. Obtain confirmatory samples of material left in place for chemical analysis (minimum two samples from excavation side walls at the extents of the Type C material).
6. Additional excavation of Type C material is not required if confirmatory sample results are consistent with existing Site background concentrations.

3.5 Stockpiling

Stockpiles shall be segregated by material Type as identified in Section 3.2. Type C materials shall be managed as follows:

1. Placed on minimum 10 mil plastic sheeting or on sound pavement, away from storm sewers, downwind property boundaries, and drainage courses.
2. Covered at the end of each work day and only uncovered when in active use.
3. Surrounded with a perimeter berm, staked silt fence or staked hay bales to manage sediment-laden runoff and to minimize run-on from outside the stockpiles.
4. Type A, B and D materials shall be surrounded with erosion and sedimentation control measures and/or covered as needed to prevent off-site migration of sediment laden runoff. In addition stockpiles may need to be covered for dust control or erosion control.

4. EXCAVATION DEWATERING

Groundwater data collected during the remedial investigations do not indicate that the Site groundwater had been impacted by the contaminants of concern at the Site (PAHs, Arsenic, Lead, and Copper).

In general, shallow excavations (less than four feet) are not expected to encounter the water table. For excavations below the water table, dewatering must be performed in conformance with the project specifications. Based on the practices employed previously at the adjacent Gannett parcel, it is anticipated that groundwater collected from excavations can be discharged to the Village of Johnson City sewer system provided permission is granted from the Binghamton-Johnson City Joint Sewage Treatment Authority (BJCJSTA) and it is first intercepted by a sediment filter and an oil/water separator, or other pre-treatment measures as directed by the BJCJSTA.

Smaller amounts of dewatered groundwater (up to approximately 1,000 gallons) that may be generated at isolated excavations or that has been used for purposes such as equipment rinsing, etc. can be discharged onsite to the ground surface for subsequent infiltration, provided no demarcation layer, clean imported fill, or cover system has been placed in the area of discharge. The discharge area shall be limited and controlled by the use of berms or other means and water from excavations shall be pumped through a sediment filter prior to discharge.

5. ENGINEERING CONTROLS

A demarcation layer and cover system must be incorporated into the backfill of any site excavation. A minimum one foot clean soil cover or pavement is required at the final ground surface. The demarcation layer must be placed over existing fill prior to the placement of subsequent clean imported fill. This would be at the bottom of trench excavations for utility installation.

6. DOCUMENTATION

Record documents of the soil management activities shall be prepared and incorporated into the Final Engineering Report for the Site. They shall include:

- Figures showing the limits of excavation, location of demarcation, and type of backfill used.
- Soil testing reports,
- Manifests and/or Bills of Lading documenting the destination of soil and other debris that was disposed off-site, and
- Dates the work was performed.

DEMOLITION PLAN NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE, STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.

2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.

3. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.

4. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES.

5. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.

6. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.

7. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY WAL-MART CONSTRUCTION MANAGER.

8. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES.

9. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.

10. SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FENCING, LIGHTING AND/OR STORM INLET STRUCTURES, THEN THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.

11. CONTRACTOR MAY LIMIT SAW-CUT & PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.

12. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.

13. BURIED UTILITY PIPES UNDER 24" DIAMETER WHICH ARE TO BE ABANDONED AND WHICH ARE WITHIN 30" OF FINISHED PAVEMENT GRADE SHALL BE REMOVED.

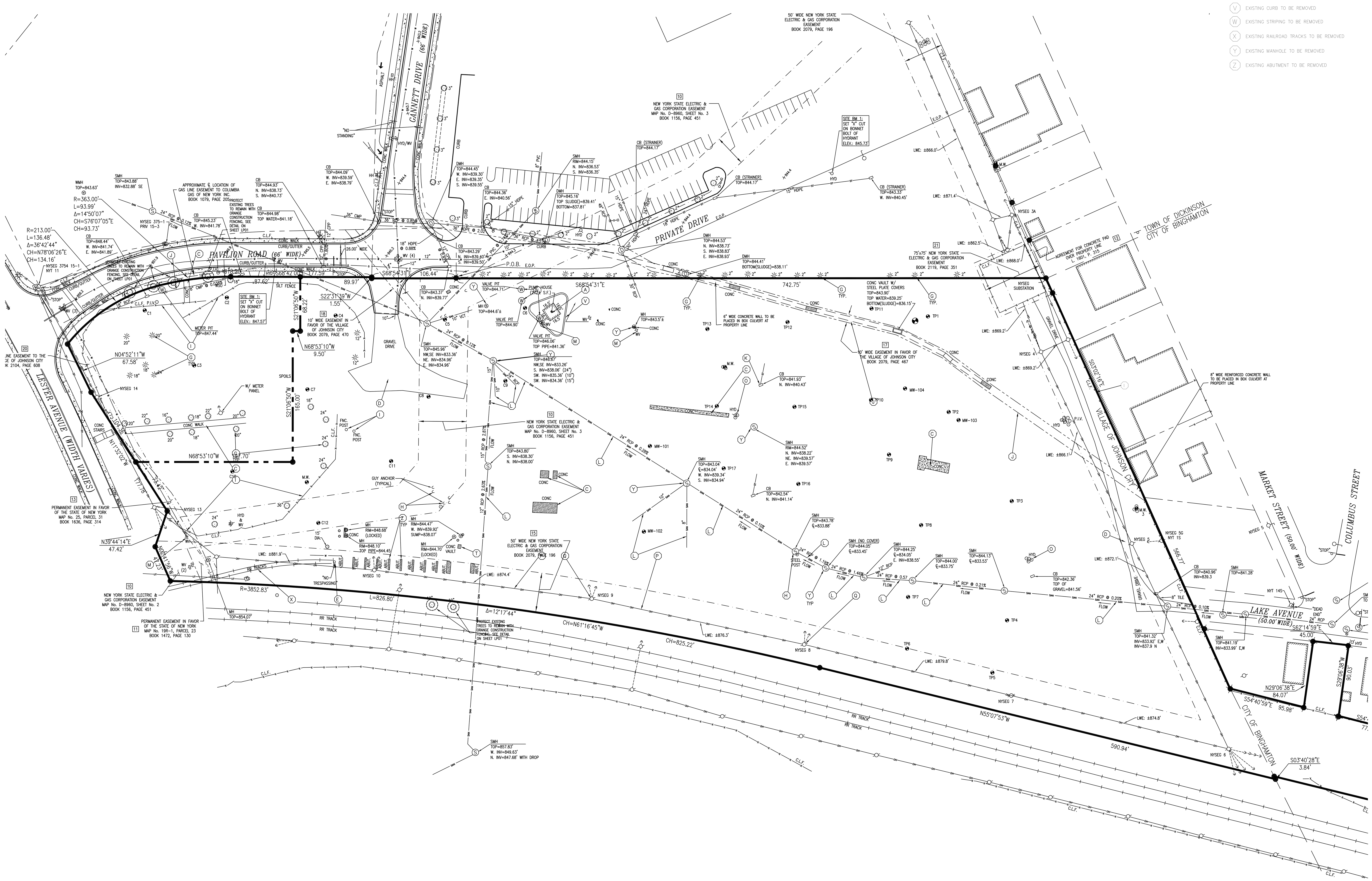
14. ALL ABANDONED WATER AND SEWER LINES, SIX INCHES OR GREATER, MUST BE EITHER GROUTED WITH 300 PSI OR GREATER FLOWABLE FILL, OR REMOVED.

15. CONTRACTOR SHALL REFERENCE REMOVIAL ACTION WORKPLAN PREPARED BY HALEY AND ALDRICH AND ALL TERMS OF THE BROWFIELD CLEANUP AGREEMENT PRIOR TO START OF WORK.

16. CONCRETE BOX CULVERT UNDER LOCATION OF PROPOSED BUILDING PAD SHALL BE REMOVED. CULVERT AREAS OUTSIDE BUILDING LIMITS MAY BE GROUTED WITH 300 PSI OR GREATER FLOWABLE FILL. AN 8" WIDE REINFORCED CONCRETE WALL SHOULD BE CONSTRUCTED INSIDE THE PROPERTY LINE AT BOTH ENDS OF THE CULVERT.

SITE LEGEND

- (A) EXISTING PAGODA PUMP HOUSE BUILDING AND APPURTENANCES TO BE RELOCATED BY VILLAGE OF JOHNSON CITY
- (B) EXISTING ASPHALT PAVEMENT TO BE REMOVED
- (C) EXISTING CONCRETE PAD AND/OR CONCRETE WALK TO BE REMOVED
- (D) EXISTING GRAVEL DRIVE TO BE REMOVED
- (E) EXISTING SIGN TO BE REMOVED
- (F) EXISTING GRASS TO BE REMOVED
- (G) EXISTING TREE TO BE REMOVED
- (H) EXISTING STRUCTURE AND APPURTENANCES TO BE REMOVED
- (I) EXISTING FENCE, FENCE POSTS AND APPURTENANCES TO BE REMOVED
- (J) EXISTING STORM SEWER TO BE REMOVED. SEE NOTE 16.
- (K) EXISTING STORM SEWER STRUCTURE TO BE REMOVED
- (L) EXISTING SANITARY SEWER TO BE REMOVED
- (M) EXISTING WATER VALVE TO BE REMOVED
- (N) EXISTING WATER METER PIT TO BE REMOVED
- (O) EXISTING HYDRANT AND BOLLARDS TO BE REMOVED
- (P) EXISTING OVERHEAD ELECTRIC TO BE RELOCATED, COORDINATE WITH ELECTRIC COMPANY
- (Q) EXISTING ELECTRIC POLE TO BE REPLACED AND/OR RELOCATED, COORDINATE WITH ELECTRIC COMPANY
- (R) EXISTING ELECTRIC METER TO BE REMOVED, COORDINATE WITH ELECTRIC COMPANY
- (S) EXISTING GAS METER TO BE REMOVED, COORDINATE WITH GAS COMPANY
- (T) EXISTING VAULT TO BE REMOVED
- (U) EXISTING DITCH OR SWALE TO BE REMOVED
- (V) EXISTING CURB TO BE REMOVED
- (W) EXISTING STRIPING TO BE REMOVED
- (X) EXISTING RAILROAD TRACKS TO BE REMOVED
- (Y) EXISTING MANHOLE TO BE REMOVED
- (Z) EXISTING ABUTMENT TO BE REMOVED



CONTRACTOR SHALL CONTACT NEW YORK ONE CALL SYSTEM (800) 962-7962 FOR LOCATION OF ALL UTILITIES AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION

0 50 100 150 FT
1" = 50' SCALE BAR

NOT APPROVED:
THIS PLAN HAS NOT RECEIVED FINAL APPROVAL OF ALL REVIEWING AGENCIES. THIS PLAN IS SUBJECT TO REVISIONS UNTIL ALL APPROVALS ARE OBTAINED AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES

Proposed Retail Development

90 LESTER AVENUE

Village of Johnson City
County of Broome
State of New York

Stella Ireland Road Associates, L.L.C.
3101 Shippers Road
Vestal, NY 13851

Bergmann associates

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1040 First Ave, Suite 430
King of Prussia, PA. 19406
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Engineers / Architects /Planners/ Surveyors

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D
1	8/24/07	PER VILLAGE REVIEW	EMM	RPS
2	10/16/07	PER DPW COMMENT	EMM	RPS
3	10/23/07	PER SPECIFICATIONS	EMM	RPS
4	2/21/08	PER TEAM REVIEW	AVN	RPS

DEMOLITION PLAN

Project Manager: **R. SWITALA, PE**
Designed by: **E. MC CLOSKEY**
Drawn by: **R. RATHFON**
Checked by: **G. OLIN, PE**
Date Issued: JUNE 15, 2007
Scale: **1"=50'**
Date

Project Number: **7223.04**
File Name: **I:\WM\7223...\...\7223-DP01.DWG**

Drawing Number:
C-1

SITE GRADING NOTES

1. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
4. PRECAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.
5. STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

   TYPE 1: RCP, CLASS III PER ASTM C-76,WITH FLEXIBLE PLASTIC BITUMEN GASKETS AT JOINTS.

