RECORD OF DECISION

New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3
Nassau County, New York

United States Environmental Protection Agency
Region 2
New York, New York
March 2024

701335

DECLARATION

SITE NAME AND LOCATION

New Cassel/Hicksville Groundwater Contamination Superfund Site
Nassau County, New York

Superfund Site Identification Number: NY0001095363
Operable Unit: 03

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for Operable Unit 3 (OU3) of the New Cassel/Hicksville Groundwater Contamination Superfund Site (Site), in Nassau County, New York. This remedy is being chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §§ 9601 - 9675, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300. This decision document explains the factual and legal basis for selecting the OU3 remedy. The attached index (see Appendix III) identifies the items that comprise the Administrative Record for this action, upon which the selected remedy is based.

The New York State Department of Environmental Conservation (NYSDEC) was consulted on the proposed remedy in accordance with Section 121(f) of CERCLA, 42 U.S.C. § 9621(f), and concurs with the selected remedy (see Appendix IV).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response actions selected in this OU3 ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy described in this document addresses groundwater contamination at a portion of the Site identified as OU3. For purposes of this OU3 ROD, OU3 is generally located east of Merrick Avenue, north of Hempstead Turnpike, west of Carman Avenue, and south of Old Country Road. EPA selected an earlier remedy, in September 2013, for a different operable unit, Operable Unit 1 (OU1). That remedy addressed groundwater contamination in the area upgradient of OU3 and downgradient of Old Country Road, Grand Boulevard, and the New Cassel Industrial Area (NCIA).

The major components of this selected remedy for OU3 of the Site include the following:

- Extraction of groundwater via pumping and ex-situ treatment of extracted groundwater prior to discharge to one or more of the following: a new or existing recharge basin; underground

infiltration galleries; the sanitary sewer; surface water, and/or reinjection to groundwater. The location, number, and pumping rates of the extraction wells, specifications for the treatment plant, and discharge locations are to be determined during the remedial design. The extraction well network will be designed to include the placement of extraction wells near the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 micrograms per liter (µg/L). In addition, a transect of extraction wells will also be installed near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L so as to establish hydraulic control and reduce the downgradient migration of contamination. During the remedial design, additional groundwater monitoring wells will be installed, and sampling will be performed to refine the areas with contaminant concentrations greater than 1,000 µg/L and 100 µg/L. Sampling for emerging contaminants, such as perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), will be performed during the remedial design. The extracted groundwater from the pumping wells will be conveyed to a groundwater treatment plant for treatment prior to discharge. Extraction and ex-situ treatment of contaminated groundwater will continue until the cleanup levels for each of the contaminants of concern (COCs) are attained within the targeted treatment area.

- As part of the remedial design, further evaluation will be conducted to identify potential locations to site the various system components. If it is determined that parkland, such as Eisenhower Park, is needed as the appropriate location to construct and/or operate a portion of these system components, EPA will coordinate this effort with Nassau County and endeavor to obtain any necessary approvals (*e.g.*, from the New York State legislature) for the use of parkland for this purpose. As part of this effort, an evaluation will be conducted of whether some of the treated effluent could be used by the County on a seasonal basis for irrigation purposes at the park. Alternatives to constructing one centralized treatment plant, such as utilizing multiple, smaller treatment plants, may be considered during the remedial design. In addition, if sufficient capacity were to exist, consideration could be given to treating a portion of the extracted groundwater at a treatment plant that is or may be constructed for another response action at another operable unit at the Site, such as OU1.

- Implementation of a long-term groundwater monitoring program to ensure that groundwater quality improves following implementation of this remedy until clean up levels are achieved, including in areas outside of the area of hydraulic control, which are being addressed through naturally occurring attenuation processes. The long-term monitoring program would include the installation and sampling of an early-warning monitoring well for the East Meadow water supply well that is located south of Hempstead Turnpike. During the remedial design, the location of the early-warning monitoring well will be determined so as to ensure sufficient time for the installation of wellhead treatment to address Site-related contamination, if such treatment is determined to be necessary.

- Institutional controls that will rely on current groundwater use restrictions in the form of state and local laws. Specifically, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available. The Site is serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in

Nassau County without a State permit. To ensure the remedy remains protective, the above State and County well restrictions will be relied upon.

- Development of a site management plan (SMP) to provide for the proper operation and maintenance (O&M) of the OU3 remedy post-construction. The SMP will include plans for confirming institutional controls, long-term groundwater monitoring, periodic reviews, and certifications, as applicable.

Individual facilities within the NCIA are considered to be among the sources of groundwater contamination for OU1. Sources of groundwater contamination for Operable Unit 2 (OU2) at the Site are generally located north and east of OU1. Response actions for OU1 and OU2, including the sources of the contamination at those OUs, are not part of this OU3, although the successful mitigation (*i.e.*, source control or cleanup) of the source area(s) at the upgradient, individual source facilities and associated groundwater contamination are anticipated and has been assumed in evaluating the potential for attaining the objectives of the selected remedial alternative for this OU3 ROD.

The environmental benefits of the selected remedy may be enhanced by employing design technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Policy[1] and NYSDEC's Green Remediation Policy. This will include consideration of green remediation technologies and practices, including granular activated carbon (GAC) regeneration.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy satisfies the statutory requirements for remedial actions set forth in Section 121 of CERCLA, 42 U.S.C. § 9621, as follows: 1) it is protective of human health and the environment; 2) it meets a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains the legally applicable or relevant and appropriate requirements under federal and state laws; 3) it is cost-effective; and 4) it utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. In addition, Section 121 of CERCLA, 42 U.S.C. § 9621, includes a preference for remedies that employ treatment that permanently and significantly reduces the volume, toxicity, or mobility of hazardous substances as a principal element. The selected remedy satisfies the preference for treatment, as it will result in the extraction and ex-situ treatment of contaminated groundwater from the aquifer prior to discharge.

