RECORD OF DECISION

Zoe Chemical Co.
State Superfund Project
New Hyde Park, Nassau County
Site No. 130211
March 2022

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

DECLARATION STATEMENT - RECORD OF DECISION

Zoe Chemical Co.
State Superfund Project
New Hyde Park, Nassau County
Site No. 130211
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Statement of Purpose and Basis

This document presents the remedy for the Zoe Chemical Co. site, a Class 2 inactive hazardous waste disposal 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, and is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300), as amended.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Zoe Chemical Co. site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the Record of Decision (ROD).

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or feasibility study (FS). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRMs, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore, No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the remedy for the site.

The IRMs conducted at the site attained the remediation objectives identified for this site in Section 6.5 for the protection of public health and the environment.

New York State Department of Health Acceptance

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

Declaration

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

March 31, 2022
Date

Susan Edwards
Susan Edwards, P.E., Acting Director
Division of Environmental Remediation

RECORD OF DECISION

Zoe Chemical Co.
New Hyde Park, Nassau County
Site No. 130211
March 2022

SECTION 1: SUMMARY AND PURPOSE

The Department, in consultation with the NYSDOH, has selected a remedy for the above referenced site. The disposal of hazardous wastes at the site resulted in threats to public health and the environment that were addressed by actions known as IRMs, which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI or FS. The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRMs, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRMs conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the remedy selected by this ROD. A No Further Action remedy may include site management, which will include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This ROD identifies the IRMs conducted and discusses the basis for No Further Action.

The New York State Inactive Hazardous Waste Disposal Site Remedial Program (also known as the State Superfund Program) is an enforcement program, the mission of which is to identify and characterize suspected inactive hazardous waste disposal sites and to investigate and remediate those sites found to pose a significant threat to public health and environment.

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

SECTION 2: CITIZEN PARTICIPATION

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

Hillside Library
Attn: Ms. Judith Loeb
155 Lakeville Road
New Hyde Park, NY 11040
Phone: 516-355-7850

On-Line Repository: https://www.dec.ny.gov/data/DecDocs/130211/

A public meeting was also conducted. At the meeting, the findings from the Site Characterization (SC), RI, and FS were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the Responsiveness Summary in Appendix A of the ROD.

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Zoe Chemical site is two-acre site located in an urban area of New Hyde Park at 1801 Falmouth Avenue. The site is bounded by Falmouth Avenue to the south and Gould Street to the west. A wellfield for the Water Authority of Western Nassau County borders the site to the north as do athletic fields for Michael J. Tully Park. A recharge basin is located approximately 50 feet west of the site. Memorial High School is located approximately 500 feet to the west.

Site Feature: The site consists of a one-story masonry structure built in 1962 that covers approximately 44,800 square feet of the western portion of the site. The eastern portion of the site is paved and used for lumber storage. The northern part of the site is covered by thick vegetation that slopes towards the building and pavement. A retaining wall is present at the base of the slope.

Current Zoning/Use(s): The site is zoned industrial and presently being utilized as a commercial lumber yard that sells building materials to the general public. Office space, sales space, and building materials are located within the building.

Past Use of the Site: Previous operations were performed by Zoe Chemical Co., which handled chemicals (1,1,1-trichloroethane [TCA], ammonia, tetrachloroethene, cleaners, pesticides, etc.) as

part of blending and packaging cleaning products and CDC Products, which manufactured deodorizing cakes for urinals. Chemicals were stored inside and outside the building. The current property owner-initiated investigations in March 2013. Between July 2013 and September 2016, three Interim Remedial Measures (IRMs) were performed to remove contamination within the former sanitary system, to remove contamination within the storm drains, and to install a soil vapor extraction system.

Site Geology and Hydrogeology: Site geology consists primarily of tan medium grain sand from 0 to approximately 20 feet below ground surface (bgs). This was identified as fill material during site explorations and when large tree trunks were uncovered during site activities. Light brown medium grain sand with fine gravel underlies the fill material. Groundwater is approximately 25 feet bgs and flows to the southwest. A perched zone was identified at approximately 14 feet bgs.

A site location map is attached as Figure 1. A site map is attached as Figure 1A.

SECTION 4: LAND USE AND PHYSICAL SETTING

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

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

SECTION 5: ENFORCEMENT STATUS

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

The PRPs for the site, documented to date, include:

Seaboard Estates, Inc.

A consent order for remedial investigation/feasibility study was executed on December 12, 2012, between the Department and the PRPs for this site. PRPs for the site have performed investigation activities to date as required by the Department. An agreement is in place for the PRPs to implement the remedy.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A 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; and
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil
- soil vapor
- 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. The tables found in Exhibit A list the applicable SCG in the footnotes. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html.

6.1.2: RI Results

The data have identified primary contaminants of concern. A "primary 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 primary contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The primary contaminants of concern identified at this site are:

1,1,1-trichloroethane(TCA)	toluene
chloroethane	aldrin
tetrachloroethene (PCE)	dieldrin
trichloroethene (TCE)	mercury

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRMs described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Reports.

6.2: Interim Remedial Measures

An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRMs have been completed at this site based on conditions observed during the RI.

IRM Source Removal & Soil Vapor Extraction

- July 2013: Sediment contaminated with TCA, 1,1-dichloroethane (DCA), PCE, TCE, 1,1-dichloroethene, toluene, and dieldrin was removed from shallow storm drains. Approximately 100 gallons of rinse water and sediment was removed and disposed off-site.
- February 2015: Approximately 350 tons of material from the subsurface drainage structures associated with the former sanitary system and contaminated soil and water within and near these structures was removed and disposed off-site. The material was contaminated with TCA, DCA, PCE, TCE, aldrin, dieldrin, and mercury. Only aldrin remained above commercial use soil cleanup objectives at approximately 15 feet bgs.
- September 2016: A soil vapor extraction system (SVE) was designed and installed to remove volatile organic compounds (e.g., TCA) from the subsurface, control soil vapor migration, and to address potential exposures related to soil vapor intrusion. The SVE system continues to operate and has removed over 67 pounds of TCA, 27 pounds of DCA, 31 pounds of chloroethane, two pounds of PCE, two pounds of TCE, and 0.48 pounds of vinyl chloride.

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.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for the site.

Nature and Extent of Contamination:
A Site Characterization was conducted in 2013 and a Remedial Investigation was initiated in 2018. Based on the findings, disposal occurred at the site resulting in significant contamination at the site, but did not migrate from the site at significant concentrations. A summary of the findings is provided below:

Soil: Chlorinated volatile organic compounds, petroleum volatile organic compounds, semi-volatile organic compounds, pesticides, and metals were detected above unrestricted use soil cleanup objectives (SCOs). Elevated levels of TCA were detected within a storm drain and a subsurface structure (former sanitary system) at concentrations of 9,290 parts per million (ppm) and 1,000 ppm, respectively. These concentrations were above the commercial use SCO of 500 ppm. IRMs were performed to remove the TCA contaminated material detected at these locations. The remaining contaminants were primarily detected beneath the paved area on the eastern portion of the site. This included benzo(a)pyrene at 1.2 ppm (1 ppm); aldrin at 4.22 ppm (0.68 ppm); dieldrin at 4.62 ppm (1.4 ppm); cadmium 15.9 ppm (9.3 ppm); copper 736 ppm (270 ppm); and mercury at 7.2 ppm (2.8 ppm), which were detected above the commercial use SCOs indicated in parentheses.

