PROPOSED RECORD OF DECISION AMENDMENT HAZ-O-WASTE (NORTHEAST ENVIRONMENTAL SERVICES) SITE

Town of Lenox / Madison County / Registry No. 727003 January 2021

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. This 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 28, 2012, the Department issued a ROD which selected a remedy to clean up the Haz-O-Waste (Northeast Environmental Services) Site. The original 2012 ROD selected building demolition, in-situ thermal treatment, followed by air sparging. In accordance with the original ROD, the building was demolished in 2014 in preparation for implementing the in-situ thermal treatment and air sparging, however, due to the technical and administrative infeasibility of implementing the in-situ thermal treatment, the Department is proposing this amendment to the ROD to modify the original remedy for the site.

The proposed modification to the remedy generally includes source removal through excavation and application of an amendment, such as zero valent iron (ZVI), for enhanced bioremediation. ZVI or a similar amendment would be injected into the subsurface to promote destruction of residual chlorinated volatile organic compound (CVOC) contamination and increase the reducing potential in the groundwater in the immediate excavation area and downgradient areas. This change in geochemical conditions would stimulate dormant microbial activities and further enhance the reductive dichlorination of CVOCs.

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:

Canastota Public Library
Attn: Liz Metzger
102 West Center Street
Canastota, NY 13032
Phone: 315-697-7030 hours open

A public comment period has been set for January 27, 2021 through February 25, 2021 to provide an opportunity for you to comment on these proposed changes.

Pursuant to Executive Order 202.15, a public meeting will not be held, in effort to limit the community spread of COVID-19.

Written comments may be sent through February 25, 2021 to:

Samantha Salotto, Project Manager
NYS Dept. of Environmental Conservation
Division of Environmental Remediation
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(518) 402-9903

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. The ROD Amendment, when issued, will serve as 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, 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 Haz-O-Waste site is located at 4123 Canal Road, in the town of Lenox, Madison County, New York.

Site Features: The site consists of four tax parcels totaling 11.98 acres. The combined property is bordered by farmland to the north, east, and west. Canal Road forms the southern border. The Old Erie Canal is located south of Canal Road. The main building, a single-story block and steel structure on a soil-supported concrete slab, was demolished in 2014. It was situated on a 3.6-acre parcel of the site. The building occupied the southeastern side of the property parcel. The site was originally developed in 1976 and consisted of a single-story concrete block building. The larger steel structure was subsequently constructed around the block building at a later date.

Current Zoning/ Use: The site is currently inactive/vacant and is zoned for commercial use. The surrounding land is undeveloped and primarily used for agriculture. The nearest residential areas are approximately 0.5 miles to the east or west on Canal Road.

Past Use of the Site: The site was a permitted Resource Conservation and Recovery Act (RCRA) Treatment, Storage and Disposal Facility (TSDF), which operated from the late 1970s until 2001 and treated various wastes including laboratory chemicals, industrial solvents, paint and ink residue and many other wastes prior to their off-site disposal. These wastes were frequently spilled during the course of the TSDF operation, contaminating the site's soil and groundwater with solvents and other organic wastes. Soil vapor extraction and groundwater treatment systems were installed to address site contamination. By 2001, the TSDF had accumulated approximately 1,200 drums of hazardous wastes, many of which were bulging and leaking and in danger of igniting. In 2002, the United States Environmental Protection Agency (USEPA) Region 2 Removal Action Program removed approximately 1,200 drums and 13 tanks from the container storage area, including more than 13,000 gal of non-hazardous flammable liquids, waste inks, oxidizers, peroxides, corrosives, and waste pesticides. In that same year, the Department issued a Summary Abatement Order and the State Supreme Court ordered the TSDF closure. In January 2002 the NYSDEC revoked the TSDF's RCRA/Part 373 Hazardous Waste Management Facility permit (a permit which regulates the treatment, storage and disposal of hazardous waste). This site is subject to RCRA corrective action and closure requirements.

Trespass and vandalism have been documented at the site, including the emptying of a partially full diesel fuel tank from one of the abandoned trucks on-site, which required an immediate corrective action in July 2009 (Spill No.0903505).

