DECISION DOCUMENT

Ash Road Properties (portion of Lowe's Home Ctr.)
Brownfield Cleanup Program
Vestal, Broome County
Site No. C704032
April 2015

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

Ash Road Properties (portion of Lowe's Home Ctr.)
Brownfield Cleanup Program
Vestal, Broome County
Site No. C704032
April 2015

Statement of Purpose and Basis

This document presents the remedy for the Ash Road Properties (portion of Lowe's Home Ctr.) site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Ash Road Properties (portion of Lowe's Home Ctr.) site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and 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 gases 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 materials which would otherwise be considered a waste;
• maximizing habitat value and creating habitat when possible;
• fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
• integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat contaminants in groundwater in the general area where the soil excavation IRM was performed. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by injecting a bioremediation reagent (e.g. a solution of food grade vegetable oil or molasses mixed with water) into the subsurface to promote microbe growth. The method and depth of injection will be determined during the remedial design. In the event that appropriate aquifer pH (6-8) and total organic carbon (TOC) concentration (greater than 50 mg/l) cannot be simultaneously maintained, the injection solution will be buffered with sodium bicarbonate to counteract the organic acids generated from biological activity.

3. Institutional Control

Imposition of an institutional control in the form of an Environmental Easement for the controlled property that:

• requires the remedial party of site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
• allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land is 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 Department approved Site Management Plan.

4. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedial element 3 above.

This plan includes, but may not be limited to:

• an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
• descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;

• a provision for evaluation of the potential for soil vapor intrusion should additional portions of the on-site building become occupied and for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
• provisions for the management and inspection of the identified engineering controls;
• maintaining site access controls and Department notification; and
• the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

• monitoring of groundwater to assess the performance and effectiveness of the remedy;
• a schedule of monitoring and frequency of submittals to the Department; and
• monitoring of vapor intrusion for any buildings re-occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

April, 28, 2015
Date

William Daigle, Director
Remedial Bureau D

DECISION DOCUMENT

Ash Road Properties (portion of Lowe's Home Ctr.)
Vestal, Broome County
Site No. C704032
April 2015

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

Vestal Public Library
320 Vestal Parkway East
Vestal, NY 13850
Phone: (607) 754-4243

NYSDEC Region 7
Kirkwood Office
1679 Route 11
Kirkwood, NY 13795
Phone: (607) 775-2545

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Ash Road site is located in a suburban area in the Town of Vestal, Broome County. The site is located northeast of the Ash Road and Sycamore Road intersection and in the southern portion of the Lowe's Home Center parking lot area.

Site Features: The 1.54 acre site is a portion of the parking lot for a 14.47 acre parcel developed with a 130,000 square foot Lowes' Home Center. The site does not have any structures and consists mostly of asphalt pavement areas with some vegetated parking lot island areas.

Current Zoning and Land Use: The site is zoned for commercial use, matching the current and contemplated use for the site. The surrounding parcels are currently used for a combination of commercial and residential. The commercial properties are mostly large retail stores. The nearest residential area is a trailer park located adjacent to the site, approximately 300 feet to the east.

Past Use of the Site: The Town Square Body Shop and Hall Plumbing occupied the site prior to redevelopment. Limited information is known about these businesses except for their location in the southern portion of the Lowe's parking lot along Ash Road. During the construction of the Lowe's parking lot, these buildings were razed and the soils around and under these buildings may have been graded to create the parking lot.

The Town Square Body Shop and Hall Plumbing may have used various cleaning products in the past for degreasing that included chlorinated solvents. At some point in past operations, a release of chlorinated solvents occurred that contaminated soil, groundwater, and soil vapor.

Prior to identifying this site as eligible for the BCP, the Department completed a Site Characterization (SC) in 2009 to locate the source of the contamination. The SC intended to ascertain whether hazardous wastes were disposed of at the site, and if so, whether additional investigation and remediation should be conducted within an environmental remediation program. The groundwater plume and other information indicate that a release occurred within the boundaries of the site. The intent of the remedial investigation performed by the BCP applicant is to determine the full nature and extent of contamination.