Perched Water: Water was collected from a perched zone beneath the former sanitary system. Multiple contaminants were detected above groundwater standards, but the primary exceedances, as compared to their groundwater standard, were TCA at 962 parts per billion (ppb); 1,1-dichloroethane (DCA) at 1,790 ppb; chloroethane at 1,630 ppb; and TCE at 198 ppb. The groundwater standard for each of these contaminants is 5 ppb. An IRM was performed that removed the perched water along with the former sanitary system.

Groundwater: Groundwater collected within the aquifer detected site contaminants dieldrin at 0.22 ppb, as compared to the groundwater standard of 0.004 ppb. Dieldrin is limited to an area near the central portion of the site and immediately down-gradient.

Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) were reported at concentrations up to 87.8 and 104 parts per trillion (ppt), respectively, exceeding the Maximum Contaminant Level (drinking water standard) of 10 ppt in groundwater. The detections of PFOA and PFOS were higher in the upgradient monitoring wells, which suggests the contamination is not attributable to the site.

1,4-Dioxane was reported at concentrations up to 0.153 ppb, which is below the Maximum Contaminant Level (drinking water standard) of 1 ppb in groundwater.

Soil Vapor and Indoor Air: On-site soil vapor samples detected TCA at 3,260 micrograms per cubic meter (ug/m3), PCE at 6,470 ug/m3, TCE at 1,690 ug/m3 and vinyl chloride at 1,150 ug/m3. Sub-slab soil vapor samples collected beneath the site building detected TCA at 182,000 ug/m3, PCE at less than 400 ug/m3 and TCE at 5,750 ug/m3. Indoor air samples detected TCA at 1.3 ug/m3, PCE at 3.8 ug/m3 and TCE at 0.3 ug/m3. Based on the data, a soil vapor extraction system was installed as an IRM to remove volatile organic compounds (e.g., TCA) from the subsurface, control soil vapor migration, and to address potential exposures related to soil vapor intrusion. Off-site soil vapor intrusion sampling detected chlorinated volatile organic compounds at two properties, but site action was not warranted as concentrations were either below guidance values or determined to be from another source.

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.*

People are not drinking contaminated groundwater because the public water supply that serves the area is monitored routinely and treated to remove contaminants before the water is distributed to consumers. People may contact contaminated soils if they dig below the building foundation or surface/site cover. Volatile organic compounds (VOCs) in the groundwater or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken in the on-site building to address the potential for inhalation of site contaminants in indoor air. Environmental data collected off-site identified VOCs at two locations. The contamination identified is not considered related to the site-specific contaminants of concern. Based on the levels detected, actions to address this contamination have been recommended to the site owners of the referenced locations.

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

- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

Soil Vapor

RAOs for Public Health Protection

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

SECTION 7: SUMMARY OF SELECTED REMEDY

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRMs as described in Section 6.2, and the current existence of a site cover. Additionally, it requires Site Management that includes Institutional Controls and Engineering Controls to achieve remedial action objectives. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of an environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

1. Soil Vapor Extraction

Soil vapor extraction (SVE) will continue to be implemented to remove VOCs from the subsurface soils and soil vapor. VOCs will be physically removed from the soil by applying a vacuum to wells that have been installed into the vadose zone (the area below the ground surface but above the water table). The vacuum draws air through the soil matrix which carries the VOCs from the soil to the SVE well. The air extracted from the SVE wells is then treated as necessary prior to being discharged to the atmosphere.

The SVE system consists of three wells installed into the vadose zone and screened from five feet below the ground surface to a depth of approximately 15 feet and three sub-slab extraction points. The air containing VOCs extracted from the SVE wells is treated by passing the air stream through activated carbon which removes the VOCs from the air prior to it being discharged to the atmosphere.

2. Sub-slab Depressurization System

When the SVE system no longer recovers significant contamination as defined in the Site Management Plan, the system will be evaluated prior to shutdown. This evaluation will assess if the system will be removed or transitioned to a sub-slab depressurization system, which would be continually operated and maintained until long-term monitoring data indicates the system is no longer needed.

3. Cover System

A site cover currently consists of the site building, pavement, and sidewalk, which will be maintained to allow for commercial use of the site. The steep slope and thick vegetation in the northern portion of the site prohibits access and commercial use of this area. Any areas of the site that are redeveloped will be required to have a site cover when completed. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil meets the applicable SCOs for commercial use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

4. Engineering and 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 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 Nassau County DOH; and
- require compliance with the Department approved Site Management Plan.

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

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

Institutional Controls: The Environmental Easement discussed above.

Engineering Controls: The existing cover and IRM soil vapor extraction/sub-slab depressurization system discussed above.

This plan also 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 evaluating soils under the building if and when the building is demolished or becomes vacant and making a determination if any further remedial action is warranted;
- a provision for evaluation of the potential for soil vapor intrusion for any newly occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- a provision that should the existing cover be removed in the future, a cover system consistent with that described in remedial element #3 Cover System will be placed in any areas where the upper one foot of exposed surface soil exceed 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 engineering controls;

b. An Operation and Maintenance (O&M) Plan 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 and cover 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;
- providing the Department access to the site and O&M records; and
- monitoring for vapor intrusion for any new buildings developed on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

6. Green Remediation

Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials; and
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.

Exhibit A

Nature and Extent of Contamination

This section describes the findings of the SC and RI for all environmental media that were evaluated and remains. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination. As described in Section 6.2, IRMs were performed that removed contamination, which will not be discussed in Exhibit A.

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 five categories; volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, inorganics, and per- and polyfluoroalkyl substances (PFAS). 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.

Source Areas

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

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

A source area was identified at the site of the abandoned septic tank and a leaching pool. Samples collected from the structures detected significant concentrations of VOCs, primarily TCA, within the soils utilized to abandon the system. In February 2015, an IRM was performed that removed the sanitary system and disposed of approximately 350 tons of material off-site. Figure 2 shows the location of the excavation area where the sanitary system was located.

The source area identified at the site was addressed by the IRMs described in Section 6.2.

Groundwater

Groundwater samples were collected from temporary points and shallow monitoring wells; see Figure 3 for sample locations. The samples were collected from 30 to 85 feet below ground surface to assess groundwater conditions. The SC and RI results indicate that contamination at the site exceeds the SCGs for volatile organic compounds, pesticides, inorganics, and per- and polyfluoroalkyl substances (PFAS), as summarized in Table 1.

Table 1 - Groundwater

Detected Constituents	Concentration Range Detected	SCG	Frequency Exceeding SCG
Volatile Organic Compounds (VOCs)[a]			
acetone	Non-Detect – 51.5	50	1/41
chloroethane	Non-Detect – 6.6	5	3/41
chloroform	Non-Detect – 23.7	7	1/41
tetrachloroethene (PCE)	Non-Detect – 8.0	5	2/41
toluene	Non-Detect – 6.7	5	1/41
1,1,1-trichloroethane (TCA)	Non-Detect – 33.1	5	1/41
Pesticides[a]			
dieldrin	Non-Detect – 0.220	0.004	3/16
Inorganics[a]			
iron	Non-Detect – 12,800	300	4/16
manganese	Non-Detect – 1,810	300	9/16
sodium	29,800 – 265,000	20,000	16/16
Per and Polyfluoroalkyl Substances (PFAS) [b]			
perfluorooctanoic acid (PFOA)	15.6 – 87.8	10	6/6
perfluorooctanesulfonic acid (PFOS)	9.13 – 104	10	4/6

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.
b - ppt: parts per trillion, which is equivalent to nanograms per liter, ng/L, in water.
c - SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, Part 5 of the New York State Sanitary Code (10 NYCRR Part 5), NYSDEC Sampling, Analysis, and Assessment of PFAS.

