DECISION DOCUMENT

Anderson Cleaners
Brownfield Cleanup Program
Jamestown, Chautauqua County
Site No. C907027
January 2012

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

DECLARATION STATEMENT - DECISION DOCUMENT

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Statement of Purpose and Basis

This document presents the remedy for the Anderson Cleaners site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Anderson Cleaners site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

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

SITE COVER
A site cover currently exists and will be maintained to allow for commercial use of the site. Any

site redevelopment will maintain a site cover, which may consist either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil cover in areas where the upper one foot of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of one foot of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial 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).

Under proposed remediation alternative, remediation will proceed in a staged approach with the most aggressive and immediate measures implemented first.

DNAPL EXTRACTION

The dense non-aqueous phase liquid (DNAPL) (undissolved PCE) provides a constant source of dissolved phase PCE and other contaminants of concern in groundwater. DNAPL extraction is employed to remove source material contributing to ongoing dissolved VOC contamination of groundwater. Effective groundwater remediation requires the removal of source material to the extent practical.

- At this site, source zone removal actions will be initially implemented. This will include the removal of DNAPL in the defined DNAPL area. DNAPL has been identified on top of the glacial till layer at a depth of about 12 feet to 16 feet bgs. DNAPL will be extracted using a compressed air operated fluid extraction system.
- Existing monitoring wells PW-3 and MW-207 and a new extraction well to be installed in proximity of existing monitoring well BR-02FR will be utilized for groundwater/DNAPL extraction wells. These wells will be fitted with chemical resistant submersible pumps that will discharge to a collection/treatment system. This treatment system will consist of gravity separation equipment to remove DNAPL from the water followed by activated carbon treatment of the separated water prior to discharge to the sanitary sewer system.

IN-SITU CHEMICAL OXIDATION

In-situ chemical oxidation is a technology used to treat chlorinated ethene compounds (a general 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.

- At this site, a chemical oxidant (i.e., potassium permanganate, sodium permanganate, etc.) will be injected within the DNAPL source zone as a polishing step. The unsaturated soil within the source area will continue to be covered by asphalt/concrete or an approximate 2-foot thick clean soil cap that was constructed during the soil removal IRM.

IN-SITU BIO-AUGMENTATION

- After the DNAPL treatment system is installed and operational at this site, in-situ biological treatment will be implemented to address dissolved contaminants of concern present in the groundwater in an area downgradient of the source area. The in-situ biological treatment

area will extend approximately 40 ft. to the east from the eastern side of the Anderson Cleaners building and approximately 100 ft. to the south from a point approximately 30 ft. to the south of the northeastern corner of the Anderson Cleaners building (near existing well BR-01). This treatment will initially consist of placing hydrogen releasing materials in the contaminated groundwater zones to stimulate microbe growth (biostimulation events). Depending on interim testing results of microbe populations and contaminant of concern concentrations, supplementary microbe populations may be added to augment the existing microbe population (bioaugmentation event).

- Based on data collected to date, three biostimulation events and one bioaugmentation event will be required. The initial biostimulation event will include the distribution of up to 1,850 pounds of a hydrogen releasing compound into test borings advanced via direct-push drilling techniques (up to 30 locations) and into several existing monitoring wells. During the second biostimulation event, approximately 1,125 pounds of a hydrogen releasing compound will be distributed, and during the third biostimulation event, up to 750 pounds of hydrogen releassing compound will be introduced into the subsurface. During one of the injection events, up to 48 liters of commercially produced Dehalococcodies microbes may be distributed into the VOC impacted saturated zone.

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Plume containment is a control strategy to prevent ongoing off-site migration of contaminants of concern. This remediation technology can be accomplished by creating an inward groundwater gradient preventing contaminated groundwater from leaving the site, or by treating the groundwater via in-situ treatment methods such that the groundwater leaving the site has been effectively treated to water quality criteria.

