Site Management Plan
Bartlett Tree Company Site
NYSDEC Site #0130074

Prepared for

F.A. Bartlett Tree Expert Company

Charlotte, North Carolina

April 20, 2015

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Revisions to Final Approved Site Management Plan:

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

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List of Abbreviations

CAMP	Community Air Monitoring Plan
CCR	Construction Completion Report
C/D	Construction/Demolition
CFR	Code of Federal Regulations
COC	Certificate of Completion
COC	contaminant of concern
DO	dissolved oxygen
DUSR	Data Usability Summary Report
EE	environmental easement
ELAP	Environmental Laboratory Approval Program
EPA	United States Environmental Protection Agency
EWP	Excavation Work Plan
HASP	Health and Safety Plan
IC	Institutional Control
ID	inside diameter
IRM	Interim Remedial Measure
m	meter
mg	milligram
ml	milliliter
MVA	mercury vapor analyzer
NCDH	Nassau County Department of Health
NTU	Nephelometric Turbidity Unit
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OP	organophosphorous
ORP	Oxidation Reduction Potential
OSHA	Occupational Safety and Health Administration
PCE	Perchloroethylene
PID	photoionization detector
PPE	Personal Protective Equipment
ppb	parts per billion
ppm	parts per million
ppt	parts per trillion
PRR	Periodic Review Report
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QEP	Qualified Environmental Professional
RI	Remedial Investigation
ROD	Record of Decision
RP	Remedial Party
SCO	Soil Cleanup Objective (6 NYCRR Part 375-6.8)
SMP	Site Management Plan
SVI	soil vapor intrusion
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Section 1

Introduction and Description of Remedial Program

1.1 Introduction

This document is required as an element of the remedial program at the Bartlett Tree Company Site (hereinafter referred to as the "Site") under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by the New York State Department of Environmental Conservation (NYSDEC). The Site was remediated in accordance with the Order on Consent and Administrative Settlement, Index No. W1-1091-06-08, Site #1-30-074, which was executed in April 2007 (hereinafter "Consent Order").

1.1.1 General

The F. A. Bartlett Tree Expert Company (Bartlett) entered into the Consent Order with the NYSDEC to remediate an approximately 0.4 acre property located in the Village of Westbury, Town of North Hempstead, Nassau County, New York. The Consent Order required Bartlett to investigate and remediate contaminated media at the Site. A figure showing the Site location and boundaries is provided in Figure 1. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement (Appendices C, D).

After completion of the remedial work described in the Record of Decision and the reports in the Administrative Record, some contamination was left in the subsurface at the Site, which is hereafter referred to as "remaining contamination." This Site Management Plan (SMP) was prepared to manage remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State.

This SMP was prepared by Brown and Caldwell Associates on behalf of Bartlett in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010 (DER-10), and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the Institutional Controls (ICs) that are required by the Environmental Easement for the Site.

1.1.2 Purpose

The Site contains contamination left after completion of the remedial action. The Environmental Easement granted to the NYSDEC, and recorded with the Nassau County Clerk on February 10, 2015 (Appendix D), requires compliance with this SMP and all ICs placed on the Site. The ICs place restrictions on Site use, and mandate operation, maintenance, monitoring and reporting measures for all ICs. This SMP specifies the methods necessary ensure compliance with all ICs required by the Environmental Easement for contamination that remains at the Site. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site after completion of the Remedial Action, including: (1) implementation and management of all ICs; (2) media monitoring; and (3) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports.

To address these needs, this SMP includes two plans: (1) an Institutional Control Plan for implementation and management of ICs; and (2) a Monitoring Plan for implementation of Site Monitoring.

This plan also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);
- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the Consent Order, and thereby subject to applicable penalties.

1.1.3 Revisions

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. In accordance with the Environmental Easement for the Site, the NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Site Background

1.2.1 Site Location and Description

The Site is located in the Village of Westbury, Town of North Hempstead, County of Nassau, New York and is identified in the Nassau County Tax Rolls as Section 10, Block 228, Lot 786 and Section 10, Block 228, Lot 206. The Site is located in an urban, mixed-use neighborhood of commercial and industrial facilities and residences. The Nassau County Assessors' Office lists the Site land category as commercial. The Site consists of a narrow parcel of land measuring approximately 340 feet in length by 60 feet wide, totaling approximately 0.4 acres. It is bordered on the north by a municipal parking lot; on the east by a construction materials warehouse; on the south by Union Avenue, followed by the Long Island Railroad, a parking lot and a cemetery; and on the west by a taxi fleet maintenance facility and construction contractor's storage yard. (see Figure 1). The boundaries of the Site are more fully described in Appendix C – Metes and Bounds.

The Site has been occupied since the mid 1950s by Bartlett, a nationwide tree care company. The Site configuration currently consists of a two-story office/garage structure with asphalt paved driveway and parking areas. Some of the parking area is temporarily unpaved pending construction of a storage structure and repaving. The facility is accessed from Union Avenue via two driveways located on either side of the Bartlett office building. A chain link fence extends along the western and northern property boundaries, with a smaller section of fencing traversing the property from east to west and enclosing the northern parking/storage areas. Bartlett's service vehicles are parked in the northern portion of the Site and, temporarily, in a locked garage on the ground floor of the office building near the facility entrances on Union Avenue.

Until they were demolished in 2008, three additional structures were present on the Site: a garage, an enclosed storage shed, and an open shed. These structures were demolished to create more space for Bartlett's service vehicles and for temporary storage of nursery stock.

Water and sewer service is currently provided by the municipality. Sanitary wastes may have been initially discharged to an on-site cesspool or drywell (Drywell 1) formerly located in the northern portion of the Site, approximately 20 feet south of the former open shed. More recently, sanitary wastes from the two story office/garage structure were discharged to a former concrete drywell/cesspool (Drywell 3) located near the northwest corner of the structure. In 2009 the office/garage sanitary system was connected to the municipal sanitary sewer on Union Avenue and Drywell 3 was closed (see below).

1.2.2 Site History

Sanborn fire insurance maps indicate that, prior to Bartlett, the Site was occupied by a wagon works and/or auto repair facility, and included a paint shop, machine shop, lumber storage structure, and a shed.

Since the mid-1950s the Site has been used by Bartlett as a base for tree maintenance services, including applications of pesticides and herbicides. In the 1960s and 1970s, excess (unused) pesticide spray solutions were typically re-tanked for applications on the following day. Since the early 1980s, pesticide and herbicide spray solutions have been prepared in truck-mounted tanks in quantities only as large as needed for immediate, individual applications. Thus, no unused spray solution is left over to be disposed. Empty, plastic pesticide containers are triple rinsed, bagged and stored on site pending recycling as plastic. Rinse water is placed in spray tanks for mixing with new spray solutions.

Bartlett is not aware of any current or former pesticide storage area other than the locked, fire proof storage structure noted above. Based on architectural plans obtained from the Village of Westbury Building Department and provided previously to the NYSDEC, the former open shed at the north end of the Site may have been part of a larger open shed constructed between 1963 and 1964 for the purpose of housing trucks. The architectural plans indicate the open storage shed was to extend along a portion of the east boundary line of the property. There is no evidence that pesticides were ever stored in the open shed.

Prior to the remediation activities undertaken by Bartlett, a number of drywells and other subterranean structures were located on the Site. These features were thoroughly investigated, remediated, and closed or removed from the Site.

1.2.3 Geologic Conditions

Three main water bearing units are found on Long Island – the upper glacial aquifer of Pleistocene age and the underlying Magothy and Lloyd aquifers of upper Cretaceous age. In the area of the Site, the upper glacial aquifer is comprised of glacial outwash consisting of sand and gravel and directly overlies the Magothy aquifer, which generally consists of fine to medium grained sand with interbedded lenses of coarse sand and sandy to solid clay. Regional groundwater flow in the area of the Site is to the south-southwest.

The geologic materials encountered by borings completed during the Remedial Investigation of the Site are depicted in cross sections A-A' and B-B' (Figures 3 and 4). Consistent with regional studies, the upper-most geologic materials are glacial outwash deposits of fine to medium sand and fine to medium gravel. A 20-foot thick layer of clayey silt is present at approximately 40 to 60 feet bgs at the northern portion of the Site. Soil borings elsewhere at the Site were not deep enough to confirm the presence of this clayey silt layer, but there is evidence that it is laterally extensive. The deposits

encountered below the clayey silt layer consisted of fine to medium sand and fine to medium gravel. Zones of relatively well sorted sand were found in deeper intervals (e.g., MW-2S at 98-102 ft bgs; MW-1D at 82-86 ft bgs). These deeper sand and gravel zones also contained a number of discrete lenses of silty clay or clayey silt which were generally gray in color and ranged from 0.2-1.5 ft in thickness. The dense black silt layer of unspecified thickness identified in the PSA report was not encountered during the RI investigations.

At least in the immediate vicinity of the Site, the Magothy aquifer is separated from the upper glacial aquifer by a relatively impermeable aquitard. Shallow groundwater in the immediate vicinity of the Site typically flows in a west or west-southwest direction (Figure 5), with variations that are apparently due to local influences. The water table is encountered at approximately 29' to 32' below ground surface, depending on seasonal variation.

1.3 Summary of Remedial Investigation Findings

A Remedial Investigation (RI) was performed to characterize the nature and extent of contamination at the Site. The results of the RI are described in detail in the following report: Remedial Investigation Report, Bartlett Tree Company Site, DEC Site No. 1-30-074, Nassau County, New York. Brown and Caldwell Associates. August 2013.

Generally, the RI determined that some soils and, to a limited extent, groundwater were impacted by certain pesticides. In addition, groundwater and soil vapor are impacted by volatile organic compounds (VOCs) that are migrating on-Site from one or more unidentified, off-Site sources. The VOCs are unrelated to Site operations.

Below is a summary of Site conditions when the RI was performed in 2008-2012:

Soil - During the RI, soil borings were advanced within the areas of concern including but not limited to Test Pit 1, Test Pit 2, Dry Well 1, the area wherein Dry Well 2 was believed to exist, Dry Well 3, the Mechanic's Pit, the Stairway Floor Drain, the Former Open Shed, the Former Pesticide Storage Locker, and other locations. This work was performed to assess the nature and extent of soil contamination on the Site. Some areas were sampled on more than one occasion, and confirmatory sampling also occurred after various IRMs were carried out at the Site.

Soil samples were analyzed for pesticides,/herbicides, VOCs, semi-volatile organic compounds (SVOCs), metals and PBCs. Shallow surface soil was characterized site-wide by collecting soil samples from zero to two feet below surface in a number of locations including from the following areas of concern: former pesticide storage locker, former open shed, test pit-1, test pit-2, stairway floor drain and mechanic's pit. Levels of pesticides in all soil samples collected from this depth interval were below the commercial use SCOs. All samples were below the protection of groundwater SCOs and the nearly all were below the residential SCOs.

The primary contaminants of concern in deeper soil are pesticides. Deeper soil sampling occurred for the Dry Well 1 area and the area wherein Drywell 2 was believed to exist. Figure 6 shows the locations and pre-remediation concentrations of pesticides detected in soil. Table 1 (below) summarizes the contaminants of concern that exceed the Unrestricted Soil Cleanup Objectives (SCOs) found in 6 NYCRR Part 375-6.8 (a). Additionally, Table 1 includes a comparison of the analytical data to the appropriate Restricted SCO found in Part 375-6.8 (b) for each individual contaminant. The Restricted SCO is the lower of:

1. The commercial use SCO where Section 4 has identified a restricted land use for the site, or
2. The protection of groundwater SCO only for the primary contaminants of concern listed in the groundwater section below.

Sampling performed in other areas of the Site, including Dry Well 3, the area of MW-1S, and others, revealed similar results of little or no detection of contaminants above relevant SCO levels.

Table 1. Remedial Investigation Soil Contamination Summary (from ROD)

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted SCG[b] (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c,d] (ppm)	Frequency Exceeding Restricted SCG
VOCs					
Tetrachloroethene	ND – 0.067	1.3	0 of 21	1.3	0 of 21
Pesticides					
4,4'-DDD	ND – 11	0.0033	17 of 21	14	0 of 21
4,4'-DDE	ND – 2.3	0.0033	13 of 21	17	0 of 21
4,4'-DDT	ND – 130	0.0033	19 of 21	47	2 of 21
Aldrin	ND – 0.0076	0.005	2 of 12	0.19	0 of 12
Alpha-BHC	ND	0.02	0 of 2	0.02	0 of 2
Endosulfan I	ND	2.4	0 of 14	102	0 of 14
Endosulfan II	ND	2.4	0 of 19	102	0 of 19
beta-BHC	ND	0.036	0 of 18	0.09	0 of 18
gamma-BHC (Lindane)	ND	0.1	0 of 21	0.1	0 of 21
Chlordane (alpha)	ND	0.094	0 of 18	2.9	0 of 18
Dieldrin	ND – 0.58	0.005	7 of 21	0.1	0 of 21
Endrin	0.017	0.014	2 of 2	0.06	0 of 2

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

Site-Related Groundwater - During the RI, four rounds of groundwater samples were collected from both deep and shallow overburden monitoring wells throughout the Site to assess on-site groundwater quality at the water table and within the deeper aquifer. The groundwater samples were analyzed for pesticides,/herbicides, VOCs, SVOCs and inorganics (metals). Table 2 (below) summarizes the contaminants of concern that exceed the applicable SCGs.

Table 2. Remedial Investigation Groundwater Contamination Summary (from ROD)

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
VOCs			
cis-1,2-Dichloroethene	ND – 48	5	4 of 24
Trichloroethene	ND – 120	5	5 of 24
Pesticides			
4,4'-DDT	ND – 0.39	0.2	2 of 24
Dieldrin	ND – 3.3	0.004	13 of 24
Endrin	ND – 0.12	ND	1 of 24
alpha-BHC	ND – 0.12	0.01	2 of 24
gamma-BHC (Lindane)	ND – 0.071	0.05	1 of 24
alpha-Chlordane	ND – 0.11	0.05	3 of 24
gamma-Chlordane	ND – 0.058	0.05	1 of 24

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

The primary groundwater contaminants of concern in on-Site groundwater are pesticides which in some instances were found to exceed SCGs. As a result of the removal of the contaminant source area (Drywell 1) through soil excavation, pesticide levels in on-Site groundwater are expected to diminish. VOCs were detected in groundwater during the RI. However, VOC levels were observed to be highest in upgradient monitoring wells MW-1S and MW-1D, indicating the VOCs are originating at an off-Site, upgradient source and are not Site-related. As part of its review of remediation data from the Site, the NYSDEC has confirmed this.

Figure 7 shows the locations and pre-remediation concentrations of pesticides detected in groundwater. Four pesticides were detected at concentrations above their standards in the most recent round of groundwater samples, collected in May, 2012. One of these, alpha Chlordane, does not appear to be related to Bartlett's historical operations as it is in an upgradient well (MW-1S) and soil samples in the area either did not contain Chlordane isomers or contained only trace levels that could not adversely impact groundwater quality. Alpha-BHC and Dieldrin were detected at part-per-trillion levels in MW-4, which is located approximately 10 feet downgradient from the soil column that was removed during the Drywell 1 IRM. The fourth pesticide, DDT, was detected above the groundwater standard in the May 2012 sample from well MW-2D. The result is anomalous given the history of low concentrations in MW-2D, and may reflect contamination by the entry of surface water into the well.

Several chemical properties of pesticides should be considered when evaluating groundwater impacts at the Site. Organic pesticides typically have very low solubilities in water and a strong chemical affinity for the inorganic and organic materials found naturally in soils and aquifer materials. The coupling of these two characteristics results in very limited mobility of pesticides in groundwater. In addition, most pesticides eventually break down over time as a result of chemical and micro-biological reactions in soils. With the 2012 removal of the pesticide-impacted soil above the water table, no more pesticides will leach downward into the saturated zone, and continuing degradation of the pesticides will eventually reduce concentrations in the saturated zone to negligible levels.

The groundwater standards for pesticides are very low, in many cases in the parts-per-trillion (ppt) range. The groundwater standards that were exceeded (and only slightly so) in the latest round of groundwater sampling (May 2012) are:

- 4 ppt – Dieldrin;
- 10 ppt - alpha-BHC;
- 50 ppt - alpha-Chlordane; and
- 200 ppt - DDT.

These low standards along with very low detection limits require stringent sampling controls to minimize cross-contamination and sample turbidity. They also create a potential for spurious groundwater quality impacts due to cross contamination during monitoring well construction.

Four metals (cobalt, iron, manganese, sodium) were detected at concentrations above the Part 703 standards. Available data for iron, manganese and sodium indicate that the concentrations of these metals are within the range of values found in shallow groundwater in sewered and unsewered areas in Nassau County. Arsenic, copper and lead, metals once used in pesticide/herbicide sprays, were only detected in samples from monitoring well MW-2D during the 2008/2009 events and may be due to the elevated turbidity of the samples prior to the redevelopment of the well or to the entry of stormwater runoff into the well.

The RI data indicate that the shallow groundwater above the clayey silt is isolated from the effects of pumping in the underlying Magothy aquifer. The isolation afforded by the clayey silt aquitard is likely the reason that no significant impact to deep groundwater quality has been detected.

Site-Related Soil Vapor Intrusion - The potential for soil vapor intrusion resulting from groundwater contamination from off-Site sources was evaluated during the RI. Sub-slab soil gas samples, indoor air samples and ambient outdoor air samples were collected in March 2008 and March 2012 (see Table 3, Figure 8). On both occasions, the chlorinated VOC tetrachloethene (PCE) was detected in subslab vapor, indoor air and outdoor air. However, on both occasions, indoor air sample results for PCE were well below the NYSDOH guidance values and the levels were similar to ambient air quality. Notably, the comparable indoor and outdoor air samples were more than two orders of magnitude lower than the sub slab concentrations.

Two other VOCs were detected in concentrations exceeding NYSDOH guidance levels; however, the sub slab levels were lower than the indoor levels, indicating an indoor or outdoor source. Several non-chlorinated VOCs were detected, four of them higher than NYSDOH guidance levels. However, the indoor concentrations of those compounds were higher than the subslab or outdoor ambient concentrations, indicating likely indoor sources.

Based on the concentrations detected, and in comparison with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in New York State (NYSDOH, October 2006), soil vapor intrusion was not identified as a concern during the RI. It has been determined that the existing floor slab seems to be functioning as an effective vapor barrier, since the indoor concentration of PCE is more than 300 times lower than the subslab concentration. However, monitoring is recommended for the office building and soil vapor intrusion may be a concern for any future onsite buildings.

1.4 Summary of Remedial Actions

The Site was remediated in accordance with the ROD and the following NYSDEC-approved Interim Remedial Measure Work Plans:

- Closure of Drywell 3 Work Plan, Bartlett Tree Company Site, Westbury, New York, DEC Site Registry No.130074. Brown and Caldwell Associates, February 2009.
- Final Interim Remedial Measure Work Plan – Drywell 1, Bartlett Tree Company Site, DEC Site Registry No. 1-30-074. Brown and Caldwell Associates, April 2012.

The following is a summary of the Remedial Actions performed at the Site:

1. Excavation and off-Site disposal of soil/fill, and other materials, as described in Section 1.4.1, below exceeding commercial SCOs as well as the SCOs for Protection of Groundwater, as described in Section 1.4.1 below;
2. Maintenance of building foundations and pavement to prevent human exposure to remaining contaminated soil/fill at the Site;

Remedial activities were completed at the Site in November, 2012. The remedial action for the Site also requires the following remedial activities to occur until the date specified in this SMP, the Environmental Easement is extinguished or as otherwise approved by NYSDEC.

1. Execution and recording of an Environmental Easement (EE) to restrict land use and prevent future exposure to any contamination remaining at the Site. The EE requires the following:
   - Requires the Site owner to complete and submit to the NYSDEC a periodic certification of institutional controls in accordance with Part 375-1.8(h)(3);
   - Allows the use and development of the controlled property for commercial and industrial use as defined by Part 375-1.8(g), although the land use is also subject to local zoning laws;
   - Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
   - Requires compliance with this NYSDEC-approved Site Management Plan.
2. Development and implementation of this Site Management Plan for long term management of remaining contamination as required by the Environmental Easement. The Site Management Plan includes the following:
   - Identifies all use restrictions for the Site and details the steps and media-specific requirements necessary to ensure the institutional controls remain in place and effective;
   - Includes an Excavation Work Plan which details the provisions for management of future excavations in areas of remaining contamination;
   - Describes the provisions of the Environmental Easement, including any groundwater use restrictions;
   - Provides for evaluation of the potential for soil vapor intrusion for any buildings developed on the Site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
   - Identifies the steps necessary for and frequency of periodic reviews and certifications of the institutional controls;
   - Describes the necessary site access controls and NYSDEC notification;
   - Includes a Monitoring Plan to monitor soil gas, indoor air and groundwater to assess the performance and effectiveness of the remedy in restoring groundwater quality, determine the need (if any) for an off-Site groundwater monitoring well downgradient of the Site,

specify the schedule of monitoring and frequency of submittals to the NYSDEC; and monitoring for vapor intrusion for any building occupied or developed on the Site.

3. Green Remediation. Green Remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:
   - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
   - Reducing direct and indirect greenhouse gas and other emissions;
   - Increasing energy efficiency and minimizing use of non-renewable energy;
   - Conserving and efficiently managing resources and materials;
   - Reducing waste, increasing recycling and increasing reuse of material which would otherwise be considered a waste.

1.4.1 Removal of Contaminated Materials from the Site

A list of the soil cleanup objectives (SCOs) for the primary contaminants of concern (COCs) and applicable land use for the Site is provided above in Table 1. The areas where excavation was performed are shown in Figure 9. The following IRMs have been completed at the Site to remove possible sources of contaminated materials based on conditions observed during the RI.

Drywell-1 - An IRM was implemented to remove Dry Well 1 and address subsurface soil surrounding and beneath this structure which was contaminated with pesticides and herbicides. The IRM work plan was approved by NYSDEC on June 14, 2012. An addendum to the work plan, which was approved on August 21, 2012, modified the method of shoring the excavation and segregating the excavated soils. Soil borings conducted in 2010 during the remedial investigation were supplemented with additional soil borings in April 2011 to further delineate the vertical and horizontal extent of contamination in subsurface soil within and around Drywell-1. Elevated levels of DDD, DDT, Chlordane, Dieldrin, and Lindane and were discovered in subsurface soils beneath the drywell. Field work associated with the IRM began on September 5, 2012. Sheet piling was driven at the outer limits of the excavation to keep the excavation open while contaminated soil was removed from within. Excavated soil was stored on-Site and was sampled and analyzed for off-Site disposal at a permitted disposal facility. Excavation activities were completed on November 12, 2012. The final depth of excavation was approximately 32 feet below grade. Groundwater was encountered at approximately 31 feet below grade.

Excavated soil was disposed of off-Site at two permitted disposal facilities. Approximately 97 tons of nonhazardous soil was disposed of at Cumberland Landfill in Newburg, Pennsylvania and approximately 341 tons of hazardous soil was disposed of at the Bennett Environmental incineration facility in Quebec, Canada. The excavation was backfilled with approximately 239 tons of certified clean fill material (sandy soil) provided by 110 Sand Company in Melville, New York and approximately 320 tons of coarse aggregate from Clinton Point Quarry, Clinton Point, New York. All backfill materials met the requirements and criteria specified in 6 NYCRR Part 375-6.7(d) and DER-10 Technical Guidance for Site Investigation and Remediation. The IRM activities are summarized in a Construction Completion Report (CCR) dated July 2013 which was prepared by a New York State licensed Professional Engineer. The CCR was approved by the NYSDEC on July 30, 2013.

Drywell-3 - Leaching pool Drywell-3 received the Bartlett facility's sanitary wastewater. Analysis of the contents did not indicate that there had been disposal of hazardous wastes into Drywell 3. With the assistance of Nassau County Department of Health (NCDH) and the Nassau County Department of Public Works, the facility was connected to the sanitary sewer system. The Drywell-3 structure was

decontaminated and closed in place due to its proximity to the foundation of the office building. During the closure of Drywell 3, approximately 6 tons of liquid, solids and sediment, together with soil below the drywell were removed and disposed of off-Site at a permitted disposal facility.

Post-removal soil samples were collected from the bottom and from a depth of 18 to 24 inches below the bottom. No contaminants of concern were detected above the protection of groundwater SCOs or the commercial use SCOs. Drywell-3 was then backfilled to grade utilizing 50 psi flowable fill material, a low strength concrete mixture that hardens in place. The closure activities are summarized in a Remedial Action Report dated November 2009, which was prepared by a New York State licensed Professional Engineer. In a letter dated June 6, 2012, the NCDH granted their concurrence with the investigation and closure of Drywell-3.

Mechanic's Pit - The former mechanics pit on the ground floor of the office building was closed in 2009 in accordance with the NYSDEC-approved Closure Work Plan. The pit had been filled with stone ballast, which was removed during the closure. The pit was found to have a solid concrete base. Once the ballast was removed, soil that had accumulated on the concrete bottom was containerized and disposed of off-site at a permitted disposal facility.

A soil sample was collected from beneath the concrete base of the pit and analyzed. There were no contaminants of concern which exceeded the protection of groundwater or commercial use SCOs, therefore, the pit was backfilled with clean stone ballast and its cover was replaced and anchored into place. The closure activities are summarized in a Remedial Action Report dated November 2009, which was prepared by a New York State licensed Professional Engineer. In a letter dated June 5, 2012, NCDH provided their concurrence with the investigation and closure of the mechanic's pit.

1.4.2 Site-Related Treatment Systems

No treatment systems were installed as part of the Site remedy.

1.4.3 Remaining Contamination

This section provides a summary of contamination remaining at the Site so that anyone performing future excavations at the Site can anticipate the environmental conditions they will encounter. For the purposes of this SMP, the remaining soil contamination is compared to the SCOs for both unrestricted use and commercial use. As set forth in 6 NYCRR Subpart 375-1, unrestricted use is achieved when a remedial program for soil meets the lowest of the three SCO values for protection of groundwater, ecological resources and public health. The SCOs for protection of ecological resources are not relevant at the Site given the absence of any ecological resources or surface water bodies. Therefore, the unrestricted use criteria for the Site are the lower of the two values for protection of groundwater and public health – residential use. The tables and figures in Appendix I present the RI soil data compared to these more stringent criteria.

For the Site, the substitution of unrestricted use SCOs for commercial SCOs has little effect on the identified extent of remaining soil contamination because the relevant SCOs for protection of groundwater are often similar to or lower than the residential SCOs and thus controlled the extent of soil remediation for the IRMs. Thus, the IRMs remediated most locations with exceedances of the SCOs for unrestricted use. The only remaining materials are approximately 14 cu. yds. of saturated soil under former Drywell 1 (32-34 feet bgs) which were not removed due to the difficulty of dewatering and shoring at this depth and the following three locations (Figure 9):

- Boring SB-7. DDT was detected in at this location at 2.9 ppm (above the Residential SCO but below the Commercial SCO) in the sample interval from 0-2 feet bgs (see Appendix I).

- Boring SB-6. Mercury was detected at this location at 1.05 ppm (above the residential SCO) in the sample interval from 0-2 feet bgs (see Appendix I).
- Test Pit TP-2. Mercury was detected at this location at 3.62 ppm (above the commercial SCO) in the sample interval from 1-2 feet bgs (see Appendix I).

Section 2
Institutional Control Plan

2.1 Introduction

2.1.1 General

Since remaining contaminated soil and groundwater/soil vapor exists beneath the Site, Institutional Controls (ICs) are required to protect human health and the environment. This Institutional Control Plan describes the procedures for the implementation and management of all ICs at the Site. The IC Plan is one component of the SMP and is subject to revision by NYSDEC.

No engineering controls are required at the Site. As noted in the ROD, since the Site is fenced and covered by buildings, asphalt or concrete, people will not come into contact with residual Site-related soil and groundwater contamination unless they dig below the surface. Such exposure will be controlled by implementing the procedures set forth in the Excavation Work Plan (Appendix A).

2.1.2 Purpose

This plan provides:

- A description of all ICs on the Site;
- The basic implementation and intended role of each IC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the features to be evaluated during each required inspection and periodic review; and
- A description of plans and procedures to be followed for implementation of ICs, such as the implementation of the Excavation Work Plan for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site.

2.2 Institutional Controls

A series of Institutional Controls is required by the ROD to: (1) prevent future exposure to remaining contamination by controlling disturbances of or access to the subsurface contamination; and, (2) limit the use and development of the Site to commercial or industrial uses only. Adherence to these Institutional Controls on the Site is required by the Environmental Easement and will be implemented under this Site Management Plan. These Institutional Controls are:

- Compliance with the Environmental Easement and this SMP by the Grantor and the Grantor's successors and assigns;
- Groundwater monitoring and soil vapor intrusion monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in this SMP;

Institutional Controls identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement.

The Site has a series of Institutional Controls in the form of Site restrictions. Adherence to these Institutional Controls is required by the Environmental Easement. Site restrictions that apply to the Controlled Property are:

- The property may only be used for commercial or industrial use provided that the long-term Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted or restricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC;
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for its intended use;
- The Site owner or remedial party will submit to NYSDEC a written statement that certifies, under penalty of perjury, that: (1) controls employed at the Controlled Property are in place, in the NYSDEC- approved format and unchanged from the previous certification or that any changes to the controls were approved by the NYSDEC; (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP, (3) that an inspection of the Site to confirm the effectiveness of the institutional controls required by the remedial program was performed under the direction of an expert that the NYSDEC finds acceptable; and (4) that the report and all attachments relating to the certification were prepared under the direction of, and reviewed by, the party making the certification . The certification will also confirm that (1) the NYSDEC retains the right to access such Controlled Property at any time in order to evaluate the continued maintenance of any and all controls, (2) that to the best of the knowledge of the party certifying, the work and conclusions contained in the certification are in accordance with the requirements of the Site remedial program, and generally accepted engineering practices; and (3) that the information presented in accurate and complete. This certification shall be submitted annually, or an alternate period of time that NYSDEC may allow and will be made by an expert that the NYSDEC finds acceptable.

2.2.1 Excavation Work Plan

The Site has been remediated for commercial use. Any future intrusive work that will penetrate the paving or building slabs, or encounter or disturb the remaining contamination, including any modifications or repairs to the existing paving or building slabs will be performed in compliance with the Excavation Work Plan (EWP) that is attached as Appendix A to this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) prepared for the Site. A sample HASP is attached as Appendix E to this SMP that is in current compliance with DER-10, and 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations. Based on future changes to State and federal health and safety requirements, and specific methods employed by future contractors, the HASP and CAMP will be updated and re-submitted with the notification provided in Section A-1 of the EWP. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the Site Management Reporting Plan (See Section 5).

The Site owner and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all intrusive work, the structural integrity of excavations, proper disposal of excavation de-water, control of runoff from open excavations into remaining contamination, and for structures that may be affected by excavations (such as building foundations).

2.2.2 Groundwater Monitoring

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

As noted previously, the primary groundwater contaminants of concern in on-Site groundwater are pesticides. As a result of the removal of the contaminant source area (Drywell 1) through soil excavation, pesticide levels in on-Site groundwater are expected to diminish. Volatile organic compounds (VOCs) were detected in groundwater during the RI. However, VOC levels were observed to be highest in upgradient monitoring wells MW-1S and MW-1D, indicating the VOCs are originating at an off-Site, upgradient source and are not Site-related. The pre-remediation (baseline) groundwater data indicated downgradient off-Site groundwater was unlikely to be impacted by Site-related constituents.

Most pesticide compounds eventually degrade over time as a result of chemical and micro-biological reactions in soils. With the removal of the pesticide-impacted soil above the water table, no more pesticides will leach downward into the saturated zone, and continuing degradation of the pesticides will eventually reduce concentrations in the saturated zone to negligible levels. Periodic monitoring of on-Site groundwater quality will be conducted in accordance with Section 3 of this SMP to document the effectiveness of the remedial action.

2.2.3 Soil Vapor Intrusion Evaluation

On-Site soil vapor currently contains VOCs off-gassing from contaminated groundwater that originates at one or more unidentified, off-Site sources. Prior to the construction of any enclosed structures on the Site, a soil vapor intrusion (SVI) evaluation will be performed to determine whether any mitigation measures are necessary to eliminate potential exposure to vapors in the proposed structure. Alternatively, an SVI mitigation system may be installed as an element of the building foundation without first conducting an investigation. This mitigation system will include a vapor barrier and passive sub-slab depressurization system that is capable of being converted to an active system.

Prior to conducting an SVI investigation or installing a mitigation system, a work plan will be developed and submitted to the NYSDEC and NYSDOH for approval. This work plan will be developed in accordance with the most recent NYSDOH “Guidance for Evaluating Vapor Intrusion in the State of New York”. Measures to be employed to mitigate potential vapor intrusion will be evaluated, selected, designed, installed, and maintained based on the SVI evaluation, the NYSDOH guidance, and construction details of the proposed structure.

Preliminary (unvalidated) SVI sampling data will be forwarded to the NYSDEC and NYSDOH for initial review and interpretation. Upon validation, the final data will be transmitted to the agencies, along with a recommendation for follow-up action, such as mitigation.

SVI sampling results, evaluations, and follow-up actions will also be summarized in the next Periodic Review Report.

2.3 Inspections and Notifications

2.3.1 Inspections

Inspections of all remedial components installed at the Site will be conducted at the frequency specified in the SMP Monitoring Plan schedule. A comprehensive Site- wide inspection will be conducted annually, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether the Site continues to be covered by buildings, asphalt, and/or concrete;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria;
- Sampling and analysis of appropriate media during monitoring events;
- If Site records are complete and up to date; and
- Changes, or needed changes, to the monitoring system.

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this plan (Section 5).

If an emergency, such as a natural disaster, occurs, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the ICs implemented at the Site by a qualified environmental professional as determined by NYSDEC.

2.3.2 Notifications

Notifications will be submitted by the property owner to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use that are required under the terms of the Consent Order, 6 NYCRR Part 375, and/or Environmental Conservation Law.
- 7-day advance notice of any proposed ground-intrusive activities pursuant to the Excavation Work Plan.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Consent Order, and all approved work plans and reports, including this SMP and all previously approved Periodic Review Reports (PRRs).
- The NYSDEC must be notified of the fulfillment of the requirements of paragraph 1, upon notification of the change of use or within five business days of the transfer.
- The date of the change of use notification to the NYSDEC, and the date of the document transfer to the new owner are to be reported in the PRR for the review period in which the transfer occurs.
- Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.4 Contingency Plan

Emergencies may include injury to personnel, fire or explosion, environmental release serious weather conditions. Such emergencies would not result in the release of remaining contamination as it is situated in the subsurface, under paving or concrete. Therefore, the remaining contamination does not necessitate special response procedures beyond those normally employed by emergency responders in a commercial/industrial setting, and none are included in this SMP.

2.4.1 Emergency Telephone Numbers

In the event of any environmentally related situation or unplanned occurrence requiring assistance, the Owner or Owner's representative(s) should contact the appropriate party from the contact list below. For emergencies, appropriate emergency response personnel should be contacted. Prompt contact should also be made to the qualified environmental professional designated by the Site owner. These emergency contact lists must be maintained in an easily accessible location at the Site.

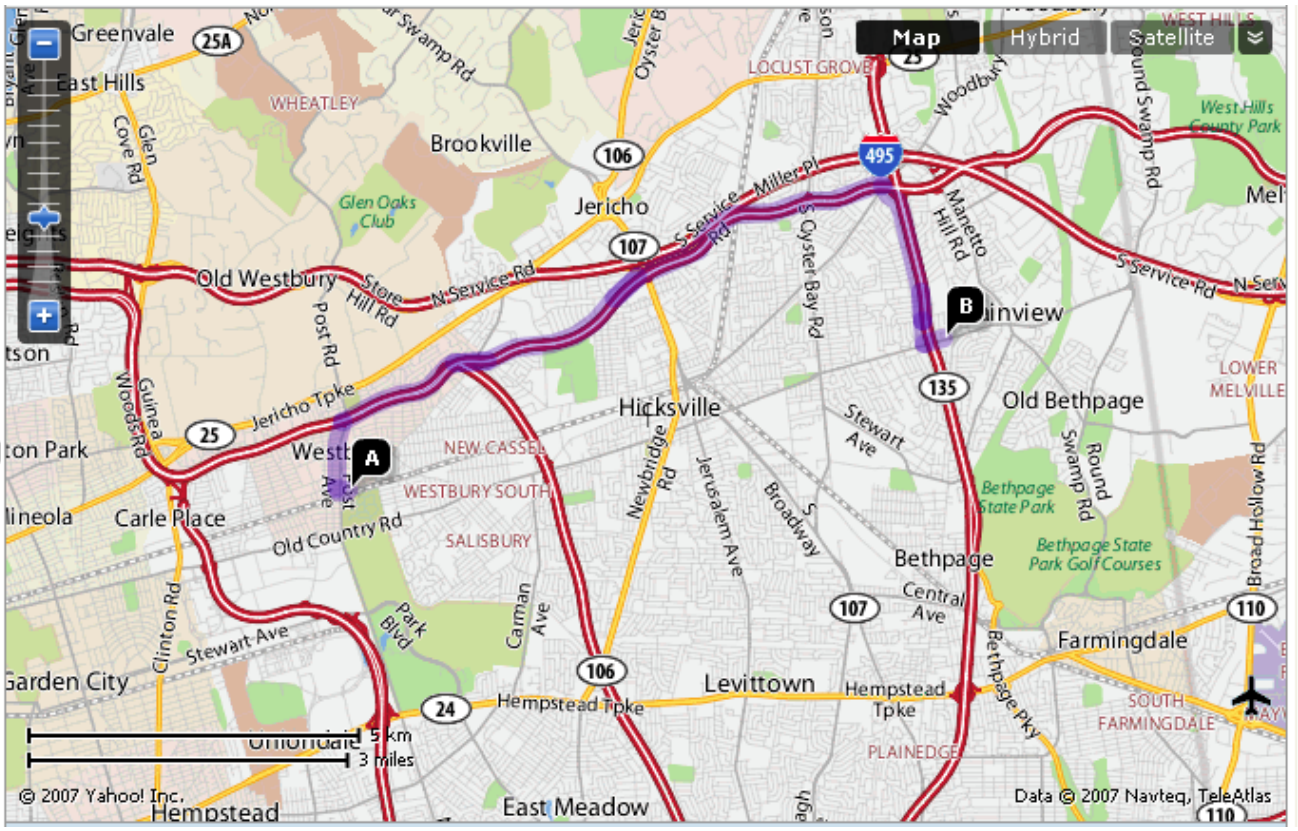
Table 4. Emergency Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3 day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362
Qualified Environmental Professional (current) Frank Williams, PG Brown and Caldwell Associates	(518) 560-5912

* Note: Contact numbers subject to change and should be updated as necessary

2.4.2 Map and Directions to Nearest Health Facility

This information is also provided in the Health and Safety Plan (Appendix E).

HOSPITAL LOCATION MAP


HOSPITAL DIRECTIONS:	HOSPITAL INFORMATION:
1. Start at 345 UNION AVE, WESTBURY - go 0.1 mi 2. Bear right on POST AVE - go 0.7 mi 3. Bear right to take ramp onto NORTHERN PKY E towards NORTHERN PARKWAY EAST – go 5.8 mi 4. Take exit #36A/SEAFORD onto RT-135 S – go 1.4 mi 5. Take exit #10/PLAINVIEW/HICKSVILLE/OLD COUNTRY RD – go 0.2 mi 6. Turn left on OLD COUNTRY RD – go 0.2 mi 7. Arrive at 888 OLD COUNTRY RD, PLAINVIEW	**North Shore University Hospital of Plainview** **888 Old Country Road** **Plainview, NY 11803** **Phone: 516-719-3000**

Section 3

Site Monitoring Plan

3.1 Introduction

3.1.1 General

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate groundwater contamination at the Site, and the potential intrusion of soil vapor derived from VOC-contaminated groundwater originating at one or more unidentified, off-Site source(s). This Monitoring Plan may only be revised with the approval of NYSDEC.

3.1.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Sampling and analysis of groundwater, indoor/outdoor air, and soil vapor;
- Assessing compliance with applicable NYSDEC standards, criteria and guidance, particularly ambient groundwater standards;
- Assessing achievement of the remedial performance criteria;
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment; and
- Preparing the necessary reports for the various monitoring activities.

To adequately address these issues, this Monitoring Plan provides information on:

- Sampling locations, protocol, and frequency;
- Information on all designed monitoring systems (e.g., boring/well construction logs);
- Analytical sampling program requirements;
- Reporting requirements;
- Quality Assurance/Quality Control (QA/QC) requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Monitoring of the performance of the remedy and overall reduction in contamination on-Site will be conducted for the first two (2) years. During that time, based on the results of the groundwater monitoring, the NYSDEC and Bartlett will make a final determination as to whether or not an off-Site monitoring well is needed downgradient from the former Drywell 1 area. Thereafter, based on the results of the groundwater monitoring, Bartlett may propose reducing the frequency of sampling or, if warranted, discontinuing it altogether. Trends in contaminant levels in groundwater in the affected areas will be evaluated to determine if the remedy continues to be effective in achieving remedial goals. Monitoring programs are summarized in Table 5 and outlined in detail in Sections 3.2 and 3.3 below.

Table 5. Monitoring/Inspection Schedule

Monitoring Program	Frequency*	Matrix	Analysis
Groundwater	Twice yearly, during seasonally high (March-April) and low (September-October) water table conditions.	Monitoring wells MW-1S/1D, MW-2S/2D, MW-3, MW-4, MW-5.	TCL Pesticides (Method 8081A) OP Pesticides (Method 8141A)
Soil Vapor Intrusion	Annually, during heating season (November 15 – March 15).	Sub-slab soil vapor, indoor air, ambient air.	VOCs by Method TO-15 (SUMMA canisters)

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC and NYSDOH.

3.2 Cover System Monitoring

The property owners will maintain and preserve the integrity of the paving and concrete building slabs that prevent direct contact with underlying remaining soil contamination.

3.2.1 Inspection and Maintenance

Concrete or asphalt pavement and concrete building slabs will be inspected quarterly to identify indications of loss of integrity such as potholes, cracking, subsidence or frost heaving. Any breaches in the pavement's integrity that create a risk of exposure of underlying contaminants will be repaired using permanent materials and paving as soon as is practical. If necessary, temporary patching materials will be used only until seasonal conditions are suitable for permanent repairs. Asphalt paving will sealed at least every five years to minimize weathering and deterioration of the paving.

3.2.2 Reporting

The owners will maintain records of inspections, noting any identified deficiencies and providing details and documentation of corrective measures. Deficiencies and repairs will also be documented with photographs. Copies of these documents will be provided quarterly to the designated QEP responsible for preparing the annual report and certification. Maintenance and repairs will be verified by the QEP through annual on-Site inspection.

3.3 Media Monitoring Program

Groundwater and soil vapor will be monitored in accordance with the requirements of the ROD. Procedures for monitoring and reporting are provided in the following subsections.

3.3.1 Groundwater Monitoring

On-Site groundwater monitoring will be performed on a periodic basis to assess the performance of the remedy. Refer to Table 5 for initial monitoring frequency.

The network of monitoring wells has been installed to monitor both up-gradient and down-gradient groundwater conditions at the Site (Figure 10). The network of wells has been designed based on the following considerations and criteria:

- Prior to the remediation of Drywell 1, the RI data indicated that groundwater quality downgradient from the drywell was impacted by pesticides associated with the saturated and unsaturated soils beneath the drywell (Figure 7).
- The Drywell 1 structure and all pesticide impacted soils were removed down to the depth of the water table (approximately 32 feet bgs).
- The mobility of the relatively small mass of pesticides remaining in the saturated zone is limited by the various pesticides' low solubilities in groundwater and tendencies to adsorb onto soil particles. The pesticide residues are expected to degrade over time.
- In the vicinity of the Site, the direction of shallow groundwater flow in the Upper Glacial Aquifer (i.e., above the clayey silt layer) varies from westerly to southwesterly (Figure 10). Shallow monitoring well MW-4 and, to a lesser extent, wells MW-2S and MW-5 are downgradient from the former source area associated with Drywell 1.
- The direction of deeper groundwater flow (i.e., below the clayey silt layer) appears to be south-southwesterly, consistent with regional groundwater flow (Figure 10). Deep monitoring well MW-2D is downgradient from the area of former Drywell 1.

Monitoring well construction logs are included in Appendix G. Monitoring well construction details are summarized in Table 6. The monitoring wells are constructed of 2" diameter PVC with 15-foot screens. Monitoring wells MW-1S, MW-2S, MW-3, MW-4 and MW-5 are screened across the water table; monitoring wells MW-1D and MW-2D are screened below the clayey silt layer.

As noted above in Table 5, groundwater monitoring will initially be conducted twice yearly, during seasonally high (March-April) and low (September-October) water table conditions. The sampling frequency may be modified with the approval of NYSDEC. The SMP will be modified to reflect changes in sampling plans approved by NYSDEC. Deliverables for the groundwater monitoring program are specified below.

3.3.1.1 Sampling Protocol

All monitoring well sampling activities will be recorded in a field book and a groundwater-sampling log presented in Appendix G. Other observations (e.g., well integrity, etc.) will be noted on the well sampling log. The well sampling log will serve as the inspection form for the groundwater monitoring well network.

Due to the very low aqueous solubility of most pesticides and their chemical affinity for solids suspended in groundwater, groundwater samples must be substantially free of turbidity if one is to accurately evaluate pesticide concentrations. The USEPA low flow sampling protocol is intended to reduce the suspension of solids within the monitoring well. Therefore, all groundwater samples will be collected according to the USEPA low flow sampling protocol outlined below.

As a contingency and for informational purposes in the event that the procedure does not produce groundwater samples with low turbidity (i.e., well under 50 NTUs[1]), duplicate samples may be field-filtered to evaluate the effects of sample turbidity on analytical results. In this case, both the unfiltered sample and the filtered sample will be submitted for laboratory analysis, and both results will be reported to the NYSDEC.

[1] Nephelometric Turbidity Units

Objectives - The objectives of the low flow groundwater procedure are to collect samples from monitoring wells while exerting minimum stress on the water-bearing formation and minimizing the disturbance of sediment in the well. The low-flow purging and sample collection technique follows the technique described within the USEPA documents titled "Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling", (USEPA, Region 2, March 16, 1998) and "USEPA Ground Water Issue: Low flow (Minimal Drawdown) Ground-water Sampling Procedures" (EPA/540/S-95/504, April 1996).

The general approach is to minimize the drawdown in the well during purging, thereby reducing disturbance prior to and during sampling. Typically this is accomplished by limiting the flow rate during purging and sampling to rates in the 100 to 250 milliliters per minute (mL/min) range. The intended advantage of this procedure is the reduction in the turbidity and aeration of the samples, thereby producing samples which are more representative of the natural groundwater conditions. If well sampling or purging results do not meet the low-flow criteria (such that drawdown enters the screened zone or exceeds 0.3 feet) it will be noted in the field data sheets. Prior to sampling, the depth to groundwater (static water level) will be measured to within the nearest 0.01 foot within at each well.

Equipment

- A submersible bladder pump.
- The discharge tubing will be laboratory- or food grade- polyethylene.
- Monitoring equipment during purging shall include a flow through cell equipped with field measuring devices for pH, turbidity, specific conductance, temperature, oxidation-reduction potential (ORP), and/or dissolved oxygen (D.O.).
- Water level measuring device, accurate to ±0.01 foot.
- Flow-rate measurement supplies such as graduated cylinders and stopwatch.
- Decontamination equipment and supplies.
- Well construction data.

Preliminary Site Activities

- Remove well cap and identify the pre-established elevation reference point on top of inside well casing.
- Measure and record the depth to groundwater (static water level) to within the nearest 0.01 foot from the reference point. Take care to minimize disturbance to the water column and avoid dislodging particulates attached to the sides of the well casing.
- In no case should any well be sounded prior to sampling as this may mobilize sediment in the bottom of the well.
- If elevated turbidity of samples remains a problem, consideration should be given to placing the sampling equipment in the well 24 hours prior to sampling to allow any sediment in the well to settle.

Sampling Procedure

- Install Pump - Slowly lower the pump and downhole measuring device, as applicable, into the well to a depth corresponding to the center of the screened interval. The intake should be kept within the well screen but no deeper than two feet below the top of the screen to prevent mobilization of sediment from the bottom. If less than two feet of water is present in the well prior to sampling, the intake shall be centered in the water column. For problematic

monitoring wells, consideration should be given to installing the pump approximately 24 hours before initiating purging.

- Re-measure Groundwater Level - Before starting the pump, measure the water level again with the pump in the well. Do not proceed until the water level has returned to within approximately 0.3 feet of the static level.
- Purging - Start pumping the well at approximately 200 to 500 milliliters per minute. The water level should be monitored as frequently as feasible immediately after the start of purging and then at least as frequently as every three to five minutes once the level has generally stabilized. Ideally, a steady flow rate should be maintained which results in a stabilized water level. The goal should be to not induce a drawdown in excess of approximately 0.3 feet (or approximately 2 percent of saturated thickness in low permeability formations). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to effect stabilization of the water level. However, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. If the recharge rate of the well is very low, care should be taken to avoid loss of pressure in the tubing line, cascading through the sand pack, or pumping the well dry. Record each adjustment made to the pumping rate, observation of changes in appearance of the water collected (e.g., increased turbidity or color) and the water level measured immediately after each adjustment.
- Monitor Indicator Parameters - During purging of the well, monitor the following field indicator parameters at the frequencies stated above; turbidity, temperature, specific conductance, pH, ORP and/or D.O. Measurement of the indicator parameters should continue every three to five minutes until these measurements indicate stability in the water quality. The well is considered stabilized and ready for sample collection when three consecutive readings are within a maximum range (from minimum to maximum measurements) as follows: ±0.1 for pH, 3% for specific conductance, ±10% for D.O., ±10 mV for ORP, and ±10% for turbidity. If the parameters have not stabilized after an hour, purge the well until a minimum of 3 well volumes have been removed and proceed to collect the samples. This alternate procedure should be noted on the field data sheet.
- Collect Samples - Samples should be collected at flow rates of between 100 and 250 mL/min, or under flow conditions such that drawdown of the water level within the well is not induced beyond the tolerances specified above. Sample containers should be filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence.
- Remove Pump and Tubing - After collection of the samples, the pump's tubing shall be properly decontaminated or discarded.
- Well Depth - Measure and record well depth.
- Close Down - Secure the well.
- Decontamination - The sampling equipment will be decontaminated between use at each well in accordance with the QAPP (Appendix H).

In the event that sample turbidity cannot be brought well below 50 NTUs, one filtered and one unfiltered groundwater sample will be collected from each of the monitoring wells. Suction filtration of the groundwater samples will be performed in the field with the use of a Buchner funnel fitted with a 0.45 um pore size, sample-dedicated filter disk or other suitable field filtration device.

Groundwater and QA/QC samples will be analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) -approved laboratory for the following parameters:

- Target Compound List (TCL) Pesticides by USEPA SW846 Method 8081A
- Organophosphorous (OP) Pesticides by USEPA SW846 Method 8141A

3.3.1.2 Monitoring Well Repairs, Replacement and Decommissioning

If biofouling or silt accumulation occurs in the monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and, to the extent necessary, replaced in accordance with applicable NYSDEC guidance (currently, CP-43: Groundwater Monitoring Well Decommissioning Policy; November 3, 2009) if an event renders the wells unusable.

Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance. In the event that replacement of a monitoring well becomes necessary, the replacement well will be constructed of materials and dimensions similar to the original well, as indicated in the well construction logs (Appendix F). The following procedure will be utilized to construct a replacement monitoring well:

Before drilling each borehole, the drill rig, augers, drill rods, and any other equipment that will enter the borehole will be steam cleaned. Construction of the monitoring wells will be in accordance with the following installation sequence.

- Advance a borehole through the overburden to the target depth using 4.25 inch inside diameter (ID) hollow stem augers.
- Collect continuous soil samples from the ground surface to the target depth using a two inch diameter, two foot long split spoon sampler in accordance with the procedures described above.
- Install a two inch Schedule 40 PVC riser casing and well screen (PVC) with flush threaded joints in the boring through the augers. The screen will be ten to fifteen feet in length with 0.010 inch wide slots.
- Place a sand pack in the annular space from the bottom of the boring to two feet above the top of the screen. The sand will consist of clean, washed and rounded silica (quartz) sand designed for use with the specified screen slot size. A six-inch filter pack of finer grained sand (choker sand) above the sand pack will be placed prior to the bentonite seal.
- Place a two foot thick bentonite seal above the sand pack. In monitoring wells that exhibit a water table above the sand pack, bentonite pellets will be used to form the seal. Where the top of the sand pack is above the water table, a pre-hydrated bentonite slurry will be used to form the seal. Place a six- to twelve-inch thick fine grained filter sand above the bentonite seal.
- Measurements of material depths will be made by frequently sounding the annulus with a weighted tape measure during installation.
- Cement/bentonite grout will be tremie emplaced in the remaining annular space from the top of the bentonite seal and filter sand to approximately ½-foot below ground surface. The grout will consist of one bag (94 pounds) of Portland cement and five pounds of bentonite mixed with six gallons of potable water.

- Install a four inch diameter stick-up or flush-mount protective casing (with locking cap) set in concrete in the remaining annular space from the top of the cement-bentonite grout seal to ground surface. Complete the surface installation with a concrete pad sloped to encourage surface drainage away from the well installation.

Well Construction Materials

- Screen and Riser Casing. The screen and riser casing will be constructed of two inch diameter Schedule 40 PVC. The joints will be flush threaded. The openings in the screen will consist of factory cut 0.010 inch wide slots.
- Sand Pack and Filter Pack. The sand pack and the filter pack material will consist of clean, washed, and rounded silica (quartz) sand packaged and delivered in sealed bags. The material will contain less than five percent non siliceous material by weight. For the sand pack, 90 to 99 percent of the material will be retained by the selected screen, and it will have a uniformity coefficient of less than 2.5. The filter pack will be uniformly graded sand of which 100 percent by weight passes a No. 30 sieve and less than 2 percent by weight passes the No. 200 sieve.
- Bentonite. The bentonite will be powdered, granular, or pelletized sodium bentonite furnished in sacks or buckets from a commercial source and free of impurities which could impact the water quality in a monitoring well.
- Grout. The grout mixture used for the installation of the monitoring wells will consist of one bag (94 pounds) of Portland Cement and six pounds of bentonite mixed with six gallons of potable water. The grout will be placed by the tremie method.
- Protective Casing. Each monitoring well will be completed with a four inch or larger diameter stick-up or flush-mounted protective casing with a locking cap. The protective casing will be installed as per ASTM standards for monitoring well construction.

Well Development - The replacement well will be developed after a minimum period of 24 hours has passed following its construction (to allow for the cement/bentonite grout to set). Development will be conducted by the use of a surge block and/or a small diameter electric submersible pump (Grundfos Redi Flo2® or equivalent), after the grout has set. The purpose of well development is to remove sediment in the well and to produce a surging effect within the sand pack. This surging of water into and out of the sand pack will loosen and remove the finer-sized particles in the pack and develop a natural gradation from the well screen to the formation. Since the development process must be forceful enough to penetrate into the sand pack, an appropriately sized surge block must be used.

During the well development process, water quality parameters (pH, temperature, electrical conductivity, and turbidity) will be recorded to document improvement if attainable. Development will be considered complete once stabilization of the field parameters has been achieved and when there is no visible increase in the clarity of the evacuated water.

The NYSDEC will be notified prior to any repair or decommissioning of monitoring wells for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent periodic report. Well decommissioning without replacement will be done only with the prior approval of NYSDEC. Well abandonment will be performed in accordance with the aforementioned CP-43 guidance document or its current version. Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

3.3.2 Soil Vapor Intrusion Monitoring

SVI monitoring will be performed on a periodic basis to assess potential intrusion of VOC vapors originating from one or more currently unidentified, off-Site sources. Refer to Table 5 for monitoring frequency. The SVI monitoring will be conducted annually, during the heating season (November 15 - March 15). The SVI monitoring will consist of sub-slab soil vapor, indoor air and ambient air samples to be collected concurrently and analyzed for VOCs by USEPA Method TO-15 (SUMMA® canisters).

Currently, the SVI sampling will consist of one sub-slab soil gas sample from the existing soil vapor probe within the office building, one indoor air sample collected from within the first floor office space, and an ambient air sample taken outside the building on the upwind side, concurrently over an eight (8) hour period. Similar sampling will also be conducted in any enclosed structures that may be constructed on-Site in the future. The sampling will be conducted in accordance with "Guidance for Evaluating Soil Vapor Intrusion in New York State" (NYSDOH, October 2006).

Prior to the SVI sampling, a pre-sampling inspection will be performed to identify and minimize conditions that may interfere with the testing. The inspection will evaluate the type of structure, floor layout, air flows and physical conditions of the office building. Potential interference from products or activities releasing volatile organic compounds (VOCs) will be identified. During the inspection, containers will be screened with a photo-ionization detector (PID) to determine whether VOCs are leaking from the container. The information from the inspection will be recorded on a building inventory form similar to the one provided in Appendix B of the above-referenced NYSDOH guidance document.

If practicable, potential sources of VOCs will be removed from the building prior to testing. If appropriate, once interfering conditions are corrected, the building will be ventilated prior to sampling to minimize residual contamination in the indoor air. Ventilation (if any) will be completed 24 hours or more prior to the scheduled sampling

Installation of Soil Vapor Probes - Soil vapor probes from which soil vapor samples will be collected will be installed as follows:

- A direct push drill rig (e.g., GeoProbe®) will be used to advance a 2 inch diameter borehole approximately 2 feet into the subsurface.
- Once the borehole is complete, a 1 inch diameter PVC slotted screen 0.010" will be set in the borehole with clean silica sand filter pack material placed in the annulus surrounding the screen. The length of screen used at the sample locations will be approximately 18 inches.
- A hydrated bentonite slurry will be placed in the annular space above the filter pack to provide a seal in the borehole from surface contamination and to minimize infiltration of ambient air.
- The top of the soil vapor probe will be completed with a male-threaded, appropriately sized tubing-barb to be used with the sampling tubing. No organic thread lubricant of any kind will be used when constructing this to minimize the chance of sample contamination. The barb will be completed with a cap so that infiltration by outside air will be minimized.
- For semi-permanent installations, the soil vapor probe may be completed with a flush-mount cast iron well vault. Alternatively, upon completion of soil vapor sampling, the soil vapor probe will be abandoned by pulling the temporary well screen out of the ground and backfilling the borehole with a hydrated bentonite slurry.

Collection of Soil Vapor Samples - Soil vapor samples will be collected no less than two weeks following the installation of the soil vapor probe. Samples will not be collected on days in which high humidity or rainfall may impact the readings from the field monitoring equipment.

- A new, dedicated Teflon® lined polyethylene sampling tube will be connected to the tubing-barb for use in sampling. The tube will be secured to prevent debris from clogging the tube and/or potentially contaminating the sample.
- Prior to sampling for VOCs (EPA Method TO-15), the sampling probe will be purged for approximately 10 minutes. This is intended to exchange air from the sampling tubing, which could potentially dilute or otherwise bias the sample. The maximum PID reading (if any) and the subsequent sustained reading will be recorded in the field notebook and/or data collection forms.
- As per the NYSDOH guidance, a Helium Tracer Gas Test will be performed on each vapor sample point to verify that no infiltration of atmospheric air occurs during sampling. This consists of applying a shroud that covers the sampling probe. The Teflon tubing will then be connected to a portable helium detector. Helium gas is then introduced inside the shroud to enrich the atmosphere surrounding the probe. A vapor sample is then measured from the tubing for the presence of high concentrations (>10%) of the tracer. Should a short circuit to the system be encountered, the probe fittings will be checked and a bentonite seal will be applied to the area where the probe intersects the surface area of the borehole. The tracer gas will be applied again and the test will be repeated until the tracer gas is no longer detected through the sample tubing.
- After purging and tracer testing, the tubing will be attached to a one liter SUMMA canister provided by the analytical laboratory. The canister will have been evacuated by the laboratory prior to shipment to the site. After the canister is attached to the tubing, the canister valve is opened, and the vacuum in the canister causes the soil gas to flow into the canister. The canister will be allowed to fill for approximately one (1) hour. The vacuum pressure in the canister will be checked at the conclusion of sampling with a pressure gauge to confirm that sample collection was complete. A vacuum pressure reading of 5 Hg indicates that the canister is filled and internal pressure is high enough to allow the laboratory to extract the sample.
- The samples will be sent to a NYSDOH ELAP certified analytical laboratory for analysis of VOCs by USEPA Method TO-15.

3.3.3 Monitoring-Derived Waste

Waste generated during the groundwater monitoring will consist of monitoring well purge water, equipment decontamination water, disposable sampling equipment, and personal protective equipment (PPE). The solid and liquid wastes will be segregated and temporarily containerized in NYSDOT-approved, 55 gallon drums pending waste characterization and appropriate off-Site disposal in a permitted facility.

Waste generated during monitoring well replacement and/or decommissioning will consist of soil cuttings, well development water, well debris, equipment decontamination water and/or personal protective equipment (PPE). The solid and liquid wastes will be segregated and temporarily containerized in NYSDOT-approved, 55 gallon drums pending waste characterization and appropriate off-Site disposal in a permitted facility.

Waste generated during the installation of soil vapor probes (if needed) will consist of soil and concrete/asphalt cuttings, equipment decontamination water and personal protective equipment

(PPE). The solid and liquid wastes will be segregated and temporarily containerized in NYSDOT-approved, 55 gallon drums pending waste characterization and appropriate off-Site disposal in a permitted facility.

All containers will be properly labeled to identify their contents.

3.4 Site Wide Inspection

Site-wide inspections will be performed on a regular schedule at a minimum of once a year. Site-wide inspections will also be performed after all severe weather conditions that may affect monitoring wells, paving or structural foundations. During these inspections, information will be compiled that is sufficient to assess the following:

- Compliance with all ICs, including Site usage;
- General Site conditions at the time of the inspection;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site records are up to date.

3.5 Monitoring Quality Assurance/Quality Control

All sampling and analyses will be performed in accordance with the requirements of the Quality Assurance Project Plan (QAPP) prepared for the Site (Appendix H). Main components of the QAPP include:

- QA/QC Objectives for Data Measurement;
- Sampling Program:
    - Sample containers will be properly washed, decontaminated, and appropriate preservative will be added (if applicable) prior to their use by the analytical laboratory. Containers with preservative will be tagged as such.
    - Sample holding times will be in accordance with the NYSDEC ASP requirements.
    - Field QC samples (e.g., trip blanks, coded field duplicates, and matrix spike/matrix spike duplicates) will be collected as necessary.
- Sample Tracking and Custody;
- Calibration Procedures:
    - All field analytical equipment will be calibrated immediately prior to each day's use. Calibration procedures will conform to manufacturer's standard instructions.
    - The laboratory will follow all calibration procedures and schedules as specified in USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods.
- Analytical Procedures;
- Preparation of a Data Usability Summary Report (DUSR) by an independent third party or a qualified person approved by the NYSDEC, which will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain of custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method.

- Internal QC and Checks;
- QA Performance and System Audits;
- Preventative Maintenance Procedures and Schedules;
- Corrective Action Measures.

3.6 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file on-Site. All forms, and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in the Reporting Plan of this SMP.

All monitoring results will be reported to NYSDEC on a periodic basis in the Periodic Review Report. A letter report will also be prepared subsequent to each sampling event that does not coincide with the Periodic Review Report. The letter report (or Periodic Review Report) will include, at a minimum:

- Date of event;
- Personnel conducting sampling;
- Description of the activities performed;
- Type of samples collected (groundwater, sub-slab vapor, indoor air, outdoor air);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables for all points sampled (to be submitted electronically in the NYSDEC- identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether groundwater or SVI conditions have changed since the last reporting event.

Data will be reported in hard copy or digital format as determined by NYSDEC. A summary of the monitoring program deliverables are summarized in Table 7 below.

Table 7. Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Groundwater Monitoring – Seasonally High Water Table Conditions	Annual sampling conducted in March-April. Letter report submitted to NYSDEC approximately eight (8) weeks after sampling event.

Groundwater Monitoring – Seasonally Low Water Table Conditions	Annual sampling conducted in September-October. Report attached to Periodic Review Report submitted to NYSDEC on March 1 for the preceding calendar year.
Soil Vapor Intrusion Monitoring	Annual sampling conducted during heating season (November-December). Report attached to Periodic Review Report submitted to NYSDEC on March 1 for the preceding calendar year.
Annual Inspection	Periodic Review Report submitted to NYSDEC on March 1 for the preceding calendar year.

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC.

Section 4

Operation and Maintenance Plan

The Site remedy does not rely on any mechanical systems, such as sub-slab depressurization systems or air sparge/ soil vapor extraction systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

Section 5

Inspections, Reporting and Certifications

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan. At a minimum, a Site-wide inspection will be conducted annually.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded on the appropriate forms. These forms are subject to NYSDEC revision.

All applicable inspection forms and other records, including all media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and Site monitoring data will be evaluated as part of the IC certification to confirm that the:

- ICs are in place, are performing properly, and remain effective;
- The Monitoring Plan is being implemented; and, based on the above items,
- The Site remedy continues to be protective of public health and the environment and is performing as contemplated by the Record of Decision (ROD).

5.2 Certification of Institutional Controls

After the last inspection of the reporting period, a QEP (Qualified Environmental Professional) or Professional Engineer licensed to practice in New York State will prepare the following certification:

For each institutional control identified for the Site, I certify that all of the following statements are true:

- The institutional control employed at this Site is unchanged from the date the control was put in place, or last approved by the NYSDEC.
- Nothing has occurred that would impair the ability of the institutional control to protect the public health and environment.
- Nothing has occurred that would constitute a violation or failure to comply with the SMP for this institutional control.
- Access to the Site will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this institutional control.

- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document.
- Use of the Site is compliant with the Environmental Easement.
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I, [name], of [business address], am certifying as Owner's Designated Site Representative (and if the site consists of multiple properties): for the Site.

The signed certification will be included in the Periodic Review Report described below.