While the selected remedy will ultimately result in reduction of contaminant levels in groundwater to allow for unlimited use and unrestricted exposure, it is anticipated that it will take longer than five years to achieve these levels. As a result, in accordance with CERCLA, the Site remedy is to be reviewed at least once every five years until cleanup levels are achieved and unrestricted use is achieved.

[1] See http://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy and http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this action.

- ✓ A discussion of the current nature and extent of contamination is included in the "Summary of Site Characteristics" section.
- ✓ Contaminants of concern (COCs) and their respective concentrations may be found in the "Summary of Site Characteristics" section.
- ✓ Potential adverse effects associated with exposure to Site contaminants may be found in the "Summary of Site Risks" section.
- ✓ A discussion of cleanup levels for COCs may be found in the "Remedial Action Objectives" section and in Table 7 in Appendix II.
- ✓ A discussion of principal threat waste is contained in the "Principal Threat Waste" section.
- ✓ Current and reasonably anticipated future land use assumptions are discussed in the "Current and Potential Future Land and Resource Uses" section.
- ✓ Remedial Action Objectives to be achieved as a result of the selected remedy are discussed in the "RAOs" section.
- ✓ Estimated capital, annual O&M, and total present worth costs are discussed in the "Description of Remedial Alternatives" section.
- ✓ Key factors in the detailed analyses of remedial alternatives (*e.g.*, how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

AUTHORIZING SIGNATURE

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March 29, 2024

Pat Evangelista, Director
Superfund and Emergency Management Division

Date

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DECISION SUMMARY

1.0 SITE NAME, LOCATION, AND DESCRIPTION

The New Cassel/Hicksville Groundwater Contamination Superfund Site (Site) is located in Nassau County, New York. The Site comprises an area of widespread groundwater contamination within the Towns of Hempstead, North Hempstead, and Oyster Bay in Nassau County, New York. The Site is currently estimated to include approximately 6.5 square miles, characterized by contaminated groundwater that has impacted several public supply wells, including four Town of Hempstead wells (Bowling Green wells 1 and 2, Roosevelt Field well 10, and Levittown well 2A), six Hamlet of Hicksville wells (4-2, 5-2, 5-3, 7-2, 8-1, and 9-3), and one Village of Westbury well (11). A Site location map is provided as Figure 1 in Appendix I.

EPA has divided the Site into separate phases, or operable units (OUs), for remediation purposes. To date, EPA has designated three OUs for the Site. EPA recognizes that there may be additional OUs for the Site, and it is anticipated that subsequent remedies would be selected to address any such OUs. OU1 was selected to address the groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the New Cassel Industrial Area (NCIA). OU2 includes the groundwater contamination at and downgradient of the General Instruments facility located at 600 West John Street, Hicksville, New York (referred to as the "GI Facility"), and other properties, including 70, 100, and 140 Cantiague Rock Road, Hicksville, New York (referred to as the "Sylvania Properties). OU3, the subject of this remedy, is to address volatile organic contaminants (VOCs) in groundwater generally located east of Merrick Avenue, north of Hempstead Turnpike, west of Carman Avenue, and south of Old Country Road and OU1. OU3 is the area referenced in the OU1 ROD as the far-field area of contamination downgradient of OU1 and the western portions of OU2. A map depicting OU3 is provided as Figure 2 in Appendix I.

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

2.1 OU1 History

The NCIA was developed for industrial use during the 1950s through the 1970s and remains densely occupied with industrial and commercial properties. As discussed in further detail in EPA's 2013 record of decision (ROD) memorializing the remedy for OU1, in 1986, Nassau County Department of Health identified extensive groundwater contamination throughout the NCIA.

Numerous investigations conducted by the New York State Department of Conservation (NYSDEC) since 1986 indicated that groundwater contamination from the upgradient NCIA properties impacted the Bowling Green water supply wells and the area south of Old Country Road and Grand Boulevard, identified as EPA's OU1. Groundwater sampling data indicated that the contaminants of concern (COCs) are tetrachloroethylene (PCE), trichloroethylene (TCE), trichloroethane (TCA), and other minor constituents and breakdown products. NYSDEC identified three groundwater plumes (eastern, central, and western) emanating from

the NCIA. NYSDEC, under its state hazardous waste cleanup program, initiated and continues to oversee a number of response actions at individual properties within the NCIA that have been determined to be impacting groundwater, including operation of extraction wells installed north of Old Country Road since 2018 to remove contaminated groundwater along the eastern portion of the NCIA.

In 2003, NYSDEC selected a remedy under its State authorities to address groundwater contamination downgradient of the NCIA. While NYSDEC conducted pre-design investigation activities, the State-selected remedy was never constructed. Thereafter, NYSDEC requested that EPA list the Site on the National Priorities List (NPL). On September 16, 2011, EPA listed the Site on the NPL, and this area south (downgradient) of the NCIA was identified by EPA as OU1. As outlined above, the listing of the Site on the NPL does not alter the oversight of the individual response actions undertaken by parties and overseen by NYSDEC in the NCIA under State authority.

