RECORD OF DECISION

Crusher Road Site
Operable Unit No. 1: Remedial Program - Source Area
Environmental Restoration Project
Bedford, Westchester County
Site No. B00185
March 2012

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

DECLARATION STATEMENT - RECORD OF DECISION

Crusher Road Site
Operable Unit Number: 01
Environmental Restoration Project
Bedford, Westchester County
Site No. B00185
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Statement of Purpose and Basis

This document presents the remedy for Operable Unit Number: 01: Remedial Program - Source Area of the Crusher Road Site site, an environmental restoration 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 Operable Unit Number: 01 of the Crusher Road Site site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program would be implemented to provide the details necessary for the construction, operation, 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 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 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. On-site Source Area: In-Situ Chemical Oxidation/Bioremediation

Treatment of the on-site source area via in-situ chemical oxidation (ISCO) and in-situ bioremediation: In-situ chemical oxidation is a technology used to treat chlorinated ethene compounds (a type of volatile organic compound) in the soil and groundwater. The process injects a chemical oxidant into the subsurface via injection wells or an infiltration gallery. The method of injection and depth of injection is determined by location of the contamination. As the chemical oxidant comes into contact with the contaminant, an oxidation reaction occurs that breaks down the contaminant into relatively benign compounds such as carbon dioxide and water. Several chemical oxidants are commercially available and oxidant to be used will be determined in the design. At this time it is assumed that RegenOx TM will be the chemical oxidant evaluated in the design. At this site, the chemical oxidant would applied in a grid pattern through direct multi-depth injections into the approximately quarter acre source area. It is estimated that the chemical oxidant would be injected during a minimum of two separate events over several months. Following the final ISCO injection, one round of bioremediation injections will be applied to the same treatment area as a polishing step. At this time it is assumed that 3-D MicroEmulsionTM will be the biological agent evaluated in the remedial design.

3. Off-site In-situ Bioremediaiton of the Off-site Plume

The source area ISCO/Bioremediation remedy is expected to eliminate the continuing release of VOCs to off-site groundwater. To address the off-site plume, in-situ bioremediation will be implemented which will include injections of a biological agent via multi-depth injection points. At this time it is assumed that 3-D MicroEmulsionTM will be the biological agent evaluated in the remedial design. The off-site injection points will be arranged in several north-south lines oriented perpendicular to the long axis of the groundwater plume. This will create a bioremediation treatment zone along the length of the off-site plume.

4. Soil Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs) to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover. Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or 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 restricted-residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use 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;
- prohibits agriculture or vegetable gardens on the controlled property; and
- requires compliance with the Department approved Site Management Plan.

6. 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 Paragraph 5 above.
Engineering Controls: The soil cover discussed in Paragraph 4.
This plan includes, but may not be limited to: include all that apply, ending final bullet with a period

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

c. an Operation and Maintenance (O&M) Plan for the On and Off-site remedy to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or

physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

March 30,2012
Date

Robert W. Schick, P.E., Acting Director
Division of Environmental Remediation

RECORD OF DECISION

Crusher Road Site
Bedford, Westchester County
Site No. B00185
March 2012

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 remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

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:

Town of Bedford
Attn: Bedford Town Clerk's Office
Bedford Town Hall
321 Bedford Road
Bedford Hills, NY 10507
Phone: (914) 666-4534

Bedford Free Library
Attn: Ann Cloonan
Bedford Free Library
Village Green
Bedford, NY 10506
Phone: (914) 234-3570

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

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 Crusher Road site is located on the end of Crusher Road in the Town of Bedford. The site is located about 1/4 mile southeast of the intersection of Bedford Road and NY State Rte. 22 (Old Post Road).

Site Features: The site is owned by the Town of Bedford and is 11.8 acres in size. The site is relatively flat and is occupied by the Town of Bedford Department of Public Works (DPW). The site contains a DPW garage building, three storage sheds, a salt storage building and other areas used for storage of gravel, sand, piping, etc.

Surrounding the site to the northeast, east and southeast is a 100+ acre former gravel mine. The adjacent property is undeveloped and predominantly wooded. The off-site property was formerly

used as a gravel mining operation and, as a result, contains approximately 20-25 acres of man made ponds.

Current Zoning/Use: The site is currently used as a maintenance facility by the Town of Bedford DPW. Use includes storage and maintenance of town vehicles, fuel distribution and storage of stone and salt. The site is currently zoned residential. The area around the site is sparsely populated. The surrounding parcels include residential property to the west and northeast and undeveloped parcels in other directions.

Historic Use: The site has been the location of the Town of Bedford DPW for over 50 years. In 2002, a Preliminary Site Assessment (PSA) was conducted on the adjacent property to the east the former gravel mine (Bedford Ponds, Site ID No. 360049). The PSA revealed groundwater contamination, but suggested that the source of the tetrachloroethylene (PCE) contamination was originating at the Town's Crusher Road DPW facility. In 2004, the Town applied for, and was accepted into the Environmental Restoration Program (ERP).

Operable Units: The site was divided into two operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination. Operable Unit 1 (OU1) represents the on-site source area. OU2 consists of the balance of the ERP site.

Site Geology and Hydrogeology: The overburden on-site is 40-100 feet thick and consists primarily of stratified drift-mainly fine sand with some clay and gravel. The depth to groundwater on and off-site is between 3-23 feet below the surface. The direction of groundwater flow is east-southeast toward the Mianus River, which is a topographic low point. Groundwater surface contour data also confirm that groundwater from both sides of the river converge and discharge to the river making the Mianus a hydraulic barrier for the off-site plume. The site is located approximately 800 feet west of the Mianus River.

Operable Unit (OU) Number 01 is the subject of this document.

A Record of Decision will be issued for OU 02 in the future.

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 (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the 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

included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

The Department and the Town of Bedford entered into a State Assistance Contract (SAC) under the NYS ERP on December 24, 2007. The SAC obligated the Municipality to implement a remedial program and allows reimbursement of up to 90 percent for all eligible remedial program costs.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The Town of Bedford will assist the state in its efforts by providing all information to the state which identifies PRPs. The Town of Bedford will also not enter into any agreement regarding response costs without the approval of the Department.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- surface water

- drinking water
- soil
- sediment
- soil vapor
- indoor air

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. The tables found in Exhibit A list the applicable SCGs in the footnotes. 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 in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified for this Operable Unit at this site is/are:

TETRACHLOROETHYLENE (PCE)	DICHLOROETHYLENE
TRICHLOROETHENE (TCE)	VINYL CHLORIDE

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- groundwater

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 Record of Decision.

There were no IRMs performed at this site during the RI.

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 Fish and Wildlife Resources Impact Analysis (FWRIA) for OU 01, which is included in the RI report, presents a detailed discussion of the existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: Based on the investigations conducted to date, the primary contaminant of concern is tetrachloroethylene (PCE) and its associated degradation products (trichloroethene, dichloroethene and vinyl chloride). Sampling and analysis of groundwater has confirmed the presence of a PCE source area, within a small area on the eastern boundary of the site. The highest groundwater concentration of PCE was measured at a depth of 20-60 feet.

Soil samples were collected from depth intervals of 0-5 feet and 5-8 feet. None of these samples contained PCE in concentrations exceeding the unrestricted SCOs. However, no discrete surface soil samples were taken from OU1, and so the quality of surface soils at the site is uncertain.

Off-site groundwater sampling has delineated an overburden plume that extends east-southeast onto adjacent property. Based on the most recent sampling, the groundwater plume is in steady state and not expanding. The plume is an estimated 900 feet long, and ranges in width from 150 to 450 feet. The plume's vertical depth extends 40-85 feet below grade. The plume appears to end at the Mianus River. Sampling of private wells located across the Mianus River showed no site related contamination. Samples from two on-site bedrock wells show no impact to the bedrock aquifer.

Surface water and sediment samples from the Mianus River indicate no impact to the river or to nearby ponds.

Sub-slab soil vapor and indoor air samples collected from the on-site DPW garage building indicated that the building was not impacted by soil vapor intrusion.

Special Resources Impacted/Threatened: The FWRIA states that the site has no impact on fish and wildlife resources. The site is located in a lightly developed area in the Town of Bedford. No wetlands have been identified at the site. Downgradient of the site there are several small ponds associated with a former gravel mine. The Mianus River is located about 800 feet to the east of the site.

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 contaminated groundwater is unlikely unless they dig below the ground surface. Sampling of private wells in the area indicates no site-related contaminants in drinking water wells. Volatile organic compounds in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn 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. Sampling indicates that soil vapor intrusion is not a concern for this site.

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.
- Prevent the discharge of contaminants to surface water.
- 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: SUMMARY OF THE SELECTED REMEDY

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the alternatives analysis (AA) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the On-site In-situ Chemical Oxidation/Bioremediation & Off-Site Bioremediation remedy.

The estimated present worth cost to implement the remedy is $450,000. The cost to construct the remedy is estimated to be $350,000 and the estimated average annual cost is $35,000.