Six VOCs were detected above SCGs at the site during the SC. One of the six contaminants was TCA, which is the main contaminant for the site based on SC data prior to the IRMs. The Water Authority of Western Nassau County was contacted to obtain available data for the supply well, located just north of the site, to determine if TCA impacted the supply well. The supply well is screened from 398 to 464 feet below ground surface, which is significantly deeper than the samples collected during the SC and RI. The supply well installation log identified clay layers at 168 and 189 feet below ground surface, which limit vertical migration of groundwater. Groundwater flow contours indicate groundwater flow to the southwest away from the supply well. Supply well data from 2000 to 2021 was reviewed and the main site contaminant, TCA, was not detected within the raw water. Based on information obtained during the RI, site contamination is not impacting the supply well. Additionally, an air stripper is operational at this supply well to remove VOCs from the raw water.

The highest dieldrin detection was at DGB-1, which was reevaluated during the RI by installing another temporary point immediately downgradient and determined to not detect dieldrin. The next highest SC detection of dieldrin was at MW-1, which was resampled as part of the RI and determined to be non-detect. The final SC detection of

dieldrin above groundwater criteria was in SGB-1 located in the parking near the site building. Dieldrin is limited to the central part of the site and immediately down-gradient.

The RI results indicate that contaminant levels in the on-site monitoring wells and off-site point exceeds the SCGs for inorganics and PFAS. The inorganic and PFAS compounds found in groundwater were also found in upgradient monitoring wells and are considered to represent site background conditions. Therefore, these contaminants found in groundwater are not considered site specific contaminants of concern. The area public water supply is monitored routinely for these parameters and required to implement actions to address exposures related to water consumption.

Groundwater contamination identified during the SC and RI was not significant and source material and impacted perched water was removed during the February 2015 IRM described in Section 6.2. No significant site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

Soil

Soil samples were collected at the site during the SC and RI. Shallow soil samples were collected within two feet of the surface to assess direct human exposure if the building or parking lot was removed. Subsurface soil samples were collected from a depth of two to 15 feet to assess soil contamination impacts. IRMs were performed, which removed significant soil contamination at the abandoned sanitary system and the storm drains. The results for the remaining soils, after the IRMs, indicated that soils at the site exceed the unrestricted SCG for volatile and semi-volatile organics, pesticides, and inorganics, as summarized in Table 2. The exceedances of unrestricted use SCO are detected beneath the building and the asphalt parking lot. The results indicate that soils at the site exceed the commercial use SCO for semi-volatile organics, pesticides, and inorganics, as summarized in Table 2. The exceedances of commercial use SCOs are detected beneath the asphalt parking lot. Figure 2 shows the results above unrestricted use SCOs and commercial use SCOs. Three VOCs and one pesticide that were detected in groundwater exceeded protection of groundwater use SCOs as denoted in Table 2.

Table 2 - Soil

Detected Constituents	Concentration Range Detected (ppm)[a]	Unrestricted Use SCG[b] (ppm)	Frequency Exceeding Unrestricted Use SCG	Restricted Use SCG[c] (ppm)	Frequency Exceeding Restricted Use SCG
VOC					
acetone	Non-Detect-9.60	0.05	10/19	0.05[d]	10/19
ethylbenzene	Non-Detect-4.20	1	5/19	390	0/19
methyl Ethyl Ketone (MEK or 2-Butanone)	Non-Detect-2.0	0.12	7/19	500	0/19
methylene Chloride	Non-Detect-0.08	0.05	1/19	500	0/19
toluene	Non-Detect-0.97	0.7	1/19	0.7[d]	1/19
1,1,1-trichloroethane (TCA)	Non-Detect-0.82	0.68	1/19	0.68[d]	1/19
1,2,4-trimethylbenzene	Non-Detect-11.0	3.6	2/10	190	0/10
xylene	Non-Detect-5.7	0.26	4/19	500	0/19
SVOCs					
benzo(a)pyrene	Non-Detect-1.20	1	1/9	1	1/9
chrysene	Non-Detect-1.29	1	1/9	56	0/9
indeno(1,2,3-C,D)pyrene	Non-Detect-0.575	0.5	1/9	5.6	0/9
phenol	Non-Detect-0.540	0.33	1/9	500	0/9
Pesticides					
aldrin	Non-Detect-4.22	0.005	7/50	0.68	4/50
alpha-chlordane	Non-Detect-3.28	0.094	10/50	24	0/50
dieldrin	Non-Detect-4.62	0.005	17/50	0.1[d]	9/50
4,4'-DDD	Non-Detect-0.0413	0.0033	5/50	92	0/50
4,4'-DDE	Non-Detect-0.0081	0.0033	5/50	62	0/50
4,4'-DDT	Non-Detect-0.0652	0.0033	9/50	47	0/50
Inorganics					
arsenic	Non-Detect-14.6	13	1/41	16	0/41
cadmium	Non-Detect-15.9	2.5	1/50	9.3	1/50
chromium, total	3.40-52.2	30	2/41	400	0/41
copper	3.10-736	50	2/50	270	1/50
lead	Non-Detect-210	63	8/41	1000	0/41
mercury	Non-Detect-7.20	0.18	10/50	2.8	1/50
zinc	5.50-1,500	109	7/41	10000	0/41

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(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Commercial Use, unless otherwise noted.
d - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Groundwater.

During the IRM to remove the abandoned sanitary system, tree trunks were removed from the excavation, which signifies that fill material was placed at the site prior to development. The fill material may have contained some of the contamination, which was detected at the site.

Based on the findings of the SC and RI, the presence of the VOCs, SVOCs, pesticides, and inorganics has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are TCA, toluene, aldrin, dieldrin, and mercury.

Soil Vapor

The potential for soil vapor intrusion resulting from the presence of site related soil or groundwater contamination was evaluated by the sampling of soil vapor, sub-slab soil vapor under structures, and indoor air inside structures. At this site soil vapor was evaluated where buildings were not located and due to the presence of buildings in the impacted area a full suite of samples were collected to evaluate whether soil vapor intrusion was occurring.

During the SC, sub-slab soil vapor and indoor air samples were collected at the site to evaluate vapor intrusion. Soil vapor samples were also collected outside the building footprint during the SC to evaluate site conditions. The SC results detected VOCs, primarily TCA, in the sub-slab soil vapor beneath the building and in the soil vapor at the site, which lead to the construction of a SVE system IRM. SC results also detected 1,1-dichloroethane (DCA), chloroethane, PCE, and TCE in the soil vapor at lower concentrations than TCA. This assessment is supported by the operation of the IRM SVE system, which has removed over 67 pounds of TCA, 27 pounds of DCA, 31 pounds of chloroethane, two pounds of PCE, two pounds of TCE, and 0.48 pounds of vinyl chloride.