- At this site, contaminant plume containment will be accomplished by installing a series of twelve 4-inch diameter groundwater collection wells on the site approximately 40 feet to 50 feet from the eastern/southeastern property line of the Site. Six wells would be installed to a depth of about 30 feet below ground surface (bgs) (into the fractured rock) and six wells would be installed to a depth of about 40 ft. bgs (into the competent bedrock). These wells would be installed at an approximate 20 foot spacing to create a continuous groundwater depression/collection zone approximately 120 feet long extending generally from north to south. Wells installed within these zones will be under flowing artesian groundwater conditions, such that the groundwater rises to more than 2 feet above the ground surface. As such, the wells would be connected to a piping network that would discharge the collected groundwater into a holding tank without the use of pumps. Collected groundwater in the holding tank will be treated using granular activated carbon. Depending on the amount of water collected and the sewer discharge requirements, the treated water will be discharged to the sanitary sewer system and/or injected into an up-gradient location (well BR-01).

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 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.

SITE MANAGEMENT PLAN

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

- an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site noted above and details the steps necessary and media-specific requirements to ensure the following institutional and/or engineering controls remain in place and effective:
    - o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
    - o a Monitoring Plan to ensure groundwater quality and to assess the performance and effectiveness of the site cover;
    - o descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
    - o provisions for evaluation and/or mitigation of the potential for soil vapor intrusion into the on-site building and for any new buildings developed on the site;
    - o provisions for the management and inspection of the identified engineering controls;
    - o maintaining site access controls and Department notification; and
    - o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

- a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - o monitoring of groundwater to assess the performance and effectiveness of the remedy;
    - o a schedule of monitoring and frequency of submittals to the Department; and
    - o monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item a above.

- an Operation and Maintenance (O&M) Plan 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:
    - o compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting; and
    - o providing the Department access to the site and O&M records.

TREATMENT REMEDIES

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.

Declaration

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

02/15/2012

Date

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Anderson Cleaners
Jamestown, Chautauqua County
Site No. C907027
January 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 New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

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

SECTION 2: CITIZEN PARTICIPATION

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

Prendergast Library
Attn: Catherine Way
509 Cherry Street
Jamestown, NY 14701
Phone: 716-484-7135

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 Anderson Cleaners site is an active dry-cleaning business located at 5 Hunt Road, Jamestown, near the intersection of Harding Avenue. The site is situated on the west side of the City of Jamestown, and straddles the Town of Ellicott municipal boundary line. The site is partially situated in both municipalities.

SITE FEATURES: The site encompasses approximately 2.4 acres in area and contains a one story brick and concrete block commercial building covering approximately 11,400 square feet in area. Other site features include asphalt paved storefront parking along the front (north) section of the building that faces Hunt Road and a gravel covered parking along the east side of the current building. The west side of the building contains a driveway for a clothing drive-thru drop-off/pickup. The balance of the site contains turf grass lawn areas. The building was built in phases over the decades and contains a storefront area for the dry-cleaning business and adjoining apparel business. The balance of the building contains separate areas for clothes finishing, two laundry and dry cleaning areas, rug cleaning, a storage area, and a garage area.

CURRENT ZONING: The site use is currently active and is zoned for commercial use. The surrounding/adjoining land use mixed residential/commercial area. The nearest residential parcel adjoins the western property boundary.

HISTORICAL USES: The first record of development on the Site was a building constructed and used as a towel factory in the 1930s (current finishing area). By the mid-1940s, Anderson Cleaners occupied the Site and operated a dry-cleaning business. The building was expanded over the years. The south/central portion of the building was constructed in 1947 and is currently occupied by the laundry and dry-cleaning area, and a portion of the office area. In 1985, a fire destroyed the northern and eastern portions (approximately 8,000 square feet) of the building. Following the fire, reconstruction/remodeling operations were undertaken and the structure was expanded to its current footprint.

Stoddard Solvent was reportedly used for dry cleaning operations from approximately 1947 to 1978. This material was stored in two underground storage tanks (USTs), each with a capacity of approximately 1,100 gallons. These USTs were located in the area that is now underneath a portion of the building used for cold storage. These USTs were reportedly removed some time before the re-construction of the building in 1985. Available information indicates that the tanks were installed at the time the south-central portion of the building was constructed (1947). The use of Stoddard Solvent was discontinued in about 1978 when tetrachloroethene (also known as perchloroethene or PCE) was first used as the primary dry-cleaning agent. In 2002, new dry-cleaning equipment that used a hydrocarbon-based solvent, DF 2000, was installed and all use of

PCE was discontinued.