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program would be implemented to provide the details necessary for the construction, operation, 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 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 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. On-site Source Area: In-Situ Chemical Oxidation/Bioremediation

Treatment of the on-site source area via in-situ chemical oxidation (ISCO) and in-situ bioremediation: In-situ chemical oxidation is a technology used to treat chlorinated ethene compounds (a type of volatile organic compound) in the soil and groundwater. The process injects a chemical oxidant into the subsurface via injection wells or an infiltration gallery. The method of injection and depth of injection is determined by location of the contamination. As the chemical oxidant comes into contact with the contaminant, an oxidation reaction occurs that breaks down the contaminant into relatively benign compounds such as carbon dioxide and water. Several chemical oxidants are commercially available and oxidant to be used will be determined in the design. At this time it is assumed that RegenOx TM will be the chemical oxidant evaluated in the design. At this site, the chemical oxidant would applied in a grid pattern through direct multi-depth injections into the approximately quarter acre source area. It is estimated that the chemical oxidant would be injected during a minimum of two separate events over several months. Following the final ISCO injection, one round of bioremediation injections will be applied to the same treatment area as a polishing step. At this time it is assumed that 3-D MicroEmulsionTM will be the biological agent evaluated in the remedial design.

3. Off-site In-situ Bioremediaiton of the Off-site Plume

The source area ISCO/Bioremediation remedy is expected to eliminate the continuing release of VOCs to off-site groundwater. To address the off-site plume, in-situ bioremediation will be implemented which will include injections of a biological agent via multi-depth injection points. At this time it is assumed that 3-D MicroEmulsionTM will be the biological agent evaluated in the remedial design. The off-site injection points will be arranged in several north-south lines oriented perpendicular to the long axis of the groundwater plume. This will create a bioremediation treatment zone along the length of the off-site plume.

4. Soil Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs) to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover. Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

5. Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property that:

- requires the remedial party or 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 restricted-residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use 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;
- prohibits agriculture or vegetable gardens on the controlled property; and
- requires compliance with the Department approved Site Management Plan.

6. 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 Paragraph 5 above.
Engineering Controls: The soil cover discussed in Paragraph 4.
This plan includes, but may not be limited to: include all that apply, ending final bullet with a period

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

c. an Operation and Maintenance (O&M) Plan for the On and Off-site remedy to ensure continued operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.

The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that continued operation is technically impracticable or not feasible.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium, a table summarizes the findings of the investigation. The tables present the contamination found at the site in the media and compares the data with the applicable Standard Criteria and Guidance (SCGs) for the site. The primary contaminant is a volatile organic compound (VOC), tetrachloroethylene (PCE) a dry cleaning solvent and its breakdown products. For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 6.1.1 are also presented.

Waste/Source Areas

As described in the RI report, a source area was identified at the site and is impacting groundwater. This source area is referred to as Operable Unit No. 1 (OU-1).

Source Areas are defined in 6 NYCRR Part 375(au). Source areas are areas of concern at a site where substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. The source areas were identified at the site include

The findings of the RI indicate that the source of the PCE is located on the eastern border of the Town of Bedford Department of Public Works (DPW) facility, within a small (estimated 1/2 acre) area that was used as a wood and yard waste debris dump. See Figure 3. The DPW property is open to the public and it is believed that the PCE was dumped illegally. Dense non-aqueous phase liquid (DNAPL) was not identified but, based on the groundwater results, the presence of small stringer of DNAPL is plausible. The identified source area will be addressed in the OU-1 remedy selection process.

Groundwater

Groundwater samples were collected from overburden and bedrock monitoring wells. The samples were collected to assess groundwater conditions on and off-site. The results indicate contamination in shallow groundwater at the site exceeds the SCGs for PCE. There was no PCE present in the two bedrock groundwater wells sampled within the area of the shallow plume.

Groundwater data revealed an overburden groundwater contaminant plume which exceeds SCGs. The plume extends east-southeast from the on-site source area to the Mianus River. The plume is approximately 900 feet long and ranges in width from 150 to 450 feet. See Figure 4. The plume's vertical depth extends about 40-85 feet below grade. Recent groundwater sampling indicates that the plume is in steady state and not expanding. The direction of groundwater flow is east-southeast toward the Mianus River, which is a topographic low point. Groundwater surface contour data also confirm that groundwater from both sides of the river converge and discharge to the river making the Mianus a hydraulic barrier for the off-site plume.

Table 1 - Groundwater

Detected VOC Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
Tetrachloroethylene (PCE)	ND-4,1000	5	49 out of 136
Trichloroethylene (TCE)	ND-100	5	9 out of 136
Dichloroethylene (DCE)	ND-27	5	5 out of 136
Vinyl Chloride (VC)	ND-8	5	1 out of 136

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).

Based on the findings of the RI, the presence of PCE and its breakdown products TCE, DCE and VC has resulted in the contamination of the shallow aquifer. The site's primary contaminants of concern that will drive the remediation of groundwater to be addressed by the OU-1 remedy selection process are PCE, TCE, DCE and VC.

Soil

Surface soil and subsurface soil samples were collected during the site investigation. Surface soil samples were collected at a depth of 0-2 inches. The surface soil sample results indicated no contamination above the residential SCOs. Subsurface soil sampling was conducted to a depth of up to eight feet. PCE was detected in 5 out of 20 soil samples collected; however, none of the PCE soil concentrations exceeded the unrestricted SCOs for PCE.

Table 2 - Soil

Detected VOC Constituents	Concentration Range Detected (ppb)[a]	Unrestricted SCG[b] (ppb)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppb)	Frequency Exceeding Restricted SCG
PCE	ND-1100	1,300	0 out of 20	19,000	0 out of 20
TCE	ND	470	0 out of 20	21,000	0 out of 20

Detected VOC Constituents	Concentration Range Detected (ppb)[a]	Unrestricted SCG[b] (ppb)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG[c] (ppb)	Frequency Exceeding Restricted SCG
DCE	ND	250	0 out of 20	100,000	0 out of 20
VC	ND	20	0 out of 20	900	0 out of 20

a - ppb: parts per billion, which is equivalent to micrograms per kilogram, micrograms/kg, in soil;
b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.
c - SCG: Part 375-6.8(b), Restricted Residential Use Soil Cleanup Objectives for the Protection of Public Health for Use,

No site-related soil contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for soil for OU-1.

Surface Water

Surface water samples were collected downgradient/off-site during the RI from the several ponds in the former gravel mine and the Mianus River. The samples were collected to assess the surface water conditions on and off-site. No contaminants were detected in surface water on or off the site.

Table 3 - Surface Water

Detected Constituents	Concentration Range Detected (ppb)[a]	SCG[b] (ppb)	Frequency Exceeding SCG
PCE	Not Detected	1	0 out of 6
TCE	Not Detected	5	0 out of 6
DCE	Not Detected	5	0 out of 6
VC	Not Detected	0.3	0 out of 6

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b-SCG: Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1) and 6 NYCRR Part 703: Surface Water and Groundwater Quality Standards.

No site-related surface water contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for surface water for OU-1.

Sediments

Sediment samples were collected downgradient/off-site during the RI from the several ponds in the former gravel mine and the Mianus River. The samples were collected to assess the surface water conditions on and off-site. No contaminants were detected in sediment at or near the site.

No special environmental resources were impacted or threatened. Surface water and sediment samples indicated no impact to the river or nearby ponds. The Fish and Wildlife Resources Impact Analysis provided in the site's Remedial Investigation Report concludes that the site has had no impact on fish and wildlife habitat. No site-

related sediment contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for sediment for OU-1.

Soil Vapor

The evaluation of the potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of sub-slab soil vapor under the on-site DPW garage and indoor air inside the structure. Neither PCE nor any of its degradation by-products were detected in the indoor air or sub-slab vapor samples collected during the RI from the on-site building. This is consistent with the fact that the building is located upgradient of the source area. No other buildings currently exist on-site or on the adjacent off-site property. Therefore, based on the data and the undeveloped nature of the downgradient off-site area, no active remedial measures are needed to address soil vapor. However, provisions to address the potential for soil vapor intrusion for future on-site buildings needs to be addressed in the OU-1 remedy.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves OU-1 in its present condition and does not provide any additional protection to public health and the environment.

Present Worth: ..... *$ 0*
Capital Cost: *$0*
Annual Costs: *$0*

Alternative 2: In-situ Chemical Oxidation (ISCO) / Bioremediation On-site and Monitored Natural Attenuation Off-site

Alternative 2 involves a combination of in-situ chemical oxidation (ISCO) and bioremediation. The oxidant will be applied on-site via multi-level injection and, to assess water quality improvement, five years of semi-annual post-treatment groundwater monitoring. Areas downgradient/off-site will be monitored, consistent with monitored natural attenuation (MNA) protocol, with five years of semi-annual groundwater monitoring. The ISCO destroys and degrades contaminants and targets higher concentrations of contaminants. The bioremediation is designed to reduce the remaining concentrations to below regulatory levels. Post-treatment groundwater monitoring includes sampling for site contaminants and the presence of MNA parameters that indicate the continuing remediation of the contaminant plume via biological processes. After treatment, there will be five years of post-treatment monitoring.