5.3 Periodic Review Report

A Periodic Review Report will be submitted to the NYSDEC every year, beginning February 14, 2016. In accordance with DER-10, the initial Periodic Review will be conducted no more than 18 months after issuance of the Certificate of Completion. In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix C (Metes and Bounds). The report will be prepared in accordance with NYSDEC DER-10 and, in accordance with DER-10, submitted within 45 days of the end of each certification period. Media sampling results will also incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ICs required by the remedy for the Site;
- Results of the required annual Site inspections and severe condition inspections, if applicable;
- All applicable inspection forms and other records generated for the Site during the reporting period in electronic format;
- A summary of pertinent information generated during the reporting period with comments and conclusions;
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends;
- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format;
- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the ROD;
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan; and
    - The overall performance and effectiveness of the remedy.

The Periodic Review Report will be submitted, in hard- copy format, to the NYSDEC Regional Office in which the Site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

Section 6

Limitations

This document was prepared solely for F. A. Bartlett Tree Expert Company (Client) in accordance with professional standards at the time the services were performed and in accordance with the contract between Client and Brown and Caldwell dated March 21, 2007. This document is governed by the specific scope of work authorized by Client; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. Brown and Caldwell has relied on information or instructions provided by Client and other parties and, unless otherwise expressly indicated, has made no independent investigation as to the validity, completeness, or accuracy of such information.

Tables

TABLE 3
SOIL VAPOR, INDOOR AIR, AND AMBIENT AIR
BARTLETT TREE COMPANY SITE, WESTBURY, NEW YORK

		SUB-SLAB			AMBIENT / INDOOR AIR					
Sample Location		SV-01		OSWER	AA-01 (ambient)		IA-01 (indoor)		NYSDOH	OSWER
Sample Depth (ft bgs)		0.5		Subslab					Indoor Air	Indoor Air
Sample Date	CAS Number	3/25/2008	3/12/2012	Guidance [3]	3/25/2008	3/12/2012	3/25/2008	3/12/2012	Guidance [1]	Guidance [2]
Volatile Organics (ug/m^3)										
1,1,1-Trichloroethane	71-55-6	17	22	22000	0.86U	1.1U	0.86U	1.1U	--	2200
1,1,2,2-Tetrachloroethane	79-34-5	3.9U	5.5U	0.42	1.1U	1.4U	1.1U	1.4U	--	0.042
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	4.3U	6.1U	300000	1.2U	1.5U	1.2U	1.5U	--	30000
1,1,2-Trichloroethane	79-00-5	3.1U	4.4U	1.5	0.86U	1.1U	0.86U	1.1U	--	0.15
1,1-Dichloroethane	75-34-3	2.3U	3.2U	5000	0.64U	0.81U	0.64U	0.81U	--	500
1,1-Dichloroethene	75-35-4	2.2U	3.2U	2000	0.63U	0.79U	0.63U	0.79U	--	200
1,2,4-Trichlorobenzene	120-82-1	21U	5.9U	2000	5.9U	1.5U	5.9U	1.5U	--	200
1,2,4-Trimethylbenzene	95-63-6	27	2.9J	60	0.78U	4.9	0.84	**94.4**	--	6
1,2-Dibromoethane (EDB)	106-93-4	4.3U	6.1U	0.11	1.2U	1.5U	ND	1.5U	--	0.011
1,2-Dichlorobenzene	95-50-1	3.4U	4.8U	2000	0.95U	1.2U	ND	1.2U	--	200
1,2-Dichloroethane	107-06-2	2.3U	3.2U	0.94	0.64U	0.81U	ND	0.81U	--	0.094
1,2-Dichloropropane	78-87-5	2.6U	3.7U	40	0.73U	0.92U	ND	0.92U	--	4
1,2-Dichlorotetrafluoroethane (Freon 114)	76-14-2	3.9U	5.6U	--	1.1U	1.4U	ND	1.4U	--	--
1,2-Dimethylbenzene (o-xylene)	95-47-6	22	3.4J	70000	0.69	5.2	0.69U	63.9	--	7000
1,3,5-Trimethylbenzene (mesitylene)	108-67-8	16	3.9U	60	0.78U	1.5	0.78U	**25**	--	6
1,3-Butadiene	106-99-0	1.2U	1.8U	0.087	0.35U	0.44U	0.35U	0.44U	--	0.0087
1,3-Dichlorobenzene	541-73-1	3.4U	4.8U	1100	0.95U	1.2U	0.95U	1.2U	--	110
1,4-Dichlorobenzene	106-46-7	3.4U	4.8U	8000	0.95U	1.2U	0.95U	1.2U	--	800
1,4-Dioxane	123-91-1	2U	2.9U	--	0.57U	0.72U	0.57U	0.72U	--	--
1-Propene	115-07-1	--	3.4U	--	--	2.6	--	0.86U	--	--
2,2,4-Trimethylpentane	540-84-1	--	3.7U	--	--	4.7	--	55.1	--	--
2-Butanone (MEK)	78-93-3	8.3	2.4U	10000	4.7	0.59U	2.6	0.59U	--	1000
2-Chlorotoluene	95-49-8	--	4.1U	--	--	1U	--	1U	--	--
2-Hexanone	591-78-6	12U	3.3U	--	3.2U	0.82U	3.2U	0.82U	--	--
3-Chloropropene (allyl chloride)	107-05-1	--	2.5U	--	--	0.63U	--	0.63U	--	--
4-Ethyltoluene	622-96-8	15	3.9U	--	0.78U	1.9	0.78U	25	--	--
4-Methyl-2-pentanone (MIBK)	108-10-1	2.3U	3.3U	800	0.65U	0.82U	0.65U	0.82U	--	80
Acetone	67-64-1	58	43.9	3500	28	28.7	14	0.48U	--	350

TABLE 3
SOIL VAPOR, INDOOR AIR, AND AMBIENT AIR
BARTLETT TREE COMPANY SITE, WESTBURY, NEW YORK

		SUB-SLAB			AMBIENT / INDOOR AIR					
Sample Location		SV-01		OSWER	AA-01 (ambient)		IA-01 (indoor)		NYSDOH	OSWER
Sample Depth (ft bgs)		0.5		Subslab					Indoor Air	Indoor Air
Sample Date	CAS Number	3/25/2008	3/12/2012	Guidance [3]	3/25/2008	3/12/2012	3/25/2008	3/12/2012	Guidance [1]	Guidance [2]
Benzene	71-43-2	**3.4**	**3.5**	3.1	0.79	3.8	0.92	**56.2**	--	0.31
Benzyl chloride	100-44-7	--	4.1U	0.5	--	1U	--	1U	--	0.05
Bromodichloromethane	75-27-4	3.8U	5.4U	1.4	1U	1.3U	1U	1.3U	--	0.14
Bromoethene (vinyl bromide)	593-60-2	--	3.5U	--	--	0.87U	--	0.87U	--	--
Bromoform	75-25-2	5.8U	8.3U	22	1.6U	2.1U	1.6U	2.1U	--	2.2
Bromomethane	74-83-9	2.2U	3.1U	50	0.61U	0.78U	0.61U	0.78U	--	5
Carbon disulfide	75-15-0	8.8U	2.5U	7000	2.5U	0.62U	2.5U	0.62U	--	700
Carbon tetrachloride	56-23-5	3.5U	5U	1.6	0.99U	1.3U	0.99U	**0.63J**	--	0.16
Chlorobenzene	108-90-7	2.6U	3.7U	600	0.73U	0.92U	0.73U	0.92U	--	60
Chloroethane	75-00-3	1.5U	2.1U	100000	0.42U	0.53U	0.42U	0.53U	--	10000
Chloroform	67-66-3	3.9	6.8	1.1	0.77U	0.98U	0.77U	0.98U	--	0.11
Chloromethane	74-87-3	1.2U	1.7U	24	0.79	0.99	0.8	1.1	--	2.4
cis-1,2-Dichloroethene	156-59-2	2.2U	3.2U	350	0.63U	0.79U	0.63U	0.79U	--	35
cis-1,3-Dichloropropene	10061-01-5	2.6U	3.6U	--	0.72U	0.91U	0.72U	0.91U	--	--
Cyclohexane	110-82-7	32	2.8U	--	1.1	1.7	0.55	28	--	--
Dibromochloromethane	124-48-1	4.8U	6.8U	1	1.3U	1.7U	1.3U	1.7U	--	0.1
Dichlorodifluoromethane (Freon 12)	75-71-8	8.5	18	2000	2.4	2.8	2.2	2.8	--	200
Ethanol	64-17-5	5.3U	30.9	--	4.8	59.2	11	588J	--	--
Ethyl acetate	141-78-6	--	2.9U	32000	--	0.72U	--	0.72U	--	3200
Ethylbenzene	100-41-4	6.2	3.4J	22	0.69U	5.2	0.69U	**56**	--	2.2
Hexachlorobutadiene	87-68-3	30U	8.5U	1.1	8.4U	2.1U	8.4U	2.1U	--	0.11
Isopropanol	67-63-0	--	2U	--	--	0.49U	--	0.49U	--	--
m,p-Xylene (sum of isomers)		46	9.1	--	1.7	16	1.5	199	--	--
Methyl methacrylate	80-62-6	--	3.3U	7000	--	0.82U	--	0.82U	--	700
Methylene chloride	75-09-2	3.9U	4.5	52	1.1U	20	1.1U	**14**	60	5.2
n-Heptane (C7)	142-82-5	22	4.1	--	2	3.9	1.3	54.5	--	--
n-Hexane (C6)	110-54-3	5.2	7.8	2000	2.3	7	1.8	133	--	200
Styrene	100-42-5	3.6	3.4U	10000	0.67U	0.85U	0.67U	1.1	--	1000
tert-Butyl alcohol (TBA)	75-65-0	--	2.4U	--	--	0.61U	--	0.61U	--	--

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TABLE 3
SOIL VAPOR, INDOOR AIR, AND AMBIENT AIR
BARTLETT TREE COMPANY SITE, WESTBURY, NEW YORK

		SUB-SLAB			AMBIENT / INDOOR AIR					
Sample Location		SV-01		OSWER	AA-01 (ambient)		IA-01 (indoor)		NYSDOH	OSWER
Sample Depth (ft bgs)		0.5		Subslab					Indoor Air	Indoor Air
Sample Date	CAS Number	3/25/2008	3/12/2012	Guidance [3]	3/25/2008	3/12/2012	3/25/2008	3/12/2012	Guidance [1]	Guidance [2]
tert-Butyl methyl ether (MTBE)	1634-04-4	2U	2.9U	30000	0.57U	0.72U	0.57U	0.72U	--	3000
Tetrachloroethene (PCE)	127-18-4	**700**	**1070**	8.1	2	1.3	**2.3**	**2.9**	100	0.81
Tetrahydrofuran	109-99-9	8.3U	2.4U	--	2.3U	0.59U	2.3U	0.59U	--	--
Toluene	108-88-3	16	93.5	4000	3.9	26	3.1	336	--	400
trans-1,2-Dichloroethene	156-60-5	2.2U	3.2U	700	0.63U	0.79U	0.63U	0.79U	--	70
trans-1,3-Dichloropropene	10061-02-6	2.6U	3.6U	--	0.72U	0.91U	0.72U	0.91U	--	--
Trichloroethene (TCE)	79-01-6	**1.6**	**2.6**	0.22	0.17U	0.21U	0.17U	0.21U	5	0.022
Trichlorofluoromethane (Freon 11)	75-69-4	3.2U	4.6	7000	1.1	1.5	1	2.1	--	700
Vinyl acetate	108-05-4	--	2.8U	2000	--	0.7U	--	0.7U	--	200
Vinyl chloride	75-01-4	1.4U	2U	2.8	0.4U	0.51U	0.4U	0.51U	--	0.28
Xylenes, total	1330-20-7	--	13	--	--	21	--	262	--	--

Notes:

U - Analyte was not detected; Reporting limit is reported.
J - Concentration is estimated.
ft bgs - feet below ground surface.
All values in ug/m^3 - micrograms per cubic meter.
Bold/Boxed Values indicate exceedence of one or more screening criteria.
[1] NYSDOH Air Guideline Values (Guidance for Evaluating Vapor Intrusion in the State of New York, 2006, Table 3.1).
[2] USEPA OSWER Target Indoor Air Concentration (Risk Level = $1x10^{-6}$).
[3] USEPA OSWER Target Shallow Gas Concentration corresponding to Target Indoor Air Concentration where the soil gas to indoor air attenuation factor = 0.1.

TABLE 6
MONITORING WELL BACKGROUND INFORMATION
BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

Location ID	Survey Coordinates NY State Plane - NAD 83 Northing	Easting	Ground Surface Elevation (ft., NGVD)	Total Depth (ft., BGS)	Depth to Clayey Silt (ft., BGS)	Elevation Clayey Silt (ft., NGVD)	Screened Interval Top (ft., BGS)	Bottom (ft., BGS)	Screened Interval Top (ft., NGVD)	Bottom (ft., NGVD)
Monitoring Wells										
MW-1S	214505.9	1099030.1	105.28	48.0	40.0	65.3	32.0	47.0	73.28	58.28
MW-1D	214509.7	1099026.0	105.39	120.0	40.0	65.4	62.0	72.0	43.39	33.39
MW-2S	214399.7	1099001.8	104.31	49.0	40.5	63.8	32.0	47.0	72.31	57.31
MW-2D	214404.5	1099001.2	104.33	109.0	40.9	63.4	62.0	72.0	42.33	32.33
MW-3	214404.9	1099043.5	104.66	59.0	51.3	53.4	32.0	47.0	72.66	57.66
MW-4	214425.1	1098997.5	104.7	44.0	39.2	65.5	29.0	44.0	75.7	60.7
MW-5	214368.2	1099004.6	104.3	44.0	40.5	63.8	29.0	44.0	75.3	60.3

Notes:
-- Data not available or not applicable
NGVD - National Geodetic Vertical Datum
BGS - Below Ground Surface

Figures

N

Grate=104.28
Storm MH
Concrete Curb
Wood Fence
Edge of Pavement
0.2'
0.4'
FORMER OPEN SHED
MASONRY WAREHOUSE
Chain link Fence
FORMER PESTICIDE STORAGE LOCKER
FORMER GARAGE
Remains of Foundation
LOT 786
LOT 787
LOT 792
LOT 207
LOT 206
Paved Parking Lot
DRYWELL 3
TEST PIT 2
MACADAM PATCH
Enclosed Pesticide Storage Area
Gate
Drain & Lower Entrance (Under Landing)
2 Story Frame Building
CASTLE INDUSTRIES, INC.
Paved Driveway
No. 345
No. 349
4.9'
WV
SCO
Gas Box
Drop Curb
ALL SEASONS TAXI
Concrete Sidewalk
UNION AVENUE
Sanitary MH
Rim=98.22
Concrete Curb
105
106
104
103
102
101
100

0 15 30
Feet

PAVEMENT EDGE
103 GROUND SURFACE ELEVATION (FT., NGVD)
PROPERTY LINE
FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)

FIGURE 1

SITE PLAN

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE 11/30/2010

PROJECT NUMBER 138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\GIS\Bartlett_Tree\Dry_Well_1_IRM\Fig_1-2_Site_Plan_113010.mxd

N

VILLAGE OF WESTBURY
PARKING LOT

SB-11
MW-1D
MW-1S
Chain link Fence
Grate=104.28
Storm MH
Concrete Curb
Wood Fence
Edge of Pavement
0.4'
0.2'
SB-12
SB-7
FORMER
OPEN
SHED
TEST PIT 1
MACADAM PATCH
TP-1
SB-4
SB-103
SB-3
SB-10/105
SB-5
SB-102
SB-104
SB-104
DRYWELL 1
SB-1
MW-4
MASONRY
WAREHOUSE
MW-2D
MW-2S
MW-3
SB-6
FORMER
PESTICIDE
STORAGE
LOCKER
MW-5
SB-9
FORMER
GARAGE
SB-2
Remains of Foundation
LOT 786
LOT 207
LOT 206
LOT 787
Paved
Parking
Lot
DRYWELL 3
TEST PIT 2
MACADAM PATCH
SB-8
TP-2
Enclosed
Pesticide
Storage
Area
Gate
Drain & Lower
Entrance
(Under Landing)
2 Story
Frame
Building
CASTLE INDUSTRIES,
Paved
Driveway
Paved
Driveway
No. 345
No. 349
4.9'
WV
SCO
Gas
Box
Gas
Box
Drop Curb
Concrete Curb
ALL SEASONS TAXI
Concrete Sidewalk
UNION AVENUE

0 5 10 Feet

0 15 30 Feet

CROSS SECTION
MONITORING WELL
SOIL BORING
DRYWELL
TEST PIT
PAVEMENT EDGE
103 GROUND SURFACE ELEVATION (FT., NGVD)
PROPERTY LINE
FORMER STUCTURE LOCATION
(APPROXIMATE, DEMOLISHED JULY 2008)

FIGURE 2

SAMPLE LOCATIONS

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE May 2011

PROJECT NUMBER 139990.750

BROWN AND CALDWELL ASSOCIATES

P:\GIS\Bartlett_Tree\Dry_Well_1_IRM\750_WasteChar&DelSampling\Site_Plan_052411.mxd

NORTH
A'

SOUTH
A

SB-11 | MW-1D | MW-1S | SB-12 | SB-7 | SB-4 | DW-1/SB-10 | SB-1 | MW-2D | MW-2S | MW-5

110 100 90 80 70 60 50 40 30 20 10 0 -10 -20

DRY WELL 1
(WIDTH DIMENSIONS
ESTIMATED)

UPPER GLACIAL SAND, GRAVEL

MAGOTHY CLAYEY SILT

MAGOTHY SAND, SILT, GRAVEL

(75.28)
(72.35)

(74.61)
(71.86)

(74.96)

(73.27)
(70.18)

(73.20)
(70.29)

MW-1S — MONITORING WELL / SOIL BORING / TEST PIT IDENTIFICATION AND APPROXIMATE LOCATION

GENERALIZED GROUND SURFACE

WELL SCREEN INTERVAL

TOTAL DEPTH OF BOREHOLE

(69.86) GROUND WATER ELEVATION FT. NGVD (4-9-09)

(69.86) GROUND WATER ELEVATION FT. NGVD (4-9-10)

ESTIMATED WATER TABLE, 4-14-2010

ESTIMATED WATER TABLE, 4-9-2009

ASPHALT PAVEMENT

SILT CLAY

UPPER GLACIAL SAND, GRAVEL

MAGOTHY - CLAYEY SILT

MAGOTHY - SAND, SILT, GRAVEL

scale 10 0 10 20 feet HORIZONTAL

scale 5 0 5 10 feet VERTICAL

FIGURE 3

HYDROGEOLOGIC CROSS-SECTION A-A'
F.A. BARTLETT TREE EXPERT COMPANY

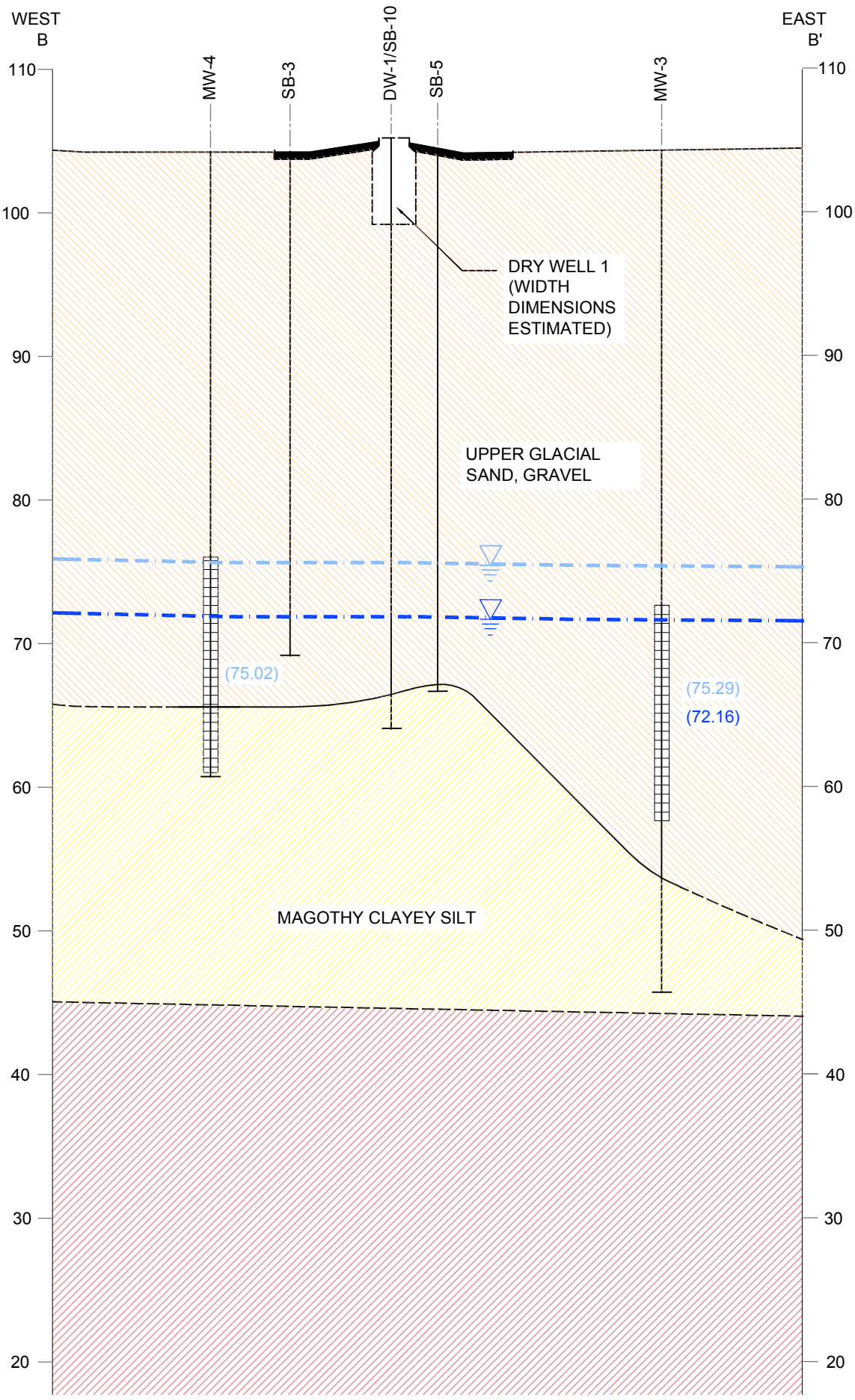
BARTLETT TREE COMPANY SITE
NASSAU COUNTY, NEW YORK

DATE 4/10

PROJECT NUMBER 138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\DRAFTING\BARTLETT\135711.102\HYDROGEOLOGIC_CROSS_SECTION_A-A'-REV1.DWG 06/28/2010 05:14:35PM By:Rjames XREFS: Basemap Layout: 34X22



LEGEND:

MW-1S — MONITORING WELL / SOIL BORING / TEST PIT IDENTIFICATION AND APPROXIMATE LOCATION

GENERALIZED GROUND SURFACE

WELL SCREEN INTERVAL

TOTAL DEPTH OF BOREHOLE

(69.86) GROUND WATER ELEVATION FT. NGVD (4-9-09)

(69.86) GROUND WATER ELEVATION FT. NGVD (4-14-10)

ESTIMATED WATER TABLE, 4-14-2010

ESTIMATED WATER TABLE, 4-09-09

ASPHALT PAVEMENT

SILT CLAY

UPPER GLACIAL SAND, GRAVEL

MAGOTHY - CLAYEY SILT

MAGOTHY - SAND, SILT, GRAVEL

10 0 10 20
scale HORIZONTAL feet

5 0 5 10
scale VERTICAL feet

FIGURE 4

HYDROGEOLOGIC CROSS-SECTION B-B'
F.A. BARTLETT TREE EXPERT COMPANY

BARTLETT TREE COMPANY SITE
NASSAU COUNTY, NEW YORK

DATE 4/10

PROJECT NUMBE 138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\DRAFTING\BARTLETT\135711.102\HYDROGEOLOGIC_CROSS_SECTION_B-B'.DWG 06/28/2010 03:00:20PM By:Rjames XREFS: Basemap Layout: 34X22

N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28

Storm MH

MW-1S
(75.06)

Concrete Curb

Wood Fence

Edge of Pavement

FORMER
OPEN
SHED

TEST PIT 1
MACADAM PATCH

MW-4
(74.40)

DRY WELL 1

MASONRY
WAREHOUSE

Regional
Groundwater
Flow

MW-2S
(74.12)

MW-3
(74.85)

FORMER
PESTICIDE
STORAGE
LOCKER

MW-5
(74.33)

FORMER
GARAGE

Remains of Foundation

LOT 786

LOT 787

LOT 207

LOT 206

Paved
Parking
Lot

DRY WELL 2

TEST PIT 2
MACADAM PATCH

Enclosed
Pesticide
Storage
Area

Gate

0.2'

0.4'

5.3'

74.0

74.2

74.4

74.6

74.8

75.0

105

106

104

103

102

0 10 20
Feet

Legend

- MONITORING WELL
- SOIL BORING
- DRYWELL
- TEST PIT
- PAVEMENT EDGE
- 103 GROUND SURFACE ELEVATION (FT., NGVD)
- PROPERTY LINE
- FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)
- WATER ELEVATION CONTOUR (FT., NGVD) DASHED WHERE INFERRED
- 75 WATER TABLE ELEVATION (FT., NGVD)
- LOCALIZED DIRECTION OF GROUNDWATER FLOW

FIGURE 5
WATER TABLE ELEVATION CONTOURS
APRIL 1, 2010

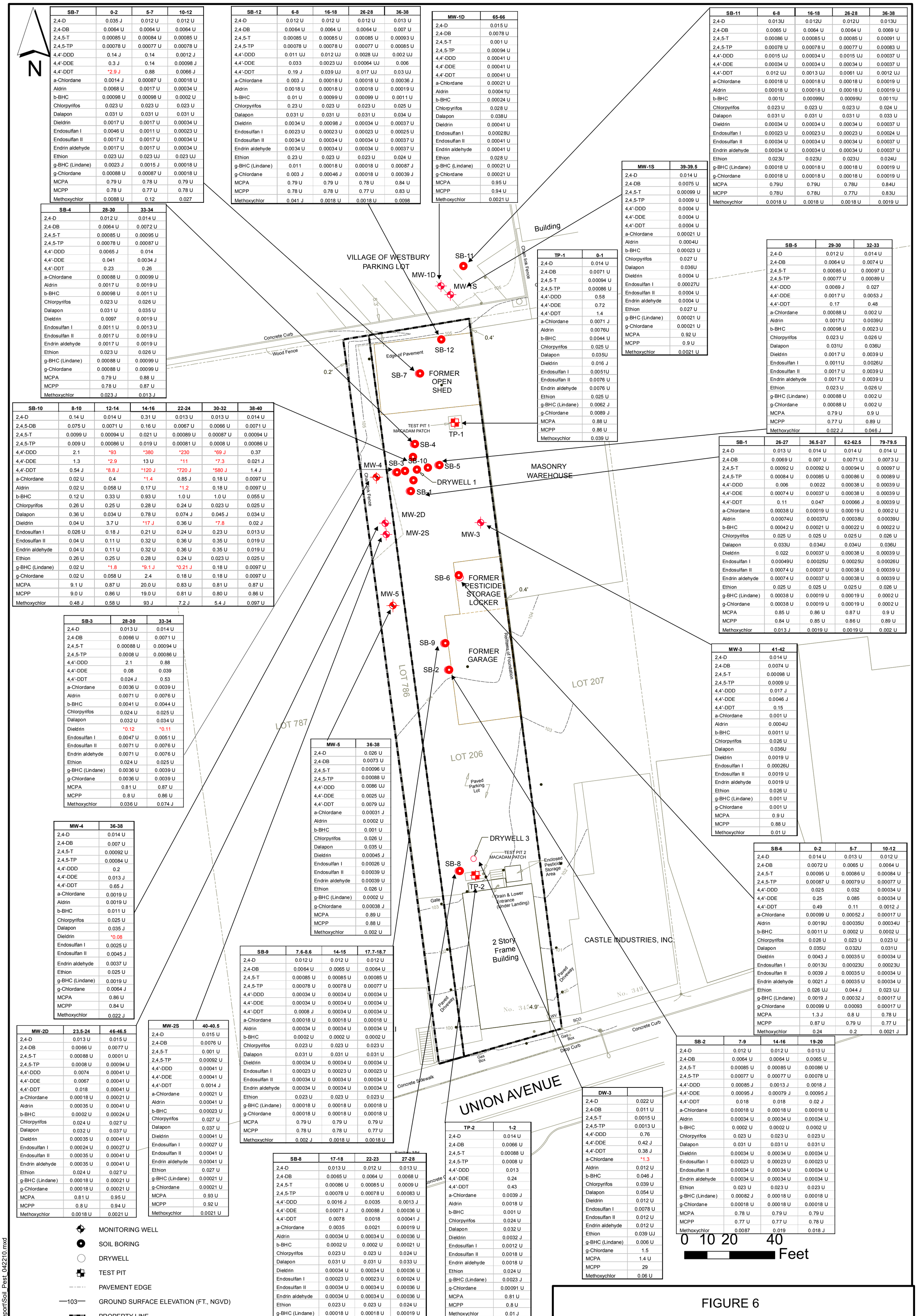
BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE: April 2010

PROJECT NUMBER: 138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Figure_-GW_4_1_10.mxd



SB-7	0-2	5-7	10-12
2,4-D	0.035 J	0.012 U	0.012 U
2,4-DB	0.0064 U	0.0064 U	0.0064 U
2,4,5-T	0.00085 U	0.00084 U	0.00085 U
2,4,5-TP	0.00078 U	0.00077 U	0.00078 U
4,4'-DDD	0.14 J	0.14	0.0012 J
4,4'-DDE	0.3 J	0.14	0.00098 J
4,4'-DDT	*2.9 J	0.88	0.0066 J
a-Chlordane	0.0014 J	0.00087 U	0.00018 U
Aldrin	0.0068 U	0.0017 U	0.00034 U
b-BHC	0.00098 U	0.00098 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.0017 U	0.0017 U	0.00034 U
Endosulfan I	0.0046 U	0.0011 U	0.00023 U
Endosulfan II	0.0017 U	0.0017 U	0.00034 U
Endrin aldehyde	0.0017 U	0.0017 U	0.00034 U
Ethion	0.023 UJ	0.023 UJ	0.023 UJ
g-BHC (Lindane)	0.0023 J	0.0015 J	0.00018 U
g-Chlordane	0.00088 U	0.00087 U	0.00018 U
MCPA	0.79 U	0.78 U	0.79 U
MCPP	0.78 U	0.77 U	0.78 U
Methoxychlor	0.0088 U	0.12	0.027

SB-12	6-8	16-18	26-28	36-38
2,4-D	0.012 U	0.012 U	0.012 U	0.013 U
2,4-DB	0.0064 U	0.0064 U	0.0064 U	0.007 U
2,4,5-T	0.00085 U	0.00085 U	0.00085 U	0.00093 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U	0.00085 U
4,4'-DDD	0.011 UJ	0.012 UJ	0.0028 UJ	0.002 UJ
4,4'-DDE	0.033	0.0023 UJ	0.00064 UJ	0.006
4,4'-DDT	0.19 J	0.039 UJ	0.017 UJ	0.03 UJ
a-Chlordane	0.003 J	0.00018 U	0.00018 U	0.00036 J
Aldrin	0.0018 U	0.00018 U	0.00018 U	0.00019 U
b-BHC	0.01 U	0.00099 U	0.00099 U	0.0011 U
Chlorpyrifos	0.23 U	0.023 U	0.023 U	0.025 U
Dalapon	0.031 U	0.031 U	0.031 U	0.034 U
Dieldrin	0.0034 U	0.00098 J	0.00034 U	0.00037 U
Endosulfan I	0.0023 U	0.00023 U	0.00023 U	0.00025 U
Endosulfan II	0.0034 U	0.00034 U	0.00034 U	0.00037 U
Endrin aldehyde	0.0034 U	0.00034 U	0.00034 U	0.00037 U
Ethion	0.23 U	0.023 U	0.023 U	0.024 U
g-BHC (Lindane)	0.011	0.00018 U	0.00018 U	0.00087 J
g-Chlordane	0.003 J	0.00046 J	0.00018 U	0.00039 J
MCPA	0.79 U	0.79 U	0.78 U	0.84 U
MCPP	0.78 U	0.78 U	0.77 U	0.83 U
Methoxychlor	0.041 J	0.0018 U	0.0018 U	0.0098

MW-1D	65-66
2,4-D	0.015 U
2,4-DB	0.0078 U
2,4,5-T	0.001 U
2,4,5-TP	0.00094 U
4,4'-DDD	0.00041 U
4,4'-DDE	0.00041 U
4,4'-DDT	0.00041 U
a-Chlordane	0.00021 U
Aldrin	0.00041U
b-BHC	0.00024 U
Chlorpyrifos	0.028 U
Dalapon	0.038U
Dieldrin	0.00041 U
Endosulfan I	0.00028U
Endosulfan II	0.00041 U
Endrin aldehyde	0.00041 U
Ethion	0.028 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.95 U
MCPP	0.94 U
Methoxychlor	0.0021 U

SB-11	6-8	16-18	26-28	36-38
2,4-D	0.013U	0.012U	0.012U	0.013U
2,4-DB	0.0065 U	0.0064 U	0.0064 U	0.0069 U
2,4,5-T	0.00086 U	0.00085 U	0.00085 U	0.00091 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U	0.00083 U
4,4'-DDD	0.0015 UJ	0.00034 U	0.0015 UJ	0.00037 U
4,4'-DDE	0.00034 U	0.00034 U	0.00034 U	0.00037 U
4,4'-DDT	0.012 UJ	0.0013 UJ	0.0061 UJ	0.0012 UJ
a-Chlordane	0.00018 U	0.00018 U	0.00018 U	0.00019 U
Aldrin	0.00018 U	0.00018 U	0.00018 U	0.00019 U
b-BHC	0.001U	0.00099U	0.00099U	0.0011U
Chlorpyrifos	0.023 U	0.023 U	0.023 U	0.024 U
Dalapon	0.031 U	0.031 U	0.031 U	0.033 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U	0.00024 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Ethion	0.023U	0.023U	0.023U	0.024U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00018 U	0.00019 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U	0.00019 U
MCPA	0.79U	0.79U	0.78U	0.84U
MCPP	0.78U	0.78U	0.77U	0.83U
Methoxychlor	0.0018 U	0.0018 U	0.0018 U	0.0019 U

MW-1S	39-39.5
2,4-D	0.014 U
2,4-DB	0.0075 U
2,4,5-T	0.00099 U
2,4,5-TP	0.0009 U
4,4'-DDD	0.0004 U
4,4'-DDE	0.0004 U
4,4'-DDT	0.0004 U
a-Chlordane	0.00021 U
Aldrin	0.0004U
b-BHC	0.00023 U
Chlorpyrifos	0.027 U
Dalapon	0.036U
Dieldrin	0.0004 U
Endosulfan I	0.00027U
Endosulfan II	0.0004 U
Endrin aldehyde	0.0004 U
Ethion	0.027 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.92 U
MCPP	0.9 U
Methoxychlor	0.0021 U

TP-1	0-1
2,4-D	0.014 U
2,4-DB	0.0071 U
2,4,5-T	0.00094 U
2,4,5-TP	0.00086 U
4,4'-DDD	0.58
4,4'-DDE	0.72
4,4'-DDT	1.4
a-Chlordane	0.0071 J
Aldrin	0.0076U
b-BHC	0.0044 U
Chlorpyrifos	0.025 U
Dalapon	0.035U
Dieldrin	0.016 J
Endosulfan I	0.0051U
Endosulfan II	0.0076 U
Endrin aldehyde	0.0076 U
Ethion	0.025 U
g-BHC (Lindane)	0.0062 J
g-Chlordane	0.0089 J
MCPA	0.88 U
MCPP	0.86 U
Methoxychlor	0.039 U

SB-5	29-30	32-33
2,4-D	0.012 U	0.014 U
2,4-DB	0.0064 U	0.0074 U
2,4,5-T	0.00085 U	0.00097 U
2,4,5-TP	0.00077 U	0.00089 U
4,4'-DDD	0.0069 J	0.027
4,4'-DDE	0.0017 U	0.0053 J
4,4'-DDT	0.17	0.48
a-Chlordane	0.00088 U	0.002 U
Aldrin	0.0017U	0.0039U
b-BHC	0.00098 U	0.0023 U
Chlorpyrifos	0.023 U	0.026 U
Dalapon	0.031U	0.036U
Dieldrin	0.0017 U	0.0039 U
Endosulfan I	0.0011U	0.0026U
Endosulfan II	0.0017 U	0.0039 U
Endrin aldehyde	0.0017 U	0.0039 U
Ethion	0.023 U	0.026 U
g-BHC (Lindane)	0.00088 U	0.002 U
g-Chlordane	0.00088 U	0.002 U
MCPA	0.79 U	0.9 U
MCPP	0.77 U	0.89 U
Methoxychlor	0.022 J	0.046 J

SB-10	8-10	12-14	14-16	22-24	30-32	38-40
2,4-D	0.14 U	0.014 U	0.31 U	0.013 U	0.013 U	0.014 U
2,4,5-DB	0.075 U	0.0071 U	0.16 U	0.0067 U	0.0066 U	0.0071 U
2,4,5-T	0.0099 U	0.00094 U	0.021 U	0.00089 U	0.00087 U	0.00094 U
2,4,5-TP	0.009 U	0.00086 U	0.019 U	0.00081 U	0.0008 U	0.00086 U
4,4'-DDD	2.1	*93	*380	*230	*69 J	0.37
4,4'-DDE	1.3	*2.9	13 U	*11	*7.3	0.021 J
4,4'-DDT	0.54 J	*8.8 J	*120 J	*720 J	*580 J	1.4 J
a-Chlordane	0.02 U	0.4	*1.4	0.85 J	0.18 U	0.0097 U
Aldrin	0.02 U	0.058 U	0.17 U	*1.2	0.18 U	0.0097 U
b-BHC	0.12 U	0.33 U	0.93 U	1.0 U	1.0 U	0.055 U
Chlorpyrifos	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
Dalapon	0.36 U	0.034 U	0.78 U	0.074 J	0.045 J	0.034 U
Dieldrin	0.04 U	3.7 U	*17 J	0.36 U	*7.8	0.02 J
Endosulfan I	0.026 U	0.18 J	0.21 U	0.24 U	0.23 U	0.013 U
Endosulfan II	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Endrin aldehyde	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Ethion	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
g-BHC (Lindane)	0.02 U	*1.8	*9.1 J	*0.21 J	0.18 U	0.0097 U
g-Chlordane	0.02 U	0.058 U	2.4	0.18 U	0.18 U	0.0097 U
MCPA	9.1 U	0.87 U	20.0 U	0.83 U	0.81 U	0.87 U
MCPP	9.0 U	0.86 U	19.0 U	0.81 U	0.80 U	0.86 U
Methoxychlor	0.48 J	0.58 U	93 J	7.2 J	5.4 J	0.097 U

SB-1	26-27	36.5-37	62-62.5	79-79.5
2,4-D	0.013 U	0.014 U	0.014 U	0.014 U
2,4-DB	0.0069 U	0.007 U	0.0071 U	0.0073 U
2,4,5-T	0.00092 U	0.00092 U	0.00094 U	0.00097 U
2,4,5-TP	0.00084 U	0.00085 U	0.00086 U	0.00089 U
4,4'-DDD	0.006	0.0022	0.00038 U	0.00039 U
4,4'-DDE	0.00074 U	0.00037 U	0.00038 U	0.00039 U
4,4'-DDT	0.11	0.047	0.00066 J	0.00039 U
a-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
Aldrin	0.00074U	0.00037U	0.00038U	0.00039U
b-BHC	0.00042 U	0.00021 U	0.00022 U	0.00022 U
Chlorpyrifos	0.025 U	0.025 U	0.025 U	0.026 U
Dalapon	0.033U	0.034U	0.034U	0.036U
Dieldrin	0.022	0.00037 U	0.00038 U	0.00039 U
Endosulfan I	0.00049U	0.00025U	0.00025U	0.00026U
Endosulfan II	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Endrin aldehyde	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Ethion	0.025 U	0.025 U	0.025 U	0.026 U
g-BHC (Lindane)	0.00038 U	0.00019 U	0.00019 U	0.0002 U
g-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
MCPA	0.85 U	0.86 U	0.87 U	0.9 U
MCPP	0.84 U	0.85 U	0.86 U	0.89 U
Methoxychlor	0.013 J	0.0019 U	0.0019 U	0.002 U

SB-3	28-30	33-34
2,4-D	0.013 U	0.014 U
2,4-DB	0.0066 U	0.0071 U
2,4,5-T	0.00088 U	0.00094 U
2,4,5-TP	0.0008 U	0.00086 U
4,4'-DDD	2.1	0.88
4,4'-DDE	0.08	0.039
4,4'-DDT	0.024 J	0.53
a-Chlordane	0.0036 U	0.0039 U
Aldrin	0.0071 U	0.0076 U
b-BHC	0.0041 U	0.0044 U
Chlorpyrifos	0.024 U	0.025 U
Dalapon	0.032 U	0.034 U
Dieldrin	*0.12	*0.11
Endosulfan I	0.0047 U	0.0051 U
Endosulfan II	0.0071 U	0.0076 U
Endrin aldehyde	0.0071 U	0.0076 U
Ethion	0.024 U	0.025 U
g-BHC (Lindane)	0.0036 U	0.0039 U
g-Chlordane	0.0036 U	0.0039 U
MCPA	0.81 U	0.87 U
MCPP	0.8 U	0.86 U
Methoxychlor	0.036 U	0.074 J

MW-5	36-38
2,4-D	0.026 U
2,4-DB	0.0073 U
2,4,5-T	0.00096 U
2,4,5-TP	0.00088 U
4,4'-DDD	0.0086 UJ
4,4'-DDE	0.0025 UJ
4,4'-DDT	0.0079 UJ
a-Chlordane	0.00031 J
Aldrin	0.0002 U
b-BHC	0.001 U
Chlorpyrifos	0.026 U
Dalapon	0.035 U
Dieldrin	0.00045 J
Endosulfan I	0.00026 U
Endosulfan II	0.00039 U
Endrin aldehyde	0.00039 U
Ethion	0.026 U
g-BHC (Lindane)	0.0002 U
g-Chlordane	0.00038 J
MCPA	0.89 U
MCPP	0.88 U
Methoxychlor	0.002 U

MW-3	41-42
2,4-D	0.014 U
2,4-DB	0.0074 U
2,4,5-T	0.00098 U
2,4,5-TP	0.0009 U
4,4'-DDD	0.017 J
4,4'-DDE	0.0046 J
4,4'-DDT	0.15
a-Chlordane	0.001 U
Aldrin	0.0004U
b-BHC	0.0011 U
Chlorpyrifos	0.026 U
Dalapon	0.036U
Dieldrin	0.0019 U
Endosulfan I	0.00026U
Endosulfan II	0.0019 U
Endrin aldehyde	0.0019 U
Ethion	0.026 U
g-BHC (Lindane)	0.001 U
g-Chlordane	0.001 U
MCPA	0.9 U
MCPP	0.88 U
Methoxychlor	0.01 U

SB-6	0-2	5-7	10-12
2,4-D	0.014 U	0.013 U	0.012 U
2,4-DB	0.0072 U	0.0065 U	0.0064 U
2,4,5-T	0.00095 U	0.00086 U	0.00084 U
2,4,5-TP	0.00087 U	0.00079 U	0.00077 U
4,4'-DDD	0.025	0.032	0.00034 U
4,4'-DDE	0.25	0.085	0.00034 U
4,4'-DDT	0.49	0.11	0.0012 J
a-Chlordane	0.00099 U	0.00052 J	0.00017 U
Aldrin	0.0019U	0.00035U	0.00034U
b-BHC	0.0011 U	0.0002 U	0.0002 U
Chlorpyrifos	0.026 U	0.023 U	0.023 U
Dalapon	0.035U	0.032U	0.031U
Dieldrin	0.0043 J	0.00035 U	0.00034 U
Endosulfan I	0.0013U	0.00023U	0.00023U
Endosulfan II	0.0039 J	0.00035 U	0.00034 U
Endrin aldehyde	0.0021 J	0.00035 U	0.00034 U
Ethion	0.026 UJ	0.044 J	0.023 UJ
g-BHC (Lindane)	0.0019 J	0.00032 J	0.00017 U
g-Chlordane	0.00099 U	0.00093	0.00017 U
MCPA	1.3 J	0.8 U	0.78 U
MCPP	0.87 U	0.79 U	0.77 U
Methoxychlor	0.24	0.2	0.0021 J

MW-4	36-38
2,4-D	0.014 U
2,4-DB	0.007 U
2,4,5-T	0.00092 U
2,4,5-TP	0.00084 U
4,4'-DDD	0.2
4,4'-DDE	0.013 J
4,4'-DDT	0.65 J
a-Chlordane	0.0019 U
Aldrin	0.0019 U
b-BHC	0.011 U
Chlorpyrifos	0.025 U
Dalapon	0.035 J
Dieldrin	*0.08
Endosulfan I	0.0025 U
Endosulfan II	0.0045 J
Endrin aldehyde	0.0037 U
Ethion	0.025 U
g-BHC (Lindane)	0.0019 U
g-Chlordane	0.0064 J
MCPA	0.86 U
MCPP	0.84 U
Methoxychlor	0.022 J

SB-9	7.6-8.6	14-15	17.7-18.7
2,4-D	0.012 U	0.012 U	0.012 U
2,4-DB	0.0064 U	0.0065 U	0.0064 U
2,4,5-T	0.00085 U	0.00085 U	0.00085 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U
4,4'-DDD	0.00034 U	0.00034 U	0.00034 U
4,4'-DDE	0.00034 U	0.00034 U	0.00034 U
4,4'-DDT	0.0008 J	0.00034 U	0.00034 U
a-Chlordane	0.00018 U	0.00018 U	0.00018 U
Aldrin	0.00034 U	0.00034 U	0.00034 U
b-BHC	0.0002 U	0.0002 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00018 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U
MCPA	0.79 U	0.79 U	0.79 U
MCPP	0.78 U	0.78 U	0.77 U
Methoxychlor	0.002 J	0.0018 U	0.0018 U

MW-2D	23.5-24	46-46.5
2,4-D	0.013 U	0.015 U
2,4-DB	0.0066 U	0.0077 U
2,4,5-T	0.00088 U	0.0001 U
2,4,5-TP	0.0008 U	0.00094 U
4,4'-DDD	0.0074	0.00041 U
4,4'-DDE	0.0067	0.00041 U
4,4'-DDT	0.018	0.00041 U
a-Chlordane	0.00018 U	0.00021 U
Aldrin	0.00035 U	0.00041 U
b-BHC	0.0002 U	0.00024 U
Chlorpyrifos	0.024 U	0.027 U
Dalapon	0.032 U	0.037 U
Dieldrin	0.00035 U	0.00041 U
Endosulfan I	0.00024 U	0.00027 U
Endosulfan II	0.00035 U	0.00041 U
Endrin aldehyde	0.00035 U	0.00041 U
Ethion	0.024 U	0.027 U
g-BHC (Lindane)	0.00018 U	0.00021 U
g-Chlordane	0.00018 U	0.00021 U
MCPA	0.81 U	0.95 U
MCPP	0.8 U	0.94 U
Methoxychlor	0.0018 U	0.0021 U

MW-2S	40-40.5
2,4-D	0.015 U
2,4-DB	0.0076 U
2,4,5-T	0.001 U
2,4,5-TP	0.00092 U
4,4'-DDD	0.00041 U
4,4'-DDE	0.00041 U
4,4'-DDT	0.0014 J
a-Chlordane	0.00021 U
Aldrin	0.00041 U
b-BHC	0.00023 U
Chlorpyrifos	0.027 U
Dalapon	0.037 U
Dieldrin	0.00041 U
Endosulfan I	0.00027 U
Endosulfan II	0.00041 U
Endrin aldehyde	0.00041 U
Ethion	0.027 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.93 U
MCPP	0.92 U
Methoxychlor	0.0021 U

SB-8	17-18	22-23	27-28
2,4-D	0.013 U	0.012 U	0.013 U
2,4-DB	0.0065 U	0.0064 U	0.0068 U
2,4,5-T	0.00086 U	0.00085 U	0.0009 U
2,4,5-TP	0.00078 U	0.00078 U	0.00083 U
4,4'-DDD	0.0016 J	0.0035	0.0013 J
4,4'-DDE	0.00071 J	0.00088 J	0.00036 U
4,4'-DDT	0.0078	0.0018	0.00041 J
a-Chlordane	0.0035	0.0021	0.00019 U
Aldrin	0.00034 U	0.00034 U	0.00036 U
b-BHC	0.0002 U	0.0002 U	0.00021 U
Chlorpyrifos	0.023 U	0.023 U	0.024 U
Dalapon	0.031 U	0.031 U	0.033 U
Dieldrin	0.00034 U	0.00034 U	0.00036 U
Endosulfan I	0.00023 U	0.00023 U	0.00024 U
Endosulfan II	0.00034 U	0.00034 U	0.00036 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00036 U
Ethion	0.023 U	0.023 U	0.024 U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00019 U
g-Chlordane	0.0055	0.0037	0.00019 U
MCPA	0.79 U	0.79 U	0.84 U
MCPP	0.78 U	0.78 U	0.83 U
Methoxychlor	0.0018 U	0.0018 U	0.0019 U

TP-2	1-2
2,4-D	0.014 U
2,4-DB	0.0066 U
2,4,5-T	0.00088 U
2,4,5-TP	0.0008 U
4,4'-DDD	0.013
4,4'-DDE	0.24
4,4'-DDT	0.43
a-Chlordane	0.0039 J
Aldrin	0.0018 U
b-BHC	0.001 U
Chlorpyrifos	0.024 U
Dalapon	0.032 U
Dieldrin	0.0032 J
Endosulfan I	0.0012 U
Endosulfan II	0.0018 U
Endrin aldehyde	0.0018 U
Ethion	0.024 U
g-BHC (Lindane)	0.0023 J
g-Chlordane	0.00091 U
MCPA	0.81 U
MCPP	0.8 U
Methoxychlor	0.01 J

DW-3	
2,4-D	0.022 U
2,4-DB	0.011 U
2,4,5-T	0.0015 U
2,4,5-TP	0.0013 U
4,4'-DDD	0.76
4,4'-DDE	0.42 J
4,4'-DDT	0.38 J
a-Chlordane	*1.3
Aldrin	0.012 U
b-BHC	0.046 J
Chlorpyrifos	0.039 U
Dalapon	0.054 U
Dieldrin	0.012 U
Endosulfan I	0.0078 U
Endosulfan II	0.012 U
Endrin aldehyde	0.012 U
Ethion	0.039 UJ
g-BHC (Lindane)	0.006 U
g-Chlordane	1.5
MCPA	1.4 U
MCPP	29
Methoxychlor	0.06 U

SB-2	7-9	14-16	19-20
2,4-D	0.012 U	0.012 U	0.013 U
2,4-DB	0.0064 U	0.0064 U	0.0065 U
2,4,5-T	0.00085 U	0.00085 U	0.00086 U
2,4,5-TP	0.00077 U	0.00077 U	0.00078 U
4,4'-DDD	0.00085 J	0.0013 J	0.0018 J
4,4'-DDE	0.00095 J	0.00079 J	0.00095 J
4,4'-DDT	0.018	0.018	0.02 J
a-Chlordane	0.00018 U	0.00018 U	0.00018 U
Aldrin	0.00034 U	0.00034 U	0.00034 U
b-BHC	0.0002 U	0.0002 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.00082 J	0.00018 U	0.00018 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U
MCPA	0.78 U	0.79 U	0.79 U
MCPP	0.77 U	0.77 U	0.78 U
Methoxychlor	0.0087	0.019	0.018 J

MONITORING WELL

SOIL BORING

DRYWELL

TEST PIT

PAVEMENT EDGE

—103— GROUND SURFACE ELEVATION (FT., NGVD)

PROPERTY LINE

FORMER STUCTURE LOCATION
(APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in milligrams per kilogram (mg/kg)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above one or more of the following New York State Subpart 375
Soil Cleanup Objectives: Protection of public Health (Commercial and Residential Use), or Protection of Groundwater.

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Soil_Pest_042210.mxd

FIGURE 6

PESTICIDE AND HERBICIDE CONCENTRATIONS IN SOIL

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
JULY, 2009

PROJECT NUMBER
135711

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

MW-1D	10/27/2008	4/9/2009	3/23/2010	5/21/2012
2,4-DB	0.29 U	0.28 U	0.29 U	0.29 U
2,4,5 - T	0.015 U	0.014 U	0.015 U	0.014 U
4,4'-DDD	0.0038 U	0.0038 U	0.012 U	0.0047 U
4,4'-DDE	0.0038 U	0.0038 U	0.0049 U	0.0047 U
4,4'-DDT	0.0058 U	0.0057 U	0.012 U	0.0047 U
alpha-BHC	0.0026 U	0.0026 U	0.0026 U	0.0028 U
alpha-Chlordane	0.0045 U	0.0045 U	0.0046 U	0.0019 U
beta-BHC	0.0036 U	0.0036 U	0.0037 U	0.0032 U
Dalapon	0.32 U	0.24 U	0.24 U	0.24 U
delta-BHC	0.0029 U	0.0028 U	0.0029 U	0.0032 U
Dieldrin	0.0038 U	0.0038 U	0.0039 U	0.0050 U
Endosulfan I	0.0029 U	0.0028 U	0.0029 U	0.0041 U
Endosulfan II	0.0038 U	0.0038 U	0.0039 U	0.014 U
Endosulfan sulfate	0.0038 U	0.0038 U	0.0055 U	0.0055 U
Endrin	0.0038 U	0.0038 U	0.0039 U	0.0077 U
Endrin ketone	0.0038 U	0.0038 U	0.017 U	0.0047 U
Gamma-BHC	0.0044 U	0.0044 U	0.0045 U	0.0019 U
gamma-Chlordane	0.0029 U	0.0028 U	0.0041 U	0.0041 U
Heptachlor epoxide	0.0035 U	0.0035 U	0.0036 U	0.0022 U
MCPP	48 U	47 U	49 U	48 U

MW-1S	10/27/2008	4/9/2009	3/23/2010	5/22/2012
2,4-DB	0.29 U	0.28 U	0.29 U	0.29 U
2,4,5 - T	0.014 U	0.014 U	0.015 U	0.014 U
4,4'-DDD	0.0038 U	0.0039 U	0.011 U	0.0047 U
4,4'-DDE	0.0038 U	0.0039 U	0.0047 U	0.0047 U
4,4'-DDT	0.0057 U	0.0059 U	0.011 U	0.0047 U
alpha-BHC	0.0026 U	0.0027 U	0.0025 U	0.0028 U
alpha-Chlordane	*0.11	*0.1	0.031	0.052 J
beta-BHC	0.025	0.0044 J	0.0036 U	0.0032 U
Dalapon	0.32 U	0.24 U	0.25 U	0.24 U
delta-BHC	0.005 U	0.003 U	0.0028 U	0.0032 U
Dieldrin	*0.18	*0.12 J	*0.012 J	0.0050 U
Endosulfan I	0.007 U	0.0033 J	0.0028 U	0.0041 U
Endosulfan II	0.0038 U	0.0039 U	0.0038 U	0.014 U
Endosulfan sulfate	0.0038 U	0.0039 U	0.0053 U	0.0055 U
Endrin	0.0038 U	0.0039 U	0.0038 U	0.0077 U
Endrin ketone	0.0038 U	0.0039 U	0.016 U	0.0047 U
Gamma-BHC	0.0044 U	0.0045 U	0.0043 U	0.0019 U
gamma-Chlordane	0.048	*0.058	0.024	0.0060 U
Heptachlor epoxide	0.014	0.0036 U	0.0035 U	0.0022 U
MCPP	48 U	47 U	49 U	48 U

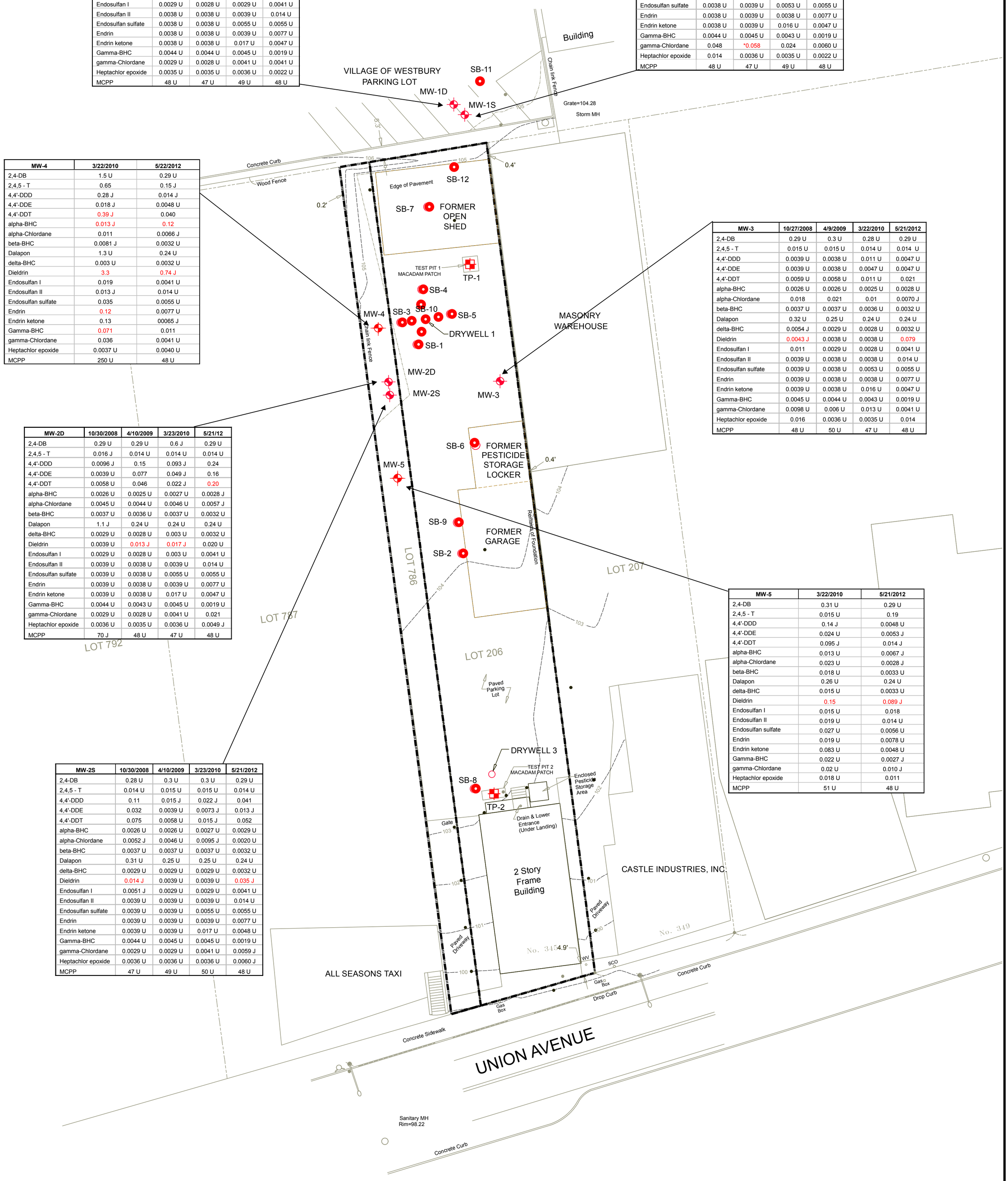
MW-4	3/22/2010	5/22/2012
2,4-DB	1.5 U	0.29 U
2,4,5 - T	0.65	0.15 J
4,4'-DDD	0.28 J	0.014 J
4,4'-DDE	0.018 J	0.0048 U
4,4'-DDT	0.39 J	0.040
alpha-BHC	0.013 J	0.12
alpha-Chlordane	0.011	0.0066 J
beta-BHC	0.0081 J	0.0032 U
Dalapon	1.3 U	0.24 U
delta-BHC	0.003 U	0.0032 U
Dieldrin	3.3	0.74 J
Endosulfan I	0.019	0.0041 U
Endosulfan II	0.013 J	0.014 U
Endosulfan sulfate	0.035	0.0055 U
Endrin	0.12	0.0077 U
Endrin ketone	0.13	00065 J
Gamma-BHC	0.071	0.011
gamma-Chlordane	0.036	0.0041 U
Heptachlor epoxide	0.0037 U	0.0040 U
MCPP	250 U	48 U

MW-3	10/27/2008	4/9/2009	3/22/2010	5/21/2012
2,4-DB	0.29 U	0.3 U	0.28 U	0.29 U
2,4,5 - T	0.015 U	0.015 U	0.014 U	0.014 U
4,4'-DDD	0.0039 U	0.0038 U	0.011 U	0.0047 U
4,4'-DDE	0.0039 U	0.0038 U	0.0047 U	0.0047 U
4,4'-DDT	0.0059 U	0.0058 U	0.011 U	0.021
alpha-BHC	0.0026 U	0.0026 U	0.0025 U	0.0028 U
alpha-Chlordane	0.018	0.021	0.01	0.0070 J
beta-BHC	0.0037 U	0.0037 U	0.0036 U	0.0032 U
Dalapon	0.32 U	0.25 U	0.24 U	0.24 U
delta-BHC	0.0054 J	0.0029 U	0.0028 U	0.0032 U
Dieldrin	0.0043 J	0.0038 U	0.0038 U	0.079
Endosulfan I	0.011	0.0029 U	0.0028 U	0.0041 U
Endosulfan II	0.0039 U	0.0038 U	0.0038 U	0.014 U
Endosulfan sulfate	0.0039 U	0.0038 U	0.0053 U	0.0055 U
Endrin	0.0039 U	0.0038 U	0.0038 U	0.0077 U
Endrin ketone	0.0039 U	0.0038 U	0.016 U	0.0047 U
Gamma-BHC	0.0045 U	0.0044 U	0.0043 U	0.0019 U
gamma-Chlordane	0.0098 U	0.006 U	0.013 U	0.0041 U
Heptachlor epoxide	0.016	0.0036 U	0.0035 U	0.014
MCPP	48 U	50 U	47 U	48 U

MW-2D	10/30/2008	4/10/2009	3/23/2010	5/21/12
2,4-DB	0.29 U	0.29 U	0.6 J	0.29 U
2,4,5 - T	0.016 J	0.014 U	0.014 U	0.014 U
4,4'-DDD	0.0096 J	0.15	0.093 J	0.24
4,4'-DDE	0.0039 U	0.077	0.049 J	0.16
4,4'-DDT	0.0058 U	0.046	0.022 J	0.20
alpha-BHC	0.0026 U	0.0025 U	0.0027 U	0.0028 J
alpha-Chlordane	0.0045 U	0.0044 U	0.0046 U	0.0057 J
beta-BHC	0.0037 U	0.0036 U	0.0037 U	0.0032 U
Dalapon	1.1 J	0.24 U	0.24 U	0.24 U
delta-BHC	0.0029 U	0.0028 U	0.003 U	0.0032 U
Dieldrin	0.0039 U	0.013 J	0.017 J	0.020 U
Endosulfan I	0.0029 U	0.0028 U	0.003 U	0.0041 U
Endosulfan II	0.0039 U	0.0038 U	0.0039 U	0.014 U
Endosulfan sulfate	0.0039 U	0.0038 U	0.0055 U	0.0055 U
Endrin	0.0039 U	0.0038 U	0.0039 U	0.0077 U
Endrin ketone	0.0039 U	0.0038 U	0.017 U	0.0047 U
Gamma-BHC	0.0044 U	0.0043 U	0.0045 U	0.0019 U
gamma-Chlordane	0.0029 U	0.0028 U	0.0041 U	0.021
Heptachlor epoxide	0.0036 U	0.0035 U	0.0036 U	0.0049 J
MCPP	70 J	48 U	47 U	48 U

MW-5	3/22/2010	5/21/2012
2,4-DB	0.31 U	0.29 U
2,4,5 - T	0.015 U	0.19
4,4'-DDD	0.14 J	0.0048 U
4,4'-DDE	0.024 U	0.0053 J
4,4'-DDT	0.095 J	0.014 J
alpha-BHC	0.013 U	0.0067 J
alpha-Chlordane	0.023 U	0.0028 J
beta-BHC	0.018 U	0.0033 U
Dalapon	0.26 U	0.24 U
delta-BHC	0.015 U	0.0033 U
Dieldrin	0.15	0.089 J
Endosulfan I	0.015 U	0.018
Endosulfan II	0.019 U	0.014 U
Endosulfan sulfate	0.027 U	0.0056 U
Endrin	0.019 U	0.0078 U
Endrin ketone	0.083 U	0.0048 U
Gamma-BHC	0.022 U	0.0027 J
gamma-Chlordane	0.02 U	0.010 J
Heptachlor epoxide	0.018 U	0.011
MCPP	51 U	48 U

MW-2S	10/30/2008	4/10/2009	3/23/2010	5/21/2012
2,4-DB	0.28 U	0.3 U	0.3 U	0.29 U
2,4,5 - T	0.014 U	0.015 U	0.015 U	0.014 U
4,4'-DDD	0.11	0.015 J	0.022 J	0.041
4,4'-DDE	0.032	0.0039 U	0.0073 J	0.013 J
4,4'-DDT	0.075	0.0058 U	0.015 J	0.052
alpha-BHC	0.0026 U	0.0026 U	0.0027 U	0.0029 U
alpha-Chlordane	0.0052 J	0.0046 U	0.0095 J	0.0020 U
beta-BHC	0.0037 U	0.0037 U	0.0037 U	0.0032 U
Dalapon	0.31 U	0.25 U	0.25 U	0.24 U
delta-BHC	0.0029 U	0.0029 U	0.0029 U	0.0032 U
Dieldrin	0.014 J	0.0039 U	0.0039 U	0.035 J
Endosulfan I	0.0051 J	0.0029 U	0.0029 U	0.0041 U
Endosulfan II	0.0039 U	0.0039 U	0.0039 U	0.014 U
Endosulfan sulfate	0.0039 U	0.0039 U	0.0055 U	0.0055 U
Endrin	0.0039 U	0.0039 U	0.0039 U	0.0077 U
Endrin ketone	0.0039 U	0.0039 U	0.017 U	0.0048 U
Gamma-BHC	0.0044 U	0.0045 U	0.0045 U	0.0019 U
gamma-Chlordane	0.0029 U	0.0029 U	0.0041 U	0.0059 J
Heptachlor epoxide	0.0036 U	0.0036 U	0.0036 U	0.0060 J
MCPP	47 U	49 U	50 U	48 U



MONITORING WELL

SOIL BORING

DRYWELL

TEST PIT

PAVEMENT EDGE

—103— GROUND SURFACE ELEVATION (FT., NGVD)

PROPERTY LINE

FORMER STUCTURE LOCATION
(APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in micrograms per liter (ug/L)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above New York State Class GA Groundwater Standards or Guidance values

0 10 20 40 Feet

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FIGURE 7

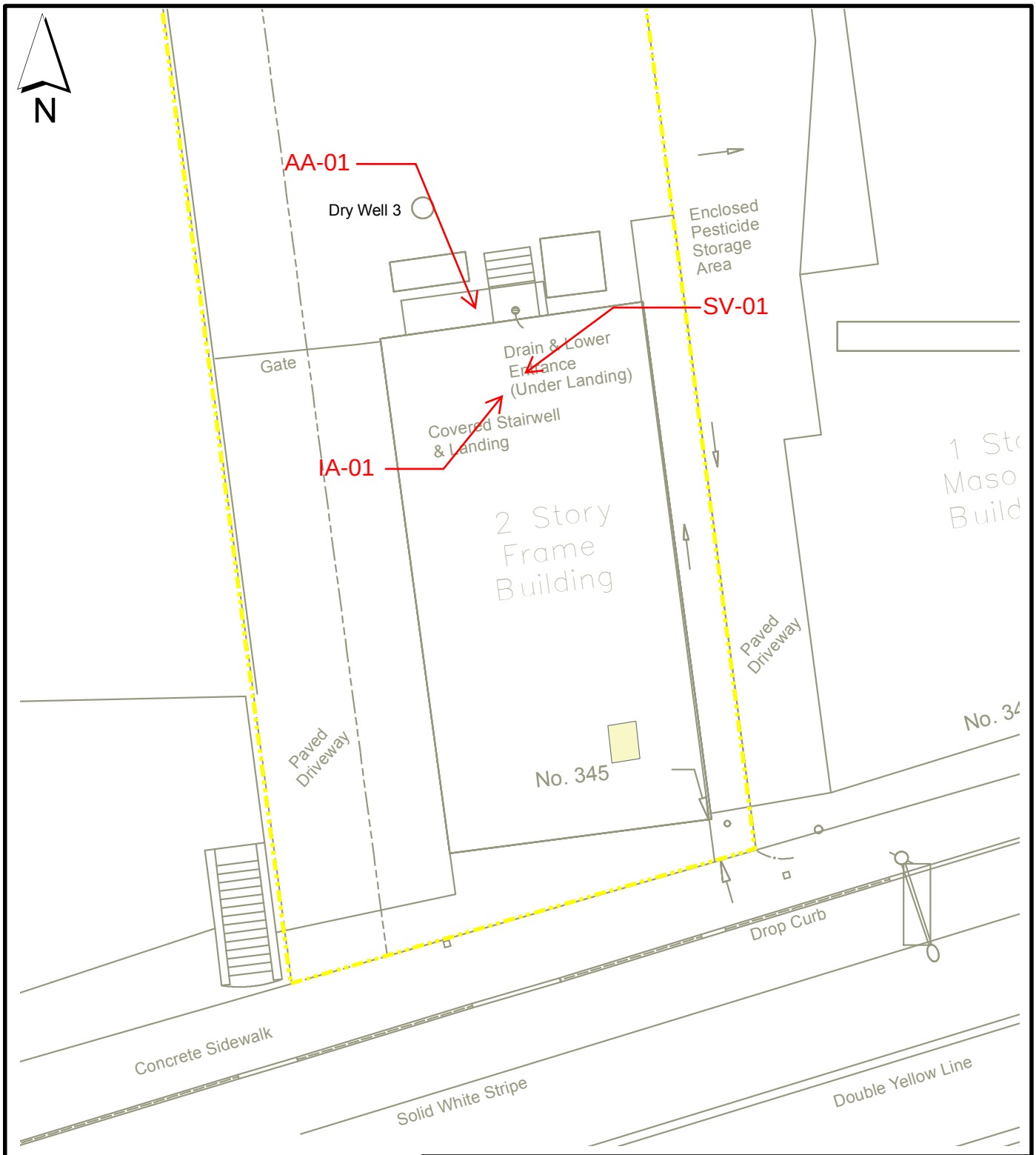
PESTICIDE AND HERBICIDE CONCENTRATIONS IN GROUNDWATER

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE: JULY, 2012

PROJECT NUMBER: 139990

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY



Legend

- Approximate Location of Mechanics Pit
- Site_Boundary

0 15 30 Feet

FIGURE 8
LOCATION OF SVI SAMPLES
MARCH 2008 AND MARCH 2012

BARTLETT TREE
COMPANY SITE
WESTBURY, NASSAU COUNTY
NEW YORK, 11590

DATE
10/2009

PROJECT NUMBER
137365.401

BROWN AND CALDWELL
ASSOCIATES

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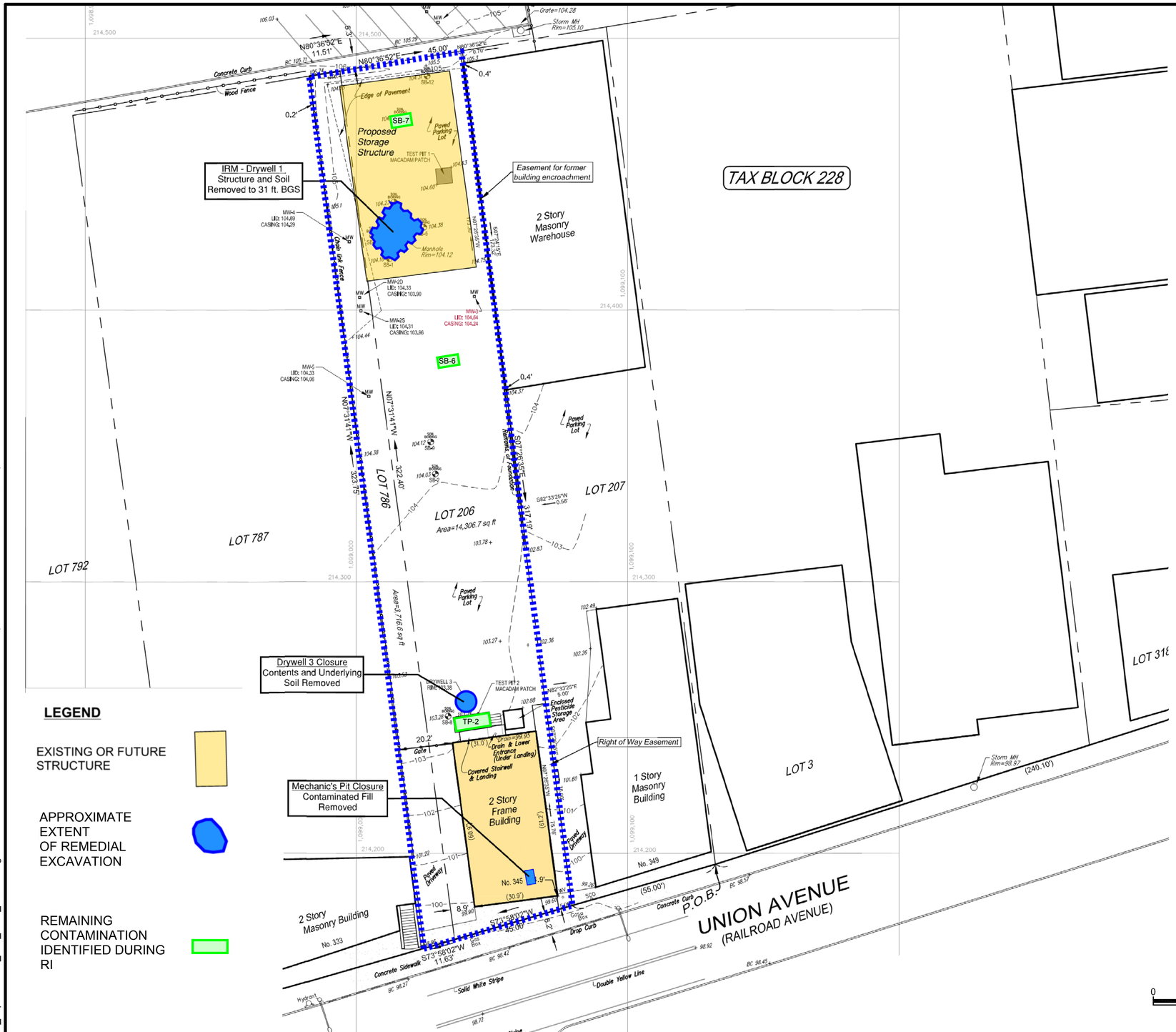
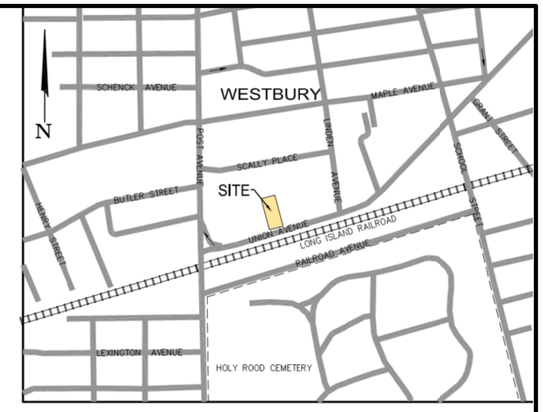


LEGEND

EXISTING OR FUTURE STRUCTURE

APPROXIMATE EXTENT OF REMEDIAL EXCAVATION

REMAINING CONTAMINATION IDENTIFIED DURING RI



KEY MAP
N.T.S.

