

DECISION DOCUMENT

Former Bernzomatic Facility
Brownfield Cleanup Program
Medina, Orleans County
Site No. C837018
February 2021



**Department of
Environmental
Conservation**

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

DECLARATION STATEMENT - DECISION DOCUMENT

Former Bernzomatic Facility
Brownfield Cleanup Program
Medina, Orleans County
Site No. C837018
February 2021

Statement of Purpose and Basis

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

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

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any 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.

2. Excavation

The existing on-site eastern machining building(s) will be demolished and the nature and extent of contamination in this area, where access was previously limited or unavailable, will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department's determination of the need for a remedy, the Remedial Action Work Plan (RAWP) will include removal and/or treatment of any source areas to the extent feasible.

At a minimum, all soils in the upper foot which exceed the commercial use Soil Cleanup Objectives (SCOs) will be excavated and transported off-site for disposal. Approximately 21 cubic yards of contaminated soil will be removed from the site.

3. Backfill

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.

4. Cover System

A site cover will be required to allow for commercial or industrial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Where a soil cover is to be used it will be a minimum of one foot of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

5. Enhanced Bioremediation

Monitoring will be required up-gradient, down-gradient, and within the treatment zone. Monitoring will be conducted for volatile organic compounds (VOCs) and metals up-gradient, down-gradient, and within the treatment zone. To evaluate the enhanced bioremediation remedy, the treatment zone will also be monitored for the following: dissolved-oxygen, nitrate, iron, sulfate, alkalinity, oxidation-reduction potential, pH, chloride, and methane. A baseline groundwater monitoring program will be implemented to provide groundwater quality data prior to in-situ enhanced bioremediation.

In-situ enhanced biodegradation will be employed to treat chlorinated VOCs in groundwater in the area of the eastern machining building. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by the placement of bacteria and nutrients into the subsurface to promote microbe growth. The bacteria and nutrients will be placed into the subsurface via injection points from 3 to 10 feet. In the event that appropriate aquifer pH (6-8) and total organic carbon (TOC) concentration (greater than 50 mg/l) cannot be simultaneously

maintained, the injection solution will be buffered with sodium bicarbonate to counteract the organic acids generated from biological activity.

6. Engineering and Institutional Controls

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 Track 4 commercial cleanup at a minimum and will include a site cover.

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 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 Department of Health; and
- require compliance with the Department approved SMP.

7. Site Management Plan

An SMP is required, which includes the following:

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

Institutional Controls: The environmental easement discussed in paragraph 6 above.

Engineering Controls: The soil cover discussed in paragraph 4 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/or groundwater use restrictions;
- 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;
- 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 one foot of exposed surface soil exceeds the applicable SCOs;
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

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

Declaration

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

Michael Cruden

02/10/21

Date

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Former Bernzomatic Facility
Medina, Orleans County
Site No. C837018
February 2021

SECTION 1: SUMMARY AND PURPOSE

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

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

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

SECTION 2: CITIZEN PARTICIPATION

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

DECInfo Locator - Web Application
<https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C837018>

Lee-Whedon Memorial Library
620 West Ave.
Medina, NY 14103
Phone: 858-789-3430

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

Site Location:

The site is comprised of two adjoining lots located at 1 Bernzomatic Drive, within the Village of Medina. The northern lot spans Bernzomatic Drive and is located in the Town of Ridgeway. The adjoining southern lot also spans Bernzomatic Drive and is located in the Town of Shelby.

Site Features:

Improvements on the 14.49-acre site include two connected buildings (the western main manufacturing building and the eastern machining building) totaling approximately 160,000 square feet. These buildings are located on the west side of Bernzomatic Drive. Truck and trailer parking areas are located to the north of the main manufacturing building, and employee and visitor parking is located to its south. Areas west and south of the main manufacturing building are generally wooded and vacant as a buffer zone to neighboring residential and commercial properties. Roof drains from the building discharge into a cistern system which stores water underneath the building as a backup supply for fire suppression. Overflow from the cistern discharges to a storm water pond located on the southwestern side of the property. Structures outside the site boundary, but located on the overall former Bernzomatic facility, include an approximately 4,000 square foot engineering laboratory and an approximately 8,000 square foot storage building on the east side of Bernzomatic Drive. A small ancillary fire pump house building is also present just north and outside the northeast corner of the site boundary. The topography of the site is generally flat and surrounding properties are of similar elevation.