   TYPE 2: SPIRAL RIB METAL PIPE TYPE 1R:GALVANIZED, ALUMINIZED, OR BITUMINOUS COATED AS SPECIFIED ON CONSTRUCTION DRAWINGS. ONLY PERMITTED WHEN SPECIFICALLY INDICATED ON CONSTRUCTION DRAWINGS. PIPE ENDS SHALL BE RE-CORRUGATED AND INSTALLED WITH SEMI-CORRUGATED HUGGER-TYPE BANDS AND "O" RING GASKETS IN ACCORDANCE WITH PIPE MANUFACTURER'S INSTALLATION REQUIREMENTS.SPIRAL RIB METAL PIPE MUST COMPLY WITH ASTM A 760 TYPE 1R. ACCEPTABLE MANUFACTURER: CONTECH, INC." ULTRA FLO OR ULTRA FLO II" OR APPROVED EQUAL.
6. EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
7. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS
8. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.
9. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
10. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING LIDS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
11. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL NYSDEC PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
12. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
13. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
14. TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY BY BERGMANN ASSOCIATES, IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.
15. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL, CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH TOWN/COUNTY SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
16. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
17. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES AND NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.
18. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, AND ALL UTILITIES PRIOR TO CONSTRUCTION.
19. SITEWORK SHALL MEET OR EXCEED WAL-MART SITE SPECIFICATIONS.
20. ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4000 PSI.
21. CONTRACTOR SHALL REFER TO GEOTECHNICAL INVESTIGATION PREPARED BY HAWK ENGINEERING (FOR INFORMATION ONLY)
22. MINIMUM SLOPE IN PAVEMENT AREA = 1.5%
23. ALL WORK SHALL COMPLY WITH REMEDIAL ACTION WORKPLAN PREPARED BY HALEY AND ALDRICH AND BROWNFIELD CLEANUP AGREEMENT FOR SUBJECT SITE.

NOTE:

ENTIRE SITE SHALL RECEIVE A DEMARCATION LAYER (TENSAR BX-1100 GEOTEXTILE FABRIC) AND APPLICATION OF CLEAN SOIL COVER OUTSIDE BUILDINGS AND PAVED AREAS.

CONTRACTOR SHALL PLACE A BLAZE ORANGE CONSTRUCTION FENCE IN ALL LANDSCAPED AREAS TO BE CONSTRUCTED AS AN ADDITIONAL DEMARCATION LAYER.

FOUNDATION SUBSURFACE PREPARATION NOTE

FOUNDATION SUBSURFACE PREPARATION WAL-MART
7042, Johnson City, New York
12/04/07

UNLESS SPECIFICALLY INDICATED OTHERWISE IN THE DRAWINGS AND/OR SPECIFICATIONS, THE LIMITS OF THIS SUBSURFACE PREPARATION ARE CONSIDERED TO BE THAT PORTION OF THE SITE DIRECTLY BENEATH AND 5 FEET BEYOND THE BUILDING AND APPURTENANCES.

APPURTENANCES ARE THOSE ITEMS ATTACHED TO THE BUILDING PROPER (REFER TO DRAWING SHEET SP1), TYPICALLY INCLUDING, BUT NOT LIMITED TO, THE BUILDING SIDEWALKS, GARDEN CENTER, PORCHES, RAMPS, STOOPS, TRUCK WELLS/DOCKS, CONCRETE APRONS AT THE AUTOMOTIVE CENTER, COMPACTOR PAD, ETC. THE SUBBASE AND THE VAPOR BARRIER, WHERE REQUIRED, DO NOT EXTEND BEYOND THE LIMITS OF THE ACTUAL BUILDING AND THE APPURTENANCES.

TO ALLOW FOR THE SLAB THICKNESS OF A 6 INCH SUBBASE. THE SUBBASE SHALL BE ITEM 304.14 IN THE NEW YORK STATE DOT STANDARD OF SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE MEASUREMENTS FOR ALL CUT AND FILL DEPTHS REQUIRED.

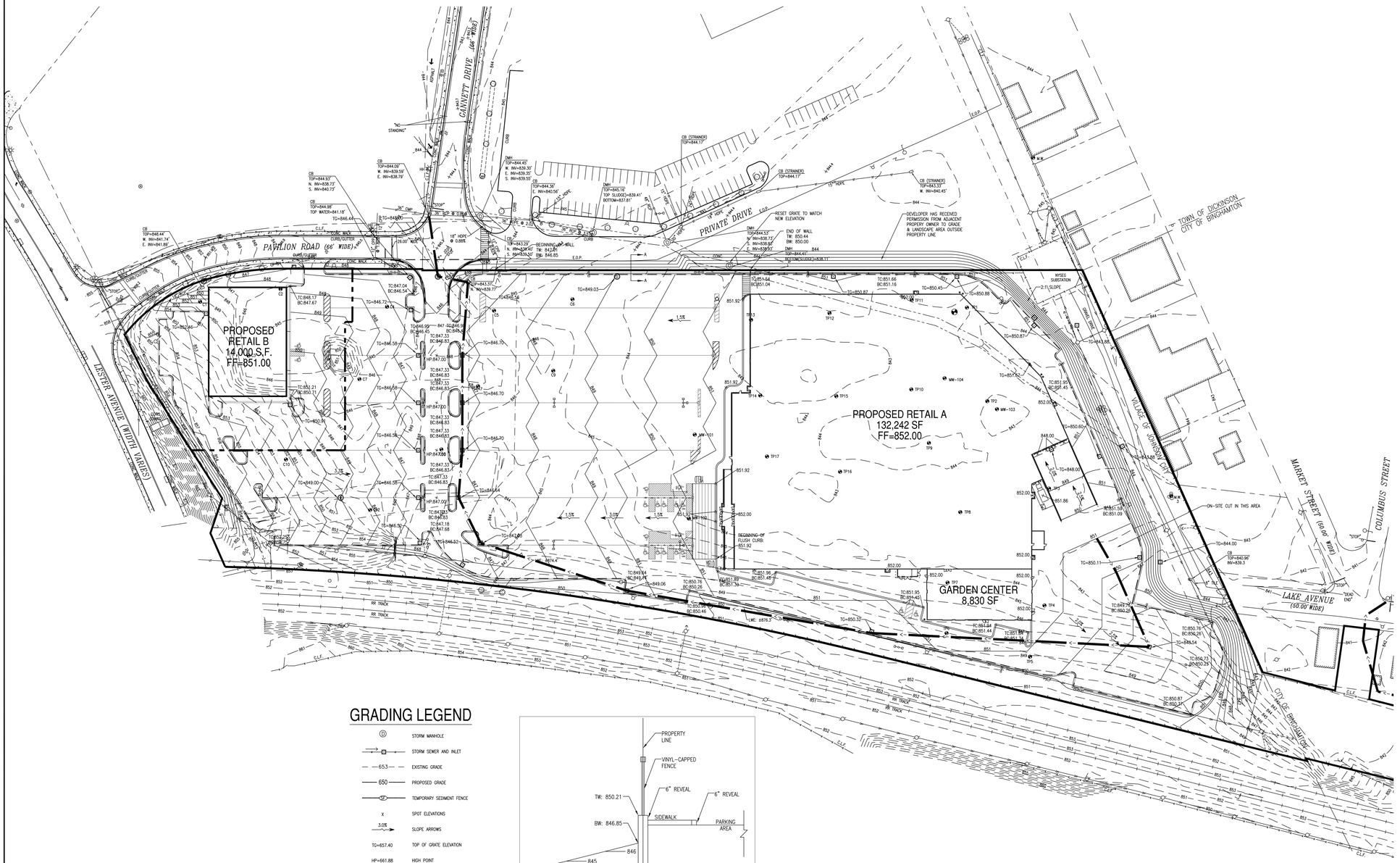
EXISTING FOUNDATIONS, SLABS, PAVEMENTS, AND BELOW-GRADE STRUCTURES SHALL BE REMOVED FROM THE BUILDING AREA. REMOVE SURFACE VEGETATIONS, TOPSOIL, ROOT SYSTEMS, ORGANIC MATERIAL, EXISTING FILL, AND SOFT OR OTHERWISE UNSUITABLE MATERIAL FROM THE BUILDING AREA. PROOFROLL EXPOSED SUBGRADE. REMOVE AND REPLACE UNSUITABLE AREAS WITH SUITABLE MATERIAL. SUBGRADE MATERIAL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIALS AND SHALL MEET THE FOLLOWING REQUIREMENTS:

LOCATION WITH RESPECT TO FINAL GRADE	P.I.
BUILDING AREA, BELOW UPPER 4 FEET	5 MAX
BUILDING AREA, UPPER 4 FEET	5 MAX

SUBGRADE MATERIALS SHALL BE PLACED IN LOOSE LIFTS NOT EXCEEDING 12 INCHES IN THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557) AT A MOISTURE CONTENT WITHIN 2 PERCENT BELOW TO 2 PERCENT ABOVE THE OPTIMUM.

THE FOUNDATION SYSTEM SHALL BE ISOLATED SPREAD FOOTINGS AT COLUMNS AND CONTINUOUS SPREAD FOOTINGS AT WALLS.

THIS FOUNDATION SUBSURFACE PREPARATION DOES NOT CONSTITUTE A COMPLETE SITE WORK SPECIFICATION. IN CASE OF CONFLICT, INFORMATION COVERED IN THIS PREPARATION SHALL TAKE PRECEDENCE OVER THE WAL-MART SPECIFICATIONS. REFER TO THE SPECIFICATIONS FOR SPECIFIC INFORMATION NOT COVERED IN THIS PREPARATION. THIS INFORMATION WAS TAKEN FROM A GEOTECHINCAL REPORT PREPARED BY HAWK ENGINEERING, PC DATED DECEMBER 2007 (GEOTECHINCAL REPORT IS FOR INFORMATION ONL Y AND IS NOT A CONSTRUCTION SPECIFICATION).



GRADING LEGEND

Ⓓ	STORM MANHOLE
	STORM SEWER AND INLET
653	EXISTING GRADE
650	PROPOSED GRADE
SF	TEMPORARY SEDIMENT FENCE
x	SPOT ELEVATIONS
3.0%	SLOPE ARROWS
TG=657.40	TOP OF GRATE ELEVATION
HP=661.88	HIGH POINT
TC 658.30 BC 657.80	TOP & BOTTOM OF CURB ELEVATIONS
	PROPOSED CONSTRUCTION ENTRANCE

SECTION A-A
N.T.S

** NOTE **
PIPE LENGTHS LISTED ARE BASED ON HORIZONTAL DISTANCE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE AND USED FOR DESIGN. CONTRACTOR TO FIELD VERIFY ACTUAL PIPE LENGTHS NEEDED FOR CONTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR COMPARING THE STORM SEWER AND SANITARY SEWER HORIZONTAL AND VERTICAL ALIGNMENTS AND INFORMING THE ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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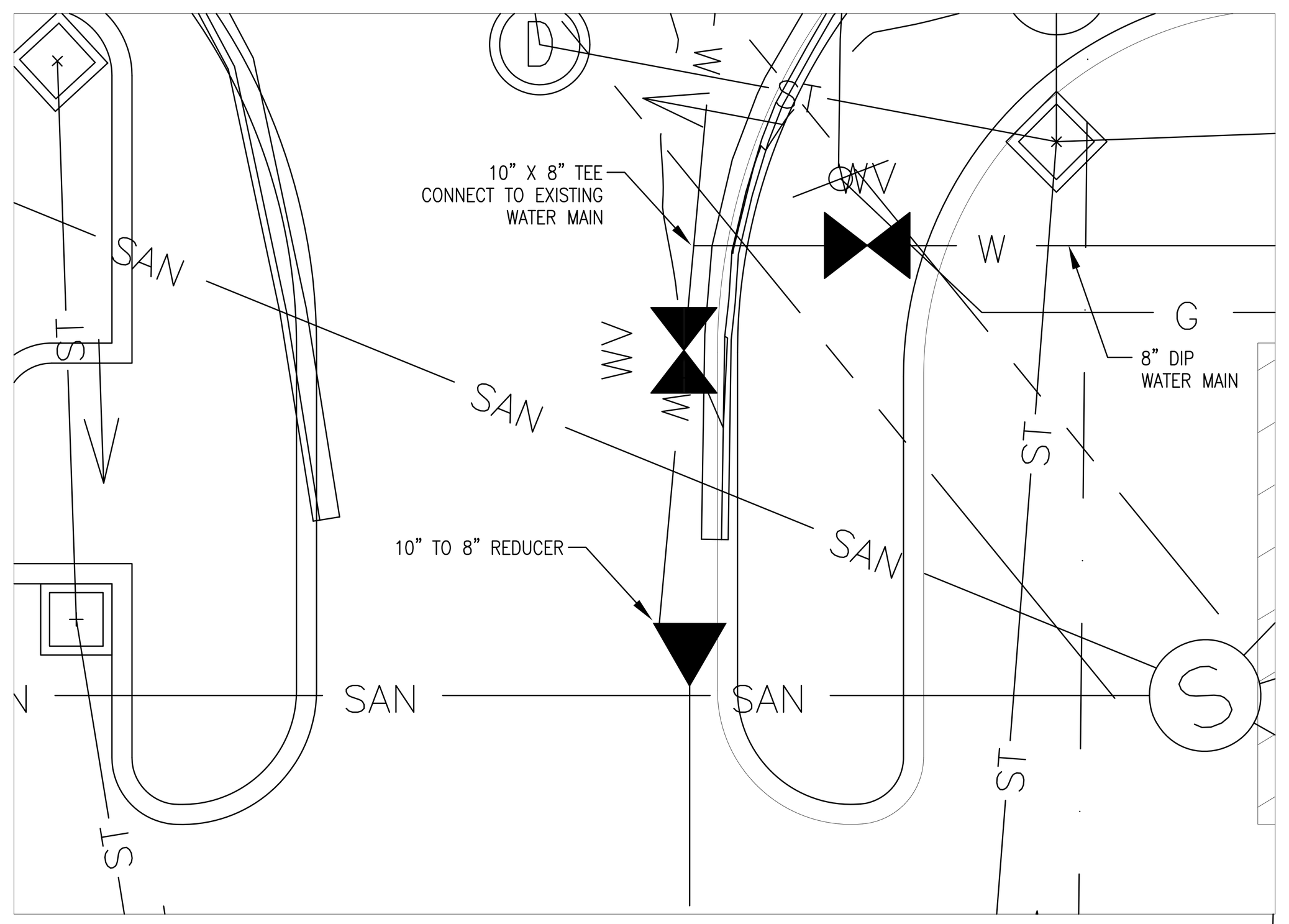
GRADING AND DRAINAGE PLAN