Site Geology and Hydrogeology: The geologic materials in the upper 30-35 feet across the site are generally composed of a reddish-brown to reddish-gray fine sand and silt. This unit becomes somewhat coarser and less silty with depth. Lenses of fine to medium sand, and occasionally gravel have been identified within the fine sand unit. These lenses appear to be interconnected to some degree but are structurally complex. Immediately underlying the upper fine sand and silt unit is a layer of compact till. Groundwater at the site is shallow at approximately 4-6 feet below ground surface and flows in a north-northwest direction.

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. The Haz-O-

Waste site is currently zoned for commercial use and is located in an area of undeveloped land primarily used for agriculture.

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 for the site, documented to date, include:

Environmental Services of America Inc.
Millenium Environmental Inc.
ERD Environmental Inc.
Haz-O-Waste Corporation
ERD Waste Corporation

The PRPs for the site declined to implement a remedial program when requested by the Department. 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 Environmental Assessment

Nature and Extent of Contamination:

Soil- The contaminants of concern in soil are: tetrachloroethene and trichloroethene, which are both volatile organic compounds (VOCs). The soil samples which exceeded commercial soil cleanup objectives (SCOs) in 2007 were found in the 0-5 ft depth interval. The concentrations of VOCs detected in sub-surface soil generally declined with depth, which indicates slow or limited downward contaminant migration. Some tetrachloroethene concentrations (up to 190 parts per million (ppm)) exceed the SCO for commercial (150 ppm) and unrestricted use (1.3 ppm), one trichloroethene soil sample concentration (220 ppm) exceeds the SCO for commercial use (200 ppm) and unrestricted use (0.47 ppm). More recent data from a supplemental investigation done in 2019 show the most significant tetrachloroethene impacts were detected at concentrations of 63 ppm and 73 ppm within the 0-3 ft depth interval. The most significant trichloroethene impacts were detected at concentrations of 14 ppm, 35 ppm, and 18 ppm within the 0-11 ft depth interval. These concentrations exceed the SCO for unrestricted use (1.3 ppm and 0.47 ppm) but are below the SCO for commercial use (150 ppm and 200 ppm). Data does not indicate any off-site impacts to soil related to this site.

Groundwater- The contaminants of concern in groundwater are VOCs including: 1,1,1-trichloroethane (TCA), 1,1,2-trichlorotriflouroethane, cis-1,2-dichloroethene (cis-1,2-DCE) and trichloroethene. The depth of the contaminant plume ranges from 5 to 35 ft below ground surface. The maximum VOC concentrations were found in wells located beneath the former building. Maximum concentrations of TCA at 7,600 parts per billion (ppb) significantly exceed

groundwater standards (5 ppb), maximum concentrations of 1,1,2-trichlorotriflouroethane at 130 ppb exceed groundwater standards (1 ppb), maximum concentrations of cis-1,2-DCE at 59,100 ppb significantly exceed groundwater standards (5 ppb), and maximum concentrations of trichloroethene and its associated degradation products up to 5,500 ppb all exceed their respective groundwater standards (5 ppb). Data indicates minor off-site impacts in groundwater related to this site.

Soil Vapor- Data does not indicate any on-site or off-site impacts in soil vapor related to this site.

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 ROD.

There were no IRMs performed at this site during the Remedial Investigation (RI).

6.3 : Summary of Human Exposure Pathways

People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. The site is completely fenced; however, persons could contact contaminants on-site if they dig below the ground surface. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface to the indoor air of buildings, is referred to as soil vapor intrusion. Since the site is vacant the inhalation of site related contaminants due to soil vapor intrusion does not represent a current concern but may be a concern for future buildings developed at the site. Environmental sampling indicates soil vapor intrusion is not a concern for offsite properties.