On September 30, 2013, EPA selected a remedy for OU1 to address groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the NCIA. As mentioned above, three groundwater plumes were identified in the NCIA and exist at OU1 (the eastern, central, and western plumes). The OU1 remedy includes in-situ treatment of groundwater via in-well vapor stripping, extraction of groundwater via pumping and ex-situ treatment, and/or in-situ chemical treatment to target high concentration areas, as appropriate. The OU1 remedy also includes the implementation of long-term monitoring and institutional controls to limit exposure to contaminated groundwater.

The design of the OU1 remedy is underway. As part of the remedy design, from 2020 to 2022, EPA installed additional vertical profile borings (VPBs) and groundwater monitoring wells in the western plume, and additional VPBs and monitoring wells were installed in the eastern and central plumes by potentially responsible parties (PRPs) under EPA's direction and oversight. During drilling of the VPBs between 2020 and 2022, the maximum concentrations of PCE detected in the eastern, central, and western plumes were 10,300 µg/L, 176 µg/L, and 1,700 µg/L, respectively. Maximum concentrations of TCE detected in the eastern, central, and western plumes was 1,090 µg/L, 714 µg/L, and 1,700 µg/L, respectively.

Following the installation of the permanent monitoring wells for OU1, a comprehensive round of sampling of these wells was conducted in Spring 2023. The sampling results are provided in the Administrative Record for this action, and the data will be used in the development of the remedial design and technical specifications for the OU1 cleanup.

2.2 OU2 History

OU2 includes the groundwater contamination at and migrating downgradient of the GI Facility and Sylvania Properties, among others. The Sylvania Properties are located immediately north and upgradient of the GI Facility in Hicksville, New York. Below is a summary of the investigations and response actions conducted at OU2.

The Sylvania Properties were used for industrial and manufacturing operations from as early as

1942. From 1952 to 1966, the facilities at the Sylvania Properties were involved in the research, development, and fabrication of nuclear elements. Beginning in 1992, investigations and removal activities were conducted to determine the nature and extent of contamination at the Sylvania Properties. In addition to radiological contamination, investigations revealed concentrations of PCE in soils up to 40,000 milligrams per kilogram (mg/kg) at a depth of 16 feet below ground surface (bgs). Cleanup activities conducted at the Sylvania Properties by certain responsible parties associated with the Sylvania Properties under a voluntary cleanup agreement with NYSDEC included the excavation of soils and the removal of underground storage tanks (USTs).

In September 2021, the U.S. Army Corps of Engineers (USACE) published a remedial investigation (RI) report for the Sylvania Properties, performed under the federal Formerly Utilized Sites Remedial Action Program (FUSRAP), and it detailed the contaminants associated with the early atomic energy program, including certain VOCs that are COCs at the Site. The RI report indicates that historical operations at the Sylvania Properties resulted in releases of wastes to the ground surface, leach pools, drywells, and recharge basins/sumps, resulting in primarily PCE, uranium, and nickel impacts to soils and groundwater.

The USACE's 2021 RI report provides detailed information regarding the extent of contamination, including PCE plumes emanating from multiple, on-property features, extending up to 8,500 feet south of the Sylvania Properties. Concentrations of PCE in groundwater were generally highest immediately downgradient of the eastern portion of the Sylvania Properties (at concentrations between 8,000 to 16,000 µg/L) at a depth of 80 feet bgs. Nickel and uranium plumes were also identified; however, these plumes were found to be limited in extent to beneath the former Sylvania Properties. Additional information regarding the findings of the RI can be found in the USACE's 2021 RI report, dated September 2021.

In 2022, the USACE performed a pilot study on the eastern portion of the Sylvania Properties to evaluate the effectiveness of air sparging/soil vapor extraction to remediate soils and shallow groundwater contaminated with VOCs. EPA anticipates receiving a report summarizing the results of the pilot study soon.

The former GI Facility, located on West John Street and adjacent to the Sylvania Properties to the south, was constructed in 1960 for the manufacture of electric components including semiconductor products and circuits. Operations continued at the property until 1993.

Investigations at the GI Facility began in 1971 and identified PCE, TCE, 1,2-dichlorobenzene (1,2-DCB), toluene, ethylbenzene, and xylene as the primary contaminants resulting from releases at two areas in the vicinity of USTs at the GI Facility. Beginning in 1980, cleanup activities under the authority of NYSDEC at the GI Facility included the removal of USTs and the excavation of approximately 25 cubic yards of soil. Soil samples indicated concentrations of total VOCs greater than 20,000 mg/kg. In 1994, a soil vapor extraction (SVE) system was installed as an interim remedial measure under the authority of the NYSDEC, however, the system was shut down in 1995 because of mechanical problems.

In March 1997, NYSDEC selected a remedy under its State authorities to address the on-

property soil contamination at the GI Facility that included an expansion of the SVE system at three areas. The SVE system operated to address on-property soil contamination before being decommissioned in two areas in 2003, and completely shut-down in 2012. For more information regarding the SVE system, refer to *Operable Unit 1, SVE System Closure Sampling in Area A*, dated 2013.

In 2003, under NYSDEC oversight, Vishay GSI, Inc. (Vishay), the successor corporate entity to General Instruments Corporation, installed an in-well air stripping system to treat VOC-contaminated groundwater attributable to the GI Facility. Through 2009, the system treated approximately 224 million gallons of groundwater and removed approximately 2,559 pounds of VOCs. An evaluation of five years of system performance since its inception resulted in Vishay shutting down the system in 2009. For more information regarding the operation of this system, refer to *Operable Unit 2 – Groundwater IRM Final Progress Report*, dated 2009.

EPA is currently overseeing the preparation of a supplemental RI report by Vishay for the GI Facility to determine the nature and extent of contamination at OU2 of the Site related thereto. Upon completion of the GI Facility supplemental RI, a feasibility study (FS) will be developed incorporating the results of the GI Facility RI and the USACE's 2021 RI, and ultimately EPA will select a remedy for OU2 at the Site.