Project Manager: **R. SWITALA, PE**
Designed by: **E. MC CLOSKEY**
Drawn by: **R. RATHFON**
Checked by: **C. OLIN, PE**
Date Issued: JUNE 15, 2007
Scale: **1"=50'**
Date

Project Number: **7223.04**
File Name: **I:\WM\7223.\...\7223-GP01.DWG**
Drawing Number: **C-3**
8 of 19

LEGEND OF PROPOSED IMPROVEMENTS

Line	Description	Symbol description
E/T	UNDERGROUND ELECTRIC & TELEPHONE	GATE VALVE IN VALVE BOX
T	UNDERGROUND TELEPHONE	REDUCER
E	UNDERGROUND ELECTRIC/POWER	FIRE HYDRANT
UGP	GARDEN CENTER ELECTRIC/POWER	TAPPING SLEEVE & VALVE
8"SS	SANITARY SEWER PIPE	SANITARY SEWER MANHOLE
8"F	FIRE PIPING	CLEAN-OUT
4"FM	4" SANITARY FORCE MAIN	POWER POLE
3"W	WATER PIPING	WATER METER
GAS	GAS PIPING	TRANSFORMER PAD
ST	STORM SEWER	PIPE BOLLARD
- - - -	UNDERDRAIN	LIGHT POLE
FO	FIBER OPTICS	CATCH BASIN, STORM MANHOLE
SC	SECURITY CAMERA CONDUIT	PULLBOX
■■■■	PHASING LIMITS	
— — —	FOUNDATION DRAIN	



WATER LINE DETAIL "A"

SCALE 1"=10'

UTILITY LEGEND

(A) 6" SANITARY SEWER LATERAL AT MINIMUM 1.0% SLOPE. COORDINATE WITH ARCHITECTURAL PLANS.

(B) GAS ENTRY WITH GAS METER. CONTRACTOR RESPONSIBLE FOR INSTALLING PIPE BOLLARD PROTECTION AT METER. CONTRACTOR SHALL COORDINATE WITH GAS COMPANY FOR TYING OF INDIVIDUAL METER.

(C) CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH GAS COMPANY REGARDING THE SIZE AND INSTALLATION OF GAS SERVICE LINE.

(D) PROPOSED LOCATION OF TRANSFORMER PAD. CONTRACTOR TO VERIFY EXACT LOCATION AND SIZE WITH POWER COMPANY PRIOR TO INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF CONCRETE PAD. CONDUIT AND PIPE BOLLARDS AS REQUIRED BY THE ELECTRIC COMPANY. CONTRACTOR SHALL COORDINATE SAID WORK WITH THE ELECTRIC COMPANY.

(E) UNDERGROUND TELEPHONE FROM POLE TO BUILDING TO BE EXTENDED BY TELEPHONE COMPANY.

(F) CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE TELEPHONE COMPANY FOR THE INSTALLATION OF OVERGROUND TELEPHONE LINES (XX PAIR). CONTRACTOR SHALL COORDINATE THE TYING OF INDIVIDUAL METERS WITH THE ELECTRIC COMPANY. CONTRACTOR TO COORDINATE WITH TELEPHONE COMPANY TO INSURE PROPER SEPARATION BETWEEN OVERHEAD LINES AND LIGHT POLES.

(G) 3" DOMESTIC WATERLINE ENTRY WITH METER PER ANY TOWN PUBLIC WORKS REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ANY APPURTENANCES ON THE DOMESTIC LINE SUCH AS BACKFLOW PREVENTION DEVICES, GATE VALVES, ETC., WHICH MAY BE REQUIRED. CONTRACTOR TO COORDINATE WITH VILLAGE OF JOHNSON CITY WATER DEPARTMENT.

(H) 8" SPRINKLER ENTRY. CONTRACTOR SHALL BE REQUIRED TO INSTALL ANY APPURTENANCES ON THE SPRINKLER LINE SUCH AS, BUT NOT LIMITED TO, A DOUBLE DETECTOR CHECK BACKFLOW PREVENTION DEVICE, IN SERIES WITH A CHECK VALVE, GATE VALVES, ETC., MEETING VILLAGE OF JOHNSON CITY WATER DEPARTMENT SPECIFICATIONS.

(I) PROPOSED FIRE HYDRANT AND ASSEMBLY, TYPICAL AS INDICATED. 8" GATE VALVE REQUIRED AT EACH HYDRANT LOCATION.

(J) REMOTE GARDEN CENTER UTILITY BOLLARD – SEE DETAIL SHEET

(K) REMOTE GARDEN CENTER POWER ENTRY. CONTRACTOR TO PROVIDE (3) 1" PVC CONDUITS.

(L) PROPOSED UNDERDRAIN

(M) PROPOSED LIGHT POLE AND BASE, SEE DETAIL

(N) PROPOSED STEEL ELECTRIC POLE REPLACEMENT. COORDINATE WITH ELECTRIC COMPANY

(O) RELOCATED OVERHEAD ELECTRIC. COORDINATE WITH ELECTRIC COMPANY

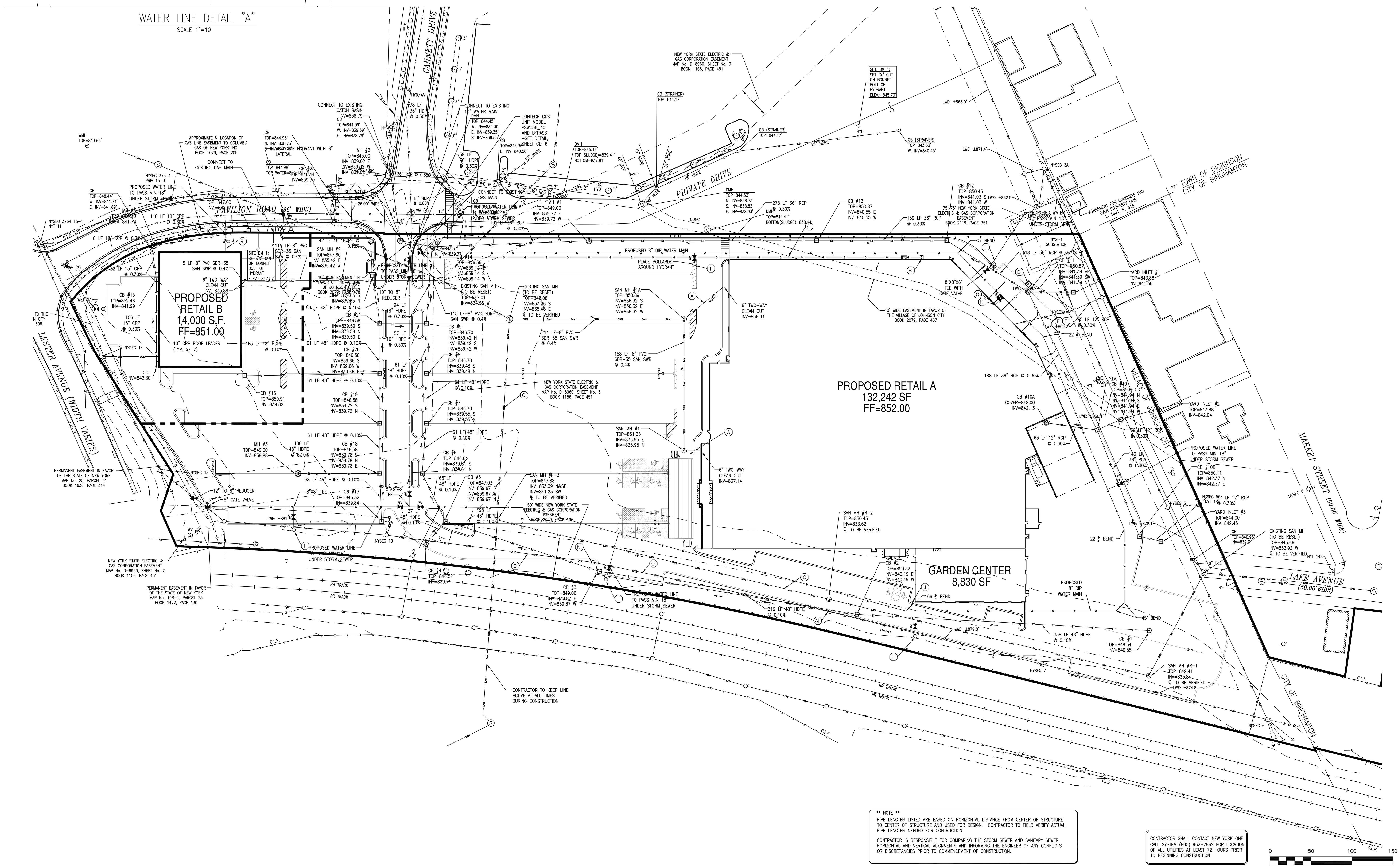
(P) PROPOSED STORM PIPE REPLACING EXISTING CULVERT IN ADJUSTED LOCATION

(Q) PROPOSED 30" SANITARY SEWER MAIN REPLACING EXISTING MAIN IN ADJUSTED LOCATION

(R) 2" DOMESTIC WATERLINE ENTRY WITH METER PER ANY TOWN PUBLIC WORKS REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ANY APPURTENANCES ON THE DOMESTIC LINE SUCH AS BACKFLOW PREVENTION DEVICES, GATE VALVES, ETC., WHICH MAY BE REQUIRED. CONTRACTOR TO COORDINATE WITH VILLAGE OF JOHNSON CITY WATER DEPARTMENT.