Site Geology and Hydrogeology: Overburden at the site consists of silty sand with some fine to

coarse gravel to a depth of approximately 20 feet below ground surface (bgs). Depth to groundwater measured in monitoring wells ranged from approximately 8 to 10 feet bgs. Through redevelopment, a natural water channel that existed along the northern edge of the site was replaced by a deep culvert which conveys water under the parking lot from east to west. Although the regional groundwater flow direction is generally to the north, the direction of groundwater flow and contaminant migration at the site has a northwest component. The groundwater flow at the site may be influenced by the culvert and other utility trenches beneath the Lowe's parking lot area.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restricts the use of the site to commercial use (which allows for industrial use) as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department, in consultation with the NYSDOH, is undertaking environmental investigation activities for adjacent off-site areas. The off-site areas are identified as a separate site identified as Ash Road Properties – Off-Site, Site No. C704032A.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI

reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site is/are:

TETRACHLOROETHYLENE (PCE)	cis-1,2-DICHLOROETHENE
TRICHLOROETHENE (TCE)	VINYL CHLORIDE

The contaminants of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM Soil Excavation

Excavation and off-site disposal of the contaminant source area was conducted between September 26, and November 7, 2011. All on-site soils which exceeded commercial use SCOs, as defined by 6 NYCRR Part 375-6.8, were excavated and removed from the site. This was confirmed through post-excavation sampling at the base and sides of the excavation where soil sampling showed concentrations below commercial use SCOs and the majority of samples were below the protection of groundwater SCOs. The limits of the excavation were approximately 35 feet (east-west) by 40 feet (north-south). The depth of the excavation ranged from approximately 5 to 6 feet bgs in the northern portion to approximately 9 to 11 feet bgs in the southern portion of the excavation area. A total of 196.63 tons of soil were removed from the site. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for commercial use was used to backfill the excavation. Asphalt pavement was replaced as a cover system in the area of the excavation and to match surrounding pavement.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination – Based on investigations to date, the primary contaminants of concern at the site include tetrachloroethene (PCE) and its associated breakdown products trichloroethene (TCE), cis-1,2-dichloroethene (cis 1,2 DCE) and vinyl chloride. PCE, TCE, cis 1,2 DCE and vinyl chloride are chlorinated volatile organics that are mobile in groundwater, and persistent in soil and soil vapor.

Soil – On–site soils were analyzed for volatile organic compounds, semi-volatile organic compounds, heavy metals, PCBs, and pesticides. Soils were only impacted by the primary contaminants of concern and were found in a well-defined contaminant source area. The contaminated soils were removed through an Interim Remedial Measure. The remedial actions have successfully achieved soil cleanup objectives for commercial use. Residual soil contamination (i.e., soil with contaminants at concentrations below the commercial use SCOs) will be addressed within the final selected remedy and the Site Management Plan.

Groundwater – On-site the area of groundwater contamination has been defined with a point of release of contamination within the site property. The groundwater has migrated more than 300 feet off-site to the west-northwest.

PCE, TCE, cis 1,2 DCE, and vinyl chloride have been detected in groundwater at concentrations exceeding their respective groundwater standards (5 parts per billion (ppb) for PCE, TCE, and cis 1,2 DCE; and 2 ppb for vinyl chloride). Maximum concentrations of PCE, TCE, cis 1,2 DCE, and vinyl chloride in groundwater are 42,000; 7,100; 15,000; and 2,900 ppb, respectively.

Soil Vapor – Soil vapor has been found to be impacted by site-related contamination. Maximum concentrations of PCE, TCE, cis 1,2 DCE, and vinyl chloride in soil vapor are 90, 590, 600, and 110 micrograms per cubic meter, respectively. The areas of soil vapor contamination appear to be associated to areas of groundwater contamination; however, the nature and extent of contamination off-site is currently unknown.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Contact with remaining contaminated soil is not expected since it is located at depth and beneath a paved parking area. People are not drinking contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of contaminants due to soil vapor intrusion does not represent a current concern. The potential exists for inhalation of site contaminants due to soil vapor intrusion for any future on-site development. The potential for soil vapor intrusion to occur off-site needs to be evaluated.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as In-situ Enhanced Bioremediation.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and 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 gases 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 materials which would otherwise be considered a waste;
• maximizing habitat value and creating habitat when possible;
• fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
• integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

2. Enhanced Bioremediation

In-situ enhanced biodegradation will be employed to treat contaminants in groundwater in the general area where the soil excavation IRM was performed. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by injecting a bioremediation reagent (e.g. a solution of food grade vegetable oil or molasses mixed with water) into the subsurface to promote microbe growth. The method and depth of injection will be determined during the remedial design. In the event that appropriate aquifer pH (6-8) and total organic carbon (TOC) concentration (greater than 50 mg/l) cannot be simultaneously maintained, the injection solution will be buffered with sodium bicarbonate to counteract the organic acids generated from biological activity.

3. Institutional Control

Imposition of an institutional control in the form of an Environmental Easement for the controlled property that:

• requires the remedial party of site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
• allows the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g), although land is 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 Department approved Site Management Plan.

4. Site Management Plan

A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in remedial element 3 above.