Present Worth: ..... *$ 414,000*
Capital Cost: *$250,000*
Annual Costs: *$35,000*

Alternative 3: ISCO/Bioremediation On-site and Bioremediation of the Off-site Groundwater Plume

For Alternative 3, the on-site remedy for source contamination and groundwater includes ISCO and bioremediation applied via multi-level injection, and three years of semi-annual post-treatment groundwater monitoring. The off-site remedy includes in-situ bioremediation applied via multi-depth injection points. The off-site injection points would be arranged in several north-south lines oriented perpendicular to the long axis of the groundwater plume. This would create a bioremediation treatment zone along the length of the off-site plume. Access to the off-site property will be required to inject the biological agent. After treatment, there will be three years of post-treatment monitoring.

Present Worth: ..... *$ 405,000*
Capital Cost: *$105,000*

Annual Costs:..... *$35,000*

Alternative 4:
Source Area Excavation / ISCO-Bioremediation On-site
and In-situ Bioremediation Off-site

Alternative 4 includes excavation and off-site disposal of an estimate 900 tons of contaminated source material. Excavation is estimated to occur within the approximately 1/4 acre source area, to a depth of 20 feet below grade. Alternative 4 also includes treatment of on-site groundwater via chemical oxidation and bioremediation applied via multi-depth injection, and three years of semi-annual post-treatment groundwater monitoring. The off-site remedy includes in-situ bioremediation applied via multi-depth injection points. The off-site injection points would be arranged in several north-south lines oriented perpendicular to the long axis of the groundwater plume. This would create a bioremediation treatment zone along the length of the off-site plume. After treatment there will be three years of post treatment monitoring.

Present Worth:..... *$1,001,000*
Capital Cost:..... *$900,000*
Annual Costs:..... *$35,000*

Alternative 5:
Restoration to Pre-Disposal or Unrestricted Conditions
Source Area Excavation / Groundwater Pump and Treat On and Off-site

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8(a). This alternative includes: excavation and off-site disposal of an estimate 900 tons of contaminated source material. Excavation is estimated to occur within the approximately 1/4 acre source area, to a depth of 20 feet below grade. On and off site groundwater would be extracted by pumping and treatment on-site, prior to discharge. Treatment of contaminated groundwater will be via air stripping and carbon filtration. To address the off-site impact, extraction wells and associated piping will be required on the off-site property.

Present Worth:..... *$ 1,425,000*
Capital Cost:..... *$1,050,000*
Annual Costs:..... *$75,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
Alternative 1: No Action	0	0	0
Alternative 2: In-situ Chemical Oxidation (ISCO) / Bioremediation On-site and Monitored Natural Attenuation Off-site	250,000	35,000	414,000
Alternative 3: ISCO/Bioremediation On-site and Bioremediation Off-site	105,000	35,000	405,000
Alternative 4: Source Area Excavation / ISCO-Bioremediation Onsite and In-situ Bioremediation Off-site	900,000	35,000	1,001,000
Alternative 5: Restoration to Pre-Disposal or Unrestricted Conditions Source Area Excavation / Groundwater Pump and Treat On and Off-site	1,050,000	75,000	1,425,000

Exhibit D

SUMMARY OF THE PROPOSED REMEDY

The Department is proposing Alternative 3, In-situ Chemical Oxidation (ISCO)/Bioremediation On-site and Bioremediation Off-site as the remedy for OU-1. Alternative 3 would achieve the remediation goals for the site by treating the on-site source area and the off-site contaminant groundwater plume. The elements of this remedy are described in Section 7. The proposed remedy is depicted in Figure 5.

Basis for Selection

The proposed remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the Alternative Analysis Report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The proposed remedy Alternative 3 (ISCO/Bioremediation On-site and Bioremediation of the Off-site Groundwater Plume) satisfies this criterion by treating the source of the groundwater contamination and the associated off-site groundwater contaminant plume, which is the most significant threat to public health and the environment. Alternative 1 (No Action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 4 (Source Area Excavation/ISCO/Bioremediation On-site and In-situ Bioremediation Off-site) and Alternative 5 (Source Area Excavation and Groundwater Pump and Treat) removes the source by excavation and off-site disposal and addresses the off-site groundwater plume, thus meeting the threshold criteria. Alternative 2 (ISCO/Bioremediation On-site and Monitored Natural Attenuation (MNA) Off-site) complies with this criterion but it is estimated that it will take longer to reach cleanup goals then the other alternatives.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternatives 2, 3, 4, and 5 address the on-site source area of contamination, and either create conditions necessary to restore off-site groundwater quality, or extracts contaminated groundwater to the extent practicable. Alternative 2 is estimated to take longer to meet the groundwater SCGs for the off-site plume then the other alternatives.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the four remaining remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2)

the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is accomplished by the alternatives involving excavation or treatment of the source area, and treatment of the off-site groundwater plume (Alternatives 3, 4 and 5). Alternative 2 is effective in the long-term, but it is anticipated it will take longer to reach SCGs for off-site groundwater. In addition, long-term groundwater monitoring is incorporated into all of the alternatives to confirm the long-term effectiveness and permanence.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

All of the alternatives (2, 3, 4 and 5) will result in a reduction of contaminant mass, toxicity and volume of the source area. Alternative 2 and 3 use ISCO and Bioremediation, and Alternatives 4 and 5 employ excavation.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 4 and 5, which call for excavation of the source area, have more short-term impacts to the local community than Alternatives 2 and 3. Excavation would require extensive site clearing of the source area and use of large construction vehicles to excavate and stage source material. Also, there will be increased truck traffic in the community to transport contaminated source material off-site and to bring clean backfill back to the site. Alternatives 2 and 3 use in-situ techniques that will require fewer construction vehicles. These technologies use drill rigs to inject the treatment materials. There would be less site clearing, less truck traffic and a lower potential for generating dust. In addition, it is estimate that excavation remedies would take longer to implement than the in-situ techniques, increasing the duration of the short-term impacts.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

All of the alternatives are implementable. In-situ remedies (Alternatives 2 and 3) must place treatment additives at select depths in the subsurface. This can pose certain challenges (geology, etc.). Alternatives 4 and 5 will use standard construction equipment and are readily implementable. However, Alternatives 4 and 5 would have to mange water in the excavation, which will require construction of a temporary water treatment system on-site. Alternative 5 will require placement of recovery wells and associated piping to bring extracted groundwater back to the on-site treatment system. This would require access and disturbance of the adjacent off-site property.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Alternatives 4 and 5 have the highest cost due to the need for extensive site clearing, the excavation and off-site disposal of the source area soil/waste, treatment of extracted groundwater, and the longer time to implement. Alternatives 2 and 3 have similar cost. Alternative 2 is slightly more costly due to the longer monitoring window, to demonstrate that the MNA remedy reaches SCGs in the off-site plume area.

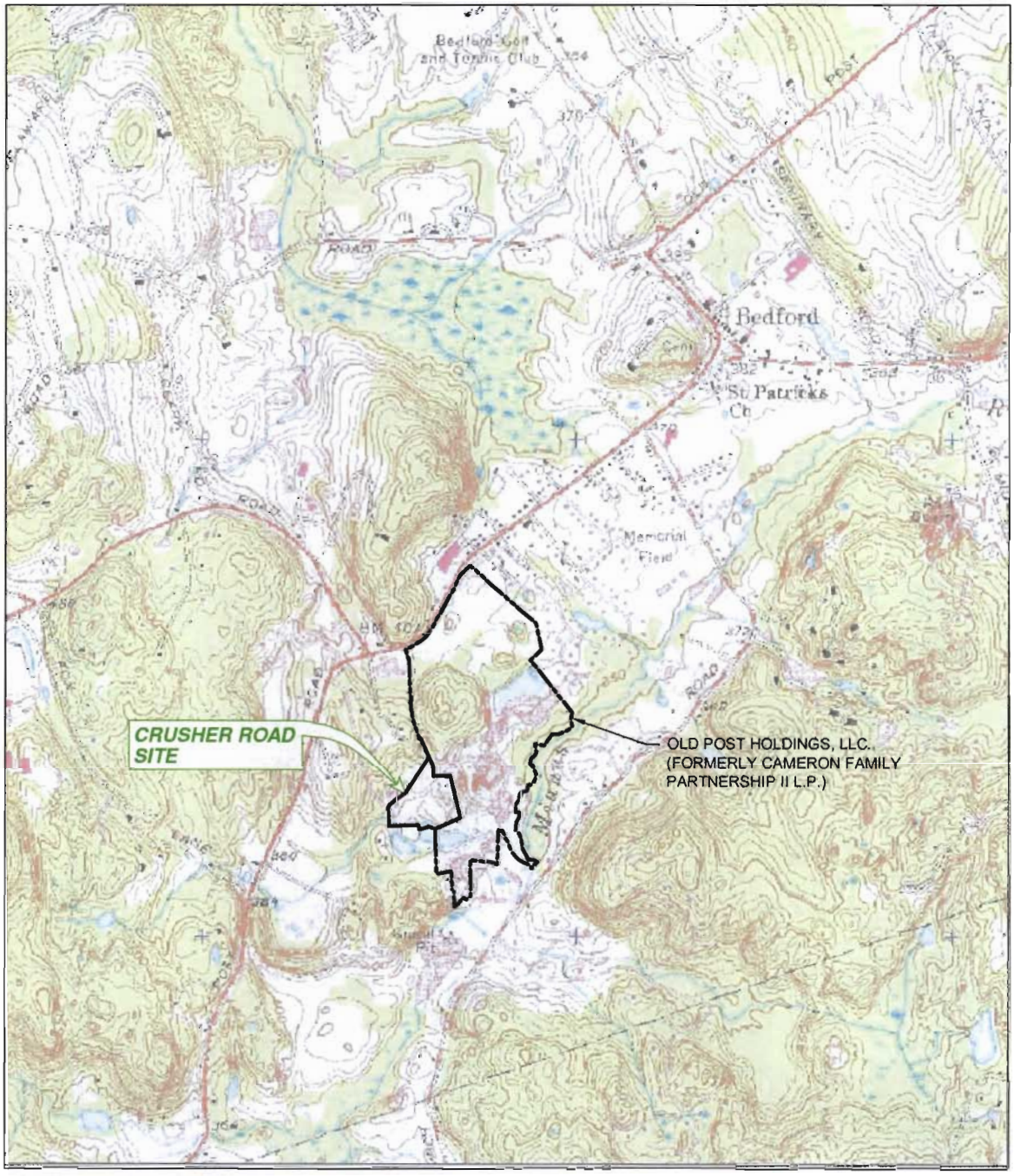
8. Land Use. When a cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the remedy.