NOTES, certification continued;

1. BOUNDARIES SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY BASED ON AVAILABLE MAPS, DEEDS OF RECORD AND PHYSICAL EVIDENCE, BUT ARE SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS AND AGREEMENTS OF RECORD THAT AN ACCURATE AND THOROUGH TITLE SEARCH MAY DISCLOSE.
2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO LOT 206 AND LOT 786 SHOWN HEREON WAS GAINED FROM TITLE COMMITMENT NUMBER 142-N-2859-A AND B PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK, DATED OCT. 17, 1994.
3. HORIZONTAL DATUM BASED ON THE NEW YORK (LONG ISLAND ZONE 3104) STATE PLANE COORDINATE SYSTEM, NAD 83 US FT, VIA GLOBAL POSITIONING SYSTEMS (GPS). THE GEOGRAPHIC AND STATE PLANE COORDINATES CONTAINED HEREON WERE THE RESULT OF A SURVEY USING SINGLE FREQUENCY G.P.S. RECEIVERS AND HAVING A POSITIONAL TOLERANCE LESS THAN 7 CM AT THE 95% CONFIDENCE LEVEL. REFERENCE MONUMENTS WERE NYCI AND NYQN ON NOVEMBER 5TH, 2008..
4. VERTICAL DATUM BASED ON NGVD 29, ESTABLISHED VIA G.P.S. ON NOVEMBER 5TH, 2008 AND CONVERTED TO NGVD 29 HEIGHT USING VERTCON. TO CONVERT TO NAVD88 APPLY A CONVERSION FACTOR OF -1.12 FEET.
5. UNAUTHORIZED ALLTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
6. LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON OBVIOUS ABOVE GROUND PHYSICAL UTILITY APPURTENANCES AND ACCESSIBLE MANHOLES. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED BY DIGGING TEST HOLES PRIOR TO ANY DESIGN OR CONSTRUCTION. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.

MONITORING WELL TABLE:

DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	RIM	CASE
MW 1-S	214505.9	1099030.1	40°45'16.92"	73°35'08.55"	105.28'	104.74'
MW 1-D	214509.7	1099026.0	40°45'16.96"	73°35'08.61"	105.39'	104.93'
MW 2-S	214399.7	1099001.8	40°45'15.87"	73°35'08.93"	104.31'	103.96'
MW 2-D	214404.5	1099001.2	40°45'15.92"	73°35'08.94"	104.33'	103.90'
MW 3	214404.9	1099043.5	40°45'15.92"	73°35'08.39"	104.64'	104.24'
MW 4	214425.1	1098997.5	40°45'16.12"	73°35'08.98"	104.69'	104.29'
MW-5	214368.2	1099004.6	40°45'15.56"	73°35'08.89"	104.33'	104.06'

REFERENCES:

1. MAP ENTITLED "MAP OF PROPERTY AT WESTBURY, N.Y." PREPARED BY NELSON B. BALDWIN, LIC. LAND SURVEYORS, WESTBURY, N.Y. AND DATED FEB. 5, 1963 AND LAST REVISED JUNE 17, 1964.
2. MAP ENTITLED "MAP OF LOT LINE CHANGE, SITUATE WESTBURY, NASSAU COUNTY, N.Y." PREPARED BY ELS ASSOCIATES, ENGINNERING-LAND SURVEYING, AND DATED 12-17-94 AND 12-22-94.
3. LAND AND TAX MAP OF SECTION 10-BLOCK 228, SHEET 1 OF 1, LAST REVISED OCTOBER 19, 2005.

0 20 40
SCALE IN FEET

Path: P:\Bartlett_Tree_Expts\139990_IRM_Work_Plan\FS\Figures File Name: FIG-7-1 Plot Date: December 20, 2013 12:12 PM Cadd User: James, Richard

Brown AND Caldwell	BROWN AND CALDWELL ASSOCIATES ALBANY, NEW YORK DATE: December 20, 2013		BARTLETT TREE COMPANY SITE #1-30-074 345 UNION AVENUE WESTBURY, NASSAU COUNTY, NEW YORK	EXTENT OF REMEDIAL EXCAVATIONS AND REMAINING SOIL CONTAMINATION FIGURE 9

N

VILLAGE OF WESTBURY
PARKING LOT

Building

Chain link Fence

Grate=104.28
Storm MH

MW-1D
MW-1S

105

5.3'

106

Concrete Curb

Wood Fence

0.4'

0.2'

Regional
Groundwater
Flow

Range of
Local Shallow
Groundwater
Flow

FORMER
DRYWELL 1

MASONRY
WAREHOUSE

MW-4

in link Fence

MW-2D
MW-2S

MW-3

0.4'

MW-5

LOT 786

LOT 207

LOT 787

LOT 206

Legend

MONITORING WELL

PROPERTY LINE

0 10 20
Feet

FIGURE 10

GROUNDWATER MONITORING WELL NETWORK

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
April 2010

PROJECT NUMBER
138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

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Appendix A: Excavation Work Plan

As noted in Section 1 of the SMP, the IRMs have remediated most locations with exceedances of the SCOs for unrestricted use. The only remaining materials are approximately 14 cu. yds. of saturated soil under former Drywell 1 (32-34 feet bgs) which were not removed due to the difficulty of dewatering and shoring at this depth and the following three locations (See SMP Figure 9):

1. Boring SB-7. DDT was detected in at this location at 2.9 ppm (above the Residential SCO but below the Commercial SCO) in the sample interval from 0-2 feet bgs (see Appendix A Figure 6-2).
2. Boring SB-6. Mercury was detected at this location at 1.05 ppm (above the commercial SCO) in the sample interval from 0-2 feet bgs (see Appendix A Table 1).
3. Test Pit TP-2. Mercury was detected at this location at 3.62 ppm (above the commercial SCO) in the sample interval from 1-2 feet bgs (see Appendix A Table 1).

For the purposes of this SMP, it is assumed that the saturated soils remaining 32 feet below former Drywell 1 will never be excavated.

Simple excavations in the remaining three areas may only require compliance with a portion of this Excavation Work Plan (EWP). For example, excavation of a small volume of soil from above the water table that is directly loaded for off-site disposal would not require the stockpiling or fluids management provisions of this EWP.

A-1 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination, the Site owner or their representative will notify the NYSDEC. Currently, this notification will be made to:

Mr. Jamie Ascher
Engineering Geologist 2
NYSDEC Region 1, Division of Environmental Remediation
SUNY at Stony Brook
50 Circle Road
Stony Brook, NY 11790-3409

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for Site re-grading, intrusive elements or utilities to be installed below the paving and/or building foundation slabs, and estimated volumes of contaminated soil to be excavated;
- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan, in electronic format, if it differs from the HASP provided in Appendix E of this document;
- Identification of disposal facilities for potential waste streams; and

- Identification of sources of any anticipated backfill, along with all required chemical testing results.

A-2 SOIL SCREENING METHODS

Unless otherwise tested, all material encountered in the three areas of remaining contamination (Figure 9) will be assumed to contain the following contaminants of concern at the following maximum concentrations:

Location (see Figure 9)	Contaminant	Maximum Concentration
SB-7	DDT	2.9 ppm
SB-6	Mercury	1.05 ppm
TP-2	Mercury	3.62 ppm

Visual, olfactory and instrument-based soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially contaminated material (remaining contamination). Screening for VOCs will be conducted with a photo-ionization detector (PID). Given the absence of elemental mercury and the very low concentrations of mercury detected in soil, screening of soils with a mercury vapor analyzer (MVA) is not warranted. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-Site disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil.

A-3 STOCKPILE METHODS

Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

All equipment, vehicles, materials, and personnel used to maintain the stockpile area will undergo decontamination procedures prior to leaving the stockpile area and accessing other “clean” areas of the Site. Handling of excavated material will be kept to a minimum to reduce the potential for contaminants being released to the environment.

A-4 MATERIALS EXCAVATION AND LOAD OUT

A QEP or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property and its contractors are solely responsible for safe execution of all invasive and other work performed under this EWP.

The presence of utilities and easements on the Site will be investigated by the QEP. It will be determined whether a risk or impediment to the planned work under this EWP is posed by utilities or easements on the Site.

During construction activities the amount of exposed excavation is to be minimized whenever possible. At the end of each workday, exposed excavations are to be covered with polyethylene sheeting to prevent the potential migration of contaminants by precipitation or wind. In addition to covering exposed excavations, erosion and sediment control measures must be followed through the use of silt fencing, hay bales, mulch, or other methods approved by the QEP.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

A truck wash will be operated on-Site. The QEP will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the Site until the activities performed under this section are complete.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site soil tracking.

The QEP will be responsible for ensuring that all egress points for truck and equipment transport from the Site are clean of dirt and other materials derived from the Site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

A-5 MATERIALS TRANSPORT OFF-SITE

All transport of materials excavated from the Site will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. In the unlikely event that loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

Given the small quantity of material that might be excavated and transported from the Site, it is unlikely that dump trailers or multiple truck loads would be required. Furthermore, the Site is surrounded by commercial/industrial property. Therefore, trucks will enter and exit the Site via the existing driveway leading to Union Avenue, and no special truck routes are necessary.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

A-6 MATERIALS DISPOSAL OFF-SITE

All soil/fill/solid waste excavated and removed from the Site will be treated as potentially contaminated and regulated material and will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated off-Site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated off-Site management of materials from this Site will not occur without formal NYSDEC approval.

Off-Site disposal locations for excavated soils will be identified in the pre- excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, i.e. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C/D recycling facility, etc. Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Before the Site was remediated, the NYSDEC determined that the following listed hazardous wastes were present:

- Dieldrin (P037)
- Endrin (P051)
- alpha-Chlordane (U036)
- 4,4-DDD (U060)
- 4,4-DDT (U061)
- gamma-BHC (Lindane, U129)

The NYSDEC subsequently provided the following, numerical contained-in criteria for determining if soils in which these pesticides are detected must be managed as hazardous waste:

Table 8. Pesticide Contained-In Criteria

PESTICIDE	CONTAINED-IN CRITERIA (ppm)
Aldrin	0.12
Chlordane (total)	6.5
DDD	8
DDE	12
DDT	8
Dieldrin	0.12
Heptachlor	0.45
Heptachlor Epoxide	0.19

Comparison of the RI data with these contained-in criteria indicates the soil in the areas of remaining contamination would likely not be classified as hazardous waste. Nevertheless, all wastes must be characterized in accordance with the requirements of the proposed, permitted disposal facility. Non-hazardous historic fill and contaminated soils taken off-Site will, at minimum, be disposed of at a RCRA Subtitle D or equivalent 6 NYCRR Part 360 permitted disposal facility. Soil that does not meet 6 NYCRR Part 375-6 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

A-7 MATERIALS REUSE ON-SITE

At a minimum, excavated material stockpiled for on-Site reuse must meet the 6 NYCRR Part 375-6 SCOs for Protection of Public Health – Commercial Use and Protection of Groundwater. In

accordance with DER-10 Section 5.4, stockpiled soil proposed for on-Site reuse will be sampled at the rate of one discrete sample per 50 cubic yards (VOCs only) and one composite sample per 50 cubic yards (metals and pesticides). Stockpile samples will be collected by a QEP and submitted to a NYSDOH ELAP certified laboratory for analysis of the following parameters:

- TCL VOCs by USEPA SW 846 Method 8260
- TCL Pesticides by USEPA SW 846 Method 8081A
- Organophosphorous Pesticides by USEPA SW 846 Method 8141A
- TAL Metals - USEPA SW 846 Method 6010B/7471A

The analytical results will be provided to the NYSDEC and the agency will be consulted before any excavated materials are re-used on-Site. Otherwise, the analytical results will be provided to the NYSDEC in the annual Periodic Review Report.

The QEP will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for re-use on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

A-8 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including excavation dewatering and groundwater monitoring well purge and development waters, will be handled, transported and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site, but will be managed off-Site at a facility permitted to accept these fluids.

Discharge of water generated during large-scale construction activities to the municipal stormwater drainage system will be performed under a SPDES permit.

A-9 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities, the paving or building foundation slabs will be restored. Prior to backfilling with imported, clean fill, a demarcation layer, consisting of orange snow fencing material or equivalent material will be placed in the excavation to provide a visual reference to the top of the 'Remaining Contamination Zone', the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this Site

Management Plan. If the type of cover changes from that which exists prior to the excavation (e.g., a building foundation slab is replaced by asphalt), a figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the Site Management Plan.

A-10 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the Site will be approved by the QEP and will be in compliance with provisions in this SMP prior to receipt at the Site.

Material from industrial Sites, spill Sites, or other environmental remediation Sites or potentially contaminated Sites will not be imported to the Site.

All imported soils will be obtained from a NYSDEC-certified clean source or an uncertified virgin mine/pit. If soil or sand is imported from an uncertified virgin mine/pit, at least one round of characterization samples for the initial 100 cubic yards of material will be required. The

characterization samples will be analyzed by a NYSDOH ELAP certified laboratory for the following parameters:

- TCL VOCs by USEPA SW 846 Method 8260
- TCL SVOCs by USEPA SW 846 Method 8270C
- PCBs by USEPA SW 846 Method 8082
- TCL Pesticides by USEPA SW 846 Method 8081A
- Organophosphorous Pesticides by USEPA SW 846 Method 8141A
- Chlorinated Herbicides by USEPA SW 846 Method 8151A
- TAL Metals - USEPA SW 846 Method 6010B/7471A

All results must at a minimum meet the 6 NYCRR Part 375-6 SCOs for unrestricted use. Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

A-11 STORMWATER POLLUTION PREVENTION

Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. All necessary repairs shall be made immediately.

Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.

All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials.

Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

A-12 CONTINGENCY PLAN

If previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for full a full list of analytes (TAL metals; TCL volatiles and semi-volatiles, TCL pesticides and PCBs), unless the Site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the periodic reports prepared pursuant to Section 5 of the SMP.

A-13 COMMUNITY AIR MONITORING AND DUST CONTROL

During excavation activity and handling of excavated material, real-time monitoring of dust will be performed in accordance with the guidance found in Appendix 1A of DER-10, Generic Community Air Monitoring Plan. The current standard for fugitive dust is for an integrated (average) measurement over a 15 minute sampling time. Particulate concentrations will be monitored continuously directly downwind of the work area. The particulate monitoring will 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 will be outfitted with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration will be visually assessed during all work activities. A background particulate level will be established for each work site.

If the work zone PM-10 particulate level is 0.1 milligram per cubic meter (mg/m3) greater than background for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that work zone PM-10 particulate levels do not exceed 0.15 mg/m3 above the background level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, work zone PM-10 particulate levels are greater than 0.15 mg/m3 above the background 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 work zone PM-10 particulate concentration to within 0.15 mg/m3 of the background level and in preventing visible dust migration.

All readings will be recorded and be available for review by the NYSDEC. The particulate levels referenced herein are guidance values applicable at the time this document was created, and are subject to change in accordance with applicable standards, criteria and guidance values at the time the work is to be performed.

In the event that the action level is reached, or if there is visible dust leaving the Site, one or more of the following dust suppression techniques will be employed:

- Applying water on paved surfaces;
- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped containers;
- Covering excavated areas and staged material after excavation activity ceases with polyethylene sheeting; and
- Closing or completing excavations as soon as practicable.

Atomizing water sprays may be used to prevent overly wet conditions. If the above dust suppression techniques do not lower particulates to an acceptable level, or if extreme wind conditions occur, work will be suspended until appropriate corrective measures are approved or the extreme wind conditions subside.

A figure showing the location of air sampling stations based on the scope of excavation and generally prevailing wind conditions will be submitted with the NYSDEC notification specified in Section A-1 of this EWP. These locations will be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

A-14 ODOR CONTROL PLAN

The soils subject to this Excavation Work Plan do not emit nuisance odors and, therefore, odor control measures are not included herein.

A-15 DUST CONTROL PLAN

Dust control measures are specified in Section A-13.

Appendix B: Responsibilities of Owner and Remedial Party

Responsibilities of Owner and Remedial Party

The Site owner is responsible for implementing the SMP") for the Bartlett Tree Company site (the "Site"), number 1-30-074. However, these actions will be carried out by the Remedial Party, as defined below. The owner(s) is/are currently listed as:

The Bartlett Realty Company, Incorporated
777 Summer Street, Stamford, CT. (the "owner").

Solely for the purposes of this document and based upon the facts related to a particular site and the remedial program being carried out, the term Remedial Party ("RP") refers to the certificate of completion holder:

David Marren, Esq.
V.P. Safety & Regulatory Affairs
FA Bartlett Tree Expert Company
13768 Hamilton Road
Charlotte, NC 28278

Nothing on this page shall supersede the provisions of the Environmental Easement, Consent Order, or other legally binding document that affects rights and obligations relating to the Site.

Site Owner's Responsibilities

1) The owner shall follow the provisions of the SMP as they relate to future construction and excavation at the Site.
2) In accordance with a periodic time frame determined by the NYSDEC, the owner shall periodically certify, in writing, that all Institutional Controls set forth in the Environmental Easement remain in place and continue to be complied with. The owner shall provide a written certification to the RP, upon the RP's request, in order to allow the RP to include the certification in the site's Periodic Review Report (PRR) certification to the NYSDEC.
3) In the event the Site is delisted, the owner remains bound by the Environmental Easement and shall submit, upon request by the NYSDEC, a written certification that the Environmental Easement is still in place and has been complied with.
4) The owner shall grant access to the Site to the NYSDEC for the purposes of performing activities required under the SMP and assuring compliance with the SMP. The RP currently occupies the Site and has access and control of it.
5) The owner is responsible for assuring the security of the remedial components located on its property to the best of its ability. In the event that damage to the remedial components or vandalism is evident, the owner shall notify the NYSDEC in accordance with the timeframes indicated in Section 2.3.2 - Notifications.
6) In the event some action or inaction by the owner adversely impacts the Site, the owner or the RP must notify the NYSDEC in accordance with the time frame indicated in Section 2.3.2- Notifications. The RP is responsible for coordinating the performance of necessary corrective actions.
7) The owner must notify the NYSDEC of any change in ownership of the Site property (identifying the tax map numbers in any correspondence) and provide contact information for the new owner of the Site. 6 NYCRR Part 375 contains notification requirements applicable to any construction or activity changes and changes in ownership. Among the notification requirements is the

following: Sixty days prior written notification must be made to the NYSDEC. Notification is to be submitted to the NYSDEC Division of Environmental Remediation's Site Control Section. Notification requirements for a change in use are detailed in Section 2.3 of the SMP. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html

8) In accordance with the tenant notification law, within 15 days of receipt, the owner must supply a copy of any vapor intrusion data, that is produced with respect to structures and that exceeds NYSDOH or OSHA guidelines on the Site, whether produced by the NYSDEC, RP, or owner, to the tenants on the property. The owner must otherwise comply with the tenant and occupant notification provisions of Environmental Conservation Law Article 27, Title 24.

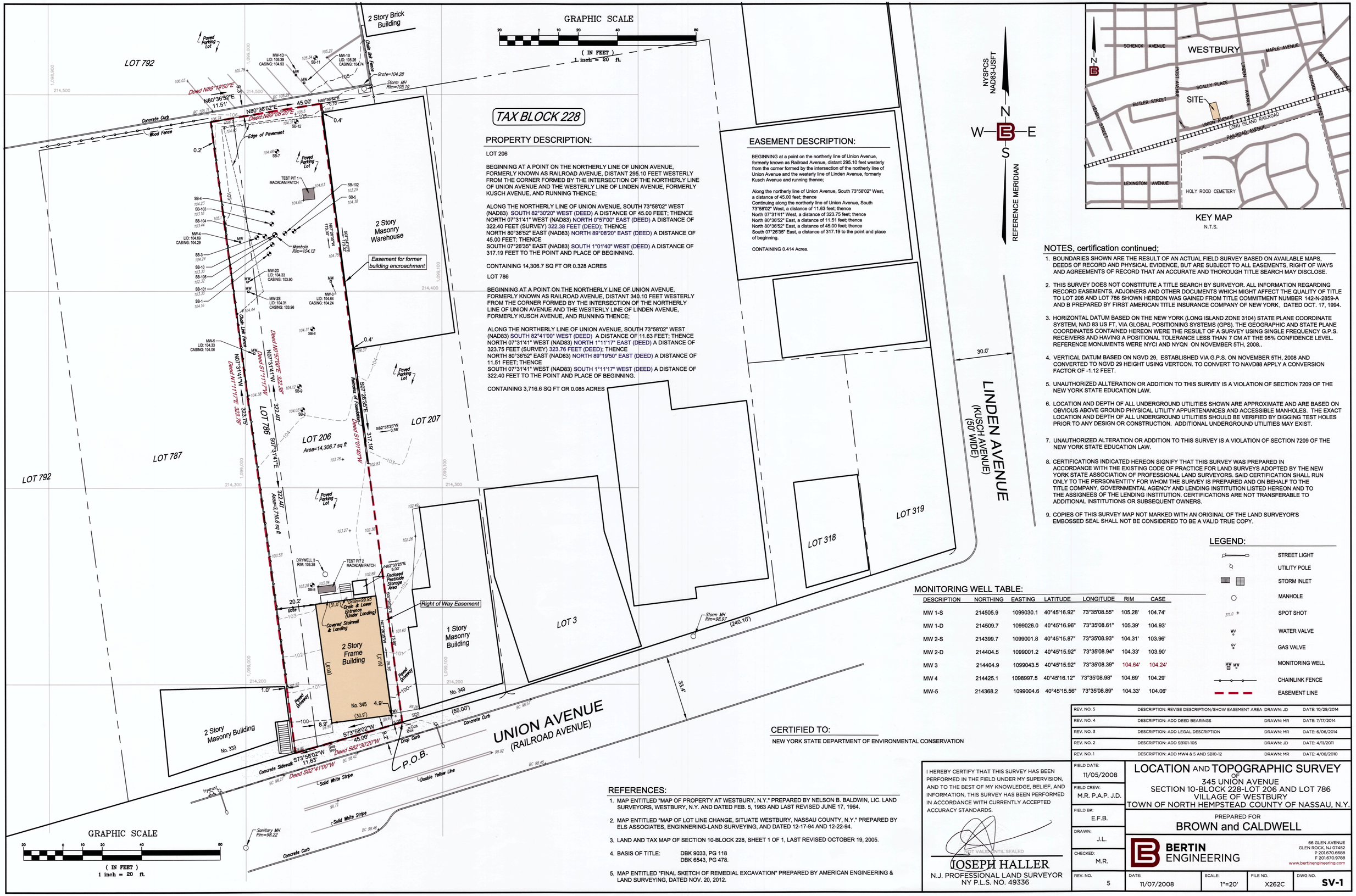
Remedial Party Responsibilities

1) The RP must follow the SMP provisions regarding any construction and/or excavation it undertakes at the site.
2) The RP shall report to the NYSDEC all activities required for remediation, operation, maintenance, monitoring, and reporting. Such reporting includes, but is not limited to, periodic review reports and certifications, electronic data deliverables, corrective action work plans and reports, and updated SMPs.
3) If the NYSDEC determines that an update of the SMP is necessary, the RP shall update the SMP and obtain final approval from the NYSDEC.
4) The RP shall notify the NYSDEC and the owner of any changes in RP ownership and/or control. The RP shall provide contact information for the new party/entity. Such activity constitutes a Change of Use pursuant to 375-1.11(d) and requires 60-days prior notice to the NYSDEC. A 60-Day Advance Notification Form and Instructions are found at http://www.dec.ny.gov/chemical/76250.html
5) Prior to a change in use that impacts the remedial requirements and/or responsibilities for implementing the SMP, the RP shall submit to the NYSDEC for approval an amended SMP.
6) Any change in use, change in ownership, change in Site classification (e.g., delisting), reduction or expansion of remediation, and other significant changes related to the Site may result in a change in responsibilities and, therefore, necessitate an update to the SMP and/or updated legal documents. The RP and/or Owner shall contact the NYSDEC to discuss the need to update such documents.

Change in RP ownership and/or control and/or Site ownership does not affect the RP's obligations with respect to the Site unless a legally binding document executed by the NYSDEC releases the RP of its obligations.

Future Site owners and their successors and assigns are required to carry out the activities set forth above.

Appendix C: Metes and Bounds



PROPERTY DESCRIPTION:

LOT 206

BEGINNING AT A POINT ON THE NORTHERLY LINE OF UNION AVENUE, FORMERLY KNOWN AS RAILROAD AVENUE, DISTANT 295.10 FEET WESTERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY LINE OF UNION AVENUE AND THE WESTERLY LINE OF LINDEN AVENUE, FORMERLY KUSCH AVENUE, AND RUNNING THENCE;

ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST (NAD83) SOUTH 82°30'20" WEST (DEED) A DISTANCE OF 45.00 FEET; THENCE NORTH 07°31'41" WEST (NAD83) NORTH 0°57'00" EAST (DEED) A DISTANCE OF 322.40 FEET (SURVEY) 322.38 FEET (DEED); THENCE NORTH 80°36'52" EAST (NAD83) NORTH 89°08'20" EAST (DEED) A DISTANCE OF 45.00 FEET; THENCE SOUTH 07°26'35" EAST (NAD83) SOUTH 1°01'40" WEST (DEED) A DISTANCE OF 317.19 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 14,306.7 SQ FT OR 0.328 ACRES

LOT 786

BEGINNING AT A POINT ON THE NORTHERLY LINE OF UNION AVENUE, FORMERLY KNOWN AS RAILROAD AVENUE, DISTANT 340.10 FEET WESTERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY LINE OF UNION AVENUE AND THE WESTERLY LINE OF LINDEN AVENUE, FORMERLY KUSCH AVENUE, AND RUNNING THENCE;

ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST (NAD83) SOUTH 82°41'00" WEST (DEED) A DISTANCE OF 11.63 FEET; THENCE NORTH 07°31'41" WEST (NAD83) NORTH 1°11'17" EAST (DEED) A DISTANCE OF 323.75 FEET (SURVEY) 323.76 FEET (DEED); THENCE NORTH 80°36'52" EAST (NAD83) NORTH 89°19'50" EAST (DEED) A DISTANCE OF 11.51 FEET; THENCE SOUTH 07°31'41" WEST (NAD83) SOUTH 1°11'17" WEST (DEED) A DISTANCE OF 322.40 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 3,716.6 SQ FT OR 0.085 ACRES

EASEMENT DESCRIPTION:

BEGINNING at a point on the northerly line of Union Avenue, formerly known as Railroad Avenue, distant 295.10 feet westerly from the corner formed by the intersection of the northerly line of Union Avenue and the westerly line of Linden Avenue, formerly Kusch Avenue and running thence;

Along the northerly line of Union Avenue, South 73°58'02" West, a distance of 45.00 feet; thence
Continuing along the northerly line of Union Avenue, South 73°58'02" West, a distance of 11.63 feet; thence
North 07°31'41" West, a distance of 323.75 feet; thence
North 80°36'52" East, a distance of 11.51 feet; thence
North 80°36'52" East, a distance of 45.00 feet; thence
South 07°26'35" East, a distance of 317.19 to the point and place of beginning.

CONTAINING 0.414 Acres.

NOTES, certification continued;

1. BOUNDARIES SHOWN ARE THE RESULT OF AN ACTUAL FIELD SURVEY BASED ON AVAILABLE MAPS, DEEDS OF RECORD AND PHYSICAL EVIDENCE, BUT ARE SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS AND AGREEMENTS OF RECORD THAT AN ACCURATE AND THOROUGH TITLE SEARCH MAY DISCLOSE.
2. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY SURVEYOR. ALL INFORMATION REGARDING RECORD EASEMENTS, ADJOINERS AND OTHER DOCUMENTS WHICH MIGHT AFFECT THE QUALITY OF TITLE TO LOT 206 AND LOT 786 SHOWN HEREON WAS GAINED FROM TITLE COMMITMENT NUMBER 142-N-2859-A AND B PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK, DATED OCT. 17, 1994.
3. HORIZONTAL DATUM BASED ON THE NEW YORK (LONG ISLAND ZONE 3104) STATE PLANE COORDINATE SYSTEM, NAD 83 US FT, VIA GLOBAL POSITIONING SYSTEMS (GPS). THE GEOGRAPHIC AND STATE PLANE COORDINATES CONTAINED HEREON WERE THE RESULT OF A SURVEY USING SINGLE FREQUENCY G.P.S. RECEIVERS AND HAVING A POSITIONAL TOLERANCE LESS THAN 7 CM AT THE 95% CONFIDENCE LEVEL. REFERENCE MONUMENTS WERE NYCI AND NYQN ON NOVEMBER 5TH, 2008..
4. VERTICAL DATUM BASED ON NGVD 29, ESTABLISHED VIA G.P.S. ON NOVEMBER 5TH, 2008 AND CONVERTED TO NGVD 29 HEIGHT USING VERTCON. TO CONVERT TO NAVD88 APPLY A CONVERSION FACTOR OF -1.12 FEET.
5. UNAUTHORIZED ALLTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
6. LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE AND ARE BASED ON OBVIOUS ABOVE GROUND PHYSICAL UTILITY APPURTENANCES AND ACCESSIBLE MANHOLES. THE EXACT LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES SHOULD BE VERIFIED BY DIGGING TEST HOLES PRIOR TO ANY DESIGN OR CONSTRUCTION. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.
7. UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.
8. CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS. SAID CERTIFICATION SHALL RUN ONLY TO THE PERSON/ENTITY FOR WHOM THE SURVEY IS PREPARED AND ON BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY AND LENDING INSTITUTION LISTED HEREON AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
9. COPIES OF THIS SURVEY MAP NOT MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S EMBOSSED SEAL SHALL NOT BE CONSIDERED TO BE A VALID TRUE COPY.

MONITORING WELL TABLE:

DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	RIM	CASE
MW 1-S	214505.9	1099030.1	40°45'16.92"	73°35'08.55"	105.28'	104.74'
MW 1-D	214509.7	1099026.0	40°45'16.96"	73°35'08.61"	105.39'	104.93'
MW 2-S	214399.7	1099001.8	40°45'15.87"	73°35'08.93"	104.31'	103.96'
MW 2-D	214404.5	1099001.2	40°45'15.92"	73°35'08.94"	104.33'	103.90'
MW 3	214404.9	1099043.5	40°45'15.92"	73°35'08.39"	104.64'	104.24'
MW 4	214425.1	1098997.5	40°45'16.12"	73°35'08.98"	104.69'	104.29'
MW-5	214368.2	1099004.6	40°45'15.56"	73°35'08.89"	104.33'	104.06'

LEGEND:

- STREET LIGHT
- UTILITY POLE
- STORM INLET
- MANHOLE
- 311.0 + SPOT SHOT
- WV WATER VALVE
- GV GAS VALVE
- MW MONITORING WELL
- CHAINLINK FENCE
- EASEMENT LINE

CERTIFIED TO:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

REFERENCES:

1. MAP ENTITLED "MAP OF PROPERTY AT WESTBURY, N.Y." PREPARED BY NELSON B. BALDWIN, LIC. LAND SURVEYORS, WESTBURY, N.Y. AND DATED FEB. 5, 1963 AND LAST REVISED JUNE 17, 1964.
2. MAP ENTITLED "MAP OF LOT LINE CHANGE, SITUATE WESTBURY, NASSAU COUNTY, N.Y." PREPARED BY ELS ASSOCIATES, ENGINNERING-LAND SURVEYING, AND DATED 12-17-94 AND 12-22-94.
3. LAND AND TAX MAP OF SECTION 10-BLOCK 228, SHEET 1 OF 1, LAST REVISED OCTOBER 19, 2005.
4. BASIS OF TITLE: DBK 9033, PG 118
   DBK 6543, PG 478.
5. MAP ENTITLED "FINAL SKETCH OF REMEDIAL EXCAVATION" PREPARED BY AMERICAN ENGINEERING & LAND SURVEYING, DATED NOV. 20, 2012.

I HEREBY CERTIFY THAT THIS SURVEY HAS BEEN PERFORMED IN THE FIELD UNDER MY SUPERVISION, AND TO THE BEST OF MY KNOWLEDGE, BELIEF, AND INFORMATION, THIS SURVEY HAS BEEN PERFORMED IN ACCORDANCE WITH CURRENTLY ACCEPTED ACCURACY STANDARDS.

NOT VALID UNTIL SEALED

JOSEPH HALLER
N.J. PROFESSIONAL LAND SURVEYOR
NY P.L.S. NO. 49336

REV. NO.	DESCRIPTION	DRAWN	DATE
REV. NO. 5	DESCRIPTION: REVISE DESCRIPTION/SHOW EASEMENT AREA	DRAWN: JD	DATE: 10/29/2014
REV. NO. 4	DESCRIPTION: ADD DEED BEARINGS	DRAWN: MR	DATE: 7/17/2014
REV. NO. 3	DESCRIPTION: ADD LEGAL DESCRIPTION	DRAWN: MR	DATE: 6/06/2014
REV. NO. 2	DESCRIPTION: ADD SB101-105	DRAWN: JD	DATE: 4/11/2011
REV. NO. 1	DESCRIPTION: ADD MW4 & 5 AND SB10-12	DRAWN: MR	DATE: 4/08/2010

FIELD DATE: 11/05/2008
FIELD CREW: M.R. P.A.P. J.D.
FIELD BK: E.F.B.
DRAWN: J.L.
CHECKED: M.R.
REV. NO. 5

LOCATION AND TOPOGRAPHIC SURVEY
OF
345 UNION AVENUE
SECTION 10-BLOCK 228-LOT 206 AND LOT 786
VILLAGE OF WESTBURY
TOWN OF NORTH HEMPSTEAD COUNTY OF NASSAU, N.Y.

PREPARED FOR
BROWN and CALDWELL

BERTIN ENGINEERING
66 GLEN AVENUE
GLEN ROCK, NJ 07452
P 201.670.6698
F 201.670.9788
www.bertinengineering.com

DATE:	SCALE:	FILE NO.	DWG NO.
11/07/2008	1"=20'	X262C	SV-1

Appendix D: Environmental Easement

NASSAU COUNTY CLERK'S OFFICE
ENDORSEMENT COVER PAGE

Recorded Date: 02-10-2015
Recorded Time: 4:02:27 p

Liber Book: D 13177
Pages From: 39
To: 48

Control Number: 2020
Ref #: RE 012667
Doc Type: D02 EASEMENT

Record and Return To:
ALITA J GIUDA ESQ
THE WEST FIRM PLLC
677 BROADWAY
8TH FLOOR
ALBANY, NY 12207-2996

Location:	Section	Block	Lot	Unit
N. HEMPSTEAD (2822)	0010	00228-00	00206	
N. HEMPSTEAD (2822)	0010	00228-00	00786	

Taxes Total	.00
Recording Totals	240.00
Total Payment	240.00

GJS001

THIS PAGE IS NOW PART OF THE INSTRUMENT AND SHOULD NOT BE REMOVED
MAUREEN O'CONNELL
COUNTY CLERK

20150210002020

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 3rd day of January, 2015, between Owner(s) The Bartlett Realty Company, Incorporated, having an office at 777 Summer Street, Stamford, County of Fairfield, State of Connecticut (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 345 Union Street in the Town of North Hempstead, County of Nassau and State of New York, known and designated on the tax map of the County Clerk of Nassau as tax map parcel numbers: Section 10 Block 228 Lots 786 and 206, being the same as that property conveyed to Grantor by deeds dated 4/22/77 and 3/31/95 and recorded in the Nassau County Clerk's Office in Liber and Page 9033/118 (as to Lot 206, recorded 5/4/77) and 10530/648 (as to Lot 786, recorded 4/10/95). The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.414 +/- acres, and is hereinafter more fully described in the Land Title Survey dated November 7, 2008 and most recently revised on October 29, 2014 prepared by Joseph Haller, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation

established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: W1-1091-06-08, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining

contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation

pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 130074
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and

communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

The Bartlett Realty Company, Incorporated:

By: _____

Print Name: Robert A. Bartlett, Jr.

Title: President Date: December 22, 2014

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Albany)

On the 22nd day of December, in the year 20 14, before me, the undersigned, personally appeared Robert A. Barker, Jr., personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public - State of New York

ALITA J. GIUDA
Notary Public, State of New York
No. 02GI6175753
Qualified in Rensselaer County
My Commission Expires Oct. 15, 2015

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 5th day of January, in the year 2015, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

BEGINNING AT A POINT ON THE NORTHERLY LINE OF UNION AVENUE, FORMERLY KNOWN AS RAILROAD AVENUE, DISTANT 295.10 FEET WESTERLY FROM THE CORNER FORMED BY THE INTERSECTION OF THE NORTHERLY LINE OF UNION AVENUE AND THE WESTERLY LINE OF LINDEN AVENUE, FORMERLY KUSCH AVENUE AND RUNNING THENCE;

ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST A DISTANCE OF 45.00 FEET; THENCE
ALONG THE NORTHERLY LINE OF UNION AVENUE, SOUTH 73°58'02" WEST A DISTANCE OF 11.63 FEET; THENCE
NORTH 07°31'41" WEST, A DISTANCE OF 323.75 FEET; THENCE
NORTH 80°36'52" EAST, A DISTANCE OF 11.51 FEET; THENCE
NORTH 80°36'52" EAST, A DISTANCE OF 45.00 FEET; THENCE
SOUTH 07°26'35" EAST, A DISTANCE OF 317.19 FEET TO THE POINT AND PLACE OF BEGINNING.

CONTAINING 0.414 ACRES

Record and Return to:
Alita J. Giuda, Esq.
The West Firm, PLLC
677 Broadway, 8th Floor
Albany, New York 12207-2996

Appendix E: Health and Safety Plan and Community Air Monitoring Plan

Health and Safety Plan for Remedial Investigation/Feasibility Study and Interim Remedial Measures Implementation

Bartlett Tree Company Site
345 Union Avenue, Westbury
Nassau County, New York

April 2012
Revision 03

BC Project Number: 139990

Prepared by:

Brown and Caldwell Associates
110 Commerce Drive
Allendale, New Jersey 07401

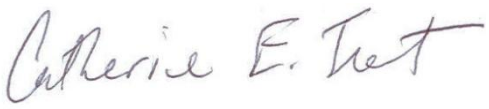
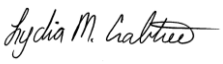
Prepared for:

F.A. Bartlett Tree Expert Company
13768 Hamilton Road
Charlotte, North Carolina 28278

Brown and Caldwell Associates
110 Commerce Drive
Allendale, New Jersey 07401

Approval Page
for
Health and Safety Plan for Remedial Investigation/Feasibility Study and Interim Remedial Measures Implementation
at
Bartlett Tree Company Site
(Revision 3)

This Health and Safety Plan (HASP) has been prepared and reviewed by the following Brown and Caldwell (BC) personnel for use at: Bartlett Tree Company Site (BC Project Number: 139990).

	Name	Signature	Title	Date
Prepared By:	Catherine E. Trent		HS Special-ist/ Sr. Engineer	4/24/12
Reviewed By:	Jack Rodak		Site Safety Officer	4/24/12
Reviewed By:	Frank Williams		Project Manager	4/24/12
Reviewed By:	Lydia Crabt-ree, CSP		Regional Safety Unit Manager	4/24/12
Effective Dates:	April 2012	through	March 2013	

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CRITICAL PROJECT INFORMATION

Primary Known Compounds of Concern:

- Benzene
- Ethyl Benzene
- Xylene
- Naphthalene
- 2-methylnaphthalene
- Polycyclic Aromatic Hydrocarbons (PAHs)
- Tetrachloroethene (PCE)
- Trichloroethene (TCE)
- 1,2-dichloroethene (DCE)
- Pesticides/Herbicides (Lindane and other isomers of BHC, Chlordane, 2,4-DB, Dieldrin, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, Endosulfan II, Endrin Aldehyde, Ethion, Heptachlor Epoxide, MCPP [1-(3-Chlorophenyl)piperazine], Methoxychlor, 2,4,5-T)
- Arsenic
- Beryllium
- Chromium
- Copper
- Iron
- Mercury
- Vanadium
- Zinc

Minimum Level of Personal Protective Equipment: ☒ Level D ☐ Level C

Personal Protective Equipment:

Standard PPE for Level D consists of:

- Work shirt and long pants;
- ANSI- or ASTM-approved steel-toed boots or safety shoes,
- ANSI-approved safety glasses;
- ANSI-approved hard hat (where required on-site or when overhead hazards are present);
- Outer nitrile gloves (11 mil or thicker) and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event);
- Sturdy work gloves (when needed); and
- High-visibility traffic safety vest.

Additional PPE that may be required is as follows:

- Safety goggles with side shields
- Plastic face shield or splash-proof goggles for use during heavy equipment decontamination
- Overboots

- Tyvek Coveralls, as necessary
- Ear plugs on an as needed basis
- Full face air purifying respirators with organic vapor/HEPA filter cartridges if upgrade to Level C is required.

SEE SECTION 10 FOR SITE EMERGENCY CONTINGENCY PROCEDURES

Do not endanger your own life. Survey the situation before taking any action.

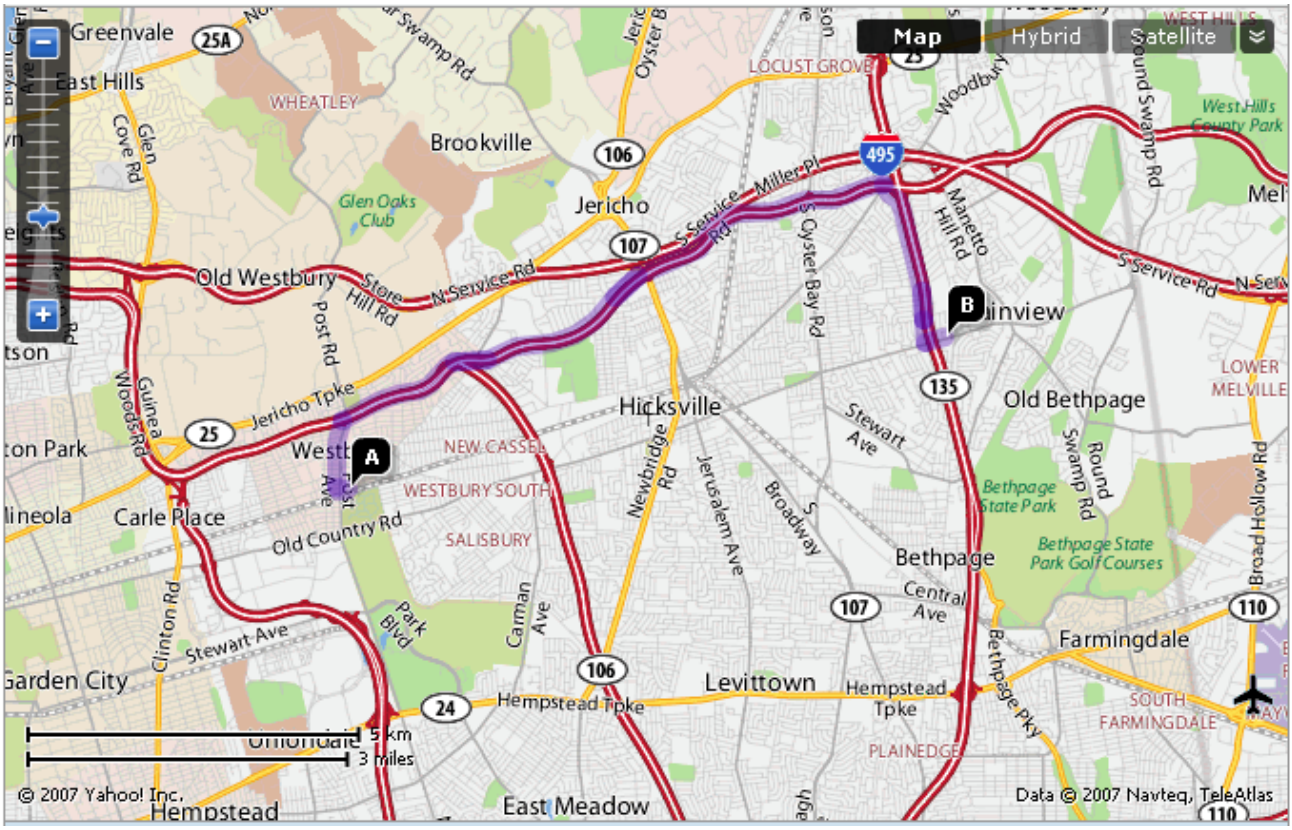
BC Office: Albany Office **234 Hudson Avenue** **Albany, NY 12210**	**518-472-1988**
Site Location Address	**345 Union Avenue** **Westbury, New York**

EMERGENCY PHONE NUMBERS: In the event of emergency, contact the Project Manager and/or Regional Safety Unit Manager.

Emergency Services (Ambulance, Fire, Police)	911
Poison Control	(800) 876-4766 or (800) 222-1222
National Response Center	(800) 424-8802
NYSDEC Spill Hotline	(800) 457-7362
Dig Safely New York	(800) 962-7962
Hospital Name	North Shore University Hospital of Plainview 888 Old Country Road Plainview, NY 11803
Hospital Phone Number	516-719-3000
BC Project Manager (PM): Frank Williams	Office: 518-472-1988 Cell: 518-339-7454
BC Project Engineer: Keith Bogatch	Office: 201-574-4765 Cell: 201-739-2320
BC Site Safety Officer (SSO): Jack Rodak	Office: 201-574-4704 Cell: 201-390-2565
BC Regional Safety Unit Manager (RSUM): Lydia Crabtree	Office: 615-250-1236 Cell: 615-202-1311
Corporate Risk Management	Property Loss Blythe Buetzow: (925) 210-2470 Injury Angela Hale: (925) 210-2218
Client Contact: David Marren, Esq. FA Bartlett Tree Expert Company 13768 Hamilton Road Charlotte, NC 28278	Office: 704-588-1150
Subcontractors:	

David Maher Boart Longyear 71 Concord St. North Reading, MA 01864	Office: 781-933-3210
OpTech Environmental Services, Inc. 1 Adler Drive East Syracuse, NY 13057	Office: 315-437-2065
OTHER CONTACT(s)	No Other Contacts Identified at this time.

HOSPITAL LOCATION MAP



HOSPITAL DIRECTIONS:	HOSPITAL INFORMATION:
1. Start at 345 UNION AVE, WESTBURY - go 0.1 mi 2. Bear right on POST AVE - go 0.7 mi 3. Bear right to take ramp onto NORTHERN PKY E towards NORTHERN PARKWAY EAST – go 5.8 mi 4. Take exit #36A/SEAFORD onto RT-135 S – go 1.4 mi 5. Take exit #10/PLAINVIEW/HICKSVILLE/OLD COUNTRY RD – go 0.2 mi 6. Turn left on OLD COUNTRY RD – go 0.2 mi 7. Arrive at 888 OLD COUNTRY RD, PLAINVIEW	**North Shore University Hospital of Plainview** **888 Old Country Road** **Plainview, NY 11803** **Phone: 516-719-3000**

EMERGENCY FIRST AID PROCEDURES

THE RESPONDER SHOULD HAVE APPROPRIATE TRAINING TO ADMINISTER FIRST AID OR CPR

1. Survey the situation. Do not endanger your own life. DO NOT ENTER A CONFINED SPACE TO RESCUE SOMEONE WHO HAS BEEN OVERCOME. FOLLOW PROTOCOLS INCLUDING THAT A STANDBY PERSON IS PRESENT. IF APPLICABLE, REVIEW MSDSs TO EVALUATE RESPONSE ACTIONS FOR CHEMICAL EXPOSURES.
2. Call 911 (if available) or the fire department **IMMEDIATELY**. Explain the physical injury, chemical exposure, fire, or release.
3. Decontaminate the victim if it can be done without delaying life-saving procedures or causing further injury to the victim.
4. If the victim's condition appears to be non-critical, but seems to be more severe than minor cuts, he/she should be transported to the nearest hospital by the SSO or designated personnel: let the doctor assume the responsibility for determining the severity and extent of the injury. If the condition is obviously serious, contact emergency medical services (EMS) for transport or appropriate actions.

Notify the PM and Regional Safety Unit Manager immediately and complete the appropriate incident investigation reports as soon as possible.

STOP BLEEDING AND CPR GUIDELINES	
To Stop Bleeding	**CPR**
1. Give medical statement by indicating you are trained in First Aid. 2. Assure: airway, breathing and circulation. 3. Use **DIRECT PRESSURE** over the wound with clean dressing or your hand (use non-permeable gloves). Direct pressure will control most bleeding. 4. Bleeding from an artery or several injury sites may require **DIRECT PRESSURE** on a **PRESSURE POINT**. Use pressure points for 30 -60 seconds to help control severe bleeding. 5. Continue primary care and seek medical aid as needed.	1. Give medical statement by indicating you are trained in CPR. 2. Arousal: Check for consciousness. 3. Call out for help, either call 911 yourself or instruct someone else to do so. It is very important to call for emergency assistance prior to initiating CPR. 4. Open airway with chin-lift. 5. Look, listen and feel for breathing. 6. If breathing is absent, give 2 slow, full rescue breaths, 1 second per breath. 7. If breathing remains absent, initiate CPR; 30 compressions for each two breaths. Repeat for 5 cycles before re-analyzing patient or until help arrives. 8. If an automated external defibrillator (AED) is available, use it in accordance with the AED instructions.

REVISION HISTORY

Revision No.	Revision Date	Reason	Editor
0	July 2007	HASP Creation for project 132354.002	C.Trent/ L.Crabtree
1	June 2009	Edited HASP for continuing project activities; Project 135711	N.Lordon/ Lydia Crabtree
2	December 2010	Edited HASP for continuing project activities – Add IRM activities	C.Trent/ L.Crabtree
3	April 2012	Updated HASP for use in IRM WP	C.Trent/ L.Crabtree
4			
5			
6			

Section 1

Introduction

Brown and Caldwell (BC) has prepared this Health and Safety Plan (HASP) for use during the during the Remedial Investigation and Feasibility Study and drywell closure activities to be conducted at the Bartlett Tree Company Site located at 345 Union Avenue, Westbury, Nassau County, New York ("the Site"). Activities conducted under BC's direction at the Site will be in compliance with applicable Occupational Safety and Health Administration (OSHA) regulations, particularly those in Title 29 of the Code of Federal Regulations, Part 1910.120 (29 CFR 1910.120), and other applicable federal, state, and local laws, regulations, and statutes. A copy of this HASP will be kept on site during scheduled field activities.

This HASP addresses the identified hazards associated with planned field activities at the Site. It presents the minimum health and safety requirements for establishing and maintaining a safe working environment during the course of work. In the event of conflicting requirements, the procedures or practices that provide the highest degree of personnel protection will be implemented. If scheduled activities change or if site conditions encountered during the course of the work are found to differ substantially from those anticipated, the Regional Safety Unit Manager and Project Manager will be informed immediately upon discovery, and appropriate changes will be made to this HASP.

BC's health and safety programs and procedures, including medical monitoring, respiratory protection, injury and illness prevention, hazard communication, and personal protective equipment (PPE), are documented in the BC Health & Safety Manual. The Health & Safety Manual is readily accessible to BC employees via the BC Pipeline. These health and safety procedures are incorporated herein by reference, and BC employees will adhere to the procedures specified in the manual.

BC's HASP has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC's own employees at the site. A copy of BC's HASP may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's HASP does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's HASP to identify all hazards that may be present at the Site.

Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer's specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested, subcontractors will provide BC with a copy of their own HASP for this project or other health and safety program documents for review.

1.1 Site History

Since the 1950s the site has been used by Bartlett as a base for tree maintenance services, including applications of pesticides and herbicides. In the 1960s and 1970s, excess (unused) pesticide spray solutions were typically re-tanked for applications on the following day. Since the early 1980s, pesticide and herbicide spray solutions have been prepared in truck-mounted tanks in quantities only as large as needed for immediate, individual applications. Thus, no unused spray solution is left over to be disposed. Empty, plastic pesticide containers are triple rinsed, bagged and stored on site pending recycling as plastic. Rinse water is placed in spray tanks for mixing with new spray solutions.

In April 1990, an anonymous caller to the DEC alleged that pesticides and herbicides, including malathion, DDT, Sevin, chlordane and lead spray for fruit trees were placed into the former cistern or dry well until sometime prior to 1983. In 1987, representatives of Bartlett investigated the dry well and found two empty, crushed containers of Sevin.

1.2 Site Description

The site is located on Long Island, at 345 Union Avenue in Westbury, Nassau County, New York. The site is located in an urban, mixed-use neighborhood of commercial and industrial facilities and residences. The site consists of a narrow parcel of land measuring approximately 340 feet in length by 60 feet wide, totaling approximately 0.4 acres. It is bordered on the north by a municipal parking lot; on the east by a lumber warehouse and automotive paint and chrome shop; on the south by Union Avenue, followed by a railroad, parking lot and cemetery; and on the west by a taxi fleet maintenance facility and construction contractor's storage yard.

A preliminary site assessment was performed in 1996-1998 by a contractor to the DEC to determine if a potential source of soil and/or groundwater contamination existed at the site (Dvirka and Bartilucci, 1998). Continuous soil samples from the unsaturated zone directly beneath the dry well (8'-37' bgs) were collected by direct-push (GeoProbe®) methods. Groundwater samples were collected with a GeoProbe® groundwater sampling probe at five (5) locations (one upgradient, one in the location of the dry well, and three downgradient). At each location groundwater was sampled at 37' bgs (water table) and 62' bgs. An existing monitoring well on adjacent property at 333 Union Avenue was also tested.

All samples were analyzed for the Target Compound List (TCL) pesticides, organochlorine pesticides (USEPA SW846 Method 8141) and herbicides (USEPA SW846 Method 8150). A subset of samples were also analyzed for the full list of TCL parameters, including volatile and semi-volatile organic compounds, polychlorinated biphenyl compounds (PCBs), cyanide and inorganic constituents.

Beginning in May 2008, BC conducted RI field activities in accordance with the NYSCDEC-approved work plan referenced above. The work included collection and analysis of soil samples from soil borings and test pits, and collection of groundwater samples from shallow and deep monitoring wells. The RI samples were submitted for analysis of the following parameters:

- TCL VOCs by USEPA SW 846 Method 8260;
- TCL SVOCs by USEPA SW 846 Method 8270C;
- TCL Pesticides by USEPA SW 846 Method 8081A;
- Organophosphorous Pesticides by USEPA SW 846 Method 8141A;
- Chlorinated Herbicides by USEPA SW 846 Method 8151A;
- TAL Metals - USEPA SW 846 Method 6010B/7471A; and
- PCBs by USEPA SW-846 Method 8082.

As part of the RI activities, BC personnel removed a cast-iron manhole cover located to the north and west of the exterior stairway of the Office Building. Visual inspection of the interior of the manhole indicated that it was filled with liquids/suspended solids associated with sanitary sewage. A light

non-aqueous phase liquid (LNAPL) with a petroleum-like odor was noted on the surface of the liquids/suspended solids. The origin of the LNAPL is unknown. BC collected a sample of the LNAPL for laboratory analysis. BC also utilized a GeoProbe®-type direct-push rig to obtain a sample of the solid material at the base of the drywell.

An apparent pit is located in the ground floor of the office building. The pit is filled with coarse aggregate and covered with wooden planks. The former use of the pit is unknown but it is suspected to be a former mechanic's pit that was used for servicing Bartlett's trucks. No records regarding the pit's construction or filling have been identified. It is not known whether this pit could have a drain that connects to Drywell 3.

The following is a summary of the organic and inorganic constituents identified in soil, groundwater and the drywell during the Preliminary Site Assessment (PSA) and the ongoing RI.

Soil Quality

During the PSA, pesticides were detected in soil samples in excess of TAGM 4046 recommended soil cleanup objectives in effect at the time for unrestricted use (RSCOs) throughout the entire soil column beneath the dry well. The herbicides 2, 4, 5-TP (Silvex) and Dicamba were detected; Silvex did not exceed its RSCO. No RSCO was established for Dicamba. VOCs (primarily benzene, ethylbenzene and xylene) and SVOCs (naphthalene, 2-methylnapthelene and various PAHs) were also found in levels exceeding RSCOs. Some of these non-chlorinated compounds may be constituents of the petroleum distillates used as pesticide carriers. Inorganic constituents found in excess of RSCOs included arsenic, beryllium, copper, iron and zinc. No site-specific information regarding background levels of these inorganic constituents has been identified. No PCBs or cyanide were detected.

Soil samples collected and analyzed as part of the ongoing RI generally contained similar constituents. The following additional organic and inorganic constituents were identified in soil during the RI: 2,4-DB; Endosulfan I/II; Endrin Aldehyde; Ethion; MCPP [1-(3-Chlorophenyl)piperazine]; 2,4,5-T; Chromium, Mercury and Vanadium.