Current Zoning and Land Use:

The site is located in zoning district I (Industrial District) and is currently utilized for storage, material assembly, packaging, and shipping. Anticipated future uses are limited to commercial and industrial activities.

Past Use of Site:

The subject property has a history of industrial use beginning in approximately 1915, including canneries and food processing companies. These uses involved process areas including a pipe shed, machine shop, and oil house that may have involved the use of hazardous materials and/or petroleum. In addition, the subject property historically utilized hazardous substances including solvents and oils. Records indicate that parts cleaning operations were once performed using solvent degreasing agents, particularly in the eastern machining building. Recent site operations involved the machining, assembly, packing, and shipping of hand-held torches by Bernzomatic, a division of Newell Rubbermaid Corporation. In 2011, Newell Rubbermaid sold the business

(Newell Rubbermaid maintained ownership of the property) to Worthington Industries who continued manufacturing torches until July 2014. Newell Rubbermaid completed a preliminary environmental investigation of the site in 2014. The industrial chemical, acetone, was detected at elevated levels in the soil and various chlorinated and volatile organic compounds were detected at elevated levels in the groundwater. Based on this information, Newell Rubbermaid notified the DEC and submitted an application to enter into the Brownfield Cleanup Program.

Site Geology and Hydrogeology

The site is located in the Erie-Ontario Lowlands Physiographic Province. The site is underlain by sand and silt mixtures with some gravel encountered just beneath the concrete surface. Overburden thickness at the site varies from approximately 9 feet on the east side of the main building to approximately 12 feet near the cistern beneath the main manufacturing building. Bedrock at the site consists of a 10-foot-thick layer of Irondequoit Limestone over Medina Sandstone.

Depth to groundwater in the overburden ranges from 0.5 to 6.7 feet below ground surface. Overall groundwater flow is to the northwest.

A site location map is attached as Figure 1 and a site boundary map is attached as Figure 2.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

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

SECTION 5: ENFORCEMENT STATUS

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

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

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

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

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

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

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

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

6.1.2: RI Results

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

dibenz[a,h]anthracene	cadmium
benzo(a)pyrene	chromium
benzo(b)fluoranthene	lead
arsenic	tetrachloroethane

trichloroethene (TCE)
cis-1,2-dichloroethene
1,1 dichloroethene

vinyl chloride
1,1,1-trichloroethane (TCA)
1,1-dichloroethane

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

- groundwater
- soil

6.2: Interim Remedial Measures

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

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

6.3: Summary of Environmental Assessment

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

Nature and Extent of Contamination

Soil, groundwater, sediment, surface water, and soil vapor were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, per- and polyfluoroalkyl substances (PFAS), polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations to date, the primary contaminants of concern are chlorinated VOCs and metals in groundwater and SVOCs in surface soils.

Soil

Polycyclic aromatic hydrocarbons (PAHs) including benzo(a)pyrene, benzo(b)fluoranthene, and dibenz(a,h)anthracene were detected in surface soils on the south and west portions of the site above commercial use soil cleanup objectives (SCOs). Benzo(a)pyrene was detected at 10 parts per million (ppm) which exceeds the commercial use SCO of 1 ppm; benzo(b)fluoranthene was detected at 15 ppm which exceeds the commercial use SCO of 5.6 ppm; and dibenz(a,h)anthracene was detected at 1.5 ppm which exceeds the commercial use SCO of 0.56 ppm.

VOCs and metals were not detected above protection of groundwater or commercial use SCOs. Contaminants are not migrating off-site in soils.