Since the current and future site use is a Town DPW yard, all the alternatives support this land use. Alternatives 2 and 3 would have less impact to the operations of the DPW yard in the short-term. The anticipated land use off-site is residential. All the alternatives are compatible with this use, with the exception of Alternative 5 which will require placement of recovery wells and associated piping to bring extracted groundwater back to the on-site treatment system. This will require access and disturbance of the adjacent off-site property for a period of time.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary will be prepared that describes public comments received and the manner in which the Department will address the concerns raised. If the selected remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

Alternative 3 (ISCO/Bioremediation On-site and Bioremediation of the Off-site Groundwater Plume) is being proposed as the remedy for OU-1 because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



NOTE:
BASE MAP ADAPTED FROM U.S.G.S. QUADRANGLE MAP MOUNT KISCO, N.Y.-CONN. -1971.

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SCALE IN FEET

TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

SITE LOCATION MAP

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Groundwater and Environmental Engineering Services
110 Corporate Park Drive
Suite 112
White Plains, NY 10604
(914) 694-5711

DRAWN:	MRV	CHECKED:	MD	DATE:	09/23/11	FIGURE:	1

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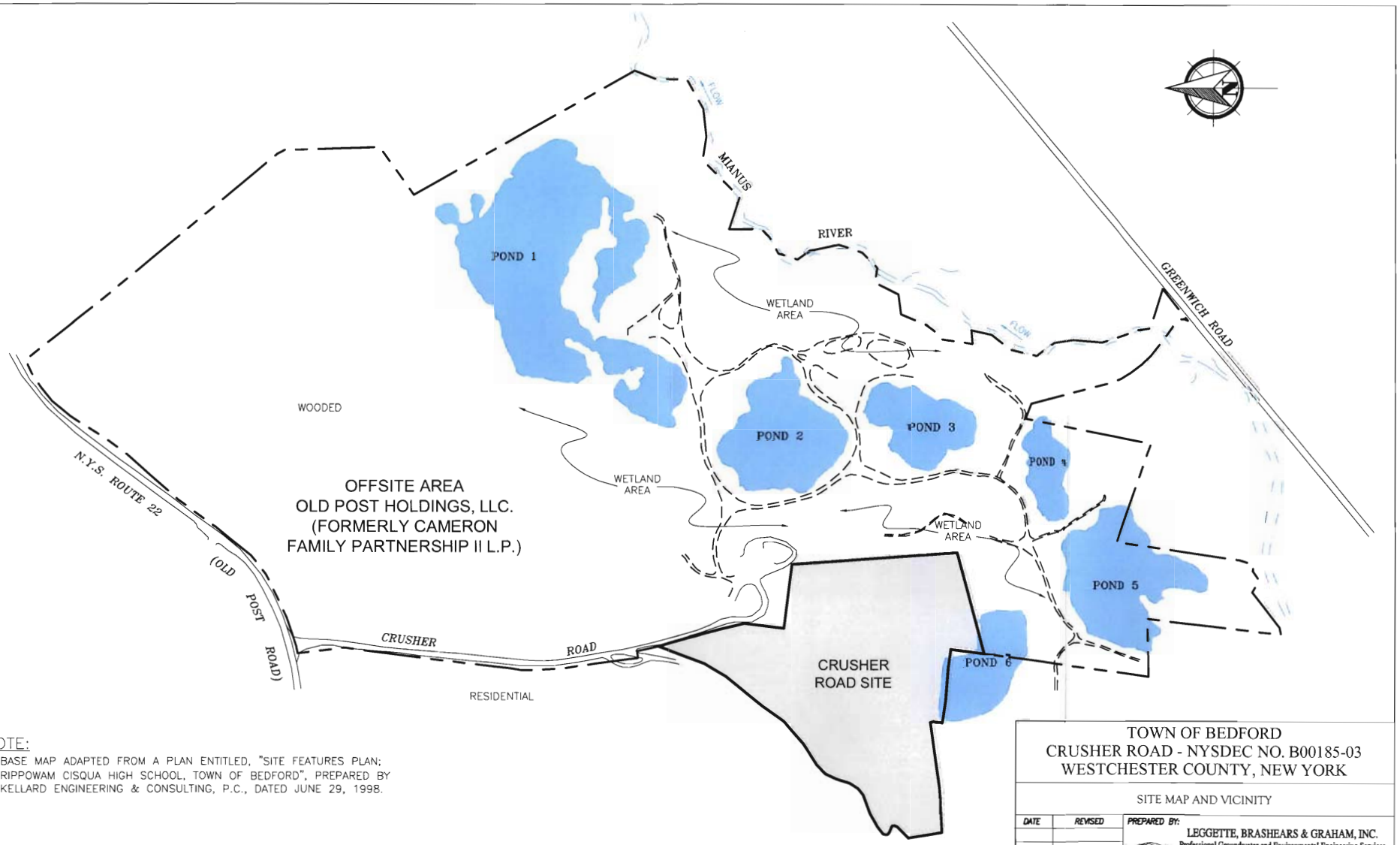

NOTE:

1. BASE MAP ADAPTED FROM A PLAN ENTITLED, "SITE FEATURES PLAN; RIPPOWAM CISQUA HIGH SCHOOL, TOWN OF BEDFORD", PREPARED BY KELLARD ENGINEERING & CONSULTING, P.C., DATED JUNE 29, 1998.

SOURCE: FIGURE CREATED FROM MAP PROVIDED BY GZA GEOENVIRONMENTAL OF NEW YORK, GZA PRELIMINARY SITE ASSESSMENT FEBRUARY 2002.

0 300
SCALE IN FEET

TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

SITE MAP AND VICINITY

DATE	REVISED	PREPARED BY:
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		Professional Groundwater and Environmental Engineering Services
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		White Plains, NY 10604
		(914) 694-5711

DRAWN: MRV | CHECKED: MD | DATE: 09/29/11 | FIGURE: 2

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SOURCE: "OFFSITE INVESTIGATION DETAIL MAP", FIGURE, DATED NOVEMBER 7, 2008 PREPARED BY INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

ONSITE SOIL BORING LOCATIONS
AND SUSPECTED SOURCE AREA

DATE	REVISED

PREPARED BY:

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DRAWN:	RAC	CHECKED:	MKD	DATE:	01/23/12	FIGURE:	4