SITE UTILITY NOTES

1. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
2. SEE SPECIFICATIONS FOR BACKFILLING AND COMPACTION REQUIREMENTS ON UTILITY TRENCHES.
3. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
4. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
5. SANITARY SEWER PIPE AND MANHOLE SHALL BE AS FOLLOWS:
   - 8" PVC SDR35 PER ASTM D 3034, FOR PIPES LESS THAN 12' DEEP
   - 8" PVC SDR26 PER ASTM D 3034, FOR PIPES MORE THAN 12' DEEP
   - 6" PVC SCHEDULE 40
   - DUCTILE IRON PIPE PER AWWA C150
   - MANHOLES SHALL BE PRECAST CONCRETE W/BOOTS (TRAFFIC MODEL RING & COVER)
6. WATERLINES SHALL BE AS FOLLOWS:
   A. 4" AND LARGER SHALL BE DUCTILE IRON PIPE CLASS 52. VALVES SHALL BE M&H RESILIENT SEAT AND M.J. GATE VALVES.
   B. 2" – 3" SHALL BE PVC C900 OR COPPER.
   C. ALL FIRE HYDRANTS SHALL BE M&H MODEL CLOW MEDALLION, 5 1/2' BURY, M.J. FOOT, 2–2 1/2 HOSE NOZZLES, 1–4" PUMPER NOZZLE.
7. ALL WATER JOINTS ARE TO BE WEDGE ACTION RESTRAINT GLANDS.
8. ALL UTILITIES SHOULD BE KEPT TEN (10') APART (PARALLEL) OR WHEN CROSSING 18" VERTICAL CLEARANCE (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE.)
9. CONTRACTOR SHALL GROUT AROUND ALL PIPE ENTRANCES TO SANITARY SEWER MANHOLES WITH NON-SHRINKING GROUT TO ASSURE CONNECTION IS WATER TIGHT.
10. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE SANITARY LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL JOINTS AT LEAST 10 FEET ON BOTH SIDES OF CROSSING, THE WATERLINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING AS REQUIRED TO PROVIDE A MINIMUM OF 18" CLEARANCE. MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-151) (CLASS 50).
11. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
12. TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS WITH WATER TIGHT LIDS.
13. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
14. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES.
15. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
16. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
17. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES IN THE VILLAGE OF JOHNSON CITY WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
18. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
19. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
20. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
21. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH CITY UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
22. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNER'S INSPECTING AUTHORITIES.
23. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.
24. THE INSTALLATION OR REPAIR OF ANY UNDERGROUND FACILITIES OR PIPING WHICH CONNECTS TO OR FURNISHES WATER FOR THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE PERFORMED ONLY BY A LICENSED UTILITY CONTRACTOR, FIRE PROTECTION SPRINKLER CONTRACTOR, OR LICENSED PLUMBER. SEE O.C.G.A. TITLE 25-11-7-(a). A COPY OF THE LICENSE OR CERTIFICATE OF COMPETENCY SHALL BE PROVIDED TO THE INSPECTOR AT THE FINAL INSPECTION.
25. REFER TO BUILDING PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
26. SELECT BACKFILL IS REQUIRED FOR ALL UTILITIES (GAS, WATER, STORM, SANITARY) THAT CROSSES THROUGH ANY PAVEMENT AREA.
27. FIRE PROTECTION SPRINKLER SYSTEM AND DOMESTIC WATER SERVICES CANNOT BE INSTALLED UNTIL THE BACKFLOW PREVENTION DEVIICE HAS BEEN DESIGNED BY A NYS PROFESSIONAL ENGINEER AND HAS BEEN SUBMITTED TO THE VILLAGE OF JOHNSON CITY AND THE NYS DEPARTMENT OF HEALTH FOR REVIEW AND APPROVAL.
28. THE GENERAL SITE CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION AND COORDINATION OF ALL UTILITIES UP TO A POINT 5' FROM THE PROPOSED BUILDING LOCATION. THE BUILDING CONTRACTOR WILL BE RESPONSIBLE FOR ALL UTILITIES INSIDE THE BUILDING, AND UP TO 5' FROM FROM THE OUTSIDE THE BUILDING.
29. ALL UTILITY WORK SHALL BE PERFORMED PER REMEDIAL ACTION WORKPLAN PREPARED BY HALEY & ALDRICH AND BROWNFIELD CLEAN-UP AGREEMENT.
30. SPOILS FROM TRENCH EXCAVATIONS SHALL BE PLACED ABOVE THE WATER TABLE AND BENEATH THE DEMARCATION LAYER.



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REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D
1	8/24/07	PER VILLAGE REVIEW	EMM	RPS
2	10/16/07	PER DPW COMMENT	EMM	RPS
3	10/23/07	PER SPECIFICATIONS	EMM	RPS
4	2/21/08	PER TEAM REVIEW	AVN	RPS

NOTE:
Unauthorized alteration or addition to this drawing is a violation of the New York State Education Law Article 145, Section 7209.

UTILITY PLAN

Project Manager: **R. SWITALA, PE**
Designed by: **E. MC CLOSKEY**
Drawn by: **R. RATHFON**
Checked by: **G. OLIN, PE**
Date Issued: JUNE 15, 2007
Scale: **1"=50'**
Date

Project Number: **7223.04**
File Name: **I:\WM\7223...\...\7223-UP01-ALT.DWG**
Drawing Number: **C-4**

APPENDIX C

Water Supply Well Decommissioning Guidance

New York State Department of Environmental Conservation
Division of Water
Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • FAX: (518) 402-9029
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

WATER SUPPLY WELL DECOMMISSIONING RECOMMENDATIONS DIVISION OF WATER

Note: these recommendations do not apply to decommissioning of wells at hazardous waste sites. For information regarding such undertakings, contact the NYSDEC Division of Environmental Remediation.

I. Local and regional regulations

Prior to conducting well decommissioning, municipal authorities should be contacted to determine if there are local regulations regarding this activity. In the counties of Nassau and Sulfolk, the NYSDEC Region 1 office must be contacted (631-444-0405) prior to any well decommissioning.

II. Written records

Complete and accurate written records of decommissioning operations should be maintained. The information to be recorded should include the original well log and/or construction record, the type of grouting material used, volume of material used, and method of placing grouting material into the well.

III. Removal of obstructions

Remove equipment, materials, debris, and obstructions that may interfere with sealing of the well or boring. This may include pumping equipment, drop pipe, packers, etc.

IV. Disinfection

The well should be disinfected using a solution of calcium hypochlorite, such as HTH, containing approximately 65% to 75% available chlorine. Common household bleach may be too weak. Calcium hypochlorite products containing fungicides, algicides, or other disinfectants should be avoided.

V. Casing

Appropriate measurements should be made to verify the depth of the well. Casing with an open annular space should be either grouted in place or removed. For casing removed from a collapsing formation, grout should be pumped through a tremie pipe so that during its removal the bottom of the casing remains submerged in grout.

Where casing is grouted in place, the casing should be cut off at least 24 inches below grade, where

practicable. For wells located in a building, upon completion of grouting the casing should be filled to floor level with no less than 12 inches of cement. Casing should be cut off not more than 3 inches from floor level. For wells terminating in a well pit, casing should be cut off not less than twelve inches below the grade established when the pit is filled.

After the grout has consolidated, the top of the casing should be closed and sealed. Steel casings should be sealed with a welded steel plate; PVC casings with a permanently affixed PVC cap.

VI. Screened intervals

The portion(s) of the well occupied by the well screen should be filled with clean sand or gravel (defined as being relatively free of clay and organic matter). The filling should be no less permeable than the formation surrounding the well screen and should extend no more than three feet above the top of the screen.

VII. Grouting of the well.

The entire casing, including riser annular spaces between casings should be filled. Sealing materials should have bearing strength sufficient to prevent subsidence and support traffic or building loads.

A. Slurry mixture and pumping - When a bentonite slurry, neat cement slurry or concrete slurry is used, it should be placed into the well under pressure via a tremie pipe of at least one inch inside diameter. At the start of operations, the tremie pipe is placed at the bottom of the well to avoid segregation or dilution of sealing materials. The tremie pipe should be submerged in the slurry at all times during slurry placement. The tremie pipe may be raised slowly as grout is introduced to the casing or hole. Placing of grout should be continuous until grout appears at the top of the casing, at which time the tremie pipe may be removed. If the tremie pipe remains at the bottom of the well during grout emplacement, remove the pipe prior to grout hardening.

B. Cement slurries - Neat cement or concrete slurries should be prepared by adding cement or sand-and-cement to the calculated required volume of clean water. The material should be satisfactory mixed until it is free of lumps, then immediately pumped into the well without delay.

C. Coarse grade or pelletized bentonite - Where coarse grade or pelletized bentonite is used, it should be poured slowly into the top of the well to avoid bridging of material in the casing or borehole. Pellets or coarse bentonite should be placed into the well by pouring at an even rate not to exceed five minutes per fifty pounds of materials. Fine bentonite particles which accumulate in the bottom of the shipping container should not be used. A work pipe or weighted drop string should be placed in the well and the height of accumulated plugging material measured after each 50 pounds of bentonite is placed in the well. If measurement indicates that bridging of plugging material has occurred, a work pipe, drill rods, or other weighted device should be run into the casing to break the bridge. The plugging operation should continue until the bentonite appears at the surface. Water should then be placed into the casing to promote expansion of the bentonite above the static water level.

D. Additional sealing recommendations for wells or borings in unconsolidated materials.

1. It is recommended that the portion of a well adjacent to unconsolidated material be filled with bentonite grout, high solids bentonite grout, or neat cement grout. Concrete grout is most appropriate for grouting in the dry portion of the hole.

2. A dug well 16 inches or greater in diameter may be sealed by pouring at a rate sufficient to completely fill the well without bridging using:

(a) uniformly mixed dry bentonite powder or granular bentonite and sand in a ratio of one part bentonite to five parts sand;

(b) clean unconsolidated materials with a permeability of 10^{-6} centimeters per second or less; or

(c) concrete grout.

E. Additional sealing recommendations for wells or borings in rock.

The portion of a well or boring in rock should be grouted with neat cement. Wells penetrating cavernous rock may require placement of a bridge in competent rock over the void. Grout is then placed above the bridge.

VIII. Sealing flowing well.

For flowing wells the integrity of the exterior casing seal should be tested prior to decommissioning the well. To test the seal, the well should be capped for a period of one week and checked for any leakage around the outside of the casing. If any leakage occurs, the casing exterior must be resealed prior to well decommissioning. Once leakage has been eliminated, the interior of the well casing should be pressure grouted. The Department should be notified when a well cannot be sealed as described.

IX. Site restoration

Well pits should be filled with clean soil to the established grade level. Upon completion of well decommissioning, the site should be restored to a condition that reasonably approaches the original condition of the property prior to the start of work. The work area should be graded to conform to existing ground contours. All materials, debris, tools, machinery, sealing material, grease, or other materials which have accumulated at the site should be removed and/or disposed of properly and in accordance with law.

December 2003

APPENDIX D

Health & Safety Plan/Community Air Monitoring Plan

HALEY & ALDRICH, INC.
SITE-SPECIFIC HEALTH & SAFETY PLAN

for

Former Endicott-Johnson Ranger Paracord Site – Southern Parcel
Remedial Action Work Plan

Johnson City, New York

Project/File No. 30603-011

Prepared by: Claire L. DeBergalis Date: 02/25/2008
Revised by: Date:

APPROVALS: The following signatures constitute approval of this Health & Safety Plan. Deviations from this Plan are not permitted without prior approval from the undersigned.

Michael G. Beikirch - Office H&S Coordinator	Date
Lisa Turturro - Site/Project Manager	Date
Tom Benedict - Corporate H&S Manager (Only required per request of LHSCs)	Date

Note: This HASP is developed for Haley & Aldrich purposes only and not for use by subcontractors. Subcontractors may use this HASP as reference only.

PRE-JOB SAFETY CHECKLIST

The following is a checklist that is designed to help Project Managers prepare for the H&S requirements needed for their projects.

The use of this form should be used during the planning stage of the project and not intended to be used the day before the project. This form is to be attached to the front off all HASP before it goes to the field.

Please initial in each appropriate box and sign on the bottom of the appropriate box that the required materials, equipment, training, etc., has been procured before commencement of work on a site.

