PROPOSED RECORD OF DECISION AMENDMENT
FORMER KENWOOD CLEANERS SITE

City of Schenectady / Schenectady County / Registry No. 447032 December 2018

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

SECTION 1: PURPOSE AND SUMMARY OF THE PROPOSED RECORD OF DECISION AMENDMENT

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing an amendment to the Record of Decision (ROD) for the above-referenced site. The disposal of hazardous wastes at this site, as more fully described in the original ROD document and Section 6 of this document, has caused the contamination of various environmental media. The proposed amendment is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This amendment identifies the new information which has led to this proposed amendment and discusses the reasons for the preferred remedy.

The Department has issued this document in accordance with the requirements of 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 Environmental Remediation Programs. This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

On March 26, 2009, the New York State Department of Environmental Conservation (Department) signed a Record of Decision (ROD) which selected a remedy to clean up the Former Kenwood Cleaners Site. The principal remedial technology of the selected remedy, Dual-Phase Extraction (DPE), was pilot tested in 2010. The pilot test results indicated that DPE technology may not be compatible with the local geology. In addition, source material was encountered during the pilot test. The source of contamination was never identified during the Remedial Investigation (RI) and therefore never incorporated into the feasibility study and remedy selection process. Based on this information, the Department conducted a Supplemental Remedial Investigation (RI) in 2017 to delineate the source area and a Supplemental Feasibility Study (FS) in 2018 to evaluate new alternatives based on that data.

A new remedy is being proposed: Excavation, In-Situ Chemical Oxidation (ISCO) and Institutional Controls with Site Management. The remedy will achieve the remedial objectives for the site by excavating and disposing of PCE-contaminated soil that exceed commercial soil cleanup objectives (SCOs), treating groundwater contamination and implementing institutional controls to prevent exposure to any remaining contamination. A detailed description of the proposed remedy and an evaluation of changes from the original remedy is provided herein.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on this proposed ROD Amendment. This is an

opportunity for public participation in the remedy selection process. The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the site. The public is encouraged to review the reports and documents, which are available at the following repositories:

Phyllis Bornt Branch Library & Literacy Center
948 State Street
Schenectady, NY 12307
Telephone: (518) 372-4393

A public comment period has been set for 30 days beginning on December 17, 2018 to provide an opportunity for you to comment on these proposed changes. A public meeting is scheduled for January 8, 2019 at 948 State St, Schenectady, NY 12307 beginning at 6:30pm.

At the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD will be presented. After the presentation, a question and answer period will be held, during which you can submit verbal or written comments on the proposal. We encourage you to review this summary and attend the meeting.

Written comments may also be sent to:

Michael Haggerty, QEP
Project Manager
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
625 Broadway, Albany, NY 12233-7016
P: (518) 402-9767 | michael.haggerty@dec.ny.gov

The Department may modify or reject the proposed changes based on new information or public comments. Therefore, the public is encouraged to review and comment on this proposal. Comments will be summarized and addressed in the responsiveness summary section of the final version of the ROD Amendment. This ROD Amendment is the Department's final selection of the remedy for the site.

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 Former Kenwood Cleaners site is a 0.3-acre property located at 445 Duane Avenue in the City of Schenectady, Schenectady County. The property was also known as the 435 Duane Avenue in the past. The site is approximately 200 feet north of the intersection of Duane Avenue and Watt Street.

Site Features:
A metal-clad building used for the manufacturing of industrial blowers and compressors is currently on-site. The building is a slab-on-grade structure built in 2004 with approximately 15,000 square feet (sq. ft.). of warehouse space and 1,200 sq. ft. of office space. The majority of the site is covered by building and asphalt.

Current Zoning and Land Use:
The site is zoned commercial. Surrounding properties include manufacturing, commercial and residential uses. The William C. Keane Elementary School is located approximately 500 ft. to the southeast.

Past Use of the Site:
The site was the location of various commercial operations including a dry cleaner. Kenwood Cleaners reportedly operated at the site from 1950 to 1964; however, evidence suggests that the dry cleaner may have operated into the 1970s or 1980s. An application for the Voluntary Cleanup Program (VCP) was filed with the Department in 1998. An investigation at that time indicated the presence of a commonly used dry cleaning solvent, tetrachloroethene (PCE) which is consistent with the past use of the site as Kenwood Cleaners. The VCP application was withdrawn once the contamination was discovered. The property was listed as a Class 2 Inactive Hazardous Waste Disposal Site in 2001 and a referral to use NYS Superfund money was issued in 2005 to conduct a remedial investigation/feasibility study.

Site Geology and Hydrogeology:
A surficial fill layer is present across the site. The fill material consists primarily of sand mixed with some ash, concrete and wood, and is approximately 10 feet thick. Underlying the fill material, a discontinuous deposit of native gray silty clay and silt is present, potentially deposited from the former unnamed stream and pond located south of the site. The silty clay and silt stratum is underlain by a confining clay layer that is continuous across the site. Shale bedrock of the Schenectady Formation was encountered at approximately 40-44 feet below ground surface (bgs). Groundwater is approximately 8-10 feet bgs and flows from east to west.

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. The Former Kenwood Cleaners site is currently zoned for commercial use, and is located in an area of mixed manufacturing, commercial and residential use.

A comparison of the results of the investigation against unrestricted use standards, criteria and guidance values (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.

The PRPs declined to implement the RI/FS at the site when requested by the Department. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the state for recovery of all response costs the state has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Supplemental Remedial Investigation

A Supplemental 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
- soil
- 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: Supplemental RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a hazardous waste 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 supplemental RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

tetrachloroethene (PCE)
trichloroethene (TCE)
cis-1,2-dichloroethene (cis-1,2-DCE)
vinyl chloride (VC)

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

- groundwater
- soil
- soil vapor intrusion

6.2: Summary of Environmental Assessment

Based on the investigations conducted at the site, the primary contaminants are chlorinated volatile organic compounds (VOCs) related to the property's history as a dry cleaner. Soil, groundwater, soil vapor and indoor air samples were analyzed to determine the nature and extent of contamination.

Soil:

The source area was identified immediately south of the current building at depths from 10 - 20 ft. bgs. PCE was the only contaminant detected over the commercial SCO for the property. PCE was detected up to 39,000 parts per million or ppm compared to a commercial SCO of 150 ppm. PCE degradation products were detected above unrestricted SCOs but below commercial SCOs. TCE was detected up to 86.0 ppm compared to an unrestricted SCO of 0.47 ppm. Cis-1,2-DCE was detected up 7.1 ppm compared to an unrestricted SCO of 0.25 ppm. VC was detected up to 0.05 ppm compared to an unrestricted SCO of 0.02 ppm. For all of these compounds, the unrestricted SCO is based on the protection of groundwater.