During the RI, the responsible party was requested to evaluate multiple structures in the vicinity of the site for vapor intrusion. Two properties granted permission for samples to be collected. RI results indicate no action needed to address exposures for one structure and action needed for the other structure. The action is driven by the detection of TCE within the sub-slab soil vapor and the indoor air of the structure. This sample also contained elevated concentrations of PCE that were significantly higher than TCA. However, this property was a mechanic shop from 1969 to 1980, which likely used PCE and TCE as part of their operations (*e.g.*, metal degreasing or part cleaner). Due to the historical use of this property and primary detections of PCE and TCE instead of TCA within the sub-slab soil vapor sample, this contamination is not considered to be site specific contaminants of concern and likely originates from another source and actions to be taken to address these issues are not part of this site remedy.

During the RI soil vapor samples were also collected at the northern and western portions of the site to evaluate soil vapor where no buildings were located. No significant concentrations were detected to the northern sample and low levels of TCA, TCE and PCE were detected in the western sample. The western soil vapor sample is the closest site sample to the off-site structure where action was identified. The results for the western sample were lower than the sub-slab soil vapor in the off-site structure, which further supports the determination that the contamination detected at the off-site structure is originating from another source.

Based on the findings of site activities, the disposal of hazardous waste has resulted in the contamination of soil vapor. The site contaminants that are considered to be the contaminants of concern which will drive the remediation of soil vapor to be addressed by the remedy selection process are TCA along with other site contaminants PCE and TCE.

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 Further Action

The No Further Action Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2. This alternative leaves the site in its present condition and does not provide any additional protection of the environment.

Alternative 2: No Further Action with Site Management

The No Further Action with Site Management Alternative recognizes the remediation of the site completed by the IRM(s) described in Section 6.2, existing cover, and requires Site Management that includes Institutional Controls and Engineering Controls to achieve remedial action objectives. This alternative maintains engineering controls which were part of the IRM and includes institutional controls, in the form of an environmental easement and site management plan, necessary to protect public health and the environment from contamination remaining at the site after the IRMs.

Present Worth: *$983,000*
Capital Cost: *$15,000*
Annual Costs (30 years): *$60,000*

Alternative 3: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative includes: excavation and off-site disposal of the impacted soil above the unrestricted soil cleanup objectives outside the footprint of the building and continued Site Management and Institutional Controls and Engineering Controls are necessary to confirm the effectiveness of the IRM and address the contamination located beneath the building.

Present Worth: *$6,000,000*
Capital Cost: *$5,000,000*
Annual Costs (30 years): *$60,000*

Exhibit C

Remedial Alternative Costs

Remedial Alternative	Capital Cost ($)	Annual Costs ($)	Total Present Worth ($)
No Action	0	0	0
No Further Action with Site Management	$15,000	$60,000	$983,000
Restoration to Pre-Disposal or Unrestricted Conditions	$5,000,000	$60,000	$6,000,000

Exhibit D

SUMMARY OF THE SELECTED REMEDY

The Department has selected Alternative 2, No Further Action with Site Management as the remedy for this site. Alternative 2 will achieve the remedial action objectives for the site by continuing to operate the SVE system, maintaining the site cover, and conducting site management activities. The elements of this remedy are described in Section 7.

Basis for Selection

The selected remedy is based on the results of site remedial activities and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the FS report.

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

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

The selected remedy Alternative 2 would satisfy this criterion by maintaining site conditions that prevent site contamination from impacting human health and the environment. The existing cover provides a barrier between receptors and site contamination. Operation of the SVE system reduces remaining VOC contamination and controls soil vapor contamination to eliminate vapor intrusion. Placement of an Environmental Easement reduces potential exposure during site development, and site use as these activities must comply with the Site Management Plan, which restricts the use of the site. Alternative 1 (No Further Action) does not provide any protection to public health from remaining contamination and will not be evaluated further. Alternative 3 (Restoration to Pre-disposal or Unrestricted Conditions) by removing most of the soil contaminated above unrestricted soil cleanup objective and continuing to operate the SVE system and site management, meets the threshold criteria.

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.

Alternative 2 complies with SCGs to the extent practicable. The IRMs conducted at the site addressed the sources of contamination and continue to reduce site contamination to achieve SCGs for VOCs. It complies with the restricted use soil cleanup objectives at the surface through use of the existing cover system. Minimal groundwater impacts have occurred. Alternative 3 also complies with this criterion as soil contamination within the parking lot would be removed in addition to operation of the SVE system. Because Alternatives 2 and 3 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site. It is expected Alternative 3 would achieve groundwater SCGs as soil contamination has been removed whereas Alternative 2 would rely on the existing cover system to limit infiltration of rainwater, which can mobilize contamination presently within the soils.

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 those alternatives involving excavation of the contaminated overburden soils (Alternative 3). Since Alternative 3 results in removal of almost all of the chemical contamination beneath the parking lot at the site, potential exposures would be less when compared to Alternative 2, as contamination would remain and rely on continued maintenance of the existing cover and site management. Full removal of all contaminated soils as part of Alternative 3 is not possible due to site conditions; see Implementability section below. Alternative 3 would require groundwater use restrictions and continued operation of the SVE system to address soil vapor intrusion, similar to Alternative 2, but the duration may be reduced since contamination was removed from the site.

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.

Alternative 2 and 3 require continued operation of the SVE system, which reduces the toxicity, mobility and volume of remaining VOC contaminants that could impact structures *via* vapor intrusion and groundwater. Alternative 3, excavation and off-site disposal, reduces the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material would not be reduced.

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.

Alternative 3 has short-term impacts during excavation and disposal of contaminated soils, which can be controlled; however, Alternative 2 would have limited impacts since no construction activities are required. The time needed to achieve the remediation goals is the shortest for Alternative 2 and longer for Alternative 3.

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.

Alternative 2 is favorable in that it is readily implementable. Alternative 3 is also implementable, but the volume of soil excavated under this alternative would necessitate increased truck traffic on local roads for several months. Additionally, the location of site contamination near the closed-in-place underground storage tanks, near the site building, near the base of the steep incline, and beneath the building would require significant construction activities to safely remove contamination but would most likely result in contamination remaining at the site. At a minimum a significant reduction in site contamination can be achieved by performing Alternative 3, but institutional and engineering controls are necessary to manage remaining contamination.

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 of the alternatives vary significantly. Alternative 2 has a lower cost, that addresses remaining contamination by continuing to operate the SVE system to remove VOCs and placement of institutional controls to limit contact with other contaminants (*e.g.*, SVOCs, pesticides, and inorganics). With its large volume of soil to be handled, Alternative 3 (excavation and off-site disposal) would have the highest cost, which includes the same site management activities as Alternative 2 since some site contamination remains.

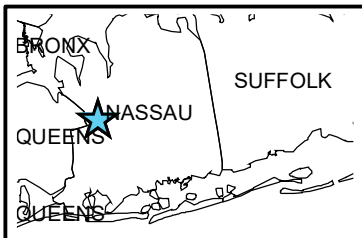
8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Since the current and future use of the site is commercial, Alternative 2 would be less desirable because at least some contaminated soil above commercial SCOs is beneath the existing cover and would remain; whereas Alternative 3 would remove the shallow contaminated soil above commercial use SCOs permanently. However, deeper contamination near the building/closed-in-place underground storage tanks that exceeds commercial use SCOs would likely remain at the site for Alternatives 2 and 3, which would be controlled by implementation of a Site Management Plan. Alternative 3 would likely not remove contamination beneath the building that is above unrestricted use SCOs and this contamination would need to be managed as part of the 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 investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary has been prepared that describes public comments received and the manner in which the Department addressed the concerns raised.