#	**Project H&S Requirements**	**Approval by PM or LHSC (initial each box or place NA)**	**Date Approved**
1.0	HASP and supporting documentation is complete and signed by all members		
2.0	Task Safety Analysis performed and attached to the HASP.		
3.0	All staff scheduled for project current with 40 hour or 8 hour refresher training.		
4.0	Is a Hazwoper site supervisor needed, if so, are they trained?		
5.0	Additional Training Requirements met: e.g.- nuclear density gauge, DOT, CSE, Competent Person Training for Excavation, etc		
6.0	We have met the client's additional H&S requirements above and beyond H&A's requirements. Example: facility safety orientations, safety documentation, meetings, PPE requirements		
7.0	H&A subcontractors have met H&A's minimum requirements, including- - Training - Medical surveillance - Written HASP - Insurance - MSDSs		
8.0	All H&A staff involved in project have met their Medical Surveillance examination requirements.		
9.0	Staff that may be required to wear a respirator, medically qualified and fit test card available.		
10.0	MSDSs on site and available for chemicals on site.		
11.0	<u>Safety equipment available, such as:</u> Flashlights, Telephone for communications, Ladders, Cones, Barricade tape, Fire extinguisher, First Aid Kit, PPE, Respiratory Protection, Air Instrumentation and Calibrated, Personal Flotation Device (PFD), 90' life line with ring, Decontamination equipment		

TABLE OF CONTENTS

ISSUANCE AND COMPLIANCE

- This HASP must be signed by all Haley & Aldrich (H&A) staff members who will work on the project, including H&A visitors.
- This HASP or a current signed copy must be retained at the site at all times when H&A staff are present. Senior management does recognize that it is difficult to utilize one HASP when many staff members are involved and there is no stationary location to maintain the HASP.
- Deviations from this HASP are not permitted without prior approval from the above signed. Unauthorized deviations may constitute a violation of H&A company procedures/policies and may result in disciplinary action.
- Revisions to this HASP must be outlined within the contents of the HASP. If immediate or minor changes are necessary, the LHSC and H&A Project Manager may use Appendix A (HASP Amendment Form), located in the back of this HASP. Any revision to the HASP requires employees to be informed of the changes and they understand the requirements of the change.
- This HASP is not for H&A Subcontractor use. Subcontractors must have their own HASP. This HASP will be made available for review by "reference only" to ensure that H&A has properly informed our subcontractors of the hazards associated with the site to the extent we are aware.
- This Site Specific HASP provides only site-specific descriptions and work procedures. General safety and health compliance programs in support of this HASP (e.g., injury reporting, medical surveillance, personal protective equipment (PPE) selection, etc. are described in detail in the H&A Corporate Health and Safety Program Manual and within Standard Operating Procedures (SOPs). Both the manual and SOPs can be located on the Company Intranet. When appropriate, users of this HASP should always refer to these resources and incorporate to the extent possible. The manual and SOPs are available to clients and regulators per request.

SITE SAFETY OFFICER

This project has identified the following person as the site safety officer (SSO). **The highest ranking person on site on this list will be the designated site safety officer.** The H&A Project Manager may designate any person as the primary. (PMs determine who will be on site and in order of highest level of authority when on site.) **A site safety officer must be on site at all times.** When none of the following are present on site, the senior or person for H&A on site will default to the SSO.

1. TBD Prior to Field Work Commencement
2. Enter name of site safety officer here
3. Enter name of site safety officer here

Roles and Responsibilities

The SSO is responsible for field implementation of this HASP and enforcement of safety rules and regulations. SSO functions include:

- Act as H&A's liaison for health and safety issues with client, staff, subcontractors, and agencies.
- Verify that utility clearance has been performed by H&A subcontractors.
- Oversee day-to-day implementation of the HASP by H&A employees on site.
- Interact with subcontractor project personnel on health and safety matters.
- Verify use of required PPE as outlined in the HASP.
- Inspect and maintain H&A safety equipment, including calibration of air monitoring instrumentation used by H&A.
- Perform changes to HASP and document in Appendix A of the HASP as needed and notify appropriate persons of changes.
- Investigate and report on-site accidents and incidents involving H&A and its subcontractors.
- Verify that site personnel are familiar with site safety requirements (e.g., the hospital route and emergency contact numbers).
- Report accidents, injuries, and near misses to the H&A PM and Local Health and Safety Coordinator (LHSC) as needed.

The SSO will conduct initial site safety orientations with site personnel (including subcontractors) and conduct toolbox and safety meetings thereafter with H&A employees and H&A subcontractors at regular intervals and in accordance with H&A policy and contractual obligations. The SSO will track the attendance of site personnel at H&A orientations, toolbox talks, and safety meetings. Subcontractors will document training and provide training rosters to the H&A SSO.

The SSO will report accidents such as injury, overexposure, or property damage to the Local Health and Safety Coordinator, to the Project Manager, and to the safety managers of other on-site consultants and contractors. The SSO will consult with the safety managers of other on-site consultants and subcontractors on specific health and safety issues arising over the course of the project, as needed.

PRE-WORK HEALTH & SAFETY BRIEFING

Note: Only H&A employees sign this page.

I have attended a briefing on this Health & Safety Plan prior to the start of on-site work and declare that I understand and agree to follow the provisions and procedures set forth herein while working on this site.

PRINTED NAME	SIGNATURE	DATE

1. PROJECT INFORMATION

Name of Project: BCP Remedial Action & Redevelopment	**H&A File No.:** 30603-011
Location: Former Endicott-Johnson Ranger Paracord Site – Southern Parcel	
Client/Site Contact: Ken Kamlet, Stella Ireland Road Associates LLC	**Contact Phone No.:** 607-770-0155 x229
H&A Project Manager: Lisa Turturro	**PM Phone No.:** 585-321-4237

SCOPE OF WORK:

The Brownfields Cleanup Program Remedial Action and Redevelopment includes: a) Decommissioning of existing groundwater monitoring and water supply wells; b) installation of a demarcation layer and cover system; c) If necessary, the analysis and removal of excavated fill materials; and d) Building and foundation construction, landscaping, and paving.

Subcontractor(s) to be involved in on-site Investigation activities:

Name	Work Activity
Construction Subcontractor	Building Construction/Demarcation Layer and cover system installation
Excavation Subcontractor	Potential Soil Excavation
Drilling Subcontractor	Well decommissioning (GW Monitoring and Water Supply)

Projected Start Date: Spring/Summer 2008

Projected Completion Date: Spring/Summer 2009

Estimated Number of Days to Complete Field Work: Several Months

2. SITE DESCRIPTION

Check one of the following:

Site classification:	☐ Industrial	☐ Commercial	☑ Other Vacant/Former Industrial

General Description

The Former Endicott-Johnson Ranger Paracord Southern Parcel was part of a former shoe and rubber manufacturing plant that comprised both the Southern Parcel and northern adjacent Gannett Parcel (Redeveloped into the Gannett Printing Press facility in 2005). All former Site buildings have been demolished, and the Southern Parcel is currently vacant.

Remedial Investigation were conducted at the property by Dames & Moore and Camp Dresser & McKee in 1997 and 2001, respectively, and by Haley & Aldrich in 2006 – 2007. The results of the investigations indicated that compounds that include arsenic, lead, copper, and polycyclic aromatic hydrocarbons (PAHs) were found in concentrations greater than the New York State Soil Cleanup Objectives Commercial Use Criteria (SCOs) within the fill. The contaminants were found to be ubiquitous throughout the fill, and not the result of individual point sources. Groundwater was not found to be impacted by the contaminants in the fill.

Site Status Note: Are there current operations at the site? (mark all that apply):

☐ Active	☑ Inactive
☐ Partially active	☐ Other

Is a **site plan** or sketch available? ☑ Y ☐ N Refer to the figures section of the Remedial Alternatives Analysis & Remedial Action Work Plan.

Work Areas

List/identify each specific work area(s) on the job site and indicate its location(s) on the site plan:

1. Water Supply Well (Pagoda Building) – Decommission existing water supply well.

2. Groundwater Wells (HA-1 through HA-5; MW-1, MW-3, and MW-8) – Decommission existing groundwater monitoring wells.

3. External Locations – Provide onsite monitoring during site preparation for construction of commercial site building including the removal (if necessary) of site soils, the installation of a demarcation layer, and the placement of geotechnical surcharge material.

3. PROJECT TASK BREAKDOWN

List and describe each distinct work task below:

Task No.	Detailed Task Description	Employee(s)	Work Date(s) or Duration
1	Decommissioning of Groundwater monitoring and observation of Water Supply Well decommissioning activities	Drilling subcontractor (TBD)	2 days
2	Construction Monitoring	H&A field tech. (TBD)	Several Months

1. Driller will decommission 8 onsite monitoring wells and one onsite water supply well as per NYSDEC recommendations. Haley & Aldrich personnel will monitor and observe installations.

2. Haley & Aldrich personnel will monitor the installation of the demarcation layer and cover system. If necessary, Haley & Aldrich personnel will collect soil samples for classification in the event onsite soils need to be removed per construction specifications. In the event that this is required, this HASP will be modified to include soil confirmation sampling as a separate work task.

4. HAZARD ASSESSMENT

Chemical Hazards

Material Safety Data Sheets (MSDS) of hazardous materials used during the execution of work shall be available on site. MSDSs are required for chemicals used to prepare samples, calibration gases, etc.

Note: MSDSs are not required for waste materials.

Does chemical analysis data indicate that the site is contaminated? ☑ Y ☐ N

Potential **physical state** of the hazardous materials at the site (mark all that apply):

- ☐ Gas/Vapor
- ☐ Sludge
- ☑ Liquid
- ☑ Solid/Particulate

Anticipated/actual **class of compounds** (mark all that apply.

- ☐ Asbestos
- ☐ Inorganics
- ☐ BTEX
- ☐ Pesticides
- ☐ Chlorinated Solvents
- ☐ Petroleum products
- ☑ Heavy Metals
- ☑ Other PAHs

Impacted environments (indicate the primary media(s) in which contamination is expected):

- ☐ Air
- ☐ Groundwater
- ☑ Soil
- ☐ Sediment
- ☐ Surface water
- ☐ Other

Estimated concentrations/medium of major chemicals expected to be encountered by onsite personnel:

Work Activity	Media	Chemical	Anticipated Concentration
Groundwater and Supply Well Decommissioning	SO	Metals, PAHs	Generally at or one order of magnitude above TAGM
Construction Monitoring	SO	SVOCS/PAHs, Metals	Generally at or one order of magnitude above TAGM

(Media key: A = Air; GW = Groundwater; SW = Surface Water; SO = Soil; SE = Sediment)

PAHs

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. PAHs are usually found as a mixture containing two or more of these compounds, such as soot.

Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids. PAHs are found in coal tar, crude oil, creosote, and roofing tar, but a few are used in medicines or to make dyes, plastics, and pesticides.

PAHs, as a group, are strongly hydrophobic, and therefore sorb to organic-based soil particles. Exposures to elevated levels of PAHs in the workplace could occur in coking, coal-tar, and asphalt production plants; smokehouses; and municipal trash incineration facilities.

Sorption of PAHs to soil and sediments increases with increasing organic carbon content and with increasing surface area of the sorbent particles. Lower molecular weight PAHs may also volatilize from soil. Due to this strong sorption to soil, PAHs do not tend to dissolve easily into and migrate with groundwater. Exposure from affected soil would tend to occur as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

Arsenic

Arsenic is a naturally occurring element widely distributed in the earth's crust and soils. In the environment, arsenic is combined with oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Inorganic arsenic compounds are mainly used to preserve wood. Organic arsenic compounds are used as pesticides, primarily on cotton plants. Because arsenic is a natural component of the earth's crust, low levels of the element are found in nearly all environmental media.

Potential exposure to arsenic could occur through eating food, drinking water, or breathing air containing arsenic, breathing contaminated workplace air, or breathing sawdust or burning smoke from wood treated with arsenic. Arsenic released to land is predominantly inorganic and relatively immobile because it binds to soil particles.

For most people, diet is the largest source of exposure, with average intakes of about 40 µg/day of total arsenic (i.e., arsenic in all of its forms). Arsenic contained in soils, like other metals, tends to remain bound in solid compounds in soil or sediment. Because of these tendencies, exposure from affected soil would tend to occur primarily as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

Copper

Copper is a naturally occurring reddish metal that is present in rock, soil, water, sediment, and, at low levels in air. Copper occurs naturally in all plants and animals. Toxic effects can occur at very high levels. Uses for copper include as the metal or alloy in the manufacture of wire, sheet metal, pipe, and other metal products. Copper compounds are also commonly used in agriculture to treat plan diseases, for water treatment, and as a preservative for wood, leather, and fabrics.

Potential exposure to copper could occur through eating food, drinking water, contact with skin, or breathing air containing copper dust. Most copper compounds found in air, water, sediment, soil and rock are strongly attached to dust and dirt or imbedded in minerals, while some copper compounds may be more loosely bound. In the general population, soluble copper is the form most likely to threaten human health.

The greatest potential source of copper exposure is through drinking water exposed to copper piping and brass faucets. Copper contained in soils, like other metals, tends to remain bound in solid compounds in soil or sediment. Because of these tendencies, exposure from affected soil would tend to occur primarily as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

Lead

Lead is a naturally occurring bluish-gray metal that is low melting and heavy. It is rarely found naturally as a metal, and is more often found combined with two or more other elements to form lead compounds. Metallic lead is resistant to corrosion. Lead can be combined with other metals to form alloys, which are commonly found in pipes, storage batteries, weights, shot and ammunition, cable covers, and sheets used to shield us from radiation. The largest use for lead is in car and vehicle batteries. Lead is released into the air during burning coal, oil, or waste. Before the use of leaded gasoline was banned, most of the lead released into the environment came from vehicle exhaust.