2.3 OU3 History

In 2015, EPA began an RI/FS of the groundwater contamination at OU3, the subject of this remedy. The investigation, conducted in two phases, included drilling VPBs, installing permanent monitoring wells, and groundwater sampling. As part of the OU3 RI, a total of 12 permanent groundwater monitoring wells were installed and sampled. Results of the OU3 RI are discussed in Section 5.3, below.

3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

On July 24, 2023, EPA released the Proposed Plan for the cleanup of OU3 of the Site, which described a number of remedial alternatives including the preferred remedial alternative, to the public for comment. EPA made supporting documentation comprising the administrative record for that proposed decision available to the public at the information repositories maintained at the Westbury Public Library in Westbury, New York, and the EPA Region 2 Office in New York City, as well as EPA's website for the Site at www.epa.gov/superfund/new-cassel-hicksville.

EPA published notice of the start of the public comment period and the availability of the above-referenced documents in *Newsday* on July 24, 2023. A copy of the public notice published in *Newsday* can be found in Appendix V. EPA accepted public comments on the Proposed Plan from July 24, 2023 through October 23, 2023.

On August 10, 2023, EPA held a public meeting at the East Meadow Public Library located at 1886 Front Street, East Meadow, New York, to inform local officials and interested citizens about the Superfund process, to present the Proposed Plan for OU3 of the Site, including the

preferred remedial alternative, and to respond to questions and comments from the attendees.

The public comment period, originally scheduled for 30 days from July 24, 2023 to August 23, 2023, was extended after EPA received a request for an extension of time. To inform the public of the extension of the public comment period, an update was posted on EPA's website for the Site, social media, and a notice of extension was published in *Newsday* on August 10, 2023. In addition, the notice of extension was distributed electronically to individuals on the Site's mailing list, and a press advisory was transmitted to various media outlets. On September 22, 2023, the public comment period was further extended an additional 30 days to October 23, 2023. To inform the public of the further extension of the public comment period, an update was posted on EPA's website for the Site, social media, and a notice of extension was published in *Newsday* on September 28, 2023. In addition, the notice of further extension was sent electronically to individuals on the Site-mailing list and a press advisory was transmitted to various media outlets.

Responses to the questions and comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix V).

4.0 SCOPE AND ROLE OF THE RESPONSE ACTION

Section 300.5 of the National Contingency Plan (NCP), 40 C.F.R. Section 300.5, which are the federal CERCLA implementing regulations, defines an OU as a discrete action that comprises an incremental step toward comprehensively addressing a site's problems. A discrete portion of a remedial response eliminates or mitigates a release, a threat of release, or pathway of exposure. The cleanup of a site can be divided into a number of OUs, depending on the complexity of the problems associated with the site.

As noted above, to date EPA has designated three OUs for the Site.

- OU1 addresses groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the NCIA and upgradient of OU3.

- OU2 includes groundwater contamination at and downgradient of the GI Facility and Sylvania Properties.

- OU3, the subject of this remedy, addresses VOCs in groundwater generally located east of Merrick Avenue, north of Hempstead Turnpike, west of Carman Avenue, and south of Old Country Road and OU1.

The primary objectives of the response actions selected in this remedy and memorialized in this ROD are to address the OU3 groundwater contamination, reduce the migration of contaminants in groundwater, and minimize any potential future health impacts related thereto. The effectiveness of the remedy selected in this OU3 ROD presumes that this action, in conjunction with the OU1 remedy and a yet-to-be-selected OU2 remedy, will restore the aquifer to its beneficial use (a source of drinking water). Response actions for OU1, OU2, and the sources of contamination at those OUs, are not addressed under this OU3, although the successful

mitigation (*i.e.*, source control or cleanup) addressing those source area(s) at the upgradient, individual source facilities and associated groundwater contamination are anticipated and was assumed in evaluating the potential alternatives for attaining the objectives of the selected remedy for this OU3 ROD.

The effectiveness of the remedy selected in this OU3 ROD presumes that the actions currently being taken at the individual, upgradient source facilities will prove to be effective in addressing contaminant sources at those facilities. In the event that contaminant source control is not successfully achieved, EPA may elect to evaluate additional options to address conditions at individual facilities with amendments to this or other OUs in the future pursuant to the requirements of CERCLA so as to ensure the effectiveness of the remedy selected by the EPA for this OU3.

5.0 SUMMARY OF SITE CHARACTERISTICS

5.1 Overview

The area encompassing OU3 consists primarily of residential properties, some light commercial use, and parkland such as Eisenhower Park and Eisenhower Golf Course. It is expected that the future land use in this area will remain the same in the future. According to EPA's EJScreen tool, there are no demographic indicators for OU3 that would indicate a community with environmental justice concerns. Within OU3, the community is in the 51st percentile for hazardous waste proximity, and the 71st percentile for the Ozone EJ index. The remedy selected in this OU3 ROD is not anticipated to result in adverse impacts to environmental resources that would affect low-income or minority populations living within the vicinity of OU3.

5.2 Geology & Hydrogeology

The aquifer at OU3 of the Site is classified as Class GA (see 6 NYCRR 701.18), meaning that it is designated as a potable water supply. The principal hydrogeologic units underlying the Site are the glacial outwash and morainal deposits known as the Upper Glacial Aquifer (UGA) and the underlying Magothy Formation and Matawan Group (Magothy). Beneath these two units are the clay member and the Lloyd Sand member of the Raritan Formation.