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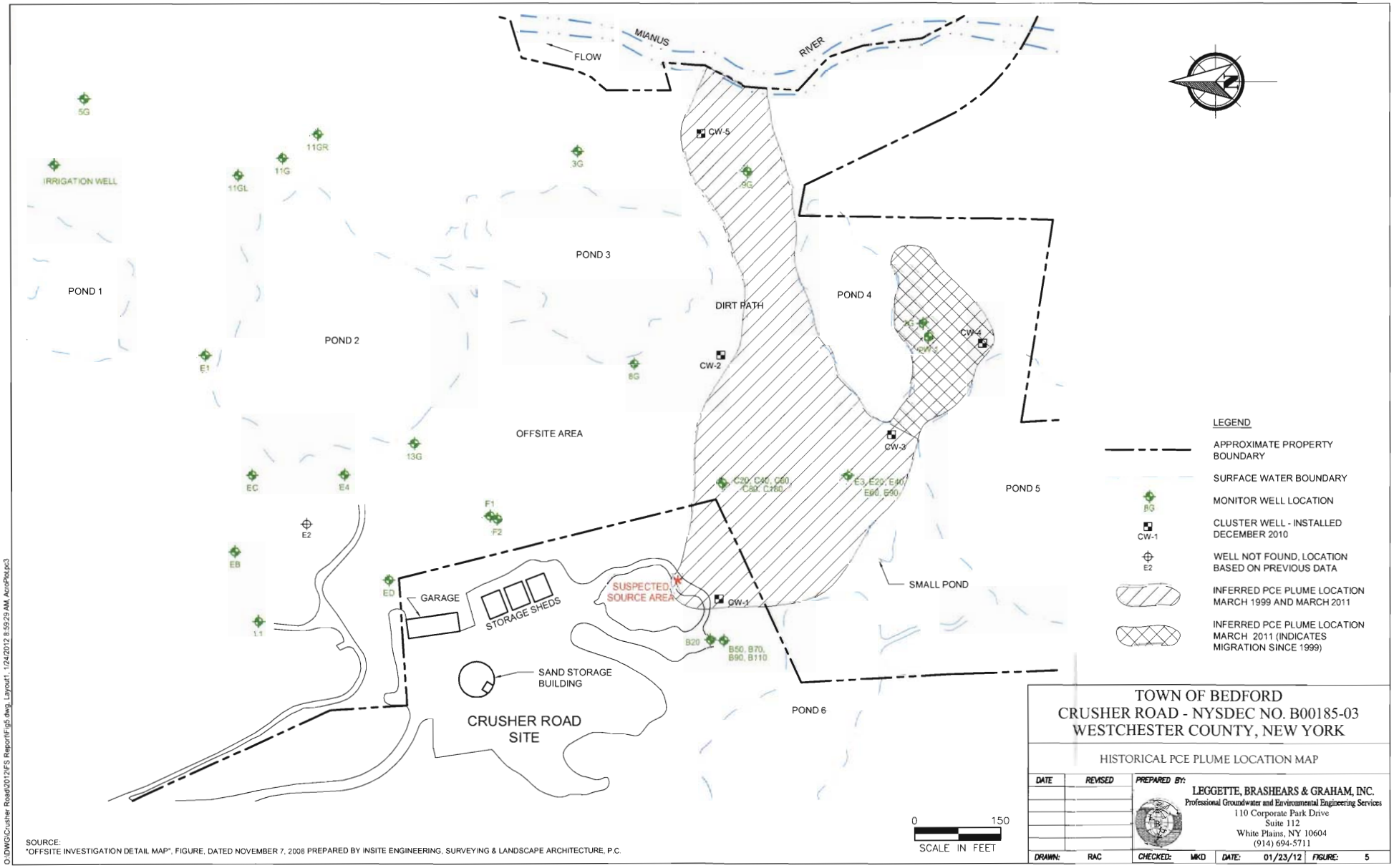

SOURCE:
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TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

HISTORICAL PCE PLUME LOCATION MAP

DATE	REVISED

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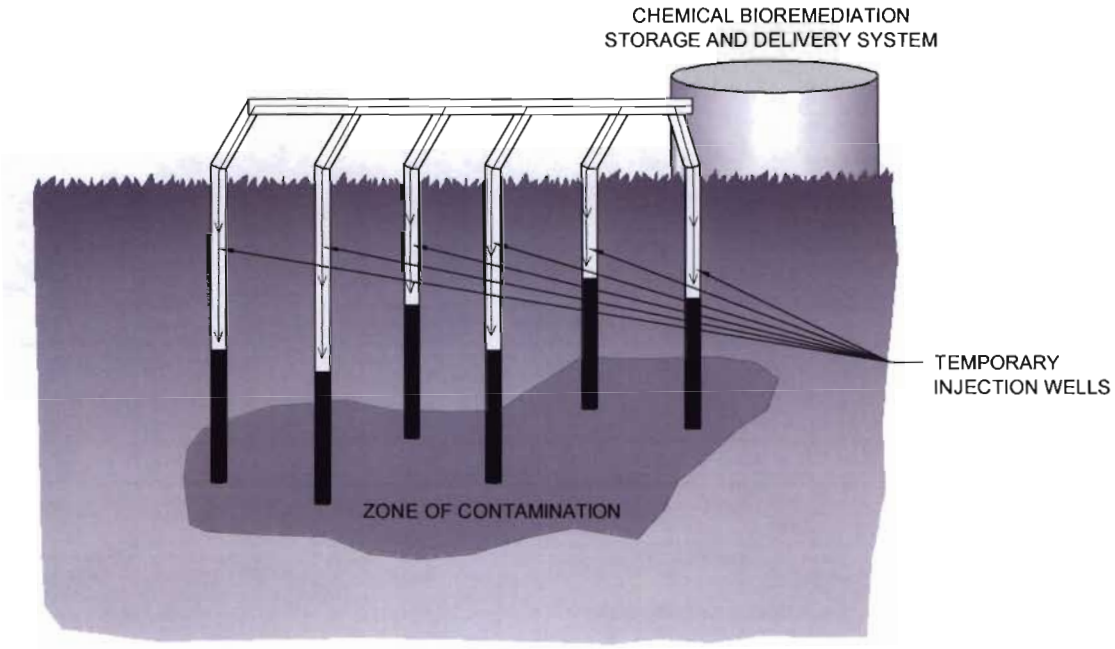
DRAWN:	RAC	CHECKED:	MKD	DATE:	01/23/12	FIGURE:	5

SCHEMATIC DIAGRAM
IN-SITU CHEMICAL OXIDATION (ISCO)/BIOREMEDIATION



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ADAPTED FROM:
NYSDEC DER-15, PRESUMPTIVE REMEDIAL TECHNOLOGIES
FOR NYS REMEDIAL PROGRAMS. APPENDIX VI

TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

IN-SITU CHEMICAL OXIDATION (ISCO)/BIOREMEDIATION

DATE	REVISED

PREPARED BY:

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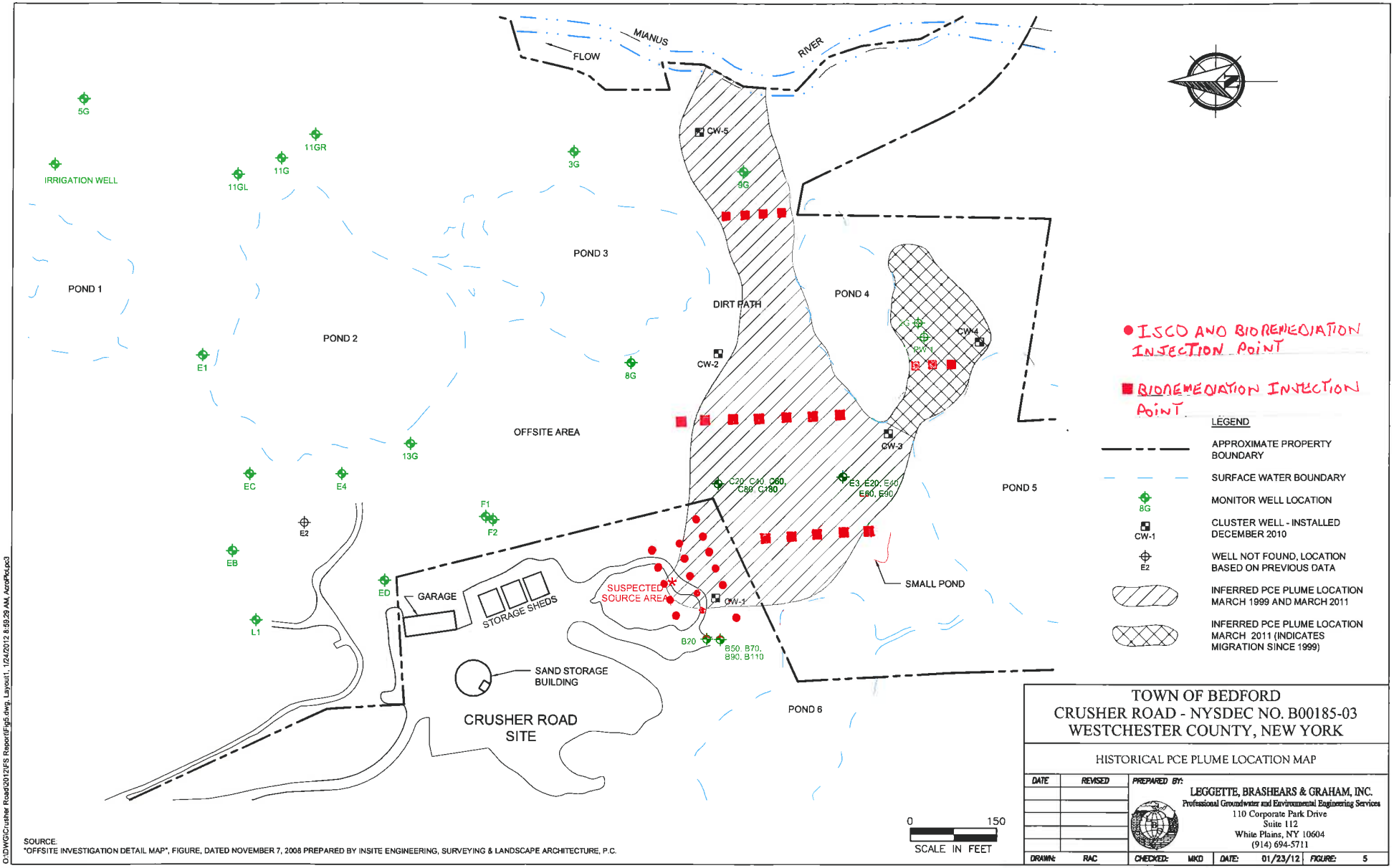