A Phase 2 investigation performed in 2003 revealed elevated levels of PCE in soil and groundwater. The owner subsequently entered the Brownfield Cleanup Program in 2005 and completed a detailed site investigation (SI) and remedial alternatives analysis.

OPERABLE UNITS: The site was divided into three 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) is the on-site source area. In 2005, an Interim Remedial Measure (IRM) was also implemented to remove shallow soil contaminated by PCE.

OU2 consists of the groundwater. The detailed SI confirmed that groundwater at the site is contaminated and requires remediation.

OU3 consists of the soil vapor. The SI documented on-site soil vapor contamination.

SITE GEOLOGY AND HYDROGEOLGY: The site is underlain by several geologic layers. The uppermost layer is covered with fill of varying thickness (2 to 8 feet) and consists of silty sand and gravel often intermixed with brick, concrete and wood debris. The fill overlays a glacial deposit layer 4 to 12 feet thick consisting of interbedded mixtures of sandy silt and clayey silt. The glacial deposit layer overlays a medium dense silty sand till layer 3 to 7 feet thick extending to the top of fractured shale bedrock. The fractured shale layer varies around 5 feet in thickness and overlays a more competent shale bedrock stratum.

Groundwater generally flows to the east/southeast across the site in two groundwater zones; top of glacial till and bottom of glacial till/fractured bedrock. Monitoring wells that penetrate into the lower glacial till unit and into the fractured bedrock reveal an upward hydraulic gradient, resulting in artesian (upward flowing) conditions for these wells. The fractured bedrock zone appears to be a confined aquifer.

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 commercial use (which allows for 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 remedial investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.4.

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Information

The analytical data collected on this site includes data for:

- groundwater
- soil

- soil vapor

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

TETRACHLOROETHYLENE (PCE) VINYL CHLORIDE
TRICHLOROETHENE (TCE)

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

IRM - Soil Removal

In 2005, an IRM was implemented to remove soil highly contaminated with PCE (source soil) from the courtyard area of the site. Due to the limited ability to remove contaminated soil to deeper depths adjacent to the building, PCE contaminated soil remains in this area.

PCE DNAPL was discovered in one of the monitoring wells in the courtyard area. Passive DNAPL removal measures were implemented until no discernable levels were present in this monitoring well.

6.3: 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*.

Access to the site is unrestricted. However, contact with contaminated soil or groundwater is unlikely unless they dig below the ground surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment

and occupancy. An evaluation of the potential for soil vapor intrusion to occur will be completed should the current use of the site change.

6.4: Summary of Environmental Assessment

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

Nature and Extent of Contamination:

OU1 (Soils) - Based upon investigations conducted to date, the primary contaminant of concern for OU1 is perchloroethylene (PCE). PCE was found both shallow and deep soil, mostly in a courtyard where storage occurred. Average concentrations of PCE found on site (approximately 5,000 ppm) significantly exceed the soil cleanup objective (SCO) for protection of groundwater (1.3 ppm). Interim remedial measures completed to date included limited removal of highly contaminated source material from overburden soils.

OU2 (Groundwater) - PCE and its associated degradation products are also found in groundwater on the site, significantly exceeding groundwater standards (typically 5 ppb), with a maximum concentration of 81,800 ppb. The highest PCE concentration in groundwater was found beneath the courtyard area and beneath the southeastern portion of the building. The PCE concentrations measured in the groundwater were significantly lower in the two locations tested to the east and south of the building. Dense non-aqueous phase liquid (DNAPL) consisting of PCE has also been located at the site partially beneath the building and potentially extending out into a parking lot area located near the southeastern corner of the building.

A moderate amount of dissolved PCE (and degradation products) from the site has migrated 80 feet down-gradient off-site. The primary contaminant of concern in off-site groundwater is cis-1,2-dichloroethylene, which is present at a maximum concentration of 3.7 ppb along Kenmore Avenue. Interim remedial measures completed to date included bio-stimulation to enhance in-situ biological treatment of the contaminant plume in shallow groundwater. Investigation of the bedrock aquifer revealed the fractured zone bedrock near the DNAPL area is impacted, but to a lesser degree than the overburden. The competent bedrock layer contamination levels are orders of magnitude lower than levels above. No DNAPL was detected in the fractured bedrock zone. The upward hydraulic gradient and confining nature of the overburden have limited the impacts to the bedrock aquifer.