Several metals and pesticides were detected slightly above unrestricted SCOs. No polychlorinated biphenyl (PCB) or semi-volatile organic compounds (SVOC) were detected above unrestricted SCOs on-site. The data does not indicate any site-related impacts to off-site soil.

Groundwater:

Groundwater contamination was encountered both on-site and off-site. PCE and its degradation products were the detected above NYS Ambient Water Quality Standards and Guidance Values. PCE was detected up to 4,400 parts per billion or ppb compared to a standard of 5 ppb. TCE was detected up to 410 ppb compared to a standard of 5 ppb. Cis-1,2 DCE was detected up to 920 ppb compared to a standard of 5 ppb. VC was detected up to 430 ppb compared to a standard of 2 ppb.

One pesticide was detected slightly above groundwater in one sample however it is likely related to sample turbidity. No SVOC, PCB, metals or per- and polyfluoroalkyl substances (PFAS) were detected above groundwater standards or guidance values.

Sub-slab Soil Vapor and Indoor Air:

PCE was detected on-site in sub-slab soil vapor up to 59,000 micrograms per cubic meter ($\mu g/m^3$). PCE was detected in on-site indoor air at concentrations up to 19 $\mu g/m^3$. Petroleum and chlorinated solvent compounds are currently used on-site as part of on-going operations; however, actions would be needed to address soil vapor intrusion in the event that the site use changes. Actions are also needed at one off-site commercial structure to address the potential for soil vapor intrusion. No actions were needed at residential structures surrounding the site.

The findings from the Supplemental RI are discussed in more detail in Exhibit A.

6.2: Interim Remedial Measures

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

6.3: Summary of Human Exposure Pathways

Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the soil vapor (air spaces within the soil) 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. Actions are recommended to address the potential for soil vapor intrusion both on-site and off-site.

SECTION 7: SUMMARY OF ORIGINAL REMEDY AND PROPOSED AMENDMENT

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 supplemental FS 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 proposed remedy is set forth in Section 8.2.

7.1 Original Remedy

The Department selected construction and operation of a dual phase extraction (DPE) system and the installation of a permeable reactive barrier (PRB) wall. The components of the original remedy are as follows:

1. A remedial design program to provide the details necessary for the construction, operation, maintenance, and monitoring of the remedial program.

2. Construction and operation of a dual phase extraction system to treat on-site soil and groundwater by collecting soil vapor and groundwater and conveying the contaminated media to treatment units.

3. Construction of a permeable reactive barrier, if determined to be necessary, along the south and west property boundaries to treat contaminated groundwater migrating off-site.

4. Imposition of an institutional control in the form of an environmental easement that would require (a) limiting the use and development of the property to commercial use, which would have also permitted industrial use; (b) compliance with the approved site management plan; (c) restricting the use of soil excavated from the site for any off-site applications pending sampling and analysis to document conformance with applicable SCGs; and (d) restricting the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by NYSDOH;

5. Development of a site management plan which would include the following institutional and engineering controls: (a) Excavated soil would be tested, properly handled to protect the health and safety of workers and the nearby community, and properly managed in a manner acceptable to the Department; (b) continued evaluation of the potential for vapor intrusion for any buildings developed on the site, including provision for mitigation of any impacts identified; (c) monitoring of groundwater and soil vapor, and potential for vapor intrusion on-site and at the off-site industrial

building; (d) identification of any use restrictions on the site; and (e) provisions for the continued proper operation and maintenance of the components of the remedy.

6. The property owner would provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notified the property owner in writing that this certification was no longer needed. This submittal would: (a) contain certification that the institutional controls and engineering controls put in place were still in place and were either unchanged from the previous certification or were compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing had occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the Site Management Plan unless otherwise approved by the Department.

7. The operation of the components of the remedy would be continued until the remedial objectives had been achieved, or until the Department determined that continued operation is technically impracticable or not feasible.

7.2 Elements of the Remedy Already Performed

A Dual-Phase Extraction (DPE) Pilot Test was conducted in July 2010 as part of the remedial design program for the site.

7.3 New Information

Based on the 2010 pilot test and the 2017 Supplement RI, the Department concluded that DPE is not a feasible remedial technology for the site. This decision was based on the following factors:

- The source of contamination was never identified during the original RI. Grossly-contaminated soil (*i.e.*, the source) was subsequently encountered and delineated during the Supplemental RI conducted as part of the remedial design activities. Identification of the source area significantly changes the conceptual site model and alternatives analysis process.
- The Supplemental RI revealed that the majority of the source material is present in the saturated zone in a native silty clay/ clayey silt layer. This site geology is not conducive to the soil vapor extraction component of DPE due its low permeability and inability to transmit vapor for collection.
- Given the depth of the source material, significant long-term operation, maintenance and monitoring (OM&M) would be required to sufficiently depress the water table as part of the DPE process.

7.4 Proposed Changes to the Original Remedy

A summary of the changes to the original ROD as proposed in this document are shown in the table below:

SUMMARY OF PROPOSED REMEDY CHANGES

Media:	March 2009 ROD	Proposed Amended ROD
Groundwater	(1) Construction and operation of a dual phase extraction system to treat on-site soil and groundwater; (2) Construction of a permeable reactive barrier, if determined to be necessary, along the south and west property boundaries to treat contaminated groundwater migrating off-site; (3) Long term monitoring; (4) Environmental Easement to restrict groundwater use	(1) Post-excavation ISCO via application of sodium permanganate (or other approved oxidant); (2) Monitoring of groundwater to assess effectiveness of the ISCO remedy. (3) Environmental Easement to restrict groundwater use
Soil	(1) Construction and operation of a dual phase extraction system to treat on-site soil and groundwater; (2) Environmental easement to limit use of property to commercial or industrial use unless otherwise approved by the Department; (3) Use of a Site Management Plan (SMP) to prevent exposure to contaminated soil.	(1) Excavation and off-site disposal of PCE-contaminated soil exceeding commercial SCOs; (2) Environmental easement to limit use of property to commercial or industrial use unless otherwise approved by the Department; (3) Use of a Site Management Plan (SMP) to prevent exposure to contaminated soil.
Soil Vapor/Indoor Air	Use of a Site Management Plan (SMP) to evaluate the potential for vapor intrusion for on-site and off-site, including provision for mitigation of any impacts identified.	Use of a Site Management Plan (SMP) to evaluate the potential for vapor intrusion for on-site and off-site, including provision for mitigation of any impacts identified. (No change)

SECTION 8: EVALUATION OF PROPOSED CHANGES

8.1 Remedial Goals

Goals for the cleanup of the site were established in the original ROD. The goals selected for this

site are:

The remediation goals for this site are to eliminate or reduce to the extent practicable:

- exposures of persons at or around the site to the volatile organic compounds in subsurface soil and groundwater;
- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards; and
- the release of contaminants from subsurface soil and groundwater into indoor air through soil vapor intrusion.