SECTION 7: SUMMARY OF ORIGINAL REMEDY AND PROPOSED AMENDMENT

7.1 Original Remedy

The remedy originally selected in the March 2012 ROD for Haz-O-Waste site included:

1. The demolition of the on-site building and transportation for off-site disposal.
2. The implementation of in-situ thermal treatment, a technology designed to raise the temperature of earth materials without excavating, to destroy or volatilize organic compounds (VOCs) in the source area. The gases produced by the thermal treatment will be collected by vapor extraction wells designed to collect vapors from the air space between soil particles and treated in the treatment unit to be constructed on site. Vapor treatment would be either to destroy the contaminants by high temperature thermal destruction (combustion) or through the absorption of the vapors onto granular activated carbon and transported off site for ultimate disposal. The source area will be temporarily fenced during treatment activities and restricted access to the site with appropriate signs would be in place.
3. Air sparging will be implemented following the in-situ thermal treatment of soil to address the remainder of the groundwater contaminant plume. Additional groundwater monitoring wells will be installed down gradient of the source area, and additional vapor monitoring

points will be installed in the vicinity of the sparge wells.

4. The operation of the components of the remedy would continue until the remedial objectives have been achieved, or until the Department determines that further reduction of contamination is not feasible by any available technology.
5. Imposition of an institutional control in the form of an Environmental Easement for the controlled property that:
    a. 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 6NYCRR Part 375-1.8(h)(3);
    b. Allows the use and development of the property for commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
    c. Restricts the use of groundwater as a source of drinking or process water, without necessary water quality treatment as determined by the NYSDOH or Madison County Department of Health;
    d. Prohibits agriculture or vegetable gardens on the controlled property; and
    e. Requires compliance with the Department approved Site Management Plan (SMP)
6. A Site Management Plan is required, which includes the following:
    a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective.

        Institutional Controls: Environmental Easement as discussed in item 5 above.

        Engineering Controls: Site fencing and the air sparge system.

        This plan includes, but is not limited to:
        - Descriptions of the provisions of the Environmental Easement including any groundwater use restrictions;
        - A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provisions for implementing actions recommended to address exposures related to soil vapor intrusion;
        - Provisions for the management and inspection of the identified engineering controls;
        - Maintenance of site access controls and Department notification and;
        - Description of the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls

    b. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but is not 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;
        - Monitoring for vapor intrusion for any building occupied or developed on the site, as may be required by the Institutional and Engineering Control Plan discussed in item 6a above.

c. 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;
    - Maintaining site access controls and Department notifications; and
    - Providing the Department access to the site and O&M records.

7.2 Elements of the Remedy Already Performed

In 2014 the on-site building was demolished and properly disposed of off-site in accordance with the 2012 ROD.

7.3 New Information

In-situ thermal treatment followed by operation of an air sparging system was the original remedy selected for the site. As part of the September 2011 Feasibility Study, a remedial alternative consisting of in-situ injection of zero valent iron (ZVI) for enhanced bioremediation was also evaluated and was ranked nearly equal to in-situ thermal treatment. In-situ injection of ZVI was not selected at the time due primarily to concerns regarding potential impediments (i.e., soil characteristics and shallow depth to groundwater) to injecting ZVI into the subsurface. In 2015, site preparation activities including building demolition, surface re-grading, storm sewer improvements, and asphalt cover installation were completed at the site in preparation for implementation of the in-situ thermal treatment and air sparging remedy. However, early in the remedial design process, the lack of sufficient power to the site, either in the form of electricity or natural gas, was identified. The cost and administrative process associated with bringing sufficient power to the site, combined with the demolition of the site building, caused the balancing criteria to favor the soil excavation alternative over the in-situ thermal treatment alternative to address site soils. Similarly, the technical and administrative feasibility, along with the improved site conditions caused the Department to reassess the feasibility of using an in-situ injection alternative to achieve the remedial goals for groundwater.

Pursuant to the ROD, a baseline investigation for an injection pilot test was completed in 2015 and emulsified vegetable oil (EVO) injection using direct-push technology was selected for the pilot test. Two pilot test injection events and five post-injection monitoring events were completed at the site between 2015 and 2018. Although the post-injection sampling data concluded that there was an increase in microbial activity, it quickly decreased, suggesting inhibitory conditions for microbial activity, making biodegradation inefficient or ineffective for treating the source area of contamination. Application of ZVI to the open excavation will promote degradation of CVOCs through an abiotic process, which differentiates it from the EVO injections.