Groundwater

Tetrachloroethene (PCE), 1,1,1-trichloroethane (TCA), and their associated degradation products were found in groundwater on the eastern portions of the site, exceeding the groundwater standard which is 5 parts per billion (ppb) for all compounds except vinyl chloride, which has a groundwater standard of 2 ppb. Maximum concentrations were 36 ppb for PCE, 72 ppb for trichloroethene, 440 ppb for cis-1,2-dichloroethene, 8.8 ppb for 1,1-dichloroethene, 21 ppb for TCA, 87 ppb for 1,1-dichloroethane, and 11 ppb for vinyl chloride.

Metals, such as arsenic, lead, cadmium, and chromium were also detected in groundwater above standards near the former aboveground storage tank area. The maximum concentrations (and groundwater standards) for arsenic, lead, cadmium, and chromium were 172 ppb (25 ppb), 430 ppb (25 ppb), 32 (5 ppb), and 462 ppb (50 ppb), respectively.

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported at concentrations of up to 2.9 and 7.2 parts per trillion (ppt), respectively, which is below the Maximum Contaminant Level (drinking water standard) of 10 ppt in groundwater for both PFOA and PFOS.

1,4-Dioxane was reported at concentrations of up to 3.7 parts per billion (ppb), exceeding the Maximum Contaminant Level (drinking water standard) of 1 ppb in groundwater.

Contaminants are not migrating off-site in groundwater.

Soil Vapor and Indoor Air

No compounds were detected in the indoor air at levels above New York State Department of Health air guideline values. PCE was the only compound detected in sub-slab soil vapor at levels indicating additional action should be considered.

PCE was detected in one sub-slab soil vapor sample at 1,200 micrograms per cubic meter (ug/m³) in the western portion of the manufacturing building during the 2017 soil vapor intrusion investigation. This area was resampled in 2019 due to a change in occupancy and PCE was detected at 40 ug/m³. The maximum indoor air concentration for PCE was 1.3 ug/m³ which is well below the air guideline value of 30 ug/m³. No further action was needed based on a full review of all sub-slab soil vapor and indoor air data.

Sub-slab soil vapor and indoor air samples were not collected from the eastern machining building because it is unoccupied and scheduled for demolition.

Contaminants are not migrating off-site in soil vapor.

Sediment

Chromium, copper, and zinc were found in storm water pond sediment above the Screening and Assessment of Contaminated Sediments Class C guidance values in one location. Chromium was detected up to 151 ppm; the guidance value is 110 ppm. Copper was detected up to 574 ppm; the guidance value is 150 ppm. Zinc was detected up to 1,090 ppm; the guidance value is 460 ppm. The extent of contaminants found in sediments is limited and no further action is required.

Surface Water

No compounds were found in surface water above standards.

6.4: Summary of Human Exposure Pathways

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

Access is not restricted and people who enter the site could contact contaminants in the soil, surface water or sediments by walking, digging or otherwise disturbing the soil or collection pond. 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 buildings and affect 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. Environmental sampling indicates that soil vapor intrusion is a not a concern for one onsite building and offsite buildings. However, additional investigation is recommended for future redevelopment or change in use in the area of the eastern machining building, currently proposed for demolition, to determine if action is needed to address soil vapor intrusion.

6.5: Summary of the Remediation Objectives

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

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

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

Sediment

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated sediments.
- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Prevent releases of contaminants from sediments that would result in surface water levels in excess of ambient water quality criteria.
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

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

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

The selected remedy is referred to as the Enhanced Bioremediation with Targeted PAH and Source Area Excavation and ICs remedy.

The elements of the selected remedy, as shown in Figures 3 and 4, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;

- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any 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.

2. Excavation

The existing on-site eastern machining building(s) will be demolished and the nature and extent of contamination in this area, where access was previously limited or unavailable, will be immediately and thoroughly investigated pursuant to a plan approved by the Department. Based on the investigation results and the Department's determination of the need for a remedy, the Remedial Action Work Plan (RAWP) will include removal and/or treatment of any source areas to the extent feasible.