SOURCE:
"OFFSITE INVESTIGATION DETAIL MAP", FIGURE, DATED NOVEMBER 7, 2008 PREPARED BY INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

TOWN OF BEDFORD
CRUSHER ROAD - NYSDEC NO. B00185-03
WESTCHESTER COUNTY, NEW YORK

HISTORICAL PCE PLUME LOCATION MAP

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DRAWN:	RAC	CHECKED:	MKD	DATE:	01/23/12	FIGURE:	5

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APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Crusher Road Site
Operable Unit No. 1
Environmental Restoration Project
Town of Bedford, Westchester County, New York
Site No. B00185

The Proposed Remedial Action Plan (PRAP) for the Crusher Road Site, Operable Unit No. 1, was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 13, 2012. The PRAP outlined the remedial measure proposed for the contaminated groundwater at the Crusher Road Site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on March 19, 2012, which included a presentation of the remedial investigation and alternative analysis (RI/AA) for Operable Unit No. 1 at the Crusher Road Site, as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 29, 2012.

This Responsiveness Summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

COMMENT 1: Does the Department anticipate that residential development of the off-site property will be possible at the end of the three year remediation period? Can residential development take place concurrently with groundwater remediation, or will the remediation preclude development?

RESPONSE 1: At the end of the three year remedial period the Department will evaluate the effectiveness of the remedy. Assuming the remedy has been effective, the off-site development would be able to take place unimpeded, although subject to all relevant local/county zoning, protection of wetlands, infrastructure and building code requirements. To the extent that the property development takes place prior to the completion of the remedial work, access would need to be maintained and the Department consulted relative to any controls which might be needed (e.g., groundwater use restriction, sub-slab depressurization systems).

COMMENT 2: What are the parameters that the Department will use to establish that the on-site or off-site remediation has been completed?

RESPONSE 2: The goal of the remedial program is to reduce the toxicity, mobility and volume of the on-site source area and to attain groundwater standards on-site and off-site, to the extent practicable.

Three benchmarks will be used to monitor the effectiveness of the on-site remediation: (1) subsurface soil sampling to document that soil cleanup objectives (SCOs) for the protection of groundwater have been met in the source area; (2) the top two feet of soil must meet the restricted residential SCOs, or else a cover system will be required; and (3) the on-site groundwater concentrations will be monitored to demonstrate a decreasing trend, supporting that bioremediation is occurring.

Similarly, the off-site groundwater concentrations will be monitored to demonstrate a decreasing trend, supporting that bioremediation is occurring. Parameters will include the constituents of concern [(i.e., tetrachloroethylene (PCE) and degradation compounds)] as well as other bioremediation parameters (e.g., redox, sulfates, biological indices).

COMMENT 3: Would Alternative Nos. 4 and 5 that propose excavation and off-site disposal of the source material, speed up the time period necessary to remediate the groundwater plume?

RESPONSE 3: The overall goal of the remedy is to address the source area and the off-site groundwater plume. Alternatives Nos. 4 and 5 may offer a reduced time frame toward achieving the remedial objectives on-site, however, the overall remedial time frame (i.e., on-site/off-site) can be expected to be about the same. The geology/hydrogeology at the site lends itself well to in-situ treatment, and the in-situ remedy is expected to be highly effective with little impact to project duration.

COMMENT 4: This site has been used for 50 years by the Town of Bedford for truck storage and repair. How certain is the Department that this type of site activity did not also contribute to the identified groundwater contamination? How do we know there aren't other problems on the site?

RESPONSE 4: Groundwater samples collected on the Town Department of Public Works (DPW) property outside of the source area did not show any contamination above background conditions. Further, soil vapor intrusion testing in the highway garage did not show any contaminants of concern (PCE and associated breakdown products) in sub-slab soil vapor. Therefore, based on the investigations conducted to date, no chemical compounds other than PCE and associated degradation products were found to exceed New York State standards, criteria and guidance for any environmental media at the DPW facility.

COMMENT 5: There are approximately nine acres of Town-regulated wetlands in the area of the plume. Did that fact influence the Department's choice of the Alternative 3? Will a State wetland permit be required to implement the remedy? What Department permits are required to construct Alternative 3/Alternative 4?

RESPONSE 5: The occurrence of the off-site ponds and wetlands is considered in the remedy selection process. The remedy was selected based on its ability to satisfy the remedial selection criteria identified in 6 NYCRR Part 375. Land use is one of the criteria and this includes, among other factors, the presence or proximity to natural resources. The remedy was selected based on its ability to best satisfy all of the remedial criteria.

The off-site ponds and wetlands are not designated State wetland(s), however, the remedial design will be reviewed by the Department's Division of Fish Wildlife and Marine Resources and any special conditions addressed.

COMMENT 6: What is the reimbursement process under the Environmental Restoration Program (ERP)? Has the Town been reimbursed during the investigation? How would the Town be reimbursed for the remediation work?

RESPONSE 6: Under the ERP, the municipality is reimbursed for up to 90% for all eligible 'on-site' costs and up to 100% for all eligible 'off-site' costs. Once the work has been paid for by the municipality (e.g., consultant costs, lab costs), the municipality may then submit a payment application to the Department requesting reimbursement. The Department then reviews the specific cost details and upon approval, reimburses the municipality for all eligible costs. To date, the Town has been reimbursed most of the funds allocated under its State Assistance Contract.

Requests for funding currently exceed the $200 million authorized under the 1996 Clean Water/Clean Air Bon Act for the ERP. Following the issuance of the Record of Decision, the Department will meet with municipal representatives to discuss options for funding the remedial program.

COMMENT 7: If there is no ERP funding available to complete the cleanup, what is the benefit to the Town?

RESPONSE 7: With the release of the Record of Decision, the Department considers that the municipality has met its obligation under the State Assistance Contract. As such, in the event funds are not available to support the remedial action, the Town of Bedford may receive a liability release, subject to certain restrictions (e.g., emplacement of an environmental easement limiting site use).

COMMENT 8: The Department states that the groundwater plume ends at the Mianus River. Are there any impacts on the river? Were upstream samples compared to downstream samples?

RESPONSE 8: The remedial investigation found no site related contamination in the surface water or sediments of the Mianus River. The investigation included sampling where the groundwater contaminant plume meets the river and PCE was not detectable in the surface water or sediment samples.

COMMENT 9: What are the short term impacts of Alternative 5 and Alternative 4, compared to Alternative 3?

RESPONSE 9: Alternative Nos. 4 and 5 call for excavation of the source area subsurface soils and off-site disposal. These two alternatives would have a greater degree of short term impacts due to the disturbances associated with excavation (e.g., heavy equipment operations). There would be increased truck traffic, noise and a greater potential for dust. Alternative No. 5 also includes installation of a groundwater pump and treat system with infrastructure on the off-site property. This would entail drilling of recovery wells and installation of piping to bring the contaminated

groundwater back to an on-site treatment system. Alternative No. 3, by comparison, has a smaller construction footprint, will require less truck traffic, results in little chance of creating dust and less infrastructure needs.

COMMENT 10: Are there any concerns with in-situ treatment due to injecting chemicals into the ground? Would the PCE contamination increase in the groundwater plume? What would be the impacts to the Mianus River? Is it possible that the selected remedy, Alternative 3, could cause contamination concentrations to go higher?

RESPONSE 10: The technology selected is highly effective, widely used and improved groundwater quality is expected in short order. PCE levels should not rise but as the chemical break down occurs some other "daughter" compounds levels may rise, although only temporarily as the breakdown proceeds. No impacts to the river are anticipated, however, the remedial program will include a comprehensive monitoring program to assure remedy implementation moves forward, as contemplated.

COMMENT 11: Is there any site-related contamination off the Town property to the west of the source? Can people who live west of Crusher Road be considered safe from any potential contamination at the site?

RESPONSE 11: The remedial investigation found no site-related contamination in groundwater upgradient or west of the source area.

Zachary Isaac Goldsmith, attorney with the law firm DL Rothberg & Associates, P.C., read aloud and submitted a statement at the March 19, 2012 public meeting, which included the following comments:

COMMENT 12: Based upon the studies performed by the Town of Bedford, the DEC, while I will refer to as the Department, has determined that the Crusher Road Site is a known, documented source of PCE contamination, which has affected both the soil and groundwater of that site and has migrated hydraulically down-gradient onto and under the Old Post Holdings, LLC (OPH) Site. The Proposed Remedial Action Plan concludes that contamination is present on both sites at levels warranting remediation. We agree with the Department's findings that contamination from the Crusher Road Site exists above regulatory standards and has migrated onto the OPH Site resulting in the need for remediation.