Further, the remediation goals for the site include attaining to the extent practicable:

- ambient groundwater quality standards;
- sub-slab soil vapor values below applicable mitigation threshold matrix values as prescribed in the New York State Guidance for Evaluating Soil Vapor Intrusion in the State of New York; and
- soil cleanup objectives for Unrestricted Use as stated in Part 375.

8.2 Evaluation Criteria and Basis for Selection

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the 2018 Supplemental Feasibility Study (FS).

Based on changes to the conceptual site model, the Department evaluated three new alternatives during the 2018 FS. The alternatives are listed below and a detailed description of each alternative is provided in Exhibit B.

Alternative 1: No Action, Institutional Controls with Site Management
Alternative 2: Excavation and Institutional Controls with Site Management
Alternative 3: Excavation, In-Situ Chemical Oxidation (ISCO) and Institutional Controls with Site Management

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.

All Alternatives (1 – 3) will protect human health from contaminated soil and groundwater through the implementation of institutional controls; however, institutional controls alone may not be sufficient to protect public health from potential soil vapor exposure in the future. If a future soil vapor intrusion (SVI) evaluation requires mitigation after a change of use, only Alternatives 2 and

3 include a contingency for engineering controls if necessary. In addition, Alternative 1 does not protect the environment and thus will not be evaluated further.

Alternative 2 will satisfy this criterion by addressing the source of the groundwater and soil vapor contamination which pose a threat to public health and the environment. Alternative 3, the proposed remedy, would similarly satisfy this criterion by addressing the source of contamination, and in addition groundwater treatment will accelerate restoration of the aquifer to pre-release conditions.

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 and 3 will comply with SCGs for soil to the extent practicable. Both address the source of contamination *via* excavation and will comply with the restricted use soil cleanup objectives (*i.e.*, commercial). The proposed excavation under both alternatives will remove approximately 95% of the total contaminant mass. After the source is addressed, groundwater is expected to reach SCGs over time through natural processes. Alternative 3 also includes groundwater treatment to accelerate restoration of the aquifer to comply with ambient water quality standards. Both alternatives will achieve SCGs for SVI through site management including mitigation in the future if required.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the 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 best accomplished by the excavation and removal of the contaminated soil as proposed in both Alternatives 2 and 3. Both alternatives will remove approximately 95% of the total contaminant mass. Alternative 3 includes groundwater treatment to accelerate restoration of the aquifer to pre-release conditions. Alternative 3 is also expected to reduce the potential for soil vapor intrusion on-site and off-site in a shorter timeframe. Both alternatives will require an environmental easement to restrict the use of the property, prohibit groundwater use and enforce a site management plan with long-term monitoring.

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.

The excavation proposed in both Alternatives 2 and 3 will reduce toxicity and mobility of contaminants on-site by transferring the material to an approved off-site facility, and the volume of contaminated material would be reduced, depending on treatment or disposal options at the

facility. Construction dewatering is required for both Alternatives 2 and 3 to achieve the target depth; all water generated will be treated and discharged/disposed, thereby reducing the volume of contamination. ISCO proposed in Alternative 3 will destroy residual contaminants in groundwater further reducing the toxicity, mobility and volume of contamination.

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 2 and 3 have comparable short-term impacts however Alternative 3 will achieve the remedial goals in a shorter timeframe. Both alternatives involve intrusive activities to the site itself which may temporarily impact the surrounding community during implementation of the remedy. The potential impacts to the community will be minimized through coordination with the municipality and the surrounding land owners during the design phase. A community air monitoring plan (CAMP) and health and safety plan (HASP) would be necessary to safely implement remedial activities for both alternatives.

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.

Alternatives 2 and 3 both involve a technical design element for the support of excavation (*i.e.*, sheet piling, underpinning or a comparable technology) and dewatering components of the remedy, but these are conventional technologies commonly implemented during remediation. The administrative issues identified during the feasibility study process to implement the proposed excavation include obtaining the necessary permits from the City of Schenectady (Building and Water Departments) as well as communication with the property owner/ tenants. The dewatering system, equipment and staging areas will be required the temporary use of areas on the property so cooperation with the owner/ tenant is critical. The ISCO proposed in Alternative 3 would also require remedial design, but the technology is regularly employed to remediate groundwater at VOC contaminated sites. No significant administrative issues identified the feasibility study process to implement ISCO; however, communication with the property owner/ tenant is necessary. Both Alternatives 2 and 3 are readily implementable.

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.

The costs for Alternatives 2 and 3 are comparable. The addition of ISCO slightly increases the capital cost associated with Alternative 3 however the number of years long-term monitoring is necessary will be reduced. The destruction of residual contaminants via ISCO will accelerate the remediation of groundwater so Alternative 3 may ultimately cost less than Alternative 2 over time

as annual costs are eliminated.

8. Land Use. When 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 soil remedy.

Both Alternatives 2 and 3 are compatible with the foreseeable land use (*i.e.*, commercial). Residual contamination will require site management and an environmental easement will restrict the use of the property, prohibit groundwater use and enforce a site management plan.

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.

9. Community Acceptance. Concerns of the community regarding the proposed changes 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 final remedy differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SECTION 9: PROPOSED AMENDED REMEDY

The Department is proposing to amend the Record of Decision (ROD) for the Former Kenwood Cleaners Site. The changes to the selected remedy are summarized in Section 7.4 above.

The estimated present worth cost to carry out the amended remedy is $1,106,000. The estimated present worth to complete the original remedy was $1,732,000 in March 2009. The cost to construct the amended remedy is estimated to be $745,000, and the estimated average annual cost for 30 years is $5,000.