At a minimum, all soils in the upper foot which exceed the commercial use Soil Cleanup Objectives (SCOs) will be excavated and transported off-site for disposal. Approximately 21 cubic yards of contaminated soil will be removed from the site.

3. Backfill

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.

4. Cover System

A site cover will be required to allow for commercial or industrial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Where a soil cover is to be used it will be a minimum of one foot of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

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In-situ enhanced biodegradation will be employed to treat chlorinated VOCs in groundwater in the area of the eastern machining building. The biological breakdown of contaminants through

anaerobic reductive dechlorination will be enhanced by the placement of bacteria and nutrients into the subsurface to promote microbe growth. The bacteria and nutrients will be placed into the subsurface via injection points from 3 to 10 feet. In the event that appropriate aquifer pH (6-8) and total organic carbon (TOC) concentration (greater than 50 mg/l) cannot be simultaneously maintained, the injection solution will be buffered with sodium bicarbonate to counteract the organic acids generated from biological activity.

Monitoring will be required upgradient, downgradient, and within the treatment zone. Monitoring will be conducted for volatile organic compounds (VOCs) and metals upgradient, downgradient, and within the treatment zone. To evaluate the enhanced bioremediation remedy, the treatment zone will also be monitored for the following: dissolved-oxygen, nitrate, iron, sulfate, alkalinity, oxidation-reduction potential, pH, chloride, and methane. A baseline groundwater monitoring program will be implemented to provide groundwater quality data prior to in-situ enhanced bioremediation.

6. Engineering and Institutional Controls

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 Track 4 commercial cleanup at a minimum and will include a site cover.

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 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 Department of Health; and
- require compliance with the Department approved SMP.

7. Site Management Plan

An SMP is required, which includes the following:

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

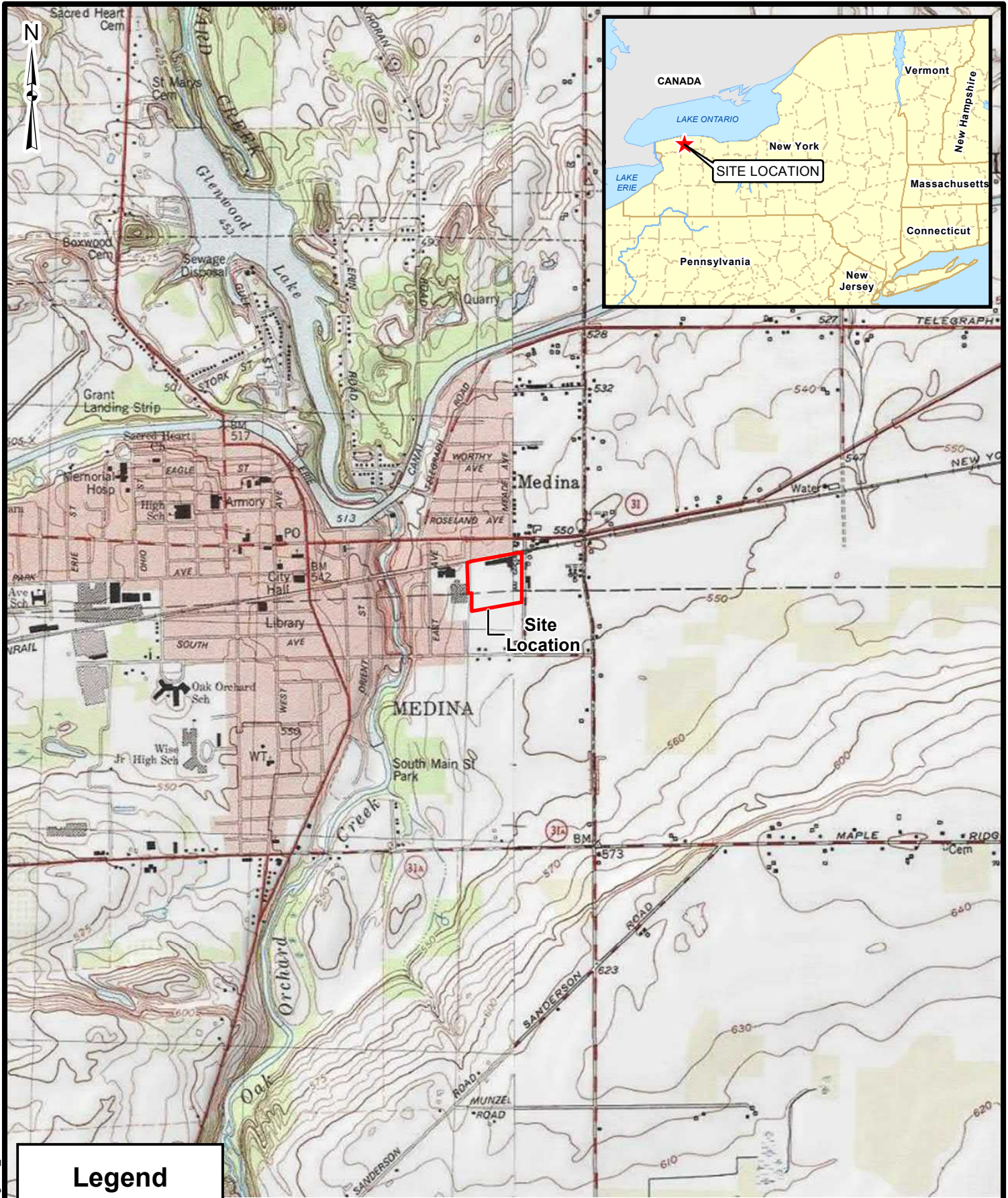
Institutional Controls: The environmental easement discussed in paragraph 6 above.