The UGA is estimated to be 40 to 65 feet thick and consists predominantly of coarse-grained sands and gravels. Unconfined groundwater is generally found at the Site between 40 and 65 feet bgs, which is near the estimated boundary between the UGA and Magothy aquifer. The underlying Magothy Formation sediments are characterized by sand and silty sand with discontinuous clay and silt layers. The Magothy is approximately 500 feet thick at the Site. Geologic studies in the area have indicated that sediments tend to become finer in size fraction the deeper that they are located in the Magothy Formation, except within the basal portion where coarse-grained sands and gravels are prevalent. The Lloyd aquifer is a confined aquifer, separated from the Magothy aquifer by the clay member of the Raritan Formation. The top of the clay member of the Raritan Formation is encountered at a depth of approximately 600 feet bgs. The Raritan Formation ranges between 100 and 300 feet in thickness.

5.3 Results of the OU3 Remedial Investigation

5.3.1 Phase I

The first phase of work on OU3 began in 2016. Six VPBs were drilled during Phase I: NCOU3-B01 through NCOU3-B06 (see Figure 2). As part of the drilling process, groundwater samples were collected at 20 to 30-foot intervals as the boreholes were advanced. The method employed ensured that a representative groundwater sample was collected from each interval. The samples collected as part of the VPB effort are referred to as groundwater screening profile samples. At each borehole, sample collection began at the water table, and then from either 147 to 197 feet bgs, depending on the borehole location, to the borehole termination depth at the top of the clay member of the Raritan Formation, around 600 feet bgs.

During Phase I, 103 VPB groundwater screening profile samples were collected and analyzed for VOCs. The VPB results indicated that a 'clean' lens of groundwater exists to a depth of approximately 200 feet bgs. Generally, the highest levels of contamination were observed in the eastern portion of OU3 between depths of 350 to 500 feet bgs, with levels of contamination decreasing with increased depth from that interval. The highest detection of total VOCs in VPB groundwater screening profile samples during Phase I was observed in NCOU3-B03 (8,667 µg/L) at a depth of 382 feet bgs.

Nine monitoring wells were subsequently installed and developed in the completed VPB boreholes during Phase I (NCOU3-MW-01S/D, NCOU3-MW-02S/D, NCOU3-MW-03S/D, NCOU3-MW-04, NCOU3-MW-05, and NCOU3-MW-6) (see Figure 2). Monitoring well screen depths were selected based on groundwater profile screening sampling results and other observed conditions, such as lithology.

Following the installation of the monitoring wells, a round of synoptic water level measurements were collected in January 2019 to gain a better understanding of groundwater flow conditions in the OU3 study area. The groundwater flow direction was determined to be consistent with previous studies at the Site and confirmed a flow generally oriented in a south-southwest direction.

In addition, groundwater samples were collected in January 2019 from each of the Phase I monitoring wells in OU3, as well as 13 existing monitoring wells located within OU1 and Eisenhower Park. The parameters for this sampling event were expanded to include additional compounds, such as metals and semi-volatile organic compounds (SVOCs). The highest concentrations of PCE (6,500 µg/L) and TCE (530 µg/L) in OU3 were detected in NCOU3-MW-03S at a depth of 380 feet bgs. Other frequently detected VOCs included 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene (1,1-DCE), and cis-1,2-dichloroethene (cis-1,2-DCE), at maximum concentrations of 17 µg/L, 120 µg/L, and 610 µg/L, respectively. These maximum concentrations were detected in monitoring wells MW-4, MW-3, and MW-17D, respectively, located within OU1. Other compounds detected included iron, sodium, and 1,4-dioxane at maximum concentrations of 52,900 µg/L, 169,000 µg/L, and 22 µg/L, respectively. These maximum concentrations were all detected in monitoring well NCOU3-MW-06, located in OU3.

In addition, in November 2018, a sample collected by EPA personnel from one of the OU3 monitoring wells and analyzed by a laboratory under contract with NYSDEC as part of a State-wide screening for emerging contaminants at Superfund sites revealed the presence of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) at concentrations of 2.18 nanograms per liter (ng/L) and 0.92 ng/L, respectively.

5.3.2 Phase II

The second phase of investigative RI work of OU3 began in 2021 and was an expansion of the work conducted in Phase I, targeting areas further downgradient. Using the same drilling and sampling methods as Phase I, seven VPBs were drilled, and groundwater screening profile samples were collected and analyzed for VOCs. During Phase II, 125 VPB groundwater screening profile samples were collected and analyzed for VOCs. VPB groundwater screening profile samples from Phase II revealed generally lower concentrations of VOCs than during Phase I. Generally, the highest levels of contamination during the drilling of VPBs in Phase II were observed at depths of approximately 400 to 570 feet bgs, indicating that contamination tends to move with groundwater flow, migrating vertically and horizontally through the subsurface. During Phase II, the highest detection of total VOCs in VPB groundwater screening profile samples was observed in NCOU3-B08 (6,877 µg/L) at a depth of 444 feet bgs.

Several other compounds were detected in the VPB groundwater screening profile samples collected during Phases I and II, with acetone and benzene being the most frequently detected non-chlorinated VOCs, with maximum concentrations of 3,300 µg/L and 290 µg/L, respectively.

Following the drilling of the VPBs, in 2021, three additional monitoring wells were installed and developed (NCOU3-MW-07, NCOU3-MW-08, and NCOU3-MW-09) to further define the nature and extent of groundwater contamination. The location of each of the VPBs and monitoring wells installed during Phases I and II are shown in Figure 2. The furthest downgradient (south) monitoring well, NCOU3-MW-09, was installed approximately one mile north of the East Meadow water district. The water district supply wells are located south (downgradient) of the Site and Hempstead Turnpike.