The elements of the proposed amended remedy listed below are identified as *unchanged, modified or new* when compared to the March 2009 remedy:

Excavation (*new*):

Excavation and off-site disposal of contaminant source area, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- non-aqueous phase liquids; and
- soil exceeding the commercial use Soil Cleanup Objective (SCO) for tetrachloroethene, as defined by 6 NYCRR Part 375-6.8

Approximately 500 cubic yards will be excavated for disposal. The proposed excavation will remove approximately 95% of the total contaminant mass however construction dewatering and

support of excavation will be necessary to achieve the required depth of 20 feet and to protect the current building.

In-situ Chemical Oxidation (*new*):

In-situ chemical oxidation (ISCO) will be implemented to treat residual contaminants in groundwater. Potassium permanganate or another suitable oxidant will be applied to the area of excavation prior to backfilling to destroy the contaminants**.** ISCO will be applied to the open excavation area: an approximate 500 square foot area located immediately south of the current building. The delivery method and oxidant will be selected during the remedial design.

Backfill (*new*):

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish the designed grades at the site.

Institutional Controls (*unchanged*):

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a commercial cleanup at a minimum and will include an environmental easement and site management plan as described below.

Institutional Controls-

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

- require 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);
- allow the use and development of the controlled property for commercial use OR industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan

Site Management Plan-

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

1. 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 above**.**

    This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site and off-site buildings impacted by 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.

2. 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 on the site, as may be required by the Institutional and Engineering Control Plan discussed above.
3. an Operation and Maintenance (O&M) Plan, if required, to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
    - procedures for operating and maintaining the remedy;
    - 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.

NEXT STEPS

As described above, there will be a public meeting and comment period on the proposed changes to the selected remedy. At the close of the comment period, the Department will evaluate the comments received and prepare a responsiveness summary which will be made available to the public. A notice describing the Department's final decision will be sent to all persons on the site mailing list.

If you have questions or need additional information you may contact any of the following:

Project Related Questions
Michael Haggerty, QEP
Project Manager
NYSDEC
625 Broadway, 11th Floor
Albany, NY 12233
Phone: (518) 402-9767
Email: michael.haggerty@dec.ny.gov

Site-Related Health Questions
Anthony Perretta
New York State Department of Health
Bureau of Environmental Exposure
Investigation Empire State Plaza,
Corning Tower, Room 1787
Albany, NY 12237
Phone: (518) 402-7860
Email: BEEI@health.ny.gov

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 for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into four categories: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides/ polychlorinated biphenyls (PCBs) and inorganics (metals and cyanide). 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 4 and Section 6.1.1 are also presented.

Waste/Source Areas

As described in the Supplemental RI report, waste/source materials were identified at the site and are impacting groundwater, soil, and soil vapor.

Wastes are defined in 6 NYCRR Part 375-1.2 (aw) and include solid, industrial and/or hazardous wastes. Source areas are defined in 6 NYCRR Part 375-1.2 (au). Source areas are areas of concern at a site were substantial quantities of contaminants are found which can migrate and release significant levels of contaminants to another environmental medium. The waste disposal area was identified during the 2017 Supplemental RI as a limited area of grossly-contaminated media, as defined in 6 NYCRR Part 375-1.2 (u), located within the footprint of the former dry cleaner operation.

Soil

The Supplemental RI was conducted to define the source area and to collect general surface and subsurface soil outside the source as a baseline. Soil samples were collected at various depths during the Supplemental RI and compared 6 NYCRR Part 375 Soil Cleanup Objectives (SCOs) for unrestricted use and commercial use.

Nineteen soil borings were installed to a maximum depth of 28 feet to define the source area three-dimensionally. Source area samples results indicate exceedance of unrestricted, commercial and protection of groundwater SCOs for chlorinated VOCs. PCE, the primary contaminant of concern, was detected above commercial and protection of groundwater SCOs to a depth of 20 feet. The data confirmed most the source material is present in the saturated zone. Depth to groundwater is approximately 8 – 10 feet bgs and the highest PCE concentrations were encountered at depths ranging from approximately 10 to 20 feet bgs. A native confining clay layer has prevented further vertical migration. Refer to Figures 3 and 4.

Additional samples were collected outside of the source area and analyzed for VOCs, SVOCs, PCBs, pesticides and metals. Five surface soil samples were collected from the 0-1foot depth interval and eight subsurface soil samples were collected between at various depths between 1-15 foot below ground surface. The results indicate minor exceedances of unrestricted SCGs for several pesticides and metals. The pesticide and metals constituents are consistent with urban backfill material and therefore, are not considered site-specific contaminants of concern.

Similarly, acetone, was detected slightly above unrestricted SCOs but the detections are likely related to lab contamination and is not considered a contaminant of concern. Refer to Figure 5.

Based on the findings of the Supplemental RI, the past disposal of hazardous waste has resulted in the contamination of soil. The primary soil contaminant, PCE, is associated with the property's former operation as a dry cleaner. PCE and its related degradation products will be addressed by the remedy selection process.

Table 1 - Soil

Detected Constituents	Concentration Range Detected (ppm[a])	Unrestricted Use SCG[b] (ppm)	Frequency Exceeding Unrestricted Use SCG	Protection of Groundwater SCG[c] (ppm)	Frequency Exceeding Protection of Groundwater SCG	Commercial Use SCG[d] (ppm)	Frequency Exceeding Commercial Use SCG
Metals							
Chromium, Total	5.00-33.7	30	1/14	N/A	N/A	400	0/14
Lead	2.70-82.3	63	2/14	N/A	N/A	1000	0/14
Mercury	0-0.600	0.18	2/14	N/A	N/A	2.8	0/14
Pesticides/PCBs							
P,P'-DDD	0-0.00470	0.0033	1/14	N/A	N/A	92	0/14
P,P'-DDE	0-0.120	0.0033	2/14	N/A	N/A	62	0/14
P,P'-DDT	0-0.0400	0.0033	2/14	N/A	N/A	47	0/14
VOC							
Acetone	0-0.720	0.05	8/59	N/A	N/A	500	0/85
Cis-1,2-Dichloroethylene	0-7.10	0.25	10/85	0.25	10/85	500	0/85
Tetrachloroethylene	0-39,000	1.3	27/85	1.3	27/85	150	7/85
Trichloroethylene	0-86.0	0.47	14/85	0.47	14/85	200	0/85
Vinyl Chloride	0-0.0510	0.02	1/85	0.02	1/85	13	0/85

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

Groundwater

Groundwater samples were collected at twenty-eight existing groundwater monitoring wells to assess current overburden groundwater conditions on-site and off-site as part of the Supplemental RI. The results indicate that contamination in groundwater at the site exceeds the SCGs for chlorinated VOCs. Refer to Figures 6 – 8. Figure 6 for groundwater flow direction, Figure 7 for the 2017 sampling results (VOC only) and Figure 8 for a 2018 limited sampling event for VOCs, SVOCs, PCBs, pesticides, metals plus Per- and Polyfluoroalkyl Substances (PFAS).