Engineering Controls: The soil cover discussed in paragraph 4 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

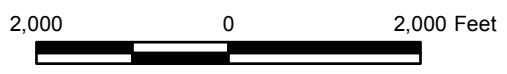
- use, and/or groundwater use restrictions;
 - a provision for evaluation of the potential for soil vapor intrusion for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - a provision that should a building 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 one foot of exposed surface soil exceeds the applicable SCOs;
 - provisions for the management and inspection of the identified engineering controls;
 - maintaining site access controls and Department notification; and
 - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- b. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
- monitoring of groundwater and soil vapor intrusion 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.



Legend

Site Boundary

Source: © 2013 National Geographic Society, i-cubed;
 1:24,000-scale USGS Topographic Maps, Medina & Knowlesville Quadrangle

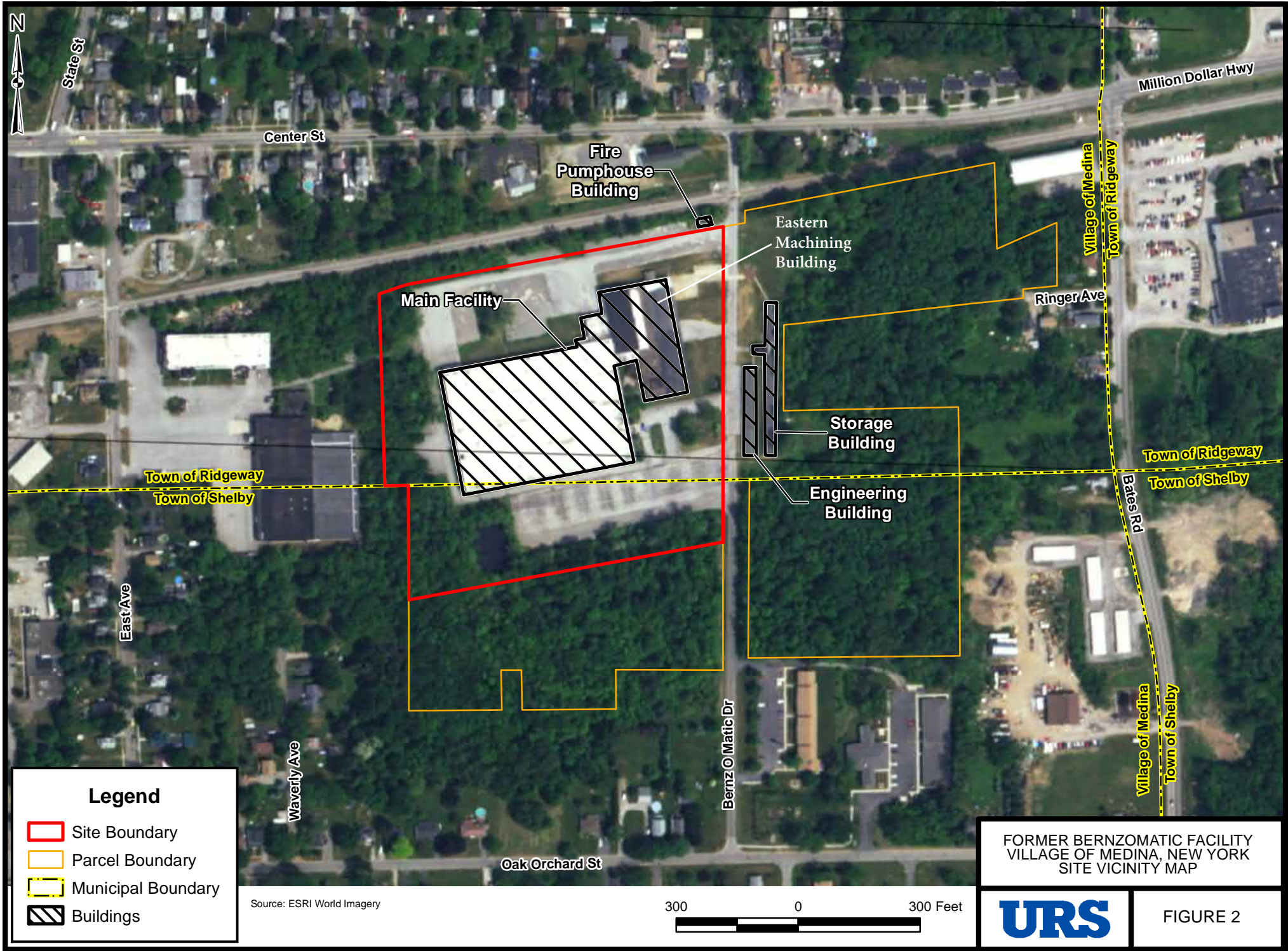


J:\Projects\25369237\GIS\Maps\Figure1_SiteLocation.mxd 8/16/2018