OU3 (Soil Vapor) - Soil vapor was found to have the highest concentrations in a location southeast of the building in an area of elevated groundwater concentrations.

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.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

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

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

REMEDIAL DESIGN

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• After the DNAPL treatment system is installed and operational at this site, in-situ biological treatment will be implemented to address dissolved contaminants of concern present in the groundwater in an area downgradient of the source area. The in-situ biological treatment area will extend approximately 40 ft. to the east from the eastern side of the Anderson Cleaners building and approximately 100 ft. to the south from a point approximately 30 ft. to the south of the northeastern corner of the Anderson Cleaners building (near existing well BR-01). This treatment will initially consist of placing hydrogen releasing materials in the contaminated groundwater zones to stimulate microbe growth (biostimulation events). Depending on interim testing results of microbe populations and contaminant of concern concentrations, supplementary microbe populations may be added to augment the existing microbe population (bioaugmentation event).

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- prohibits agriculture or vegetable gardens on the controlled property; and
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    - o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
    - o a Monitoring Plan to ensure groundwater quality and to assess the performance and effectiveness of the site cover;
    - o descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
    - o provisions for evaluation and/or mitigation of the potential for soil vapor intrusion into the on-site building and for any new buildings developed on the site;
    - o 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.

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

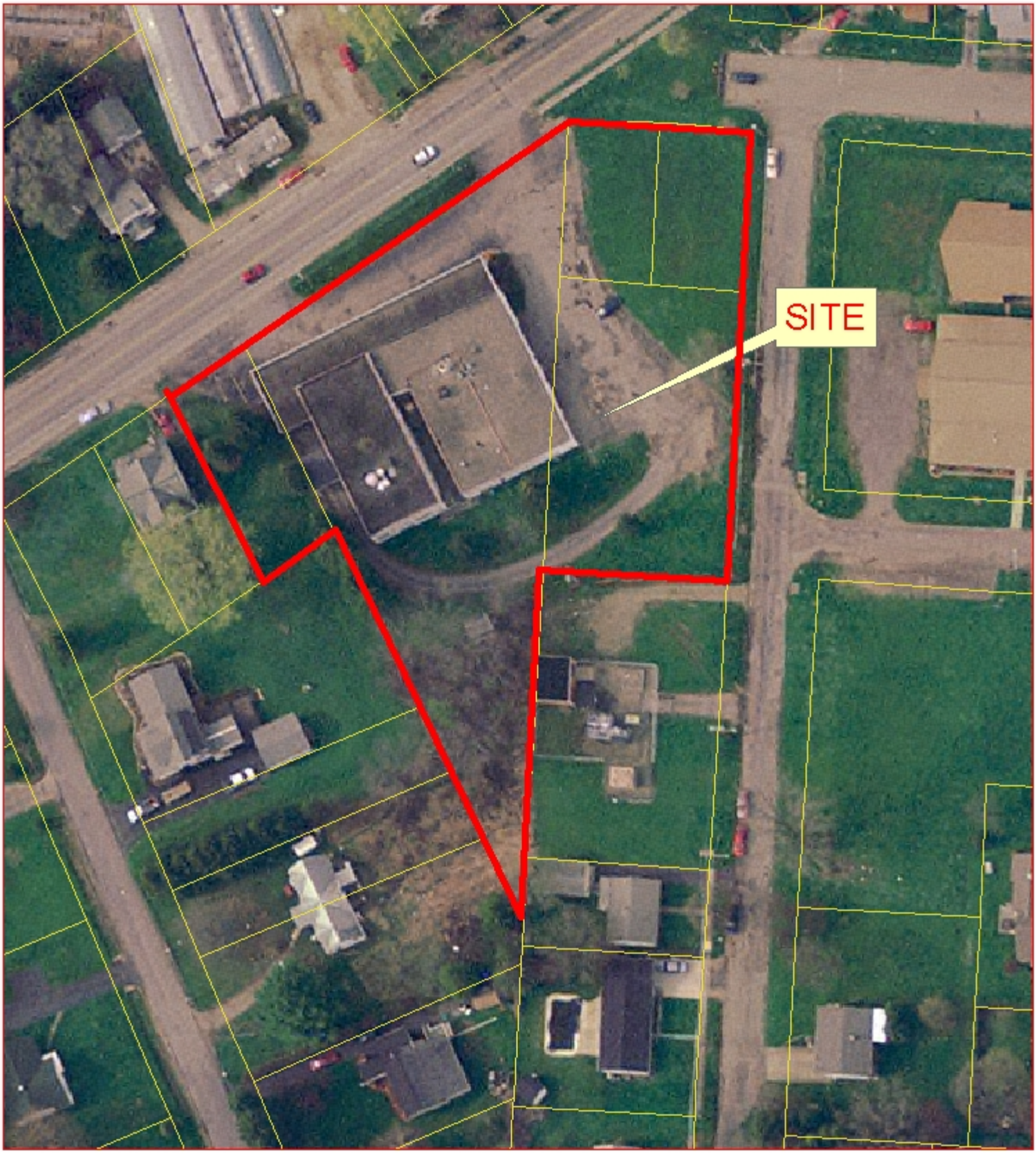
- monitoring of groundwater to assess the performance and effectiveness of the remedy;
- a schedule of monitoring and frequency of submittals to the Department; and
- monitoring for vapor intrusion for any buildings occupied or developed on the site, as may be required by the Institutional and Engineering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