Based on the findings of the Supplemental RI, the past disposal of hazardous waste has resulted in the contamination of groundwater. The primary groundwater contaminant of concern, PCE, and its related degradation compounds, were detected in groundwater. These contaminants are associated with the site's former operation as a dry cleaner and will be addressed by the remedy selection process. The pesticide, P-P'-DDD, was detected slightly above groundwater SCGs in one sample however, the exceedance is likely an artifact of turbidity and is not considered site-specific contaminants of concern.

Table 2 - Groundwater

Detected Constituents	Concentration Range Detected (ppb[a])	SCG[b] (ppb)	Frequency Exceeding SCG
Pesticides/PCBs NYS CLASS GA			
P,P'-DDD	0-0.4	0.3	1/5
VOC NYS CLASS GA			
Cis-1,2-Dichloroethylene	0-920	5	29/73
Tetrachloroethylene (PCE)	0-4,600	5	29/73
Trans-1,2-Dichloroethene	0-18.0	5	2/73
Trichloroethylene (TCE)	0-410	5	16/73
Vinyl Chloride	0-430	2	18/73

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.

Soil Vapor

The potential for soil vapor intrusion resulting from the presence of site-related soil or groundwater contamination was evaluated during Supplemental RI in 2017. The current on-site building and one off-site commercial structure was sampled and evaluated. Sub-slab soil vapor and ambient indoor air samples were collected in order to determine whether actions are needed to address exposures to site-related contaminants.

The results from the on-site building indicate PCE is present in sub-slab vapor and indoor air. Based on the PCE concentrations detected, mitigation is the recommended action according to the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, however, the building's current occupant manufactures industrial blowers and compressors where solvents and paints are commonly used as part of their operation. Based

on the current use, the NYSDEC and NYSDOH have determined that mitigation is not required at this time. The potential for exposure via soil vapor intrusion will be reevaluated if there is a change of use at the property or solvents are no longer utilized. Refer to Figure 9.

The results from the off-site building indicate the potential for soil vapor intrusion. Additional monitoring and/or mitigation will be implemented as part of site management as required.

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, Institutional Controls with Site Management

The Site Management Alternative requires only institutional controls for the site. This alternative includes institutional controls, in the form of an environmental easement and a site management plan, necessary to protect public health and the environment from any contamination identified at the site.

Present Worth: *$344,000*
Capital Cost: *$58,000*
Annual Costs: *$5,000*

Alternative 2: Excavation and Institutional Controls with Site Management

This alternative includes excavation of PCE-contaminated soil exceeding commercial SCOs, as defined by 6 NYCRR Part 375-6.8, and transportation off-site for disposal. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be transported to the site to replace the excavated soil and restore the property. The proposed excavation to achieve commercial SCOs will remove approximately 95% of the total contaminant mass however construction dewatering and support of excavation will be necessary to achieve the required depth of 20 feet and to protect the existing on-site structure. Excavation of the remaining contaminant mass would require expanding the excavation significantly and the removal of large volumes of uncontaminated soil to access the remaining source material. The location of the current on-site building also prevents excavation to the northeast. Based on this information, the Department determined excavation to meet the protection of groundwater SCOs is not feasible. After source removal, contamination in groundwater is expected to reduce gradually over time by natural processes.

This alternative includes institutional controls, in the form of an environmental easement, necessary to protect public health and the environment. The environmental easement will restrict the use of the property, prohibit groundwater use and enforce a site management plan. This alternative also includes engineering controls if required in the future. For example, a change of use on-site will prompt a SVI evaluation; depending on the result, vapor mitigation may be required. Remedial design would require approximately 6 – 12 months and implementation of the remedy would require an additional 6 – 12 months.

Present Worth: *$1,086,000*
Capital Cost: *$725,000*
Annual Costs: *$5,000*

Alternative 3: Excavation, In-Situ Chemical Oxidation and Institutional Controls with Site Management

This alternative includes excavation of PCE-contaminated soil exceeding commercial SCOs, as defined by 6 NYCRR Part 375-6.8, and transportation off-site for disposal. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be transported to the site to replace the excavated soil and restore the property. The proposed excavation to achieve commercial SCOs will remove approximately 95% of the total contaminant mass however construction dewatering and support of excavation will be necessary to achieve the required depth of 20 feet and to protect the existing on-site structure. Excavation of the remaining contaminant mass would require expanding the excavation significantly and the removal of large volumes of uncontaminated soil to access the remaining source material. The location of the current on-site building also prevents excavation to the northeast. Based on this information, the Department determined excavation to meet the protection of groundwater SCOs is not feasible. In-situ chemical oxidation (ISCO) will be applied and/or mixed into the open excavation prior to backfilling to treat residual contaminants. The destruction of residual contaminants via ISCO will accelerate the remediation of groundwater and achieve SCGs in a shorter time frame.