Because the original remedy, which included in-situ thermal remediation to address the source area, is no longer being considered, the means of treating downgradient groundwater via air sparging was also reconsidered. The results of the supplemental investigation, completed in 2019, showed that the impact to groundwater does not appear to be migrating significantly beyond the localized impacted area and the greatest VOC impacts are primarily within and

adjacent to the former building footprint. Due to these new findings, application of the ZVI amendment was considered for groundwater treatment. Soil in the saturated zone consists of fine sand and silt. The geology of the Site soil and the noted lack of a significant hydraulic gradient explain why contamination does not appear to be migrating.

Based on the findings of the supplemental investigation, source removal with amendment application using ZVI have been identified as the preferred remedy for the site.

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
Haz-O-Waste (Northeast Environmental Services) (No. 727003) Record of Decision Amendment

Media:	2012 ROD	Amended ROD
Groundwater	(1) Installation of an air sparge system for groundwater plume treatment. (2) Imposition of an institutional control in the form of an Environmental Easement restricting the use of groundwater without treatment and approval. (3) Use of a Site Management Plan to maintain the Institutional Controls and/or Engineering Controls (IC/EC) at the site. (4) Long term monitoring.	(1) In-situ amendment in source areas via injection of zero valent iron (ZVI) (or other approved amendment). (2) Monitoring of ground water parameters and quality to assess effectiveness of the in-situ amendment injection remedy. (3) Imposition of an institutional control in the form of an Environmental Easement to restrict groundwater use without treatment and approval. (4) Use of a Site Management Plan to maintain the Institutional Controls and/or Engineering Controls (IC/EC) at the site. (5) Performance monitoring.
Soil	(1) In-situ thermal treatment that will destroy or volatilize VOCs in the source area. (2) Imposition of an institutional control in the form of an Environmental Easement restricting the use and development of the property to industrial/commercial use to restrict exposure unless otherwise approved by the Department; (3) Use of a Site Management Plan (SMP) to maintain IC/ECs at the site.	(1) Excavation and off-site disposal of contaminant source areas, including all on-site soils which exceed commercial SCOs and protection of groundwater SCOs for the contaminants found in groundwater. (2) Imposition of an institutional control in the form of an Environmental Easement restricting the use and development of the property to industrial/commercial use to restrict exposure unless otherwise approved by the Department. (3) Use of a Site Management Plan (SMP) to maintain IC/ECs at the site.
Soil Vapor/Indoor Air	(1) An Institutional and Engineering Control Plan with a provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion.	There are no changes to the remedy for soil vapor/indoor air via this amendment.

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:

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

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

No changes to these goals are proposed in this amended remedy, except the addition of a Soil Vapor Remedial Action Objective (RAO) to align with the remedy.

8.2 Evaluation Criteria

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 original Feasibility Study.

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

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

The original remedy, in-situ thermal treatment and air sparging, satisfies this criterion by

destroying or volatilizing the source of the soil and groundwater contamination and treating the groundwater plume. The amended remedy, source removal with amendment application, is also protective of human health and the environment by removing the source and treating the groundwater plume. It should also be noted that removal of the source will eliminate the source entirely and the plume will decline once the source is removed. Potential exposures to workers could occur during excavation but will be managed by a health and safety plan and a community air monitoring program (CAMP) will be implemented. Both alternatives rely on institutional and engineering controls and long-term operation, maintenance and monitoring activities to minimize the risk of exposure to residual contamination following implementation of the remedy. As a result, there will be no change to protection of human health and the environment between the original remedy and the new remedy.

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.

The original remedy, in-situ thermal treatment and air sparging, and the amended remedy, source removal with amendment application, both comply with the soil and groundwater SCGs for the site to the extent practicable. Both alternatives address the source of contamination and also treat the groundwater plume. As a result, there will be no change to compliance with SCGs between the original remedy and the new, proposed remedy.