• an Operation and Maintenance (O&M) Plan 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; and
- providing the Department access to the site and O&M records.

TREATMENT REMEDIES

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.



0 50 100 150 200 Feet

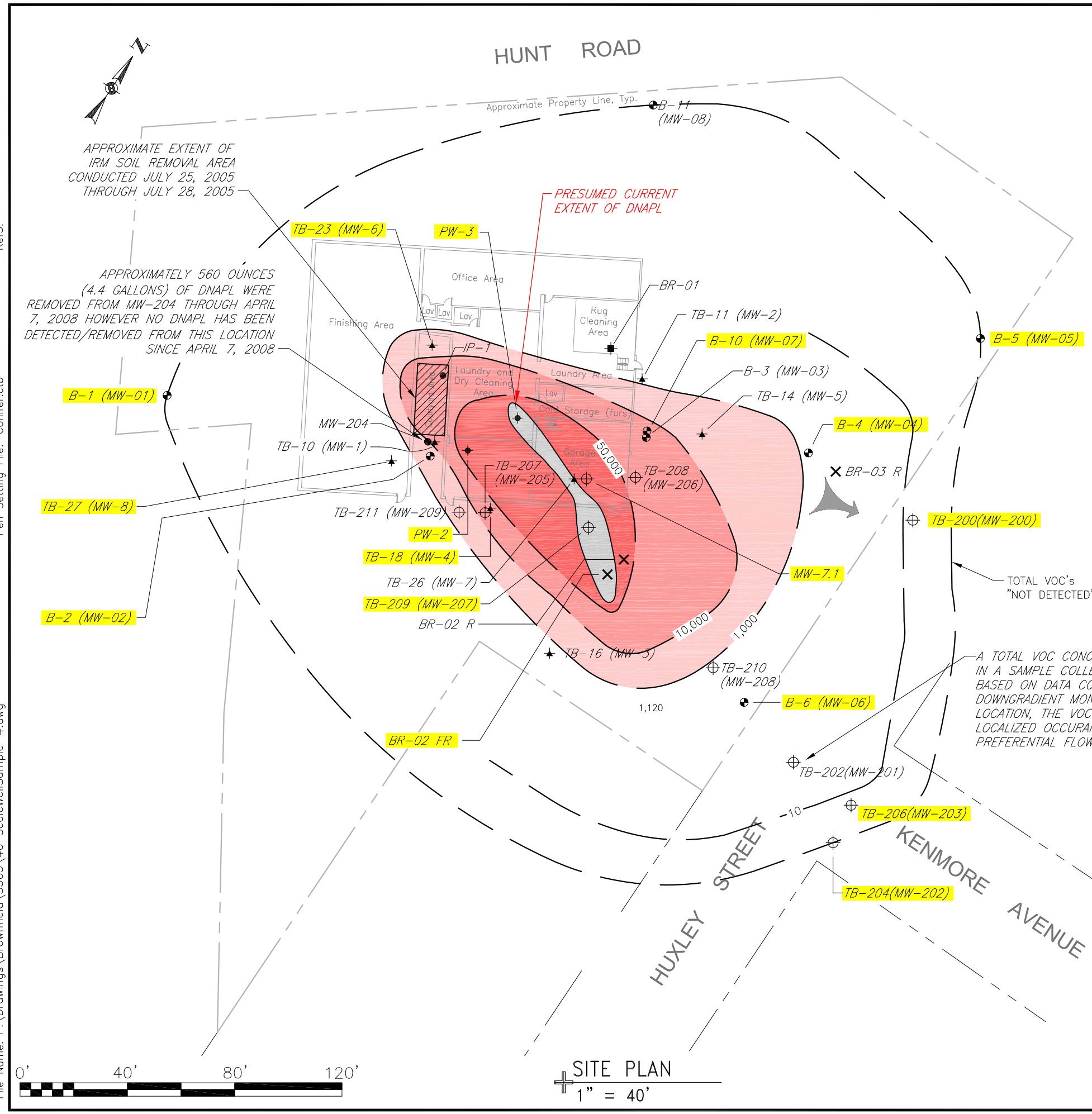
N
W E
S

Figure 1

Site Map

Anderson Cleaners
City of Jamestown, Chautauqua Co.
Site No. C907027

DEPARTMENT OF ENVIRONMENTAL CONSERVATION • NEW YORK STATE •



LEGEND:

B-1	Test Results for the most-recent sample event from this Monitoring Well location used in the generatrion of VOC Concentration Contour Lines
— — —	Estimated Total VOC Concentration (ppb) Contour Line
B-1 (MW-01)	Test Boring/Groundwater Monitoring Well completed between May 2, 2005 and May 6, 2005 and on May 23, 2005
TB-11 (MW-2)	Test Boring with 1-Inch Diameter Monitoring Well installed during initial Phase II Environmental Site Assessment
PW-2	Test Boring/Groundwater Monitoring Well completed on October 13, 2004
TB-200 (MW-200)	Test Boring/Groundwater Monitoring Well completed on April 6, 2006, June 17, 2006 and December 27-28, 2006
MW-204	4" Monitoring well completed on July 5, 2006
BR-01	Bedrock Well
	Apparent Groundwater flow direction based on August 18, 2005 measurements