Between January and April 2022, EPA conducted two groundwater sampling events, collecting groundwater samples from 26 monitoring wells in OU3 and the surrounding area. The results from these two sampling events were consistent with the previously analyzed groundwater screening profile sampling results. The highest concentrations of PCE, TCE and cis-1,2-DCE detected from the permanent monitoring wells installed as part of the OU3 RI were generally observed in the eastern portion of OU3. The maximum groundwater contaminant concentrations from permanent monitoring wells installed as part of the OU3 RI are included in Table A below.

As indicated above, as part of the OU3 RI, the 2022 groundwater sampling events included the collection of samples from select monitoring wells located within OU1. The results indicated the highest concentrations of PCE (5,300 µg/L) and TCE (750 µg/L) were detected in OU1 monitoring well MW-17D at a depth of 280 feet bgs. This monitoring well is located in the eastern plume of OU1, upgradient of OU3 monitoring well NCOU3-MW-03S (PCE 3,400 µg/L

and TCE 11 µg/L). Therefore, while contaminant concentrations generally reveal a decreasing trend in concentrations with an increase in distance from OU1, instances of higher concentrations have been revealed.

During Phase II, other frequently detected VOCs in the OU3 groundwater monitoring wells included 1,1,1-TCA, 1,1-DCE, and cis-1,2-DCE, at maximum concentrations of 8.1 µg/L, 23 µg/L, and 190 µg/L, respectively. These maximum concentrations were detected in NCOU3-MW-08, NCOU3-MW-08, and NCOU3-MW-04, respectively. 1,4-dioxane, an SVOC, was detected during OU3 sampling at a maximum concentration of 28 µg/L in monitoring well NCOU3-MW-06. Additional contaminants considered to be Site-related based on historical OU1 information were detected, and the maximum concentrations for these contaminants are also included in Table A below. Metals such as sodium, iron, and arsenic were detected in OU3 during Phase II at maximum concentrations of 128,000 µg/L, 109,000 µg/L, and 40.1 µg/L, respectively. These maximum concentrations were all detected in monitoring well NCOU3-MW-06, located in OU3. However, metals are not considered to be Site-related. Some of the metals detected are naturally occuring in the Magothy Formation, while others may have resulted from urban runoff and stormwater recharge to the aquifer system unrelated to releases at the Site.

Table A: Maximum Groundwater Contaminant Concentrations

Contaminants of Concern (COCs)	Monitoring Well Maximum Concentration (µg/L)	Monitoring Well ID	Sample Depth (bgs)
Tetrachloroethylene	6,500	NCOU3-MW-03S	380
Trichloroethylene	530	NCOU3-MW-03S	380
Cis-1,2-Dichloroethene	390	NCOU3-MW-03S	380
Trans-1,2-Dichloroethene	9.9	NCOU3-MW-06	440
1,1-Dichloroethene	23	NCOU3-MW-08	385
1,1-Dichloroethane	11	NCOU3-MW-01S / NCOU3-MW-07	385 / 425
1,2-Dichloroethane	2.4	NCOU3-MW-04	404
1,2,3-Trichloropropane	0.26 J*	NCOU3-MW-05	380
1,1,1-Trichloroethane	13 J	NCOU3-MW-03S	380
1,1,2-Trichloroethane	1.1	NCOU3-MW-03D	470
Vinyl Chloride	0.46 J	NCOU3-MW-02D	512
Benzene	0.96	NCOU3-MW-02D	512
1,4-Dioxane	28	NCOU3-MW-06	440

Note: Table A provides the maximum contaminant concentrations for permanent monitoring wells installed in OU3 as part of the RI/FS.

* J value indicates estimated concentration.

For more detailed information regarding the results of the remedial investigation (RI), including a comprehensive analysis of VPB and groundwater monitoring well samples, please refer to Section 4 of the OU3 RI report, dated July 2023.

In April and May 2022, EPA collected two additional rounds of synoptic water level

measurements. To provide a better understanding of groundwater flow directions at the Site, groundwater elevations were collected from a total of 127 monitoring, municipal, and irrigation wells located in the general area. The data confirmed that groundwater within the UGA and Magothy aquifer in OU3 generally flows in a south-southwest direction with local variations to the southwest and may be impacted by the pumping of active municipal and industrial supply wells and the functioning of stormwater retention basins. The supply wells in the study area range in depth from 200 feet bgs to more than 600 feet bgs. The wells operate for a range of purposes, from municipal water supply and irrigation wells to private industrial wells used for cooling equipment. Water levels were generally between one and three feet higher in 2022 compared to 2019. The difference in groundwater levels may be the result of a combination of seasonal and annual variations in precipitation and/or fluctuations caused by pumping at nearby water supply wells.

An evaluation of natural attenuation conditions was conducted as part of the RI to characterize conditions that may support or inhibit microbial degradation of chlorinated solvents through the process of reductive dechlorination. Reductive dechlorination is a natural attenuation process that can degrade chlorinated VOCs (CVOCs) by transforming chlorinated compounds such as TCE to other compounds. In addition to degradation, other natural attenuation processes can include dispersion, dilution, sorption, and volatilization. The primary process of attenuation at a site can change through time if subsurface chemical conditions are altered. To assess degradation processes on Site-related contamination, laboratory analyses were performed in 2022 for a series of geochemical parameters to provide information on geochemical conditions, which can impact natural attenuation processes. The following is a summary of the conclusions of the analysis:

- Reductive dechlorination only occurs in anaerobic conditions (less than 0.5 milligrams per liter (mg/L) of dissolved oxygen. The levels of dissolved oxygen measured in the OU3 study area indicated a broad range of conditions in the aquifer ranging from being oxygen depleted to being oxygenated approaching saturation. In general, wells with depths greater than 400 feet bgs showed anaerobic conditions (oxygen depleted). The analyses indicated that anaerobic conditions necessary for reductive dechlorination are not widespread throughout the OU3 study area.