Alternative 2 has been selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



Key Plan
1 inch = 20 miles

Legend

Site

0 500 1,000 2,000 Feet

1 inch = 1,000 feet

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO,

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

Figure 1
Site Location Map
Zoe Chemical Co. - Site Number 130211
New Hyde Park, Nassau County, New York

N

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

Figure 1A
Aerial Map
Zoe Chemical Co. - Site Number 130211
New Hyde Park, Nassau County, New York

N

ISB-1 (0-2ft) (9/18/13)			
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDD	3.9	3.3	92,000
4,4'-DDT	15.2	3.3	47,000

ISB-2 (0-2ft) (9/18/13)			
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDT	3.9	3.3	47,000

SB-5 (0-2ft) (4/22/13)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	8.8	5	1,400
4,4'-DDT	5.8	3.3	47,000
Metals mg/kg	Result	Unres.	Com.
Chromium	32.4	30	1,500
Lead	187	63	1,000
Zinc	159	109	10,000

SB-X (0-2ft) (4/22/13)			
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	4,220	5	680

SGB-1 (10-12ft) (10/8/13)			
VOC ug/kg	Result	Unres.	Com.
Acetone	592	50	500,000
Ethylbenzene	3,850	1,000	390,000
m,p-Xylene	2,350	260	500,000
o-Xylene	301	260	500,000
Xylene (total)	2,650	260	500,000
SVOC ug/kg	Result	Unres.	Com.
Benzo(a)anthracene	791	1,000	5,600
Benzo(b)fluoranthene	666	1,000	5,600
Benzo(a)pyrene	1,200	1,000	1,000
Chrysene	1,290	1,000	56,000
Indeno(1,2,3-cd)pyrene	575	500	5,600
Pesticides ug/kg	Result	Unres.	Com.
alpha-Chlordane	3,280	94	24,000
Dieldrin	4,620	5	1,400
Metals mg/kg	Result	Unres.	Com.
Lead	139	63	1,000
Mercury	7.2	0.18	2.8
Zinc	354	109	10,000

SGB East (0-2ft) (10/1/18)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	56.2	5	1,400

SGB East (5-8ft) (10/1/18)			
Pesticides ug/kg	Result	Unres.	Com.
alpha-Chlordane	128	94	24,000
Dieldrin	109	5	1,400
Metals mg/kg	Result	Unres.	Com.
Mercury	0.27	63	1,000

SGB East (10-12ft) (10/1/18)			
Pesticides ug/kg	Result	Unres.	Com.
alpha-Chlordane	102	94	24,000
Dieldrin	97.8	5	1,400

SB-6/SSB East (0-2ft) (10/2/18)			
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDE	4.3	3.3	62,000
Metals mg/kg	Result	Unres.	Com.
Lead	122	63	1,000

SB-6/SSB East (5-8ft) (10/2/18)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	28.1	5	1,400
4,4'-DDD	41.3	3.3	92,000
4,4'-DDE	8.1	3.3	62,000

SB-6/SSB East (10-12ft) (10/2/18)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	25.5	5	1,400

SB-1 (0-2ft) (4/22/13)			
SVOC ug/kg	Result	Unres.	Com.
Phenol	540	330	500,000
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDT	6.7	3.3	47,000
Metals mg/kg	Result	Unres.	Com.
Cadmium	15.9	2.5	9.3
Copper	736	50	270
Lead	82	63	1,000
Mercury	0.32	0.18	2.8
Zinc	416	109	10,000

SB-1 East (0-2ft) (10/1/18)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	14.3	5	1,400
4,4'-DDT	4.4	3.3	47,000

SB-4 (0-2ft) (4/22/13)			
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDT	4.0	3.3	47,000

EP-6 (15ft) (North East) (2/22/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	320	50	500,000
2-Butanone (MEK)	160	120	500,000
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	11.2	5	680
4,4'-DDD	7.32	3.3	92,000
4,4'-DDE	4.51	3.3	62,000
Metals mg/kg	Result	Unres.	Com.
Mercury	0.26	0.18	2.8

SB-6/SSB South (0-2ft) (10/2/18)			
Pesticides ug/kg	Result	Unres.	Com.
Dieldrin	7.3	5	1,400
4,4'-DDE	4.7	3.3	62,000
4,4'-DDT	6	3.3	47,000
Metals mg/kg	Result	Unres.	Com.
Arsenic	14.6	13	16
Lead	66.1	63	1,000
Mercury	0.19	0.18	2.8
Zinc	133	109	10,000

EP-3 (15ft) (North West) (2/21/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	7,300	50	500,000
2-Butanone (MEK)	2,000	120	500,000
Ethylbenzene	1,400	1,000	390,000
1,2,4-Trimethylbenzene	9,300	3,600	190,000
m,p-Xylene	2,600	260	500,000
Xylene (total)	2,600	260	500,000
Pesticides ug/kg	Result	Unres.	Com.
cis-Chlordane	615	94	24,000
Dieldrin	465	5	1,400
Metals mg/kg	Result	Unres.	Com.
Mercury	0.27	0.18	2.8

EP-2 (15ft) (West) (2/21/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	130	50	500,000
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDD	39.6	3.3	92,000
4,4'-DDT	65.2	3.3	47,000
Metals mg/kg	Result	Unres.	Com.
Mercury	0.29	0.18	2.8

EP-1 (15ft) (South West) (2/21/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	66	50	500,000
Pesticides ug/kg	Result	Unres.	Com.
4,4'-DDD	7.02	3.3	92,000

EP-4 (15ft) (Bottom West) (2/21/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	340	50	500,000
2-Butanone (MEK)	170	120	500,000
1,1,1-Trichloroethane	820	680	500,000
m,p-Xylene	1,100	260	500,000
o-Xylene	430	260	500,000
Xylene (total)	1,500	260	500,000
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	47.5	5	680
cis-Chlordane	323	94	24,000
Dieldrin	329	5	1,400

EP-7 (15ft) (South East) (2/22/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	1,800	50	500,000
2-Butanone (MEK)	510	120	500,000
Ethylbenzene	4,200	1,000	390,000
Toluene	970	700	500,000
1,2,4-Trimethylbenzene	11,000	3,600	190,000
m,p-Xylene	4,600	260	500,000
o-Xylene	1,100	260	500,000
Xylene (total)	5,700	260	500,000
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	1,200	5	680
cis-Chlordane	1,490	94	24,000
Dieldrin	988	5	1,400
Metals mg/kg	Result	Unres.	Com.
Mercury	0.37	0.18	2.8

EP-5 (15ft) (East) (2/22/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	1,100	50	500,000
2-Butanone (MEK)	480	120	500,000
Ethylbenzene	1,100	1,000	390,000
m,p-Xylene	480	260	500,000
Xylene (total)	480	260	500,000
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	1,390	5	680
cis-Chlordane	1,350	94	24,000
Dieldrin	664	5	1,400

EP-8 (15ft) (Bottom East) (2/22/15)			
VOC ug/kg	Result	Unres.	Com.
Acetone	1,300	50	500,000
2-Butanone (MEK)	460	120	500,000
Pesticides ug/kg	Result	Unres.	Com.
Aldrin	1,060	5	680
cis-Chlordane	336	94	24,000
Dieldrin	271	5	1,400