Potential exposure to lead could occur through eating food, drinking water, contact with skin, or breathing air containing copper dust. Once lead falls onto soil, it sticks strongly to soil particles and remains in the upper layer of soil.

A common source of lead exposure is from drinking water exposed to lead piping and from lead exposure from lead paint in older buildings. Additionally lead exposure is common near busy highways or old orchards where lead arsenate pesticides were used. Lead contained in soils, like other metals, tends to remain bound in solid compounds in soil or sediment. Because of these tendencies, exposure from affected soil would tend to occur primarily as a result of direct contact with affected soil or inhalation/ingestion of windborne affected soil.

http://intranet/Health_Safety/3503/8709/HASP_Topics.doc

Physical Hazards

Is any site work area(s) to be entered for this project considered a confined space? ☐ Y ☑ N

If yes, indicate which area(s) and why:

ALL CONFINED SPACE ENTRY PROJECTS REQUIRE SPECIAL PROCEDURES, PERMITS AND TRAINING AND MUST BE APPROVED BY THE CORPORATE HEALTH & SAFETY MANAGER.

Physical Hazard Checklist

Indicate all hazards that may be present for each task. If any of these potential hazards are checked, it is the project manager's responsibility to determine how to eliminate/minimize the hazard to protect onsite personnel. Note: Task numbers refer to those identified in Section 3.

(copy and paste a checkmark "✓"into appropriate boxes)

Potential Job Hazards	Task 1	Task 2
Underground utilities	✓	✓
Overhead utilities	✓	✓
Excavations greater than 4' depth		
Open excavation fall hazards		
Heavy equipment	✓	✓
Drilling hazards	✓	
Noise (above 85 dBA)	✓	✓
Traffic concerns		
Extreme weather conditions		
Rough terrain for drilling equipment		
Buried drums		
Heavy lifting (more than 50 lbs)		
High risk fire hazard		
Poisonous insects or plants		
Water hazards		
Use of a boat		
Lockout/Tagout requirements		
Other: Specify		

Indicate any **unusual features** at the site (e.g., power lines at low heights, variable terrain, excessive insects, etc.) that are **unique to this project** and steps to be taken to minimize risk:

NONE

POTENTIAL ACTIVITY HAZARDS

1. Abrasions
2. Access
3. Asphyxiation
4. Bacteria
5. Biological Hazards
6. Bloodborne Pathogens
7. Cave ins
8. Chemical/Thermal Burns
9. Chemicals
10. Cold Stress
11. Compressed Gases
12. Confined Spaces
13. Congestion
14. Cuts
15. Defective Equipment
16. Dermatitis
17. Dropping Materials/Tools to Lower Levels
18. Drowning or flowing water
19. Electrical Shock
20. Elevated /Visibility of Overhead Work
21. Energized Equipment
22. Ergonomics
23. Explosions
24. Fatigue
25. Fire
26. Flammability
27. Flying debris
28. Foreign Body in Eye
29. Frost bite/cold
30. Fugitive Dust
31. Generated Wastes
32. Guards removed
33. Hazardous Materials
34. Heat Stress (cramps, exhaustion, stroke)
35. Heavy Equipment Operation (improper use)
36. Heavy Lifting
37. High crime area (violence)
38. High Winds
39. Hoists, Rigging, Slings, Wire, Rope
40. Impact
41. Improper Rigging
42. Inability to Maintain Communication
43. Inclement Weather
44. Inclines
45. Insects/Reptiles
46. Known/Unknown Visitors
47. Mold
48. Moving Equipment, Conveyors or Vehicles
49. Muddy Site Conditions
50. New Personnel
51. New Rental or Change in Equipment Used
52. Noise
53. Odor/VOC Emissions
54. Overhead Utilities
55. Overhead Work
56. Overloaded Equipment (tipping)
57. Oxygen deficiency
58. Pinch Points
59. Poisonous Plants
60. Poor Housekeeping
61. Poor illumination
62. Poor Visibility
63. Pressure
64. Pressurized Lines
65. Radiation
66. Repetitive Motion
67. Sharp Objects
68. Silicosis
69. Slips, Trips, and Falls
70. Sprains and Strains
71. Steam
72. Sunburn
73. Surface Water Run-off
74. Toxicity
75. Traffic
76. Underground utilities
77. Uneven terrain
78. Unsafe Atmosphere
79. Vibration
80. Weight
81. Work at Depth
82. Work at Heights
83. Work over Water
84. Working on Ice

HAZARD CONTROLS

Air Monitoring - PID
Appropriate Clothing/Monitoring Of Weather
Appropriate Labels/Signage
Barricades/Fencing/Silt Fencing
Buddy System
Confined Space Procedures
Decontamination Procedures
Derived Waste Management Plan
Drinking Water/Fluids
Dust Abatement Measures
Emergency Action Plan Procedures
Equipment Inspection
Equipment Manuals/Training
Exclusion/Work Zones
Exhaust Ventilation Fall Protection - Type
Fire Extinguisher/Fire Watch
Flotation Devices/Lifelines
Ground Fault Interrupter
Ground Hydraulic Attachments
Grounds on Equipment/Tanks
Hand Signal Communication
Hazardous/Flammable Material Storage
Hearing Protection – Ear Plugs
Hoses, Access to Water
Hotwork Procedures
Isolation of Energy Sources(Lockout/Tagout)
Machine/Equipment Guards
Manual Lifting Equipment
Proper Lifting Techniques
Proper Tool for Job
Proper Work Position/Tools
Protective Equipment
Radio Communication
Respirator, (Specify Type)
Safety Harness/Lanyard/Scaffold
Sloping, Shoring, Trench Box
Spill Prevention Measures/Spill Kits
Stormwater Control Procedures/Methods
Vehicle Inspection
Visitor Escort/Orientation/Security
Window Cleaning/Defrost

Describe any special precautions to be taken with respect to the hazards highlighted above:

5. PROTECTIVE MEASURES

Personal Protective Equipment Requirements

(copy and paste a checkmark "✓"into appropriate boxes)

Required PPE	Task 1	Task 2
Hard hat	✓	✓
Safety glasses w/side shields	✓	✓
Steel-toe footwear	✓	✓
Hearing protection (plugs, muffs)	✓	✓
Tyvek ™ coveralls		
PE-coated Tyvek™ coveralls		
Boots, chemical resistant or disposable boot covers	✓	✓
Leather work gloves		
Inner gloves -	✓	✓
Outer gloves -		
Tape all wrist/ankle interfaces		
Half-face respirator		
Full-face respirator		
Organic vapor cartridges		
Acid gas cartridges		
Other cartridges:		
P-100 (HEPA) filters		
Face shield		
Personal Flotation Device (PFD)		
High-Visibility Safety Vest		
Other: Chemical protective boots		
Level of protection required [C or D]:	Modified D	Modified D

The PPE checked in any box above must be on site during the task being performed. Work shall not commence unless the PPE is present.

In the event of respirator use, H&A staff that may be required to wear a respirator must be:

- Medically qualified
- Fit tested
- Fresh shaven with no facial hair that will interfere with the seal. This includes one day hair growth or more, beards, excessive long side burns, and goatees.

Personal Hygiene Safeguards

Describe any additional safeguards other than basic decontamination procedures for personal hygiene. The following safeguards, at a minimum, shall be adhered to:

1. No Smoking or tobacco product on any Hazwoper project

2. No eating or dinking in the exclusion (hot) zone; and
3. It is especially important to wash your hands before eating, smoking, taking medication, chewing gum/tobacco, using the restroom, or applying cosmetics and before you leave the site for the day. It is recommended that personnel present on site shower or bathe at home at the end of each day of working on the site.

Site Safety Equipment

Check all items that are required to be on site:

☐ Fire Extinguisher	☑ First Aid Kit	☐ Flashlight
☐ Air horn/signaling device	☑ Cellular Phone	☐ Duct tape
☐ Ladder	☐ Barricade tape	☐ Drum dolly
☐ Two-way radio	☐ Safety cones	☐ Harness/Lanyard
☐ Other Specify		

The equipment checked in any box above must be on site during the task being performed. Work shall not commence unless the equipment is present.

Site Security & Work Area Controls

Access to each contaminated work area will be controlled during on-site activities as follows: Consider protection of both project and non-project personnal (e.g., general public, facility personnel).

Traffic cones and barricade tape will placed around the perimeter of the work area to prevent the general public from accessing the work area.

Can **site access** be controlled by a perimeter fence or similar means? ☑ Y ☐ N

If not, how will the site/work area be controlled during non-work hours to prevent access by unauthorized persons?

Equipment and tools will be locked down during non-work hours while working at exterior locations.

Training Requirements

Health and Safety Training

Personnel will not be permitted to supervise or participate in field activities until they have been trained to a level required by their job function and responsibility. H&A staff members, contractors, subcontractors, and consultants who have the potential to be exposed to contaminated materials or physical hazards must complete the training described in the following sections.

The H&A Project Manager/LHSC will be responsible for maintaining and providing to the client/site manager documentation of H&A staff members' compliance with required training as requested. Records shall be maintained per OSHA requirements.

40-Hour Health and Safety Training

The 40-Hour Health and Safety Training course provides instruction on the nature of hazardous waste work, protective measures, proper use of personal protective equipment, recognition of signs and symptoms which might indicate exposure to hazardous substances, and decontamination procedures. It is required for all personnel working on-site, such as equipment operators, general laborers, and supervisors, who may be potentially exposed to hazardous substances, health hazards, or safety hazards consistent with 29 CFR 1910.120.

8-hour Annual Refresher Training

Personnel who complete the 40-hour health and safety training are subsequently required to attend an annual 8-hour refresher course to remain current in their training. When required, site personnel must be able to show proof of completion (i.e., certification) at an 8-hr refresher training course within the past 12 months.

8-Hour Supervisor Training

On-site managers and supervisors directly responsible for, or who supervise staff members engaged in hazardous waste operations, should have eight additional hours of Supervisor training in accordance with 29 CFR 1910.120. Supervisor Training includes, but is not limited to, accident reporting/investigation, regulatory compliance, work practice observations, auditing, and emergency response procedures.

Additional Training for Specific Projects

H&A personnel will ensure their personnel have received additional training on specific instrumentation, equipment, confined space entry, construction hazards, etc., as necessary to perform their duties. This specialized training will be provided to personnel before engaging in the specific work activities. Any staff member engaging in the following activities will be required to have additional training:

- Client specific training or orientation
- Competent person excavations
- Confined space entry (entrant, supervisor, and attendant)

- Heavy equipment including aerial lifts and forklifts
- First aid/ CPR
- Diving
- Use of fall protection
- Commercial Drivers License
- Use of Nuclear Density Gauges
- Asbestos

6. MONITORING PLAN AND EQUIPMENT

Is air/**exposure monitoring** required at this work site for personal protection? ☑ Y ☐ N

Is **perimeter monitoring** required for community protection? ☑ Y ☐ N

Monitoring/Screening Equipment

required to be on site:

- ☐ HNu analyzer (PID) ☐ 10.2eV ☐ 11.7eV
- ☐ Organic vapor monitor (FID)
- ☐ Photovac Micro Tip, 10.6eV
- ☐ Photovac GC
- ☑ Other MiniRae 2000
- ☐ Combustible Gas Indicator (CGI) (LEL)
- ☐ Multiple Gas Detector-LEL/O_2/H_2S/CO
- ☑ Dust Monitors (RAMs)
- ☐ Colorimetric tubes Specify:

Standard Action Levels And Required Responses

For readings obtained with a multiple gas detector or an individual monitoring instrument are listed in Table 2. Specific Ionization potentials and exposure limits are listed in Table 1.

Description of Monitoring Requirements (include frequency and location by Task):

VOC Monitoring:
Applicable tasks: # 1, 2
Frequency: 1 reading every 15 minutes when soil is disturbed.
Description: In the event that soil excavation occurs, the soils will be screened using a PID (Mini Rae 2000) for the presence of volatiles

Work Zone Particulate Monitoring:
Applicable tasks: # 1, 2
Frequency: 1 reading every 5 minutes
Description: If particulate levels at the area of excavation are measured at a concentration greater than 100 micrograms per cubic meter above background and are sustained for 15 minutes, or airborne dust is observed, then dust suppression techniques must be employed. Work may continue provided particulate levels do not exceed 150 micrograms per cubic meter above the upwind level and provided that no visible dust is migrating from the work zone. If the PM-10 particulate concentration exceeds 5 milligrams per cubic meter in the work zone, workers will be required to upgrade their personal protective equipment to Level C (full-face respirator).