- Iron and manganese play a role in both biotic (biological) and abiotic (physical or chemical) degradation of CVOCs, and increased concentrations of iron and manganese can be indicative of their reduction to more soluble forms as a result of microbial degradation. Elevated levels of iron and manganese were observed in select monitoring wells.

- For reductive dechlorination to occur, sulfate in the groundwater must be less than 20 mg/L. Analytical results indicate that sulfate levels were below this value throughout the OU3 study area, indicating the potential for natural attenuation to occur.

- Chloride is produced during reductive dechlorination and can be an indicator of biological activity. Chloride was detected in each sample collected as part of the RI, indicating the potential for natural attenuation to occur. Chloride in groundwater could

also be naturally occuring or related to urban run-off impacting groundwater.

Geochemical characteristics indicate that anaerobic conditions favorable for microbial degradation are present in isolated areas but are not widespread throughout OU3. The presence of PCE and TCE metabolites indicate that CVOC degradation is occuring to some degree, but the lack of vinyl chloride indicates that reductive dechlorination is not currently moving beyond 1,2-DCE on a wide scale. Anaerobic conditions favorable for microbial degradation of CVOCs may be present in isolated areas within silts and clays at greater depths in the aquifer. The presence of 1,1-DCE indicates that abiotic degradation of TCA may also be occuring. Some degree of dilution and dispersion are also expected to occur as contamination migrates downgradient.

The OU3 RI report contains additional details for all sampling results, including an in-depth analysis of the fate and transport and nature and extent of contamination in the study area.

6.0 CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

6.1 Land Use

The area encompassing OU3 consists primarily of residential properties and includes Eisenhower Park and Eisenhower Golf Course, with light commercial use along Old Country Road to the north, Merrick Avenue to the west, Carman Avenue to the east and Hempstead Turnpike to the south. The Nassau County Correctional Center is located to the east of OU3. Several schools are located within OU3, including the W Tresper Clarke Middle School, Bowling Green Elementary School, East Meadow High School and East Meadow Middle School. EPA does not anticipate any changes to zoning or land use at and surrounding OU3.

6.2 Groundwater Use

The potable water supply for Nassau and Suffolk counties is dependent upon the underlying aquifers. These aquifers, including the Magothy and Lloyd, comprise a system of sole or principal source aquifers that are defined by EPA as supplying at least 50% of drinking water consumed in the area overlying the aquifers. The aquifers underlying Long Island are composed primarily of sand and gravel, mixed with lesser amounts of silt and clay.

Public supply water districts monitor water quality regularly and have previously installed treatment systems to remove VOCs from groundwater prior to distribution. Area residents receive drinking water from public water supplies that have treatment systems installed so that the drinking water meets federal and State standards. There are currently no public water supply wells installed within OU3. The furthest downgradient (south) monitoring well in OU3 (NCOU3-MW-09) was installed approximately one mile north of the East Meadow Water District. The Bowling Green wells 1 and 2, located in EPA's OU1, operated from 1975 to 2015.

7.0 SUMMARY OF SITE RISKS

As part of the CERCLA remedy selection process, EPA conducted a baseline human health risk assessment (HHRA) for OU3 to estimate the risks and hazards associated with the current and future effects of contaminants on human health and the environment. An HHRA is an analysis of the potential adverse human health effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate these exposures under current and future land uses. A screening level ecological risk assessment (SLERA) assesses the potential risks posed to ecological receptors. Because the OU3 contaminated groundwater does not discharge to any surface water bodies within the OU3 study area, ecological receptors are not exposed to contaminants from OU3 of the Site, and thus the exposure pathways for ecological receptors are not complete. Hence, a SLERA was not conducted for OU3.

7.1 Human Health Risk Assessment

The following four-step process is utilized by EPA for assessing site-related human health risks for a reasonable maximum exposure (RME) scenario:

- *Hazard Identification* – in this step EPA uses the analytical data collected to identify the contaminants of potential concern (COPCs) at a site for each medium, with consideration of a number of factors explained below;

- *Exposure Assessment* – in this step EPA estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (*e.g.*, ingesting contaminated groundwater) by which humans are potentially exposed;

- *Toxicity Assessment* – in this step EPA determines the types of adverse health effects associated with chemical exposures and the relationship between magnitude of exposure (dose) and severity of adverse effects (response);

- *Risk Characterization* – in this step EPA summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also results in identifying concentrations of contamination that exceed acceptable levels, defined in the NCP as an excess lifetime cancer risk greater than 1×10^{-6} – 1×10^{-4} (also commonly expressed as 1E-06 to 1E-04), an excess of lifetime cancer risk greater than 1×10^{-6} (*i.e.*, point of departure) combined with site-specific circumstances, or a noncancer Hazard Index (HI) greater than 1; contaminants at these concentrations are considered COCs and are typically those that will require remediation at the site. Also included in this section is a discussion of the uncertainties associated with these risks.

7.1.1 Hazard Identification

In this step, the COPCs in groundwater were identified based on such factors as toxicity, frequency of detection, fate and transport of the contaminants in the environment, concentration, mobility, persistence, and bioaccumulation.