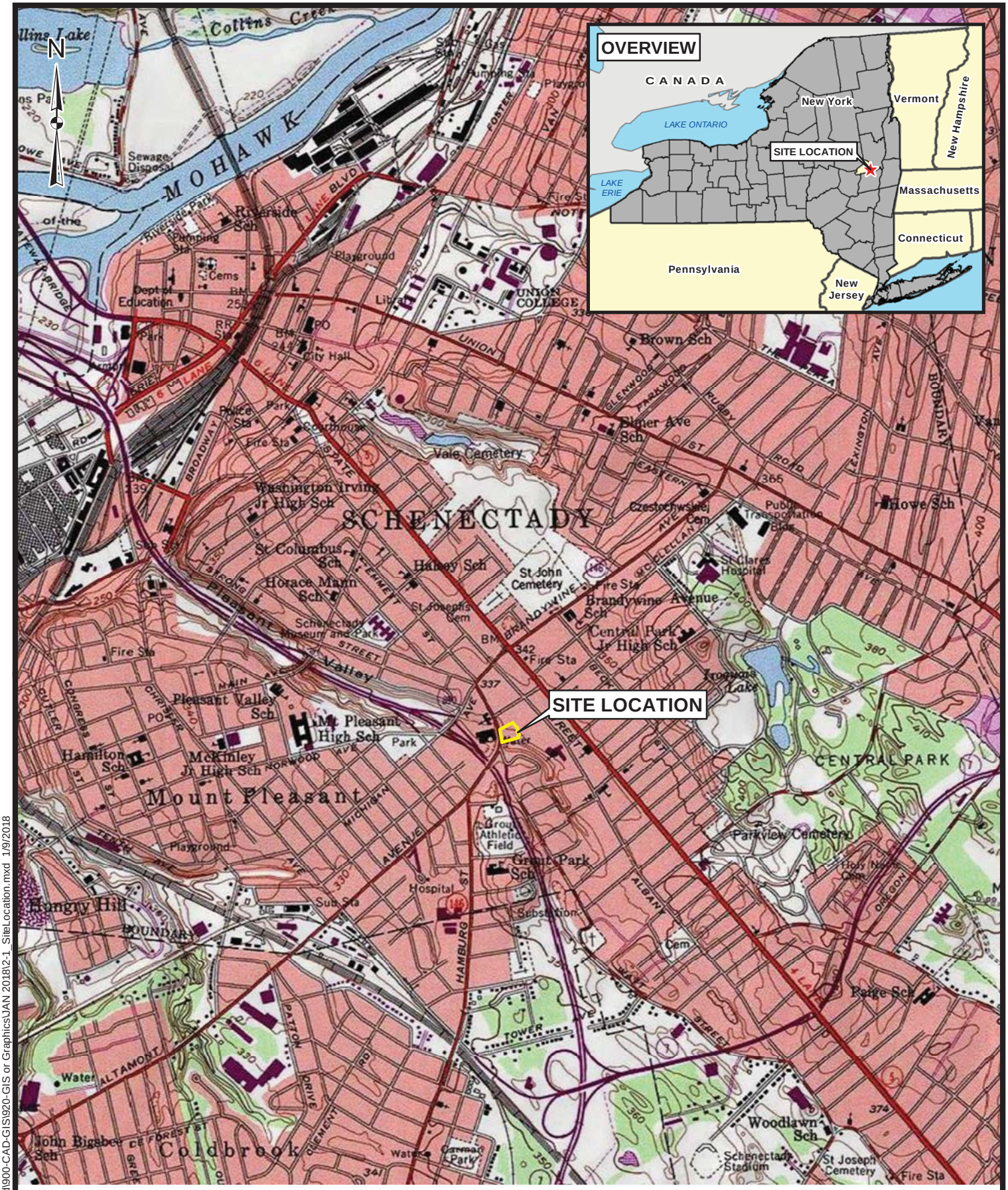
This alternative includes institutional controls, in the form of an environmental easement, necessary to protect public health and the environment. The environmental easement will restrict the use of the property, prohibit groundwater use and enforce a site management plan. This alternative also includes engineering controls if required in the future. For example, a change of use on-site will prompt a SVI evaluation; depending on the result, vapor mitigation may be required. Remedial design would require approximately 6 – 12 months and implementation of the remedy would require an additional 6 – 12 months. Refer to Figure 10.

Present Worth: *$1,106,000*
Capital Cost: *$745,000*
Annual Costs: *$5,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action, Institutional Controls with Site Management	$58,000	$5,000	$344,000
Excavation and Institutional Controls with Site Management	$725,000	$5,000	$1,086,000
Excavation, In-Situ Chemical Oxidation and Institutional Controls with Site Management	$745,000	$5,000	$1,106,000