This plan includes, but may not be limited to:

• an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
• descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
• a provision for evaluation of the potential for soil vapor for any new buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
• provisions for the management and inspection of the identified engineering controls;
• maintaining site access controls and Department notification; and
• the steps necessary for the periodic reviews and certification of the institutional and engineering controls.

b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

• monitoring of groundwater to assess the performance and effectiveness of the remedy;
• a schedule of monitoring and frequency of submittals to the Department; and
• monitoring of vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

FIGURE 1 – SITE MAP

Ash Road Properties, C704032

Town of Vestal, Broome County

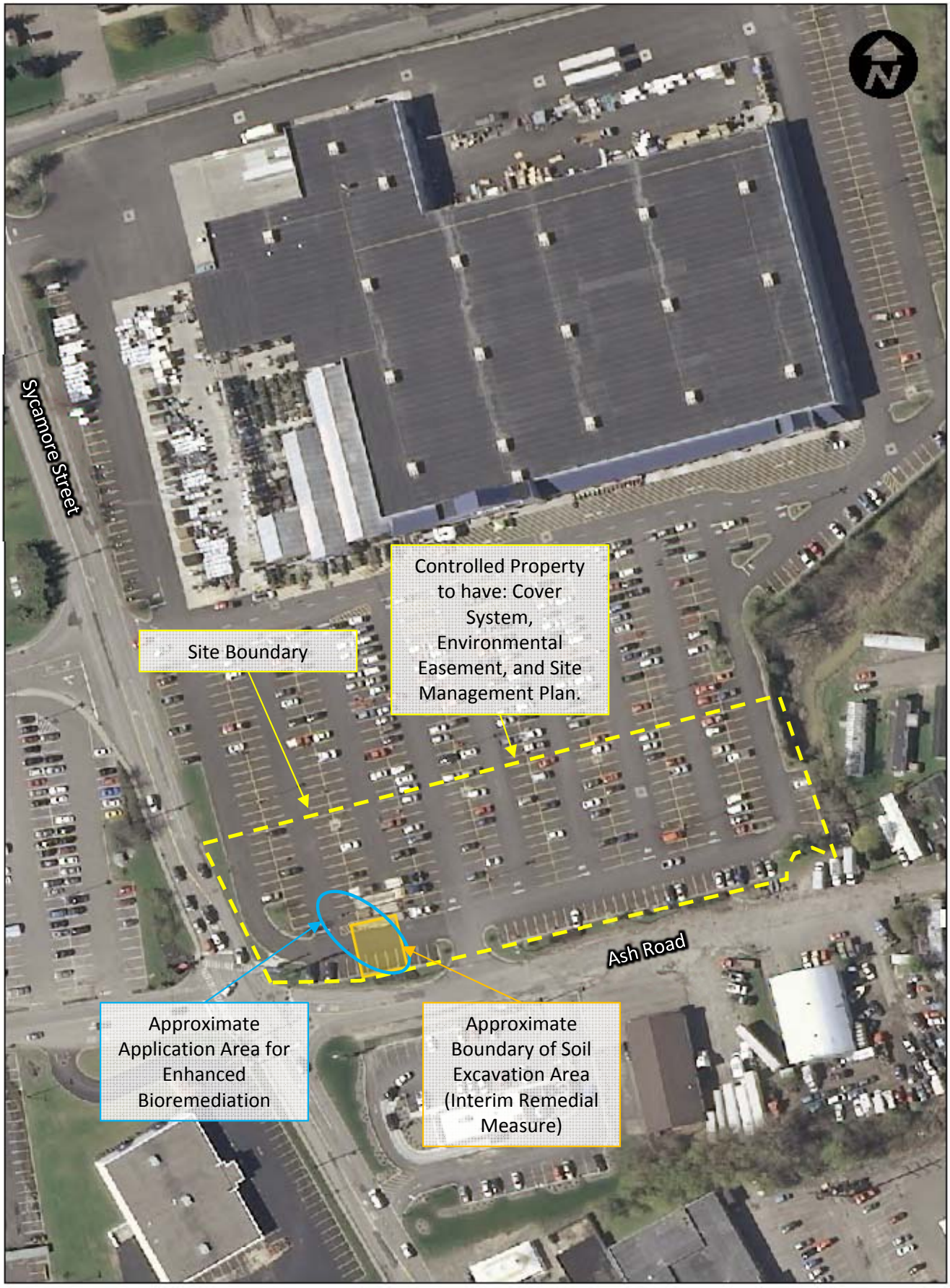

FIGURE 2 – REMEDIAL ELEMENTS

Ash Road Properties, C704032

Town of Vestal, Broome County