Community Particulate Monitoring:
Applicable tasks: # 1, 2
Frequency: 1 reading every 5 minutes
Description: In accordance with NYSDOH generic CAM guidance, if particulate levels at the downwind perimeter of the subject site are measured at a concentration greater than 100 micrograms per cubic meter above background and are sustained for 15 minutes, or airborne

dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue provided particulate levels do not exceed 150 micrograms per cubic meter above the upwind level and provided that no visible dust is migrating from the work area (described in the generic CAM guidance attached to this document).

Notes: Exposure Guidelines for common contaminants are listed in **Table 1**
http://intranet/Health_Safety/3502/6453/Table1_April03.xls

Requirements for PPE upgrades based on monitoring are in **Table 2**
http://intranet/Health_Safety/3502/7003/Table2.xls

Record monitoring data and PPE upgrades on **Record of Field Monitoring** form **http://intranet/Health_Safety/590/1874/Frm_4003%20Field%20Monitor%20Record.xls**; maintain with project files.

Calibration and use of Equipment

Calibrate all monitoring equipment in accordance with manufacturers requirements and site specific requirements (e.g., at the beginning and end of each work day). Calibration of equipment shall be documented in the field notes or Daily Field Report (DFR).

Calibration data will be recorded in a bound field notebook or in the field notes. Documentation should include:

- Date/time
- Zero reading before calibration
- Concentration of calibration gas
- Reading obtained with calibration gas before adjusting span
- Final reading obtained with calibration gas after adjusting span

Air monitoring for exposure should be based on the frequency established above. Record time, location and results of monitoring and actions taken based upon the readings.

Use the H&A established SOPs for equipment calibration in the H&A SOP's located on the Intranet.

7. DECONTAMINATION

Personnel Decontamination

Are **decontamination procedures** required for personnel working on site? ☑ Y ☐ N
If yes, describe steps:

1. Remove any PPE and contain in plastic bag prior to leaving work area, in following order: Outer gloves (if applicable), tyvek (if applicable) boots, inner gloves.

2. Decontaminate any personal equipment which is not disposable with alconox wash and water rinse.

3. Dispose of PPE at appropriate client-approved location offsite (ie, solid waste dumpster).

Location of decontamination station: At the work area boundary next to drilling or sampling equipment.

Disposal of PPE: With solid waste or in appropriate client-approved waste stream offsite.

Tools & Equipment Decontamination

All decon should be conducted at the site and not at the office or lab.

Check all **equipment and materials needed for decontamination** of tools and other equipment:

☐ Acetone	☑ Distilled water	☐ Poly sheeting
☑ Alconox soap	☐ Drums for water	☑ Steam cleaner
☑ Brushes	☐ Hexane	☑ Tap water
☑ Disposal bags	☐ Methanol	☑ Washtubs
☐ Other Specify		

Outline the **equipment decontamination procedures** for this project:

1. Decontamination of drilling and construction equipment and tools with steam cleaner.

2. Decontaminate smaller tools or sampling equipment at each work area using alconox wash and water rinse (ie, buckets, wash tubs, etc).

Disposal methods for contaminated decontamination materials (e.g., wash water, rags, brushes, poly sheeting) will consist of:

The solid waste materials will be managed with the onsite solid waste disposed offsite. Decon water will be disposed onsite via the ground unless water is identified to be contaminated (we

do not currently anticipate the water will be contaminated during the decon process) in which case it will be contained and staged onsite for future proper disposal.

8. CONTINGENCY PLANNING

How H&A responds to an emergency depends on whether we are at an active facility or another other location. **Many active facilities have very stringent requirements for the mitigation of emergencies.** Therefore, the PM is responsible for identifying any specific requirements from the client contact.

As a rule of thumb, the following are H&A's basic responses to handling Emergencies. Typically, H&A does not mitigate emergencies. When Clients request or require specific functions such as First Aid/CPR trained personnel on site, we typically conform. Before any Project Manager or LHSC agrees to something more stringent, many issues should be considered such as training, safety, feasibility of an adequate response, insurance requirements, and much more.

Fire

- Major Fires - Major fires will be mitigated by the local fire departments or by client's on-site fire/emergency response departments.
- Incipient Stage Fires -Incipient stage fires will be extinguished by on-site personnel using fire extinguishers. Only those who have received annual training may use an extinguisher.

Medical

All H&A employee injuries and illnesses will be documented using the Supervisor's Accident / Injury / Near Miss Report (SAIR). This form is available on the Intranet.

- First Aid - First aid will be addressed using the on-site first aid kit. H&A employees are not required or expected to administer first aid/CPR to any H&A, Contractor, or Civilian personnel at any time and it is H&A's position that those who do are doing it on their behalf and not as a function of their job.
- Trauma - Based upon the nature of the injury, the injured party may be transported to the nearest hospital or emergency clinic by on-site personnel or by ambulance. First response to a trauma incident is to call 911 or facility security. H&A staff members are expected to assist in ancillary roles only such as directing ambulances to the scene. It is the discretion of the staff member on site whether an ambulance should be procured in remote locations where ambulance services will not be effective.

Hazardous Materials Spill

- Small incidental spills (e.g.- pint of motor oil) caused by H&A employees and/or by the contractor will be mitigated by the H&A staff member and/or the contractor.
- Large spills (e.g.- large leak from heavy equipment fuel tank) The contractor is responsible for cleanup. In the event that it posses a serious human or environmental threat, the local Fire Department and/or client emergency response department will be contacted. Once emergency has been mitigated typically clean up will be provided by a vendor.

Rescue

H&A employees will not enter any confined spaces for rescue purposes.

Weather Related Emergencies

H&A employees and their subcontractors should be aware of potential health effects and/or physical hazards of working during inclement weather. If applicable, the effects and hazards of heat stress, cold stress, frostbite, thunderstorms, lightning, etc., should be outlined in Section 4.0, or the H&A SOP should be included if one exists.

Emergency Alarming and Communication

In the event of an emergency, on site H&A personnel and Subcontractors shall assemble in a designated area. Role shall be completed by the SSO or senior-most H&A person present. No personnel shall leave the assembly area unless directed to do so by Project management, the SSO, or recognized emergency response agency (e.g., police, fire department).

Evacuation alarms and/or emergency information will be communicated among personnel on site by the following means: Verbal communication.

If communication will be by other means, describe:

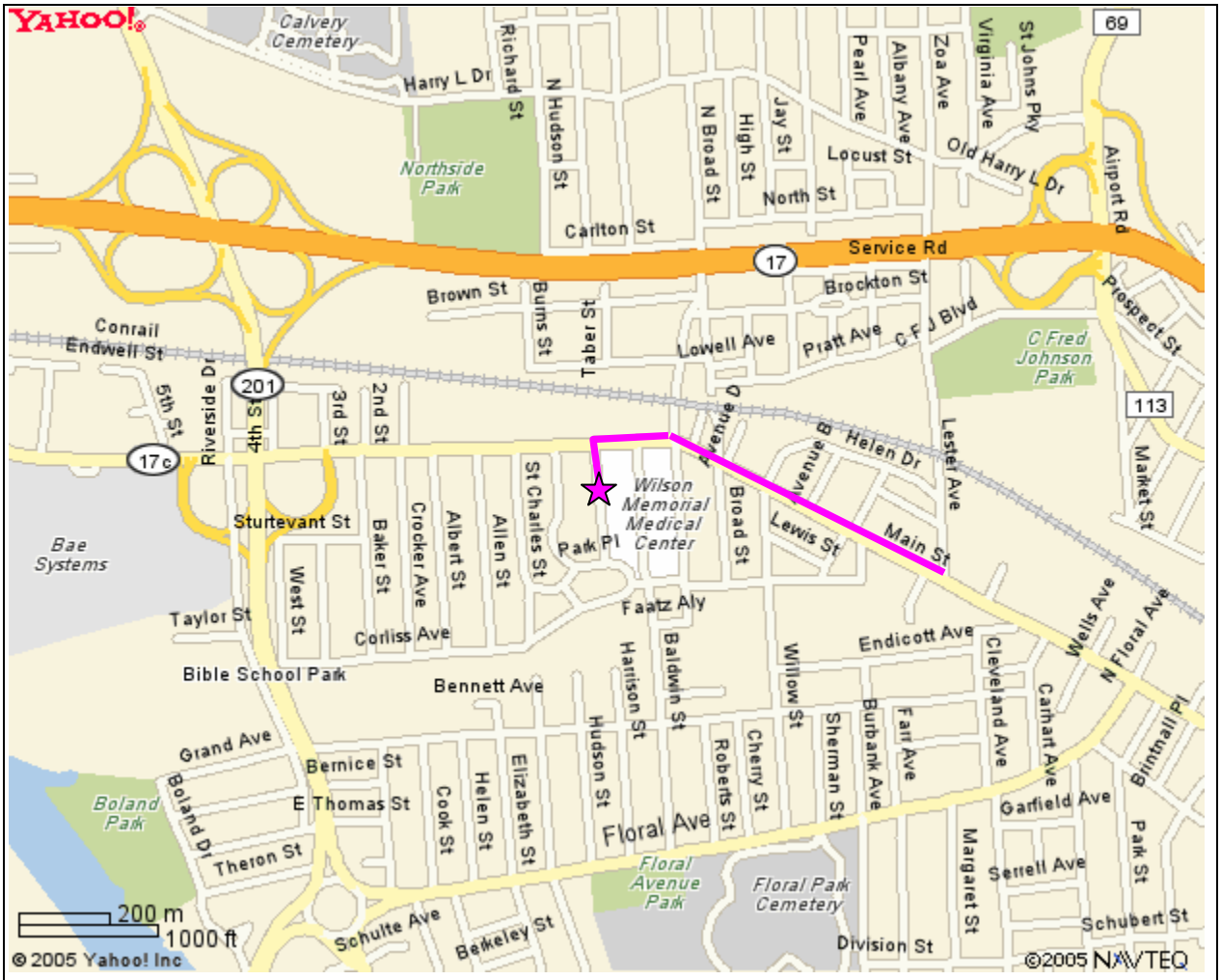
Emergency services will be summoned: Via on-site phone. If contact will be by other means, describe:

An Haley & Aldrich, Inc. field representative will call emergency services.

The **site evacuation plan** is as follows: Exterior evacuation is to move as far away from hazard in any good direction, while keeping traffic in mind.

EMERGENCY RESPONSE RESOURCES

Nearest Hospital: (see attached map) Address: Phone Number:	Wilson Memorial Regional Medical Center 33-57 Harrison Street Johnson City, NY 13790 607-762-2494
Emergency Response Number:	**911**
Local Emergency Response Number (if not on 911 system):	911
Other Ambulance, Fire, Police, or Environmental Emergency Resources:	911
H&A Project Manager: Phone Number: Emergency Phone Number: Client Contact/Project Manager: Phone Number: Emergency Phone Number:	Lisa Turturro 585.321.4237 585.370.3087 Ken Kamlet 607-770-0155 x229 911
Other Entity: Address: Phone Number:	Mike G. Beikirch Haley and Aldrich, inc. 585.321.4229



Directions:
1. Start on **Lester Ave** going toward **Helen Dr. (0.3 mi)**
2. Turn **Right** on **Main St. [Rt-17C] (0.5 mi)**
3. Turn **Left** on **Harrison St. (0.1 mi)**
4. Arrive at **Wilson Memorial Regional Medical Center** on the **Left**

APPENDIX A
HASP Amendment Form

This Appendix is to be used whenever there is an immediate change in the project scope that would require an amendment to the HASP. For project scope changes associated with "add-on" tasks, the changes must be made in the body of the HASP. Before changes can be made, a review of the potential hazards must be initiated by the H&A Project Manager.

Amendment No.	
Site Name:	
Work Assignment No.:	
Date:	
Type of Amendment:	
Reason for Amendment:	
Alternate Safeguard Procedures:	
Required Changes in PPE:	

Project Manager Signature: _____ Date: _____

Local Health and Safety Coordinator : _____ Date: _____

This original form must remain on site with the original HASP. If additional HASPs are in the field, it is the PMs responsibility to forward a signed copy of this amendment to those who have copies.