**FORMER BERNZOMATIC FACILITY
 VILLAGE OF MEDINA, NEW YORK
 SITE LOCATION MAP**



FIGURE 1



FORMER BERNZOMATIC FACILITY
VILLAGE OF MEDINA, NEW YORK
SITE VICINITY MAP



Legend

-  Monitoring Well
-  Demolition Area

FORMER BERNZOMATIC FACILITY
VILLAGE OF MEDINA, NEW YORK
ESTIMATED DEMOLITION AREA



FIGURE 3

Source: NYS Digital Ortho-Imagery Program, Orleans County, 2015

C:\Users\maxwell.reis\Documents\benzomatic\Maps\Demo_Area.mxd 4/29/2020

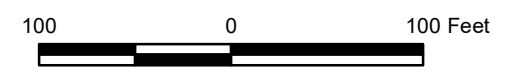
C:\Users\maxwell.reis\Documents\benzomatic\Maps\A114_ProposedTreatmentAreas.mxd 10/20/2020



Legend

- PAH Excavation Location (5'x5'x1')
- ◆ Monitoring Well
- Line of Injection Points
- - - Potential Line of Injection Points
- PH I ESA REC
- Assumed Source Area
- Potential Treatment Area

Note: Extent of treatment area and location of injection points will be determined during a pre-design investigation to be performed following building demolition.
 Source: NYS Digital Ortho-Imagery Program, Orleans County, 2015



FORMER BERNZOMATIC FACILITY
 VILLAGE OF MEDINA, NEW YORK
 ESTIMATED TREATMENT AREAS



FIGURE 4