SOURCE:
USGS 7.5 Minute Topographic Quadrangle
Schenectady - 1995

2,000 0 2,000 Feet

URS

FORMER KENWOOD CLEANERS SITE
SITE LOCATION

FIGURE 1

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N

DUANE AVENUE

KELTON AVENUE

ODELL STREET

STATE STREET

ALBANY STREET

LANDSCAPED AREA

EXISTING METAL CLAD BUILDING

Site Boundary

LOADING DOCK

FORMER DRY CLEANER BUILDING FOOTPRINT

ASPHALT PAVEMENT

CURB

CURB

BUILDING

INTERSTATE

890

RAMP

RAMP

PARKING LOT

CURB

PARKING LOT

PARKING LOT

CURB

LAKE BOULEVARD

ALTAMONT AVENUE

WILLIAM C. KEANE ELEMENTARY SCHOOL

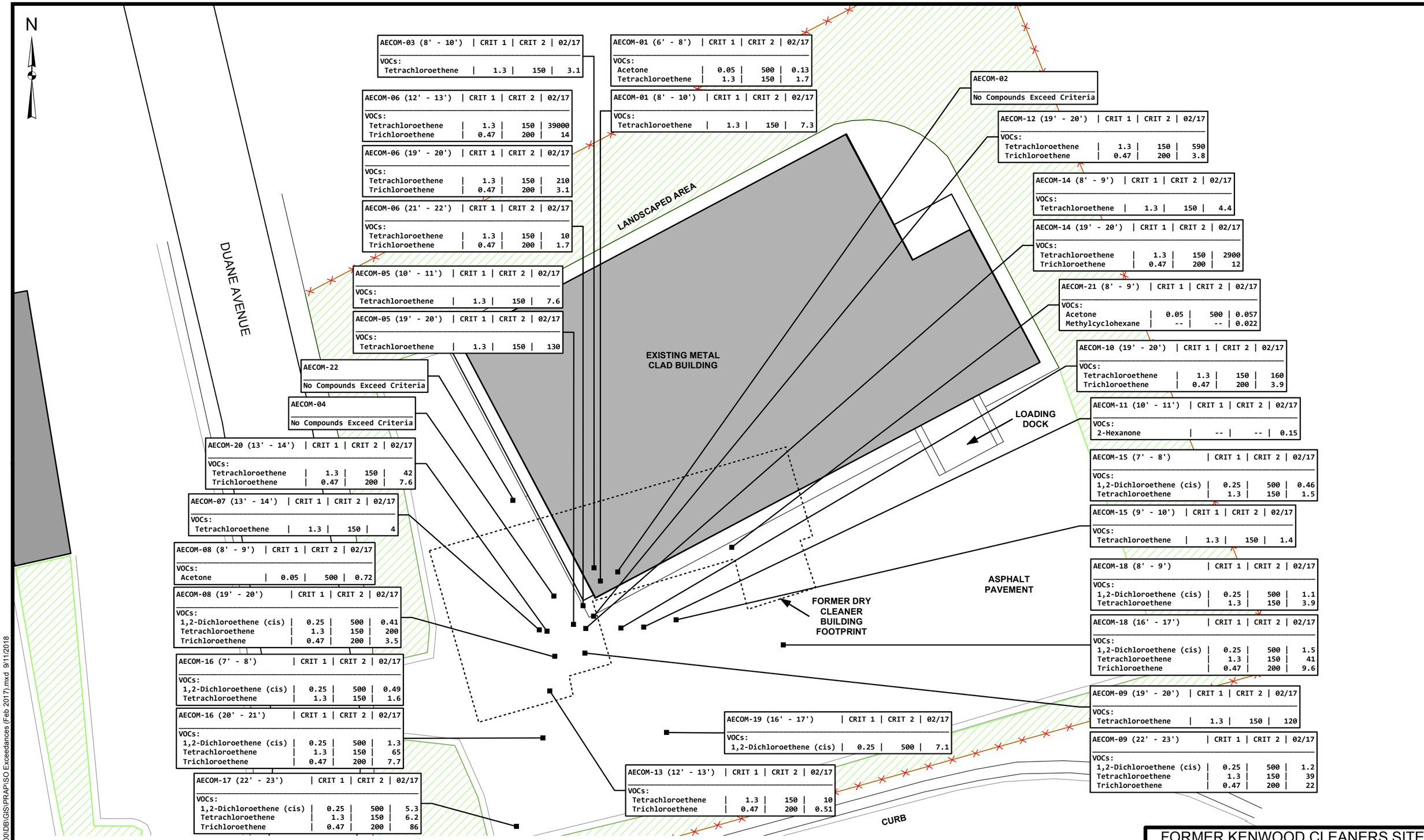
100 0 100 Feet

FORMER KENWOOD CLEANERS
SITE PLAN

URS

FIGURE 2

\\URSBuffalo\Buffalo\Projects\60523012__Kenwood\900-CAD-GIS\920-GIS or Graphics\JAN 2018\2-2_SitePlan.mxd 1/21/2018



Legend

■ Soil Boring

NOTE:
Samples were analyzed for VOCs only.

CRITERIA:
CRIT 1: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Unrestricted Use.
CRIT 2: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Effective 12/14/06. Protection of Public Health, Commercial.

FORMER KENWOOD CLEANERS SITE
COMPOUNDS DETECTED IN SOIL
FEBRUARY 2017

URS

FIGURE 3

J:\Projects\11174747.00000\DB\GIS\PRAP\SO Exceedances (Feb 2017).mxd 9/11/2018

N

AECOM-03, 3.1 (8'-10')
AECOM-02, 0.19 (2'-4')
AECOM-01, 7.3 (8'-10')
AECOM-21, 0.059 (8'-9')
AECOM-04, 0.079 (11'-12')
GP-07, 0.044 (7'-8')
AECOM-06, 39000 (12'-13')
MP-06D, 560 (14.8')
MP-04D, ND (9.5')
AECOM-12, 590 (19'-20')
AECOM-15, 1.5 (7'-8')
AECOM-05, 130 (19'-20')
AECOM-10, 160 (19'-20')
AECOM-07, 4 (13'-14')
AECOM-14, 2900 (19'-20')
AECOM-11, 0.15 (14'-15')
AECOM-20, 42 (13'-14')
GP-04, 0.14 (7'-8')
AECOM-18, 41 (16'-17')
AECOM-08, 200 (19'-20')
AECOM-09, 120 (19'-20')
GP-09, 0.26 (6'-7')
AECOM-13, 10 (12'-13')
AECOM-19, 0.88 (16'-17')
AECOM-16, 65 (20'-21')
URS-10, 0.31 (18'-20')
CURB

Legend

- Soil Sample

PCE Concentration Contour

- 10 mg/kg
- 100 mg/kg
- 1000 mg/kg
- 10000 mg/kg
- 1.6 mg/kg (Unrestricted Threshold)
- 150 mg/kg (Commercial Threshold)

Maximum PCE Concentration (mg/kg)

AECOM-07, 4 (13'-14')

Soil Sample Location ID | Soil Sample Depth Interval

NOTES:
1. Contours based on maximum PCE concentration

10 0 10 Feet

FORMER KENWOOD CLEANERS SITE
PCE IN SOIL ISOCONCENTRATION CONTOURS

URS

FIGURE 4

\\URSBuffalo\Buffalo\Projects\60523012__Kenwood\900-CAD-GIS\920-GIS or Graphics\JAN 2018\2-8_PCE_Concentration.mxd 1/9/2018

N

ODELL STREET

DUANE AVENUE

SS-05
No Compounds Exceed Criteria

SS-04
No Compounds Exceed Criteria

SB-04
No Compounds Exceed Criteria

SS-01 (0' - 1') | CRIT 1 | CRIT 2 | 06/18

Metals:			
Chromium	30	1500	33.7

SB-01
No Compounds Exceed Criteria

SS-02
No Compounds Exceed Criteria

SB-02
No Compounds Exceed Criteria

SB-03 (1' - 2') | CRIT 1 | CRIT 2 | 06/18

Pesticides:			
4,4'-DDE	0.0033	62	0.015
4,4'-DDT	0.0033	47	0.023
Metals:			
Lead	63	1000	82.3
Mercury	0.18	2.8	0.6

SS-03 (0' - 1') | CRIT 1 | CRIT 2 | 06/18

Pesticides:			
4,4'-DDD	0.0033	92	0.0047
4,4'-DDE	0.0033	62	0.12
4,4'-DDT	0.0033	47	0.04
Metals:			
Lead	63	1000	74.5
Mercury	0.18	2.8	0.2

Legend

■ Soil Sample

Notes: Units are in mg/kg; Samples were analyzed for VOCs, SVOCs, PCBs, Pesticides, and Metals.
Criteria: CRIT 1: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Unrestricted Use
CRIT 2: 6 NYCRR Part 375.6, Remedial Program Soil Cleanup Objectives, Protection of Public Health.