TABLE 1
HAZARD MONITORING

(CIRCLE CONTAMINANTS OF CONCERN, WRITE ADDITIONAL CONTAMINANTS AND EXPOSURE ON LAST PAGE)

CONTAMINANTS OF CONCERN	ROUTES OF EXPOSURE	IDLH	PEL	TLV	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
Acetone	R, I, C	2500	1000	500 Cv 750	9.69	60	13	--	Chem, sweet, pungent
Ammonia	R, A, I, C	300	50	25 Cv 35	--	--	0.5-2	10	Pungent suffocating odor
Benzene	R,A,I,C	Ca	1	Sk 0.5	9.25	150	4.68	--	Solvent
Carbon tetrachloride (Tetrachlormethane)	R,A,I,C	Ca	2 Cv25 200: 5 min peak	Sk 5 Cv 10	11.47**	10	50	--	Sweet, pungent
Chlorobenzene	R,I,C	1000	75	10	9.07	200	0.68	--	Almond like
Chloroform	R,I,C	Ca	2	10	11.42**	65	50	--	Sweet
Cyanides (CN salts)	R,A,I,C	50 mg/m^3	5 mg/m^3	Sk Cv 5 mg/m^3	--	--	--	--	Faint almond odor
o-Dichlorobenzene	R,A,I,C	200	Cv 50	25 Cv 50	9.06	50	0.3	E 20-30	Pleasant, aromatic
p-Dichlorobenzene	R,I,C	150	Cv 75	10	8.94	--	0.18	E 80-160	Distinct, aromatic mothball-like
Dichlorodifluoromethane (Freon 12)	R,C	1500	1000	1000	11.97**	15	--	--	--
1,1-Dichloroethane	R,I,C	3000	100	100	--	80	200	--	Distinct
1,2-Dichloroethane	R,I,A,C	Ca	Cv 100 50	10	11.12**	80	88	--	Chloroform
1,1-Dichloroethylene (Vinylidene chloride, 1,1-DCE	R,I	Ca	--	5 Cv 20	*	40	190	--	--
1,2-Dichloroethylene	R,I,C	1000	200	200	9.65	50	0.85	--	Ether-like acrid
Ethanol	R,A,I,C	--	1000	1000	10.48**	25	10	--	Sweet
Ethylbenzene	R,I,C	800	100	Cv 125 100	8.76	100	2.3	E 200	Aromatic
Ethylene Glycol vapor	R,A,I,C	--	100 mg/m^3	-	--	--	--	--	--
Formaldehyde	I,C	Ca	0.75	Cv 0.3	10.88**	--	0.83	--	Hay
Gasoline	R,I,C	Ca	--	300	--	--	--	E 0.5	Petroleum
Hexane, n-isomer	R,I,C	--	500	50	10.18	70	130	E.T 1400-1500	Mild, gasoline-like
Hydrogen Cyanide (as CN)	R,A,I,C	50	10	Sk Cv-4.7	**	--	0.58	--	Bitter almond
Hydrogen peroxide	R,I,C	75	1	1	11**	--	--	--	Shar[
Methanol	R,I,C	25000	Sk 200	Sk 200	10.84**	12	1000	--	Sweet
MEK peroxide	R,I,C	--	Cv 0.7	Cv 0.2	--	--	--	--	--
Methyl Chloroform (1,1,1-TCA)	R,I,C	700	350	350	**	105	20-100	--	Chloroform-like
Methylene Chloride (Dichloromethane, Methylene dichloride)	R,I,C	Ca	25	50	11.35**	100	25-50	E 5000	Ether-like
Methyl Mercaptan	R,C	150	Cv 10	0.5	9.44	--	--	--	Garlic, Rotten Cabbage
MIBK (Hexone)	R,I,C	500	100	50 Cv 75	--	--	--	--	Pleasant
Naptha (coal tar)	R,I,C	1000	100	400	--	--	--	--	Aromatic
Naphthalene	R,A,I,C	250	10	10	8.14	--	0.3	E 15	Mothball-like
Octane	R,I,C	750	500	300 Cv 375	9.9	80	48	--	Gasoline-like
Pentachlorophenol	R,A,I,C	Ca 2.5 mg/m^3	0.5 mg/m^3 Sk	Sk 0.5 mg/m^3	--	--	--	--	Pungent when hot
Phenol	R,A,I,C	250	Sk 5	Sk 5	8.5	--	0.04	E.N.T. 68	Medicinal

TABLE 1
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Propane	R,C	2100	1000	2500	10.95**	80	1600	--	Natural gas odor
Stoddard Solvent (Mineral Sprits	R,CI,I	20000 mg/m^3	500	100	*	--	1	E 400	Kerosene-like
1,1,2,2-Tetrachloroethane	R,A,I,C	Ca (100)	Sk 5	1	11.1**	100	1.5	--	--
Tetrachloroethylene (Perchloroethylene)	R,I,C	Ca	100	25	9.32	70	4.68	N.T513-690	Ether, chloroform-like
Toluene	R,A,I,C	500	200	50	8.82	110	2.14	E300-400	Mothball-like
Trichloroethylene	R,I,C	Ca (1000)	100	50	9.47	70	21.4	--	Solventy, chloroform-like
Turpentine	R,A,I,C	800	100	100	--	--	200	E.N 200	Pine-like
Vinyl Chloride	R	Ca	1	2	9.995	--	3000	--	Ethereal
Xylenes	R,A,I,C	1000	100	100	8.56/8.44	111/116	1.1	E.N.T. 200	Aromatic
DUSTS, MISTS AND MISCELLANEOUS COMPOUNDS									
Asbestos	R	Ca	0.1 fibr/cc	Species dependent	--	--	--	--	--
PCBs-42% Chlorine	R,A,I,C	Ca	1 mg/m^3 Sk	1 mg/m^3 Sk	--	--	--	--	Mild, hydrocarbon
PCBs-54% Chlorine	R,A,I,C	Ca	0.5 mg/m^3 Sk	0.5 mg/m^3 Sk	--	--	--	--	Mild, hydrocarbon
Styrene	R,I,C	700	100	20	8.47	85	0.047	E 200-400	Rubber, solvent
Aluminum- metal dust- total	R,I,C	--	15 mg/m^3	10 mg/m^3	--	--	--	--	--
-soluble salts	R,I,C	--	2 mg/m^3	2 mg/m^3	--	--	--	--	--
Arsenic- inorganic	R,A,I,C	Ca	0.01 mg/m^3	0.2 mg/m^3	--	--	--	--	--
Barium:soluble compounds	R,I,C	250 mg/m^3	0.5 mg/m^3	0.5 mg/m^3	--	--	--	--	--
Cadmium dusts	R,I	Ca	0.005 mg/m^3	0.01 mg/m^3	--	--	--	--	--
Chromium: Species Dependent (Hexavalent)	R,I,A,C	25 mg/m^3	Spec Dep hex- (.5mg/m$^{3)}$	Spec Dep	--	--	--	--	--
Copper - dust & mist	R,I,C	--	1 mg/m^3	1 mg/m^3	--	--	--	--	--
Lead - arsenate	R,I,C	Ca	0.05 mg/m^3	0.15 mg/m^3	--	--	--	--	--
- inorg. dust & fume	R,I,C	--	0.5 mg/m^3	0.15 mg/m^3	--	--	--	--	--
- chromate	R,I,C	--	--	0.05 mg/m^3	--	--	--	--	--
Manganese & compounds	R,I	500 mg/m^3	Cv-5 mg/m^3	0.2 mg/m^3	--	--	--	--	--
Mercury & inorg. comp.	R,A,C	10 mg/m^3	Cv0.1 mg/m^3	0.1 mg/m^3	--	--	--	--	--
- (organo) alkyl comp.	R,A,I,C	2 mg/m^3	0.01 mg/m^3	0.1 mg/m^3	--	--	--	--	--
Nickel - metal, insoluble	R,I,C	Ca	1 mg/m^3	1 mg/m^3	--	--	--	--	--
- soluble comp.	R,I,C	Ca	0.1 mg/m^3	0.1 mg/m^3	--	--	--	--	--
Nuisance Dust			5mg/m^3(Resp) 15mg/m^3(total)						
Portland cement	R,I,C	--	15 mg/m^3	10 mg/m^3	--	--	--	--	--
Selenium compounds	R,A,I,C	100 mg/m^3	0.2 mg/m^3	0.2 mg/m^3	--	--	--	--	--
Silver - metal	R,I,C	--	0.01 mg/m^3	0.1 mg/m^3	--	--	--	--	--
- soluble comp.	R,I,C	--	--	0.1 mg/m^3	--	--	--	--	--
Thallium, soluble	R,A,I,C	20 mg/m^3	0.1 mg/m^3 Sk	0.1 mg/m^3 Sk	--	--	--	--	--
Tin, metal & inorganic	R,C	400 mg/m^3	2 mg/m^3	2	--	--	--	--	--
Comp. except oxides									
Tin, organic compounds	R,A,I,C	200 mg/m^3	0.1 mg/m^3	0.1 mg/m^3 Sk	--	--	--	--	--
Zinc chromates, as Cr	R,I,C	--	Cv 0.1 mg/m^3	Cv 0.1 mg/m^3	--	--	--	--	--

TABLE 1
HAZARD MONITORING

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CONTAMINANTS OF CONCERN	ROUTES OF EXPOSURE	IDLH	PEL	TLV	PID (IP eV)	FID	ODOR THRES-HOLD	IRRITATION THRESHOLD	ODOR DESCRIPTION
Zinc oxide dust (total)	R,I,C	--	15 mg/m^3	10 mg/m^3	--	--	--	--	--

Notes: All units in ppm unless otherwise noted.

R = Respiratory (Inhalation) I = Ingestion A = Skin Absorption C = Skin and/or Eye Contact

Cv = Ceiling value Ca = Carcinogen Sk = Skin

** = Use 11.7 eV lamp

TABLE 2
Last Revised September 2002

MONITORING METHOD, ACTION LEVELS AND PROTECTIVE MEASURES

INSTRUMENT	HAZARD	ACTION LEVEL	ACTION RESPONSE
Respirable Dust Monitor	Total Particulates	> 5 mg/m^3	Upgrade to Level C Protection
OVA, HNU[2], Photovac Microtip	Total Organic Vapors	Background	Level D Protection
		10 ppm > background or lowest OSHA permissible exposure limit, whichever is lower, or as modified for this task. Sustained for >5 minutes in the breathing zone.	Upgrade to Level C - site evacuation may be necessary for specific compounds
		50 ppm over background, unless lower values required due to respirator protection factors	Cease work; upgrade to Level B[3] may be required
Explosimeter[4] (LEL)	Flammable/Explosive Atmosphere	<10% Scale Reading	Proceed with work
		10-15% Scale Reading	Monitor with extreme caution
		>15% Scale Reading	Evacuate site
0xygen Meter[5]	Oxygen-Deficient Atmosphere	19.5% - 23.5% 0_2	Normal - Continue work
		< 19.5% 0_2	Evacuate site; oxygen deficient
		> 23.5% 0_2	Evacuate site; fire hazard
Radiation Meter[6]	Ionizing Radiation	0.1 Millirem/Hour	If > 0.1, radiation sources may be present[7]
		> 1 Millirem/Hour	Evacuate site; radiation hazard
Drager Tubes	Vapors/Gases	Species Dependent > 1 ppm vinyl chloride > 1 ppm benzene > 1 ppm 1,1-DCE	Consult Table 1 or other resources for concentration toxicity/detection data. Upgrade to Level C if concentration of compounds exceed thresholds shown at left; May need to cease work if other levels exceeded - site specific
Gas Chromatograph (GC)	Organic Vapors	3 ppm total OV > background or > lowest specific OSHA permissible exposure limit, whichever is lower	On-site monitoring or tedlar bag sample collection for off-site/laboratory analysis

Notes:

1. Monitor breathing zone.
2. Can also be used to monitor some inorganic species.
3. Positive pressure demand self contained breathing apparatus
4. Lower explosive limit (LEL) scale is 0-100%. LEL for most gasses is 15%.
5. Normal atmospheric oxygen concentration at sea level is 20%
6. Background gamma radiation is ~0.01-0.02 millirems/hour.
7. Contact H&A Health and Safety staff immediately.

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and/or particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in established action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels that those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences of facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

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Depending upon the nature of known of potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area may be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well camp or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some incidences, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15-minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedances of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.