Evergreen Avenue
Falmouth Avenue
Gould Street
Water Authority Of Western Nassau County
Approximate Property Boundary
Sloped Area with Heavy Brush
Former Flammable Storage Areas
ISB-5
ISB-4
ISB-3
Former Tank Locations
Abandoned USTs
SITE BUILDING
Garage Door
SGB North
SB-6/SSB North
Sloped Area with Brush
7ft. Wide Concrete pad with Metal Storage Racks
Former Product Storage Area
Former Product Storage Area Sample
Truck Bays
2-Foot Wide Restored Trench
Metal Vault
Former SSB
Former Tank Storage Area
SB-3
SB-1 West
SB-2
SB-1 South
Sewer Connection
Former SB-6
Gate
SB-6/SSB West
Excavated Area Detail

0 20 40 60
Graphic Scale In Feet

LEGEND

- Former Exterior Soil Boring
- Former 8' Soil Vapor Sample
- Existing Groundwater Monitoring Well
- Storm Drain
- Soil 12' Boring
- Shallow Groundwater Boring installed down gradient from the former cesspool (across Falmouth Avenue)
- Soil Sample
- Area Excavated February 2015 IRM
- Exceeds Commercial and Industrial Standards
- Exceeds Commercial Standards

Note: 1. Samples without detections over Part 375 Unrestricted Use SCOs only show sample locations.
2. All sample concentrations listed on this drawing exceed Part 375 Unrestricted Use SCOs.
Concentrations highlighted exceed Commercial or Commercial and Industrial Use SCOs.
3. Industrial SCOs for Aldrin is 1,400 ug/kg, Dieldrin is 2,800 ug/kg, Benzo(a)pyrene is 1,200 ug/kg, and Mercury is 5.7 mg/kg.

H:\Drawings\Seaboard Estates-Zoe Chemical\2021-3

CA RICH CONSULTANTS, INC.
Environmental Specialists Since 1982
17 Dupont Street, Plainview, New York 11803

TITLE: Soil Samples Detected above Unrestricted, Commercial, and Industrial SCOs

DATE: 9/21/2021

SCALE: AS SHOWN

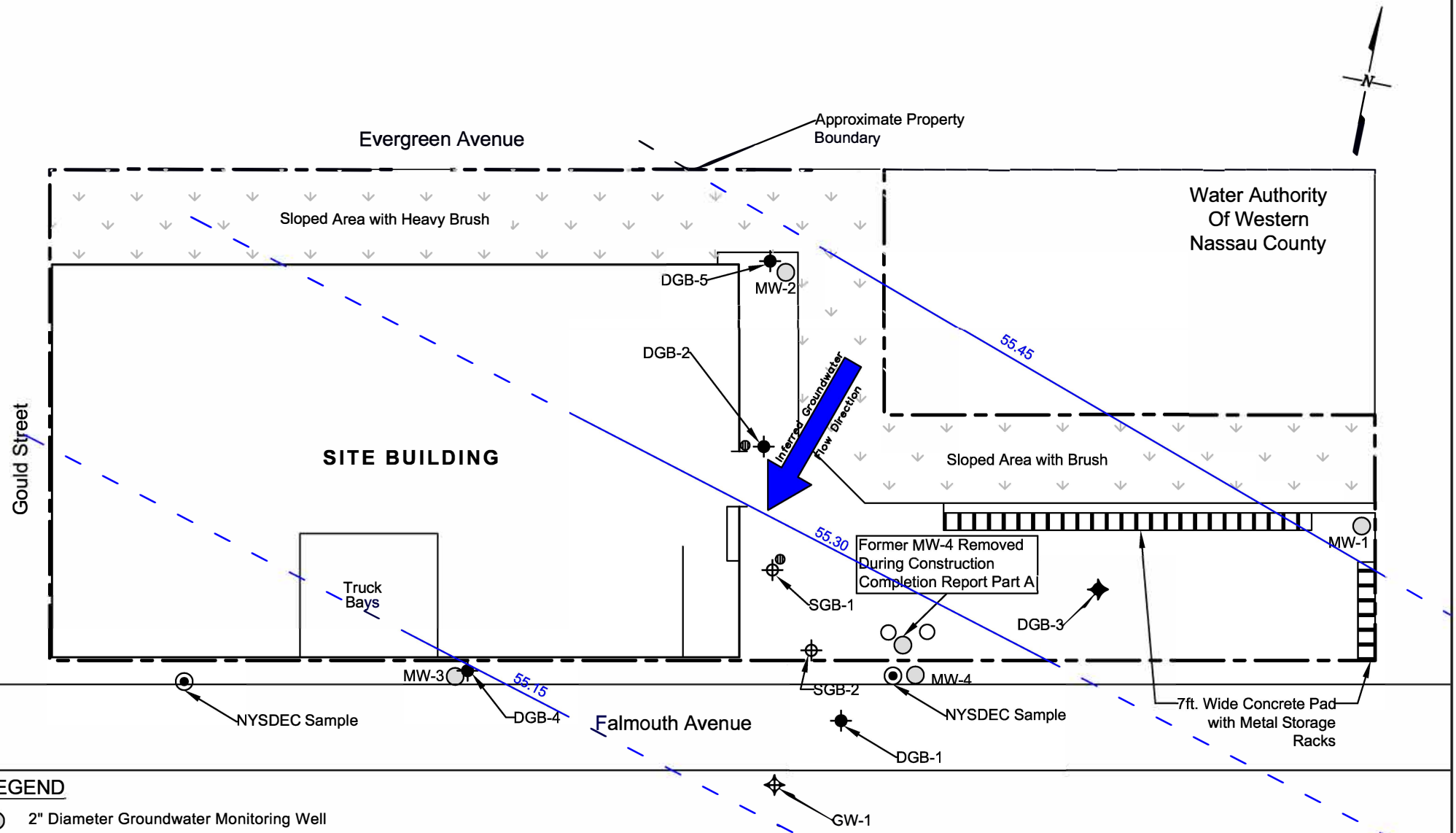
FIGURE: 2

DRAWING NO: 2021-3

Former Zoe Chemical Site
1801 Falmouth Avenue
New Hyde Park, NY

DRAWN BY: J.T.C./T.R.B.

APPR. BY: J.E.P.



LEGEND

- 2" Diameter Groundwater Monitoring Well
- Temporary 55' or 85' Groundwater Boring
- Temporary 30' Groundwater Boring
- Storm Drain
- Former Sanitary System ¯ Removed February 20i5 IRM
- NYSDEC Sample

0 20 40 60
Graphic Scale In Feet

Note:
1. The groundwater samples depicted on this figure collected as part of the Site Characterization and Remedial Investigation.
2. The groundwater contour is from data collected on March 3, 2021.

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TITLE: Groundwater Sample Locations & Groundwater Elevation Contours		DATE: 9/21/2021
		SCALE: As Shown
FIGURE: 3	Former Zoe Chemical Site 1801 Falmouth Avenue New Hyde Park, NY	DRAWN BY: J.T.C./T.R.B.
DRAWING NO: 2021–2		APPR. BY: J.E.P.