While we intend to submit more detailed comments concerning the technical aspects of the remedial method selected by the Department, for purposes of this public hearing, we wish to state for the record that Old Post holdings agrees with the findings of the Department that remediation of the Crusher Road Site and the OPH Site is required. In light of the nature of the contamination, and the fact that it has migrated, and continues to migrate, under the OPH Site, we expect that the Department will diligently implement the remedy it has selected. To that end, we further understand and expect that the Department will marshal the necessary resources for this purpose and, to the extent the selected remedy does not achieve cleanup criteria, the Department will pursue the necessary means and methods to fully remediate the PCE contamination impacting these properties.

Old Post Holdings has, as the immediately adjacent property owner, suffered the most significant impacts and damage to its property from the disposal that occurred at the Crusher Road Site. The Department's findings have confirmed that the contaminant plume has migrated under a portion of the OPH Site and remediation is required. Old Post Holdings looks forward to working with the Town of Bedford to mitigate the damage this condition has caused to the OPH Site.

Based on the actions the Department is proposing relative to the remediation of the documented conditions, Old Post Holdings does not object to the proposed remedy, subject however to the continued vigilance of the Department in timely implementing the required remediation.

We thank the Department for advancing remedial actions at the Crusher Road Site and appreciate the opportunity to present our comments.

RESPONSE 12: Comments noted.

Deborah L. Rothberg, attorney with the law firm DL Rothberg & Associates, P.C., and counsel for Old Post Holdings, LLC, ("OPH"), the owner of property located at 325-361 Old Post Road, submitted a letter (dated March 29, 2012) which included the comments listed below. This letter included accompanying technical comments prepared by Impact Environmental (letter dated March 29, 2012), the environmental consultant for OPH. The letters included the following comments:

COMMENT 13: With respect to the technical issues identified by Impact, certain of those concerns relate to the completeness of the remedial investigation performed of the Crusher Road Site and the OPH Property by Leggette Brashears & Graham, LLC, ("LBG") on behalf of the Town of Bedford. In that regard, because the investigation does not appear to meet the requirements of the ERP or satisfy Department standards and criteria, to the extent that Department intends to provide any liability release to, or otherwise intends to limit the liability of the Town of Bedford under the ERP, we must object. Unless the Department is able to provide adequate assurance that the remedial work required to be performed to timely and fully remediate the Crusher Road Site and the OPH Property, we urge that any protection granted to the Town of Bedford be commensurate only with respect to such work as it has satisfactorily performed to date.

RESPONSE 13: The municipality has the benefits identified in ECL 56-0509 regarding the liability limitation beginning the date of the Department's approval of the State assistance application. However, the property cannot be used for any new purpose until the remediation of the property is completed to the Department's satisfaction. If the municipality fails to complete the work to the State's satisfaction, the protection afforded by ECL 56-0509 is suspended until it completes the work, however, to date the remedial program has been to the State's satisfaction.

COMMENT 14: OPH reserves any and all rights it may have relating to the issues raised in these comments or otherwise arising out of the contamination or the investigation of the Crusher Road Site or the OPH Property. We appreciate the opportunity to submit comments on the PRAP on behalf of OPH and look forward to receipt of the Department's response.

RESPONSE 14: Comment noted.

COMMENT 15: It is possible that dense non-aqueous phase liquid (DNAPL) has extended onto the OPH Property and this potential was not investigated in connection with the Remedial Investigation Report (RIR).

RESPONSE 15: Subsurface soil samples were collected at various depths in the source area (defined as OU-1 in the PRAP) during the remedial investigation. During the investigations DNAPL was not identified in any on-site of the subsurface soil samples. However, based on the groundwater results, the presence of small stringers of DNAPL is plausible. The off-site investigation also did not identify DNAPL stringers, but there is the potential for their existence based on the groundwater water concentrations directly downgradient of OU-1.

The source component of the remedy, chemical oxidation, is in the Departments experience a proven remedial approach to address the potential for small DNAPL stringers in a diffused subsurface source area like the one found at the Crusher Road Site.

COMMENT 16: A permanent well was not installed in the area of the highest historic concentration of PCE on the OPH Property (GP-101 at 31,000 ppb) or in the area immediately down-gradient of the highest 2008 concentration detected on the Crusher Road Site (DPWL2D at 4,100 ppb). The placement of the cluster wells and permanent wells does not appear to be consistent with the centerline of the PCE plume and therefore the concentrations being reported in the recent 2010 groundwater sampling may not represent the worst-case scenario existing on the OPH Property.

RESPONSE 16: The Department maintains that the groundwater delineation is not inconsistent with appropriate Department guidance. DER-10-3.1(c) states that one of the purposes of the remedial investigation is to delineate the areal extent of the contaminant in media, to determine the subsurface characteristics of the site and to identify migration pathways. The Department approved the Remedial Investigation Report on December 12, 2012 and determined that the site investigation had characterized the nature and extent of contamination sufficient to develop and evaluate alternatives in an Alternative Analysis.

Regarding the specific area mentioned in the comment, the Department maintains there is an adequate well network downgradient of the area identified (specifically multi-well cluster C and E) to allow for development and implementation of the selected alternative. Further, there were several vertical profile borings in this area to confirm that it is a source area. The Department will evaluate whether a permanent well cluster is needed at this location to evaluate the effectiveness of the selected remedial action, during the design phase of the project.

COMMENT 17: The delineation of the plume appears to be adequate in the horizontal extent in groundwater, but the permanent monitoring well network appears to have a deficiency on the southwestern quadrant in between Pond 5 and Pond 6. Typical monitoring networks have flanking wells that are on the outside of the centerline of the plume. The horizontal extent of the PCE plume to the east-southeast appears to be delineated to the Mianus River.

RESPONSE 17: The vertical profile borings placed very close to, and downgradient of, this area (e.g., OSL1D & OSL1E) showed little contamination. This confirmed that the area in question is considered by the Department to be up- and side-gradient of the source area and the contaminated

groundwater plume. Further, it is the Department understanding that the area in question has wetland characteristics that greatly hampered access to this location. During the investigation efforts were made to reduce the impact to the off-site property to the extent practicable, including avoiding obvious wetland-type habitats, where possible.

COMMENT 18: The vertical extent of the PCE plume in the dissolved phase has been delineated to the depth of reported refusal due to bedrock. Investigation of groundwater in bedrock was reportedly performed under the scope of the RIR in wells C-180 and B-110 and indicated no levels of PCE were detected. However, the bedrock geology was not investigated (i.e. fractures, channels) as part of the RI; and therefore the potential exists that the PCE plume (dissolved and/or DNAPL) has permeated beyond the geological sand deposits and has migrated into the bedrock of the OPH Property.

RESPONSE 18: One of the bedrock wells mentioned (C-180) is approximately 30 feet downgradient of OU1, located within the overburden groundwater contaminant plume. This well has shown no site-related contamination. In addition, the vertical profile borings were generally advanced to refusal, which was believed to be the top of the bedrock surface. Directly downgradient of monitoring well cluster 'C' (off-site) contaminant concentrations decrease markedly with depth, as noted by the results of the groundwater samples from the vertical profile borings. Finally, private wells sampled during the investigation, which are reported to be bedrock wells based on discussion with the home owners, did not show any site-related contamination. Therefore, data supports that the bedrock system in the off-site area is not impacted by site-related contamination.

COMMENT 19: No soil vapor sampling was conducted on the OPH Property as part of the RIR. While no buildings presently exist on the OPH Property, the potential exists that soil vapor intrusion may be an issue with regard to any future development.

RESPONSE 19: The potential exists for soil vapor intrusion to occur on the OPH property if development occurs in an area where site-related contamination in groundwater is present. The Monitoring Plan will assess the performance and effectiveness of the remedy which includes, but may not be limited to, the monitoring of groundwater and soil vapor, both on- and off-site.

COMMENT 20: The Alternatives Analysis Report, which was supposed to be issued in the Fall of 2011 has not been completed to date for review. Further, pilot testing for ISCO (which was the contemplated remedy) was not performed under the scope of the RIR. Additional investigation activities may be necessary for the design of a remedial alternative.

RESPONSE 20: The remedy, as outlined in this ROD, includes a remedial design phase to provide details necessary for the construction, operation, maintenance and monitoring of the remedial program. During the preliminary design effort, the Department will evaluate the need for bench and pilot studies and conduct them as deemed necessary.