Groundwater Quality

Groundwater samples collected from directly beneath the dry well contained elevated levels of pesticides. The turbidity of the groundwater samples was generally very high, usually in excess of 999 NTUs, indicating that the samples contained high levels of suspended silt and clay. Most organic pesticides are relatively insoluble in water and have a high affinity for silt and clay particles. Therefore, the groundwater analytical results for pesticides may reflect elevated levels of adsorbed phase constituents as opposed to dissolved concentrations.

No pesticides were detected in the downgradient samples. Two pesticides were detected in one upgradient sample. The VOCs ethylbenzene and total xylenes were detected above standards in groundwater samples collected directly beneath the dry well.

The chlorinated solvents tetrachloroethene (PCE), trichloroethene (TCE), and cis & trans 1,2-dichloroethene (DCE) were detected in groundwater. TCE and DCE can be produced in certain environments through biodegradation of PCE. TCE and DCE were found in the deeper groundwater samples (62') from both upgradient and downgradient locations, but not in the sample from directly beneath the dry well. The Dvirka and Bartilucci Preliminary Site Assessment report concluded that this finding suggests two off-site sources (plumes) for TCE and DCE. PCE was detected in the shallower upgradient sample at 180 µg/L and in the deeper upgradient sample at 6 µg/L. Low levels of PCE were also detected in the samples from directly beneath the dry well, but not in the downgradient samples. Dvirka and Bartilucci concluded that this finding suggests an off-site source for PCE also. No significant levels of SVOCs or inorganics were detected. No PCBs or cyanide were detected.

Groundwater samples collected and analyzed as part of the ongoing RI generally contained similar constituents. The following additional organic and inorganic constituents were identified in groundwater during the RI: Endosulfan I/II; Heptachlor Epoxide; MCPP [1-(3-Chlorophenyl)piperazine]; 2,4,5-T; Chromium and Vanadium.

Drywell Contents

BC submitted sediment and LNAPL samples for analysis. The LNAPL sample was also submitted for qualitative gas chromatographic (GC) fingerprinting to assess its similarity to known petroleum product types. The data indicate the presence of a number of organic compounds in the LNAPL and/or sediment samples, including VOCs (e.g., toluene, ethyl benzene, xylenes, etc.), SVOCs (e.g., naphthalene, fluorene, anthracene), pesticides (DDT, DDE, DDD, chlordane, BHC), and herbicides (e.g. MCPP [1-(3-Chlorophenyl)piperazine]; 2,4,5-T; 2,4-DB). The fingerprint analysis of the LNAPL sample indicated it most closely resembled diesel/No. 2 fuel oil.

1.3 Scope of Work

The field activities for which this HASP applies to are described in further detail in the following NYSDEC-approved documents:

- "Remedial Investigation/Feasibility Study Work Plan, Bartlett Tree Company Site", (Brown and Caldwell, July 2007)
- "Closure of Drywell 3 Work Plan, Bartlett Tree Company Site, Westbury, New York, NYSDEC Site Registry No. 130074", (Brown and Caldwell Associates, February 2009)
- "Interim Remedial Measure Work Plan – Drywell 1, Bartlett Tree Company Site, NYSDEC Site Registry No. 1-30-074", (Brown and Caldwell Associates, January 2011)

Field activities associated with the Remedial Investigation/Feasibility Study are as follows:

- Soil borings: Soil borings will be advanced using hollow-stem augers through and adjacent to former dry wells. Split spoon samples will be collected continuously and logged. Representative soil samples will be collected for laboratory analysis. Drilling-related services will be provided by a subcontractor.
- Monitoring well installation and development: Approximately five (5) two-inch diameter PVC monitoring wells (3 shallow, 2 deep) will be installed in the overburden to depths up to approximately 60 feet for the shallow wells and approximately 120 feet for the deeper wells. The shallow wells will be installed using a hollow-stem auger drilling rig, whereas the deep wells will be installed using Rotosonic® drilling techniques. Following installation the wells will be developed by pumping and/or bailing water from them. One or more contingency monitoring wells will be installed if hydrogeologic and chemical-analytical data indicate that the initial monitoring wells do not adequately intercept groundwater flow paths from identified source areas. Drilling-related services will be provided by a subcontractor.
- Slug testing: Slug tests will be conducted on each monitoring well installed during the investigation. Water (approximately one bailer volume) will be removed from the monitoring well. Water levels will then be measured frequently following the water removal until the water level has stabilized.
- Groundwater Monitoring: A site-wide round of groundwater sampling will be conducted after development and slug testing of the monitoring wells. Sampling will be conducted after at least one week has passed since slug testing to allow for establishment of equilibrium conditions within the monitoring wells.
- Groundwater Level Monitoring: Monthly depth to water measurements will be conducted on the monitoring wells for a period of six (6) months.

- Survey: Each of the new borings and monitoring wells will be surveyed. The survey will include location coordinates, ground surface elevation and, in the case of the monitoring wells, top of casing elevation data. A boundary line survey of the parcel(s) owned by Bartlett Tree Experts will also be performed. The survey will be performed by a New York State licensed surveyor subcontracted to BC.
- Investigation-derived waste management: Waste generated during the remedial investigation will include soil cuttings, well development water, equipment decontamination water, disposable sampling equipment, and personal protective equipment (PPE). The waste will be temporarily containerized in polyethylene tanks or NYSDOT-approved, 55 gallon drums pending waste characterization and appropriate off-site disposal in a permitted facility. All containers will be properly labeled to identify their contents.

BC, through its affiliates Brown and Caldwell Constructors and Brown and Caldwell Associates will provide construction and field engineering services as follows:

- Inspection of Mechanic's Pit: The inspection of the mechanic's pit will be performed, in general, as follows. The boards covering the pit will be removed and the fill materials (apparently gravel) will be removed from the pit by means of a vacuum (vac) truck, small excavator, or by hand shovel. The pit will not be entered unless it is apparent that it was constructed as a mechanic's pit and thus intended for occupancy, and is deemed by the project engineer to be structurally sound. Prior to entering the pit, the atmosphere in the pit will be monitored in accordance with Section 5 to verify that conditions are within acceptable limits in accordance with the site-specific Health and Safety Plan (HASP). If the pit is found to be unsuitable for entry, its contents will be inspected and sampled as practicable from the surface. Following inspection and sampling of the pit, it will be temporarily covered with a road plate pending receipt and evaluation of analytical results for the above noted samples.
- Inspection of Stairwell Drain: A floor drain is located at the base of the exterior stairway located on the north side of the Office Building (adjacent to Drywell 3). Historical architectural plans indicate this floor drain may be connected to the drywell. A sample of sediment from inside the stairway floor drain will be collected after removing the steel grate over the floor drain. Water (dyed or undyed) will be introduced into the stairway floor drain while the interior of Drywell 3 is observed for evidence of drainage.
- Closure of Drywell 3: The contents of the drywell will be removed to the extent practicable using a vacuum (vac) truck. Initially, the asphalt paving around the manhole and over the drywell will be saw cut and removed along with the subsurface materials to expose the cover of the drywell structure. The access manhole will be removed and either a larger opening cut in the cover of the drywell structure or the entire cover removed to facilitate removal of the materials, inspection of the drywell interior, and other closure activities. After the lid of the drywell structure is accessed and either breached or removed, the approximately fifteen feet of liquids/suspended solids will be removed from the drywell/cesspool via vacuum truck. After this removal, the sediments/soils underlying the liquids/suspended solids will be removed. After the contents of the drywell have been removed, the interior will be inspected. The inspection will be conducted from the ground surface; the drywell will not be entered as it is considered to be a confined space. BC will collect a representative endpoint sample from the remaining sediments/native soil located at the base of the removal effort. The drywell will be backfilled with clean fill.

During the IRM, BC will provide Quality Assurance services. Field activities associated with the implementation of the Interim Remedial Measures (IRM) are as follows:

- Soil borings: Soil borings will be advanced using hollow-stem augers through and adjacent to former dry wells. Split spoon samples will be collected continuously and logged. Representative

soil samples will be collected for laboratory analysis. Drilling-related services will be provided by a subcontractor.

- Site preparation activities will include mobilization of equipment, preparation of equipment and materials, surveying, installation of erosion and sediment controls, and installation of a decontamination area. The work area will be cleared of surface debris and marked out to discourage unauthorized access, using jersey barriers, temporary fencing, safety cones and caution tape.
- Excavation. The final excavation strategy will be based on the pre-characterization analysis results. The current strategy will be to provide a 20 foot x 20 foot square sheet pile wall. Based on the results of the geotechnical investigation the actual design will be finalized. The conceptual design is to provide an internally braced cell that is constructed utilizing forty five (45) foot long sheets. The sheet pile wall will be braced as the excavation is advanced. The internal bracing would consist of walers installed along the inside perimeter of the sheet piles. The results of the pre-characterization sampling will also determine if an internal cell is constructed within the larger 20' x 20' cell. This would be a focused excavation to remove the most highly contaminated soils directly below the drywell structure. This would be a self supporting structure that would be advanced with the excavation to avoid having to design for additional soil pressures. This internal cell may be as small as 10' x 10' square. The design of this cell will be determined based the geotechnical evaluation and on the actual soil contamination identified during the confirmatory/delineation sampling and the geotechnical evaluation. This strategy may allow for segregation of soils for disposal as hazardous and non-hazardous waste categories. Due to the depth of the excavation (approximately 30 feet) a long reach excavator will be used to remove the soil from the cell(s). The excavator will be sized to allow for the removal of the soil to the required depth, while also allowing the bucket of the excavator to fit within the constructed steel cells. The soil will be excavated and direct loaded into off-site transport vehicles based on the pre-characterization results. The trucks will be staged on the loading/decontamination pad. Trucks will be lined with polyethylene liners prior to loading. The ground surface from the excavation to the transport vehicles will be lined with polyethylene sheeting to contain spillage during truck loading. The polyethylene will be cleaned between trucks so that soil is not tracked from the excavation area or out of the site. Trucks will be inspected prior to leaving the site to insure that no soil has been spilled on the sides or wheels of the trucks. If soils are found, the soil will be swept off the trucks with a broom. If required, trucks will be decontaminated using a pressure washer on the tracking/decontamination pad. Water used for decontamination, as well as any sediments washed off of the trucks, will be collected and removed for offsite disposal at the pre-designated disposal facilities.
- Backfill. Once the excavation is complete, the excavation will be backfilled with certified clean backfill soil. Backfill will be placed into the excavation and spread with the long reach excavator. Soils will be compacted using a remote controlled vibratory tamper. The steel sheet piles will be extracted using an ABI Mobilram or similar equipment. During removal the steel sheeting will be dry cleaned with a shovel or by knocking loose soil of the steel as it is removed. The backfill and the sandy soil encountered at the site will act as an abrasive surface and the sheets should be removed relatively free of any residual soil.
- The excavation will take place in a paved area. Prior to the installation of the sheet pile wall, the pavement will be saw-cut and removed. No other significant disturbances are anticipated. Following the completion of the IRM activities, areas subject to remediation will be restored, to the extent practicable, to pre-remediation conditions with respect to topography and drainage. Asphalt pavement will be installed in place of the disturbed pavement. Disturbance of vegetated

areas is not anticipated; however, should limited impact occur, previously vegetated areas will be seeded.

- Equipment that comes in contact with the excavated material (e.g., excavator arm and bucket, hand tools, etc) will be cleaned with high pressure water spray or steam cleaned within the decontamination pad prior to leaving the work area. Heavy equipment and materials, such as those used to mark out the construction area, will be removed from the Site once the backfilling and restoration activities have been completed. The decontamination pad will be removed following the completion of all activities requiring decontamination.

Section 2

Key BC Project Personnel and Responsibilities

Frank Williams is the BC Project Manager (PM). Lydia Crabtree, CSP, is the BC Regional Safety Unit Manager (RSUM). Jack Rodak has been designated as the BC Site Safety Officer (SSO) for this project. An onsite SSO will be designated from the field staff implementing the field activities. The BC project field staff have completed 40 hours of comprehensive health and safety training, which meets the requirements of 29 CFR 1910.120.

The responsibilities of key BC project personnel are presented below.

2.1 BC Project Manager

The PM is responsible for evaluating hazards anticipated at the Site and working with designated field staff and the RSUM to prepare this HASP to address the identified hazards. The PM is also responsible for the following.

- Informing project participants of safety and health hazards identified at the Site.
- Providing a copy of and requiring that each BC project team member, including subcontractors, reads or is briefed on the HASP.
- Checking that the BC project team is adequately trained and perform safety briefings in accordance with this HASP.
- Providing the resources necessary for maintaining a safe and healthy work environment for BC personnel.
- Communicating project safety concerns to the RSUM for determining corrective actions.

2.2 BC Site Safety Officer

The SSO has on-Site responsibility for verifying that BC team members, including subcontractors, comply with the provisions of this HASP. The SSO has the authority to monitor and correct health and safety issues as noted on-Site. The SSO is responsible for the following.

- Reporting unforeseen or unsafe conditions or work practices at the Site to the PM or RSUM.
- Stopping operations that threaten the health and safety of BC field team or members of the surrounding community.
- Monitoring the safety performance of Site personnel to evaluate the effectiveness of health and safety procedures.
- Performing air monitoring, as necessary, as prescribed in this HASP.
- Documenting field team compliance with this HASP by completing the appropriate BC forms contained in the Appendices of this document.
- Conducting daily tailgate safety meetings and assuring that project personnel understand the requirements of this HASP (as documented by each BC field team member's signature on the Signature Page).

- Limiting access to BC work areas on the Site to BC field team members and authorized personnel.
- Enforcing the "buddy system" or minimum 2-person teams as appropriate for Site activities.
- Performing periodic inspections to evaluate safety practices at the Site.
- Identifying the location and route to nearby medical facility and emergency contact information and coordinating appropriate responses in the event of emergency.

2.3 BC Regional Unit Safety Manager

The RSUM is responsible for final review and modification of this HASP. Modifications to this HASP that result in less protective measures than those specified may not be employed by the PM or SSO without the approval of the RSUM. In addition, the RSUM has the following responsibilities.

- Developing and coordinating the overall BC health and safety program.
- Advising the PM and SSO on matters relating to health and safety on this project.
- Recommending appropriate safeguards and procedures.
- Modifying this HASP, if necessary, and approving changes in health and safety procedures at the Site.

2.4 BC Team Members

BC employees and subcontractors are responsible for familiarizing themselves with health and safety aspects of the project and for conducting their activities in a safe manner. This includes attending site briefings, communicating health and safety observations and concerns to the SSO, maintaining current medical and training status and maintaining and using proper tools, equipment and PPE. Proper work practices are part of ensuring a safe and healthful working environment. Safe work practices are essential and it is the responsibility of BC employees and team members to follow safe work practices when conducting scheduled activities. Safe work practices to be employed during the entire duration of fieldwork include, but are not limited to, the following.

- Following the provisions of this HASP, company health and safety procedures and regulatory requirements.
- Reviewing safety-related information from other parties (i.e., client or contractors) as it relates to BC's activities.
- Inspecting personal protective equipment (PPE) before on-site use, using only intact protective clothing and related gear, and changing suits, gloves, etc. if they are damaged or beyond their useful service life.
- Set up, assemble, and check out all equipment and tools for integrity and proper function before starting work activities.
- Assisting in and evaluating the effectiveness of Site procedures (including decontamination) for personnel, protective equipment, sampling equipment and containers, and heavy equipment and vehicles.
- Practice the "buddy system" as appropriate for site activities.
- Do not use faulty or suspect equipment.
- Do not use hands to wipe sweat away from face. Use a clean towel or paper towels.
- Practice contamination avoidance whenever possible.
- Do not smoke, eat, drink, or apply cosmetics while in chemically-affected areas of the site or before proper decontamination.

- Wash hands, face and arms before taking rest and lunch breaks and before leaving the site at the end of the workday.
- Check in and out with the SSO upon arrival and departure from the site.
- Perform decontamination procedures as specified in this HASP.
- Notify the SSO immediately if there is an incident that causes an injury, illness or property loss. Incidents that could have resulted in injury, illness or property loss (close call) will also be reported to the SSO.
- Do not approach or enter an area where a hazardous environment (i.e., oxygen deficiency, toxic or explosive) may exist without employing necessary engineering controls, proper PPE and appropriate support personnel.
- Use respirators correctly and as required for the Site; check the fit of the respirator with a negative or positive pressure test; do not wear respirator with facial hair or other conditions that prevent a face-to-face piece seal.
- Confined spaces will not be entered without appropriate evaluation, equipment, training and support personnel.

2.5 BC Subcontractors

Subcontractor personnel are expected to comply fully with subcontractor's HASP and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC HASP. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.

Section 3

Hazard Analysis

Hazards at the Site may include physical hazards, chemical hazards or biological hazards. Each type of identified hazard is addressed in the following sections. Hazards that are the specialty of a subcontractor (i.e., operation of a drill rig or excavator) are not addressed in this HASP. Subcontractors are responsible for identifying potential hazards associated with their activities and implementing proper controls.

3.1 Chemical Hazards

Exposure pathways of concern for chemical compounds that may be present at the Site are inhalation of airborne contaminants, direct skin contact with contaminated materials, and incidental ingestion of affected media. Wearing protective equipment and following decontamination procedures listed in Section 7 can minimize dermal contact and incidental ingestion. To minimize inhalation hazards, dust or vapor control measures will be implemented, where necessary, and action levels will be observed during scheduled activities. Site-specific action levels and air monitoring requirements are presented in Section 5.

Site Specific Chemical Concerns			
Known or Suspected Compounds	Source (soil/water/sludge, etc.)	Known Concentration Range Specify (ppm, mg/kg, mg/l)	
		Lowest	Highest
Benzene	Soil	ND	86 µg/Kg
	Groundwater	ND	ND
Ethylbenzene	Soil	ND	49000 µg/Kg
	Groundwater	ND	7 µg/L
Toluene	Soil	ND	3700 µg/Kg
	Groundwater	ND	ND
Xylenes, Total	Soil	ND	444000 µg/Kg
	Groundwater	ND	37 µg/L
Naphthalene	Soil	ND	81000 µg/Kg
	Groundwater	ND	3 µg/L
2-methlynaphthalene	Soil	ND	290000 µg/Kg
	Groundwater	ND	5 µg/L
Polycyclic Aromatic Hydrocarbons (PAHs)	Soil	ND	82483 µg/Kg
	Groundwater	ND	3 µg/L
Tetrachloroethene (PCE)	Soil	ND	840 µg/Kg
	Groundwater	ND	160 µg/L
Trichloroethene (TCE)	Soil	ND	ND
	Groundwater	ND	170 µg/L
1,2-dichloroethene (DCE)	Soil	ND	ND

Site Specific Chemical Concerns			
Known or Suspected Compounds	Source (soil/water/sludge, etc.)	Known Concentration Range Specify (ppm, mg/kg, mg/l)	
		Lowest	Highest
	Groundwater	ND	140 µg/L
Pesticides, Total	Soil	ND	11680000 µg/Kg
	Groundwater	ND	27.8 µg/L
delta-BHC	Soil	ND	ND
	Groundwater	ND	0.049 µg/L
gamma-BHC (Lindane)	Soil	ND	3400 µg/Kg
	Groundwater	ND	3.2 µg/L
alpha-Chlordane	Soil	ND	1900 µg/Kg
	Groundwater	ND	0.11 µg/L
gamma-Chlordane	Soil	ND	1400 µg/Kg
	Groundwater	ND	0.086 µg/L
2,4-DB	Soil/Oil	ND	46 µg/Kg
	Groundwater	ND	ND
Dieldrin	Soil	ND	29000 µg/Kg
	Groundwater	ND	0.59 µg/L
4-4'-DDE	Soil	ND	25000 µg/Kg
	Groundwater	ND	0.19 µg/L
4-4'-DDD	Soil	ND	680000 µg/Kg
	Groundwater	ND	6 µg/L
4-4'-DDT	Soil	ND	11000000 µg/Kg
	Groundwater	ND	19 µg/L
Endosulfan I/II	Soil	ND	ND
	Groundwater	ND	0.011 µg/L
Endrin	Soil	ND	ND
	Groundwater	ND	0.098 µg/L
Endrin Aldehyde	Soil	ND	2.1 µg/Kg
	Groundwater	ND	ND
Ethion	Soil	ND	44 µg/Kg
	Groundwater	ND	ND
Heptachlor Epoxide	Soil	ND	ND
	Groundwater	ND	0.016 µg/L
1-(3-chlorophenyl)piperazine aka MCPP, Mecoprop	Soil	ND	29000 µg/Kg
	Groundwater	ND	70 µg/L
Methoxychlor	Soil	ND	560000 µg/Kg
	Groundwater	ND	4.9 µg/L
2,4,5-T	Soil/Oil	ND	3.0 µg/Kg
	Groundwater	ND	0.016 µg/L
Arsenic	Soil	1.1 mg/Kg	8.9 mg/Kg
	Groundwater	ND	159 µg/L
Beryllium	Soil	0.04 mg/Kg	0.27 mg/Kg

Site Specific Chemical Concerns			
Known or Suspected Compounds	Source (soil/water/sludge, etc.)	Known Concentration Range Specify (ppm, mg/kg, mg/l)	
		Lowest	Highest
	Groundwater	1.7 µg/L	10.3 µg/L
Copper	Soil	2.2 mg/Kg	74.3 mg/Kg
	Groundwater	5.9 µg/L	166 µg/L
Chromium	Soil	ND	15.6 mg/Kg
	Groundwater	ND	22.2 µg/L
Iron	Soil	1470 mg/Kg	11600 mg/Kg
	Groundwater	1070 µg/L	539000 µg/L
Mercury	Soil	ND	3.62 mg/Kg
	Groundwater	ND	ND
Vanadium	Soil	ND	20.4 mg/Kg
	Groundwater	ND	7.9 µg/L
Zinc	Soil	11.1 mg/Kg	530 mg/Kg
	Groundwater	90.8 µg/L	1110 µg/L

Chemical descriptions of select chemicals of concern, including health effects and exposure limits, are presented in the following paragraphs. Each chemical description includes physical and odor recognition characteristics, the health effects associated with exposure, and exposure limits expressed as an 8-hour time-weighted average (TWA). Provided are federal OSHA (OSHA) permissible exposure limits (PELs; located in 29 CFR 1910.1000) and the American Conference of Governmental Industrial Hygienists (ACGIH) threshold limit values (TLVs).

3.1.1 Pesticides and herbicides

Pesticides and herbicides are manufactured for a wide variety of purposes and can come with a wide variety of side effects on the endocrine, nervous, and immune systems of human beings.

The following compounds have been detected above environmental clean-up standards at the site; however the presence of these pesticides/herbicides do not impact the monitoring requirements to be performed as described in Section 5:

- 2-methylnaphthalene
- 2,4-DB
- Endrin Aldehyde
- Ethion
- Heptachlor Epoxide
- 1-(3-chlorophenyl) piperazine aka MCPP
- Methoxychlor
- 2,4,5-T
- Vanadium

3.1.2 Benzene

Benzene is a clear, volatile liquid. It is colorless, highly flammable, and toxic, with a characteristic odor. It is a severe eye and moderate skin irritant. Human effects by inhalation and ingestion include euphoria, changes in sleep and motor activity, nausea and vomiting, other blood effects, dermatitis, and fever. In industry, inhalation is the primary route of chronic benzene poisoning. If the liquid is aspirated

into the lung it may cause pulmonary edema. Poisoning by skin contact has also been reported. Exposure to high concentrations (3,000 ppm) may result in acute poisoning, which is characterized by the narcotic action of benzene on the central nervous system. Chronic poisoning occurs most commonly through inhalation and dermal absorption. Benzene is a known human carcinogen that can cause leukemia.

- The OSHA PEL is listed as 1 ppm.
- The TLV is listed as 0.5 ppm.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.3 Ethylbenzene

Ethylbenzene is a clear, colorless liquid. It is mildly toxic by inhalation and skin contact. Inhalation can cause eye, sleep, and pulmonary changes. It is an eye and skin irritant at levels as low as 0.1% (1,000 ppm) of the vapor in air. At higher concentrations, it is extremely irritating at first, then can cause dizziness, irritation of the nose and throat, and a sense of constriction in the chest. Exposure to high concentrations of ethylbenzene vapor may result in irritation of the skin and mucous membranes, dizziness, irritation of the nose and throat, and a sense of constriction of the chest.

- The OSHA PEL is listed as 100 ppm.
- The TLV is listed as 20 ppm.

3.1.4 Toluene

Toluene is a colorless liquid with a benzol-like odor. Human systemic effects of exposure to toluene include central nervous system changes, hallucinations or distorted perceptions, motor activity changes, psychophysiological changes, and bone marrow changes. It is a severe eye irritant and an experimental teratogen. Inhalation of high vapor concentrations may cause impairment of coordination and reaction time, headaches, nausea, eye irritation, loss of appetite, a bad taste in the mouth, and lassitude.

- The OSHA PEL is listed as 200 ppm.
- The TLV is listed as 20 ppm.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.5 Xylene

Xylene is a clear, colorless liquid. It exhibits the general chlorinated hydrocarbon central nervous system effects, olfactory (smell) changes, eye irritation and pulmonary changes. It is a severe skin irritant. There are three isomers: ortho, meta, and para. Exposure to high concentrations of xylene vapor may result in eye and skin irritation. Eye irritation may occur at concentrations of about 200 ppm.

- The OSHA PEL is listed as 100 ppm.
- The TLV is listed as 100 ppm.

3.1.6 Naphthalene

Naphthalene is a colorless to brown solid with an odor of mothballs. Poisoning may occur by inhalation, ingestion, or skin absorption. Naphthalene can cause nausea, headache, fever, anemia, liver damage, vomiting, convulsions, and coma. It is an experimental teratogen and a questionable carcinogen.

Naphthalene is flammable when exposed to heat or flame and reacts with oxidizing materials. It is explosive in the form of vapor or dust when exposed to heat or flame. When heated to decomposition, it emits acrid smoke and irritating fumes.

- The OSHA PEL is listed as 10 ppm.
- The TLV is listed as 10 ppm.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.7 Polynuclear Aromatic Hydrocarbons (PNAs)

PNAs constitute a class of materials of which benzo[a]pyrene (BaP) is one of the most common and also the most hazardous. In general, PNAs can be formed in any hydrocarbon combustion process. The less efficient the combustion process, the higher the PNA emission factor is likely to be. The major sources are stationary sources, such as heat and power generation, refuse burning, industrial activity, such as coke ovens, and coal refuse heaps. PNAs may also be released from oil spills. Because of the large number of sources, people are exposed to very low levels of PNAs every day.

Certain PNAs, such as the more common BaP, have been demonstrated to be carcinogenic at relatively high exposure levels in laboratory animals. BaP is a yellowish crystalline solid that consists of five benzene rings joined together. It is highly soluble in fat tissue and has been shown to produce tumors in the stomachs of laboratory mice. In addition, skin cancers have been induced in a variety of animals at very low levels and unspecified lengths of application.

It is important to recognize the PNAs' ability to adhere to soil and other particulates. Therefore, good particulate emission controls and the use of air purifying respirators with particulate filters are required for protection against airborne PNA hazards.

- The OSHA PEL is listed as 0.2 mg/m^3 (as coal tar pitch volatiles).
- The TLV is listed as 0.2 mg/m^3 (coal tar pitch volatiles, as benzene soluble aerosol).

3.1.8 Tetrachloroethylene (PCE)

PCE (also known as perchloroethylene) is a colorless liquid with an ether-like odor. Short-term exposure to PCE may cause headaches, nausea, drowsiness, dizziness, incoordination, unconsciousness, irritation of the eyes, nose, and throat, and flushing of the face and neck. In addition, it may cause liver damage with such findings as yellow jaundice and dark urine. Liver damage may become evident several weeks after exposure. Skin contact may create a dry, scaly, itchy dermatitis. PCE is classified by the U.S. Environmental Protection Agency as a Group B2 probable human carcinogen.

- The OSHA PEL is listed as 100 ppm.
- The TLV is listed as 25 ppm.

3.1.9 Trichloroethylene (TCE)

TCE is a clear, colorless liquid with a characteristic chloroform odor. It is a mildly toxic VOC that is also an experimental carcinogen, tumorigen, and teratogen. It can cause eye effects, hallucinations and distorted perceptions when inhaled. TCE is an eye and severe skin irritant. Exposure to vapors may cause eye, nose and throat irritation. Prolonged inhalation of moderate concentrations of vapor may cause headaches and drowsiness. Inhalation of high concentrations may cause narcosis and anesthesia. Severe, acute exposure can result in cardiac failure. Significant chronic exposure may damage the liver and other organs. Prolonged repeated skin contact with the liquid may cause irritation and dermatitis.

- The OSHA PEL is listed as 100 ppm.
- The TLV is listed as 10 ppm.

3.1.10 1,2-Dichloroethene (1,2-DCE)

1,2-Dichloroethylene (1,2-DCE), a mixture of the cis and trans isomers, is a liquid with a slightly acrid odor. Available data conflict on whether there is significant difference in the toxicity from short-term exposure to trans-1,2-DCE versus cis-1,2-DCE. Narcosis has been identified as the important effect of inhalation.

- The OSHA PEL is listed as 200 ppm.
- The TLV is listed as 200 ppm.

3.1.11 Benzene hexachloride (bhc)

Benzene hexachloride (also known as BHC) is a white, crystalline powder. Technical grade BHC contains 68.7% α-BHC, 6.5% β-BHC, and 13.5% γ-BHC. It is a toxic organochlorine pesticide that is persistent in the environment and accumulates in mammalian tissues. BHC is a confirmed carcinogen with experimental tumorigenic and neoplastigenic data by ingestion and skin contact. The various isomers have different actions; the γ (lindane) and α isomers are central nervous system stimulants, and the β and Δ are central nervous system depressants. It is a poison by ingestion and inhalation. Human systemic effects by inhalation include headache, nausea, vomiting, and fever. Lindane is more toxic than DDT or dieldrin. When heated to decomposition, it emits very toxic fumes of Cl-, HCl, and phosgene.

- The OSHA PEL for γ-BHC (lindane) is listed as 0.5 mg/m^3.
- The TLV for γ-BHC (lindane) is listed as 0.5 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.12 Lindane (benzene hexachloride - gamma isomer)

Lindane is a colorless solid with a musty odor (pure material is odorless). Exposure to lindane may cause vomiting, restlessness, muscle spasms, convulsions, respiratory failure, severe breathing difficulties that may be delayed in onset, headaches, irritation of the eyes, nose, and throat, and skin rash. Lindane is moderately toxic by dermal absorption.

- The OSHA PEL is listed as 0.5 mg/m^3.
- The TLV is listed as 0.5 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.13 Dieldrin

Dieldrin is a light brown crystal with a mild chemical odor. Short-term exposure to dieldrin can cause hyperirritability, headaches, dizziness, nausea, vomiting, blood in the urine, tremors, convulsions, and coma.

- The OSHA PEL is listed as 0.25 mg/m^3.
- The TLV is listed as 0.1 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.14 4,4'-DDE

DDE is a suspected carcinogen with experimental carcinogenic, reproductive, and neoplastigenic data. It is an insecticide and is a poison by ingestion. When heated to decomposition, it emits very toxic fumes of Cl-.

- No OSHA PEL or TLV is listed for DDE.

3.1.15 4,4'-DDD

DDD is a crystalline solid used as an insecticide. It is a confirmed carcinogen with experimental carcinogenic, neoplastigenic, and tumorigenic data. It is a poison by ingestion and is moderately toxic by skin contact. When heated to decomposition, it emits very toxic fumes of Cl-.

- No OSHA PEL or TLV is listed for DDD.

3.1.16 4,4'-DDT

DDT is a confirmed carcinogen with experimental carcinogenic, neoplastigenic, tumorigenic, and teratogenic data. It is an insecticide and is a human poison by ingestion. It is an experimental poison by skin contact and subcutaneous routes. Human systemic effects include anesthesia, convulsions, headache, cardiac arrhythmia, nausea, vomiting, sweating, and pulmonary changes. When heated to decomposition, it emits very toxic fumes of Cl-.

- The OSHA PEL is listed as 1 mg/m^3.
- The TLV is listed as 1 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.17 Endosulfan I/II

Endosulfan is a highly toxic organochlorine pesticide that does not accumulate significantly in human tissue. It is a questionable carcinogen with experimental tumorigenic and neoplastigenic data. It is a poison by ingestion, inhalation, and skin contact. Endosulfan is a central nervous system stimulant producing convulsions. When heated to decomposition, it emits toxic fumes of Cl- and SOx.

- The OSHA PEL of 0.1 mg/m^3 has been vacated.
- The TLV is listed as 0.1 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.18 Endrin

Endrin is a colorless to tan solid with a mild chemical odor. Exposure to endrin may cause sudden convulsions that may occur from 30 minutes to 10 hours after exposure. Headaches, dizziness, drowsiness, weakness, and loss of appetite may occur two to four weeks after exposure.

- The OSHA PEL is listed as 0.1 mg/m^3.
- The TLV is listed as 0.1 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.19 chlordane

Chlordane is a colorless to amber, odorless, viscous liquid. It is a confirmed carcinogen and is a poison to humans by ingestion and possibly other routes. It is moderately toxic by skin contact. Human systemic effects by ingestion or skin contact include tremors, convulsions, excitement, loss of muscle coordination, and gastritis. When heated to decomposition, chlordane emits toxic fumes of Cl-.

- The OSHA PEL is listed as 0.5 mg/m^3.
- The TLV is listed as 0.5 mg/m^3.

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.20 Arsenic

Metallic arsenic is most commonly a gray, brittle, crystalline solid. It can also be in a black or yellow amorphous form. Arsenic is also commonly found in its volatile white trioxide form. Arsenic is used in several insecticides, herbicides, defoliants, desiccants, and rodenticides and appears in a variety of forms. It is also used in tanning, pigment production, glass manufacturing, wood preservation, and anti-fouling coatings. Arsenic is classified as a known carcinogen.

Short-term exposure to arsenic can cause marked irritation of the stomach and intestines with nausea, vomiting, and diarrhea. In severe cases the vomiting and stools are bloody and the exposed individual goes into collapse and shock with weak, rapid pulse, cold sweats, coma, and death. Inorganic arsenicals are more toxic than organic arsenicals, and the trivalent form is more toxic than the pentavalent form. Acute arsenic poisoning usually results from ingestion exposures. Blood cell changes, blood vessel damage, and impaired nerve function can also result from chronic arsenic ingestion. Other effects include skin changes, irritation of the throat, increased risk of cancer of the liver, bladder, kidney, and lung.

- The OSHA PEL is listed as 0.01 mg/m^3 for inorganic forms of arsenic and 0.5 mg/m3 for organic forms.
- The TLV is listed as 0.01 mg/m^3 for arsenic and inorganic arsenic compounds.

3.1.21 Beryllium

Beryllium is a confirmed carcinogen with experimental carcinogenic, neoplastigenic, and teratogenic data. Human systemic effects by inhalation include lung fibrosis, dyspnea, and weight loss.

- The OSHA PEL is listed as 0.002 mg/m^3.
- The TLV is listed as 0.00005 mg/m^3.

3.1.22 Chromium

Chromium is a greenish-blue, odorless solid. Chromic acid and its salts have a corrosive action on the skin and mucous membranes. The lesions are confined to the exposed parts, affecting chiefly the skin of the hands and forearms and the mucous membranes of the nasal septum. Chromate salts are human and experimental carcinogens of the lungs, nasal cavity, and paranasal sinus, and are also experimental carcinogens of the stomach and larynx. Hexavalent compounds are more toxic than trivalent. Exposure to chromium has been associated with lung changes in workers exposed to chromium alloys. Chromium dust exposure may cause minor lung changes.

- The OSHA PEL is listed as 0.005 mg/m^3 for hexavalent chromium (Cr[VI]), 0.5 mg/m^3 for Cr (II and III) compounds, and 1.0 mg/m^3 for chromium as a metal.
- The TLV is listed as 0.01 mg/m^3 for insoluble Cr (VI) compounds, 0.05 mg/m^3 for soluble Cr (VI) compounds, and 0.5 mg/m^3 for metal and Cr III compounds.

3.1.23 Copper

In its elemental form, copper is a common metal with a distinct reddish color. Human systemic effects by ingestion include nausea and vomiting. In animals, inhalation of copper dust has caused hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, and injury to the lung cells. Short-term exposure to copper dust can cause a feeling of illness similar to the common cold with sensations of chills and stuffiness of the head. Small copper particles may enter the eye and cause irritation, discoloration, and damage.

- The OSHA PEL is listed as 0.1 mg/m^3 for copper as a fume, and 1.0 mg/m^3 for dust.
- The TLV is listed as 0.2 mg/m^3 for copper as a fume, and 1.0 mg/m^3 for dust.

3.1.24 Mercury

Mercury is a silver-colored, heavy, mobile liquid element. Mercury is a poison by inhalation, and is corrosive to skin, eyes, and mucous membranes. It may be absorbed into the body through the skin. Human systemic effects by inhalation include wakefulness, muscle weakness, anorexia, headache, diarrhea, liver changes, dermatitis, and fever. It is an experimental teratogen with experimental reproductive effects and tumorigenic data. When heated to decomposition it emits toxic fumes of mercury.

- The OSHA PEL is listed as 0.1 mg/m^3 as a Ceiling Value for elemental mercury, inorganic compounds and aryl compounds. The OSHA PEL is listed as 0.04 mg/m^3 as a Ceiling Value for Alkyl compounds.
- The TLV is listed as 0.01 mg/m^3 for mercury alkyls, 0.1 mg/m^3 for mercury aryl compounds, and 0.025 mg/m^3 for inorganic forms including metallic mercury

Note: Published exposure limits designate a skin notation indicating that dermal contact can contribute to the overall exposure.

3.1.25 Zinc

Zinc is a bluish-white, lustrous metallic element, and zinc oxide is a white fume. Short-term exposure to zinc oxide fume can cause a flu-like illness called metal fume fever. Symptoms of metal fume fever include headache, fever, chills, muscle ache, nausea, vomiting, weakness, and tiredness. Pure zinc powder, dust, and fume is relatively non-toxic to humans by inhalation. However, the inhalation of zinc oxides may cause a sweet taste, throat dryness, cough, weakness, generalized aches, chills, nausea, and vomiting. Zinc is flammable in the form of dust when exposed to heat or flame and may ignite spontaneously in air when dry. It is explosive in the form of dust when reacted with acids.

- The OSHA PEL is listed as 15 mg/m^3 for total zinc oxide dust, and 5 mg/m^3 for zinc oxide fume and the respirable fraction of dust.
- The TLV is listed as 2 mg/m^3 for respirable zinc oxide and 0.01 mg/m^3 for zinc chromates (as Cr).

3.2 Hazard Communication

In accordance with the Hazard Communication standard, material safety data sheets (MSDSs) will be maintained on site for chemical products used by BC personnel at the Site (i.e., spray paint, PVC cement, etc.). Subcontractors will be responsible for maintaining MSDSs for chemical products they bring on Site. In addition, containers will be clearly labeled in English to indicate their contents and appropriate hazard warnings. Please note that labeling containers includes, but is not limited to, any waste, used PPE, and/or decontamination materials collected.

3.3 Opening Wells and Well Vaults

Direct-reading instrumentation specified in Section 5 will be used to monitor any work in a well vault at the site where VOCs are a concern. The well vault will be opened carefully with the BC employee staying upwind as much as possible and then left open for a minimum of three minutes to allow the vault to vent. If the well cap is then removed, allow another three minutes for the well head to vent before proceeding. Please note that if there are other established protocols that differ from 3 minutes; the

more protective time increment will be followed. Personnel should stay upwind as much as possible while working in and around the vault.

When removing a well cap, personnel will remain upwind as much as possible and will carefully remove the cap by opening it away from them in order to minimize the likelihood of exposure to vapors. Personnel will wait a minimum of three minutes to allow the well to vent before proceeding.

3.4 Physical Hazards

The following physical hazards, as marked below, have been identified and may be encountered during scheduled field activities.

☒ Slips, Trips and Falls	☒ Housekeeping
☒ Heavy Equipment	☒ Materials and Equipment Handling - Lifting
☒ Excavations	☒ Drilling
☒ Noise	☒ Underground Utilities
☒ Overhead Utilities	☒ Equipment Refueling
☒ Electrical Hazards	☐ Lockout/Tagout
☒ Confined Spaces – the pit will be air monitored as a confined space prior to entry and during work as a precaution to verify the space is not a permit-required confined space. Should air monitoring or other potential hazards warrant re-classifying this space as a permit-required confined space then employees will evacuate the pit and contact the PM and the RSUM..	☐ Fire/Explosion
☒ Sharp Objects/Cutting Utensils	☐ Cutting Acetate Sleeves
☐ Elevated Platforms/Working Surfaces	☒ Ladder Use
☒ Traffic	☒ Driving
☐ Arc Flash Protection	☐ Boating Safety
☐ Water Hazards (non-boating)	☐ Building Collapse
☒ Removing Manhole Covers	☐ Personal Safety – Urban Setting

Actions to be taken to protect against the hazards identified are provided in the sections below.

3.4.1 Slip, Trips and Falls

Slipping hazards may exist due to uneven terrain, wet or slick surfaces, leaks or spills. Tripping hazards may be present from elevation changes, debris, poor housekeeping or tools and equipment. Some specific hazards may include: climbing/descending ladders, scaffolding, berms or curbing. Collectively, these types of injuries account for nearly 50 percent of all occupational injuries and accepted disabling claims. Prevention requires attention and alertness on the part of each worker, following and enforcing proper procedures, including good housekeeping practices, and wearing appropriate protective equipment.

3.4.2 Housekeeping

Personnel shall maintain a clean and orderly work environment. Make sure that all materials stored in tiers are stacked, racked, blocked, interlocked, or secured to prevent sliding, falling, collapse, or

overturning. Keep aisles and passageways clear and in good repair to provide for free and safe movement of employees and material-handling equipment. Do not allow materials to accumulate to a degree that it creates a safety or fire hazard.

During construction activities, scrap and form lumber with protruding nails and other items shall be kept clear from work areas, passageways, and stairs. Combustible scrap and debris shall be removed at regular intervals. Safe means must be provided to facilitate removal of debris.

Containers must be provided for collecting and separating waste, used rags and other debris. Containers used for garbage and other oily flammable or hazardous waste such as caustics, acids, harmless dusts, etc., must be separated and equipped with covers. Garbage and other waste shall be disposed of at frequent and regular intervals.

3.4.3 Heavy Equipment

Equipment, including earth-moving equipment, drill rigs, or other heavy machinery, will be operated in compliance with the manufacturer's instructions, specifications, and limitations, as well as any applicable regulations. The operator is responsible for inspecting the equipment prior to use each work shift to verify that it is functioning properly and safely.

The following precautions should be observed whenever heavy equipment is in use:

- PPE, including steel-toed boots, safety glasses, high visibility vests, and hard hats must be worn.
- Personnel must be aware of the location and operation of heavy equipment and take precautions to avoid getting in the way of its operation. Workers must never assume that the equipment operator sees them; eye contact and hand signals should be used to inform the operator of the worker's intent.
- Personnel should not walk directly in back of, or to the side of, heavy equipment without the operator's knowledge. Workers should avoid entering the swing radius of equipment and be aware of potential pinch points.
- Nonessential personnel will be kept out of the work area.

3.4.4 Materials and Equipment Handling - Lifting

The movement and handling of equipment and materials on the Site pose a risk to workers in the form of muscle strains and minor injuries. These injuries can be avoided by using safe handling practices, proper lifting techniques, and proper personal safety equipment such as steel-toed boots and sturdy work gloves. Where practical, mechanical devices will be utilized to assist in the movement of equipment and materials. Workers will not attempt to move heavy objects by themselves without using appropriate mechanical aids such as drum dollies or hydraulic lift gates.

Proper lifting techniques include the following:

- Lift with the strength of your knees, not your back.
- Firmly plant your feet approximately shoulder-width apart.
- Turn your whole body, don't bend or twist at the waist.
- Be sure that the path is clear of obstructions or tripping hazards; avoid carrying objects that will obstruct your vision.
- Use caution when holding an object from the bottom to prevent crushing of the hands or fingers when lowering.

3.4.5 Excavations

A competent person who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them, will be present during excavation activities.

The atmosphere will be tested in excavations, before employees are permitted to enter and begin work, greater than 4 feet in depth or where oxygen deficiency or toxic or flammable gases are likely to be present. The atmosphere shall be ventilated and re-tested until flammable gas concentrations less than 5 percent of the lower explosive limit (LEL) and site-specific action levels are obtained. Worker entry will not be allowed if the oxygen concentration is less than 20 percent. In addition, a safe means of access and egress (i.e., a ladder, stairs or ramp) must be provided so that no more than 25 feet of lateral travel is required by employees.

Workers will not enter unstable excavations or excavations greater than 5 feet in depth without appropriate protective systems such as benching, sloping, or shoring. If shoring or shielding systems are not used, side slopes will not be steeper than 1½:1 without written confirmation from the competent person that the slope is safe for the soil conditions. Excavations will be constructed in accordance with the OSHA Excavation Safety Standard (29CFR1926 Subpart P).

The competent person will inspect excavations daily. If there is evidence that a cave-in or slide is possible, work will cease until the necessary safeguards have been taken. Excavated material will be placed far enough from the edge of the excavation (a minimum of 2 feet) so that it does not fall back into the opening or affect the integrity of the sidewall. At the end of each day's activities, open excavations will be clearly marked and secured to prevent nearby workers or unauthorized personnel from entering them. Remote sampling techniques will be the preferred method of sample collection in excavations.

3.4.6 Drilling

During all drilling activities, the operator must verify that the appropriate level of protection and appropriate safety procedures are utilized. The operator will verify that equipment "kill switches" are functioning properly at the start of each day's use. Hard hats, steel-toed boots, and ear and eye protection will be required at all times when working around drill rigs. The proximity of underground and overhead utilities must be identified before any drilling is attempted. The rig may not be moved with the mast in the upright position.

Workers can effectively manage hazards associated with working around heavy equipment if a constant awareness of these hazards is maintained. These hazards include the risk of becoming physically entangled in rotating machinery, slipping and falling, impact injury to eyes, head and body, and injury from machinery operations. Never work or walk on piles of well casings. Make sure all high-pressure lines and hoses have whip checks attached. Constant visual or verbal contact with the equipment operator will facilitate such awareness.

3.4.7 Noise

Noise may result primarily from the operation of heavy equipment, process machinery or other mechanical equipment. Hearing protection with the appropriate noise reduction rating (NRR) shall be worn in areas with high noise levels. A good rule of thumb to determine if hearing protection is needed is the inability to have a conversation at arms length without raising voice levels. If loud noise is present or normal conversation becomes difficult, hearing protection in the form of ear plugs, or equivalent, will be required.

3.4.8 Underground Utilities

Reasonable efforts will be made to identify the location(s) of underground utilities (e.g., pipes, electrical conductors, fuel lines, and water and sewer lines) before intrusive soil work is performed. The state underground utility notification authority (e.g., USA, Dig Alert, Blue Stake, etc.) will be contacted prior to the start of intrusive field activities in accordance with local notification requirements. In areas not evaluated or serviced by the underground utility notification authority, and a reasonable potential for underground utilities exists, one or more of the following techniques will be employed to determine the location of subsurface structures.

- Contracting the services of a qualified private utility locator.
- Having a survey of the subject area conducted by staff trained in the use of subsurface utility locating equipment.
- Subsurface testing (i.e., hand digging or potholing) to the expected depth of probable utilities (not less than 5 feet).

If utilities cannot be located or if unlocated utilities are suspected to be present, subsurface activities (i.e., borings, excavation) should not be conducted before the location(s) or absence of underground utilities is confirmed.

Typical subsurface location marks are as follows:

- Red – electrical,
- Yellow – gas/oil/steam,
- Blue – water,
- Green – sanitary/storm drains/culverts,
- Orange – communications, and
- White – proposed excavation or boring.

Intrusive work should be limited to the area 3.3 feet (1 meter) on either side of the location marks. In some special cases such as fiber optics and high-pressure pipelines this area should be expanded to 16.5 feet (5 meters) on either side of the utility.

3.4.9 Overhead Utilities

If work is to be conducted in the vicinity of overhead electrical utilities, the owner of the overhead line will be contacted to determine the maximum voltage. Any overhead utility will be considered to be energized unless and until the person owning or operating such line verifies that the line is not energized, and the line is visibly grounded at the work site.

Workers will not perform work in proximity to energized high-voltage lines (including scaffolding, well drilling, pile driving, or hoisting equipment) until danger from accidental contact with high-voltage lines has been effectively guarded against.

Equipment with articulated upright booms or masts are not permitted to operate within 15 feet of an overhead utility line (less than 50kV) while the boom is in the upright position. For transmission lines in excess of 50kV, an additional distance of 4 inches for each 10 kV over 50kV will be used.

3.4.10 Equipment Refueling

Care shall be exercised while refueling generators, pumps, vehicles, and other equipment to prevent fire and spills. Personnel shall eliminate static electricity by grounding themselves (touching metal) prior to using refueling hoses and or containers of petroleum liquids. Items being refueled shall be grounded or

be located on the ground and not on a trailer, work bench or inside a truck bed. Equipment that is hot must be allowed to cool prior to refueling. Spill response materials shall be available when conducting refueling operations.

3.4.11 Electrical Hazards

Electrical equipment to be used during field activities will be suitably grounded and insulated. Ground-fault circuit interrupters (GFCI), or equivalent, will be used with electrical equipment to reduce the potential for serious electrical shock. Electrical equipment including batteries, generators, panels and extension cords shall be kept dry during use. Extension cords may not be used as a permanent means of providing power and will be removed from service if they are worn, frayed, or if the grounding prong is missing.

Extension cord precautions include the following:

- Be aware of exposed or bare wires, especially on metal grating. Warning: Electrical contact with metal can cause fatal electrocution.
- Prior to use, inspect cords for exposed or bare wires, worn or frayed cords, and incorrect splices. Splices are permitted, but there must be insulation equal to the cable, including flexibility.
- Cables and extension cords in passageways, steps or any area where there may be foot traffic should be secured so as to not create a tripping hazard. Overhead cables and extension cords shall be rigged to a height greater than 6 feet.
- Shield extension cords that must run across driveways or areas where vehicle traffic is present.
- Do not run cords across doorways or windows where they can be frayed or cut by a closed door or window.
- Do not run wires through wet or puddled areas.
- Flexible cord sets that are used on construction sites or in damp locations shall be of hard usage or extra hard usage type.

Observation of energized machinery will take place from a safe distance. Only qualified personnel will remove guards, hatch covers, or other security devices if necessary. Equipment lockout procedures and the appropriate facility work permit requirements will be followed. Lockout/tagout procedures will be conducted before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. Workers conducting the operation will positively isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the isolation. Only employees who perform the lockout/tagout procedure may remove their own tags/locks. Employees shall complete lockout/tagout training before initiating this procedure.

Only qualified personnel will remove covers of electrical equipment to expose energized electrical parts. Entering electrical rooms/vaults or areas with live exposed electrical part by BC employees shall be permitted only when accompanied by a qualified personnel after notification and approval of the appropriate facility personnel.

3.4.12 Lockout/Tagout

Lockout/tagout (LO/TO) procedures in accordance with 29 CFR 1910.147 will be performed before activities begin on or near energized or mechanical equipment that may pose a hazard to site personnel. The purpose of the lockout/tagout (LO/TO) system is to safeguard exposure from machinery, energized electrical circuits, piping under pressure, or any type of energy source from unexpected energization or start up that could cause harm to an individual. Workers conducting the operation will positively isolate the piece of equipment, lock/tag the energy source, and verify effectiveness of the

isolation. Only employees who perform the lockout/tagout procedure may remove their own tags/locks. Employees must be thoroughly trained before initiating this procedure.

Whenever multiple personnel (or multiple employers are working on the same worksite) are to be engaged in activities requiring LO/TO, employees/employers shall inform each other of their activities and coordinate their respective LO/TO procedures. When applicable, BC shall request an owner's representative to initiate the LO/TO procedure and apply the first lock. When initiated by others, BC will remove their locks prior to leaving a facility. Whenever a group lockout/tagout procedure must be performed, they shall utilize a procedure that affords the same level of protection as that provided by the implementation of a personal lockout or tagout device. Group LO/TO devices shall meet the requirements of 29 CFR 1910.145(f)(3).

Basic Lockout/Tagout Procedures

1. Each person will maintain their own lock, key, and lockout device so that no one else can remove the lock.
2. Always notify the operator when work is to be done.
3. Use your own lock to lock out electrical power. Attach a tag or sign to the power disconnect to indicate that maintenance work is in progress. Use the wording "Do Not Operate."
4. Bleed all pressure from pneumatic, hydraulic, or other fluid lines, or safely isolate them from the area where work is being done.
5. Drain contents of lines or tanks as needed. Lock valves open or closed to prevent buildup of pressure.
6. Ground electrical systems as needed.
7. Secure any device under tension or compression so as to prevent accidental movement. Move suspended parts that could drop or cycle to a safe position and block, clamp, or chain them in place.
8. Verify (test) that the mechanism has been isolated from the source of energy.
9. Ensure that all workers remove their individual locks after work is completed. The last worker should remove the locking devices.
10. Ensure that the last person double-checks that all is clear and safe before start-up.

Portable Equipment

Portable electrical equipment such as hand drills, computers, and power saws that use plug type connectors must be unplugged prior to any task that may expose the employee to energized portions of the equipment. Removal of the plug from the power source, such as the generator or wall socket, may be combined with a tagout system, particularly if the plug is at a distance from the equipment being repaired

3.4.13 Confined Spaces

The pit will be air monitored as a confined space prior to entry and during work as a precaution to verify the space is not a permit-required confined space. Should air monitoring or other potential hazards warrant re-classifying this space as a permit-required confined space then employees will evacuate the pit and contact the PM and the RSUM.

Entry into confined spaces will be conducted in strict accordance with 29 CFR 1910.146. Confined spaces will be evaluated prior to entry to determine if hazards are present that could pose a risk to entrants. Before workers may enter a permit-required confined space, an entry permit must be completed by the PM or SSO, approved by the RSUM and, all requirements for entry must be met.

- Confined spaces may be described as having, but not being limited to, the following characteristics:
- is large enough to permit an employee to enter and perform work; and
- has limited or restricted means of entry and exit; and
- is not equipped, designed, or intended for continuous human occupancy.

If there is any serious health and safety hazard present in the confined space, the space is considered a permit-required confined space (permit space). A permit-space is a confined space that has one or more of the following characteristics:

- contains or has the potential to contain a hazardous atmosphere; or
- contains or has the potential to contain a material with the potential to engulf or entrap an employee; or
- is so configured that an employee may become trapped, disoriented, or asphyxiated by wall configurations or floors that taper to smaller cross sections; or
- contains any other established safety or health hazard (examples may include sources of energy, moving parts or thermal considerations).

All fluid, electrical, and steam lines and other sources of energy that could harm entrants must be completely isolated before entry. The following atmospheric conditions must be met before entry is permissible (air monitoring may be necessary to verify these conditions are met):

- flammable vapor or dust must be at a concentration less than 5 percent of the lower explosive limit (LEL); and
- oxygen must be at a concentration greater than 20 percent and less than 22 percent; and
- hydrogen sulfide concentration must be less than 5 parts per million (ppm); and
- toxic substances must be at a concentration less than half their respective permissible exposure limits or specified action limits.

In addition, the following roles must be designated before entry into permit-required confined spaces is allowed: Entry Supervisor; Attendant; and Authorized Entrant(s). Confined space entry for each project also requires training for the project team on written operating procedures, including the use of the Confined Space Entry Permit form.

BC employees are not trained in rescue services. Such services are to be arranged locally, prior to entry operations, by the PM. Rescue services can typically be provided by the local fire department or contracted service provider.

3.4.14 Fire/Explosion

Site workers should have an increased awareness concerning fire and explosion hazards whenever working with or near flammable materials, especially when performing any activity that may generate sparks, flame, or other source of ignition. Intrinsically safe equipment is required when working in or near environments with the potential for an explosive or flammable atmosphere. The SSO will verify facility requirements for a “hot work” permit before activities that may serve as a source of ignition are conducted.

Flammable materials will be kept away from sources of ignition. In the event of fire, work will cease, the area will be evacuated, and the local fire response team will be notified immediately. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. A fully charged ABC dry chemical fire extinguisher will be readily available for use during all scheduled activities at the Site.

3.4.15 Sharp Objects/Cutting Utensils

Frequently field tasks require the cutting of items such as rope, packaging or containers. Care should be exercised in using knives and/or cutting implements while performing such cutting tasks. Personnel should cut down and away from their body and other personnel. The item being cut should be braced or secured from movement while cutting. When slicing open acetate liners, such as those utilized in direct push drilling, personnel should use a hook blade cutting implement designed for this task versus a straight blade knife.

3.4.16 Cutting Acetate Sample Sleeves

The cutting of acetate sleeves presents a potential hazard to sampling personnel. By following proper procedures, the risk associated with this activity can be effectively minimized. To remove the soil sample the acetate liner must be cut with a bladed tool or knife. Knives are more frequently the source of disabling injuries than any other hand tool. The principal hazard in the use of knives is the hand slipping from the handle onto the blade or the blade strikes another part of the body. To prevent this, the following safety procedures should be followed:

- Provide a safety blade holder with a retraction spring on a track where blade mounts. Use a hook type linoleum blade which has a reduced cutting edge. When the hook of the blade is cutting the acetate liner it keeps the blade extended. If the blade breaks or the operator's hand slips the blade automatically retracts into the handle of the safety blade holder.
- Replace blades when they become dull. If material becomes hard to cut then the blade is dull.
- Wear leather cut-resistant (such as Kevlar) gloves.
- Wear safety glasses.
- The cutting stroke should be away from the body. If that is not possible, then the hands and body should be in the clear.
- Provide an angle iron device to place the liner in when cutting. This gives a holder for the liner.
- If you drop the knife, just let it fall to the ground and DO NOT try to catch it.
- If you lay the knife down, make sure the blade is retracted into the holder or the knife is placed in a protective holder.

3.4.17 Elevated Platforms / Working Surfaces

When working at heights that expose employees to falls greater than 6 feet, especially on sloping roofs and elevated platforms, the requirements of 29 CFR 1926.502 shall be observed. In such instances, a safety harness shall be worn and the lanyard secured at a level not lower than the employee's waist, limiting the free-fall distance to a maximum of 6 feet.

Elevated work platforms shall be constructed, used, and maintained in accordance with Subpart L of the OSHA Construction Safety Orders. Scaffolds and hoisting lines shall be inspected daily by a competent person to verify the integrity of the components. If a material is determined to be defective, it may not be used for any purpose and will be replaced immediately.

A standard railing shall consist of top rail, intermediate rail, toe board, and post. It shall have a vertical height of approximately 42 inches (±3 inches) from the top surface of the top rail to the floor, platform, runway, or ramp. The top rail shall have a smooth surface throughout. The intermediate rail shall be set half way between the top rail and the floor, platform, runway, or ramp.

A cover of standard strength and construction that is secured against accidental displacement shall guard floor holes, hatchways, or any other openings into which a person can walk. When the cover is not in place, the openings shall be guarded with a standard railing (equipped with a toe board) on all

exposed sides. Any cover on floor openings shall be properly labeled or stenciled with letters at least one inch high or greater stating "OPENING – DO NOT REMOVE".

Personal Fall Protection Equipment

Full body harness is the only acceptable means of fall arrest for personnel working over surfaces greater than six feet in height. A Fall Arrest System consisting of safety harness and anchor lanyard must be worn by anyone working on elevated surfaces that lack "general" fall protection such as railings, etc.

Lanyards must be tied off at a point above the worker's head and to a firm structure or a portion thereof designed to hold a weight of 5,000 lbs. Only hooks with locking snaps that operate in "as new" condition will be used. These hooks are also referred to as "double action lanyard hooks".

When other possible means of fall protection (railings, etc.) are not available, individuals working at heights of less than 6 feet must tie-off if there is danger of impalement, especially if the impalement hazard cannot be mitigated in accordance with OSHA standards.

All workers must perform routine inspection of belts/harnesses and lanyards prior to their use. The employer shall conduct regular inspections (every three months) of all fall protection equipment. In addition, there shall be an inspection of all workers' personal tools and equipment prior to the employees using them on the job.

Lanyards are to be used for tie-off purposes only, and damaged belts, harnesses, and lanyards must be retired and discarded.

3.4.18 Ladder Use

Ladders are to be maintained in good condition at all times, with tight joints, hardware, and fittings securely attached, and moveable parts freely operating without binding or undo play. Defective ladders must be "tagged" out of service. Safety "feet" shall be kept in good condition. Ladders are to be visually inspected for possible signs of damage or defects daily, before each use.

Where possible, portable straight rung ladders shall be set up so that the horizontal distance from the top support to the foot of the ladder is ¼ of the working length of the ladder. The ladder shall be secured by tying it off to a firm point, or held in place by another worker while in use. If the ladder is used to gain access to a roof or platform, the side rails shall extend at least 3 feet beyond the point of support at the edge of the roof or platform.

Step ladders shall always be set up properly, so that they are in the "A" frame position, level and with all four feet on firm ground, and fully opened with the spreaders locked in place. Personnel are forbidden to stand on the top cap or on the last step of a step ladder, or to stand on the hinged back of a step ladder. A step ladder shall never be used at a straight ladder.

3.4.19 Traffic

Vehicular traffic presents opportunities for serious injury to persons or property. Traffic may consist of street traffic or motor vehicles operated by facility employees or visitors to the Site. Workers and other pedestrians are clearly at risk during periods of heavy traffic. Risk from motor vehicle operations may be minimized by good operating practices and alertness, and care on the part of workers and pedestrians.

Site personnel will wear high-visibility traffic safety vests whenever activities are conducted in areas of heavy traffic. Work vehicles will be arranged to be used as a barrier between site workers and nearby traffic. If required by local ordinances or site location, a traffic control plan will be developed and implemented. Consider using amber/yellow warning lights to alert traffic to the work zone. Note that amber/yellow warning lights may be required by specific clients or ordinances.

It is important to be conscious of all vehicular traffic that may be present during conduct of field operations. Use caution tape, barricades, or safety cones to denote the boundaries of the work area and to alert vehicle operators to the presence of operations which are non-routine to them. Be careful when exiting the work area and especially when walking out from between parked vehicles to avoid vehicular traffic.

Never turn your Back on Traffic. When working in or near a roadway, walk and work with your face to the oncoming traffic. If you must turn your back to traffic, have a coworker watch oncoming traffic for you.

Vehicle and Worksite Position. Whenever possible, place a vehicle between your worksite and oncoming traffic. Not only is the vehicle a large, visible warning sign, but if an oncoming car should fail to yield or deviate, the parked vehicle, rather than your body, would absorb the first impact of a crash. Turn the wheels so that if the vehicle were struck, it would swing away from the worksite. Even though the vehicle would protect you in a crash, it might be knocked several feet backward. Always leave some room between the rear of the vehicle and the work area.

Use of Signs and Cones to Direct Traffic. Traffic signs and cones are used to inform drivers and direct traffic away from and around you. Cones and signs are only effective if they give oncoming drivers enough time to react and make it clear how traffic should react.

Cone Positioning. The most common coning situation is setting a taper of cones that creates a visual barrier for oncoming motorists and gradually closes a lane.

The position of the taper depends on the road width, position and size of the work area, and also on the characteristics of the traffic.

3.4.20 Driving

A lot of driving is required to get to, from, and between project Sites. Safe vehicle maintenance and operation must be a priority. It requires knowledge of directions to (and conditions of) the Site in advance, careful exiting and merging into traffic, anticipating the unexpected, remaining alert to one's physical and mental condition, resisting distractions such as cell phone use, other car activities and contacting assistance when needed. Report all vehicle colllisions/incidents to BC's Risk Manager.

3.4.21Arc Flash Protection

An arc flash is a short circuit through the air when insulation or isolation between electrified conductors is breached or can no longer withstand the applied voltage. Statistics show that there are 5 to 10 arc flash explosions a day near electrical equipment that result in hospitalization of a burn victim. An arc flash can be caused by common occurrences such as dropping tools, accidental contact with electrical systems, and build up of dirt or corrosion.

The temperature of an arc can reach more than 35,000 F as it creates a brilliant flash of light and a loud noise. Concentrated energy explodes outward from the electrical equipment, spreading hot gases, molten metal, causing death or severe burns, and creating pressure waves that can damage hearing or brain function and a flash that can damage eyesight. The fast-moving pressure wave also can send loose material such as pieces of equipment, metal tools, and other objects flying, injuring anyone standing nearby.

Regulations require the calculation of the "flash protection boundary" inside which qualified workers must be protected when working. This boundary is an imaginary sphere surrounding the potential arc point, "within which a person could receive a second-degree burn if an electrical arc flash were to occur," according to the National Fire Protection Association (NFPA) 70E standard. Brown and Caldwell's Health and Safety Manual gives direction of when and where to establish this boundary.

BC's Electrical Safety/Arc Flash Policy provides information and instruction for BC employees who work on or near energized power circuits, electrical distribution equipment, electrical utilization equipment and those who inspect energized equipment, where a phase-to-ground or phase-to-phase short or fault occurrence may cause an Arc Flash event.

BC employees must comply with BC's Electrical Safety and Lock-Out/Tag-Out Policy in the Health and Safety Manual and treat electrical equipment and circuits as energized until:

1. Lock-Out/Tag-Out protection is in place and the equipment or circuit has been tested to verify "no voltage" present, by a trained and qualified electrical worker, or
2. The equipment or circuit has been physically isolated from every power source, tested, and clearly labeled.

For those BC employees involved with energized electrical work (i.e. design verification, equipment check-out, or start-up adjustments), the following ordered approach must be used:

1. BC employees will seek to have a trained and qualified electrical worker perform all energized electrical hands-on work (i.e. switching, metering, testing, etc.) while BC employees remain outside the flash protection boundary, with the exception of those BC employees who have completed NFPA 70 E and have appropriately planned, including appropriate PPE, for the task.
2. BC employees that closely supervise work within the flash protection boundary should document the possible electrical hazards, appropriate PPE, and mitigation techniques to be implemented during the project with a detailed project work plan attached to this plan's appendicies. The Electrical Safety Officer (ESO) or similarly qualified person must approve all project work plans with identified shock or arc flash hazards.
3. Prior to performing this work, the Project Manager (PM) will verify that the above-mentioned project work plan is prepared and approved and reviewed by the PM, the project field team, the SSO, and cognizant Health and Safety Manager.
4. Only BC employees with NFPA 70E Qualified Person training shall enter the flash protection boundary wearing the proper Personal Protective Equipment (PPE) and only for Hazard/Risk Categories 0-2 – see the 'Warning' section below.