Source: ESRI World Imagery

50 0 50 Feet

FORMER KENWOOD CLEANERS SITE
SUPPLEMENTAL INVESTIGATION
SURFACE SOIL AND SOIL BORING
ANALYTICAL EXCEEDANCES
(JUNE 2018)

URS

FIGURE 5

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N

DUANE AVENUE

WATT STREET

URS-05, 317.54

GP-01, 321.62

GP-03, 320.01

GP-07, 317.98

GP-09, 318.14

GP-02, 319.24

GP-08, 317.85

URS-04, 311.68

URS-06, 306.13

URS-07, 307.25

316

314

312

310

308

Legend

- Monitoring Well
- Groundwater Flow Direction
- 310 Groundwater Elevation Contour (ft amsl)

50 0 50 Feet

FORMER KENWOOD CLEANERS SITE
GROUNDWATER ELEVATION CONTOURS
FEBRUARY 2017

URS

FIGURE 6

\\URSBuffalo\Buffalo\Projects\605523012_Kenwood\900-CAD-GIS\920-GIS or Graphics\JAN 2018\2-7_GW ELEV.mxd 1/21/2018

N

DUANE AVENUE

LANDSCAPED AREA

EXISTING METAL CLAD BUILDING

BUILDING

LOADING DOCK

FORMER DRY CLEANER BUILDING FOOTPRINT

ASPHALT PAVEMENT

CURB

PARKING LOT

PARKING LOT

PARKING LOT

WATT STREET

CURB

CURB

URS-05
No Compounds Exceed Criteria

EW-01 | CRIT | 03/17

VOCs:		
Tetrachloroethene	5	13

MP-08D | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	18
Tetrachloroethene	5	290
Trichloroethene	5	17

GP-07 | CRIT | 03/17

VOCs:		
Tetrachloroethene	5	63

URS-04 | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	660
1,2-Dichloroethene (trans)	5	18
Tetrachloroethene	5	790
Trichloroethene	5	260
Vinyl chloride	2	4.9

URS-06 | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	140
1,2-Dichloroethene (trans)	5	8.5
Tetrachloroethene	5	6.2
Vinyl chloride	2	13

URS-11
No Compounds Exceed Criteria

URS-07
No Compounds Exceed Criteria

GP-01
No Compounds Exceed Criteria

MP-12D
No Compounds Exceed Criteria

MP-11D
No Compounds Exceed Criteria

MP-13D
No Compounds Exceed Criteria

GP-03
No Compounds Exceed Criteria

EW-02
No Compounds Exceed Criteria

MP-06D | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	120
Tetrachloroethene	5	1700
Trichloroethene	5	190
Vinyl chloride	2	3.7

GP-02 | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	7.1
Tetrachloroethene	5	31

GP-09 | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	25
Tetrachloroethene	5	6.8
Trichloroethene	5	7.7
Vinyl chloride	2	3

GP-08 | CRIT | 03/17

VOCs:		
Vinyl chloride	2	11

URS-10 | CRIT | 03/17

VOCs:		
1,2-Dichloroethene (cis)	5	15
Vinyl chloride	2	140

Legend

- Monitoring Well
- Extraction Well

NOTE:
Samples were analyzed for VOCs only.

CRITERIA:
CRIT: NYSDEC TOGS (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. April 2000, Class GA.

50 0 50 Feet

FORMER KENWOOD CLEANERS SITE
COMPOUNDS DETECTED IN GROUNDWATER
MARCH 2017

URS

FIGURE 7

J:\Projects\11174747.00000\DB\GIS\PRAP\GW Exceedances (Mar 2017).mxd 9/11/2018

Legend

- Measuring Point

Notes: Units are in µg/L; Samples were analyzed for VOCs, SVOCs, PCBs, Pesticides, Metals, and PFASs.
Criteria: NYSDEC TOGS 1.1.1 Ambient Water Quality Standards, Class GA
Source: ESRI World Imagery

50 0 50 Feet

FORMER KENWOOD CLEANERS SITE
SUPPLEMENTAL INVESTIGATION
GROUNDWATER ANALYTICAL EXCEEDANCES
(JUNE 2018)

URS

FIGURE 8

J:\Projects\11174747.00000\DB\GIS\PRAP\GW Exceedances (Jun 2018).mxd 9/11/2018

N

DUANE AVENUE

LANDSCAPED AREA

H-001-OA	03/17
VOCs:	
Carbon tetrachloride	0.42

H-001-C (Sub-slab)	03/17
VOCs:	
Carbon tetrachloride	0.39
Methylene chloride	1.5
Tetrachloroethene	89
Trichloroethene	0.27

EXISTING METAL CLAD BUILDING

H-001-D (Sub-slab)	03/17
VOCs:	
Tetrachloroethene	59000
Trichloroethene	190

H-001-C	03/17
VOCs:	
Carbon tetrachloride	0.43
Methylene chloride	2.1
Tetrachloroethene	16
Trichloroethene	0.21

LOADING DOCK

ASPHALT PAVEMENT

H-001-D	03/17
VOCs:	
Carbon tetrachloride	0.4
Methylene chloride	2.4
Tetrachloroethene	19
Trichloroethene	0.21

FORMER DRY CLEANER BUILDING FOOTPRINT

CURB

Legend

- Sub-slab Sample
- Indoor Air Sample
- Outdoor Air Sample

30 0 30 Feet

FORMER KENWOOD CLEANERS SITE CHLORINATED COMPOUNDS DETECTED IN SUB-SLAB/INDOOR AIR/OUTDOOR AIR MARCH 2017

URS

FIGURE 9

\\URSBuffaloBuffalo\Projects\60523012_Kenwood\900-CAD-GIS\920-GIS or Graphics\JAN 2018\2-12_Chlorinated_Compounds.mxd 1/21/2018

N

CURB

Legend

Area of Excavation and ISCO

Area cannot be excavated due to proximity to foundation

PCE Concentration Contour

- 10 mg/kg
- 100 mg/kg
- 1000 mg/kg
- 10000 mg/kg
- 1.6 mg/kg (Unrestricted Threshold)
- 150 mg/kg (Commercial Threshold)

NOTES:
1. Contours based on maximum PCE concentration

10 0 10 Feet

CONCEPTUAL LAYOUT FOR ALTERNATIVE 3
EXCAVATION, ISCO AND SMP

URS

FIGURE 10

\\URSBuffalo\Buffalo\Projects\60523012__Kenwood\900-CAD-GIS\920-GIS or Graphics\JAN 201815-2_ExcavationArea.mxd 1/21/2018