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

3. Short-term 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.

The amended remedy, source removal with amendment application will be implemented within a shorter timeline than the original in-situ thermal treatment and air sparging remedy. Since contaminated soil will be transported off-site for disposal rather than treated on-site, an increase in traffic can be expected during the implementation of the proposed new remedy. Potential exposures could occur to the surrounding area during excavation but will be monitored by a CAMP and strict protocols followed to protect public and worker health.

4. 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.

Although the original remedy, in-situ thermal treatment and air sparging, achieve effectiveness via thermal treatment by addressing the majority of the contaminated soil at the site and contaminated soil below the water table, the remedy also relies on an environmental easement and long-term monitoring for long-term effectiveness and permanence due to expected residual

contamination. The amended remedy, source removal with amendment application will result in removal of contaminated soil from the site and the addition of an amendment as part of the alternative will further enhance remediation of residual contamination in groundwater. Similar to the alternative selected in the ROD, the presence of residual contamination will require an environmental easement and long-term monitoring for the amended remedy. The implementation of an environmental easement and long-term monitoring will ensure that the remedy remains effective in protecting human health and the environment.

5. 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 original remedy, in-situ thermal treatment and air sparging were expected to achieve a significant reduction of the mobility and volume of contamination on-site via removal of source area contamination and treatment of the groundwater contaminant plume. The amended remedy, source removal with amendment application, will also achieve effective reduction in mobility and volume of contamination by removing the source from the site for proper off-site disposal and treating residual groundwater contamination through the application of the amendment.

6. Implementability. The technical feasibility 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.

The amended remedy, source removal with amendment application poses significantly fewer challenges than the original remedy, in-situ thermal treatment and air sparging, from a technical standpoint. The original remedy requires the construction of above and below ground infrastructure at the site to apply heat (thermal treatment) and air (air sparging) to the subsurface. The air sparging system would require the installation of 14 air sparge/injection wells, 2 monitoring wells and a compressor or blower to supply air. Operation of a system for thermal conductive heating or electrical resistance heating typically requires installation of specialized electrical transmission equipment on-site and requires connection to a high voltage electrical transmission line provided by the electrical utility. If the necessary voltage and/or transmission lines are not readily available at or near the site, significant costs will likely be incurred for the electrical utility to install the lines and equipment necessary to supply the power. During operation, the in-situ thermal treatment system would consume a significant amount of power. Initial estimates for cost of power usage at the site were approximately 2 million. The effectiveness and uniformity of in-situ treatments are often difficult to verify. Also, the technologies can result in uncontrolled movement of heat (thermal treatment) or air (air sparging) in the subsurface, making the cleanup less efficient. The amended remedy, source removal via excavation, does not require the construction of infrastructure at the site. Source removal efforts can be readily focused on specific contaminated areas/zones and rapidly verified via visual observations, field measurements and laboratory results. Application of an amendment to the excavation area can also be readily implemented, without difficulty. Source removal with amendment application is also simpler to implement from an administrative standpoint, since there are multiple obstacles to procuring in-situ thermal treatment, due to the limited number of

vendors and proprietary nature of the technologies applied. Numerous companies are capable of excavating contaminated soil and transporting it to a permitted disposal facility and applying amendment to an excavation. In summary, the technical and administrative feasibility to implement the amended remedy is straightforward and will present a low level of difficulty for a contractor to complete.

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 amended remedy of source removal with amendment application is expected to be less expensive than the original remedy of in-situ thermal treatment and air sparging.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

8. 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 Haz-O-Waste Site. The changes to the selected remedy are summarized in Section 7.3 above.

The estimated present worth cost to carry out the amended remedy is $1,580,000, which includes three years of operation, maintenance and monitoring. The estimated present worth to complete the original remedy was $5,600,000 with an average annual cost of $100,000. The cost to construct the amended remedy is estimated to be $1,490,000 and the estimated average annual cost for 3 years is $90,000.