WARNING

Qualified BC personnel are limited to work in Hazard/Risk Categories 0-2, and therefore only require PPE meeting the requirements of Hazard/Risk Categories 0-2.

Only qualified electricians may conduct work categorized as a Hazard/Risk Category of 3 or 4.

Qualified BC personnel are NOT to cross a flash protection boundary which involves a Hazard/Risk Category 3 or 4 situation.

BC employees and management shall review the Arc Flash policy in BC's Health and Safety Manual for detailed requirements.

Questions concerning this policy should be directed to the BC Electrical Safety Officer RSUM.

Definitions

Energized Electrical Work. Work performed on or near energized electrical systems or equipment with exposed components operating at 50 volts or greater. Electrical system testing, thought to be de-energized, but not yet proven to be (for example, a LO/TO effectiveness check).

Flash Protection Boundary. The distance from energized exposed electrical equipment at which an unprotected person will receive a curable burn: 2nd degree burn or blistering. Work performed inside

this boundary requires that the person be a "qualified person" and the use of appropriate personal protective equipment (PPE) to protect against arc flash burns.

Newly installed/serviced electrical equipment may contain an Arc Flash Label that will identify the energy, hazard category and PPE requirements associated with the equipment. For all other unlabeled equipment, where the specific flash protection boundary (energy, hazard category, and applicable PPE) is not established or cannot be established first (prior to live electrical exposure), BC personnel must maintain a 4-foot minimum observation distance (10 feet is preferred) from the exposed (i.e. doors open, covers off) live electrical equipment rated 600V and below. In the event that the flash protection boundary must be crossed, qualified BC personnel will don PPE appropriate for Hazard/Risk Category 2. For equipment rated above 600V, BC personnel must maintain a 10-foot minimum observation distance and not enter the flash protection boundary unless qualified and approved to do so.

Qualified BC Employee. A person with the training and experience having knowledge of energized electrical equipment hazards from an operational standpoint and from the safety training standpoint.

Educational credentials alone do not make a person qualified. Determination of qualification must be established by the employee's supervisor or other designated knowledgeable management representative.

3.4.22 Boating Safety

Boating or similar activities on aerated water treatment ponds and/or tanks by BC personnel is not permitted. The aeration process affects the buoyancy of the liquid and therefore boats can not consistently stay afloat.

Performing work activities from a boat can present unique hazards to employees. The following guidelines can help mitigate the risk. The boat can become unstable if the weight in it is excessive or loaded improperly. Too much weight will reduce maneuverability and freeboard (the height of the boat sides above the water) and can increase the risk of sinking.

When boarding the boat, the operator must be sure that the boat is secure. With one hand on the boat, each employee should quickly lower themselves straight down into the center of the boat. A United States Coast Guard (USCG) certified personal floatation device will be worn by each BC employee in the boat. In addition, other USCG-required items (i.e., throwable cushion, retrieval line, etc.) will be present on the boat. To move around in a boat, one should step along the fore-and-aft centerline of the boat while the boat is held in place along the pier.

Do not board the boat while carrying equipment, rather first board the craft and then have someone hand in the equipment or place the equipment in the boat prior to launch The amount and location of weight is critical and can reduce the risk of capsizing. Weight should be kept towards the middle or centerline of the boat, both fore and aft and side to side, also the weight should be kept low to the bottom of the boat to reduce the center of gravity.

It is not anticipated that waves of substantial size will be encountered, however, if a wave approaches the boat, steer the bow towards the oncoming wave. Overloading the boat increases draw and the potential for swamping. Watercraft must be operated within the boat manufacturers weight limits.

Should the boat capsize, Brown and Caldwell personnel shall abandon the boat and return to shore as quickly as possible. It is important that the employees attempt to remove themselves from the water as soon as possible, and get inside and call for help. Hypothermia (cold stress) is a significant risk for anyone involved in a boating mishap due to the rapid conduction of body heat by cold water. Wet or dry suits are recommended for cold weather/cold water (less than 45° F) operations.

3.4.23 Water Hazards (non-boating activities)

Wading in streams poses a few natural hazards such as uneven terrain, and potentially dangerous water levels. Field work should be halted when there has been significant rainfall within the past 24 hours or during the course of a work day. The potential for rapidly rising water levels is present in many of these streams/rivers within the project area. SSO shall evaluate field conditions after a rainfall and halt field work if there is the possibility of the development of a hazardous condition.

Open Water

Streams or stormwater ditches may be located near freeways and highways. High stream flows commonly associated with storm events present a threat to workers. Slippery conditions, streamside vegetation, and unstable stream banks could cause a worker to fall into a stream. The risks of a fall include bodily injury, hypothermia and drowning. Work in and around streams will require the use of the buddy system for safety purposes. During storm events that cause streams and rivers to rise to dangerously high conditions, employees should discontinue their work until safe working conditions resume. Prior to entering water, employees must evaluate the need to wear PFDs, rubber boots, or waders and use them as is deemed necessary based on conditions present. Some factors to consider when evaluating the need to wear a PFD are stream current speed, stream bed material (e.g. slippery stones vs. small gravel/sand), water depth, and how far out from the bank the employee will be required to go into the stream.

Changing Water Levels

When precipitation falls in the area, water levels within the stream may change quickly. Rising water levels may be dangerous. All personnel should exit the stream once wet weather has occurred in the area. If the forecast calls for rain, the group should meet and discuss alternative activities that may be planned for the day. After a rain, the SSO must evaluate field conditions and halt field work if there is the possibility of the development of a hazardous condition. When walking in the stream, efforts will be made to walk in the shallow and/or slower moving parts of the stream whenever possible.

3.4.24 Building Collapse

Buildings collapse for a variety of reasons. Natural phenomena such as earthquakes, hurricanes, floods, mudslides, avalanches, and storms are the usual cause for building collapses. Vacant buildings may be at risk for collapse since maintenance-related activities have been often neglected thus resulting in structural damage.

Project personnel should attempt to answer the following questions whenever working near suspect building structures:

- Are there any vacant buildings present on site?
- Will it be necessary to enter or work next to the vacant building(s)?
- Are there any apparent hazards including external damage, falling objects, sticky doors, structural instability, or possible asbestos and/or lead paint?
    - External damage may include, but not necessarily be limited to, foundation cracks, damaged or missing porch roofs and overhangs, supports, gaps between steps and the structure, missing supports or portions of walls, and “washed away” ground.
    - Falling objects may include, but not necessarily be limited to, building cornices, gutters, bricks, and roofs/roofing materials.
- Be aware that when entering a building, if the door sticks at the top it could mean the ceiling is ready to fall. If you force the door open, stand outside the doorway clear of falling debris.

- Has the building(s) been inspected by a qualified professional and deemed safe for entry?
- Are there any viable alternatives for conducting work that preclude the need to enter or work next to the suspect building(s)?

If you have any concerns about entering the building after answering the above questions, speak with the PM immediately. The client will need to be informed that a proper building inspection or engineering controls may be needed before work can be performed.

If you don't feel safe entering a building, notify the PM and RSUM and stay outside the building at an appropriate distance to avoid falling debris.

3.4.25 Removing/Replacing Manhole Covers

Manhole structures are the principal means of access into wastewater collection systems and into other underground utilities and facilities. In general, manhole entries are conducted to determine the physical conditions of manholes and pipelines, collect data, and for maintenance activities.

Removing and replacing manhole covers can present potential hazards (overexertion, struck by, caught between, contaminated air, traffic, etc.) to personnel. Therefore, personnel should always first seek to have client or contractor personnel remove and install the manhole cover whenever possible. If this is not possible, then BC personnel need to plan and carefully consider all the potential hazards and controls associated with the removal and installation. Hard hat, safety glasses, safety boots, and leather/cut-resistant gloves must be used when attempting to remove manhole covers.

When working in the vicinity of an open sewer manhole, air monitoring must be performed to verify that the atmosphere is safe for work activities. At no time are personnel to break the plane of the manhole with any part of their body. Where entry must be made, the requirements of the Confined Spaces section of this HASP must be complied with at all times (i.e. training, air monitoring, ventilation, permitting, rescue, etc.).

General Procedures for Removing/Replacing Manhole Covers

The following are general guidelines for the removal and replacement of manhole covers. Use procedures as they apply to the specific covers to be removed. Additional tools or different procedures may be necessary for a particular location.

Freeing the Manhole Cover

When the cover is stuck in its frame, remove any encrustation with a cold chisel. Next, place a block of wood on the cover near the rim and hit the block of wood with a heavy hammer. Do this at different points around the rim until the cover has loosened.

Unseating the Manhole Cover

Lift the cover with the Hook and Lifter tool. Next, attach the hook and lifter tool to the outer edge/rib before trying to move the cover. Unseat the cover, about four inches, by pulling and lifting with a fluid motion.

Removing the Manhole Cover

Evaluate the area surrounding the manhole cover to be removed and verify conditions that could present a hazard during removal have been properly mitigated. Use proper body mechanics – using the leg and arm muscles to lift and pull the cover – don't use your back.

With your feet properly positioned evenly apart and footing secure, pull the cover clear of the frame. Once clear of the frame keep pulling the cover with a steady motion and remove it from the work area. Potential pinch points exist to the hands, fingers, and feet. Never place your hands, fingers, or feet under the manhole cover. Whenever possible, have someone assist with the removal and replacement of the manhole cover.

Replacing the Manhole Cover

Stand parallel to the desired direction of travel for moving the manhole and check the cover frame of the manhole to make sure it is free of any obstructions or debris.

Place the point of the Hook and Lifter tool under the edge of the cover, lift slightly, and drag the cover toward its frame.

Move to the opposite side of the cover and repeat the lifting and dragging motion.

Continue alternating the lifting and dragging until the cover is partially over the manhole frame.

With the hook, lift the edge that is farthest from the opening until the cover slides into the frame of the manhole.

Check the cover for proper seating in the manhole cover frame.

3.4.26 Personal Safety - Urban Setting

Working in a distressed neighborhood may present hazards associated with street violence or other crime. In these situations, mental preparation before going to the Site and awareness while on Site are of key importance. If in doubt, always ask Site or client personnel about the safety of a neighborhood. Forethought should be given to arranging to work during daylight hours if possible. Take advantage of any Site security measures (monitoring cameras, security guards) and investigate such measures prior to the field work. Once in the field, work in parties of two or more and stay within view of the general public. Keep a charged cell phone nearby or on your person at all times. Become familiar with your location so you can effectively communicate it over the phone.

In addition to these basic principals, the following is a list of common personal safety rules that apply not only to work at the Site, but to general safety practices while in the field and also between work shifts:

- If at all possible, work/travel in groups. Do not venture out alone.
- Be alert. Notice who passes you and who's behind you. Maintain distance between yourself and strangers. Know where you are, and note potential exit paths.
- If work has paused, do not appear slack or distracted. Do not sit in a vehicle with the doors unlocked.
- Walk in well-lighted areas. Don't walk close to bushes, alleys, and so on. In dark or deserted neighborhoods, walk down the middle of the street (be alert to vehicle traffic).
- If a car pulls up slowly, or the occupants of the vehicle bother you, cross the street and walk or run in the other direction. If you are pursued, dial 911.
- If you feel someone is following you, turn around and check. Proceed to the nearest lighted house or place of business.
- Don't overburden yourself with bags or packages, which might impede running or taking care of yourself.
- Be aware of loose clothing, packs/purses and hair. These give an assailant an easier method of grabbing and controlling you. Wear unrestrictive clothing for ease of movement (but not overly loose).

- Carry a non-weapon personal safety device (such as a whistle, panic button, or key light) - anything that could visually or audibly draw attention to your location.
- What you carry in your hand(s) is important. Valuables make you a potential target. Items such as a hand auger or tool may help you be perceived as a less-than-inviting victim.
- Carry as little cash as possible.
- Hold your purse tightly, close to your body. Keep your wallet in a front or in a buttoned, hip pocket. When at a fixed location, lock your valuable items away and out of site (i.e., in a trunk).
- Be careful when people stop you for directions or information. Always reply from a distance; never get too close to a stranger's car.
- If you feel that you are in danger, don't be afraid to scream and run.
- Toss wallet/keys away from direction of escape.
- Don't attach car keys to house keys.
- Leave large valuables (purse, laptop) locked and hidden in the vehicle.

3.5 Natural Phenomena

Natural phenomena such as weather-related emergencies and acts of nature can affect employees' safety. Natural phenomena can occur with little or no warning. If an emergency situation arises as a result of natural phenomena, adhere to the contingency procedures outlined in Section 10. The following natural phenomena have been identified and may be encountered during scheduled field activities.

- ☒ Sunburn
- ☒ Cold Stress
- ☒ Hurricanes/Nor' Easters
- ☐ Earthquakes
- ☒ Heat Stress
- ☒ Lightning/Electrical Storms
- ☐ Tornados and Strong/Straight Line Winds
- ☐ Flooding

3.5.1 Sunburn

Working outdoors with the skin unprotected for extended periods of time can cause sunburn to the skin. Excessive exposure to sunlight is associated with the development of skin cancer. Field staff should take precautions to prevent sunburn by using sunscreen lotion and/or wearing hats and long-sleeved garments.

3.5.2 Heat Stress

Climate conditions, particularly heat, are important considerations in planning and conducting site operations. Heat-related illnesses range from heat fatigue to heat stroke, with heat stroke being the most serious condition. Workers should be trained and aware of signs and symptoms of heat-related illnesses, as well as first aid for these conditions. These are summarized in the table below. The SSO and site workers will monitor each other for signs of heat stress. If an employee exhibits signs or symptoms of heat-related illness, the SSO, or designee, must be notified and the appropriate response procedures initiated.

Heat Related Illness			
Condition	**Signs**	**Symptoms**	**Response**
Heat Rash or Prickly Heat	Red rash on skin.	Intense itching and inflammation.	Increase fluid intake and observe affected worker.
Heat Cramps	Heavy sweating, lack of muscle coordination.	Muscle spasms, and pain in hands, feet, or abdomen.	Increase fluid uptake and rest periods. Closely observe affected worker for more serious symptoms.
Heat Exhaustion	Heavy sweating; pale, cool, moist skin; lack of coordination; fainting.	Weakness, headache, dizziness, nausea.	Remove worker to a cool, shady area. Administer fluids and allow worker to rest until fully recovered. Increase rest periods and closely observe worker for additional signs of heat exhaustion. If symptoms of heat exhaustion recur, treat as above and release worker from the day's activities after he/she has fully recovered.
Heat Stroke	Red, hot, dry skin; disorientation; unconsciousness	Lack of or reduced perspiration; nausea; dizziness and confusion; strong, rapid pulse.	Immediately contact emergency medical services by dialing emergency medical services. Remove the victim to a cool, shady location and observe for signs of shock. Attempt to comfort and cool the victim by administering small amounts of cool water (if conscious), loosening clothing, and placing cool compresses at locations where major arteries occur close to the body's surface (neck, underarms, and groin areas). Carefully follow instructions given by emergency medical services until help arrives.

The effects of ambient temperature can cause physical discomfort, loss of efficiency, and personal injury, and can increase the probability of mishaps. In particular, protective clothing that decreases the body's ventilation can be an important factor leading to heat-related illnesses.

To reduce the potential for heat-related illness, workers are encouraged to drink plenty of water/fluids to stay properly hydrated. in addition, a work schedule will be established that will provide sufficient rest periods for cooling down (at least five minutes when workers feel the need to do so) and have access to shade from the sun (which, in addition to natural shade or canopies, includes resting inside a vehicle with the air conditioner running). Personnel must maintain an adequate supply of non-caffeinated drinking fluids on site for personal hydration – a minimum of one quart of water per employee per hour.

3.5.3 Cold Stress

Workers performing activities during winter and spring months may encounter extremely cold temperatures, as well as conditions of snow and ice, making activities in the field difficult. Adequate cold weather gear, especially head and foot wear, is required under these conditions. Workers should be aware of signs and symptoms of hypothermia and frostbite, as well as first aid for these conditions. These are summarized in the table below.

Cold Stress Symptoms and Response			
Condition	**Signs**	**Symptoms**	**Response**
Hypothermia	Confusion, slurred speech, slow movement.	Sleepiness, confusion, warm feeling.	Remove subject to a non-exposed, warm area, such as truck cab; give warm fluids; warm body core; remove outer and wet clothing and wrap torso in blankets with hot water bottle or other heat source. Get medical attention immediately.
Frostbite	Reddish area on skin, frozen skin.	Numbness or lack of feeling on exposed skin.	Place affected extremity in warm, not hot, water, or wrap in warm towels. Get medical attention.

Cold Stress Symptoms and Response			
Condition	**Signs**	**Symptoms**	**Response**
Trench Foot	Swelling and/or blisters of the feet	Tingling/itching sensation; burning; pain in the feet	Remove wet/constrictive clothing and shoes. Gently dry and warm feet with slight elevation. Seek medical attention.

3.5.4 Lightning/Electrical Storms

Lightning can be unpredictable and may strike many miles in front of, or behind, a thunderstorm. Workers will therefore cease field operations at the first sign of a thunderstorm and suspend activities until at least 30 minutes after the last observed occurrence of lightning or thunder. For purposes of this HASP, signs of a thunderstorm will include any visible lightning or audible thunder.

In the event of a thunderstorm, field personnel will take the following actions:

- Get inside a permanent building structure (not a shed or canopy) or fully enclosed metal vehicle (not a convertible or camper shell) with the windows fully up.
- If in a house or building, do not use the telephone or any electrical appliance that's connected to the building's electrical wiring.
- Stay away from tall isolated objects, such as trees, drill rigs, telephone poles, or flag poles.
- Avoid large open areas, such as fields or parking lots, where a person is the relatively highest object.
- Stay away from lakes, ponds, railroad tracks, fences, and other objects that could transmit current from a distant lightning strike.
- If caught out in the open without time to escape or find shelter, seek a low area (if time permits), crouch down, and bend forward holding the ankles. Tuck the head so that it's not the highest part of the body, without letting it touch the ground. Under no circumstances lay down.

If a person is struck by lightning contact emergency medical services, even if he/she appears only stunned or otherwise unhurt as medical attention may still be needed. Check for burns, especially at fingers and toes, and areas next to buckles and jewelry.

3.5.5 Hurricanes/Nor' Easters

The key to responding to hurricane conditions is being informed. Before taking to the roads to leave for or from a jobsite during suspect hurricane conditions, listen to the radio for current and forecast conditions. Know what the weather reports mean by "watch" and "warning." A hurricane watch means hurricane conditions are possible in the specified area of the watch, usually within 36 hours. A hurricane warning indicates hurricane conditions are expected in the specified area of the warning, usually within 24 hours.

If watch or warning conditions exist, employees will communicate with the project manager to determine the appropriate course of action. Travel to or from work is not recommended if the employee will travel in the vicinity of a hurricane warning area. Restrictions on travel during hurricane watches are largely dependent on the actual weather conditions at the time. Employees are discouraged from driving during weather conditions where visibility and vehicle control are severely limited.

Nor'easters have the potential to cause as much damage as hurricanes, with powerful winds, rain or snow and large waves. They can pound and erode beaches with heavy surf, affect inland areas with flooding, or coat the land with thick layers of ice and snow.

Nor'easters result from the counterclockwise rotation of a low pressure system and the clockwise rotation of a high pressure system, combining to bring wind and moisture to the northeast. The nor'easter's ferocity will depend on the strength of the two systems.

One reason nor'easters are so dangerous is that they tend to move much more slowly than hurricanes. That slow movement allows the storm's effects to accumulate in a given area.

A nor'easter's wind circulation can cause tidal waters in back bays to be held in place, and not allow the water to drain through inlets and into the ocean. The accumulation of more and more water in tidal areas can cause widespread flooding.

Nor'easters can occur all year long, but are primarily a risk between September and April.

In the event of a hurricane or nor' easter, be prepared by:

- Checking NOAA Weather Radio All Hazards, your local radio and TV stations (i.e, The Weather Channel) for updates, watches, warnings or emergency instructions.
- Know the Coastal Evacuation Route for coastal areas or an inland area with chronic flooding.

For long term projects with temporary or permanent office area, keep an emergency preparedness kit consisting of, but not limited to:

- Current project/office contacts list – (how to reach folks in an emergency),
- Blankets,
- Flashlights,
- Radio (operated by batteries),
- Batteries for flashlight and radio (note: batteries should be replaced annually to assure freshness) ,
- Water (unless there is a water bubbler that can be used with no electricity), and
- Snack crackers, dried fruit, etc. - a source of food that won't go bad.

3.5.6 Tornados and Strong/Straight Line Winds

Tornados and strong or straight line winds are potentially dangerous weather conditions because both have the ability to generate on very short notice (in some cases under one hour from clear weather conditions). Tornados and strong or straight line winds both have the same warning properties and recommendations. If a tornado "watch" is issued for your area, it means that a tornado is "possible". If a tornado "warning" is issued, it means that a tornado has actually been spotted, or is strongly indicated on radar, and it is time to go to a safe shelter immediately.

Be alert to what is happening outside, but do not place yourself in jeopardy by standing next to windows. Some common observations during a tornado include: a sickly greenish or greenish-black color to the sky; if there is a watch or warning announced or posted; an abrupt fall of hail (however, hail can occur in the absence of a tornado); a strange quiet that occurs within or shortly after a thunderstorm; clouds moving by very fast, especially in a rotating pattern or converging toward one area of the sky; a sound like a waterfall or rushing air at first, but turning into a roar as it comes closer (the sound of a tornado has been likened to that of both railroad trains and jets); debris dropping from the sky; an obvious "funnel-shaped" cloud that is rotating; or debris such as branches or leaves being pulled upwards, even if no funnel cloud is visible.

During a tornado warning or tornado occurrence, each employee is instructed to do the following:

- Proceed to interior rooms and halls on the lowest floor (do not use an elevator to exit an upper floor). Avoid halls that open to the outside in any direction. If there are no interior hallways, avoid those that open to the southwest, south, or west, since that is usually the direction from which the tornado will come.
- Stay away from glass, both windows and doors. Crouch down, and make as small a "target" as possible. If you have something with which to cover your head, do so, otherwise, use your hands.

- Exercise extreme caution when leaving your area of shelter. Be aware of potential hazards (i.e., natural gas smell, smoke, fire). In the event these hazards are encountered in your area of shelter, immediately evacuate the shelter. If the building/shelter has been damaged by a tornado, do not flush the toilets, as the sewer lines may have been damaged.
- If you are traveling in an automobile and can see a tornado, do not stay in your car and try to outrun a tornado. If possible, stop the car and enter the nearest business and seek shelter.
- If you are outside and it is not possible to get inside, seek a low lying ditch, culvert, etc. and keep your body as low to the ground and as braced as possible.

3.5.7 Earthquakes

Earthquakes strike suddenly, violently, and without warning. If your project is located near a fault line, earthquakes are an unpredictable possibility. For long term projects with temporary or permanent office area, keep an emergency preparedness kit consisting of, but not limited to:

- Current project/office contacts list - how to reach folks in an emergency,
- Blankets,
- Flashlights,
- Radio (operated by batteries),
- Batteries for flashlight and radio (note: batteries should be replaced as needed to assure freshness),
- Water (unless there is a water bubbler that can be used with no electricity), and
- Snack crackers, dried fruit, etc. - a source of food that won't go bad.

This kit is meant to serve as overnight survival in the event that it becomes unsafe to leave the project site. The kit's contents should be suited to meet the size and needs of your project. If you feel the earth shaking, consider the following tips:

- Drop down; take cover under a desk or table and hold on.
- Stay indoors until the shaking stops and you are sure it is safe to exit.
- Stay away from bookcases, shelves, or anything that could fall on you.
- Stay away from windows.
- If inside a building, expect fire alarms and sprinklers to go off during the quake.
- If you are outdoors, find a clear spot away from buildings, trees, and power lines. Drop to the ground and cover your head.
- If you are in a car, slow down and drive to a clear place, preferably away from power lines. Stay in the car until the shaking stops.

3.5.8 Flooding

Flooding may occur at or en-route to and from the Site and may be the result of weather conditions or due to thawing of ice and snow (especially in the Spring).

In the event flooding starts to occur:

- Stay tuned to NOAA Weather Radio All Hazards, your local radio and TV stations (i.e., The Weather Channel) for updates, watches, warnings or emergency instructions.
- Know the Coastal Evacuation Route for coastal area or an inland area with chronic flooding
- If the waters start to rise inside before you have evacuated, retreat to higher ground, including the roof. Use cell phone or land line to call for help. Take a flashlight and a portable radio. Then, wait for help. Don't try to swim to safety; wait for rescuers to come to you.

- Avoid flooded areas. Do not attempt to cross any flooded areas in a vehicle or on foot. Flood waters may be deeper than they look.
- Avoid low-lying areas like ditches, creeks, and rivers.
- Before entering or re-entering a building, check for any signs of structural damage.
- When entering a building, do not use matches, lighters, or open flame. Use a flashlight only.
- After a flood, steps and floors are often slippery with mud and covered with debris, including nails and broken glass. Be careful walking around.

3.6 Biological Hazards

The following biological hazards have been identified and may be encountered during scheduled field activities.

- ☐ Bloodborne Pathogens/Sanitary Waste
- ☒ Rodents and Mammals
- ☒ Reptiles/Snakes
- ☒ Venomous Insects
- ☒ Mosquitoes
- ☐ Fire Ants
- ☒ Spiders/Scorpions
- ☒ Ticks
- ☒ Poisonous Plants

If any biological hazards are identified at the Site, workers in the area will immediately notify the SSO and nearby personnel.

3.6.1 Bloodborne Pathogens/Sanitary Waste

Potential exposure to bloodborne pathogens may occur during some work activities (e.g., sewer video surveys or source sampling), rendering first aid or CPR. Direct contact is an important route of exposure for bloodborne pathogens due to puncture injuries, contact with abraded skin, or contact with areas such as the eyes, without appropriate protection. While very few organisms can enter the body through normal intact skin, direct contact with sewage, blood and body fluids is to be avoided. Site personnel should thoroughly wash their hands and face before eating, drinking or smoking and before leaving the work site.

Exposure controls and Universal Precautions are required at suspect locations, in order to prevent contact with blood or other potentially infectious materials as specified in Brown and Caldwell's Bloodborne Pathogens Program. All blood or other potentially infectious material will be considered infectious regardless of the perceived status of the source individual. A Hepatitis B vaccination will be offered to BC personnel before the person participates in a task where direct exposure to potentially infectious materials is a possibility (i.e., first aid or CPR). For personnel who have potential exposure to sanitary wastes, a current tetanus/diphtheria inoculation or booster is recommended.

3.6.2 Rodents/Mammals

Animals may potentially carry the rabies virus or disease causing agents. Do not attempt to feed or touch animals. Feces from some small mammals may contain diseases such as Hanta Virus. Avoid generating dust in the vicinity of rodent feces. In addition, animals such as dogs or wild predators (i.e., cougars or coyotes) may pose an attack hazard. Persons should slowly back away in a non-threatening manner if an encounter with a threatening animal occurs. In order to avoid such encounters, use the buddy system and make noise when working in areas where such animals may be present.

3.6.3 Reptiles/Snakes

The primary reptiles of concern are venomous snakes (rattlesnake, water moccasin, and copperhead). Avoid contact and areas that may harbor snake populations including high grass, shrubs, and crevices. In the event of a bite, immobilize the affected area and contact emergency medical services. If more than 30 minutes from emergency care, apply bandage wrap two to four inches above the bite (note: bandage should be loose enough to slip your finger underneath).

Wear shoes and heavy pants when walking and hiking in areas where snakes are likely found. Do not reach into rocky cracks, under logs, or large rocks. Even if a snake looks dead, do not touch it. A snake can still bite up to one hour after its death. Do not get near or tease a snake. Snakes are shy creatures and generally will not attack unless bothered.

Diamond Back Rattle Snake

Diamond backs are large snakes. They have a row of dark diamonds down the back and a rattle on their tail. These snakes have cat-like eyes and a pit between their nostril and eye. Eastern diamond backs like pine flat woods and scrub areas where palmetto thickets and gopher tortoise burrows are found. These snakes travel during the day and hide at night.

Timber Rattle Snake

Timber rattle snakes have a reddish-brown stripe running down the center of their back and black cross bands. Their tails are solid black with a rattle. These snakes have cat-like eyes and a pit between their nostril and eye. Timber rattlers live in damp river beds, pine flat woods, swamps, and cane thickets.

Pygmy Rattle Snake

These small snakes are light to dark grey in color. They have a tiny rattle. Pygmy rattle snakes have cat-like eyes and a pit between their nostril and eye. These snakes are found in lowland pine flat woods, prairies, around lakes, ponds, and swamps. Pygmy rattlers are aggressive and will strike anything within striking range.

Cottonmouth (Water Moccasin)

Young cottonmouths are often mistaken for copperheads because of their reddish-brown cross bands. As these snakes age, their cross bands darken until they become almost solid black. Cottonmouths live near water sources like lakes, streams, rivers, ponds, and swamps. When threatened, cottonmouths may coil and open their mouths as though ready to bite. The white inside of the mouth is what gives this snake its name, "cottonmouth".

Copperhead

Copperheads have dark coppery red-brown hourglass cross bands on a lighter brown color. The top of the head is covered with large plate-like scales. Copperheads have cat-like eyes and a pit between their nostril and eye. These snakes live in rocky, wooded areas and low, wet swampy areas. Copperheads are sluggish and rarely bite, unless stepped on or touched.

Coral Snake

The body of this snake is ringed with black, yellow and red bands. (Remember: Red on yellow can kill a fellow. Red on black, venom lack.) The head of a coral snake is black, while the tail is black and yellow.

3.6.4 Venomous Insects

Common examples include bees, fire ants and wasps. Avoid contact with insects and their hives. If stung, remove the stinger by gently scraping it out of the skin (do not use tweezers). If the worker is stung by an insect, immediately apply an ice pack to the affected area and wash area with soap and water and apply antiseptic. If an allergic reaction occurs, contact emergency medical services for

appropriate treatment. Seek medical attention immediately if you are allergic to venomous stings such as bees or if anaphylaxis symptoms are present.

3.6.5 Mosquitoes

Mosquitoes may transmit diseases such as West Nile Virus. Symptoms of West Nile Virus include: fever, headache, tiredness, body aches, and occasional rash. Avoid mosquito bites by wearing long sleeved shirt and long pants. Apply insect repellent to clothes and/or skin (if FDA approved for topical use). Report any dead birds in the area to local health officials. Mosquitoes are most active from dusk to dawn.

3.6.6 Fire Ants

Red and Black Fire Ants are capable of inflicting numerous stings (7 to 9) per ant in a matter of seconds, and large numbers of fire ants will typically attack at the same time. Fire ants are very aggressive and will sting simply upon coming in contact with skin. Individuals who are allergic to bees should carry bee sting kits when there is the potential to come in contact with fire ants. Fire ants are predominantly located in the southern United States.

The best way to avoid fire ants is to avoid disturbing their mounds. Fire ant mounds are typically constructed in disturbed habitats such as open fields, along roadsides, lawns, and many other open sunny areas. The mounds are constructed of dirt and/or other organic materials. Mounds are typically 10” to 24” in diameter and approximately 18” in height. If you disturb a mound, get away from the mound immediately.

Fire ant stings typically leave tiny red blisters and sometimes white pustules. Symptoms of stings include blistering, burning, swelling, pain, and irritation of the affected area. Recommended treatment consists of antihistamines along with topical antibiotic cream. Anaphylaxis symptoms such as shortness of breath, discomfort, lowered heart rate, etc. may also accompany fire ant stings. Seek medical attention immediately if you are allergic to venomous stings such as bees or if anaphylaxis symptoms are present.

3.6.7 Spiders/Scorpions

The black widow and brown recluse spiders are the most venomous. Avoid contact with spiders and scorpions and areas where they may hide. They favor dark hiding places. Inspect clothing and shoes before getting dressed. Wear gloves and safety shoes when working with lumber, rocks, inspecting buildings, etc. Signs and symptoms of bites include: headache, cramping pain/muscle rigidity, rash and/or itching, nausea, dizziness, vomiting, weakness or paralysis, and convulsions or shock. Wash bite area with soap and water and apply antibiotic cream. Contact emergency medical services if allergic reaction or severe symptoms occur.

3.6.8 Ticks

Deer ticks may carry and transmit Lyme disease to humans. Signs of Lyme disease include a reddish “bulls-eye” around the affected area approximately a week after the bite. Symptoms include headache, fever, and muscle/joint pain. Persons suspecting infection should contact a health professional. Whenever possible, avoid areas likely to be infested with ticks during the spring and summer months.

Wear light-colored clothing so ticks can be easily spotted and removed. Wear long sleeves and pants and tuck pant legs into boots or socks. Apply insect repellents to clothing and skin (if FDA approved for topical application). Persons with long hair should tie their hair back to minimize the potential for ticks to nestle in the scalp.

Personnel should self perform tick checks once daily field work is completed. If a tick is embedded in the skin, use tweezers to grasp the tick's head (near the skin) and pull straight out. Consider saving the removed tick for laboratory analysis.

3.6.9 Poisonous Plants

Common examples include poison ivy, poison oak and poison sumac. Avoid contact. Long-sleeved shirts and pants will allow some protection against inadvertent contact. If contact occurs, immediately wash the affected area thoroughly with soap and water. If an allergic reaction occurs, seek the care of a medical professional.

Poison Ivy is a trailing or climbing woody vine or a shrub-like plant with leaves that are each divided into three broad, pointed leaflets. The leaflets are commonly dark glossy green on top and slightly hairy underneath. They produce small yellowish or greenish flowers followed by berry-like drupes.

Poison Oak is a member of the same family as poison ivy and has a very similar appearance. Poison oak has leaves divided into three leaflets and generally has three to seven distinct lobes. Typically they are a shrubby type plant that can grow to eight feet in height, or sometimes can be a climbing plant.

The best way to prevent exposure is the ability to recognize these plants. Conduct an initial survey of the area to determine if the plants are present in the work area, and avoid contact with them.

If plants are located and work must be conducted in that area, have the plants removed if possible. If this is not possible, wear long sleeved shirts, gloves, and a heavy material type pants. Remember not to touch contaminated clothing. There are products available that can be applied to exposed skin, (similar to sunscreen products) prior to working around the plants. Tyvek suits may be another option used at the wearer's discretion to keep poisonous plant oils from getting on clothing. Please note that using Tyvek suits may increase the risk of heat stress conditions so extra precautions should be taken such as more frequent breaks and drinking plenty of fluids

Section 4

Personal Protective Equipment

The purpose of PPE is to protect employees from hazards and potential hazards they are likely to encounter during site activities. The amount and type of PPE used will be based on the nature of the hazard encountered or anticipated. Respiratory protection will be utilized when an airborne hazard has been identified using real-time air monitoring devices, or as a precautionary measure in areas designated by the RSUM or SSO.

Dermal protection, primarily in the form of chemical-resistant gloves and coveralls, will be worn whenever contact with chemically affected materials (e.g., soil, groundwater, sludge) is anticipated, without regard to the level of respiratory protection required.

On the basis of the hazards identified for this project, the following levels of personal protective equipment (PPE) will be required and used. Changes to the specified levels of PPE will not be made without the approval of the SSO after consultation with the RSUM.

4.1 Conditions Requiring Level D Protection

In general, site activities will commence in Level D PPE unless otherwise specified, or if the SSO determines on site that a higher level of PPE is required. Air monitoring of employee breathing zones will be routinely conducted using real-time air monitoring devices to determine if upgrading to Level C PPE is necessary. Level D PPE will be permitted as long as air monitoring data indicate that airborne concentrations of chemicals of concern are maintained below the site-specific action levels defined in Section 5.2. Level A or B PPE is not anticipated and is therefore not addressed in this plan. If Level A or B PPE is necessary, this HASP will be revised to reflect changes as appropriate.

It is important to note that dermal protection is required whenever contact with chemically-affected materials is anticipated. The following equipment is specified as the minimum PPE required to conduct activities at the Site:

- Work shirt and long pants,
- ANSI- or ASTM-approved steel-toed boots or safety shoes,
- ANSI-approved safety glasses,
- ANSI-approved hard hat (where required on-site or when overhead hazards are present);
- Outer nitrile gloves (11 mil or thicker) and inner nitrile surgical gloves when direct contact with chemically affected soils or groundwater is anticipated (nitrile surgical gloves may be used for collecting or classifying samples as long as they are removed and disposed of immediately after each sampling event).
- Sturdy work gloves (when needed); and
- High-visibility traffic safety vest.

Other personal protection readily available for use, if necessary, includes the following items.

- Chemical goggles when in contact with chemical liquids can be reasonably expected or when handling corrosive chemicals. In addition, a face shield may be required to protect the face from splash hazards.

- Chemical-resistant clothing (e.g., Tyvek or polycoated Tyvek coveralls) when contact with chemically affected soils or groundwater is anticipated.
- Safety shoes/boots with protective overboots or knee-high PVC polyblend boots when direct contact with chemically affected soils is anticipated.
- Hearing protection.

Work will cease and PPE upgraded if action levels specified in Section 5.2 are exceeded. The RSUM will be notified whenever PPE is upgraded or downgraded.

4.2 Conditions Requiring Level C Protection

If air monitoring indicates that the site-specific action levels defined in Section 5.2 are exceeded, workers in the affected area(s) will upgrade PPE to Level C. In addition to the protective equipment specified for Level D, Level C also includes the following items.

- NIOSH-approved half- or full-face air-purifying respirator (APR) equipped with appropriate cartridges (reference Section 5.2). Note: safety glasses are not required when wearing a full-face APR.

Respirators will be stored in clean containers (i.e., self-sealing bag) when not in use. Respirator cartridges will be replaced in accordance with the following change-out schedule.

Respirator Cartridge Replacement	
Type of Cartridge	**Cartridge Change-out Schedule**
Particulate (i.e., HEPA)	At least weekly or sooner the employee detects an increase in breathing resistance. This will occur as the filter becomes loaded with particulate matter.
Sorbent (i.e., organic vapor)	At the end of each day's use or sooner if the employee detects an abnormal odor or other indicator.

Personnel who wear air-purifying respirators must be trained in their use and must have successfully passed either a qualitative or quantitative respirator fit test, and medical evaluation within the last 12 months in accordance with and 29 CFR 1910.134.

4.3 Stop Work Conditions

If air monitoring indicates that the site-specific action levels defined in Section 5.2 are exceeded, activities will cease, and personnel must evacuate the designated Exclusion Zone. The PM and RSUM will be contacted immediately.

Work will also cease if unanticipated conditions or materials are encountered or if an imminent danger is identified. The SSO will immediately contact the RSUM for consultation.

Section 5

Air Monitoring Plan

Real-time air monitoring devices will be used to analyze airborne contaminant concentrations approximately every 15 minutes in the workers' breathing zones while workers are in the designated Exclusion Zone, or when task or exposure conditions change (whichever frequency is less). If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate.

Background concentrations will be determined at the beginning of each work shift by collecting several instrument readings upwind of the scheduled activities. Alternatively, background levels can be determined by collecting readings from a nearby (upwind) area that can reasonably be considered unaffected by Site activities.

Real-time measurements will be made as near as feasible to the breathing zone of the worker with the greatest exposure potential in each active work area. If authorized by the RSUM, real time measurements may cease being taken when sufficient historical data is generated to warrant its cessation. Air monitoring will be reinstated if potential exposure conditions change.

The equipment will be calibrated daily, and the results will be recorded on BC's Air Monitoring Form. The results of air monitoring will also be recorded on the Air Monitoring Form and will be retained in the project files following completion of field activities. A copy of the Air Monitoring Form is located in Appendix A.

5.1 Monitoring Instruments

On-site worker exposure to airborne contaminants will be monitored during intrusive site activities.

5.1.1 Photoionization Detector and Flame ionization Detector

A calibrated photoionization detector (PID) with a lamp strength of 10.6 eV or flame ionization detector (FID) will be used to monitor changes in personnel exposure to volatile organic compounds (VOCs). The SSO, or designee, will perform routine monitoring during site operations to evaluate concentrations of VOCs in employee breathing zones. If VOCs are detected above predetermined action levels specified in Section 5.2, the procedures found in Section 4 of this HASP will be followed.

5.1.2 Real-Time Aerosol Monitor

A miniature real-time aerosol monitor (mini-RAM or equivalent) will be used to monitor exposure to airborne dusts. The SSO, or designee, will perform routine monitoring during site operations to evaluate concentrations of airborne dusts in employee breathing zones. If airborne dusts are detected above predetermined action levels specified in Section 5.2, the procedures found in Section 4 of this HASP will be followed.

5.1.3 Combustible Gas and Hydrogen Sulfide Gas Monitoring

A multi-gas detector will be used to monitor changes in levels/exposure to combustible gases (lower explosive limit; LEL) and hydrogen sulfide gas during intrusive site activities. The SSO, or designee, will perform routine monitoring during site operations to evaluate concentrations of target compound in the vicinity of boreholes, test pits, sewers, or elsewhere, as necessary. If target compounds are detected

above predetermined action levels specified below, work will cease and the Regional Safety Unit Manager will be contacted immediately.

5.2 Site Specific Action Levels

The following action levels were developed for exposure monitoring with real-time air monitoring instruments. Air monitoring data will determine the required respiratory protection levels at the Site during scheduled intrusive activities. The action levels are based on sustained readings indicated by the instrument(s). Air monitoring will be performed and recorded at up to 15-minute intervals.

If elevated concentrations are indicated, the monitoring frequency will be increased, as appropriate. If during this time, sustained measurements are observed, the following actions will be instituted, and the PM and RSUM will be notified. For purposes of this HASP, sustained readings are defined as the average airborne concentration maintained for a period of one (1) minute above established background levels.

5.2.1 Action Levels for Volatile Organic Compounds

VOC – Action Levels		
Activity	**Action Level**	**Level of Respiratory Protection**
Soil-intrusive activities	< 5 ppm above background (VOCs)	Level D: No respiratory protection required.
	5 to 25 ppm (VOCs)	Level C: Half- or full-face air-purifying respirator fitted with organic vapor cartridges: Increase engineering control efforts and re-monitor effectiveness. **Contact RSUM prior to respirator upgrade**.
	> 25 ppm (VOCs)	Cease operations and evacuate work area. Contact RSUM and PM immediately.

5.2.2 Action Levels for Dust

Dust – Action Levels		
Activity	**Action Level**	**Level of Respiratory Protection**
Dust Generating Activities	< 0.5 mg/m^3 above background	Level D: No respiratory protection required.
	0.5 to 2.5 mg/m^3	Level C: Half- or full-face air-purifying respirator fitted with HEPA (P-100) cartridges: Increase engineering control efforts and re-monitor effectiveness. **Contact RSUM prior to respirator upgrade**.

Dust – Action Levels		
Activity	**Action Level**	**Level of Respiratory Protection**
	> 2.5 mg/m^3	Cease operations and evacuate work area. Contact RSUM and PM immediately.

5.2.3 Action Levels for Pit Entry

There is a pit located on this project that may need to be entered by employees for visual inspection and sample collection. The above VOC action limits should be monitored as well as hydrogen sulfide, oxygen, and VOCs for lower explosive limit. Action Levels for this activity are:

- As mentioned in the table above for VOCs using a PID;
- hydrogen sulfide less than 5 parts per million (ppm);
- LEL less than 5%; and
- oxygen between 20% and 22%

If acceptable atmospheric conditions are not met, personnel will immediately evacuate the area and the RSUM will be contacted for consultation. It is important to note that if other compounds of concern can reasonably be expected, the RSUM will be contacted for appropriate air monitoring instrumentation and acceptable atmospheric concentrations.

Air monitoring will be performed prior to entering into an area of concern. This can be accomplished by using an extended probe or tubing, or by lowering the instrument into the subject space. Air monitoring will then be performed continuously during activities in the suspect area. Data collected will be recorded at approximately 15 minute intervals. In some instances, air monitoring may be discontinued after consultation with the RSUM.

The equipment will be calibrated in accordance with manufacturer's specifications. The results of air monitoring will be recorded in the field notebook or an appropriate BC form. For reference, a copy of a Air Monitoring Form is located in Appendix A. The BC Confined Space Pre-Entry Checklist and Confined Space Entry Permit are located in Appendix F.

Section 6

Site Control Measures

The SSO will conduct a safety inspection of the work site before each day's activities begin to verify compliance with the requirements of the HASP. Results of the first day's inspection will be documented on the Site Safety Checklist. A copy of the checklist is included in Appendix B. Thereafter, the SSO should document unsafe conditions or acts, along with corrective action, in the project notes or field log book.

Procedures must be followed to maintain site control so that persons who may be unaware of site conditions are not exposed to hazards. The work area will be barricaded by tape, warning signs, or other appropriate means. Site equipment or machinery will be secured and stored safely.

Access to the specified work area will be limited to authorized personnel. Only BC employees and designated BC subcontracted personnel, as well as designated employees of the client, will be admitted to the work site. Personnel entering the work area are required to sign the signature page of this HASP, indicating they have read and accepted the health and safety practices outlined in this plan.

In some instances it may be necessary to define established work zones: an Exclusion Zone, a Contamination Reduction Zone, and a Support Zone. Work zones may be established based on the extent of anticipated contamination, projected work activities, and the presence or absence of non-project personnel. The physical dimensions and applicability of work zones will be determined for each area based on the nature of job activity and hazards present. Within these zones, prescribed operations will commence using appropriate PPE. Movement between zones will be controlled at checkpoints.

Considerable judgment is needed to maintain a safe working area for each zone, balanced against practical work considerations. Physical and topographical barriers may constrain ideal locations. Field measurements combined with climatic conditions may, in part, determine the control zone distances. Even when work is performed in an area that does not require the use of chemical-resistant clothing, work zone procedures may still be necessary to limit the movement of personnel and retain adequate site control.

Personnel entering the designated Exclusion Zone should exit at the same location. There must be an alternate exit established for emergency situations. In all instances, worker safety will take precedence over decontamination procedures. If decontamination of personnel is necessary, exiting the Site will include the decontamination procedures described in the following section.

Section 7

Decontamination Procedures

Decontamination will take place in the decontamination area identified on-Site. Workers, PPE, sampling equipment, and heavy equipment leaving the exclusion area will be inspected to determine the level of decontamination necessary to prevent the spread of potentially hazardous materials. Unnecessary equipment and support vehicles are to be left outside the designated Exclusion Zone so that decontamination will not be necessary.

Despite protective procedures, personnel may come in contact with potentially hazardous compounds while performing work tasks. If so, decontamination needs to take place using an Alconox or TSP wash, followed by a rinse with clean water. Standard decontamination procedures for levels C and D are as follows.

- equipment drop,
- boot cover and outer glove wash and rinse,
- boot cover and outer glove removal,
- suit removal,
- safety boot wash and rinse,
- inner glove wash and rinse,
- respirator removal,
- inner glove removal, and
- field wash of hands and face.

Site workers should employ only applicable steps in accordance with level of PPE worn and extent of contamination present. The SSO shall maintain adequate quantities of clean water to be used for personal decontamination (i.e., field wash of hands and face) whenever a suitable washing facility is not located in the immediate vicinity of the work area.

Disposable items will be disposed of in an appropriate container. Wash and rinse water generated from decontamination activities will be handled and disposed of properly. Non-disposable items (i.e., respirators) may need to be cleaned or sanitized before reuse. Each site worker is responsible for the maintenance, decontamination, and sanitizing of their own PPE.

Used equipment may be decontaminated as follows.

- Remove adhered materials (i.e., dirt or mud) to increase the effectiveness of the decontamination process.
- An Alconox or TSP and water solution may be used to wash the equipment.
- The equipment will then be rinsed with clean water until it is determined clean.

Each person must follow these procedures to reduce the potential for transferring chemically affected materials off site.

Section 8

Training Requirements

BC Site personnel, including subcontractors and visitors conducting work in controlled areas of the Site, must have completed the appropriate training as required by 29 CFR 1910.120. In addition, the SSO will have completed the 8-hour Site Supervisor course, have current training in first aid and CPR, and any additional training appropriate to the level of site hazards. Further site-specific training will be conducted by the SSO prior to the initiation of project activities. This training will include, but will not necessarily be limited to, emergency procedures, site control, personnel responsibilities, and the provisions of this HASP. Each employee will document that they have been briefed on the hazards identified at the site and that they have read and understand the requirements of this HASP by signing the H&S Plan Acknowledgement Form attached as Appendix C.

A daily morning briefing to cover safety procedures and contingency plans in the event of an emergency is to be included with a discussion of the day's activities. These daily meetings will be recorded on the Daily Tailgate Safety Meeting Form. A copy of the Daily Tailgate Safety Meeting Form is included in Appendix D.

Exception: When there is only one employee performing field activities for the project, a formal and documented daily tailgate safety meeting (or completion of the form) is not required. However, personnel are still expected to plan their work activities and attend any site specific safety meetings or training so that tasks are performed safely.

Section 9

Medical Surveillance Requirements

BC Site personnel, including subcontractors and site visitors, who will or may work in an area designated as an exclusion zone must have fulfilled the appropriate medical monitoring requirements in accordance with 29 CFR 1910.120(f). Each individual entering an exclusion zone must have successfully completed an annual surveillance examination and/or an initial baseline examination within the last 12 months.

Medical surveillance is conducted as a routine program for BC field staff in accordance with the requirements of 29 CFR 1910.120(f). There will not be any special medical tests or examinations required for staff involved in this project.

A Hepatitis B vaccination will be offered to BC personnel before the person participates in a task where direct exposure to potentially infectious materials is a possibility (i.e., first aid or CPR). For personnel who have potential exposure to sanitary wastes, a current tetanus/diphtheria inoculation or booster is recommended.

Section 10

Contingency Procedures

Minimum emergency equipment maintained on site will include a fully charged ABC dry chemical fire extinguisher, an adequately stocked first aid kit, and an emergency eyewash station (when corrosive chemicals are present). In addition, employees will consider maintaining the personal emergency supply items listed in Section 3: Natural Phenomena, as appropriate.

In the event of an emergency, site personnel will signal distress with three blasts of a horn (a vehicle horn will be sufficient), or other predetermined signal. Communication signals, such as hand signals, must be established where communication equipment is not feasible or in areas of loud noise.

It is the SSO's duty to evaluate the seriousness of the situation and to notify appropriate authorities. The first part of this plan contains emergency telephone numbers as well as directions to the hospital. Nearby telephone access must be identified and available to communicate with local authorities. If a nearby telephone is not available, a cellular telephone will be maintained on site during work activities. The operation of the cellular phone will be verified to confirm that a signal can be achieved at the work location.

The SSO, or designee, should contact local emergency services in the event of an emergency. After emergency services are notified, the PM and RSUM will be notified of the situation as soon as possible. If personal injury, property damage or equipment damage occurs, the PM and BC Risk Manager will be contacted as soon as practicable. An Incident Investigation Report will be completed within 24 hours by the SSO, or other designated person. A copy of the Incident Investigation Report is included in Appendix E.

10.1 Injury or Illness

If an exposure or injury occurs, work will be temporarily halted until an assessment can be made to determine it is safe to continue work. The SSO, in consultation with the RSUM, will make the decision regarding the safety of continuing work. The SSO will conduct an investigation to determine the cause of the incident and steps to be taken to prevent recurrence.

In the event of an injury, the extent and nature of the victim's injuries will be assessed and first aid/CPR will be rendered as appropriate. If necessary, emergency services will be contacted or the individual may be transported to the nearby medical center. The mode of transportation and the eventual destination will be based on the nature and extent of the injury. A hospital route map is presented at the front of this HASP.

In the event of a life-threatening emergency, the injured person will be given immediate first aid and emergency medical services will be contacted by dialing the number listed in the Critical Project Information section at the beginning of this plan. The individual rendering first aid will follow directions given by emergency medical personnel via telephone.

10.2 Vehicle Collision or Property Damage

If a vehicle collision or property damage event occurs, the SSO, or designee, will contact the BC Risk Manager for appropriate action.

10.3 Fire

In the event of fire, the alarm will be sounded and Site personnel will evacuate to a safe location (preferably upwind). The SSO, or designee, should contact the local fire department immediately by dialing 911. When the fire department arrives, the SSO, or designated representative, will advise the commanding officer of the location and nature of the fire, and identification of hazardous materials on site. Only trained, experienced fire fighters should attempt to extinguish substantial fires at the Site. Site personnel should not attempt to fight fires, unless properly trained and equipped to do so. Site personnel should not attempt to fight a fire if it poses a risk to their personal safety.

Note that smoking is not permitted in controlled areas (i.e., exclusion or contamination reduction zones), near flammable or combustible materials, or in areas designated by the facility as non-smoking areas.

10.4 Underground Utilities

In the event that an underground conduit is damaged during subsurface work, mechanized equipment will immediately be shut off and personnel will evacuate the area until the nature of the piping can be determined. Depending on the nature of the broken conduit (e.g., natural gas, water, or electricity), the appropriate local utility will be contacted.

10.5 Site Evacuation

The SSO will designate evacuation routes and refuge areas to be used in the event of a Site emergency. Site personnel will stay upwind from vapors or smoke and upgradient from spills. If workers are in an Exclusion or Contamination Reduction Zone at the start of an emergency, they should exit through the established decontamination corridors, if possible. If evacuation cannot be done through an established decontamination area, site personnel will go to the nearest safe location and remove chemically-affected clothing there or, if possible, leave it near the Exclusion Zone. Personnel will assemble at the predetermined refuge following evacuation and decontamination. The SSO, or designated representative, will count and identify site personnel to verify that all have been evacuated safely.

10.6 Spill of Hazardous Materials

If a hazardous material spill occurs, site personnel should locate the source of the spill and determine the hazard to the health and safety of site workers and the public. Attempts to stop or reduce the flow should only be performed if it can be done without risk to personnel.

Isolate the spill area and do not allow entry by unauthorized personnel. De-energize sources of ignition within 100 feet of the spill, including vehicle engines. Should a spill be of the nature or extent that it cannot be safely contained, or poses an imminent threat to human health or the environment, an emergency cleanup contractor will be called out as soon as possible. Spill containment measures listed below are examples of responses to spills.

- Right or rotate containers to stop the flow of liquids. This step may be accomplished as soon as the spill or leak occurs, providing it is safe to do so.
- Sorbent pads, booms, or adjacent soil may be used to dike or berm materials, subject to flow, and to solidify liquids.
- Sorbent pads, soil, or booms, if used, must be placed in appropriate containers after use, pending disposal.
- Contaminated tools and equipment shall be collected for subsequent cleaning or disposal.

Section 11

Documentation

The implementation of the HASP must be documented on the appropriate forms (see appendices) to verify employee participation and protection. In addition, the regulatory requirements must be met for recordkeeping on training, medical surveillance, injuries and illnesses, exposure monitoring, health risk information, and respirator fit-tests. Documentation of each BC employee's health and safety records is maintained by the Health and Safety Data Manager in Walnut Creek, California.

Health and safety documentation and forms completed, as specified by this plan, are to be retained in the project file.

Other relevant project-specific health and safety documents, such as MSDSs or client-specified procedures, will be attached to this HASP in Appendix F.

Appendix A:

Air Monitoring Form

Brown AND Caldwell

Air Monitoring Form

Instructions: Complete this form immediately prior to project start.
File in project folder when complete.

Name of Project/Site:	Project No:
Project/Site Location:	
Employee Performing Air Monitoring: (Print and Sign):	Date:

Instrument(s)

Manufacturer/Model:	Manufacturer/Model:
Manufacturer/Model:	Manufacturer/Model:

Does the instrument(s) have a current calibration per the manufacturer's instructions? ☐ Yes ☐ No

Was the instrument(s) field checked (i.e bump tested or field calibrated) per the manufacturer's instructions? ☐ Yes ☐ No

Remarks:

Monitoring Data

TIME	LOCATION AND ACTIVITY	P/FID (PPM)	COLORIMETRIC TUBES (PPM)	RAM (mg/m^3)	MULTI-GAS DETECTION			
					%LEL	H2S	O2	OTHER

Appendix B:

Site Safety Checklist

Brown AND Caldwell

Site Safety Checklist

Instructions: Complete this form immediately prior to project start.
File in project folder when complete.

Name of Project/Site:	Project No:
Project/Site Location:	
Employee Completing Checklist: (Print and Sign):	Date:

Yes	No	N/A		Yes	No	N/A	
☐	☐	☐	Written Health and Safety (H&S) Plan is on site?	☐	☐	☐	Respirators are available, properly cleaned, and stored?
☐	☐	☐	Addenda to the H&S Plan are documented on site?	☐	☐	☐	Overhead utilities do not present a hazard to equipt./personnel?
☐	☐	☐	H&S Plan information matches conditions/activities at the site?	☐	☐	☐	Traffic control measures have been implemented?
☐	☐	☐	H&S Plan read/signed by all site personnel, including visitors?	☐	☐	☐	Trenches and excavations are safe for entry?
☐	☐	☐	Daily tailgate H&S meetings have been held/documented?	☐	☐	☐	Soil Spoils are at least 2 feet from the edge of the excavation?
☐	☐	☐	Site personnel have required training and medical?	☐	☐	☐	Emergency/FA equipt. is on site as described in the H&S Plan?
☐	☐	☐	Air monitoring is performed/documented per the H&S Plan?	☐	☐	☐	Drinking water is readily available?
☐	☐	☐	Air monitoring equipment has been calibrated daily?	☐	☐	☐	Phone is readily available for emergency use?
☐	☐	☐	Site zones are set up and observed where appropriate?	☐	☐	☐	Utility locator has cleared subject locations?
☐	☐	☐	Access to the work area limited to authorized personnel?	☐	☐	☐	Proper drum and material handling techniques are used?
☐	☐	☐	Decontamination procedures followed/match the H&S Plan?	☐	☐	☐	Waste containers/drums are labeled appropriately?
☐	☐	☐	Decontamination stations (incl. hand/face wash) are set up and used?	☐	☐	☐	Ext. cords are grounded/protected from water/vehicle traffic?
☐	☐	☐	PPE used matches H&S Plan requirements?	☐	☐	☐	Tools and equipment are in good working order?
☐	☐	☐	Hearing protection used where appropriate?	☐	☐	☐	GFCIs used for portable electrical tools and equipment?

Notes

(All "no" answers must be addressed and corrected immediately. Note additional health and safety observations here):

Appendix C:

H&S Plan Acknowledgement Form

H&S Plan Acknowledgement Form

Instructions: Complete this form immediately prior to project start or as new personnel join the project.
File in project folder when complete.

Name of Project/Site:	Project No:
Project/Site Location:	
Employee Performing Briefing: (Print and Sign):	Date:

Employee Acknowledgement:

The following signatures indicate that these personnel have read and/or been briefed on this Health and Safety (H&S) Plan and understand the potential hazards/controls for the work to be performed.

Important Notice to Subcontractor(s):

Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer's specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested, subcontractors will provide BC with a copy of their own H&S Plan for this project or other health and safety program documents for review.

BC's Health and Safety Plan has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC's own employees at the site. A copy of BC's H&S Plan may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's H&S Plan does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities. (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's H&S Plan to identify all hazards that may be present at the Site. Subcontractor personnel are expected to comply fully with subcontractor's Health and Safety Plan and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC H&S Plan. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.

Print	Sign	Date	Print	Sign	Date

Appendix D:

Daily Tailgate Meeting Form

DAILY TAILGATE MEETING FORM

Name of Project/Site:	Project No:
Project/Site Location:	
Employee Completing Form (*print and sign*):	**Date:**

Employee Acknowledgement:

The following signatures indicate that these personnel have read and/or been briefed on this Health and Safety (H&S) Plan and understand the potential hazards/controls for the work to be performed.

Important Notice to Subcontractor(s):

Subcontractors are responsible for developing, maintaining, and implementing their own health and safety programs, policies, procedures and equipment as necessary to protect their workers, and others, from their activities. Subcontractors shall operate equipment in accordance with their standard operating procedures as well as manufacturer's specifications. Any project monitoring activities conducted by BC at the Site shall not in any way relieve subcontractors of their critical obligation to monitor their operations and employees for the determination of exposure to hazards that may be present at the Site and to provide required guidance and protection. If requested, subcontractors will provide BC with a copy of their own H&S Plan for this project or other health and safety program documents for review.

BC's Fieldwork Safety Plan has been prepared specifically for this project and is intended to address health and safety issues solely with respect to the activities of BC's own employees at the site. A copy of BC's H&S Plan may be provided to subcontractors in an effort to help them identify expected conditions at the site and general site hazards. The subcontractor shall remain responsible for identifying and evaluating hazards at the site as they pertain to their activities and for taking appropriate precautions. For example, BC's H&S Plan does not address specific hazards associated with tasks and equipment that are particular to the subcontractor's scope of work and site activities. (e.g., operation of a drill rig, excavator, crane or other equipment). Subcontractors are not to rely on BC's H&S Plan to identify all hazards that may be present at the Site. Subcontractor personnel are expected to comply fully with subcontractor's Fieldwork Safety Plan and to observe the minimum safety guidelines applicable to their activities which may be identified in the BC H&S Plan. Failure to do so may result in the removal of the subcontractor or any of the subcontractor's workers from the job site.

Print	Sign	Date	Print	Sign	Date

Plan of the Day

(Describe the activities that are planned to be performed today)

Potential Hazards and Topics Discussed

(Describe the potential hazards and controls that may be associated with planned activities)

☐ Physical ☐ Natural Phenomena ☐ Chemical ☐ Electrical ☐ Biological ☐ Radiological

☐ Other (specify):

Place a copy in the project file.

Appendix E:

Incident Investigation Report

Preliminary Incident Investigation Report Form

Privileged and Confidential
Do Not Distribute

Instructions:

If an incident occurs, complete all applicable information in this form, make a copy for your records, and immediately forward the original to the office Health and Safety Coordinator (HSC). If fields are not applicable, indicate with "N/A". Use separate sheet(s) if necessary and attach sketches, photographs, witness statements, or other information that may be helpful in understanding how the accident/incident occurred. For assistance in completing this form, contact your office H&S Coordinator/Specialist or your Regional Safety Unit Manager (RSUM).

HSC – Review and enter report into the BC Online Incident Reporting System within 3 workdays of receipt. File original in appropriate office health and safety file.

NOTE:

This report is important – please take the time necessary to properly complete it. Incomplete reports will be forwarded to appropriate management for review and action.

General Information

Date of Accident/Incident	**Time of Accident/Incident:**	**Date Accident/Incident Reported:**	**To Whom:**
Exact Location of Accident/Incident (Street, City, State)**:**			**BC Office:**
Name Project:			**Project Number:**
Employee Completing the Investigation (Print and Sign)**:**			**Date:**

Injured/Ill Employee/Property Damage Information

Employee Name:	**Employee No.**	**Department:**	**Phone Number:**
Job Title:		**Manager's Name and Phone Number:**	
Nature of Injury/Illness (laceration, contusion, strain, etc.)**:**		**Body Part Affected** (arm, leg, head, hand, etc.)**:**	
Describe Property Damage and Estimate Loss :			

Description of Accident/Incident

Describe the accident sequentially, beginning with the initiating event, and followed by secondary and tertiary events. End with the nature and extent of injury/damage. Name any object or substance and tell how they were included. Examples: 1) Employee was pulling utility cart that was loaded with wastepaper from office area to hallway. Wheel of utility cart caught against door casing. Bags of heavy wastepaper that were in cart fell to end of cart. Cart tipped over onto foot of employee. Right foot was crushed between utility cart and door casing, resulting in severe contusion to right foot of employee. 2) Employee was driving rental car from office to project site. Car struck icy section of road. Employee lost control of vehicle, which skidded across road into concrete abutment on side of road. Accident resulted in damage to right fender, tire, headlight, and grill.

Preliminary Incident Investigation Report Form

Privileged and Confidential
Do Not Distribute

Analysis of Accident Causes

Immediate Causes - Substandard Actions

What substandard actions caused or could have caused the accident/incident? State the actions on the part of the employee or others that contributed to the occurrence of the accident/incident. Examples: 1) Employee overloaded the utility cart with wastepaper. 2) Employee exceeded safe speed on icy road, and was inattentive to hazard.

Codes (check all that apply)

- ☐ Failure to recognize hazard(s)
- ☐ Failure to use equipment or use it properly
- ☐ Failure to use PPE or use it properly
- ☐ Failure to warn, secure, or barricade
- ☐ Horseplay
- ☐ Improper lifting
- ☐ Improper loading, placement, or position for task
- ☐ Performing excessive repetitive activities
- ☐ Operating equipment without authority
- ☐ Removing or making safety devices inoperable
- ☐ Servicing equipment in operation
- ☐ Using defective equipment
- ☐ Unclassified (not determined)
- ☐ Other (specify): _____

Immediate Causes - Substandard Conditions

What substandard conditions caused or could have caused the accident/incident? State the conditions that existed at the time of the accident (the specific control factors that were or may have been the direct or immediate cause or causes of the accident). Examples: 1) Wheel of utility cart was worn and would not roll properly; utility cart was overloaded with wastepaper. 2) Road was covered with icy spots; weather was foggy.

Codes (check all that apply)

- ☐ Congested or restricted area
- ☐ Defective tools, equipment, or materials
- ☐ Fire or explosion hazards
- ☐ Hazardous environmental conditions (vapors, dusts, etc.)
- ☐ High or low temperature exposures
- ☐ Inadequate guards or barriers
- ☐ Inadequate or excessive illumination
- ☐ Inadequate ventilation
- ☐ Inadequate walking/working surfaces
- ☐ Noise Exposures
- ☐ Poor housekeeping
- ☐ Radiation exposures
- ☐ Unclassified (not determined)
- ☐ Other (specify): _____

Basic Causes - Personal and Job Factors

What personal and/or job factors caused or could have caused the accident/incident? State the influencing factors or underlying causes, either conditions or actions or both, that contributed to the accident/incident. Examples: 1) Employee had not been instructed in overloading hazards. 2) Employee had not been trained in driving under winter conditions; company has no driver training program.