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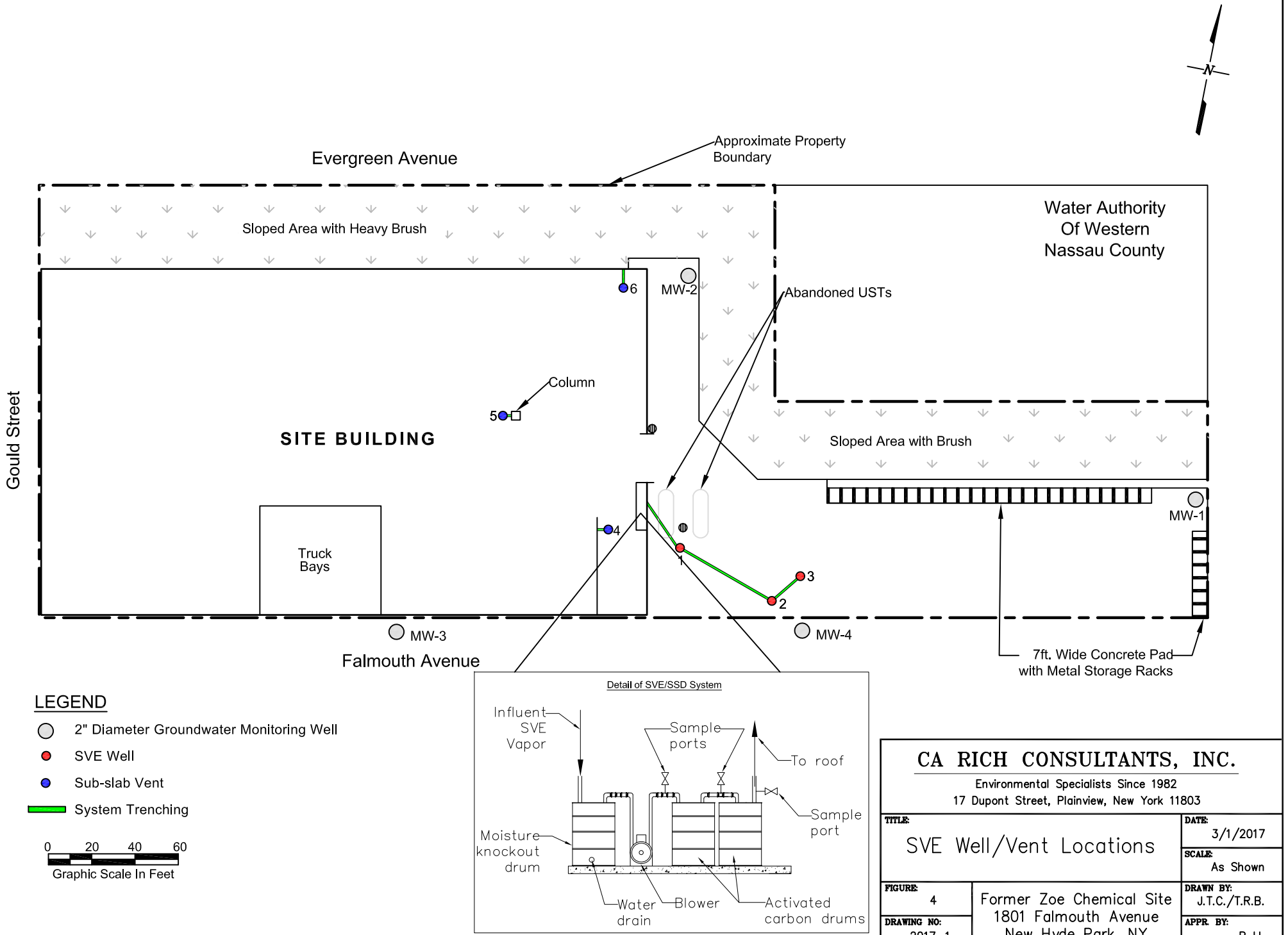

CA RICH CONSULTANTS, INC.

Environmental Specialists Since 1982
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TITLE: SVE Well/Vent Locations		DATE: 3/1/2017
		SCALE: As Shown
FIGURE: 4	Former Zoe Chemical Site 1801 Falmouth Avenue New Hyde Park, NY	DRAWN BY: J.T.C./T.R.B.
DRAWING NO: 2017-1		APPR. BY: R.J.I.

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APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Zoe Chemical Co.
State Superfund Project
New Hyde Park, Nassau County, New York
Site No. 130211

The Proposed Remedial Action Plan (PRAP) for the Zoe Chemical Co. site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on February 9, 2022. The PRAP outlined the remedial measure proposed for the contaminated soil, groundwater, and soil vapor at the Zoe Chemical Co. site.

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

A public meeting was held on February 24, 2022, which included a presentation of the remedial investigation feasibility study (RI/FS) for the Zoe Chemical Co. as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on March 10, 2022.

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

Timothy J. McGuire with H2M Architects + Engineers submitted a letter dated March 9, 2022, which included the following comments:

COMMENT 1:

Groundwater flows in southwest direction from this site. Many Water Authority of Western Nassau County (WAWNC) water supply wells are located downgradient of 1801 Falmouth Avenue. Of note is Station 57 (NYSDEC Well No. N-7649 and N-7650) located approximately 1.5 miles, which has a history of VOCs and emerging contaminants (1,4-dioxane) also seen at 1801 Falmouth Avenue.

RESPONSE 1:

The Department is aware of the WAWNC water supply wells located down-gradient of the site and the significant trichloroethene (TCE) and tetrachloroethene (PCE) contamination impacting Well No. N-7649 and N-7650. The Department attempted to identify a source(s) of contamination that is impacting these supply wells. The Department utilized the Source Water Assessment Program (SWAP) information to define the search area and focus an investigation to industries that use these types of chemicals (e.g., dry cleaners, machine shops, printers, and chemical companies). A Records Search and Hydraulic Evaluation report, dated September 8,

2009, was prepared by the Department's consultant to identify potential sources of contamination impacting these supply wells. Eighteen groundwater profile points and thirteen soil vapor points were completed near suspected sources up-gradient of these supply wells. Investigations were located along Jericho Turnpike, Denton Avenue, and Hillside Avenue. As part of this effort, six groundwater profile points and three soil vapor points were installed near the Zoe Chemical Co. site or down-gradient of it to also evaluate other sources within the commercial/industrial area. The investigations did not find significant concentrations of TCE or PCE that would be considered a source of contamination that is impacting the supply wells. The sample location near the Zoe Chemical Co. site did detect elevated 1,1,1-trichloroethane (TCA) and breakdown products, which led to the site being investigated further. Details of this investigation are available under Site No. 130191.

COMMENT 2:

The investigation work plan investigated the site and focuses on one off-site supply well station – Station 20, which is located northeast and upgradient of 1801 Falmouth Avenue. Site investigation on groundwater was done through samples from October 1st, 2018, within the perimeter of the site, which showed no major contamination from the primary contaminants of concern from this site after the interim remedial measures (IRMs). For the off-site contamination investigation, VOC (TCA and its degradation products) data were analyzed for upgradient supply well – Station 20, from December 2011 through August 2017, and concluded that "the Site has no negative impact on the adjacent upgradient public supply well". No other downgradient off-site wells were investigated. Based on these two conclusions DEC stated "No significant site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternative need to be evaluated for groundwater" – we disagree with this statement for the following reasons listed below:

a. The investigation failed to address downgradient wells.
b. No off-site investigation was done at supply wells of Station 57, which is 1.5 miles downgradient of the Site.
c. As per the SWAP report, the migrating contaminant from the site is well within the contribution areas of the wellheads at Station 57.
d. Station 57 is has been contaminated with 1,1,1-trichloroethane (TCA), tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethane (DCA) for years now – which are listed as the primary contaminants of concern and also present in the perched water of the site.
e. TCA, TCE and PCE commonly uses 1,4-dioxane as a stabilizer – no offsite 1,4-dioxane investigation was done. 1,4-dioxane is impacting Station 57 in concentrations well above the MCL.
f. The monitoring wells used to sample during the investigation were shallow (samples were collected from 30 to 85 feet below ground surface) compared to the depth of the supply well. Sampling (from the sallow monitoring wells) indicated that elevated concentrations were found above a layer of clay – perched water. But as we know the glacial aquifer may contain streaks of fairly impermeable clay but eventually groundwater flowing southwest will find a more porous strata and migrate downwards. The investigation did not evaluate the quantity of contamination released over the years

of improper disposal at site nor was there a comparison of the quantity removed to make the definitive statement that no contamination has migrated off site.

g. No off-site or deep aquifer investigation focused on VOC or 1,4-dioxane was done in the Remedial investigation report downgradient of the site to prove that there is no plume.