The elements of the proposed amended remedy listed below are identified as *unchanged, modified or new* when compared to the March 2012 remedy:

1. A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:
    a. Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
    b. Reducing direct and indirect greenhouse gases and other emissions;
    c. Increasing energy efficiency and minimizing use of non-renewable energy;
    d. Conserving and efficiently managing resources and materials;
    e. Reducing waste, increasing recycling and increasing reuse of materials which

would otherwise be considered a waste;
   f. Maximizing habitat value and creating habitat when possible;
   g. Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
   h. Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
   i. Incorporate green remediation principles and techniques to the extent feasible in the future development at this site, and future on-site buildings will include, at a minimum, a 20 mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction. (*modified*)
2. Excavation and off-site disposal of contaminant source areas, including all on-site soils which exceed commercial SCOs and protection of groundwater SCOs for the contaminants found in groundwater, as defined by 6 NYCRR Part 375-6.8. The cubic yards of contaminated soil that will be removed from the site will be defined in the remedial design. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7 (d) will be brought in to replace the excavated soil. (*new*)
3. In-situ enhanced bioremediation will be employed to treat contaminants in groundwater in an area to be determined during the remedial design. The biological breakdown of contaminants through anaerobic reductive dichlorination will be enhanced by a chemical reductant, such as ZVI or similar material into the subsurface. The method and depth of injection will be determined during the remedial design. Monitoring will be required within the treatment zone. Monitoring will be conducted for contaminants of concern and their degradation byproducts upgradient and downgradient of the treatment zone. The treatment zone will be monitored for dissolved oxygen and oxidation/reduction potential. (*new*)
4. Imposition of an institutional control in the form of an environmental easement for the controlled property which will:
   a. 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);
   b. Allow the use and development of the controlled property for commercial use as defined by Part 375-1.8 (g), although land use is subject to local zoning laws;
   c. 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
   d. Require compliance with the Department approved Site Management Plan. (*unchanged*)
5. A Site Management Plan is required, which includes the following:
   a. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
      i. Institutional Controls: the environmental easement discussed above.
      ii. Engineering Controls: restricted access to the site.
   b. This plan includes, but may not be limited to:
      i. An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
      ii. Descriptions of the provisions of the environmental easement including any

land use, and groundwater use restrictions;

iii. A provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

iv. A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);

v. Maintaining site access controls and Department notification; and

vi. The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

i. Monitoring of groundwater to assess the performance and effectiveness of the remedy;

ii. A schedule of monitoring and frequency submittals to the Department;

iii. Monitoring for vapor intrusion for any buildings on-site, may be required by the Institutional and Engineering Control Plan discussed above. (*modified*)