Codes (check all that apply)

Personal Factor Codes

- ☐ Alcohol or drug influence (possible)
- ☐ Fatigue
- ☐ Inadequate skill, capability, knowledge, or training
- ☐ Inattention
- ☐ Rushing to complete work
- ☐ Unclassified (not determined)
- ☐ Other (specify): _____

Job Factor Codes

- ☐ Inadequate engineering
- ☐ Inadequate leadership/supervision
- ☐ Inadequate maintenance, wear, abuse, or misuse
- ☐ Inadequate planning or accelerated schedule
- ☐ Inadequate tools/equipment
- ☐ Inadequate work standards/procedures
- ☐ Unclassified (not determined)
- ☐ Other (specify): _____

Remedial Actions

Describe the actions taken or planned to prevent recurrence of accident/incident - provide the implementation date and person responsible for any planned corrective action.. Examples: 1) Wheels of utility cart were replaced with larger size wheels; all carts were inspected for safe operation; employees were instructed in overloading hazards. 2) All project personnel were instructed at the safety training meeting on driving under hazardous conditions; driver training program will be implemented.

Codes (check all that apply)

- ☐ Equipment repair or replacement
- ☐ Improve design or construction
- ☐ Improve housekeeping
- ☐ Improve PPE
- ☐ Install safety guard or device
- ☐ Reinstruction or reprimand of personnel involved
- ☐ Temporary/permanent reassignment of personnel
- ☐ Work method change
- ☐ Use safer materials or equipment
- ☐ Develop and publish lessons learned
- ☐ Unclassified (not determined)
- ☐ Other (specify): _____

Appendix F:

Miscellaneous Health and Safety Information

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

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

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

Community Air Monitoring Plan

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

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

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

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

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

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

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

- 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.

June 20, 2000

P:\Bureau\Common\CommunityAirMonitoringPlan (CAMP)\GCAMPR1.DOC

Appendix F: Groundwater Monitoring Well Construction Logs

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-1D **Page** 1 **of** 4

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CRM/Allendale, NJ	FJW	6"	2" PVC	.010"	120.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
9/26/08 - 9/27/08	Boart Longyear	Hammer Type:	Grundfos

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD 83 US FT	Easting: 1099026.0 ft.
Jim	Sonic	Mini-Sonic	Vert Datum: NGVD 29	Northing: 214509.7 ft.
			Ground Surface Elev: 105.4 ft.	TOC Elev: 104.9 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
	105		Asphalt.		1		0.0	*0.0-0.5' - Concrete Pad*
		SW GW	Light brown, mf SAND, some (-) f Gravel. Dry.					
		SM GM	Brown mf SAND, and mf Gravel, trace (+) Silt.					
5	100	SW GW	Light brown mf SAND. some (-) mf Gravel. Dry.		2		0.0	
		SW GW	Reddish brown mf SAND, some (+) mf Gravel, trace (-) Silt.					
10	95	SW GW	Same as above. Slightly moist.		3		0.0	
15	90	SW GW	Same as above.		4		0.0	
20	85	SW GW	Orange/brown mf SAND, some (-) mf Gravel. Dry.		5		0.0	*0.5-58' - Cement/Bentonite Grout*
25	80	SW GW	Mf SAND, some mf Gravel, trace (-) Silt with iron staining.		6		0.0	
30	75	SW	Reddish brown mf SAND, some mf Gravel,		7		0.0	

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 135711 Project Location: Westbury, NY	Permit Number:	Well No. MW-1D Page 2 of 4

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		GW	trace (-) Silt with Iron staining.					
		SW GW	Light brown mf SAND, little mf Gravel.					
		SW GW	Reddish brown mf SAND and mf Gravel, trace Silt. Moist.					
35	70	SW GW	Brown mf SAND, little (+) mf Gravel, trace (-) Silt. Wet.		8		0.0	
40	65	SC SM	Reddish brown Clayey SILT, some mf SAND with mica flakes. Moist.					
45	60	SC SM	Same as above.		9		0.0	
50	55							
55	50	SC SM	Same as above.		10		0.0	
		SC SM	Gray Clayey SILT, some mf SAND with mica flakes. Moist.					
60	45							*58-60' - Bentonite Seal*
		SM GM	Reddish Brown mf SAND, little mf Gravel, trace (+) Silt.					
								62-72' - .010' Slotted PVC Screen
65	40	SM GM	Reddish brown mf SAND, little Silt, little (-) mf Gravel. Wet.		11		0.0	65-66' - Sample MW-1D-65-66
								60-74' - #1 Filter pack sand

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-1D **Page** 3 **of** 4

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		SM GM	Gray mf SAND, little Silt, little (-) mf Gravel. Wet.					
75	30	SW	Dark brown mf SAND. Wet.		12		0.0	
		SM GM	Brown mf SAND, little Silt, little (-) f Gravel. Wet.					
		SC SM	Gray Clayey SILT, some mf Sand with Iron staining.					
		SW GW	Brown-red mf SAND, little (-) mf Gravel, trace Silt.					
80	25	SW GW	Brown cmf SAND, little cmf Gravel, trace Silt. Saturated and loose.					*74-120' - Bentonite Backfill*
85	20	SW	Tan cm SAND. Loose.		13		0.0	
		SM	Red-brown mf SAND, little Silt. Wet.					
		SC SM	Gray Clayey SILT, little f Sand iron staining and mica flakes.					
90	15	SM	Brown cmf SAND, trace Silt. Loose (flowing), wet.					
95	10	SM	Light brown mf SAND, trace Silt.		14		0.0	
		SM	Light brown mf SAND, little Silt.					
		SC SM	Brown mf SAND, some (-) Clayey Silt. Bands of grey Clayey Silt.					
		SM	Red-brown mf SAND, little Silt. Wet.					
100	5							
105	0	SM	Brown-reddish brown mf SAND, trace (+) Silt with lenses of gray clayey Silt @ 106.4-106.6 and 110.3-110.6.		15		0.0	

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 135711 Project Location: Westbury, NY	Permit Number:	Well No. MW-1D Page 4 of 4

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well	PID Readings (ppm)	Remarks
110	-5										
		SM	Gray brown mf SAND, little (+) Silt. Lenses of mica flakes.								
115	-10										
120											End of Boring at 120'

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-1S **Page** 1 **of** 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CRM/Allendale, NJ	FJW	6"	2" PVC	.010"	48.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
9/27/08 - 9/27/08	Boart Longyear	Hammer Type:	Grundfos

Driller:	Drilling Method:	Drilling Equipment:		
Jim	Sonic	Mini-Sonic	**Horiz Datum/Proj:** NAD 83 US FT **Vert Datum:** NGVD 29 **Ground Surface Elev:** 105.3 ft.	**Easting:** 1099030.1 ft. **Northing:** 214505.9 ft. **TOC Elev:** 104.7 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
			Asphalt.		1		0.0	*0.0-0.5' - Concrete Pad*
		SW GW	Brown mf SAND and GRAVEL.					
		SW GW	Light Brown mf SAND, some mf Gravel.					
5	100	SM GM	Brown mf SAND, some (+) mf Gravel, trace (+) Silt.		2		0.0	
		SW GW	Reddish-brown mf SAND and GRAVEL.					
		SW GW	Brown mf SAND and GRAVEL.					
		SW GW	Brown mf SAND, some (+) Silty Clay.					
		SM GM	Red-brown mf SAND, some mf Gravel.					
10	95	SW GW SW GW	Same as above.		3		0.0	
15	90	SW GW	Orange-brown mf SAND, some mf Gravel, trace (-) Silt.		4		0.0	*0.5-29' - Cement/Bentonite Grout*
20	85	SW GW	Light brown mf SAND, some (-) mf Gravel, moist.		5		0.0	
25	80	SW GW	Same as above.		6		0.0	
30	75							*29-31' - Bentonite Seal*

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 135711 Project Location: Westbury, NY	Permit Number:	Well No. **MW-1S** Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		SW	Light brown mf SAND.					
35	70	SW GW	Light brown mf SAND, some (-) mf Gravel, wet.		7		0.0	*32-47' - .010" slot PVC screen* *31-48' - #1 Filter Sand*
		SW GW	Mf GRAVEL and c SAND, wet.					
		SW GW	Light brown mf SAND, some (-) mf Gravel, wet.					
40	65	SC SM	Red-brown Clayey SILT, some mf Sand.					39-39.5' - Sample MW-1S-39-39.5
45	60	SC SM	Same as above.		8		0.0	
								End of Boring at 48'

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** **MW-2D** **Page** 1 **of** 3

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CRM/Allendale, NJ	FJW	6"	2" PVC	.010"	109.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
9/23/08 - 9/29/08	Boart Longyear	Hammer Type:	Grundfos

Driller:	Drilling Method:	Drilling Equipment:		
Matt	Sonic	Mini-Sonic	**Horiz Datum/Proj:** NAD 83 US FT **Vert Datum:** NGVD 29 **Ground Surface Elev:** 104.3 ft.	**Easting:** 1099001.2 ft. **Northing:** 214404.5 ft. **TOC Elev:** 103.9 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
		SM GM	Brown mf SAND, some (-) mf Gravel, trace (+) Clayey Silt. Topsoil. Dry.		1		0.0	*0.0-0.5' - Concrete pad*
		SM GM	Light brown mf SAND, some (-) cmf Gravel, trace (+) Clayey Silt. Dry.					
		SW GW	Tan mf SAND, some mf Gravel. Dry.					
	100	SW GW	Tan mf SAND, and cmf Gravel, trace (-) Silt (gravel rounded). Dry.		2		0.6	
5								
	95	SW GW	Brown-tan mf SAND, and cmf Gravel (gravel rounded). Dry.		3		0.6	
10								
	90							
15								
	85	SW GW	Light brown-tan cmf SAND, little (+) cmf GRAVEL, trace (-) Silt.		4		50.9	
20								
		SM GM	Beige-tan mf SAND, little (-) mf Gravel, trace (-) Silt.					
	80	SM GM	Light brown, mf SAND, little (-) mf Gravel, trace Silt.					23.5' - Moderate to strong odor 23.5-24' - Sample MW-2D-23.5-24 *0.5-58' - Cement/Bentonite Grout*
25								
	75	SW	Brown cmf SAND, trace (+) cmf Gravel. Wet.		5		0.0	
30								

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 135711 Project Location: Westbury, NY	Permit Number:	Well No. MW-2D Page 2 of 3

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
35	70							
		SC SM	Red-brown mf SAND, some Clayey Silt, trace f Gravel.					
40	65	SC SM	Same as Above.		6		0.0	
		SC SM	Brown Clayey SILT, some mf Sand, mica flakes.					
45	60	SC SM	Brown-gray Clayey SILT, some mf Sand, trace Organics. Organics are burned wood/ char.					46-46.5' - Sample MW-2D-46-46.5
50	55	SC SM	Same as Above.		7		0.0	
		SC SM	Mf SAND, some Clayey Silt. Wet.					
55	50	SC SM	Brown-Gray Clayey SILT, some f Sand, trace organics.					
		CL ML	Red-brown Clayey SILT, little f Sand. Dry and Dense.					56.8-58.8' - Black staining
60	45	SW GW	Red-brown mf SAND and GRAVEL, little Silty Clay.		8		0.0	*58-60' - Bentonite Seal*
		SW	Light brown f SAND, little (-) cmf Gravel, trace Silt. Saturated/Wet.					
65	40							*62-72' - .010" slot PVC screen*
		SM	Mf SAND, some (-) Silty Clay, little mf (-) Gravel, iron staining.					
	35	SM	Light brown mf SAND, trace (+) cmf Gravel, trace (-) Silt. Wet/Saturated		9		0.0	*60-74' - #1 Filter Sand*

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-2D **Page** 3 **of** 3

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		SM	Light brown mf SAND, trace (+) Silt, trace (-) Gravel. Saturated.					69.6-72.8' - Discontinuous black staining
		SM	Cmf SAND, trace (+) cmf Gravel. Much looser than overlying.					
	30							
75								
		SM	Reddish brown mf SAND, trace (+) Silt, trace (-) mf Gravel.					
	25	SM	Orange-tan mf SAND, trace Silt.		10		0.0	
80								
	20							
85								*74-109' - Bentonite Backfill*
	15	SW	Brown mf SAND, trace (+) cmf Gravel. Lenses of Silty CLAY w/ iron staining at 90.5-90.8', 92.1-93.5' and 96.5-97'. Moist.		11		0.0	
90								
	10							
95								
	5	SW	Light brown mf SAND. Saturated, loose.		12		0.0	
100								
		CL ML SW	Gray-brown Silty CLAY. Cmf SAND, trace (-) Silt.					
	0							
105								*End of Boring at 109'*

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-2S **Page** 1 **of** 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CRM/Allendale, NJ	FJW	6"	2" PVC	.010"	49.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Continuous Core	Development Method:
9/24/08 - 9/25/08	Boart Longyear	Hammer Type:	Grundfos

Driller:	Drilling Method:	Drilling Equipment:		
Matt	Sonic	Mini-Sonic	**Horiz Datum/Proj:** NAD 83 US FT **Vert Datum:** NGVD 29 **Ground Surface Elev:** 104.3 ft.	**Easting:** 1099001.8 ft. **Northing:** 214399.7 ft. **TOC Elev:** 104.0 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
		SM GM	Dark brown mf SAND, some mf Gravel, little Clayey Silt. Topsoil.		1		0.0	*0.0-0.5' - Concrete Pad*
	100	SW GW	Brown mf SAND, some (+) mf Gravel, trace (-) Silt.		2		0.0	
5		SW GW	Tan mf SAND, some (+) mf Gravel, trace (-) Silt. Iron staining.					
	95	SW GW	Reddish brown mf SAND, little (+) mf Gravel, trace (-) Silt, dry.		3		0.0	
10								
	90	SW GW	Orange-light brown cmf SAND, some (+) cmf Gravel (rounded), dry.		4		0.0	
15								*0.5-29' - Cement/Bentonite Grout*
	85	SW GW	Same as above.		5		0.0	
20								
		SW GW	Light brown cmf SAND some (-) mf Gravel.					
	80	SW GW	Light brown mf SAND, some (-) mf Gravel, dry.					
25								
	75	SW GW	Same as above, moist.		6		0.0	
30								*29-31' - Bentonite Seal*

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** **MW-2S** **Page** 2 **of** 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		SW GW	Light brown mf SAND, little (-) mf Gravel, trace Silt.					
	70							*32-47' - .010" slot PVC screen*
35		SM GM	Light brown cmf SAND, trace Clayey Silt, trace (+) mf Gravel.					
	65	SM GM	Same as above.		7		0.0	*31-49' - #1 Filter Sand*
40		SC SM	Red-Brown Silty CLAY, some mf Sand, trace (-) organics, mica flakes.					40-40.5' - Sample MW-2S-40-40.5
	60	SC SM	Same as above.		8		0.0	
45								*End of Boring 49'*

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** **MW-3** **Page** 1 **of** 2

Geologist/Office	**Checked By:**	**Borehole Diameter:**	**Screen Diameter and Type:**	**Slot Size:**	**Total Boring Depth (ft)**
CRM/Allendale, NJ	FJW	6"	2" PVC	.010"	59.0 ft.

Start/Finish Date	**Drilling Contractor:**	**Sampling:** Continuous Core	**Development Method:**
9/25/08 - 9/26/09	Boart Longyear	**Hammer Type:**	Grundfos

Driller:	**Drilling Method:**	**Drilling Equipment:**	**Horiz Datum/Proj:** NAD 83 US FT	**Easting:** 1099043.5 ft.
Matt	Sonic	Mini-Sonic	**Vert Datum:** NGVD 29	**Northing:** 214404.9 ft.
			Ground Surface Elev: 104.7 ft.	**TOC Elev:** 104.2 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
		SM	Asphalt.		1		0.0	*0.0-0.5' - Cement Pad*
		GM	Dark brown mf SAND and mf GRAVEL, little (-) Silt. Topsoil.					
		SM GM	Brown mf SAND and GRAVEL, trace (+) Silt. Moist.					
		SW GW	Light brown mf SAND, some (+) mf Gravel, trace (-) Silt. Dry.					
	100	SW GW	Light Brown mf SAND, some (+) cmf Gravel. Dry.		2		0.0	
5								
	95	SW GW	Orange-brown mf SAND, some mf Gravel, occasional iron staining. Dry.		3		0.0	
10								
	90							
15								*0.5-29' - Cement/Bentonite Grout*
								14-19' - No sample
	85	SW GW	Light brown mf SAND, some (+) mf Gravel (rounded). Dry.		4		0.0	
20								
		SW GW	Orange-Light Brown mf SAND, some (-) mf Gravel, iron staining.					
	80							
25								
	75	SW GW	Light tan-grey cmf SAND, some (+) mf Gravel, very loose.		5		0.0	
30		SW	Light brown mf SAND, some (-) mf Gravel,					*29-31' - Bentonite Seal*

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 135711 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** **MW-3** **Page** 2 **of** 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well	PID Readings (ppm)	Remarks
		GW	trace Silt.					
		SM GM	Mf SAND and GRAVEL, little Silt.					
	70	SW GW	Orange-brown mf SAND, little (+) mf Gravel, trace Silt.					*32-47' - .010" slot PVC screen*
35		SM GM	Brown mf SAND, some (-) mf Gravel, little (+) Silt, moist.					
	65	SW GW	Brown mf SAND, little mf Gravel, very loose, saturated.		6		0.0	*31-48' -#1 Filter sand*
40		SW GW	Orange-brown mf SAND, little (+) mf Gravel, trace (-) Silt, wet.					41-42' - Sample MW-3-41-42
	60							
45								
	55	SW	Tan mf SAND, loose, wet.		7		0.0	
50		SW GW	Mf GRAVEL, some (+) mf Sand, loose, wet.					
		SW GW	Brown mf SAND, little mf Gravel, frequent Mica flakes.					
		SC SM	Reddish-brown Clayey SILT, some mf Sand, mica flakes.					
	50							
55								*48-59' - Bentonite Backfill*
		SC SM	Grey Clayey SILT, some mf Sand, mica flakes.					
								End of Boring at 59'

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 138944 Project Location: Westbury, NY	Permit Number:	Well No. MW-4 Page 1 of 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CJM/Allendale, NJ	FJW	8.25"	2" PVC	0.010"	44.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
3/9/10 - 3/9/10	ADT	Hammer Type: Automatic	Surge & Purge w/Whale pump

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD 83 US FT	Easting: 1098997.5 ft.
S. Miller	HSA	CME 55	Vert Datum: NGVD 29	Northing: 214425.1 ft.
			Ground Surface Elev: 104.7 ft.	TOC Elev: 104.3 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
			Hand cleared from 0-4' due to underground utilities. Tan/Brown cmf SAND, some mf Gravel. Moist.	NA	1		NA	*0-2' BGS: Concrete Pad* *2-25' BGS: Cement/Bentonite grout*
5	100		Dk. Brown f SAND and SILT, trace Gravel (Misc. Fill - brick), trace Organics. Moist.	2-4-6-5	2		0.0	
				4-4-5-6	3		0.0	
			Brown/Orange fmc SAND, some (-) Gravel, trace Silt.					
			Lt. Brown/Tan mf SAND, some (-) fm Gravel, trace Silt. Moist.	6-5-6-10	4		0.0	
10	95		Lt. Brown/Tan mf SAND, some (-) fm Gravel (rounded), trace Silt. Moist.	3-7-16-11	5		0.0	
				10-8-11-13	6		0.0	
15	90		Tan/White/Brown mf SAND, some (-) fmc Gravel. Fe staining.	5-6-8-11	7		0.0	
			Tan/White/Brown mf SAND, some (+) fmc Gravel (rounded and angular). Fe staining.	18-18-11-13	8		0.3	
			Tan/White mf SAND, little (+) fmc Gravel, trace (-) Silt.	7-16-11-10	9		0.3	
20	85		Tan/White mf SAND, some fmc Gravel, trace (-) Silt. Fe staining.	19-25-29-22	10		0.0	Two split-spoon samples collected in 20-22' interval due to sand in the augers.
			Tan/White mf SAND, little (+) fmc Gravel, trace (-) Silt. Fe staining.	8-16-14-25	11		0.0	
25	80			30-22-29-25	12		1.2	*25-27' BGS: Bentonite seal*
			Tan/Lt. Brown mf SAND, little (-) fm Gravel.	5-13-22-27	13		0.0	*27-44' BGS: #1 Filter Sand*
			No recovery. Cobble in shoe.	26-36-52-33	14		NA	
30	75		Tan/Lt. Brown mf SAND, little (-) fm	6-13-15-27	15		0.0	*29-44' BGS: 0.010" Slot PVC Screen*

MONITORING WELL LOG

BROWN AND CALDWELL	Project Name: Bartlett Project Number: 138944 Project Location: Westbury, NY	Permit Number:	Well No. MW-4 Page 2 of 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well	PID Readings (ppm)	Remarks
			Gravel. Wet to saturated.	NA	16					0.0	
	70			2-9-11-17	17					0.0	
35				11-21-33-27	18					0.0	Sample MW-4-36-38 collected.
				3-5-5-7	19					0.0	
	65		Tan/Brown mfc GRAVEL and SAND. Wet to saturated.								
40			Brown/Tan Clayey SILT and f SAND.	6-3-3-6	20					0.0	

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 138944 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-5 **Page** 1 **of** 2

Geologist/Office	Checked By:	Borehole Diameter:	Screen Diameter and Type:	Slot Size:	Total Boring Depth (ft)
CJM/Allendale, NJ	FJW	8.25"	2" PVC	0.010"	44.0 ft.

Start/Finish Date	Drilling Contractor:	Sampling: Split Spoon	Development Method:
3/9/10 - 3/9/10	ADT	Hammer Type: Automatic	Surge & Purge w/Whale pump

Driller:	Drilling Method:	Drilling Equipment:	Horiz Datum/Proj: NAD 83 US FT	Easting: 1099004.6 ft.
S. Miller	HSA	CME 55	Vert Datum: NGVD 29	Northing: 214368.2 ft.
			Ground Surface Elev: 104.3 ft.	TOC Elev: 104.1 ft.

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int / Recovery / Lithology / Well (Traffic Rated Vault Box)	PID Readings (ppm)	Remarks
			Hand cleared from 0-4' due to underground utilities. Tan/Brown cmf SAND, some mf Gravel. Moist.	NA	1		NA	*0-2' BGS: Concrete Pad*
	100		Dk. Brown fm SAND, little (+) Silt, trace Gravel.	5-7-8-6	2		0.0	*2-25' BGS: Cement/Bentonite grout*
5			Brown/Tan cmf SAND, little (+) fm Gravel, trace Silt.	5-4-7-10	3		1.3	
			Dk. Brown/Tan/Orange cmf SAND, little (+) fmc Gravel, trace Silt. Moist.	13-15-21-17	4		0.5	
	95							
10				23-10-9-11	5		0.7	
			Tan/Orange mfc SAND, little f Gravel, trace (-) Silt. Moist.	NA	6		0.3	
	90		Tan/Orange/White fm SAND, some fm Gravel, trace Silt. Loose.	11-10-9-8	7		0.7	
15								
			Tan/White fm SAND, little (+) fm Gravel. Loose. Dry.	11-8-7-6	8		0.4	
			Tan/Orange mf SAND, little fm Gravel. Fe staining throughout. Cobble in shoe	7-7-5-9	9		0.4	
	85							
20				10-11-9-7	10		1.3	
			Tan/White/Orange mf SAND, little (+) mf Gravel. Fe staining.	16-10-12-16	11		0.4	
	80		Tan/White fm SAND, little (+) mf Gravel. Fe staining. Moist.	9-17-23-22	12		1.5	*25-27' BGS: Bentonite seal*
25			Tan/White fm SAND, little (-) fm Gravel.	17-25-19-30	13		0.8	*27-44' BGS: #1 Filter Sand*
			Tan/White fm SAND, little (+) fm Gravel. Fe staining.	8-9-18-21	14		0.7	
	75							*29-44' BGS: 0.010" Slot PVC Screen*
30				11-15-20-22	15		0.2	

MONITORING WELL LOG

BROWN AND CALDWELL	**Project Name:** Bartlett **Project Number:** 138944 **Project Location:** Westbury, NY	**Permit Number:**	**Well No.** MW-5 **Page** 2 **of** 2

Depth (feet)	Elevation (feet)	USC Soil Type	Description	Blow Counts	Sample No.	Graphic Log: Sample Int	Graphic Log: Recovery	Graphic Log: Lithology	Graphic Log: Well	PID Readings (ppm)	Remarks
			Tan/Orange fm SAND, little (+) fm Gravel. Fe staining. Moist to wet.								
			Tan/Orange/White fm SAND, little (+) fmc Gravel. Wet to saturated.	14-10-18-17	16					0.5	
	70			5-14-16-25	17					0.0	
35			Tan/White mf SAND, little fm Gravel. Wet to saturated.	9-11-15-12	18					0.0	Sample MW-5-36-38 collected.
			No recovery. Cleaning sand from augers.	NA	19					NA	
	65										
40			Brown/Tan fmc GRAVEL.	3-6-5-8	20					0.0	
			Tan/Lt. Brown Clayey SILT, trace (+) f Sand. Moist to wet. Mica present.	4-7-9-3	21					0.0	

Appendix G: Sampling Log Forms

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number:
Sample I.D.: (if different from well no.)

Project:
Personnel:

Date: _____ Time: _____
Weather: _____ Air Temp.: _____

WELL DATA:

Casing Diameter: _____ ❑ Stainless Steel ❑ Steel ❑ PVC ❑ Teflon® ❑ Other: _____
Intake Diameter: _____ ❑ Stainless Steel ❑ Galv. Steel ❑ PVC ❑ Teflon® ❑ Open rock
DEPTH TO : Static Water Level: _____ ft Bottom of Well:_____ft
DATUM: ❑ Top of Protective Casing ❑ Top of Well Casing ❑ Other:
CONDITION: Is Well clearly labeled? ❑ Yes ❑ No Is well clean to bottom? ❑ Yes ❑ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ❑ Yes ❑ No
Does Weep Hole adequately drain well head? ❑ Yes ❑ No
Is Concrete Pad Intact? (not cracked or frost heaved) ❑ Yes ❑ No
Is Padlock Functional? ❑ Yes ❑ No ❑ NA Is Inner Casing Intact? ❑ Yes ❑ No
Is Inner Casing Properly Capped and Vented? ❑ Yes ❑ No

VOLUME OF WATER: Standing in well: _____ To be purged: _____

PURGE DATA:

METHOD: □ Bailer, Size: ____ ❑ Bladder Pump ❑ 2" Submersible Pump ❑ 4" Submersible Pump
❑ Centrifugal Pump ❑ Peristaltic Pump ❑ Inertial Lift Pump ❑ Other: _____

MATERIALS: Pump/Bailer: ❑ Teflon® ❑ Stainless Steel ❑ PVC ❑ Other: _____
Tubing/Rope: ❑ Teflon® ❑ Polyethylene ❑ Polypropylene ❑ Other: _____

Pumping Rate: _____ Elapsed Time: _____ Volume Pumped: _____
Was well Evacuated? ❑ Yes ❑ No Number of Well Volumes Removed: _____
PURGING EQUIPMENT: ❑ Dedicated ❑ Prepared Off-Site ❑ Field Cleaned

SAMPLING DATA:

METHOD: ❑ Bailer, Size: ____ ❑ Bladder Pump ❑ 2" Submersible Pump ❑ 4" Submersible Pump
❑ Syringe Sampler ❑ Peristaltic Pump ❑ Inertial Lift Pump ❑ Other: _____

MATERIALS: Pump/Bailer: ❑ Teflon® ❑ Stainless Steel
Tubing/Rope: ❑ Teflon® ❑ Polyethylene

SAMPLING EQUIPMENT: ❑ Dedicated ❑ Prepared Off-Site ❑ Field Cleaned
Metals samples field filtered? ❑ Yes ❑ No Method: _____
APPEARANCE: ❑ Clear ❑ Turbid ❑ Color: _____ ❑ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: _____ Meter Model: _____ Meter S/N: _____
Temperature: _____ Spec. Cond.: _____ Meter Model: _____ Meter S/N: _____
ORP: _____ DO: _____ Turbidity: _____
DUP : ❑ No ❑ Yes Name: _____
MS/MSD : ❑ No ❑ Yes Name: _____
Field Lab Results: ❑N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: _____

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: ______________________________ Project Number: __________________

Personnel: ________________________________ Well ID: _________________________

Purge/Sample Depth: ________________________ Sample ID: _______________________

Actual Time	pH	Temp (ºC)	ORP (mV)	Cond ( )	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments

Soil Vapor Sample Collection Field Form

Project:_____ Project #:_____

Date:_____ Personnel:_____

Sample ID: _____

Carbon Filter ID #: _____

Sample location: _____ Depth of sample point below grade: _____

Rainfall: _____ Wind speed (mph) and direction: _____

Start:

Time: _____

Temperature (°C): _____

Barometric Pressure (mmHg):_____

Relative Humidity (%):_____

Flow rate: _____

End:

Time: _____

Temperature (°C): _____

Barometric Pressure (mmHg):_____

Relative Humidity (%):_____

Flow rate: _____

Helium tracer test:

Tubing type used: _____ Length of tubing (cm): _____ Tubing volume (cc): _____
1 to 3 volumes purged @ < 200cc/min? YES NO
Chamber tracer gas conc.: _____ Tracer gas conc. during purging: _____

Weather conditions during probe installation:

Temperature (°C): _____ Rainfall: _____ Barometric Pressure (mmHG): _____

Wind direction: _____ Wind speed (mph): _____

Comments:

_____
_____
_____

Appendix H: Quality Assurance Project Plan

The SMP activities will be conducted in accordance with the quality assurance procedures specified in this QAPP to ensure that suitable and verifiable sampling and analytical results are obtained.

1. Equipment Decontamination

Field decontamination will be accomplished using the methods described below.

1.1 Drilling Equipment

All down-hole drilling equipment will be decontaminated before beginning drilling activities at the site, and after completion of each boring or monitoring well. Decontamination of the drilling equipment will be conducted over a decontamination pad using a high pressure steam cleaner. Rinsate accumulated in the decontamination pad will be pumped into DOT-approved 55 gallon steel drums pending waste characterization and appropriate off-site disposal.

1.2 Water Level Indicators

Upon completion of the water level measurements, the probe will be raised to the surface and along with the wetted portion of the tape will be decontaminated with the following procedure:

- Wash in potable water and laboratory detergent
- Rinse with potable water
- Rinse with deionized water

1.3 Submersible Pumps

When a submersible pump is used for well purging and/or sampling, it will be cleaned prior to and between each use. (Pump tubing will be discarded after each use.) The cleaning process will consist of the following:

- Wash the exterior of the pump with a detergent solution.
- Flush laboratory detergent solution through the pump by placing the pump in a bucket filled with the detergent solution.
- Flush potable water through the pump by placing the pump in a bucket filled with potable water.
- Rinse the packer with potable water.
- Rinse the internal and external portions of the pump with deionized water.
- The power leads to the pump will be decontaminated in a similar fashion.

2. Analytical Methods

Table 1 below provides specifications for all environmental media samples and quality control samples:

Table 1 - Analytical Summary

Laboratory Analysis	Groundwater	Soil Vapor
	MW-1S/D **MW-2S/D** **MW-3** **MW-4** **MW-5**	**1 Indoor Air** **1 Ambient Air** **1 Soil Vapor**
Parameters		
TCL Pesticides Method 8081A	7	--
Organophosphorous Pesticides Method 8141A	7	--
VOCs by TO-15 (SUMMA® cannister)	--	3
Total Environmental Media Samples	7	3
Duplicates	1	--
MS/MSD	1	--
Trip Blanks	--	--
Equipment Blanks	1	--
Total QA/QC Samples	3	0

Notes:
All analytical methods NYSDEC ASP and/or USEPA SW 846

Data will be reported in Category B format along with the required quality assurance data on the required forms and with all raw data including calibration data, blank data, chromatograms, quant reports, sample prep logs, sample run logs and percent moisture work sheets and will be provided in electronic format.

3. Field Quality Assurance/Quality Control Samples

Quality control procedures will be followed so that laboratory preparation, sampling, and transport activities do not bias the results of the chemical analysis. Trip blanks and field blanks will be prepared and analyzed as described below to provide a quantitative basis for validating the analytical data.

3.1 Trip Blanks

Trip blanks will be prepared only when aqueous sampling is performed, and only when that sampling involves VOC analysis; trip blanks will not be prepared for non-aqueous samples. A trip blank will consist of an analyte-free water sample prepared by the laboratory and will accompany the sample container shipment from the laboratory to the field and back. Trip blanks will be subject only to volatile organic analysis. Trip blanks will be collected at a rate of one per sample shipment or one per two day sampling event, whichever is greater.

3.2 Field (Equipment) Blanks

Field blanks, also referred to as equipment blanks, are used to determine if the sampling equipment used in the field might contribute appreciable concentrations of constituents to the samples. Laboratory grade deionized water is run over, or through, the sampling equipment and collected in the same type of sample jars as other samples. Ideally, the results for this analysis will show non-detects for the constituents analyzed. One Field Blank will be collected every day that samples are collected, or one per 20 samples, which ever is greater.

3.3 Duplicate Samples

Field duplicates are a second aliquot of a field sample. Variations in the sample and duplicate can be indicative of possible inaccuracy or imprecision of laboratory methodologies. One Field Duplicate will be collected for every 20 samples.

Field duplicates will be collected in one of two ways, depending on the analysis to be performed. For each analyte, with the exception of VOCs, the sample volume will be homogenized in plastic bowls with plastic spoons, or by kneading the material in a plastic bag (e.g., Ziploc© bag). Once homogenized, the material will be evenly distributed into the sample containers. Sample collection materials (bowls, spoons, plastic bags, gloves) will be laboratory decontaminated or single use.

Homogenization of sample material that will be analyzed for VOCs is inappropriate given the volatile nature of these constituents; homogenization would only provide a greater opportunity for constituent loss due to exposure to the atmosphere.

3.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

Additional sample volumes will be collected for MS/MSD analyses to evaluate the effect of the sample matrix on the analytical method. Additional sample volumes for MS/MSD analyses will be collected at a frequency of one pair per sample batch, or at least 1 per 20 samples. The MS/MSD samples will be collected at the same time the primary sample is collected and should be collected from a sample location that contains concentrations of the constituent of concern.

4. Sample Handling Requirements

4.1 Sample Containers and Preservatives

The appropriate sample containers and associated preservatives must be obtained following the applicable NYSDEC and USEPA guidance. The containers and preservatives will be supplied by the laboratory that will conduct the analyses. It is crucial that the sample containers be carefully organized and inventoried prior to the initiation of the sampling program in order to provide sufficient time to rectify problems, should they occur. Finally, pre-printed sample labels will be placed on the sample containers.

Table 2 below lists the various required preservation methods, container types, and maximum sample holding times.

TABLE 2 - SAMPLE CONTAINERS, PRESERVATION, TECHNIQUES, AND HOLDING TIMES

Analytical Parameter	Typical Volume Required (mL) [b]	Container [a]	Preservative	Maximum Holding Time
Pesticides	1000-4000	G/Teflon®-lined cap	Cool, 4°C	7 days/extraction +40 days/analysis

NOTES:
a. Polyethylene (P) or Glass (G) or Amber Glass (AG).
b. Analytical laboratory should be consulted for specific volume requirements.

4.2 Sample Labels and Nomenclature

Sample labels are required on sample containers for the primary purpose of sample identification. Specific field data need not be recorded on the labels, since such information will be recorded on field data sheets. The sample labels will contain the following information:

Sample ID Number
Location identification number (i.e., well number, boring designation)
Analysis to be performed
Preservative (optional)
Project name and number
Date and time of sample collection
Initials of sampler

Each sample collected will receive a distinct sample identifier. The sample identifier will consist of three parts; the first part will identify the area the sample was collected from within, the second part will identify the sample matrix, the third part will identify the specific sample. A complete list below identifies the different area and matrix identifiers. As an example, a soil sample collected using a split-spoon or a macro-core in Area A from Boring 1 would be designated A-B-001. The "A" designates the area, "B" identifies the sample as a soil boring, and "001" identifies the specific boring number. Each boring identifier will additionally have the depth interval added to the end of the identifier. In the example above, if the sample was collected from the 1-2 foot interval the sample identifier would be "A-B-001-01-02".

The Quality Assurance/Quality Control (QA/QC) samples will also be identified in three parts; sample type, date, and a unique number if more than one type is collected in a single day. For example, a duplicate would be identified as "DUP-mmddyy" and a second duplicate collected on the same day would be "DUP-mmddyy-1".

Below are the matrix/sample codes:

"SVI" indicates a soil vapor, indoor/ambient air sample
"MW" indicates a groundwater (monitoring well) sample
"FB" indicates a field blank
"TB" indicates a trip blank
"DUP" indicates a duplicate

4.3 Field Sample Storage

Sample containers will be held on-site for a period not exceeding two (2) calendar days. Sample shipments to the laboratory will be by overnight courier. When practicable, the sample containers will arrive back at the laboratory within four (4) days of their initial shipment to the field.

4.4 Sample Shipment

Shipment of samples to an analytical laboratory is usually required upon completion of sample collection. Proper packaging is necessary in order to protect the sample containers, to maintain the samples at a temperature of 4°C, and to comply with applicable transportation regulations.

In general, samples are shipped using packaging that is supplied by the analytical laboratory. The packaging normally includes a shippable insulated box such as an ice cooler and contains protective internal packaging materials such as foam sleeves. Some laboratories use proprietary sample packaging with integral internal packaging. In either case, provisions need to be made for maintaining the temperature of the samples with the use of re-freezable ice packs.

Regulations must be observed regarding the shipment of Dangerous Goods. Sample containers and certain field equipment may be defined as Dangerous Goods such that special requirements must be followed for their shipment. Air shipment of Dangerous Goods is regulated by the International Air Transport Association (IATA) as described in "Dangerous Goods Regulations" (IATA, current year). IATA Regulations are updated annually. Shipment by ground is regulated by the U.S. Department of Transportation (DOT; 49 CFR). Furthermore, individual shippers (e.g., Federal Express) or other countries (international shipments) may have additional requirements for dangerous goods shipment.

Environmental samples, (e.g., groundwater, surface water, or soil samples) containing relatively low concentrations of contaminants, (regulated under 40 CFR) are currently exempt from Hazardous Goods regulations. 40 CFR 261.40(d) states, "A sample of solid waste or a sample of water, soil, or air which is collected for the sole purpose of testing to determine its characteristics or composition is not subject to this Part or Parts 262 through 267 or Part 124 of this chapter or to the notification requirements of Section 3010 of RCRA". Sample containers must be properly packed such that inadvertent spillage does not occur during shipment.

Environmental samples which are known or suspected to be toxic, corrosive, flammable, or those which emit a noxious odor or create an anesthetic annoyance or discomfort to passengers and/or flight crews when shipped by air, must be packed, labeled, and shipped in accordance with current IATA regulations. Refer to "Dangerous Good Regulations" (current year), Section 3 - Classification.

Specific regulations exist (Shipment in Excepted Quantities) for the shipment of many reagents that are commonly used as preservatives and decontamination agents. Consequently, the shipment to the field site of "empty" sample containers containing small quantities of preservatives must be conducted in accordance with the regulations. The most significant limitations for the shipment of preservatives (IATA, current year)

involve those for nitric acid in which only small quantities (<0.5L) of low concentration (<20 percent) nitric acid can be shipped in a given sample shipment.

4.5 Chain-of-Custody

Chain-of-custody procedures are designed to trace the sample from the time that it is collected until it, or its derived data, are used. Samples would be considered to be "in custody" under the following conditions:

- It is in personal possession.
- It is in personal view after being in personal possession.
- It was in personal possession when it was properly secured.
- It is in a designated secure area.

A chain-of-custody form (to be supplied by the specific laboratory providing service) is to be initiated at the time that the sample containers leave the site at which they are prepared, usually that of the analytical laboratory supplying the containers. It is important that the field personnel completely fill out the applicable sections of the form. The chain-of-custody forms will be placed in shipping containers, protected from moisture using plastic bags (e.g., Ziploc®) and will accompany the containers during shipment to the laboratory. The field personnel collecting the samples will be responsible for the custody of the samples until transportation to the laboratory. Sample transfer requires the individuals relinquishing and receiving the samples to sign, date, and note the time of transfer on the chain-of-custody forms. The chain-of-custody is considered to be complete after it has been received and signed in by the analytical laboratory. A copy of the chain-of-custody record will be maintained by the field personnel along with the other field records.

Common carriers (i.e., Federal Express) are not expected to sign the chain-of-custody form. However, the bill of lading or airbill becomes part of the chain-of-custody record when a common carrier is used to transport the samples.

5. Analytical Laboratory QA/QC

The analytical laboratory shall have systems and procedures to ensure and document that the data provided meets the requirements for precision, accuracy, representativeness, completeness, and comparability.

5.1 Quality Assurance Management Plan

The laboratory shall submit a current, controlled, and signed copy of the Quality Assurance Management Plan. The Plan shall be in general accordance with the requirements set forth in the draft National Environmental Laboratory Accreditation Program guidelines (Federal Register, December 2, 1994). These include:

All laboratories shall prepare and have available for review a written description of the laboratory's quality assurance activities, i.e., a QA plan. The QA plan must be an independent document that may incorporate by reference, already available standard operating procedures (SOPs) or other material, e.g., methods, guidance documents, etc., that are approved by the laboratory management. Analysts in the laboratory should either have copies of the document or easy access to the document. The items listed below constitute essential requirements of a Quality System. All laboratories should be encouraged to add any additional items thought to improve the analytical data. The following items shall be included:

- General QC procedures

- Performance evaluation samples
- Staff
- Equipment
- Test methods and standard operating procedures (SOPs)
- Physical facilities
- Sample acceptance policy and sample receipt
- Sample tracking
- Record keeping, data review and reporting
- Corrective action policy and procedures
- Definition of terms
- Bibliography

Substantive changes, modifications, or revisions to the document shall be provided within fifteen (15) days of implementation.

5.2 Standard Operating Procedures

The laboratory shall maintain for all procedures written, practical, operating procedures. The laboratory's Quality Assurance Manager shall maintain the SOPs and a current copy must be available at the location where the analysis is performed.

The laboratory SOP must provide directions for the step-by-step execution of all analyses and tasks performed by the laboratory. The SOP must reference the source of the procedure (US EPA Method, ASTM, Standard Methods, etc.). The SOP must:

- Be uniquely identified as to version or revision.
- Be consistent with the instrument manufacturer specifications and instructions
- Be available for auditing purposes
- Be reviewed and updated to reflect the current practices and facility requirements
- Be archived for future reference in usability reviews and evidentiary situations
- Be subject to procedures which prevent the use of outdated versions.

5.3 Quality Assurance Measurements

The laboratory must perform all applicable quality assurance measurements indicated in the cited procedure. At a minimum, each sample preparation and analysis batch must include a method blank, a blank spike (or laboratory control standard), a matrix spike, and a duplicate (or matrix spike duplicate for organic analyses). The method blank and LCS results shall be reported in the same units as the client samples. A batch will be defined as no more than twenty samples (excluding QC samples) of a similar matrix, prepared and/or analyzed together.

Precision and Accuracy

Precision measures the reproducibility of measurements. It is strictly defined as the degree of mutual agreement among independent measurements as the result of repeated application of the same process under similar conditions. Total precision is the measurement of the variability associated with the entire sampling process. It is determined by analysis of duplicate or replicate field samples and measures variability introduced by both the laboratory and field operations. Duplicate samples and matrix duplicate spiked

samples are analyzed where applicable, to assess field and analytical precision, and the precision measurement is determined using the relative percent difference (RPD) between the duplicate results.

Accuracy is a statistical measurement of correctness and includes components of random error (variability due to imprecision) and systemic error. It therefore reflects the total error associated with the measurement. Analytical accuracy is measured by comparing the percent recovery of analytes spiked into a Laboratory Control Sample (LCS), also known as a blank spike. For some organic compounds, surrogate recoveries can also be used to assess accuracy and method performance for each sample analyzed.

Accuracy of matrix spike recoveries is used to evaluate matrix effects in individual samples for a specific site. Matrix spike data is not used as the primary accuracy determination for laboratory QC purposes. Specific methods do have very wide "recommended" limits for controlling laboratory data.

Statistical Determination of Precision and Accuracy

Accuracy is evaluated by analyzing matrix spike data.

For measurements where matrix spikes are used, the percent recovery will be calculated as follows:

$$\%R = 100\% \times \left[\frac{S-U}{C_{sa}}\right]$$

Where: %R = percent recovery

S = measured concentration in spiked aliquot

U = measured concentration in unspiked aliquot

C_{sa} = actual concentration of spike added.

When a standard reference material (SRM) is used:

$$\%R = 100\% \times \left[\frac{C_m}{C_{srm}}\right]$$

Where: %R = percent recovery

C_m = measured concentration of SRM

C_{srm} = actual concentration of SRM

If calculated from duplicate measurements, relative percent difference (RPD) is the normal measure of precision as defined by the following equation:

$$RPD = \frac{(C_1 - C_2)x100\%}{\frac{(C_1 + C_2)}{2}}$$

Where: RPD = relative percent difference

C_1 = larger of the two observed values

C_2 = smaller of the two observed values

If calculated from three or more replicates, the relative standard deviation (RSD) will be used rather than RPD in accordance with the following equation:

$$RSD = (s / \bar{y}) \times 100\%$$

Where: RSD = relative standard deviation

s = standard deviation

$\bar{y}$ = mean of replicate analyses

Standard deviation is defined as follows:

$$S = \sqrt{\frac{\sum_{i=1}^{n} (y_i - \bar{y})^2}{n-1}}$$

Where: s = standard deviation

y_i = measured value of the *i*th replicate

$\bar{y}$ = mean of replicate measurements

n = number of replicates

The method detection limit is the laboratory established smallest amount of analyte that can be measured and reported with 99% confidence that the concentration is greater than zero.

MDL is defined as follows for all measurements:

$$MDL = t_{(n-1,\ 1-a\ =\ 0.99)}\ (S)$$

Where: MDL = method detection limit

S = standard deviation of the replicate analyses

$t_{(n-1,\ 1-a\ =\ 0.99)}$ = student's t-value for a one-sided 99 percent confidence level and a standard deviation estimate with n-1 degrees of freedom

The precision and accuracy of each measured parameter shall be within the guidelines set forth in the published method. LCS recovery acceptance criteria shall be based on control charts and must include the last twenty (20) measurements. In the absence of 20 measurements, the default acceptance criteria may be no greater than 75-125%. Matrix spike and surrogate recovery criteria must be established in accordance with the published method.

Corrective action for LCS, surrogate, and matrix spike failures must be specified in the Laboratory Quality Assurance Manual or in the Laboratory SOP for the given method. Discussion of the application of the corrective action shall be provided in the analysis case narrative.

Representativeness

Samples collected in the filed shall be representative of the conditions that are being measured. The lab will take steps to ensure that subsamples of the samples submitted are representative of the container as a whole.

Comparability

All measurements made by the laboratory must be comparable to applicable reference standards. The lab must participate in interlaboratory comparisons as necessary to maintain the state certifications. The lab must provide copies of results of performance in interlaboratory programs upon request.

Completeness

Completeness is defined as the number of analyses considered to be valid compared to the number of analyses that were considered necessary for accomplishing the task. Typically, studies are designed with extra sampling so that the loss of a few samples (perhaps 10 percent) would still leave enough data to achieve the desired objectives. For the purpose of estimating completeness, the total number of analyses required for accomplishing the objectives requiring analytical laboratory data is 90 percent of the non-QC samples submitted for analysis.

All samples submitted to the lab and all analyses requested will be intended to fulfill project requirements. Results submitted which are not in compliance with method requirements or quality assurance measurements may be rejected.

5.4 Sample Management

Samples shall be checked upon receipt for thermal preservation (if applicable). The results of the check shall be recorded on the chain-of-custody submitted with the samples. Chemical preservation (e.g., appropriate pH) shall be checked upon receipt or prior to sample preparation/analyses. The results of such checks shall be recorded. Data from any samples that do not meet the criteria must be discussed in the report case narrative.

The samples shall be properly preserved and stored in approved containers specified by the laboratory quality assurance program and the applicable methods. Where samples must be split in the laboratory, the laboratory will perform the required tasks in a manner that insures that all subsamples are representative of the original sample. Samples shall be stored in a secure area.

The laboratory shall assign a unique identification (ID) code to each sample received in the laboratory. The laboratory shall design a system to unequivocally identify all samples, subsamples and subsequent extracts and/or digestates so that each aliquot is uniquely identified. This laboratory code shall maintain an unequivocal link with the unique field ID assigned each container. The laboratory ID number shall be placed on the sample container as a durable label. The laboratory ID number shall be entered into the laboratory records and shall be the link that associates the sample with related laboratory activities (i.e., sample preparation, calibration, etc.).

5.5 Laboratory Records

The laboratory shall implement protocols that will produce unequivocal, accurate records which document all laboratory activities associated with sample receipt, preparation, analysis, review and reporting. These records will be held a minimum of seven (7) years.

The activities documented shall include but are not limited to:

- Sample preservation including appropriate sample container and compliance with holding time;
- Sample identification, receipt, acceptance or rejection and log-in;
- Sample storage and tracking (includes shipping receipts, transmittal forms, and internal routing and assignment records);
- Sample preparation (includes cleanup and separation protocols, ID #s, volumes, weights, instrument printouts, meter readings, calculations, reagents, etc.);
- Sample analysis;
- Standard and reagent origin, receipt, preparation, and use;
- Equipment receipt, use, specification, operating conditions and preventative maintenance;
- Calibration criteria, frequency and acceptance criteria;
- Data and statistical calculations, review, confirmation, interpretation, assessment and reporting conventions;
- Method performance criteria including expected quality control requirements;
- Quality control protocols and assessment;
- Electronic data security, software documentation and verification, software and hardware audits, backups, and records of any changes to automated data entries;
- All automated sample handling systems;
- Records storage and retention; and
- Sample disposal including the date of sample or subsample disposal and name of the responsible person.

In addition to documenting all the above-mentioned activities, the following shall be retained:

- All original raw data, whether hard copy or electronic, for calibrations, samples and quality control measures, including analysts work sheets and data output records (chromatograms, strip charts, and other instrument response readout records);
- Copies of final reports;
- Archived standard operating procedures;
- Correspondence relating to laboratory activities for a specific project;
- All corrective action reports, audits and audit responses;
- Performance evaluation results and raw data; and
- Data review and cross checking.

5.6 Laboratory Reporting

Laboratory analytical reports shall consist of three deliverables:

- Summary Data Report

- Raw Data Validation Package
- Electronic Data Deliverable (EDD)

The Summary Data report will consist of the following information:

- Cover letter - a statement signed by both the responsible corporate individual and the Project Manager indicating that the report meets the technical specifications and applicable requirements of the contract.
- Case narrative - A brief statement of the condition of sample receipt, compliance with holding times, a discussion of conditions encountered, organized by analytical procedures performed, which will affect the interpretation of results. If any quality assurance measurements did not meet the specifications of the procedure, the narrative will indicate why the data is reportable.
- Cross reference of Sample Identification with laboratory identification.
- Sample Results - The results of the analysis shall include the sample preparation and analytical methods, dates of sample preparation and analysis, method detection limit or reporting limit, concentration of analyte, units of concentration, sample matrix.
- Blank results.
- Blank spike or Laboratory Control Standard results. (Analyte, amount spiked, amount recovered, percent recovery, acceptance criteria.)
- Surrogate analysis results.
- Matrix spike/duplicate matrix spike results.

The Raw Data Validation Package report will consist of the following information (as applicable):

- Initial calibration data (including raw data, chromatograms, instrument response data, standard preparation logs, standard source records)
- Instrument performance checks (continuing calibration verification, blank verification, etc.)
- Internal standard measurements.
- Quantitation reports.
- Mass spectra for each reported analyte.
- Copies of sample preparation worksheets, bench worksheets, run logs, cleanup procedure checks (GPS, flourisil, etc.)
- Standard addition results, serial dilution results.
- Applicable Method Detection Limit (MDL) study results and dates of MDL studies.

Electronic Data Deliverable (EDD) will consist of the following information in the following format (as applicable):

Content of Electronic Deliverables

Field Name	Description
SAMPLE_ID	Brown and Caldwell sample identification, as shown on COC
LAB_ID	Laboratory Sample Identification
REPORT_ID	Numerical identifier of hard copy report
ANALYTE	Analyte name
ANALYTE_ID	Chemical Abstract Service number, for non-specific analyte names (petroleum hydrocarbons, etc.), a valid value will be supplied.
PREP_CODE	Method of sample preparation
ANAL_CODE	Method of sample analysis

Field Name	Description
RESULT	Reported result or reporting limit if result is non-detect
ERROR	For radiochemical analysis only
UNITS	Result units
RESULT_TYPE	Identifies sample or blank
PREP_BATCH	Unique preparation batch identifier
ANAL_BATCH	Unique analysis batch identifier
DILUTION_FACTOR	Factor required to bring sample concentration into calibration range
QUALIFIER	CLP defined result flag
RET_TIME	For GC/MS Tentatively Identified Compounds only
SAMPLE_DATE	Date sample collected from chain-of-custody.
PREP_DATE	Date sample prepared or extracted.
PREP_TIME	Time sample prepared or extracted (24 hour clock HH:MM)
ANAL_DATE	Date sample analyzed
ANAL_TIME	Time sample analyzed (24 hour clock HH:MM)
REPORT_LIMIT	Detection limit of analysis, corrected for moisture, dilution, etc.
REPORT_LIMIT_UNITS	Units for detection limit.

6. Data Documentation and Management

6.1 Field Notebook

A field note book will be dedicated to the Bartlett Tree Company Site SMP field project. All note books and any original forms will become part of the permanent project file. The following daily information will be recorded in the field notebook:

- Date;
- Weather conditions;
- Personnel;
- All site visitors;
- Chronological, general description of all field activities that day;
- Records of all field measurements;
- Descriptions of any modifications to the SMP;
- Record of equipment calibration;
- Sample collection data.

7. Field Instrumentation

All field analytical instrumentation will be calibrated and maintained per the following chart:

Field Analytical Instrument Maintenance and Calibration Protocols

Equipment	Calibration	Frequency
pH meter	Calibrate with two pH buffer solutions	Every 10 samples

Sp. Conductance/Salinity	Calibrate with one calibration solution	Before and after use.
Dissolved oxygen meter	Calibration according to manufacturer's recommendations with ambient air	At the beginning of each day and every two hours
Temperature	Check against a mercury thermometer	Start and end of each day
Conductivity	Calibrate with one calibration solution	Start, middle, and end of each day
Rechargeable equipment batteries	Charge	After use as required
Sampling Accessories (tubing, submersible pump)	Periodic maintenance performed and recorded in equipment log	As required
Photoionization Detector (PID)	Calibrate per manufacturer's specification with appropriate gas.	Start of each day being used.
Oil-Water Interface Probe	Clean with soap and water and rinse with clean water to remove any product buildup.	Beginning of each day or whenever buildup occurs.

Appendix I: Comparison of Soil Data to Unrestricted Use Criteria

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
Benzene	2.9	0.06	MG/KG		0.044 UJ	0.0006 U	0.0007 U	0.0006 U	0.0005 U	0.0007 U	0.0006 U	0.0006 U	0.0006 U	0.0005 U
Ethylbenzene	30	1	MG/KG		*2.9 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		*3.7 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		*34 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.089 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.36 UJ	0.005 U	0.005 U	0.005 U	**0.007 J**	0.005 U	0.004 U	0.004 U	**0.016**	0.004 U
Acetone	100	0.05	MG/KG		0.62 UJ	**0.009 J**	0.009 U	**0.01 J**	**0.033 J**	**0.013 J**	**0.012 J**	**0.01 J**	*0.091	0.008 U
Chlorobenzene	100	1.1	MG/KG		0.089 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.089 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.089 UJ	0.001 U	**0.002 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.005 J**	0.001 U
Methylene chloride	51	0.05	MG/KG		0.18 UJ	**0.016**	**0.003 J**	**0.008**	**0.002 J**	0.003 U	**0.004 J**	**0.006**	**0.006**	**0.006**
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.089 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.018**	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.089 UJ	0.001 U	**0.003 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.002 J**	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
Acenaphthylene	100	107	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U
Anthracene	100	1000	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U
Benzo(a)anthracene	1	1	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.092 J**	**0.077 J**
Benzo(a)pyrene	1	22	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.11 J**	**0.093 J**
Benzo(b)fluoranthene	1	1.7	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.18 J**	**0.15 J**
Benzo(g,h,i)perylene	100	1000	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.083 J**	**0.064 J**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
Benzo(k)fluoranthene	1	1.7	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.068 J**	**0.055 J**
Chrysene	1	1	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.13 J**	**0.099 J**
Dibenz(a,h)anthracene	0.33	1000	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U
Fluoranthene	100	1000	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.21**	**0.16 J**
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.081 J**	**0.044 J**
Naphthalene	100	12	MG/KG		**5.1**	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U
Phenanthrene	100	1000	MG/KG		**0.44**	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.12 J**	**0.073 J**
Pyrene	100	1000	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	**0.2**	**0.15 J**

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
2-Methylnaphthalene	NE	NE	MG/KG		**4.5**	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U
Benzyl butyl phthalate	NE	NE	MG/KG		0.12 U	0.08 U	0.083 U	0.082 U	0.071 U	0.083 U	0.08 U	0.079 U	0.077 U	0.071 U
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		**1.6**	0.08 U	0.083 U	0.082 U	0.071 U	0.083 U	0.08 U	0.079 U	0.077 U	0.071 U
Carbazole	NE	NE	MG/KG		0.06 U	0.04 U	0.042 U	0.041 U	0.036 U	0.042 U	0.04 U	0.039 U	0.038 U	0.036 U

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		**29**	0.9 U	0.94 U	0.92 U	0.8 U	0.94 U	0.9 U	0.88 U	0.86 U	0.8 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.0013 U	0.0009 U	0.00094 U	0.00092 U	0.0008 U	0.00094 U	0.0009 U	0.00088 U	0.00086 U	0.0008 U
2,4-DB	NE	NE	MG/KG		0.011 U	0.0075 U	0.0078 U	0.0076 U	0.0066 U	0.0077 U	0.0074 U	0.0073 U	0.0071 U	0.0066 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		1.4 U	0.92 U	0.95 U	0.93 U	0.81 U	0.95 U	0.91 U	0.9 U	0.88 U	0.81 U
4,4'-DDD	2.6	14	MG/KG		**0.76**	0.0004 U	0.00041 U	0.00041 U	**0.0074**	0.00041 U	**0.0094 J**	**0.017 J**	**0.58**	**0.013**
4,4'-DDE	1.8	17	MG/KG		**0.42 J**	0.0004 U	0.00041 U	0.00041 U	**0.0067**	0.00041 U	**0.003**	**0.0046 J**	**0.72**	**0.24**
4,4'-DDT	1.7	136	MG/KG		**0.38 J**	0.0004 U	0.00041 U	**0.0014 J**	**0.018**	0.00041 U	**0.15**	**0.13**	**1.4**	**0.43**
Aldrin	0.019	0.19	MG/KG		0.012 U	0.0004 U	0.00041 U	0.00041 U	0.00035 U	0.00041 U	0.0004 U	0.0019 U	0.0076 U	0.0018 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.0078 U	0.00027 U	0.00028 U	0.00027 U	0.00024 U	0.00027 U	0.00026 U	0.0013 U	0.0051 U	0.0012 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.012 U	0.0004 U	0.00041 U	0.00041 U	0.00035 U	0.00041 U	0.0004 U	0.0019 U	0.0076 U	0.0018 U
BHC, beta	0.072	0.09	MG/KG		**0.046 J**	0.00023 U	0.00024 U	0.00023 U	0.0002 U	0.00024 U	0.00023 U	0.0011 U	0.0044 U	0.001 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.006 U	0.00021 U	0.00021 U	0.00021 U	0.00018 U	0.00021 U	0.0002 U	0.001 U	**0.0062 J**	**0.0023 J**
Chlordane, alpha	0.91	2.9	MG/KG		*1.3	0.00021 U	0.00021 U	0.00021 U	0.00018 U	0.00021 U	0.0002 U	0.001 U	**0.0071 J**	**0.0039 J**
Chlordane, gamma	NE	NE	MG/KG		**1.5**	0.00021 U	0.00021 U	0.00021 U	0.00018 U	0.00021 U	0.0002 U	0.001 U	**0.0089 J**	0.00091 U
Chlorpyrifos	NE	NE	MG/KG		0.039 UJ	0.027 U	0.028 U	0.027 U	0.024 U	0.027 U	0.026 U	0.026 U	0.025 U	0.024 U
Dalapon	NE	NE	MG/KG		0.054 U	0.036 U	0.038 U	0.037 U	0.032 U	0.037 U	0.036 U	0.035 U	0.035 U	0.032 U
Diazinon	NE	NE	MG/KG		0.039 UJ	0.027 U	0.028 U	0.027 U	0.024 U	0.027 U	0.026 U	0.026 U	0.025 U	0.024 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.022 U	0.014 U	0.015 U	0.015 U	0.013 U	0.015 U	0.014 U	0.014 U	0.014 U	0.014 U
Dichloroprop	NE	NE	MG/KG		0.014 U	0.0097 U	0.01 U	0.0098 U	0.0085 U	0.01 U	0.0096 U	0.0094 U	0.0092 U	0.0086 U
Dieldrin	0.039	0.1	MG/KG		0.012 U	0.0004 U	0.00041 U	0.00041 U	0.00035 U	0.00041 U	0.0004 U	0.0019 U	**0.016 J**	**0.0032 J**
Endosulfan sulfate	4.8	1000	MG/KG		0.012 U	0.0004 U	0.00041 U	0.00041 U	0.00035 U	0.00041 U	0.0004 U	0.0019 U	0.0076 U	0.0018 U
Endrin aldehyde	NE	NE	MG/KG		0.012 U	0.0004 U	0.00041 U	0.00041 U	0.00035 U	0.00041 U	0.0004 U	0.0019 U	0.0076 U	0.0018 U
Ethion	NE	NE	MG/KG		0.039 UJ	0.027 U	0.028 U	0.027 U	0.024 U	0.027 U	0.026 U	0.026 U	0.025 U	0.024 U
Heptachlor epoxide	NE	NE	MG/KG		0.006 U	0.00021 U	0.00021 U	0.00021 U	0.00018 U	0.00021 U	0.0002 U	0.001 U	0.0039 U	0.00091 U
Methoxychlor	NE	NE	MG/KG		0.06 U	0.0021 U	0.0021 U	0.0021 U	0.0018 U	0.0021 U	0.002 U	0.01 U	0.039 U	**0.01 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.0015 U	0.00099 U	0.001 U	0.001 U	0.00088 U	0.001 U	0.00098 U	0.00097 U	0.00094 U	0.00088 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
Aluminum	NE	NE	MG/KG		**641**	**995**	**1220**	**535**	**2040**	**2010**	**2040 J**	**1200 J**	**11600**	**6090**
Antimony	NE	NE	MG/KG		1.78 U	1.19 U	**1.28 J**	1.18 U	1.06 U	1.22 U	1.18 U	1.17 U	**1.18 J**	1.06 U
Arsenic	16	16	MG/KG		1.69 U	1.13 U	**6.07**	1.12 U	**2.02 J**	**4.34**	**1.4 J**	1.11 U	**13.3**	**11.4**
Barium	350	820	MG/KG		**33.7**	**3.6**	**11.8**	**4.23**	**11.8**	**10.2**	**12.1 J**	**6.91 J**	**104**	**196**
Beryllium	14	47	MG/KG		0.121 U	0.0812 U	**0.109 J**	0.0804 U	**0.112 J**	0.0831 U	**0.108 J**	**0.0793 J**	**0.281 J**	**0.307 J**
Cadmium	2.5	7.5	MG/KG		*2.5	0.167 U	**0.631 J**	0.166 U	0.148 U	0.171 U	0.165 U	0.163 U	**0.208 J**	0.149 U
Calcium	NE	NE	MG/KG		**714**	41.5 UJ	34.8 UJ	13.8 UJ	**76.1**	**74.4**	52.6 UJ	32.9 UJ	**20500**	**13100**
Chromium	NE	19	MG/KG		**4.27**	**2.29**	**7.14 J**	**2.02**	**6.98**	**3.76**	**3.9**	**2.52**	**13.3**	**7.63**
Cobalt	NE	NE	MG/KG		0.338 U	0.227 U	**2.63**	0.225 U	**1.37**	0.232 U	**0.556 J**	**0.273 J**	**3.17**	**2.35**
Copper	270	1720	MG/KG		**188**	**1.8**	**1.62**	**0.937 J**	**2.84**	**2.07**	**1.93**	**1.18**	**30.3**	**7.97**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	DW-3	MW-1S	MW-1D	MW-2S	MW-2D	MW-2D	MW-3	MW-3	TP-1	TP-2
5-Metals	Protection of Public Health - Residential Use	Protection of Groundwater		SampleName:	DW-3	MW-1S-39-39.5	MW-1D-65-66	MW-2S-40-40.5	MW-2D-23.5-24	MW-2D-46-46.5	MW-3-41-42	DUP-092508	TP-1-0-1	TP-2-1-2
Analyte Name			Units											
Iron	NE	NE	MG/KG		1420	1810	6940	1310	3630	3380	2790	2130	11900	7070
Lead	400	450	MG/KG		59	1.77 J	2.78	0.991 J	1.43 J	3.92	1.35 J	1.16 J	188	338
Magnesium	NE	NE	MG/KG		116	84	34.7	34.9	140	47.5	184 J	93.4 J	12100	1290
Manganese	2000	2000	MG/KG		8.33	8.79	55	7.61	52.6	10.7	15.8	9.83	201	140
Mercury	0.81	0.73	MG/KG		0.51	0.0132 U	0.0142 U	0.0133 U	0.0122 J	0.0138 U	0.0135 U	0.0128 U	0.301	*3.62
Nickel	140	130	MG/KG		4.91	0.871 J	1.04 J	0.721 U	1.68	0.746 U	1.42	0.762 J	7.15	4.31
Potassium	NE	NE	MG/KG		91.1	73.9	232	55.5 J	145	256	146	85.5	816	488
Selenium	36	4	MG/KG		1.74 U	1.17 U	1.31 J	1.16 U	1.04 U	1.2 U	1.15 U	1.14 U	1.23 J	1.04 U
Silver	36	8.3	MG/KG		0.608 J	0.203 U	0.239 J	0.201 U	0.18 U	0.208 U	0.2 U	0.198 U	0.627	0.337 J
Sodium	NE	NE	MG/KG		73.3 J	44.5 U	46.7 U	44.1 U	39.5 U	45.6 U	43.9 U	43.5 U	48.2 J	210
Thallium	NE	NE	MG/KG		2.26 U	1.52 U	1.9 J	1.5 U	1.34 U	1.55 U	1.49 U	1.48 U	1.44 J	1.35 U
Vanadium	NE	NE	MG/KG		1.24	2.86	5.97	1.44	4.52	8.54	3.14	2.09	20.4	10
Zinc	2200	2480	MG/KG		108	4.68	11.5 J	2.17 UJ	7.77	2.99 UJ	4.91	3.23 UJ	191	37.6