Thus, we recommend a more extensive off-site contamination investigation is carried out to include sampling for VOC and 1,4-dioxane at a depth near the water supply wells for WAWNC Station 57 before stating the groundwater is not a media of concern.

RESPONSE 2:

The 2014, Site Characterization (SC) identified that the elevated groundwater contamination detected at the site was located within perched water beneath the former sanitary system. SC groundwater samples collected from the aquifer were not significantly contaminated and not representative of a source of contamination that is impacting Well No. N-7649 and N-7650. In 2015, the contaminated perched water was removed as part of the IRM to remove the sanitary system. In 2016, a soil vapor extraction system was installed, which further protects groundwater by removing volatiles (e.g., TCA) from the vadose zone before contaminants can infiltrate into the groundwater. In 2018, a groundwater evaluation was performed during the Remedial Investigation that confirmed shallow groundwater at the site and immediately down-gradient of the sanitary system was not significantly impacted. RI samples included the collection of 1,4-dioxane, which was detected below drinking water standards. The Department's investigation, indicated in Response 1, investigated multiple facilities as these chemicals (e.g., PCE, TCE, and TCA) are utilized by various industries. Four groundwater sample points located within two blocks south and southwest of the Zoe Chemical Co. site did not detect significant contamination. Deeper sample points on-site and off-site are not warranted as the minor detections are anticipated to further attenuate the deeper and further down-gradient of the site. Based on available information from the SC, RI, and the Department's investigation, no significant site-related groundwater contamination of concern was identified, and no remedial alternatives need to be evaluated for groundwater near the site or down-gradient of the site.

The request for an extensive investigation at a depth near the water supply wells for WAWNC Station 57 would need to be performed under a different program. The Department has shared information from the Department's investigation with the U.S. Environmental Protection Agency (EPA) as they are conducting a groundwater investigation in this area to identify a source of TCE contamination identified during the Fulton Avenue NPL site investigation. Additional information about this investigation can be obtained from the EPA or from the Department, Site No. 130073.

COMMENT 3:

The Remedial Action Objectives (RAO) for this State Superfund Project states: a. Public Health Protection: Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

There is no concrete evidence that years of contamination has not leached into groundwater and been carried downgradient off-site as explained in point (2). The Water Authority of Western

Nassau County has had to upgrade three of its facilities with new expensive and sophisticated Advanced Oxidation Treatment as a result of contamination possibly emanating from this Site. Although the RAO may have been met for the site, the WAWNC will be the entity ensuring this RAO is met for any legacy off site contamination. We request that the WAWNC be kept aware of any monitoring results or new information regarding the source of 1,4-dioxane and VOC contamination at 20 and 57.

RESPONSE 3:

Fact sheets regarding current and new sites are released by the Department and may contain information regarding sources of contamination near supply wells 20 and 57. Typically fact sheets are provided to the water authorities, but anyone can sign up for these notifications by going to the Department's website by using the link below. This will permit you to sign up for notifications by county.
www.dec.ny.gov/chemical/61092.html

Additionally, the Department's website, DECinfo Locator, can be used to obtain updates regarding sites and available reports that have been posted.
https://www.dec.ny.gov/pubs/109457.html

COMMENT 4:

The proposed remedy is to go with the Remedial Alternative 2 i.e. No Further Action with Site Management. This alternative may prevent future exposure and migration of the contaminants, it does not address any efforts to mitigate the negative impacts that may already have been caused by the migration of contaminants downgradient.

RESPONSE 4:

Since no significant groundwater contamination was detected in the aquifer, see Response 2, the off-site migration of site contamination is expected to attenuate within a short distance of the site.

COMMENT 5:

We recommend that the WAWNC be included on any correspondence or data collection due to the fact that there is a potential threat to the Water Authority's wells by possible legacy contamination emanating from this site. This includes any additional remedial actions taken and the resulting treated water quality data.

RESPONSE 5:

The proposed remedy does not include a groundwater monitoring component. Site Management reports will be posted to the Department's website, see link below, which will show compliance with the selected remedy. These reports will include any additional remedial actions taken and the resulting treated water quality data, if performed.
https://www.dec.ny.gov/data/DecDocs/130211/

Jessica Proscia CA Rich Consultants, Inc. submitted an email dated March 3, 2022, which included the following comment:

COMMENT 6:

We will get a land surveyor at the property to determine the property dimensions. The PRAP details that the sidewalk is part of the composite cover system. In the Town of North Hempstead, owners are not required to maintain the sidewalks, it's the Department of Public Works. However, if we find the site does include the sidewalk it will be part of the composite cover system. I wanted to make a note of this before the public comment period ended. Again, we will be needing an updated site survey anyway so we can determine this when we obtain a new one.

RESPONSE 6:

The site survey for the environmental easement will determine if the sidewalks along Falmouth Avenue are part of the site and will need to be maintained as part of site management. The inclusion of sidewalks is also appropriate as walkways to an entrance on the parking lot side of the building may be placed in the future, which would make this part of the composite cover system.

APPENDIX B

Administrative Record

Administrative Record

Zoe Chemical Co.
State Superfund Project
New Hyde Park, Nassau County, New York
Site No. 130211

1. *Proposed Remedial Action Plan for the Zoe Chemical Co. site,* dated February 2022, prepared by the Department.

2. Order on Consent, Index No. W1-1165-12-06, between the Department and Seaboard Estates, Inc., executed on December 6, 2012.

3. "Records Search and Hydraulic Evaluation – Final WAWNC Well 57", September 8, 2009, prepared by Mactec.

4. "Site Characterization Report – Final WAWNC Well 57 Study", May 19, 2011, prepared by Mactec.

5. "Site Characterization Report – Former Zoe Chemical", July 2014, prepared by CA Rich Consultants, Inc.

6. "Citizen Participation Plan – Zoe Chemical Site", September 2014, prepared by CA Rich Consultants, Inc.

7. "Construction Completion Report Part A – Former Zoe Chemical Site", February 2016, prepared by Korlipara Engineering and CA Rich Consultants, Inc.

8. "Construction Completion Report Part B – Former Zoe Chemical Site", June 2017, prepared by Korlipara Engineering and CA Rich Consultants, Inc.

9. "Remedial Investigation Work Plan – Former Zoe Chemical", May 2018, prepared by CA Rich Consultants, Inc.

10. "Remedial Investigation Report and Feasibility Study – Former Zoe Chemical", January 2022, prepared by Korlipara Engineering and CA Rich Consultants, Inc.

11. Letter dated March 9, 2022, from Timothy J. McGuire H2M Architects + Engineers.

12. Email dated March 3, 2022, from Jessica Proscia CA Rich Consultants, Inc.