SECTION 10: NEXT STEPS

As described above, there is a 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
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Site-Related Health Questions
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NYSDOH
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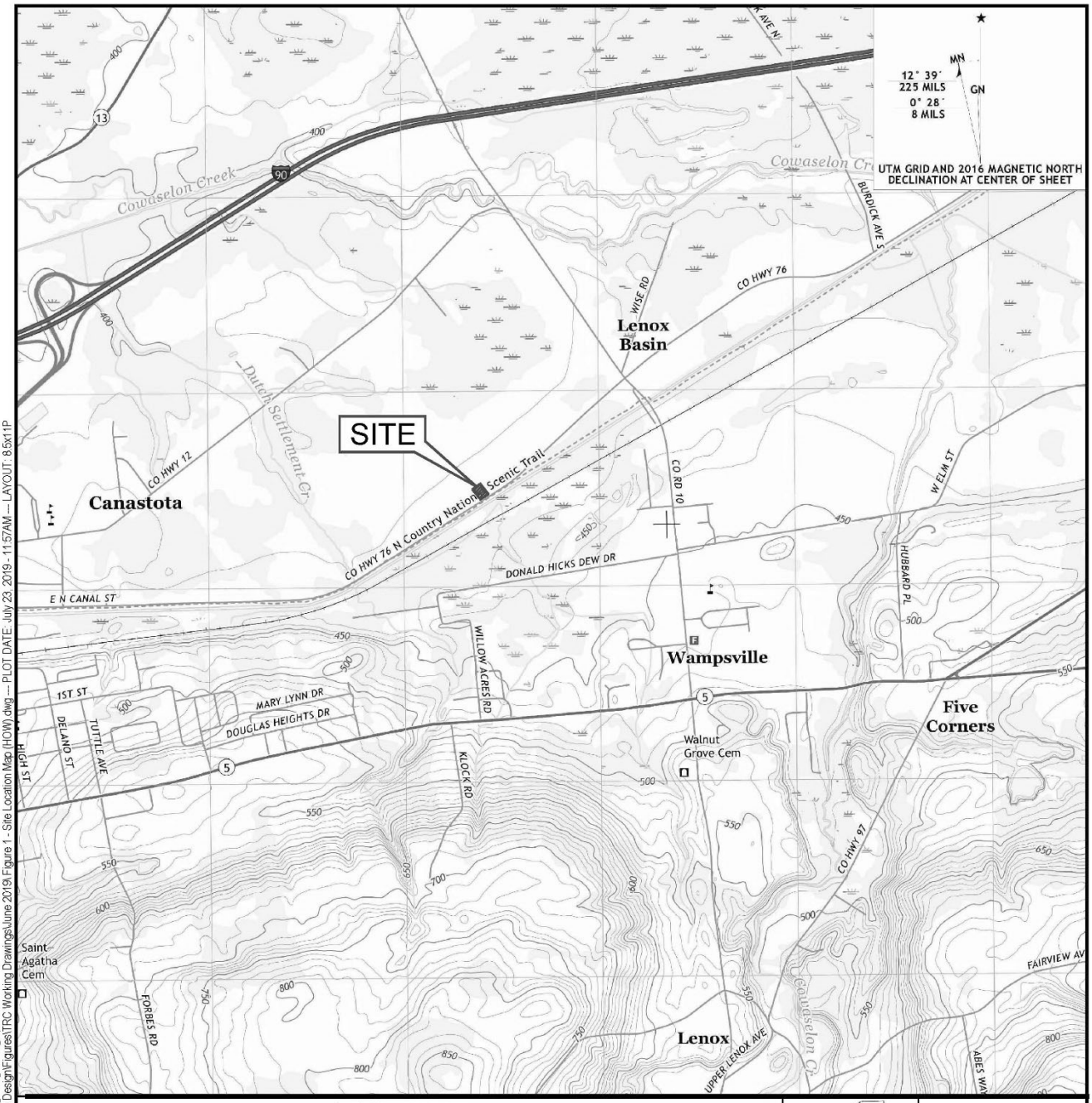

SCALE: 1:2400

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

QUADRANGLE LOCATION

MAP INCLUDES INFORMATION FROM THE FOLLOWING MAP SHEET(S): TP,ONEIDA, NY, 7.5 MINUTE DATED 2016.

MAP OBTAINED THROUGH USE OF TOPOVIEW WITH THE INTERFACE CREATED BY THE NATIONAL GEOLOGIC MAP DATABASE PROJECT (NGMDB), IN SUPPORT OF THE TOPOGRAPHIC MAPPING PROGRAM, MANAGED BY THE USGS NATIONAL GEOSPATIAL PROGRAM (NGP).

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PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
HAZ-O-WASTE SITE - NYSDEC SITE NO. 727003
4123 CANAL ROAD
LENOX, NEW YORK

TITLE:

SITE LOCATION MAP

DRAWN BY:	H. DELGADO
CHECKED BY:	J. MAGDA
APPROVED BY:	N. KRANES
DATE:	JULY 2019
PROJ. NO.:	198432
FILE:	Figure 1 - Site Location Map (HOW).dwg

FIGURE 1

8.5x11 --- ATTACHED XREFS: --- ATTACHED IMAGES: Haz-O-Waste topo_01; Haz-O-Waste topo_02; NY_Oneida_20160825_TM
DRAWING NAME: I:\Projects\NYSDEC\Assignments\WA #3 - Haz-O-Waste Design\Figures\TRC Working Drawings\June 2019\ Figure 1 - Site Location Map (HOW).dwg --- PLOT DATE: July 23, 2019 - 11:57AM --- LAYOUT: 8.5x11P