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
				SampleName:	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
Benzene	2.9	0.06	MG/KG		0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
				SampleName:	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.005 U	0.005 U	0.005 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		0.008 U	0.008 U	0.009 U	**0.009 J**	0.008 U	**0.011 J**	**0.008 J**	**0.008 J**
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		0.002 U	0.002 U	**0.011**	**0.011**	**0.002 J**	**0.003 J**	**0.005 J**	0.002 U
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
				SampleName:	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
Acenaphthylene	100	107	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Anthracene	100	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Benzo(a)anthracene	1	1	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Benzo(a)pyrene	1	22	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Benzo(b)fluoranthene	1	1.7	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Benzo(g,h,i)perylene	100	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
2-PAHs/SVOCs	Protection of Public Health - Residential Use	Protection of Groundwater		*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
Analyte Name			*Units*	*SampleName:*	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
Benzo(k)fluoranthene	1	1.7	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Chrysene	1	1	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Dibenz(a,h)anthracene	0.33	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Fluoranthene	100	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Naphthalene	100	12	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Phenanthrene	100	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Pyrene	100	1000	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
2-SVOCs	Protection of Public Health - Residential Use	Protection of Groundwater		*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
Analyte Name			*Units*	*SampleName:*	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
2-Methylnaphthalene	NE	NE	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U
Benzyl butyl phthalate	NE	NE	MG/KG		0.074 U	0.075 U	0.076 U	0.079 U	0.069 U	0.069 U	0.069 U	0.07 U
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		0.074 U	0.075 U	0.076 U	0.079 U	0.069 U	0.069 U	0.069 U	0.07 U
Carbazole	NE	NE	MG/KG		0.037 U	0.038 U	0.038 U	0.039 U	0.034 U	0.034 U	0.034 U	0.035 U

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
4-Pesticides/Herbicides	Protection of Public Health - Residential Use	Protection of Groundwater		*Location:*	*SB-1*	*SB-1*	*SB-1*	*SB-1*	*SB-2*	*SB-2*	*SB-2*	*SB-2*
Analyte Name			*Units*	*SampleName:*	*SB-1-26-27*	*SB-1-36.5-37*	*SB-1-62-62.5*	*SB-1-79-79.5*	*SB-2-7-9*	*SB-2-14-16*	*SB-2-19-20*	*DUP-100208*
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.84 U	0.85 U	0.86 U	0.89 U	0.77 U	0.77 U	0.77 U	0.78 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00084 U	0.00085 U	0.00086 U	0.00089 U	0.00077 U	0.00077 U	0.00077 U	0.00078 U
2,4-DB	NE	NE	MG/KG		0.0069 U	0.007 U	0.0071 U	0.0073 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.85 U	0.86 U	0.87 U	0.9 U	0.78 U	0.79 U	0.79 U	0.79 U
4,4'-DDD	2.6	14	MG/KG		**0.006**	**0.0022**	0.00038 U	0.00039 U	**0.00085 J**	**0.0013 J**	**0.00082 J**	**0.0018 J**
4,4'-DDE	1.8	17	MG/KG		0.00074 U	0.00037 U	0.00038 U	0.00039 U	**0.00095 J**	**0.00079 J**	0.00034 U	**0.00095 J**
4,4'-DDT	1.7	136	MG/KG		**0.11**	**0.047**	**0.00066 J**	0.00039 U	**0.018**	**0.018**	**0.009 J**	**0.02 J**
Aldrin	0.019	0.19	MG/KG		0.00074 U	0.00037 U	0.00038 U	0.00039 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.00049 U	0.00025 U	0.00025 U	0.00026 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-1	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2	SB-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-1-26-27	SB-1-36.5-37	SB-1-62-62.5	SB-1-79-79.5	SB-2-7-9	SB-2-14-16	SB-2-19-20	DUP-100208
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.00074 U	0.00037 U	0.00038 U	0.00039 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
BHC, beta	0.072	0.09	MG/KG		0.00042 U	0.00021 U	0.00022 U	0.00022 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.00038 U	0.00019 U	0.00019 U	0.0002 U	**0.00082 J**	0.00018 U	0.00018 U	0.00018 U
Chlordane, alpha	0.91	2.9	MG/KG		0.00038 U	0.00019 U	0.00019 U	0.0002 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U
Chlordane, gamma	NE	NE	MG/KG		0.00038 U	0.00019 U	0.00019 U	0.0002 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U
Chlorpyrifos	NE	NE	MG/KG		0.025 U	0.025 U	0.025 U	0.026 U	0.023 U	0.023 U	0.023 U	0.023 U
Dalapon	NE	NE	MG/KG		0.033 U	0.034 U	0.034 U	0.036 U	0.031 U	0.031 U	0.031 U	0.031 U
Diazinon	NE	NE	MG/KG		0.025 U	0.025 U	0.025 U	0.026 U	0.023 U	0.023 U	0.023 U	0.023 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.014 U	0.014 U	0.014 U	0.012 U	0.012 U	0.012 U	0.013 U
Dichloroprop	NE	NE	MG/KG		0.0089 U	0.009 U	0.0091 U	0.0095 U	0.0083 U	0.0083 U	0.0083 U	0.0083 U
Dieldrin	0.039	0.1	MG/KG		**0.022**	0.00037 U	0.00038 U	0.00039 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
Endosulfan sulfate	4.8	1000	MG/KG		0.00074 U	0.00037 U	0.00038 U	0.00039 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	NE	NE	MG/KG		0.00074 U	0.00037 U	0.00038 U	0.00039 U	0.00034 U	0.00034 U	0.00034 U	0.00034 U
Ethion	NE	NE	MG/KG		0.025 U	0.025 U	0.025 U	0.026 U	0.023 U	0.023 U	0.023 U	0.023 U
Heptachlor epoxide	NE	NE	MG/KG		0.00038 U	0.00019 U	0.00019 U	0.0002 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U
Methoxychlor	NE	NE	MG/KG		**0.013 J**	0.0019 U	0.0019 U	0.002 U	**0.0087**	**0.019**	**0.0057 J**	**0.018 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00092 U	0.00092 U	0.00094 U	0.00097 U	0.00085 U	0.00085 U	0.00085 U	0.00086 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-1	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2	SB-2
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-1-26-27	SB-1-36.5-37	SB-1-62-62.5	SB-1-79-79.5	SB-2-7-9	SB-2-14-16	SB-2-19-20	DUP-100208
Aluminum	NE	NE	MG/KG		**1240**	**923**	**1660**	**3350**	**3160**	**1480**	**1420**	**1300**
Antimony	NE	NE	MG/KG		1.09 U	1.09 U	1.12 U	1.16 U	1.01 U	1.02 U	1.02 U	1.02 U
Arsenic	16	16	MG/KG		**1.37 J**	**2.43**	**4.72**	**6.25**	**1.28 J**	**1.82 J**	**1.25 J**	0.971 U
Barium	350	820	MG/KG		**8.13**	**5.91**	**7.8**	**10.9**	**7.29**	**6.66**	**7.72**	**6.99**
Beryllium	14	47	MG/KG		**0.144 J**	**0.119 J**	**0.0964 J**	**0.218 J**	**0.0941 J**	**0.0849 J**	**0.089 J**	0.0695 U
Cadmium	2.5	7.5	MG/KG		0.153 U	0.153 U	0.157 U	0.162 U	0.142 U	0.143 U	0.143 U	0.143 U
Calcium	NE	NE	MG/KG		27.6 UJ	23.8 UJ	47.5 UJ	66.8 UJ	**56.2**	**31.3**	**34.9**	**40.2**
Chromium	NE	19	MG/KG		**3.52**	**2.62**	**5.12**	**9.31**	**3.96**	**3.53**	**3.34**	**2.43**
Cobalt	NE	NE	MG/KG		**0.654**	**0.325 J**	0.213 U	**0.717**	**2.95**	**0.632**	**0.581**	**0.375 J**
Copper	270	1720	MG/KG		**1.3**	**1.82**	**1.85**	**4.1**	**2.17**	**1.96**	**1.36**	**1.18**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-1	SB-1	SB-1	SB-1	SB-2	SB-2	SB-2	SB-2
5-Metals	Protection of Public Health - Residential Use	Protection of Groundwater		SampleName:	SB-1-26-27	SB-1-36.5-37	SB-1-62-62.5	SB-1-79-79.5	SB-2-7-9	SB-2-14-16	SB-2-19-20	DUP-100208
Analyte Name			Units									
Iron	NE	NE	MG/KG		**3420**	**2800**	**5260**	**7930**	**3040**	**2560**	**2150**	**1490**
Lead	400	450	MG/KG		**1.27 J**	**1.29 J**	**2.41**	**5.1**	**2.1**	**1.17 J**	**2.06**	**1.71**
Magnesium	NE	NE	MG/KG		**78.7**	**66.6**	**42.2**	**70.1**	**277**	**64.7**	**62.9**	**73.9**
Manganese	2000	2000	MG/KG		**17.7**	**19.7**	**8.48**	**30.6**	**61.9**	**24.1**	**24.5**	**13.8**
Mercury	0.81	0.73	MG/KG		0.0126 U	0.0125 U	0.0127 U	0.0127 U	0.0114 U	0.0112 U	0.0114 U	0.0113 U
Nickel	140	130	MG/KG		**1.09 J**	**0.903 J**	0.683 U	**1.75**	**1.81**	**1.31**	**1.08**	**0.99 J**
Potassium	NE	NE	MG/KG		**79.1**	**69.5**	**213**	**285**	**131**	**75.7**	**68.3**	**70.1**
Selenium	36	4	MG/KG		1.07 U	1.07 U	1.1 U	1.14 U	0.992 U	1 U	**1.02 J**	1 U
Silver	36	8.3	MG/KG		0.186 U	0.186 U	0.19 U	0.197 U	**0.173 J**	0.174 U	0.174 U	0.174 U
Sodium	NE	NE	MG/KG		40.8 U	40.8 U	41.8 U	43.3 U	37.7 U	38.2 U	38.2 U	38.1 U
Thallium	NE	NE	MG/KG		1.39 U	1.39 U	1.42 U	1.47 U	1.28 U	1.3 U	1.3 U	1.3 U
Vanadium	NE	NE	MG/KG		**5.17**	**3.28**	**7.81**	**16.3**	**2.93**	**2.31**	**3.13**	**2.81**
Zinc	2200	2480	MG/KG		**9.9**	3.3 UJ	3.42 UJ	**7.44**	**2.48**	**2.57**	**2.35**	**2.31**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-3*	*SB-3*	*SB-4*	*SB-4*	*SB-5*	*SB-5*	*SB-6*	*SB-6*	*SB-6*
				SampleName:	*SB-3-28-30*	*SB-3-33-34*	*SB-4-28-30*	*SB-4-33-34*	*SB-5-29-30*	*SB-5-32-33*	*SB-6-0-2*	*SB-6-5-7*	*SB-6-10-12*
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0005 U	0.0005 U	0.0006 U	0.0005 U	0.0007 U	0.0006 U	0.0005 U	0.0005 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-3*	*SB-3*	*SB-4*	*SB-4*	*SB-5*	*SB-5*	*SB-6*	*SB-6*	*SB-6*
				SampleName:	*SB-3-28-30*	*SB-3-33-34*	*SB-4-28-30*	*SB-4-33-34*	*SB-5-29-30*	*SB-5-32-33*	*SB-6-0-2*	*SB-6-5-7*	*SB-6-10-12*
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.005 U	0.005 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		**0.011 J**	**0.008 J**	**0.01 J**	**0.012 J**	**0.008 J**	**0.012 J**	0.008 U	0.007 U	0.007 U
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		**0.004 J**	0.002 U	**0.007**	**0.008**	**0.003 J**	**0.012**	**0.022**	**0.008**	**0.003 J**
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]											
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-3*	*SB-3*	*SB-4*	*SB-4*	*SB-5*	*SB-5*	*SB-6*	*SB-6*	*SB-6*
				SampleName:	*SB-3-28-30*	*SB-3-33-34*	*SB-4-28-30*	*SB-4-33-34*	*SB-5-29-30*	*SB-5-32-33*	*SB-6-0-2*	*SB-6-5-7*	*SB-6-10-12*
Acenaphthylene	100	107	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.11 J**	0.035 U	0.034 U
Anthracene	100	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.12 J**	0.035 U	0.034 U
Benzo(a)anthracene	1	1	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.62**	**0.083 J**	0.034 U
Benzo(a)pyrene	1	22	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.6**	**0.079 J**	0.034 U
Benzo(b)fluoranthene	1	1.7	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.85**	**0.084 J**	0.034 U
Benzo(g,h,i)perylene	100	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.4**	**0.049 J**	0.034 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
Benzo(k)fluoranthene	1	1.7	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.32**	**0.043 J**	0.034 U
Chrysene	1	1	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.75**	**0.092 J**	0.034 U
Dibenz(a,h)anthracene	0.33	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.11 J**	0.035 U	0.034 U
Fluoranthene	100	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**1.4**	**0.15 J**	0.034 U
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.38**	**0.041 J**	0.034 U
Naphthalene	100	12	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	0.039 U	0.035 U	0.034 U
Phenanthrene	100	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.92**	**0.067 J**	0.034 U
Pyrene	100	1000	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**1.3**	**0.15 J**	0.034 U

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
2-Methylnaphthalene	NE	NE	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	0.039 U	0.035 U	0.034 U
Benzyl butyl phthalate	NE	NE	MG/KG		0.071 U	0.077 U	0.069 U	0.077 U	0.069 U	0.079 U	0.077 U	0.07 U	0.068 U
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		0.071 U	0.077 U	0.069 U	0.077 U	0.069 U	0.079 U	0.077 U	0.07 U	0.068 U
Carbazole	NE	NE	MG/KG		0.036 U	0.038 U	0.034 U	0.039 U	0.034 U	0.04 U	**0.059 J**	0.035 U	0.034 U

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.8 U	0.86 U	0.78 U	0.87 U	0.77 U	0.89 U	0.87 U	0.79 U	0.77 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.0008 U	0.00086 U	0.00078 U	0.00087 U	0.00077 U	0.00089 U	0.00087 U	0.00079 U	0.00077 U
2,4-DB	NE	NE	MG/KG		0.0066 U	0.0071 U	0.0064 U	0.0072 U	0.0064 U	0.0074 U	0.0072 U	0.0065 U	0.0064 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.81 U	0.87 U	0.79 U	0.88 U	0.79 U	0.9 U	**1.3 J**	0.8 U	0.78 U
4,4'-DDD	2.6	14	MG/KG		**2.1**	**0.88**	**0.0065 J**	**0.014**	**0.0069 J**	**0.027**	**0.025**	**0.032**	0.00034 U
4,4'-DDE	1.8	17	MG/KG		**0.08**	**0.039**	**0.041**	**0.0034 J**	0.0017 U	**0.0053 J**	**0.25**	**0.085**	0.00034 U
4,4'-DDT	1.7	136	MG/KG		**0.024 J**	**0.53**	**0.23**	**0.26**	**0.17**	**0.48**	**0.49**	**0.11**	**0.0012 J**
Aldrin	0.019	0.19	MG/KG		0.0071 U	0.0076 U	0.0017 U	0.0019 U	0.0017 U	0.0039 U	0.0019 U	0.00035 U	0.00034 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.0047 U	0.0051 U	0.0011 U	0.0013 U	0.0011 U	0.0026 U	0.0013 U	0.00023 U	0.00023 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.0071 U	0.0076 U	0.0017 U	0.0019 U	0.0017 U	0.0039 U	**0.0039 J**	0.00035 U	0.00034 U
BHC, beta	0.072	0.09	MG/KG		0.0041 U	0.0044 U	0.00098 U	0.0011 U	0.00098 U	0.0023 U	0.0011 U	0.0002 U	0.0002 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.0036 U	0.0039 U	0.00088 U	0.00099 U	0.00088 U	0.002 U	**0.0019 J**	**0.00032 J**	0.00017 U
Chlordane, alpha	0.91	2.9	MG/KG		0.0036 U	0.0039 U	0.00088 U	0.00099 U	0.00088 U	0.002 U	0.00099 U	**0.00052 J**	0.00017 U
Chlordane, gamma	NE	NE	MG/KG		0.0036 U	0.0039 U	0.00088 U	0.00099 U	0.00088 U	0.002 U	0.00099 U	**0.00093**	0.00017 U
Chlorpyrifos	NE	NE	MG/KG		0.024 U	0.025 U	0.023 U	0.026 U	0.023 U	0.026 U	0.026 UJ	0.023 UJ	0.023 UJ
Dalapon	NE	NE	MG/KG		0.032 U	0.034 U	0.031 U	0.035 U	0.031 U	0.036 U	0.035 U	0.032 U	0.031 U
Diazinon	NE	NE	MG/KG		0.024 U	0.025 U	0.023 U	0.026 U	0.023 U	0.026 U	0.026 UJ	0.66 UJ	0.023 UJ
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.014 U	0.012 U	0.014 U	0.012 U	0.014 U	0.014 U	0.013 U	0.012 U
Dichloroprop	NE	NE	MG/KG		0.0086 U	0.0092 U	0.0083 U	0.0093 U	0.0083 U	0.0095 U	0.0093 U	0.0084 U	0.0082 U
Dieldrin	0.039	0.1	MG/KG		*0.12	*0.11	**0.0097**	0.0019 U	0.0017 U	0.0039 U	**0.0043 J**	0.00035 U	0.00034 U
Endosulfan sulfate	4.8	1000	MG/KG		0.0071 U	0.0076 U	0.0017 U	0.0019 U	0.0017 U	0.0039 U	0.0019 U	0.00035 U	0.00034 U
Endrin aldehyde	NE	NE	MG/KG		0.0071 U	0.0076 U	0.0017 U	0.0019 U	0.0017 U	0.0039 U	**0.0021 J**	0.00035 U	0.00034 U
Ethion	NE	NE	MG/KG		0.024 U	0.025 U	0.023 U	0.026 U	0.023 U	0.026 U	0.026 UJ	**0.044 J**	0.023 UJ
Heptachlor epoxide	NE	NE	MG/KG		0.0036 U	0.0039 U	0.00088 U	0.00099 U	0.00088 U	0.002 U	0.00099 U	0.00018 U	0.00017 U
Methoxychlor	NE	NE	MG/KG		0.036 U	**0.074 J**	**0.023 J**	**0.013 J**	**0.022 J**	**0.046 J**	**0.24**	**0.2**	**0.0021 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00088 U	0.00094 U	0.00085 U	0.00095 U	0.00085 U	0.00097 U	0.00095 U	0.00086 U	0.00084 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
Aluminum	NE	NE	MG/KG		**2020**	**1360**	**1450**	**1760**	**1830**	**5120**	**11800**	**5140**	**1660**
Antimony	NE	NE	MG/KG		1.06 U	1.12 U	1.03 U	1.15 U	1.01 U	1.14 U	**1.25 J**	1.01 UJ	0.987 UJ
Arsenic	16	16	MG/KG		1.01 U	**1.53 J**	**2.82 J**	1.09 U	**2.03**	**2.71**	**7.97**	**2.89**	0.938 U
Barium	350	820	MG/KG		**7.38**	**5.86**	**4.2**	**12.1**	**7.33**	**21.9**	**106**	**21.7**	**8.84**
Beryllium	14	47	MG/KG		**0.111 J**	**0.11 J**	**0.129 J**	**0.0953 J**	**0.229 J**	**0.209 J**	**0.351 J**	**0.275 J**	**0.0997 J**
Cadmium	2.5	7.5	MG/KG		0.149 U	0.156 U	0.145 U	0.161 U	0.142 U	0.16 U	**1.2**	0.142 U	0.138 U
Calcium	NE	NE	MG/KG		**58.2**	**35.1**	**34**	**40.9**	**33.4**	**136**	**2430**	**1620**	**34.2**
Chromium	NE	19	MG/KG		**2.91**	**3.63**	**3.34**	**3.85**	**3.5**	**8.08**	**14.6**	**10.6**	**3.12**
Cobalt	NE	NE	MG/KG		**0.387 J**	**0.426 J**	**1.27**	**2.94**	**2.28**	**1.62**	**4.39**	**2.46**	**0.554**
Copper	270	1720	MG/KG		**1.43**	**1.17**	**1.42**	**1.77**	**3.45**	**3.96**	**44.1**	**6.41**	**1.73**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5	SB-6	SB-6	SB-6
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-3-28-30	SB-3-33-34	SB-4-28-30	SB-4-33-34	SB-5-29-30	SB-5-32-33	SB-6-0-2	SB-6-5-7	SB-6-10-12
Iron	NE	NE	MG/KG		**2510**	**2660**	**2290**	**2370**	**6680**	**6760**	**15200**	**7940**	**2200**
Lead	400	450	MG/KG		**1.8**	**1.75**	**1.61**	**1.79**	**1.84**	**3.58**	**244**	**18**	**2.34**
Magnesium	NE	NE	MG/KG		**177**	**106**	**108**	**154**	**120**	**725**	**1670**	**1340**	**98.2**
Manganese	2000	2000	MG/KG		**10.8**	**9.82**	**43.1**	**78.7**	**82.9**	**55.3**	**227**	**124**	**22.4**
Mercury	0.81	0.73	MG/KG		0.012 U	0.0124 U	0.0113 U	0.0129 U	0.0118 U	0.0132 U	***1.05**	**0.0893 J**	0.0109 U
Nickel	140	130	MG/KG		**1.46**	**1.14**	**1.12**	**1.4**	**1.48**	**4.05**	**9.51**	**5.51**	**1.31**
Potassium	NE	NE	MG/KG		**131**	**85.3**	**89.3**	**123**	**114**	**458**	**752**	**468**	**80.9**
Selenium	36	4	MG/KG		1.04 U	1.09 U	1.01 U	1.13 U	0.993 U	1.12 U	1.13 U	0.993 U	0.967 U
Silver	36	8.3	MG/KG		0.18 U	0.19 U	0.176 U	0.195 U	**0.363 J**	**0.317 J**	**0.752**	**0.391 J**	0.168 U
Sodium	NE	NE	MG/KG		39.6 U	41.6 U	38.6 U	42.8 U	37.8 U	42.5 U	**45.4 J**	**38 J**	36.8 U
Thallium	NE	NE	MG/KG		1.35 U	1.42 U	1.31 U	1.46 U	1.29 U	1.45 U	**1.86 J**	1.29 U	1.25 U
Vanadium	NE	NE	MG/KG		**5.33**	**2.92**	**3.78**	**3.23**	**3.23**	**5.67**	**20.2**	**10.1**	**2.7**
Zinc	2200	2480	MG/KG		**11**	**9.31**	**4.39**	**5.2**	**10.7**	**10.5**	**277**	**57.1**	**4.09**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0006 U	0.0005 U	0.0005 U	0.0005 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.005 U	0.004 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		0.008 U	0.007 U	0.007 U	0.007 U	0.008 U	0.007 U	**0.012 J**	**0.009 J**	0.007 U	0.007 U
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		**0.003 J**	**0.009 J**	**0.005 J**	**0.007**	0.002 U	**0.004 J**	**0.008**	0.002 U	**0.004 J**	0.002 U
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
Acenaphthylene	100	107	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Anthracene	100	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzo(a)anthracene	1	1	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzo(a)pyrene	1	22	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzo(b)fluoranthene	1	1.7	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzo(g,h,i)perylene	100	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzo(k)fluoranthene	1	1.7	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
Chrysene	1	1	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Dibenz(a,h)anthracene	0.33	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Fluoranthene	100	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Naphthalene	100	12	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Phenanthrene	100	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Pyrene	100	1000	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
2-Methylnaphthalene	NE	NE	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U
Benzyl butyl phthalate	NE	NE	MG/KG		0.069 U	0.069 U	0.069 U	0.069 U	0.07 U	0.069 U	0.073 U	0.069 U	0.069 U	0.069 U
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		0.069 U	0.069 U	0.069 U	0.069 U	0.07 U	0.069 U	0.073 U	0.069 U	0.069 U	0.069 U
Carbazole	NE	NE	MG/KG		0.034 U	0.034 U	0.034 U	0.035 U	0.035 U	0.035 U	0.037 U	0.035 U	0.035 U	0.034 U

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
				SampleName:	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.78 U	0.78 U	0.77 U	0.78 U	0.78 U	0.78 U	0.83 U	0.78 U	0.78 U	0.77 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00078 U	0.00078 U	0.00077 U	0.00078 U	0.00078 U	0.00078 U	0.00083 U	0.00078 U	0.00078 U	0.00077 U
2,4-DB	NE	NE	MG/KG		0.0064 U	0.0064 U	0.0064 U	0.0064 U	0.0065 U	0.0064 U	0.0068 U	0.0064 U	0.0065 U	0.0064 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.79 U	0.79 U	0.78 U	0.79 U	0.79 U	0.79 U	0.84 U	0.79 U	0.79 U	0.79 U
4,4'-DDD	2.6	14	MG/KG		**0.14 J**	**0.024 J**	**0.14**	**0.0012 J**	**0.0016 J**	**0.0035**	**0.0013 J**	0.00034 U	0.00034 U	0.00034 U
4,4'-DDE	1.8	17	MG/KG		**0.3 J**	**0.061 J**	**0.14**	**0.00098 J**	**0.00071 J**	**0.00088 J**	0.00036 U	0.00034 U	0.00034 U	0.00034 U
4,4'-DDT	1.7	136	MG/KG		***2.9 J**	**0.53 J**	**0.88**	**0.0066 J**	**0.0078**	**0.0018**	**0.00041 J**	**0.0008 J**	0.00034 U	0.00034 U
Aldrin	0.019	0.19	MG/KG		0.0068 U	0.0017 U	0.0017 U	0.00034 U	0.00034 U	0.00034 U	0.00036 U	0.00034 U	0.00034 U	0.00034 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.0046 U	0.0011 U	0.0011 U	0.00023 U	0.00023 U	0.00023 U	0.00024 U	0.00023 U	0.00023 U	0.00023 U
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.0068 U	0.0017 U	0.0017 U	0.00034 U	0.00034 U	0.00034 U	0.00036 U	0.00034 U	0.00034 U	0.00034 U
BHC, beta	0.072	0.09	MG/KG		0.0039 U	0.00098 U	0.00098 U	0.0002 U	0.0002 U	0.0002 U	0.00021 U	0.0002 U	0.0002 U	0.0002 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.0035 U	**0.0023 J**	**0.0015 J**	0.00018 U	0.00018 U	0.00018 U	0.00019 U	0.00018 U	0.00018 U	0.00018 U
Chlordane, alpha	0.91	2.9	MG/KG		0.0035 U	**0.0014 J**	0.00087 U	0.00018 U	**0.0035**	**0.0021**	0.00019 U	0.00018 U	0.00018 U	0.00018 U
Chlordane, gamma	NE	NE	MG/KG		0.0035 U	0.00088 U	0.00087 U	0.00018 U	**0.0055**	**0.0037**	0.00019 U	0.00018 U	0.00018 U	0.00018 U
Chlorpyrifos	NE	NE	MG/KG		0.023 UJ	0.023 UJ	0.023 UJ	0.023 UJ	0.023 U	0.023 U	0.024 U	0.023 U	0.023 U	0.023 U
Dalapon	NE	NE	MG/KG		0.031 U	0.031 U	0.031 U	0.031 UR	0.031 UJ	0.031 UJ	0.033 UJ	0.031 UJ	0.031 UJ	0.031 UJ
Diazinon	NE	NE	MG/KG		0.023 UJ	0.023 UJ	0.023 UJ	0.023 UJ	0.023 U	0.023 U	0.024 U	0.023 U	0.023 U	0.023 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		**0.035 J**	**0.018 J**	0.012 U	0.012 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U
Dichloroprop	NE	NE	MG/KG		0.0083 U	0.0083 U	0.0082 U	0.0083 U	0.0083 U	0.0083 U	0.0088 U	0.0083 U	0.0083 U	0.0083 U
Dieldrin	0.039	0.1	MG/KG		0.0068 U	0.0017 U	0.0017 U	0.00034 U	0.00034 U	0.00034 U	0.00036 U	0.00034 U	0.00034 U	0.00034 U
Endosulfan sulfate	4.8	1000	MG/KG		0.0068 U	0.0017 U	0.0017 U	0.00034 U	0.00034 U	0.00034 U	0.00036 U	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	NE	NE	MG/KG		0.0068 U	0.0017 U	0.0017 U	0.00034 U	0.00034 U	0.00034 U	0.00036 U	0.00034 U	0.00034 U	0.00034 U
Ethion	NE	NE	MG/KG		0.023 UJ	0.023 UJ	0.023 UJ	0.023 UJ	0.023 U	0.023 U	0.024 U	0.023 U	0.023 U	0.023 U
Heptachlor epoxide	NE	NE	MG/KG		0.0035 U	0.00088 U	0.00087 U	0.00018 U	0.00018 U	0.00018 U	0.00019 U	0.00018 U	0.00018 U	0.00018 U
Methoxychlor	NE	NE	MG/KG		0.035 U	0.0088 U	**0.12**	**0.027**	0.0018 U	0.0018 U	0.0019 U	**0.002 J**	0.0018 U	0.0018 U
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00085 U	0.00085 U	0.00084 U	0.00085 U	0.00086 U	0.00085 U	0.0009 U	0.00085 U	0.00085 U	0.00085 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*SB-7*	*SB-7*	*SB-7*	*SB-7*	*SB-8*	*SB-8*	*SB-8*	*SB-9*	*SB-9*	*SB-9*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*SB-7-0-2*	*DUP-100108*	*SB-7-5-7*	*SB-7-10-12*	*SB-8-17-18*	*SB-8-22-23*	*SB-8-27-28*	*SB-9-7.6-8.6*	*SB-9-14-15*	*SB-9-17.7-18.7*
Aluminum	NE	NE	MG/KG		**2190 J**	**4080 J**	**2200**	**2250**	**1370**	**1540**	**1780**	**3440**	**2090**	**1560**
Antimony	NE	NE	MG/KG		0.994 U	1.03 U	1.03 U	1.04 U	1.01 U	1.01 U	1.07 U	1.01 U	1.03 U	1.02 U
Arsenic	16	16	MG/KG		**1.56 J**	**4.36 J**	**2.06**	**1.49 J**	**2.57**	**1.77 J**	**2.44**	**1.92 J**	**1.94 J**	0.972 U
Barium	350	820	MG/KG		**14**	**22.8**	**11.7**	**7.64**	**2.56**	**3.41**	**6.01**	**14.5**	**6.54**	**8.35**
Beryllium	14	47	MG/KG		**0.127 J**	**0.176 J**	**0.164 J**	**0.201 J**	**0.149 J**	**0.0959 J**	**0.0952 J**	**0.174 J**	**0.135 J**	0.0696 U
Cadmium	2.5	7.5	MG/KG		0.139 U	0.145 U	0.144 U	0.145 U	0.142 U	0.141 U	0.15 U	0.141 U	0.144 U	0.143 U
Calcium	NE	NE	MG/KG		**6390 J**	**2210 J**	**1300**	**83.5**	13.1 UJ	17.3 UJ	26.4 UJ	**87.9**	**65.8**	32.6 UJ
Chromium	NE	19	MG/KG		**4.03**	**5.73**	**14**	**15.6 J**	**7.01**	**3.78**	**5.73**	**5.12**	**4.54**	**2.34**
Cobalt	NE	NE	MG/KG		**0.95 J**	**1.66 J**	**1.37**	**0.771**	**0.391 J**	**0.293 J**	**0.478 J**	**3.57**	**0.756**	**0.413 J**
Copper	270	1720	MG/KG		**4.25 J**	**7.54 J**	**3.07**	**2.96**	**1.76**	**1.61**	**2.74**	**3.53**	**2.96**	**1.32**
Iron	NE	NE	MG/KG		**4400**	**6910**	**6730**	**4500 J**	**11600**	**4310**	**3350**	**5010**	**3310**	**1490**
Lead	400	450	MG/KG		**21.5**	**30.7**	**5.43**	**2.68**	**1.48 J**	**1.58**	**2.05**	**2.6**	**2.23**	**1.6**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-7	SB-7	SB-7	SB-7	SB-8	SB-8	SB-8	SB-9	SB-9	SB-9
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-7-0-2	DUP-100108	SB-7-5-7	SB-7-10-12	SB-8-17-18	SB-8-22-23	SB-8-27-28	SB-9-7.6-8.6	SB-9-14-15	SB-9-17.7-18.7
Magnesium	NE	NE	MG/KG		**3790 J**	**1880 J**	**947**	**126**	**68.4**	**118**	**151**	**308**	**135**	**72.7**
Manganese	2000	2000	MG/KG		**65.9 J**	**182 J**	**94.7**	**32.2**	**36**	**11.4**	**22.6**	**44.9**	**26.1**	**14.8**
Mercury	0.81	0.73	MG/KG		**0.0549 J**	**0.0575 J**	0.0116 U	0.0119 U	0.0115 U	0.0112 U	0.0119 U	0.0112 U	0.0115 U	0.0116 U
Nickel	140	130	MG/KG		**2.52 J**	**4.28 J**	**3.66**	**1.54**	**1.11**	**0.759 J**	**1.37**	**2.3**	**1.36**	**1.08**
Potassium	NE	NE	MG/KG		**247 J**	**483 J**	**243**	**109**	**91.6**	**120**	**127**	**261**	**132**	**83.6**
Selenium	36	4	MG/KG		0.974 U	1.01 U	1.01 U	1.02 U	0.992 U	0.989 U	1.05 U	0.987 U	1.01 U	1 U
Silver	36	8.3	MG/KG		**0.238 J**	**0.377 J**	**0.295 J**	**0.291 J**	**0.607**	**0.23 J**	**0.211 J**	**0.3 J**	**0.18 J**	0.174 U
Sodium	NE	NE	MG/KG		37.1 U	38.6 U	38.3 U	38.7 U	37.8 U	37.6 U	39.9 U	37.6 U	38.4 U	38.2 U
Thallium	NE	NE	MG/KG		1.26 U	1.31 U	1.31 U	1.32 U	1.29 U	1.28 U	1.36 U	1.28 U	1.31 U	1.3 U
Vanadium	NE	NE	MG/KG		**4.44 J**	**8.93 J**	**5.85**	**22.3 J**	**10.5**	**4.16**	**4.1**	**6.2**	**3.48**	**2.46**
Zinc	2200	2480	MG/KG		**27.4 J**	**60.9 J**	**18.2**	**12.2**	**16.1**	**2.71**	**2.74**	**4.31**	**3.57**	**3.24**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	MW-4	MW-5	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	MW-4-36-38	MW-5-36-38	SB-10-8-10	SB-10-12-14	SB-10-14-16	SB-10-22-24	SB-10-30-32	SB-10-38-40
Benzene	2.9	0.06	MG/KG		0.0006 U	0.0006 U	0.0006 U	0.026 U	0.0006 U	0.0005 U	0.0005 U	0.0006 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	*4.6	**0.2**	**0.001 J**	**0.1**	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	**0.001 J**	*32	*18	**0.01**	**0.68**	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	MW-4	MW-5	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	MW-4-36-38	MW-5-36-38	SB-10-8-10	SB-10-12-14	SB-10-14-16	SB-10-22-24	SB-10-30-32	SB-10-38-40
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.005 U	0.005 U	0.005 U	0.21 U	0.005 U	0.004 U	0.004 U	0.005 U
Acetone	100	0.05	MG/KG		**0.009 J**	0.008 U	0.008 U	0.37 U	0.009 U	0.007 U	**0.014 J**	**0.015 J**
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	**0.23 J**	**0.012**	0.001 U	**0.006**	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		**0.002 J**	0.002 U	**0.004 J**	0.1 U	**0.005 J**	0.002 U	0.002 U	*0.096
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	**0.002 J**	0.052 U	**0.002 J**	**0.004 J**	**0.004 J**	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	MW-4	MW-5	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	MW-4-36-38	MW-5-36-38	SB-10-8-10	SB-10-12-14	SB-10-14-16	SB-10-22-24	SB-10-30-32	SB-10-38-40
Acenaphthylene	100	107	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1	22	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*MW-4*	*MW-5*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*MW-4-36-38*	*MW-5-36-38*	*SB-10-8-10*	*SB-10-12-14*	*SB-10-14-16*	*SB-10-22-24*	*SB-10-30-32*	*SB-10-38-40*
Benzo(k)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	12	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*MW-4*	*MW-5*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*MW-4-36-38*	*MW-5-36-38*	*SB-10-8-10*	*SB-10-12-14*	*SB-10-14-16*	*SB-10-22-24*	*SB-10-30-32*	*SB-10-38-40*
2-Methylnaphthalene	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*MW-4*	*MW-5*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*MW-4-36-38*	*MW-5-36-38*	*SB-10-8-10*	*SB-10-12-14*	*SB-10-14-16*	*SB-10-22-24*	*SB-10-30-32*	*SB-10-38-40*
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.84 U	0.88 U	9 U	0.86 U	19 U	0.81 U	0.8 U	0.86 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00084 U	0.00088 U	0.009 U	0.00086 U	0.019 U	0.00081 U	0.0008 U	0.00086 U
2,4-DB	NE	NE	MG/KG		0.007 U	0.0073 U	0.075 U	0.0071 U	0.16 U	0.0067 U	0.0066 U	0.0071 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.86 U	0.89 U	9.1 U	0.87 U	20 U	0.83 U	0.81 U	0.87 U
4,4'-DDD	2.6	14	MG/KG		**0.2**	0.0086 UJ	**2.1**	***93**	***380**	***230**	***69 J**	**0.37**
4,4'-DDE	1.8	17	MG/KG		**0.013 J**	0.0025 UJ	**1.3**	***2.9**	13 U	***11**	***7.3**	**0.021 J**
4,4'-DDT	1.7	136	MG/KG		**0.65 J**	0.0079 UJ	**0.54 J**	***8.8 J**	***120 J**	***720 J**	***580 J**	**1.4 J**
Aldrin	0.019	0.19	MG/KG		0.0019 U	0.0002 U	0.02 U	0.058 U	0.17 U	***1.2**	0.18 U	0.0097 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.0025 U	0.00026 U	0.026 U	**0.18 J**	0.21 U	0.24 U	0.23 U	0.013 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	MW-4	MW-5	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	MW-4-36-38	MW-5-36-38	SB-10-8-10	SB-10-12-14	SB-10-14-16	SB-10-22-24	SB-10-30-32	SB-10-38-40
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		**0.0045 J**	0.00039 U	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
BHC, beta	0.072	0.09	MG/KG		0.011 U	0.0011 U	0.12 U	0.33 U	0.93 U	1 U	1 U	0.055 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.0019 U	0.0002 U	0.02 U	*1.8	*9.1 J	*0.21 J	0.18 U	0.0097 U
Chlordane, alpha	0.91	2.9	MG/KG		0.0019 U	**0.00031 J**	0.02 U	**0.4**	*1.4	**0.85 J**	0.18 U	0.0097 U
Chlordane, gamma	NE	NE	MG/KG		**0.0064 J**	**0.00038 J**	0.02 U	0.058 U	**2.4**	0.18 U	0.18 U	0.0097 U
Chlorpyrifos	NE	NE	MG/KG		0.025 U	0.026 U	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
Dalapon	NE	NE	MG/KG		**0.035 J**	0.035 U	0.36 U	0.034 U	0.78 U	**0.074 J**	**0.045 J**	0.034 U
Diazinon	NE	NE	MG/KG		0.025 U	0.026 U	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.014 U	0.014 U	0.14 U	0.014 U	0.31 U	0.013 U	0.013 U	0.014 U
Dichloroprop	NE	NE	MG/KG		0.009 U	0.0094 U	0.096 U	0.0092 U	0.21 U	0.0087 U	0.0085 U	0.0092 U
Dieldrin	0.039	0.1	MG/KG		*0.08	**0.00045 J**	0.04 U	3.7 U	*17 J	0.36 U	*7.8	**0.02 J**
Endosulfan sulfate	4.8	1000	MG/KG		0.0037 U	0.00039 U	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Endrin aldehyde	NE	NE	MG/KG		0.0037 U	0.00039 U	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Ethion	NE	NE	MG/KG		0.025 U	0.026 U	0.26 U	0.25 U	0.28 U	0.24 U	0.023 UR	0.025 U
Heptachlor epoxide	NE	NE	MG/KG		0.0019 U	0.0002 U	0.02 U	0.058 U	0.32 U	0.18 U	0.18 U	0.0097 U
Methoxychlor	NE	NE	MG/KG		**0.022 J**	0.002 U	**0.48 J**	0.58 U	**93 J**	**7.2 J**	**5.4 J**	0.097 U
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00092 U	0.00096 U	0.0099 U	0.00094 U	0.021 U	0.00089 U	0.00087 U	0.00094 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	MW-4	MW-5	SB-10	SB-10	SB-10	SB-10	SB-10	SB-10
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	MW-4-36-38	MW-5-36-38	SB-10-8-10	SB-10-12-14	SB-10-14-16	SB-10-22-24	SB-10-30-32	SB-10-38-40
Aluminum	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	820	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	14	47	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	7.5	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NE	19	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	1720	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*MW-4*	*MW-5*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*	*SB-10*
5-Metals	Protection of Public Health - Residential Use	Protection of Groundwater		*SampleName:*	*MW-4-36-38*	*MW-5-36-38*	*SB-10-8-10*	*SB-10-12-14*	*SB-10-14-16*	*SB-10-22-24*	*SB-10-30-32*	*SB-10-38-40*
Analyte Name			*Units*									
Iron	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	450	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2000	2000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	0.73	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Nickel	140	130	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Selenium	36	4	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Silver	36	8.3	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2200	2480	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-11-6-8	SB-11-16-18	SB-11-26-28	SB-11-36-38	SB-12-6-8	SB-12-16-18	SB-12-26-28	SB-12-36-38	DUP030810
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0006 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.001 J**	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.006**	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-11-6-8	SB-11-16-18	SB-11-26-28	SB-11-36-38	SB-12-6-8	SB-12-16-18	SB-12-26-28	SB-12-36-38	DUP030810
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		0.008 U	0.007 U	**0.008 J**	0.007 U	0.007 U	0.007 U	0.007 U	0.008 U	**0.009 J**
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		0.002 U	0.002 U	0.002 U	0.002 U	**0.002 J**	0.002 U	0.002 U	0.002 U	**0.003 J**
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.006**	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-11-6-8	SB-11-16-18	SB-11-26-28	SB-11-36-38	SB-12-6-8	SB-12-16-18	SB-12-26-28	SB-12-36-38	DUP030810
Acenaphthylene	100	107	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1	22	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]										
2-PAHs/SVOCs	Protection of Public Health - Residential Use	Protection of Groundwater		Location:	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name			**Units**	**SampleName:**	**SB-11-6-8**	**SB-11-16-18**	**SB-11-26-28**	**SB-11-36-38**	**SB-12-6-8**	**SB-12-16-18**	**SB-12-26-28**	**SB-12-36-38**	**DUP030810**
Benzo(k)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	12	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]										
2-SVOCs	Protection of Public Health - Residential Use	Protection of Groundwater		Location:	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name			**Units**	**SampleName:**	**SB-11-6-8**	**SB-11-16-18**	**SB-11-26-28**	**SB-11-36-38**	**SB-12-6-8**	**SB-12-16-18**	**SB-12-26-28**	**SB-12-36-38**	**DUP030810**
2-Methylnaphthalene	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]										
4-Pesticides/Herbicides	Protection of Public Health - Residential Use	Protection of Groundwater		Location:	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name			**Units**	**SampleName:**	**SB-11-6-8**	**SB-11-16-18**	**SB-11-26-28**	**SB-11-36-38**	**SB-12-6-8**	**SB-12-16-18**	**SB-12-26-28**	**SB-12-36-38**	**DUP030810**
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.78 U	0.78 U	0.77 U	0.83 U	0.78 U	0.78 U	0.77 U	0.83 U	0.85 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00078 U	0.00078 U	0.00077 U	0.00083 U	0.00078 U	0.00078 U	0.00077 U	0.00083 U	0.00085 U
2,4-DB	NE	NE	MG/KG		0.0065 U	0.0064 U	0.0064 U	0.0069 U	0.0064 U	0.0064 U	0.0064 U	0.0069 U	0.007 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.79 U	0.79 U	0.78 U	0.84 U	0.79 U	0.79 U	0.78 U	0.84 U	0.86 U
4,4'-DDD	2.6	14	MG/KG		0.0015 UJ	0.00034 U	0.0015 UJ	0.00037 U	0.011 UJ	0.012 UJ	0.0028 UJ	0.0019 UJ	0.002 UJ
4,4'-DDE	1.8	17	MG/KG		0.00034 U	0.00034 U	0.00034 U	0.00037 U	**0.033**	0.0023 UJ	0.00064 UJ	**0.006**	**0.0047**
4,4'-DDT	1.7	136	MG/KG		0.012 UJ	0.0013 UJ	0.0061 UJ	0.0012 UJ	**0.19 J**	0.039 UJ	0.017 UJ	0.03 UJ	0.024 UJ
Aldrin	0.019	0.19	MG/KG		0.00018 U	0.00018 U	0.00018 U	0.00019 U	0.0018 U	0.00018 U	0.00018 U	0.00019 U	0.00019 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.00023 U	0.00023 U	0.00023 U	0.00024 U	0.0023 U	0.00023 U	0.00023 U	0.00024 U	0.00025 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-11-6-8	SB-11-16-18	SB-11-26-28	SB-11-36-38	SB-12-6-8	SB-12-16-18	SB-12-26-28	SB-12-36-38	DUP030810
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.00034 U	0.00034 U	0.00034 U	0.00037 U	0.0034 U	0.00034 U	0.00034 U	0.00037 U	0.00037 U
BHC, beta	0.072	0.09	MG/KG		0.001 U	0.00099 U	0.00099 U	0.0011 U	0.01 U	0.00099 U	0.00099 U	0.0011 U	0.0011 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.00018 U	0.00018 U	0.00018 U	0.00019 U	**0.011**	0.00018 U	0.00018 U	**0.00084 J**	**0.00087 J**
Chlordane, alpha	0.91	2.9	MG/KG		0.00018 U	0.00018 U	0.00018 U	0.00019 U	**0.003 J**	0.00018 U	0.00018 U	**0.00036 J**	**0.00032 J**
Chlordane, gamma	NE	NE	MG/KG		0.00018 U	0.00018 U	0.00018 U	0.00019 U	**0.003 J**	**0.00046 J**	0.00018 U	**0.00039 J**	**0.00032 J**
Chlorpyrifos	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	0.024 U	0.23 U	0.023 U	0.023 U	0.024 U	0.025 U
Dalapon	NE	NE	MG/KG		0.031 U	0.031 U	0.031 U	0.033 U	0.031 U	0.031 U	0.031 U	0.033 U	0.034 U
Diazinon	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	0.024 U	0.23 U	0.023 U	0.023 U	0.024 U	0.025 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.012 U	0.012 U	0.013 U	0.012 U	0.012 U	0.012 U	0.013 U	0.014 U
Dichloroprop	NE	NE	MG/KG		0.0084 U	0.0083 U	0.0083 U	0.0089 U	0.0083 U	0.0083 U	0.0082 U	0.0088 U	0.009 U
Dieldrin	0.039	0.1	MG/KG		0.00034 U	0.00034 U	0.00034 U	0.00037 U	0.0034 U	**0.00098 J**	0.00034 U	0.00037 U	0.00037 U
Endosulfan sulfate	4.8	1000	MG/KG		0.00034 U	0.00034 U	0.00034 U	0.00037 U	0.0034 U	0.00034 U	0.00034 U	0.00037 U	0.00037 U
Endrin aldehyde	NE	NE	MG/KG		0.00034 U	0.00034 U	0.00034 U	0.00037 U	0.0034 U	0.00034 U	0.00034 U	0.00037 U	0.00037 U
Ethion	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	0.024 U	0.23 U	0.023 U	0.023 U	0.024 U	0.025 U
Heptachlor epoxide	NE	NE	MG/KG		0.00018 U	0.00018 U	0.00018 U	0.00019 U	0.0018 U	0.00018 U	0.00018 U	0.00019 U	0.00019 U
Methoxychlor	NE	NE	MG/KG		0.0018 U	0.0018 U	0.0018 U	0.0019 U	**0.041 J**	0.0018 U	0.0018 U	**0.0098**	**0.008 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00086 U	0.00085 U	0.00085 U	0.00091 U	0.00085 U	0.00085 U	0.00085 U	0.00091 U	0.00093 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12	SB-12	SB-12
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-11-6-8	SB-11-16-18	SB-11-26-28	SB-11-36-38	SB-12-6-8	SB-12-16-18	SB-12-26-28	SB-12-36-38	DUP030810
Aluminum	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	820	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	14	47	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	7.5	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NE	19	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	1720	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*SB-11*	*SB-11*	*SB-11*	*SB-11*	*SB-12*	*SB-12*	*SB-12*	*SB-12*	*SB-12*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*SB-11-6-8*	*SB-11-16-18*	*SB-11-26-28*	*SB-11-36-38*	*SB-12-6-8*	*SB-12-16-18*	*SB-12-26-28*	*SB-12-36-38*	*DUP030810*
Iron	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	450	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2000	2000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	0.73	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	140	130	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	36	4	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	36	8.3	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2200	2480	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.026 U	0.0005 U	0.0005 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.14 J**	**0.003 J**	0.001 U
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.19 J**	**0.004 J**	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	**0.079 J**	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	0.21 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		**0.013 J**	0.008 U	**0.01 J**	**0.03**	0.37 U	**0.016 J**	0.007 U
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		0.002 U	0.002 U	0.002 U	0.002 U	0.1 U	0.002 U	0.002 U
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		**0.003 J**	**0.002 J**	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.052 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
Acenaphthylene	100	107	MG/KG		NA	NA	NA	NA	NA	NA	NA
Anthracene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1	22	MG/KG		NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
Benzo(k)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA
Chrysene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	12	MG/KG		NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
2-Methylnaphthalene	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.82 U	0.81 U	0.78 U	0.8 U	0.8 U	0.77 U	0.77 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00082 U	0.00081 U	0.00078 U	0.0008 U	0.0008 U	0.00077 U	0.00077 U
2,4-DB	NE	NE	MG/KG		0.0067 U	0.0067 U	0.0064 U	0.0067 U	0.0067 U	0.0064 U	0.0064 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.83 U	0.82 U	0.79 U	0.82 U	0.82 U	0.78 U	0.78 U
4,4'-DDD	2.6	14	MG/KG		*44 J	*54 J	*28 J	*21 J	*17 J	*32 J	**1.2 J**
4,4'-DDE	1.8	17	MG/KG		*3	*4.3	**0.8**	**0.8 J**	*3	*2.5	**1.2**
4,4'-DDT	1.7	136	MG/KG		0.18 U	0.19 U	*2.9 J	*12 J	**0.98 J**	*120 J	*2.1 J
Aldrin	0.019	0.19	MG/KG		0.018 U	0.018 U	0.018 U	0.018 U	*0.02 J	0.017 U	0.017 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.024 U	0.024 U	0.023 U	0.024 U	0.023 U	**0.26**	**0.21**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.39 U	0.47 U	0.034 U	0.035 U	0.18 U	0.034 U	0.034 U
BHC, beta	0.072	0.09	MG/KG		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.099 U	0.098 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.017 U
Chlordane, alpha	0.91	2.9	MG/KG		**0.82**	***0.96**	0.018 U	**0.12**	**0.83**	**0.21**	0.017 U
Chlordane, gamma	NE	NE	MG/KG		**1.1**	**1.4**	**0.09**	**0.26**	**0.72**	**0.21**	0.017 U
Chlorpyrifos	NE	NE	MG/KG		0.024 U	0.024 U	0.023 U	0.024 U	0.024 U	0.023 U	0.023 U
Dalapon	NE	NE	MG/KG		0.048 U	0.048 U	0.046 U	0.047 U	0.047 U	0.045 U	0.045 U
Diazinon	NE	NE	MG/KG		0.024 U	0.024 U	0.023 U	0.024 U	0.024 U	0.023 U	0.023 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.013 U	0.012 U	0.013 U	0.013 U	0.012 U	0.012 U
Dichloroprop	NE	NE	MG/KG		0.0087 U	0.0086 U	0.0083 U	0.0086 U	0.0086 U	0.0083 U	0.0083 U
Dieldrin	0.039	0.1	MG/KG		0.36 U	0.035 U	0.34 U	0.35 U	0.35 U	0.34 U	0.034 U
Endosulfan sulfate	4.8	1000	MG/KG		**0.24**	0.26 U	**0.066 J**	0.035 U	0.15 U	0.034 U	0.034 U
Endrin aldehyde	NE	NE	MG/KG		**0.17 J**	**0.21**	**0.15 J**	0.4 U	**0.2**	0.43 U	0.039 U
Ethion	NE	NE	MG/KG		0.024 U	0.024 U	0.023 U	0.024 U	0.024 U	0.023 U	0.023 U
Heptachlor epoxide	NE	NE	MG/KG		**0.15**	**0.17**	**0.022 J**	**0.069 J**	**0.098**	**0.064 J**	0.017 U
Methoxychlor	NE	NE	MG/KG		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	0.17 U
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00089 U	0.00089 U	0.00085 U	0.00088 U	0.00088 U	0.00085 U	0.00085 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-101	SB-101	SB-101	SB-101	SB-102	SB-102	SB-102
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-101-10	DUP-040711	SB-101-20	SB-101-WT	SB-102-10	SB-102-20	SB-102-WT
Aluminum	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Antimony	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	MG/KG		NA	NA	NA	NA	NA	NA	NA
Barium	350	820	MG/KG		NA	NA	NA	NA	NA	NA	NA
Beryllium	14	47	MG/KG		NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	7.5	MG/KG		NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Chromium	NE	19	MG/KG		NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Copper	270	1720	MG/KG		NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*SB-101*	*SB-101*	*SB-101*	*SB-101*	*SB-102*	*SB-102*	*SB-102*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*SB-101-10*	*DUP-040711*	*SB-101-20*	*SB-101-WT*	*SB-102-10*	*SB-102-20*	*SB-102-WT*
Iron	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Lead	400	450	MG/KG		NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Manganese	2000	2000	MG/KG		NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	0.73	MG/KG		NA	NA	NA	NA	NA	NA	NA
Nickel	140	130	MG/KG		NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Selenium	36	4	MG/KG		NA	NA	NA	NA	NA	NA	NA
Silver	36	8.3	MG/KG		NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Thallium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA
Zinc	2200	2480	MG/KG		NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0006 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	**0.0008 J**	0.0005 U	**0.0006 J**
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.1**	**0.002 J**	**0.024**
Toluene	100	0.7	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.001 J**
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.27**	**0.009**	**0.33**

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	**0.004 J**	0.004 U	0.005 U	0.004 U	0.004 U
Acetone	100	0.05	MG/KG		0.007 U	**0.01 J**	**0.011 J**	0.007 U	**0.02 J**	0.007 U	**0.02 J**	0.007 U	**0.013 J**
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	**0.003 J**	0.001 U	**0.009**
Chloroform	10	0.37	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		**0.005 J**	0.001 U	0.001 U	**0.005 J**	0.001 U	0.001 U	0.001 U	**0.002 J**	**0.067**
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
Acenaphthylene	100	107	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1	22	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-103*	*SB-103*	*SB-103*	*SB-104*	*SB-104*	*SB-104*	*SB-105*	*SB-105*	*SB-105*
				SampleName:	*SB-103-10*	*SB-103-20*	*SB-103-WT*	*SB-104-10*	*SB-104-20*	*SB-104-WT*	*SB-105-10*	*SB-105-20*	*SB-105-WT*
Benzo(k)fluoranthene	1	1.7	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	1	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	12	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	100	1000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-103*	*SB-103*	*SB-103*	*SB-104*	*SB-104*	*SB-104*	*SB-105*	*SB-105*	*SB-105*
				SampleName:	*SB-103-10*	*SB-103-20*	*SB-103-WT*	*SB-104-10*	*SB-104-20*	*SB-104-WT*	*SB-105-10*	*SB-105-20*	*SB-105-WT*
2-Methylnaphthalene	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl butyl phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]												
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*Location:*	*SB-103*	*SB-103*	*SB-103*	*SB-104*	*SB-104*	*SB-104*	*SB-105*	*SB-105*	*SB-105*
				SampleName:	*SB-103-10*	*SB-103-20*	*SB-103-WT*	*SB-104-10*	*SB-104-20*	*SB-104-WT*	*SB-105-10*	*SB-105-20*	*SB-105-WT*
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.8 U	0.8 U	0.77 U	0.79 U	0.78 U	0.78 U	**100**	0.78 U	0.85 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.0008 U	0.0008 U	0.00077 U	0.00079 U	0.00078 U	0.00078 U	0.00084 U	0.00078 U	0.00085 U
2,4-DB	NE	NE	MG/KG		0.0066 U	0.0066 U	0.0064 U	0.0065 U	0.0064 U	0.0064 U	0.007 U	0.0064 U	0.007 U
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.81 U	0.81 U	0.78 U	0.8 U	0.79 U	0.79 U	**11**	0.79 U	0.86 U
4,4'-DDD	2.6	14	MG/KG		***10 J**	***27 J**	**1.8 J**	***46 J**	***94 J**	***28 J**	0.037 U	***43 J**	***46 J**
4,4'-DDE	1.8	17	MG/KG		***3.8**	***2.1**	**1.1**	***3.2**	***2.1**	**0.94**	***7.3**	**1.3 J**	***2.6**
4,4'-DDT	1.7	136	MG/KG		0.035 U	***100 J**	***55 J**	**0.23 J**	***12 J**	***21 J**	**0.78 J**	***170 J**	***370 J**
Aldrin	0.019	0.19	MG/KG		**0.018 J**	0.018 U	0.018 U	***0.023 J**	***1.5**	***0.15**	***0.073 J**	0.087 U	0.096 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.023 U	0.023 U	**0.089**	0.023 U	0.023 U	**0.11**	0.025 U	0.11 U	**2.5**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.035 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.037 U	0.17 U	0.19 U
BHC, beta	0.072	0.09	MG/KG		0.1 U	0.1 U	0.099 U	0.1 U	0.1 U	0.098 U	0.11 U	0.49 U	0.54 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.017 U	0.019 U	0.087 U	0.096 U
Chlordane, alpha	0.91	2.9	MG/KG		*0.93	**0.24**	0.018 U	*0.99	0.018 U	0.017 U	*2.6	**0.84**	0.096 U
Chlordane, gamma	NE	NE	MG/KG		**0.91**	**0.24**	**0.029 J**	**1**	**0.44**	**0.12**	**0.53 J**	**1.1**	**0.7**
Chlorpyrifos	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.075 U	0.023 U	0.025 U
Dalapon	NE	NE	MG/KG		0.047 U	0.047 U	0.045 U	0.046 U	0.046 U	0.046 U	0.05 U	0.046 U	0.05 U
Diazinon	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	**0.091**	0.023 U	0.023 U	0.075 U	0.023 U	0.025 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.013 U	0.012 U	0.013 U	0.012 U	0.012 U	**0.025 J**	0.012 U	0.014 U
Dichloroprop	NE	NE	MG/KG		0.0085 U	0.0085 U	0.0082 U	0.0084 U	0.0083 U	0.0083 U	**0.015 J**	0.0083 U	0.009 U
Dieldrin	0.039	0.1	MG/KG		0.35 U	3.4 U	0.34 U	0.34 U	0.034 U	0.34 U	0.37 U	0.34 U	2.8 U
Endosulfan sulfate	4.8	1000	MG/KG		**0.13 J**	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.35 U	0.17 U	0.19 U
Endrin aldehyde	NE	NE	MG/KG		**0.11 J**	0.034 U	0.034 U	**0.14 J**	0.034 U	0.32 U	0.56 U	1.6 U	1.6 U
Ethion	NE	NE	MG/KG		0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	**0.28**	0.023 U	0.025 U
Heptachlor epoxide	NE	NE	MG/KG		**0.17**	**0.069 J**	0.018 U	**0.12**	**0.079 J**	**0.02 J**	0.019 U	**0.13 J**	0.096 U
Methoxychlor	NE	NE	MG/KG		0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.17 U	**1.7**	**1.3 J**	**1.6 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00087 U	0.00087 U	0.00084 U	0.00086 U	0.00085 U	0.00085 U	**0.0088**	0.00085 U	0.00092 U

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
Aluminum	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	350	820	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	14	47	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	2.5	7.5	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	NE	19	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	1720	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group:	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	SB-103	SB-103	SB-103	SB-104	SB-104	SB-104	SB-105	SB-105	SB-105
5-Metals													
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	SB-103-10	SB-103-20	SB-103-WT	SB-104-10	SB-104-20	SB-104-WT	SB-105-10	SB-105-20	SB-105-WT
Iron	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	450	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2000	2000	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	0.73	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	140	130	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	36	4	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	36	8.3	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	NE	NE	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	2200	2480	MG/KG		NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Soil Results:

Analyte Group: 1-BTEX/Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
Benzene	2.9	0.06	MG/KG		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0006 U
Ethylbenzene	30	1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	100	0.7	MG/KG		**0.003 J**	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	100	1.6	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 1-Volatiles	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
1,1,2,2-Tetrachloroethane	NE	NE	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone (MEK)	100	0.12	MG/KG		0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.005 U
Acetone	100	0.05	MG/KG		0.055 UJ	**0.014 J**	0.007 U	0.007 U	0.007 U	0.009 U
Chlorobenzene	100	1.1	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	10	0.37	MG/KG		0.001 U	**0.001 J**	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-Dichloroethene	59	0.25	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methylene chloride	51	0.05	MG/KG		0.002 U	**0.011**	**0.004 J**	0.002 U	0.002 U	0.002 U
Tetrachloroethene (PCE)	5.5	1.3	MG/KG		0.001 U	0.001 U	**0.021**	0.001 U	0.001 U	**0.002 J**
Trichloroethene (TCE)	10	0.47	MG/KG		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
Acenaphthylene	100	107	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U
Anthracene	100	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U
Benzo(a)anthracene	1	1	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**0.97 J**
Benzo(a)pyrene	1	22	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	***1.1 J**
Benzo(b)fluoranthene	1	1.7	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	***1.8 J**
Benzo(g,h,i)perylene	100	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**1 J**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 2-PAHs/SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	Dry Well	Dry Well	Mechanic Pit	Mechanic Pit	Mechanic Pit	Step
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	Unspiked	18-24	Top	Below	Below-FD	Drain
Benzo(k)fluoranthene	1	1.7	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**0.87 J**
Chrysene	1	1	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	***1.5 J**
Dibenz(a,h)anthracene	0.33	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U
Fluoranthene	100	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**2.4**
Indeno(1,2,3-c,d)pyrene	0.5	8.2	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**0.87 J**
Naphthalene	100	12	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U
Phenanthrene	100	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**1.3 J**
Pyrene	100	1000	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	**2.2**

Analyte Group: 2-SVOCs	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	Dry Well	Dry Well	Mechanic Pit	Mechanic Pit	Mechanic Pit	Step
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	Unspiked	18-24	Top	Below	Below-FD	Drain
2-Methylnaphthalene	NE	NE	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U
Benzyl butyl phthalate	NE	NE	MG/KG		0.07 U	0.071 U	0.7 U	0.068 U	0.068 U	**2.5**
bis(2-Ethylhexyl)phthalate	NE	NE	MG/KG		0.07 U	0.071 U	**1.6 J**	0.068 U	0.068 U	**10**
Carbazole	NE	NE	MG/KG		0.035 U	0.036 U	0.35 U	0.034 U	0.034 U	0.42 U

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			Location:	Dry Well	Dry Well	Mechanic Pit	Mechanic Pit	Mechanic Pit	Step
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	Units	SampleName:	Unspiked	18-24	Top	Below	Below-FD	Drain
2-(2-Methyl-4-chlorophenoxy)propionic acid (MCPP)	NE	NE	MG/KG		0.79 U	0.8 U	**6.6**	0.76 U	0.76 U	0.94 U
2,4,5-TP (Silvex)	58	3.8	MG/KG		0.00079 U	0.0008 U	**0.00099 J**	0.00076 U	0.00076 U	0.00094 U
2,4-DB	NE	NE	MG/KG		0.0065 U	0.0066 U	**0.064**	**0.0089 J**	0.0063 U	**0.013 J**
2-Methyl-4-chlorophenoxyacetic acid (MCPA)	NE	NE	MG/KG		0.8 U	0.81 U	0.8 U	0.77 U	0.77 U	0.96 U
4,4'-DDD	2.6	14	MG/KG		**0.16**	**0.04**	**6.8 J**	**0.013**	**0.015**	**0.76 J**
4,4'-DDE	1.8	17	MG/KG		**0.018 J**	**0.011**	**1.6 J**	**0.0048 J**	**0.0067 J**	**1.6 J**
4,4'-DDT	1.7	136	MG/KG		0.0017 U	**0.097**	**22 J**	**0.14**	**0.2**	**5.1 J**
Aldrin	0.019	0.19	MG/KG		0.0017 U	0.00035 U	0.035 U	0.0017 U	0.0017 U	0.042 U
alpha Endosulfan (Endosulfan I)	4.8	102	MG/KG		0.0012 U	0.00023 U	0.023 U	0.0011 U	0.0011 U	0.028 U