NOTES:

1. Site Plan produced from drawings by Habiterra Associates, Thorsell, Kennedy, Casker, Arnone & Hedin. P.C. entitled "Addition and Renovations, Anderson Cleaners, Inc", drawings A-1 Floor Plan dated October 22, 1985 and L-1 Grading Plan and from notes of site visits by representatives of Day Environmental, Inc.
2. Well locations MW-01, MW-02, MW-03, MW-04, MW-05, MW-06, MW-07 and MW-08 were obtained in the field by a Trimble GeoXT GPS. Other well and test boring locations were obtained by tape measurement from existing site structure. Locations should be considered accurate to the degree implied by the method used.

PROJECT MANAGER	RLK
DATE	10-2011
DRAWN BY	RJM
DATE DRAWN	11-2-2011
SCALE	As Noted
DATE ISSUED	11-2-2011

DAY ENVIRONMENTAL, INC.
ENVIRONMENTAL CONSULTANTS
ROCHESTER, NEW YORK 14614-1008
NEW YORK, NEW YORK 10016-0710

PROJECT TITLE
5 HUNT ROAD
JAMESTOWN, NEW YORK

REMEDIAL INVESTIGATION - BCP #C907027

DRAWING TITLE
Presumed Extent Of Total VOC Impact: Groundwater

PROJECT NO.
3563S-04

FIGURE 7B

Ref1:
Ref2:
Ref3:

Xerox432AnsiB-2; 11 x 17
Layout Name: Layout1
Pen Setting File: Conifer.ctb

Time Plotted: Wednesday, November 02, 2011 1:30:46 PM
File Name: P:\Drawings\Brownfield\3563\40 ScaleWellSample-4.dwg