COMMENT 21: The PRAP identifies two Operable Units (OU-1 and OU-2) in connection with the remediation of contamination at, under and migrating from the Crusher Road Site. There appears to be an error in the PRAP, both in the text and figures, regarding the identification of the OU's in the PRAP. At Page 3 of the PRAP the text indicates that OU-l represents the "on-site source area" and

OU-2 "consists of the balance" of the "ERP site". An inconsistent depiction of the OU's is then included in the PRAP figures, with the OU's depicted on Figure 3 and a remedial design layout on Figure 7. First, it is unclear why the OPH Property, which is significantly impacted by the Crusher Road contamination and part of the initial remedial design layout (See figure 7) is not specifically identified in the text as a part of the first Operable Unit; and further why an operable unit was established for an area of the Crusher Road Site which has not been contaminated by the PCE source (See Figure 3 -OU-2). The source of contamination has been confirmed to originate from the Crusher Road Site, but the extent of contamination is primarily affecting the OPH Property (at least 16 acres of the OPH Property), which is located immediately adjacent and hydraulically down-gradient of the Crusher Road Site. The RI and PRAP demonstrate that the OPH Property is the primary receptor being impacted by the migration of contaminants from the Crusher Road Site and requires remedial action. Figure 7 of the PRAP depicts the remediation injection locations proposed for the OPH Property, but none of the OPH Property has been identified as an Operable Unit. It appears that the boundaries of the operable units defined by the NYSDEC erroneously omit the limits of the groundwater contaminant plume, which extends on the OPH Property and reportedly terminates at the Mianus River. The attached figure (Plate #1) shows the configuration of Operable Units as proposed by the NYSDEC, which should be corrected to include the OPH Property.

RESPONSE 21: The State Assistance Contract executed between the municipality and the Department on December 24, 2007 defines the site as the 11.8 acre Crusher Road Site. Therefore, the statement in the PRAP is correct. The PRAP has defined the Crusher Road Site to include 2 operable units (OUs). Operable Unit 1, which is the focus of the PRAP, is the estimated 0.5-acre source area, and the balance of the Crusher Road Site is defined as Operable Unit 2.

The ERP obligates the municipality to fully delineate the nature and extent site-related contamination, including any off-site contamination. The Department considers the extent of the groundwater contaminant plume on the OPH property to be impacted “off-site” area.

COMMENT 22: An Alternative Analysis Report (AAR) was not completed prior to the development and selection of the remedy. According to the NYSDEC Division of Environmental Remediation's Municipal Assistance for Environmental Restoration Projects-Procedures Handbook, July 2004 (Sections 5.4 Development and Analysis of Alternatives and 5.5- Alternative Analysis Reports and Proposed Remedial Action Plan), “a detailed evaluation will be conducted on the alternatives. That evaluation will take due consideration of the factors identified in 6NYCRR375-1.10(c)(1-7, inclusive)”. As the AAR was not completed, the regulations set forth by NYSDEC do not appear to have been followed to conclude on the appropriate remedy

RESPONSE 22: With the Department’s approval of the AAR, the Department determined that the AAR met the requirements of Part 375-1.8(f) as the alternatives presented in the AAR were adequately evaluated against the criterion listed in part 375.

With regards to part 375-1.10(c), the Department reviewed and approved the Citizen Participation Plan which was included as part of the remedial investigation work plan on March 20, 2007. In addition, with the release of the PRAP, setting the public comment period, and holding a public meeting on March 19, 2011 to solicit public comments, the Department maintains that it met all requirements for Citizen Participation are prescribed under Part 375 and DER-23 ‘Citizen

Participation Handbook for Remedial Program.'.

COMMENT 23: The final Alternatives Analysis Report requires the stamp and signature of a currently-registered New York State licensed professional engineer before it can be approved by the DEC. This report was not completed prior to the PRAP, but presumably could be performed in advance of any design work.

According to the Part 375 regulations, the AAR was supposed to be completed prior to the PRAP. It is expected that further evaluation of the remedy selection will be provided such that it supports the technical basis required for the OPH Property before the Record of Decision (ROD) is formalized, Such information should include a technical analysis of the selected remedy and provide specific detail of the means and methods that will be employed for the remediation.

RESPONSE 23: The Department typically makes the final draft AAR available for the duration of the public comment period associated with the PRAP and only finalizes the document post comment period to allow for any changes which may be deemed necessary as a result of public comment. The AAR is then finalized and the PE stamp affixed and the document signed at this time.

COMMENT 24: The PRAP does not take into consideration any remedial requirements that may be necessary for the future development of the adjacent OPH Property (such as institutional or engineering controls).

RESPONSE 24: The PRAP outlined the institutional and engineering controls that will occur on OU-1 (the site). This will include the development of a Site Management Plan (SMP) that will address all required on-site and off-site operation and monitoring to determine the effectiveness of the remedy which serves as an institutional control. The Department does not require institutional controls in the form of an environmental easement for off-site properties when selecting a remedy.

COMMENT 25: The PRAP identifies that the selected remedy for the OPH Property is bioremediation and monitoring. Specifically, the off-site remedy includes in-situ bioremediation applied via multidepth injection points (to inject biological agent) followed by three years of monitoring. The spacing/distribution of the proposed injection points are not substantiated based on technical data. No evaluation was provided that supports the spacing proposed. It seems unlikely that the limited injections proposed would be effective for remedial action sufficient to meet the objectives. Further detail on the proposed injections, such as depths, injection rates, bioorganism agent specifications, etc. should be provided.

RESPONSE 25: The remedy, as set forth in this Record of Decision, (ROD) includes a remedial design phase to provide details necessary for the construction, operation and maintenance and monitoring of the remedial program. The locations of the proposed off-site injection points identifed by the ROD are conceptual and used for costing purposes. During the design, a review of the existing investigation data will be conducted to further define the exact location of the injection points. This may include the need for a preliminary design investigation to capture additional detail (e.g., geology/hydrogeology) in anticipation of remedy implementation.

COMMENT 26: While it was proposed that three years of post-treatment monitoring would be

performed, no commitment for additional injections or alternative remedial alternatives were proposed in the event that the selected remedy is not an effective long-term solution. If such performance monitoring does not meet that applicable criteria (which is not defined in the PRAP and should be clearly stated), the NYSDEC should be prepared to undertake additional remedial measures that will more fully address the contamination conditions on the Crusher Road Site and OPH Property. Such measures may include further investigation or characterization of the contamination to identify any potential deficiencies that may be precluding the remedial action from adequately mitigating the contamination and meeting the applicable Standards, Criteria and Guidance. If such a condition exists, further remedial alternatives or "Contingency Remedial Plan" may be required and the NYSDEC should be prepared to undertake such measures to ensure appropriate remediation at the Crusher Road Site and OPH Property.

RESPONSE 26: The ROD states that a monitoring plan will be developed as part of the Site Management Plan. As per DER-10-5.4(c)(2)(iii), implementation of an in-situ treatment technology will include monitoring to document the effectiveness of the remedy and DER-10-6.2.2 outlines the requirements of the monitoring plan. If it determined during the monitoring phase of the project that additional injections other measures are required to enhance the effectiveness of the remedy, they will be considered at that time.

As per DER-2 'Making Changes to Selected Remedies', remedies are selected by issuance of the program-specific decision document (in the case of the ERP a Record of Decision) after completion of the appropriate CP activities. If, between the selection of the remedy and the completion of construction, the Department becomes aware of information which substantially supports the need to change the remedy, the remedy may be modified. Changes to selected remedies may be considered when significant new information comes to the attention of the Department. Significant new information may come from a variety of sources, including, results of pre-design investigations, data gathered during construction, or data collection during post construction monitoring.

COMMENT 27: On behalf of OPH, we agree with NYSDEC that active remediation is necessary to address the impacts at the Crusher Road Site and the OPH Site, and that such remediation should proceed expeditiously. In accordance with the foregoing, we request that NYSDEC properly address the key issues as presented herein in connection with the Proposed Remedial Action Plan for the Crusher Road Site, including but not limited to; completion of an Alternatives Analysis Report, Pre-Design Investigation (additional investigation, delineation and/or pilot testing or feasibility study), correction of the operable unit classification and inclusion of a contingency measure for remedial alternatives if the proposed remedy is not successful in meeting remedial action objectives.

RESPONSE 27: Comment noted.

APPENDIX B

Administrative Record

Administrative Record

Crusher Road Site
Operable Unit No. 1
Environmental Restoration Project
Town of Bedford, Westchester County, New York
Site No. B00185

1. Proposed Remedial Action Plan for the Crusher Road Site, Operable Unit No.1, dated February 2012, prepared by the Department.

2. Alternatives Analysis Report, Crusher Road Site, NYSDEC ERP Site No B00185, Town of Bedford, NY", dated March 2012, prepared by Leggette, Brashears & Graham.

3. Remedial Investigation Report, Crusher Road Site, Site No B00185, Town of Bedford, NY" dated February 2012, prepared by Leggette, Brashears & Graham, Inc.

4. Remedial Site Investigation Work Plan, Crusher Road Site, Site No. B00185, Town of Bedford, NY", prepared by Leggette, Brashears & Graham, Inc. dated November 2006.

5. New York State Department of Environmental Conservation 1996 Clean Water/Clean Air Bond Act Environmental Restoration Program State Assistance Contract, Site No. B00185, Contract No. C303413, executed December 24, 2007.

6. Preliminary Site Assessment, Crusher Road Site", dated February 2002, prepared by TAMS Consultants, Inc and GZA GeoEnvironmental of New York.