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 4-Pesticides/Herbicides	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
beta Endosulfan (Endosulfan II)	4.8	102	MG/KG		0.0017 U	0.00035 U	0.035 U	0.0017 U	0.0017 U	0.042 U
BHC, beta	0.072	0.09	MG/KG		0.001 U	0.0002 U	0.02 U	0.00096 U	0.00096 U	0.024 U
BHC, gamma (Lindane)	0.28	0.1	MG/KG		0.00089 U	0.00018 U	*0.26 J	**0.0048**	**0.0064**	0.021 U
Chlordane, alpha	0.91	2.9	MG/KG		**0.019**	**0.017**	**0.035 J**	0.00086 U	0.00086 U	**0.06 J**
Chlordane, gamma	NE	NE	MG/KG		**0.027**	**0.017**	0.018 U	**0.00088 J**	0.00086 U	0.021 U
Chlorpyrifos	NE	NE	MG/KG		0.023 U	0.023 U	**2.4**	0.022 U	0.022 U	0.55 U
Dalapon	NE	NE	MG/KG		0.032 U	**0.035 J**	0.031 U	0.03 U	0.03 U	0.038 U
Diazinon	NE	NE	MG/KG		0.023 U	0.023 U	0.46 U	0.022 U	0.022 U	0.55 U
Dichlorophenoxyacetic acid (2,4-D)	NE	NE	MG/KG		0.013 U	0.013 U	**5.1**	0.012 U	0.012 U	**0.058**
Dichloroprop	NE	NE	MG/KG		0.0084 U	0.0085 U	0.0084 U	0.0081 U	0.0081 U	0.01 U
Dieldrin	0.039	0.1	MG/KG		0.0017 U	0.00035 U	0.035 U	0.0017 U	0.0017 U	0.042 U
Endosulfan sulfate	4.8	1000	MG/KG		0.0017 U	0.00035 U	0.035 U	0.0017 U	0.0017 U	0.042 U
Endrin aldehyde	NE	NE	MG/KG		0.0017 U	0.00035 U	0.035 U	0.0017 U	0.0017 U	0.042 U
Ethion	NE	NE	MG/KG		0.023 U	0.023 U	0.46 U	0.022 U	0.022 U	0.55 U
Heptachlor epoxide	NE	NE	MG/KG		0.00089 U	0.00018 U	0.018 U	0.00086 U	0.00086 U	0.021 U
Methoxychlor	NE	NE	MG/KG		0.0089 U	**0.0037 J**	**1 J**	**0.015 J**	**0.021 J**	**3.4 J**
Trichlorophenoxyacetic acid (2,4,5-T)	NE	NE	MG/KG		0.00086 U	0.00087 U	**0.0019**	0.00083 U	0.00083 U	**0.0033**

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
Aluminum	NE	NE	MG/KG		**479 J**	**617**	**4370**	**2430**	**3020**	**3790**
Antimony	NE	NE	MG/KG		1.05 U	1.06 U	**5.35**	0.994 U	0.994 U	1.22 U
Arsenic	16	16	MG/KG		1 U	1 U	*79.2	**2.2 J**	**0.964 J**	**6.38**
Barium	350	820	MG/KG		**3.4**	**4.57**	**105**	**6.17**	**8.82**	**50.3**
Beryllium	14	47	MG/KG		0.0716 U	0.0718 U	**0.129 J**	**0.0885 J**	**0.0786 J**	0.083 U
Cadmium	2.5	7.5	MG/KG		0.147 U	0.148 U	**5.19**	**0.149 J**	**0.168 J**	**0.735**
Calcium	NE	NE	MG/KG		**29.8**	**66.1**	**5590**	**143**	**191**	**25800**
Chromium	NE	19	MG/KG		**0.92 J**	**13.3**	*40.9	**3.25 J**	**10 J**	*21.2
Cobalt	NE	NE	MG/KG		0.2 U	0.201 U	**4.95**	**2.32**	**1.73**	**6.72**
Copper	270	1720	MG/KG		**1.35**	**3.01**	**140**	**4.31**	**5.41**	**71.4**

TABLE 1
Subsurface Soil Analytical Results
Remedial Investigation
Bartlett Tree Company Site
Westbury, New York

Analyte Group: 5-Metals	Soil Cleanup Objectives [6 NYCRR Subpart 375-6]			*Location:*	*Dry Well*	*Dry Well*	*Mechanic Pit*	*Mechanic Pit*	*Mechanic Pit*	*Step*
Analyte Name	Protection of Public Health - Residential Use	Protection of Groundwater	*Units*	*SampleName:*	*Unspiked*	*18-24*	*Top*	*Below*	*Below-FD*	*Drain*
Iron	NE	NE	MG/KG		**615 J**	**648**	**30900**	**3780**	**4000**	**21000**
Lead	400	450	MG/KG		**1.53 J**	**1.82**	***840**	**6.9**	**7.14**	**46**
Magnesium	NE	NE	MG/KG		**16.8**	**24.7**	**1330**	**514 J**	**1070 J**	**6540**
Manganese	2000	2000	MG/KG		**0.954**	**1.42**	**248**	**142 J**	**79.1 J**	**171**
Mercury	0.81	0.73	MG/KG		**0.0177 J**	0.012 U	***1.42**	**0.0112 J**	**0.0331 J**	**0.102 J**
Nickel	140	130	MG/KG		**0.266 J**	**0.448 J**	**16.3**	**3.03 J**	**5.75 J**	**16.8**
Potassium	NE	NE	MG/KG		**39.3 J**	**52.8 J**	**752**	**246 J**	**418 J**	**533**
Selenium	36	4	MG/KG		1.03 U	1.03 U	1.02 U	0.974 U	0.974 U	1.2 U
Silver	36	8.3	MG/KG		0.189 U	0.19 U	0.187 U	0.179 U	0.179 U	**0.929**
Sodium	NE	NE	MG/KG		39.3 U	39.4 U	**143**	37.1 U	37.1 U	**158**
Thallium	NE	NE	MG/KG		1.53 U	1.53 U	1.5 U	1.44 U	1.44 U	1.77 U
Vanadium	NE	NE	MG/KG		**0.654**	**1.17**	**11**	**5.6**	**4.68**	**24.3**
Zinc	2200	2480	MG/KG		0.695 U	**3.24**	**312**	**16.6**	**19.6**	**254**

Notes:
U – The analyte was analyzed for, but was not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.
J – Estimated concentration. The result is below the quantitation limit but above the method detection limit.
UJ – The analyte was not detected above the reported sample quantitation limit. However, based on data validation, the reported method detection limit is approximate and may or may not represent the actual limit of the quantitation necessary to accurately and precisely measure the analyte in the sample.
R – Results rejected as determined by data validators.
NE – Standard and/or guidance value not established.
NA – Not analyzed.
ND – Not detected.
* (Red) concentrations are above one or more of the following New York State Subpart 375 Soil Cleanup Objectives: Protection of Public Health (Residential Use), or Protection of Groundwater

N

SB-7	0-2	5-7	10-12
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
Acetone	0.007 U	0.007 U	0.007 U
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U
Methylene chloride	0.003 J	0.005 J	0.007
Tetrachloroethene	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-12	6-8	16-18	26-28	36-38
Ethylbenzene	0.001 J	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.006	0.001 U	0.001 U	0.001 U
Acetone	0.007 U	0.007 U	0.007 U	0.009 J
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 J	0.002 U	0.002 U	0.003 J
Tetrachloroethene	0.006	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U

MW-1D	65-66
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.009 U
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.002 J
MEK (2-Butanone)	0.005 U
Methylene chloride	0.003 J
Tetrachloroethene	0.001 U
Trichloroethene	0.003 J

SB-11	6-8	16-18	26-28	36-38
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.007 U	0.008 J	0.007 U
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U

MW-1S	39-39.5
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.009 J
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.005 U
Methylene chloride	0.016
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

SB-4	28-30	33-34
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
Acetone	0.01 J	0.012 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U
Methylene chloride	0.007	0.008
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

TP-1	0-1
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	*0.091
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.005 J
MEK (2-Butanone)	0.016
Methylene chloride	0.006
Tetrachloroethene	0.018
Trichloroethene	0.002 J

SB-10	8-10	12-14	14-16	22-24	30-32	38-40
Ethylbenzene	0.001 U	*4.6	0.2	0.001 J	0.1	0.001 U
Toluene	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 J	*32	*18	0.1	0.68	0.001 U
Acetone	0.008 U	0.37 U	0.009 U	0.007 U	0.014 J	0.015 J
Chlorobenzene	0.001 U	0.23 J	0.012	0.001 U	0.006	0.001 U
Chloroform	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.21 U	0.005 U	0.004 U	0.004 U	0.005 U
Methylene chloride	0.004 J	0.1 U	0.005 J	0.002 U	0.002 U	*0.096
Tetrachloroethene	0.002 J	0.052 U	0.002 J	0.004 J	0.004 J	0.001 U
Trichloroethene	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U

SB-5	29-30	32-33
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
Acetone	0.008 J	0.012 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.005 U
Methylene chloride	0.003 J	0.012
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

SB-3	28-30	33-34
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
Acetone	0.011 J	0.008 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U
Methylene chloride	0.004 J	0.002 U
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

SB-1	26-27	36.5-37	62-62.5	79-79.5
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.008 U	0.009 U	0.009 J
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.005 U	0.005 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.011	0.011
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U

MW-4	36-38
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.009 J
Chlorobenzene	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.005 U
Methylene chloride	0.002 J
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

MW-3	41-42
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.012 J
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.004 U
Methylene chloride	0.006
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

MW-2D	23.5-24	46-46.5
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
Acetone	0.033 J	0.013 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.007 J	0.005 U
Methylene chloride	0.002 J	0.003 U
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

MW-5	36-38
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.008 U
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.005 U
Methylene chloride	0.002 U
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

MW-2S	40-40.5
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.01 J
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.005 U
Methylene chloride	0.008
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

SB-6	0-2	5-7	10-12
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.007 U	0.007 U
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.004 U	0.004 U
Methylene chloride	0.022	0.008	0.003 J
Tetrachloroethene	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-9	7.6-8.6	14-15	17.7-18.7
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
Acetone	0.009 J	0.007 U	0.007 U
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 U	0.004 J	0.002 U
Tetrachloroethene	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-2	7-9	14-16	19-20
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.011 J	0.008 J
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 J	0.003 J	0.005 J
Tetrachloroethene	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-8	17-18	22-23	27-28
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.007 U	0.012 J
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.005 U
Methylene chloride	0.002 U	0.004 J	0.008
Tetrachloroethene	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

TP-2	1-2
Ethylbenzene	0.001 U
Toluene	0.001 U
Xylenes, total	0.001 U
Acetone	0.008 U
Chlorobenzene	0.001 U
Chloroform	0.001 U
cis-1,2-DCE	0.001 U
MEK (2-Butanone)	0.004 U
Methylene chloride	0.006
Tetrachloroethene	0.001 U
Trichloroethene	0.001 U

DW-3	
Ethylbenzene	*2.9 J
Toluene	*3.7 J
Xylenes, total	*34 J
Acetone	0.62 UJ
Chlorobenzene	0.089 UJ
Chloroform	0.089 UJ
cis-1,2-DCE	0.089 UJ
MEK (2-Butanone)	0.36 UJ
Methylene chloride	0.18 UJ
Tetrachloroethene	0.089 UJ
Trichloroethene	0.089 UJ

VILLAGE OF WESTBURY PARKING LOT
SB-11
MW-1D
MW-1S
Building
Chain link Fence
Grate=104.28
Storm MH
105
83.3'
Concrete Curb
Wood Fence
106
0.4'
SB-12
Edge of Pavement
0.2'
SB-7
FORMER OPEN SHED
TEST PIT 1
MACADAM PATCH
TP-1
SB-4
SB-10
MW-4
SB-3
SB-5
DRYWELL 1
SB-1
MASONRY WAREHOUSE
MW-2D
MW-2S
MW-3
SB-6
FORMER PESTICIDE STORAGE LOCKER
0.4'
MW-5
SB-9
FORMER GARAGE
SB-2
Remains of Foundation
LOT 709
LOT 207
LOT 792
LOT 206
104
103
Paved Parking Lot
DRYWELL 3
TEST PIT 2
MACADAM PATCH
SB-8
TP-2
Enclosed Pesticide Storage Area
102
Gate
Drain & Lower Entrance (Under Landing)
2 Story Frame Building
CASTLE INDUSTRIES
101
Paved Driveway
100
No. 349
No. 345
4.9'
WV
SCO
Gas Box
Concrete Curb
Drop Curb
ALL SEASONS TAXI
Concrete Sidewalk
UNION AVENUE
Sanitary MH
Rim=98.22
Concrete Curb

MONITORING WELL
SOIL BORING
DRYWELL
TEST PIT
PAVEMENT EDGE
103 GROUND SURFACE ELEVATION (FT., NGVD)
PROPERTY LINE
FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in milligrams per kilogram (mg/kg)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above one or more of the following New York State Subpart 375 Soil Cleanup Objectives: Protection of public Health (Commercial and Residential Use), or Protection of Groundwater.

0 10 20 40 Feet

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Soil_VOCs_042310.mxd

FIGURE 6-1

VOLITILE ORGANIC COMPOUND CONCENTRATIONS IN SOIL

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
APRIL, 2010

PROJECT NUMBER
138944

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

N

0.2'

SB-9

FORMER OPEN SHED

SB-103	9-11	19-21	29.5- 31.5(WT)
Benzene	0.0005 U	0.0006 U	0.0005 U
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U
Acetone	0.007 U	0.01 J	0.011 J
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.005 J	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-4	28-30	33-34
Benzene	0.0005 U	0.0006 U
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U
Acetone	0.01 J	0.012 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U
Methylene chloride	0.007	0.008
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

SB-10	8-10	12-14	14-16	22-24	30-32	38-40
Benzene	0.0006 U	0.026 U	0.0006 U	0.0005 U	0.0005 U	0.0006 U
Ethylbenzene	0.001 U	*4.6	0.2	0.001 J	0.1	0.001 U
Toluene	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 J	*32	*18	0.1	0.68	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.37 U	0.009 U	0.007 U	0.014 J	0.015 J
Chlorobenzene	0.001 U	0.23 J	0.012	0.001 U	0.006	0.001 U
Chloroform	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.21 U	0.005 U	0.004 U	0.004 U	0.005 U
Methylene chloride	0.004 J	0.1 U	0.005 J	0.002 U	0.002 U	*0.096
Tetrachloroethene	0.002 J	0.052 U	0.002 J	0.004 J	0.004 J	0.001 U
Trichloroethene	0.001 U	0.052 U	0.001 U	0.001 U	0.001 U	0.001 U

SB-102	9-11	19-21	29.8- 31.8(WT)
Benzene	0.026 U	0.0005 U	0.0005 U
Ethylbenzene	0.14 J	0.003 J	0.001 U
Toluene	0.052 U	0.001 U	0.001 U
Xylenes, total	0.19 J	0.004 J	0.001 U
1,1,2,2-Tetrachloroethane	0.079 J	0.001 U	0.001 U
Acetone	0.37 U	0.016 J	0.007 U
Chlorobenzene	0.052 U	0.001 U	0.001 U
Chloroform	0.052 U	0.001 U	0.001 U
cis-1,2-DCE	0.052 U	0.001 U	0.001 U
MEK (2-Butanone)	0.21 U	0.004 U	0.004 U
Methylene chloride	0.1 U	0.002 U	0.002 U
Tetrachloroethene	0.052 U	0.001 U	0.001 U
Trichloroethene	0.052 U	0.001 U	0.001 U

TEST PIT 1
MACADAM PATCH

SB-4

SB-103

SB-10/SB-105

SB-5

SB-3

SB-104

SB-102

MW-4

SB-101

DRYWELL 1

SB-1

SB-105	9-11	19-21	28.7- 30.7(WT)
Benzene	0.0008 J	0.0005 U	0.0006 J
Ethylbenzene	0.1	0.002 J	0.024
Toluene	0.001 U	0.001 U	0.001 J
Xylenes, total	0.27	0.009	0.33
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U
Acetone	0.02 J	0.007 U	0.013 J
Chlorobenzene	0.003 J	0.001 U	0.009
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.004 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.001 U	0.002J	0.067
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-5	29-30	32-33
Benzene	0.0005 U	0.0007 U
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U
Acetone	0.008 J	0.012 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.005 U
Methylene chloride	0.003 J	0.012
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

Chain link Fence

SB-3	28-30	33-34
Benzene	0.0005 U	0.0005 U
Ethylbenzene	0.001 U	0.001 U
Toluene	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U
Acetone	0.011 J	0.008 J
Chlorobenzene	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U
Methylene chloride	0.004 J	0.002 U
Tetrachloroethene	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U

MW-2D

MW-2S

MW-3

SB-101	9-11	19-21	29.7- 31.7(WT)
Benzene	0.0005 U	0.0005 U	0.0005 U
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U
Acetone	0.013 J	0.01 J	0.03
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.003 J	0.002 J	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

SB-104	9-11	19-21	30.1- 32.1(WT)
Benzene	0.0005 U	0.0005 U	0.0005 U
Ethylbenzene	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U
Acetone	0.007 U	0.02 J	0.007 U
Chlorobenzene	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.004 U	0.004 J	0.004 U
Methylene chloride	0.002 U	0.002 U	0.002 U
Tetrachloroethene	0.005 J	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U

MW-5

SB-1	26-27	36.5-37	62-62.5	79-79.5
Benzene	0.0006 U	0.0006 U	0.0006 U	0.0006 U
Ethylbenzene	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	0.001 U	0.001 U	0.001 U	0.001 U
Xylenes, total	0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-Tetrachloroethane	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	0.008 U	0.008 U	0.009 U	0.009 J
Chlorobenzene	0.001 U	0.001 U	0.001 U	0.001 U
Chloroform	0.001 U	0.001 U	0.001 U	0.001 U
cis-1,2-DCE	0.001 U	0.001 U	0.001 U	0.001 U
MEK (2-Butanone)	0.005 U	0.005 U	0.005 U	0.004 U
Methylene chloride	0.002 U	0.002 U	0.011	0.011
Tetrachloroethene	0.001 U	0.001 U	0.001 U	0.001 U
Trichloroethene	0.001 U	0.001 U	0.001 U	0.001 U

MER
ICIDE
RAGE
LOCKER

0

SB-9

SB-2

FORMER GARAGE

0 5 10 Feet

Remains of Foundatio

LOT 786

104

Legend

- MONITORING WELL
- SOIL BORING
- DRYWELL
- TEST PIT
- PAVEMENT EDGE
- —103— GROUND SURFACE ELEVATION (FT., NGVD)
- PROPERTY LINE
- FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in milligrams per kilogram (mg/kg)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above one or more of the following New York State Subpart 375 Soil Cleanup Objectives: Protection of public Health (Commercial and Residential Use), or Protection of Groundwater.

FIGURE 6-1a

VOLITILE ORGANIC COMPOUND CONCENTRATIONS IN SOIL

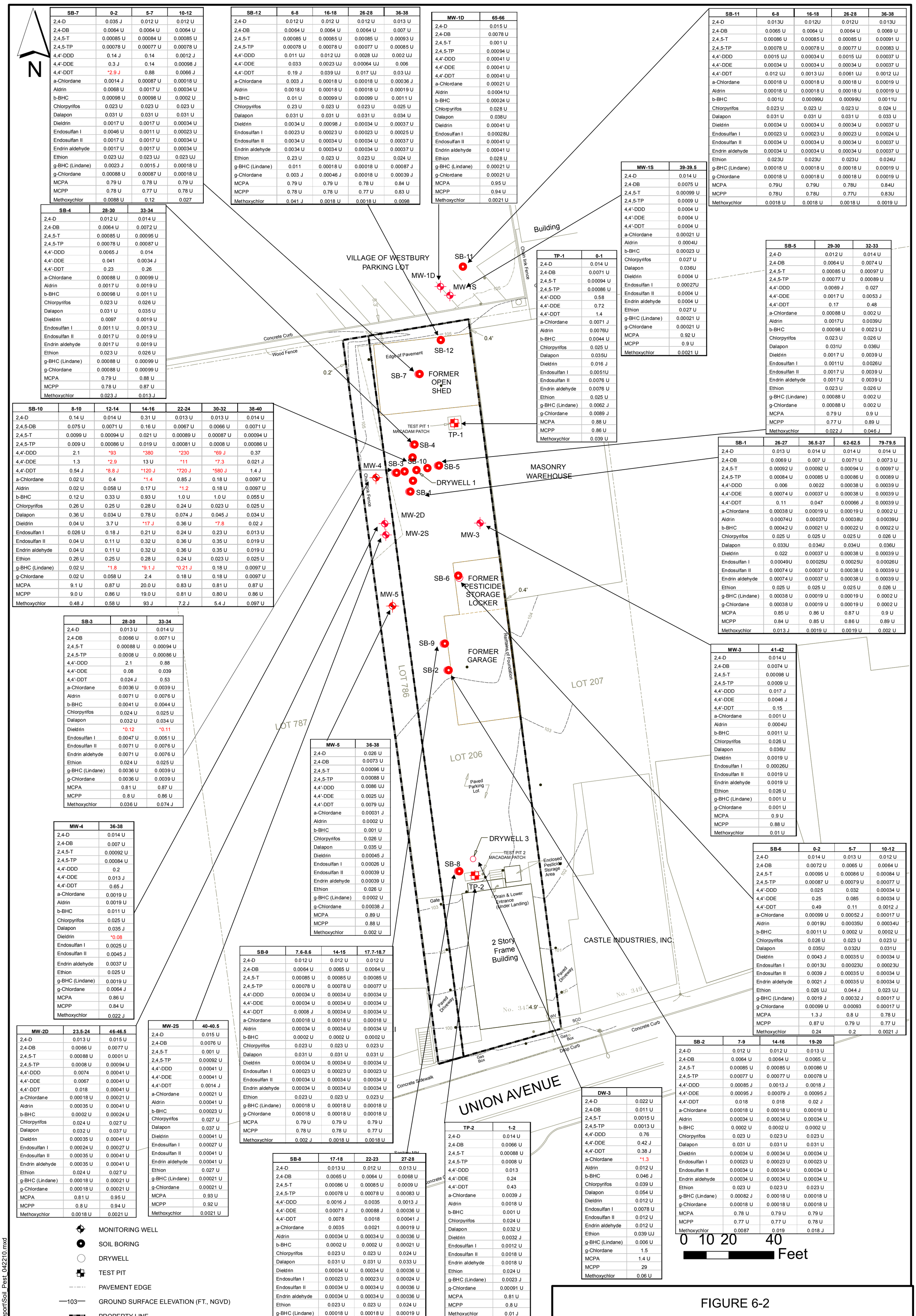
BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK
DRYWELL 1 IRM

DATE: May 2011

PROJECT NUMBER: 139990.750

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\GIS\Bartlett_Tree\Dry_Well_1_IRM750_WasteChar&DelSampling\Soil_VOCs_051711.mxd



SB-7	0-2	5-7	10-12
2,4-D	0.035 J	0.012 U	0.012 U
2,4-DB	0.0064 U	0.0064 U	0.0064 U
2,4,5-T	0.00085 U	0.00084 U	0.00085 U
2,4,5-TP	0.00078 U	0.00077 U	0.00078 U
4,4'-DDD	0.14 J	0.14	0.0012 J
4,4'-DDE	0.3 J	0.14	0.00098 J
4,4'-DDT	*2.9 J	0.88	0.0066 J
a-Chlordane	0.0014 J	0.00087 U	0.00018 U
Aldrin	0.0068 U	0.0017 U	0.00034 U
b-BHC	0.00098 U	0.00098 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.0017 U	0.0017 U	0.00034 U
Endosulfan I	0.0046 U	0.0011 U	0.00023 U
Endosulfan II	0.0017 U	0.0017 U	0.00034 U
Endrin aldehyde	0.0017 U	0.0017 U	0.00034 U
Ethion	0.023 UJ	0.023 UJ	0.023 UJ
g-BHC (Lindane)	0.0023 J	0.0015 J	0.00018 U
g-Chlordane	0.00088 U	0.00087 U	0.00018 U
MCPA	0.79 U	0.78 U	0.79 U
MCPP	0.78 U	0.77 U	0.78 U
Methoxychlor	0.0088 U	0.12	0.027

SB-12	6-8	16-18	26-28	36-38
2,4-D	0.012 U	0.012 U	0.012 U	0.013 U
2,4-DB	0.0064 U	0.0064 U	0.0064 U	0.007 U
2,4,5-T	0.00085 U	0.00085 U	0.00085 U	0.00093 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U	0.00085 U
4,4'-DDD	0.011 UJ	0.012 UJ	0.0028 UJ	0.002 UJ
4,4'-DDE	0.033	0.0023 UJ	0.00064 UJ	0.006
4,4'-DDT	0.19 J	0.039 UJ	0.017 UJ	0.03 UJ
a-Chlordane	0.003 J	0.00018 U	0.00018 U	0.00036 J
Aldrin	0.0018 U	0.00018 U	0.00018 U	0.00019 U
b-BHC	0.01 U	0.00099 U	0.00099 U	0.0011 U
Chlorpyrifos	0.23 U	0.023 U	0.023 U	0.025 U
Dalapon	0.031 U	0.031 U	0.031 U	0.034 U
Dieldrin	0.0034 U	0.00098 J	0.00034 U	0.00037 U
Endosulfan I	0.0023 U	0.00023 U	0.00023 U	0.00025 U
Endosulfan II	0.0034 U	0.00034 U	0.00034 U	0.00037 U
Endrin aldehyde	0.0034 U	0.00034 U	0.00034 U	0.00037 U
Ethion	0.23 U	0.023 U	0.023 U	0.024 U
g-BHC (Lindane)	0.011	0.00018 U	0.00018 U	0.00087 J
g-Chlordane	0.003 J	0.00046 J	0.00018 U	0.00039 J
MCPA	0.79 U	0.79 U	0.78 U	0.84 U
MCPP	0.78 U	0.78 U	0.77 U	0.83 U
Methoxychlor	0.041 J	0.0018 U	0.0018 U	0.0098

MW-1D	65-66
2,4-D	0.015 U
2,4-DB	0.0078 U
2,4,5-T	0.001 U
2,4,5-TP	0.00094 U
4,4'-DDD	0.00041 U
4,4'-DDE	0.00041 U
4,4'-DDT	0.00041 U
a-Chlordane	0.00021 U
Aldrin	0.00041U
b-BHC	0.00024 U
Chlorpyrifos	0.028 U
Dalapon	0.038U
Dieldrin	0.00041 U
Endosulfan I	0.00028U
Endosulfan II	0.00041 U
Endrin aldehyde	0.00041 U
Ethion	0.028 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.95 U
MCPP	0.94 U
Methoxychlor	0.0021 U

SB-11	6-8	16-18	26-28	36-38
2,4-D	0.013U	0.012U	0.012U	0.013U
2,4-DB	0.0065 U	0.0064 U	0.0064 U	0.0069 U
2,4,5-T	0.00086 U	0.00085 U	0.00085 U	0.00091 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U	0.00083 U
4,4'-DDD	0.0015 UJ	0.00034 U	0.0015 UJ	0.00037 U
4,4'-DDE	0.00034 U	0.00034 U	0.00034 U	0.00037 U
4,4'-DDT	0.012 UJ	0.0013 UJ	0.0061 UJ	0.0012 UJ
a-Chlordane	0.00018 U	0.00018 U	0.00018 U	0.00019 U
Aldrin	0.00018 U	0.00018 U	0.00018 U	0.00019 U
b-BHC	0.001U	0.00099U	0.00099U	0.0011U
Chlorpyrifos	0.023 U	0.023 U	0.023 U	0.024 U
Dalapon	0.031 U	0.031 U	0.031 U	0.033 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U	0.00024 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U	0.00037 U
Ethion	0.023U	0.023U	0.023U	0.024U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00018 U	0.00019 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U	0.00019 U
MCPA	0.79U	0.79U	0.78U	0.84U
MCPP	0.78U	0.78U	0.77U	0.83U
Methoxychlor	0.0018 U	0.0018 U	0.0018 U	0.0019 U

MW-1S	39-39.5
2,4-D	0.014 U
2,4-DB	0.0075 U
2,4,5-T	0.00099 U
2,4,5-TP	0.0009 U
4,4'-DDD	0.0004 U
4,4'-DDE	0.0004 U
4,4'-DDT	0.0004 U
a-Chlordane	0.00021 U
Aldrin	0.0004U
b-BHC	0.00023 U
Chlorpyrifos	0.027 U
Dalapon	0.036U
Dieldrin	0.0004 U
Endosulfan I	0.00027U
Endosulfan II	0.0004 U
Endrin aldehyde	0.0004 U
Ethion	0.027 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.92 U
MCPP	0.9 U
Methoxychlor	0.0021 U

TP-1	0-1
2,4-D	0.014 U
2,4-DB	0.0071 U
2,4,5-T	0.00094 U
2,4,5-TP	0.00086 U
4,4'-DDD	0.58
4,4'-DDE	0.72
4,4'-DDT	1.4
a-Chlordane	0.0071 J
Aldrin	0.0076U
b-BHC	0.0044 U
Chlorpyrifos	0.025 U
Dalapon	0.035U
Dieldrin	0.016 J
Endosulfan I	0.0051U
Endosulfan II	0.0076 U
Endrin aldehyde	0.0076 U
Ethion	0.025 U
g-BHC (Lindane)	0.0062 J
g-Chlordane	0.0089 J
MCPA	0.88 U
MCPP	0.86 U
Methoxychlor	0.039 U

SB-5	29-30	32-33
2,4-D	0.012 U	0.014 U
2,4-DB	0.0064 U	0.0074 U
2,4,5-T	0.00085 U	0.00097 U
2,4,5-TP	0.00077 U	0.00089 U
4,4'-DDD	0.0069 J	0.027
4,4'-DDE	0.0017 U	0.0053 J
4,4'-DDT	0.17	0.48
a-Chlordane	0.00088 U	0.002 U
Aldrin	0.0017U	0.0039U
b-BHC	0.00098 U	0.0023 U
Chlorpyrifos	0.023 U	0.026 U
Dalapon	0.031U	0.036U
Dieldrin	0.0017 U	0.0039 U
Endosulfan I	0.0011U	0.0026U
Endosulfan II	0.0017 U	0.0039 U
Endrin aldehyde	0.0017 U	0.0039 U
Ethion	0.023 U	0.026 U
g-BHC (Lindane)	0.00088 U	0.002 U
g-Chlordane	0.00088 U	0.002 U
MCPA	0.79 U	0.9 U
MCPP	0.77 U	0.89 U
Methoxychlor	0.022 J	0.046 J

SB-4	28-30	33-34
2,4-D	0.012 U	0.014 U
2,4-DB	0.0064 U	0.0072 U
2,4,5-T	0.00085 U	0.00095 U
2,4,5-TP	0.00078 U	0.00087 U
4,4'-DDD	0.0065 J	0.014
4,4'-DDE	0.041	0.0034 J
4,4'-DDT	0.23	0.26
a-Chlordane	0.00088 U	0.00099 U
Aldrin	0.0017 U	0.0019 U
b-BHC	0.00098 U	0.0011 U
Chlorpyrifos	0.023 U	0.026 U
Dalapon	0.031 U	0.035 U
Dieldrin	0.0097	0.0019 U
Endosulfan I	0.0011 U	0.0013 U
Endosulfan II	0.0017 U	0.0019 U
Endrin aldehyde	0.0017 U	0.0019 U
Ethion	0.023 U	0.026 U
g-BHC (Lindane)	0.00088 U	0.00099 U
g-Chlordane	0.00088 U	0.00099 U
MCPA	0.79 U	0.88 U
MCPP	0.78 U	0.87 U
Methoxychlor	0.023 J	0.013 J

SB-1	26-27	36.5-37	62-62.5	79-79.5
2,4-D	0.013 U	0.014 U	0.014 U	0.014 U
2,4-DB	0.0069 U	0.007 U	0.0071 U	0.0073 U
2,4,5-T	0.00092 U	0.00092 U	0.00094 U	0.00097 U
2,4,5-TP	0.00084 U	0.00085 U	0.00086 U	0.00089 U
4,4'-DDD	0.006	0.0022	0.00038 U	0.00039 U
4,4'-DDE	0.00074 U	0.00037 U	0.00038 U	0.00039 U
4,4'-DDT	0.11	0.047	0.00066 J	0.00039 U
a-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
Aldrin	0.00074U	0.00037U	0.00038U	0.00039U
b-BHC	0.00042 U	0.00021 U	0.00022 U	0.00022 U
Chlorpyrifos	0.025 U	0.025 U	0.025 U	0.026 U
Dalapon	0.033U	0.034U	0.034U	0.036U
Dieldrin	0.022	0.00037 U	0.00038 U	0.00039 U
Endosulfan I	0.00049U	0.00025U	0.00025U	0.00026U
Endosulfan II	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Endrin aldehyde	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Ethion	0.025 U	0.025 U	0.025 U	0.026 U
g-BHC (Lindane)	0.00038 U	0.00019 U	0.00019 U	0.0002 U
g-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
MCPA	0.85 U	0.86 U	0.87 U	0.9 U
MCPP	0.84 U	0.85 U	0.86 U	0.89 U
Methoxychlor	0.013 J	0.0019 U	0.0019 U	0.002 U

SB-10	8-10	12-14	14-16	22-24	30-32	38-40
2,4-D	0.14 U	0.014 U	0.31 U	0.013 U	0.013 U	0.014 U
2,4,5-DB	0.075 U	0.0071 U	0.16 U	0.0067 U	0.0066 U	0.0071 U
2,4,5-T	0.0099 U	0.00094 U	0.021 U	0.00089 U	0.00087 U	0.00094 U
2,4,5-TP	0.009 U	0.00086 U	0.019 U	0.00081 U	0.0008 U	0.00086 U
4,4'-DDD	2.1	*93	*380	*230	*69 J	0.37
4,4'-DDE	1.3	*2.9	13 U	*11	*7.3	0.021 J
4,4'-DDT	0.54 J	*8.8 J	*120 J	*720 J	*580 J	1.4 J
a-Chlordane	0.02 U	0.4	*1.4	0.85 J	0.18 U	0.0097 U
Aldrin	0.02 U	0.058 U	0.17 U	*1.2	0.18 U	0.0097 U
b-BHC	0.12 U	0.33 U	0.93 U	1.0 U	1.0 U	0.055 U
Chlorpyrifos	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
Dalapon	0.36 U	0.034 U	0.78 U	0.074 J	0.045 J	0.034 U
Dieldrin	0.04 U	3.7 U	*17 J	0.36 U	*7.8	0.02 J
Endosulfan I	0.026 U	0.18 J	0.21 U	0.24 U	0.23 U	0.013 U
Endosulfan II	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Endrin aldehyde	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Ethion	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
g-BHC (Lindane)	0.02 U	*1.8	*9.1 J	*0.21 J	0.18 U	0.0097 U
g-Chlordane	0.02 U	0.058 U	2.4	0.18 U	0.18 U	0.0097 U
MCPA	9.1 U	0.87 U	20.0 U	0.83 U	0.81 U	0.87 U
MCPP	9.0 U	0.86 U	19.0 U	0.81 U	0.80 U	0.86 U
Methoxychlor	0.48 J	0.58 U	93 J	7.2 J	5.4 J	0.097 U

MW-3	41-42
2,4-D	0.014 U
2,4-DB	0.0074 U
2,4,5-T	0.00098 U
2,4,5-TP	0.0009 U
4,4'-DDD	0.017 J
4,4'-DDE	0.0046 J
4,4'-DDT	0.15
a-Chlordane	0.001 U
Aldrin	0.0004U
b-BHC	0.0011 U
Chlorpyrifos	0.026 U
Dalapon	0.036U
Dieldrin	0.0019 U
Endosulfan I	0.00026U
Endosulfan II	0.0019 U
Endrin aldehyde	0.0019 U
Ethion	0.026 U
g-BHC (Lindane)	0.001 U
g-Chlordane	0.001 U
MCPA	0.9 U
MCPP	0.88 U
Methoxychlor	0.01 U

SB-3	28-30	33-34
2,4-D	0.013 U	0.014 U
2,4-DB	0.0066 U	0.0071 U
2,4,5-T	0.00088 U	0.00094 U
2,4,5-TP	0.0008 U	0.00086 U
4,4'-DDD	2.1	0.88
4,4'-DDE	0.08	0.039
4,4'-DDT	0.024 J	0.53
a-Chlordane	0.0036 U	0.0039 U
Aldrin	0.0071 U	0.0076 U
b-BHC	0.0041 U	0.0044 U
Chlorpyrifos	0.024 U	0.025 U
Dalapon	0.032 U	0.034 U
Dieldrin	*0.12	*0.11
Endosulfan I	0.0047 U	0.0051 U
Endosulfan II	0.0071 U	0.0076 U
Endrin aldehyde	0.0071 U	0.0076 U
Ethion	0.024 U	0.025 U
g-BHC (Lindane)	0.0036 U	0.0039 U
g-Chlordane	0.0036 U	0.0039 U
MCPA	0.81 U	0.87 U
MCPP	0.8 U	0.86 U
Methoxychlor	0.036 U	0.074 J

MW-5	36-38
2,4-D	0.026 U
2,4-DB	0.0073 U
2,4,5-T	0.00096 U
2,4,5-TP	0.00088 U
4,4'-DDD	0.0086 UJ
4,4'-DDE	0.0025 UJ
4,4'-DDT	0.0079 UJ
a-Chlordane	0.00031 J
Aldrin	0.0002 U
b-BHC	0.001 U
Chlorpyrifos	0.026 U
Dalapon	0.035 U
Dieldrin	0.00045 J
Endosulfan I	0.00026 U
Endosulfan II	0.00039 U
Endrin aldehyde	0.00039 U
Ethion	0.026 U
g-BHC (Lindane)	0.0002 U
g-Chlordane	0.00038 J
MCPA	0.89 U
MCPP	0.88 U
Methoxychlor	0.002 U

MW-4	36-38
2,4-D	0.014 U
2,4-DB	0.007 U
2,4,5-T	0.00092 U
2,4,5-TP	0.00084 U
4,4'-DDD	0.2
4,4'-DDE	0.013 J
4,4'-DDT	0.65 J
a-Chlordane	0.0019 U
Aldrin	0.0019 U
b-BHC	0.011 U
Chlorpyrifos	0.025 U
Dalapon	0.035 J
Dieldrin	*0.08
Endosulfan I	0.0025 U
Endosulfan II	0.0045 J
Endrin aldehyde	0.0037 U
Ethion	0.025 U
g-BHC (Lindane)	0.0019 U
g-Chlordane	0.0064 J
MCPA	0.86 U
MCPP	0.84 U
Methoxychlor	0.022 J

SB-6	0-2	5-7	10-12
2,4-D	0.014 U	0.013 U	0.012 U
2,4-DB	0.0072 U	0.0065 U	0.0064 U
2,4,5-T	0.00095 U	0.00086 U	0.00084 U
2,4,5-TP	0.00087 U	0.00079 U	0.00077 U
4,4'-DDD	0.025	0.032	0.00034 U
4,4'-DDE	0.25	0.085	0.00034 U
4,4'-DDT	0.49	0.11	0.0012 J
a-Chlordane	0.00099 U	0.00052 J	0.00017 U
Aldrin	0.0019U	0.00035U	0.00034U
b-BHC	0.0011 U	0.0002 U	0.0002 U
Chlorpyrifos	0.026 U	0.023 U	0.023 U
Dalapon	0.035U	0.032U	0.031U
Dieldrin	0.0043 J	0.00035 U	0.00034 U
Endosulfan I	0.0013U	0.00023U	0.00023U
Endosulfan II	0.0039 J	0.00035 U	0.00034 U
Endrin aldehyde	0.0021 J	0.00035 U	0.00034 U
Ethion	0.026 UJ	0.044 J	0.023 UJ
g-BHC (Lindane)	0.0019 J	0.00032 J	0.00017 U
g-Chlordane	0.00099 U	0.00093	0.00017 U
MCPA	1.3 J	0.8 U	0.78 U
MCPP	0.87 U	0.79 U	0.77 U
Methoxychlor	0.24	0.2	0.0021 J

MW-2D	23.5-24	46-46.5
2,4-D	0.013 U	0.015 U
2,4-DB	0.0066 U	0.0077 U
2,4,5-T	0.00088 U	0.0001 U
2,4,5-TP	0.0008 U	0.00094 U
4,4'-DDD	0.0074	0.00041 U
4,4'-DDE	0.0067	0.00041 U
4,4'-DDT	0.018	0.00041 U
a-Chlordane	0.00018 U	0.00021 U
Aldrin	0.00035 U	0.00041 U
b-BHC	0.0002 U	0.00024 U
Chlorpyrifos	0.024 U	0.027 U
Dalapon	0.032 U	0.037 U
Dieldrin	0.00035 U	0.00041 U
Endosulfan I	0.00024 U	0.00027 U
Endosulfan II	0.00035 U	0.00041 U
Endrin aldehyde	0.00035 U	0.00041 U
Ethion	0.024 U	0.027 U
g-BHC (Lindane)	0.00018 U	0.00021 U
g-Chlordane	0.00018 U	0.00021 U
MCPA	0.81 U	0.95 U
MCPP	0.8 U	0.94 U
Methoxychlor	0.0018 U	0.0021 U

MW-2S	40-40.5
2,4-D	0.015 U
2,4-DB	0.0076 U
2,4,5-T	0.001 U
2,4,5-TP	0.00092 U
4,4'-DDD	0.00041 U
4,4'-DDE	0.00041 U
4,4'-DDT	0.0014 J
a-Chlordane	0.00021 U
Aldrin	0.00041 U
b-BHC	0.00023 U
Chlorpyrifos	0.027 U
Dalapon	0.037 U
Dieldrin	0.00041 U
Endosulfan I	0.00027 U
Endosulfan II	0.00041 U
Endrin aldehyde	0.00041 U
Ethion	0.027 U
g-BHC (Lindane)	0.00021 U
g-Chlordane	0.00021 U
MCPA	0.93 U
MCPP	0.92 U
Methoxychlor	0.0021 U

SB-9	7.6-8.6	14-15	17.7-18.7
2,4-D	0.012 U	0.012 U	0.012 U
2,4-DB	0.0064 U	0.0065 U	0.0064 U
2,4,5-T	0.00085 U	0.00085 U	0.00085 U
2,4,5-TP	0.00078 U	0.00078 U	0.00077 U
4,4'-DDD	0.00034 U	0.00034 U	0.00034 U
4,4'-DDE	0.00034 U	0.00034 U	0.00034 U
4,4'-DDT	0.0008 J	0.00034 U	0.00034 U
a-Chlordane	0.00018 U	0.00018 U	0.00018 U
Aldrin	0.00034 U	0.00034 U	0.00034 U
b-BHC	0.0002 U	0.0002 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00018 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U
MCPA	0.79 U	0.79 U	0.79 U
MCPP	0.78 U	0.78 U	0.77 U
Methoxychlor	0.002 J	0.0018 U	0.0018 U

SB-8	17-18	22-23	27-28
2,4-D	0.013 U	0.012 U	0.013 U
2,4-DB	0.0065 U	0.0064 U	0.0068 U
2,4,5-T	0.00086 U	0.00085 U	0.0009 U
2,4,5-TP	0.00078 U	0.00078 U	0.00083 U
4,4'-DDD	0.0016 J	0.0035	0.0013 J
4,4'-DDE	0.00071 J	0.00088 J	0.00036 U
4,4'-DDT	0.0078	0.0018	0.00041 J
a-Chlordane	0.0035	0.0021	0.00019 U
Aldrin	0.00034 U	0.00034 U	0.00036 U
b-BHC	0.0002 U	0.0002 U	0.00021 U
Chlorpyrifos	0.023 U	0.023 U	0.024 U
Dalapon	0.031 U	0.031 U	0.033 U
Dieldrin	0.00034 U	0.00034 U	0.00036 U
Endosulfan I	0.00023 U	0.00023 U	0.00024 U
Endosulfan II	0.00034 U	0.00034 U	0.00036 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00036 U
Ethion	0.023 U	0.023 U	0.024 U
g-BHC (Lindane)	0.00018 U	0.00018 U	0.00019 U
g-Chlordane	0.0055	0.0037	0.00019 U
MCPA	0.79 U	0.79 U	0.84 U
MCPP	0.78 U	0.78 U	0.83 U
Methoxychlor	0.0018 U	0.0018 U	0.0019 U

TP-2	1-2
2,4-D	0.014 U
2,4-DB	0.0066 U
2,4,5-T	0.00088 U
2,4,5-TP	0.0008 U
4,4'-DDD	0.013
4,4'-DDE	0.24
4,4'-DDT	0.43
a-Chlordane	0.0039 J
Aldrin	0.0018 U
b-BHC	0.001 U
Chlorpyrifos	0.024 U
Dalapon	0.032 U
Dieldrin	0.0032 J
Endosulfan I	0.0012 U
Endosulfan II	0.0018 U
Endrin aldehyde	0.0018 U
Ethion	0.024 U
g-BHC (Lindane)	0.0023 J
g-Chlordane	0.00091 U
MCPA	0.81 U
MCPP	0.8 U
Methoxychlor	0.01 J

DW-3	
2,4-D	0.022 U
2,4-DB	0.011 U
2,4,5-T	0.0015 U
2,4,5-TP	0.0013 U
4,4'-DDD	0.76
4,4'-DDE	0.42 J
4,4'-DDT	0.38 J
a-Chlordane	*1.3
Aldrin	0.012 U
b-BHC	0.046 J
Chlorpyrifos	0.039 U
Dalapon	0.054 U
Dieldrin	0.012 U
Endosulfan I	0.0078 U
Endosulfan II	0.012 U
Endrin aldehyde	0.012 U
Ethion	0.039 UJ
g-BHC (Lindane)	0.006 U
g-Chlordane	1.5
MCPA	1.4 U
MCPP	29
Methoxychlor	0.06 U

SB-2	7-9	14-16	19-20
2,4-D	0.012 U	0.012 U	0.013 U
2,4-DB	0.0064 U	0.0064 U	0.0065 U
2,4,5-T	0.00085 U	0.00085 U	0.00086 U
2,4,5-TP	0.00077 U	0.00077 U	0.00078 U
4,4'-DDD	0.00085 J	0.0013 J	0.0018 J
4,4'-DDE	0.00095 J	0.00079 J	0.00095 J
4,4'-DDT	0.018	0.018	0.02 J
a-Chlordane	0.00018 U	0.00018 U	0.00018 U
Aldrin	0.00034 U	0.00034 U	0.00034 U
b-BHC	0.0002 U	0.0002 U	0.0002 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
Dalapon	0.031 U	0.031 U	0.031 U
Dieldrin	0.00034 U	0.00034 U	0.00034 U
Endosulfan I	0.00023 U	0.00023 U	0.00023 U
Endosulfan II	0.00034 U	0.00034 U	0.00034 U
Endrin aldehyde	0.00034 U	0.00034 U	0.00034 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.00082 J	0.00018 U	0.00018 U
g-Chlordane	0.00018 U	0.00018 U	0.00018 U
MCPA	0.78 U	0.79 U	0.79 U
MCPP	0.77 U	0.77 U	0.78 U
Methoxychlor	0.0087	0.019	0.018 J

0 10 20 40 Feet

MONITORING WELL

SOIL BORING

DRYWELL

TEST PIT

PAVEMENT EDGE

103 GROUND SURFACE ELEVATION (FT., NGVD)

PROPERTY LINE

FORMER STUCTURE LOCATION
(APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in milligrams per kilogram (mg/kg)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above one or more of the following New York State Subpart 375
Soil Cleanup Objectives: Protection of public Health (Commercial and Residential Use), or Protection of Groundwater.

P:\GIS\Bartlett_Tree\2010_Data-Summary_Report\Soil_Pest_042210.mxd

FIGURE 6-2

PESTICIDE AND HERBICIDE CONCENTRATIONS IN SOIL

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK

DATE
JULY, 2009

PROJECT NUMBER
135711

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

SB-10	8-10	12-14	14-16	22-24	30-32	38-40
2,4-D	0.14 U	0.014 U	0.31 U	0.013 U	0.013 U	0.014 U
2,4,5-DB	0.075 U	0.0071 U	0.16 U	0.0067 U	0.0066 U	0.0071 U
2,4,5-T	0.0099 U	0.00094 U	0.021 U	0.00089 U	0.00087 U	0.00094 U
2,4,5-TP	0.009 U	0.00086 U	0.019 U	0.00081 U	0.0008 U	0.00086 U
4,4'-DDD	2.1	*93	*380	*230	*69 J	0.37
4,4'-DDE	1.3	*2.9	13 U	*11	*7.3	0.021 J
4,4'-DDT	0.54 J	*8.8 J	*120 J	*720 J	*580 J	1.4 J
a-Chlordane	0.02 U	0.4	*1.4	0.85 J	0.18 U	0.0097 U
Aldrin	0.02 U	0.058 U	0.17 U	*1.2	0.18 U	0.0097 U
b-BHC	0.12 U	0.33 U	0.93 U	1.0 U	1.0 U	0.055 U
Chlorpyrifos	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
d-BHC	0.054 U	0.15U	0.44 U	0.49 U	0.48 U	0.026 U
Dalapon	0.36 U	0.034 U	0.78 U	0.074 J	0.045 J	0.034 U
Diazinon	0.26 U	0.25 U	0.28 U	0.24 U	0.023 U	0.025 U
Dichloroprop	0.096 U	0.0092 U	0.21 U	0.0087 U	0.0085 U	0.0092 U
Dieldrin	0.04 U	3.7 U	*17 J	0.36 U	*7.8	0.02 J
Endosulfan I	0.026 U	0.18 J	0.21 U	0.24 U	0.23 U	0.013 U
Endosulfan II	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Endosulfan sulfate	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Endrin aldehyde	0.04 U	0.11 U	0.32 U	0.36 U	0.35 U	0.019 U
Ethion	0.26 U	0.25 U	0.28 U	0.24 U	0.023 UR	0.025 U
g-BHC (Lindane)	0.02 U	*1.8	*9.1 J	*0.21 J	0.18 U	0.0097 U
g-Chlordane	0.02 U	0.058 U	2.4	0.18 U	0.18 U	0.0097 U
Heptachlor epoxide	0.02 U	0.058 U	0.32 U	0.18 U	0.18 U	0.0097 U
MCPA	9.1 U	0.87 U	20.0 U	0.83 U	0.81 U	0.87 U
MCPP	9.0 U	0.86 U	19.0 U	0.81 U	0.80 U	0.86 U
Methoxychlor	0.48 J	0.58 U	93 J	7.2 J	5.4 J	0.097 U

SB-105	9-11	19-21	28.7-30.7
2,4-D	0.025 J	0.012 U	0.014 U
2,4-DB	0.007 U	0.0064 U	0.007 U
2,4,5-T	0.00088	0.00085 U	0.00092 U
2,4,5-TP	0.00084 U	0.00078 U	0.00085 U
4,4'-DDD	0.037 U	*43 J	*46 J
4,4'-DDE	*7.3	1.3 J	*2.6
4,4'-DDT	0.78 J	*170 J	*370 J
a-Chlordane	*2.6	0.84	0.096 U
Aldrin	*0.073 J	0.087 U	0.096 U
b-BHC	0.11 U	0.49 U	0.54 U
Chlorpyrifos	0.075 U	0.023 U	0.025 U
d-BHC	0.058 J	0.23 U	0.25 U
Dalapon	0.05 U	0.046 U	0.05 U
Diazinon	0.075 U	0.023 U	0.025 U
Dichloroprop	0.015 J	0.0083 U	0.009 U
Dieldrin	0.37 U	0.034 U	2.8 U
Endosulfan I	0.025U	0.11 U	2.5
Endosulfan II	0.037 U	0.17 U	0.19 U
Endosulfan sulfate	0.35 U	0.17 U	0.19 U
Endrin aldehyde	0.56 U	1.6 U	1.6 U
Ethion	0.28	0.023 U	0.025 U
g-BHC (Lindane)	0.019 U	0.087 U	0.096 U
g-Chlordane	0.53 J	1.1	0.7
Heptachlor epoxide	0.019 U	0.13 J	0.096 U
MCPA	11	0.79 U	0.86 U
MCPP	100	0.78 U	0.85 U
Methoxychlor	1.7	1.3 J	1.6 J

SB-3	28-30	33-34
2,4-D	0.013 U	0.014 U
2,4-DB	0.0066 U	0.0071 U
2,4,5-T	0.00088 U	0.00094 U
2,4,5-TP	0.0008 U	0.00086 U
4,4'-DDD	2.1	0.88
4,4'-DDE	0.08	0.039
4,4'-DDT	0.024 J	0.53
a-Chlordane	0.0036 U	0.0039 U
Aldrin	0.0071 U	0.0076 U
b-BHC	0.0041 U	0.0044 U
Chlorpyrifos	0.024 U	0.025 U
d-BHC	0.0066 U	0.0071 U
Dalapon	0.032 U	0.034 U
Diazinon	0.024 U	0.025 U
Dichloroprop	0.0086 U	0.0092 U
Dieldrin	*0.12	*0.11
Endosulfan I	0.0047 U	0.0051 U
Endosulfan II	0.0071 U	0.0076 U
Endosulfan sulfate	0.0071 U	0.0076 U
Endrin aldehyde	0.0071 U	0.0076 U
Ethion	0.024 U	0.025 U
g-BHC (Lindane)	0.0036 U	0.0039 U
g-Chlordane	0.0036 U	0.0039 U
Heptachlor epoxide	0.0036 U	0.0039 U
MCPA	0.81 U	0.87 U
MCPP	0.8 U	0.86 U
Methoxychlor	0.036 U	0.074 J

SB-104	9-11	19-21	30.1-32.1
2,4-D	0.013 U	0.012 U	0.012 U
2,4-DB	0.0065 U	0.0064 U	0.0064 U
2,4,5-T	0.00086 U	0.00085 U	0.00085 U
2,4,5-TP	0.00079 U	0.00078 U	0.00078 U
4,4'-DDD	*46 J	*94 J	*28 J
4,4'-DDE	*3.2	*2.1	0.94
4,4'-DDT	0.23 J	*12 J	*21 J
a-Chlordane	*0.99	0.018 U	0.017 U
Aldrin	*0.023 J	*1.5	*0.15
b-BHC	0.1 U	0.1 U	0.098 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
d-BHC	0.047 U	0.047 U	0.046 U
Dalapon	0.046 U	0.046 U	0.046 U
Diazinon	0.091	0.023 U	0.023 U
Dichloroprop	0.0084 U	0.0083 U	0.0083 U
Dieldrin	0.34 U	0.034 U	0.34 U
Endosulfan I	0.023U	0.023U	0.11
Endosulfan II	0.034 U	0.034 U	0.034 U
Endosulfan sulfate	0.13 J	0.034 U	0.034 U
Endrin aldehyde	0.14 J	0.034 U	0.32 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.018 U	0.018 U	0.017 U
g-Chlordane	1	0.44	0.12
Heptachlor epoxide	0.12	0.079 J	0.02 J
MCPA	0.8 U	0.79 U	0.79 U
MCPP	0.79 U	0.78 U	0.78 U
Methoxychlor	0.18 U	0.18 U	0.17 U

SB-4	28-30	33-34
2,4-D	0.012 U	0.014 U
2,4-DB	0.0064 U	0.0072 U
2,4,5-T	0.00085 U	0.00095 U
2,4,5-TP	0.00078 U	0.00087 U
4,4'-DDD	0.0065 J	0.014
4,4'-DDE	0.041	0.0034 J
4,4'-DDT	0.23	0.26
a-Chlordane	0.00088 U	0.00099 U
Aldrin	0.0017 U	0.0019 U
b-BHC	0.00098 U	0.0011 U
Chlorpyrifos	0.023 U	0.026 U
d-BHC	0.0016 U	0.0018 U
Dalapon	0.031 U	0.035 U
Diazinon	0.023 U	0.026 U
Dichloroprop	0.0083 U	0.0093 U
Dieldrin	0.0097	0.0019 U
Endosulfan I	0.0011 U	0.0013 U
Endosulfan II	0.0017 U	0.0019 U
Endosulfan sulfate	0.0017 U	0.0019 U
Endrin aldehyde	0.0017 U	0.0019 U
Ethion	0.023 U	0.026 U
g-BHC (Lindane)	0.00088 U	0.00099 U
g-Chlordane	0.00088 U	0.00099 U
Heptachlor epoxide	0.00088 U	0.00099 U
MCPA	0.79 U	0.88 U
MCPP	0.78 U	0.87 U
Methoxychlor	0.023 J	0.013 J

SB-1	26-27	36.5-37	62-62.5	79-79.5
2,4-D	0.013 U	0.014 U	0.014 U	0.014 U
2,4-DB	0.0069 U	0.007 U	0.0071 U	0.0073 U
2,4,5-T	0.00092 U	0.00092 U	0.00094 U	0.00097 U
2,4,5-TP	0.00084 U	0.00085 U	0.00086 U	0.00089 U
4,4'-DDD	0.006	0.0022	0.00038 U	0.00039 U
4,4'-DDE	0.00074 U	0.00037 U	0.00038 U	0.00039 U
4,4'-DDT	0.11	0.047	0.00066 J	0.00039 U
a-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
Aldrin	0.00074U	0.00037U	0.00038U	0.00039U
b-BHC	0.00042 U	0.00021 U	0.00022 U	0.00022 U
Chlorpyrifos	0.025 U	0.025 U	0.025 U	0.026 U
d-BHC	0.00069 U	0.00035 U	0.00035 U	0.00037 U
Dalapon	0.033U	0.034U	0.034U	0.036U
Diazinon	0.025U	0.025U	0.025U	0.026U
Dichloroprop	0.0089 U	0.009 U	0.0091 U	0.0095 U
Dieldrin	0.022	0.00037 U	0.00038 U	0.00039 U
Endosulfan I	0.00049U	0.00025U	0.00025U	0.00026U
Endosulfan II	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Endosulfan sulfate	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Endrin aldehyde	0.00074 U	0.00037 U	0.00038 U	0.00039 U
Ethion	0.025 U	0.025 U	0.025 U	0.026 U
g-BHC (Lindane)	0.00038 U	0.00019 U	0.00019 U	0.0002 U
g-Chlordane	0.00038 U	0.00019 U	0.00019 U	0.0002 U
Heptachlor epoxide	0.00038 U	0.00019 U	0.00019 U	0.0002 U
MCPA	0.85 U	0.86 U	0.87 U	0.9 U
MCPP	0.84 U	0.85 U	0.86 U	0.89 U
Methoxychlor	0.013 J	0.0019 U	0.0019 U	0.002 U

SB-103	9-11	19-21	29.5-31.5
2,4-D	0.013 U	0.013 U	0.012 U
2,4-DB	0.0066 U	0.0066 U	0.0064 U
2,4,5-T	0.00087 U	0.00087 U	0.00084 U
2,4,5-TP	0.0008 U	0.0008 U	0.00077 U
4,4'-DDD	*10 J	*27 J	1.8 J
4,4'-DDE	*3.8	*2.1	1.1
4,4'-DDT	0.035 U	*100 J	*55 J
a-Chlordane	*0.93	0.24	0.018 U
Aldrin	0.018 J	0.018 U	0.018 U
b-BHC	0.1 U	0.1 U	0.099 U
Chlorpyrifos	0.023 U	0.023 U	0.023 U
d-BHC	0.047 U	0.047 U	0.046 U
Dalapon	0.047 U	0.047 U	0.045 U
Diazinon	0.023 U	0.023 U	0.023 U
Dichloroprop	0.0085 U	0.0085 U	0.0082 U
Dieldrin	0.35 U	3.4 U	0.34 U
Endosulfan I	0.023U	0.023U	0.089
Endosulfan II	0.035 U	0.034 U	0.034 U
Endosulfan sulfate	0.13 J	0.034 U	0.034 U
Endrin aldehyde	0.11 J	0.034 U	0.034 U
Ethion	0.023 U	0.023 U	0.023 U
g-BHC (Lindane)	0.018 U	0.018 U	0.018 U
g-Chlordane	0.91	0.24	0.029 J
Heptachlor epoxide	0.17	0.069 J	0.018 U
MCPA	0.81 U	0.81 U	0.78 U
MCPP	0.8 U	0.8 U	0.77 U
Methoxychlor	0.18 U	0.18 U	0.18 U

SB-102	9-11	19-21	29.8-31.8
2,4-D	0.013 U	0.012 U	0.012 U
2,4-DB	0.0067 U	0.0064 U	0.0064 U
2,4,5-T	0.00088 U	0.00085 U	0.00085 U
2,4,5-TP	0.0008 U	0.00077 U	0.00077 U
4,4'-DDD	*17 J	*32 J	1.2 J
4,4'-DDE	*3	*2.5	1.2
4,4'-DDT	0.98 J	*120 J	*2.1 J
a-Chlordane	0.83	0.21	0.017 U
Aldrin	*0.02 J	0.017 U	0.017 U
b-BHC	0.1 U	0.099 U	0.098 U
Chlorpyrifos	0.024 U	0.023 U	0.023 U
d-BHC	0.048 U	0.046 U	0.046 U
Dalapon	0.047 U	0.045 U	0.045 U
Diazinon	0.024 U	0.023 U	0.023 U
Dichloroprop	0.0086 U	0.0083 U	0.0083 U
Dieldrin	0.35 U	0.34 U	0.034 U
Endosulfan I	0.023U	0.26	0.21
Endosulfan II	0.18 U	0.034 U	0.034 U
Endosulfan sulfate	0.15 U	0.034 U	0.034 U
Endrin aldehyde	0.2	0.43 U	0.039 U
Ethion	0.024 U	0.023 U	0.023 U
g-BHC (Lindane)	0.018 U	0.017 U	0.017 U
g-Chlordane	0.72	0.21	0.017 U
Heptachlor epoxide	0.098	0.064 J	0.017 U
MCPA	0.82 U	0.78 U	0.78U
MCPP	0.8 U	0.77 U	0.77 U
Methoxychlor	0.18 U	0.17 U	0.17 U

SB-5	29-30	32-33
2,4-D	0.012 U	0.014 U
2,4-DB	0.0064 U	0.0074 U
2,4,5-T	0.00085 U	0.00097 U
2,4,5-TP	0.00077 U	0.00089 U
4,4'-DDD	0.0069 J	0.027
4,4'-DDE	0.0017 U	0.0053 J
4,4'-DDT	0.17	0.48
a-Chlordane	0.00088 U	0.002 U
Aldrin	0.0017U	0.0039U
b-BHC	0.00098 U	0.0023 U
Chlorpyrifos	0.023 U	0.026 U
d-BHC	0.0016 U	0.0037 U
Dalapon	0.031U	0.036U
Diazinon	0.023 U	0.026 U
Dichloroprop	0.0083 U	0.0095 U
Dieldrin	0.0017 U	0.0039 U
Endosulfan I	0.0011U	0.0026U
Endosulfan II	0.0017 U	0.0039 U
Endosulfan sulfate	0.0017 U	0.0039 U
Endrin aldehyde	0.0017 U	0.0039 U
Ethion	0.023 U	0.026 U
g-BHC (Lindane)	0.00088 U	0.002 U
g-Chlordane	0.00088 U	0.002 U
Heptachlor epoxide	0.00088 U	0.002 U
MCPA	0.79 U	0.9 U
MCPP	0.77 U	0.89 U
Methoxychlor	0.022 J	0.046 J

SB-101	9-11	19-21	29.7-31.7
2,4-D	0.013 U	0.012 U	0.013 U
2,4-DB	0.0067 U	0.0064 U	0.0067 U
2,4,5-T	0.00089 U	0.00085 U	0.00088 U
2,4,5-TP	0.00082 U	0.00078 U	0.0008 U
4,4'-DDD	*54 J	*28 J	*21 J
4,4'-DDE	*4.3	0.8	0.8 J
4,4'-DDT	0.19 U	*2.9 J	*12 J
a-Chlordane	*0.96	0.018 U	0.12
Aldrin	0.018 U	0.018 U	0.018 U
b-BHC	0.1 U	0.1 U	0.1 U
Chlorpyrifos	0.024 U	0.023 U	0.024 U
d-BHC	0.049 U	0.047 U	0.048 U
Dalapon	0.048 U	0.046 U	0.047 U
Diazinon	0.024U	0.023U	0.024U
Dichloroprop	0.0087 U	0.0083 U	0.0086 U
Dieldrin	0.36 U	0.34 U	0.35 U
Endosulfan I	0.024U	0.023U	0.024U
Endosulfan II	0.47 U	0.034 U	0.035 U
Endosulfan sulfate	0.24	0.066 J	0.035 U
Endrin aldehyde	0.21	0.15 J	0.4 U
Ethion	0.024 U	0.023 U	0.024 U
g-BHC (Lindane)	0.018 U	0.018 U	0.018 U
g-Chlordane	1.4	0.09	0.26
Heptachlor epoxide	0.17	0.022 J	0.069 J
MCPA	0.83 U	0.79 U	0.82 U
MCPP	0.82 U	0.78 U	0.8 U
Methoxychlor	0.018 U	0.018 U	0.018 U

TEST PIT 1
MACADAM PATCH

TP-1

SB-4

SB-103

SB-10/
SB-105

SB-5

SB-102

SB-3

MW-4

SB-104

SB-101

DRYWELL 1

SB-1

MW-2D

MW-3

Chain link Fence

105

104

0 5 10
Feet

Legend

- MONITORING WELL
- SOIL BORING
- DRYWELL
- TEST PIT
- PAVEMENT EDGE
- —103— GROUND SURFACE ELEVATION (FT., NGVD)
- PROPERTY LINE
- FORMER STUCTURE LOCATION (APPROXIMATE, DEMOLISHED JULY 2008)

Explanation of Terms and Abbreviations

U-The analyte was analzed for, but not detected. Value shown is the method detection limit (MDL) for the analyzed constituent.

J-Estimated concentration. The result is below the quantitation limit but above the method detection limit.

Results reported in milligrams per kilogram (mg/kg)

Where applicable, table lists the higher concentration from original and duplicate sample.

*Red concentrations are above one or more of the following New York State Subpart 375 Soil Cleanup Objectives: Protection of public Health (Commercial and Residential Use), or Protection of Groundwater.

FIGURE 6-2a

PESTICIDE AND HERBICIDE CONCENTRATIONS IN SOIL

BARTLETT TREE COMPANY SITE
WESTBURY, NEW YORK
DRYWELL 1 IRM

DATE
MAY, 2011

PROJECT NUMBER
139990.750

BROWN AND CALDWELL
ALLENDALE, NEW JERSEY

P:\GIS\Bartlett_Tree\Dry_Well_1_IRM750_WasteChar&DelSampling\Soil_Pest_051711a.mxd