In the HHRA, EPA characterized the risk to human health from exposure to groundwater at OU3 of the Site. COPCs were determined by comparing the maximum detected concentrations of each chemical identified with state and federal risk-based screening values.

The COPC screening conducted in the HHRA identified 27 COPCs, including 13 VOCs and 1,4-dioxane. A comprehensive list of all COPCs can be found in the HHRA in the administrative record file for this decision. COPCs at concentrations similar to background or not considered to be Site-related are carried through the quantitative portion of the HHRA but not identified as primary COPCs (*i.e.*, COCs) for OU3 of the Site.

The Site-related COCs, or the contaminants requiring a response, include PCE, TCE, cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-DCE, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), 1,2,3-trichloropropane (1,2,3-TCP), 1,1,1-TCA, 1,1,2-trichloroethane (1,1,2-TCA), vinyl chloride, benzene, and 1,4-dioxane. PCE, TCE, cis-1,2-DCE, 1,1,2-TCA and 1,2,3-TCP were associated with elevated risk and/or hazard. The remaining chemicals are considered COCs because they have been determined to be site-related and exceed state drinking water standards. It is also noteworthy that 1,1,1-TCA and 1,1-DCE did not exceed the screening criteria used to determine COPCs in the HHRA. Therefore, these chemicals were not quantitatively evaluated for risk or hazard. However, since these chemicals also exceeded state drinking water standards, they were retained as COCs as well.

7.1.2 Exposure Assessment

Consistent with Superfund policy and guidance, the HHRA is a baseline human health risk assessment and therefore assumes a scenario where no remediation or institutional controls are taken to mitigate or remove hazardous substance releases. Cancer risks and noncancer hazard indices were calculated based on an estimate of the RME expected to occur under current and future conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.

The area encompassing OU3 consists primarily of residential properties and includes Eisenhower Park and Eisenhower Golf Course, with light commercial use along Old Country Road to the north, Merrick Avenue to the west, Carman Avenue to the east, and Hempstead Turnpike to the south. The land use pattern at and surrounding OU3 of the Site is not expected to change in the foreseeable future.

Based on current and future land use, EPA evaluated residential and commercial uses in the HHRA for OU3 of the Site. Under the current land use scenario, there are no current exposures, however, exposures were considered under the future land use scenario as follows:

- Resident (child [0-6 years] and adult): ingestion of and dermal contact with groundwater and inhalation of vapors during bathing/showering activities

- Commercial/Industrial Worker (adult): ingestion of and dermal contact with groundwater

A summary of all the exposure pathways considered in the HHRA can be found in Table 2 of Appendix II. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper bound estimate of the average concentration for each contaminant, but in some cases it may be the maximum detected concentration. A summary of the exposure point concentrations for the COCs in groundwater can be found in Table 1 of Appendix II, while a comprehensive list of the exposure point concentrations for all COPCs can be found in the HHRA.

Vapor migration from groundwater, through soil, and intrusion to indoor air was also evaluated qualitatively as a potential exposure pathway. A vapor intrusion screening assessment was conducted by reviewing the vertical distribution of contaminants in the OU3 VPB data collected for the RI. The results demonstrated that the upper glacial (0-85 feet bgs) and upper Magothy (85-185 feet bgs) aquifer zones are mostly not contaminated, and the shallowest screening criteria exceedance of any individual compound was at a depth of 147 feet bgs in the OU3 study area. The depth to contaminated groundwater exceeded 100 feet in all VPB sampling conducted. As 'clean' lenses of shallow groundwater have been demonstrated to exist over the deeper OU3 contaminated zones, vapor intrusion in OU3 was not further analyzed.

7.1.3 Toxicity Assessment

In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects were determined. Potential health effects are contaminant-specific and may include the risk of developing cancer over a lifetime or other noncancer health effects, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some contaminants are capable of causing both cancer and noncancer health effects.

Under current EPA guidelines, the likelihood of carcinogenic risks and noncancer hazards as a result of exposure to Site chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the human health risk assessment were obtained from the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Value database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA's directive on toxicity values. This information is presented in Table 3 of Appendix II (noncarcinogenic toxicity data summary) and Table 4 of Appendix II (cancer toxicity data summary). Additional toxicity information for all COPCs is presented in the HHRA.

7.1.4 Risk Characterization

This step summarized and combined outputs of the exposure and toxicity assessments to provide a quantitative assessment of Site risks. Exposures were evaluated based on the potential

risk of developing cancer and the potential for noncancer health hazards.

Noncarcinogenic risks were assessed using a HI approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) that are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (*e.g.*, the amount of a chemical ingested from contaminated drinking water) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the HQs for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (*i.e.*, chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur as a result of Site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals which are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for noncarcinogenic health effects on a specific target organ. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

A summary of the noncarcinogenic hazards associated with those receptors that exceeded the threshold value of 1 are shown in Table 5 of Appendix II. The HI (169) for the child/adult resident exceeded the threshold of 1, and the HI (11) for the worker also exceeded the threshold of 1.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the assessment. As stated in the NCP, the acceptable risk range for site-related exposure is 10^{-6} to 10^{-4}.

As shown in Table 6 of Appendix II, the estimated cancer risk for the child/adult resident of $2x10^{-3}$ exceeds the upper bound of EPA's threshold criteria of $1x10^{-6}$ to $1x10^{-4}$, and the site-related COPCs that primarily contributed to both elevated noncancer hazards and cancer risks for the child/adult residents were 1,1,2-TCA, 1,2,3-TCP, cis-1,2-DCE, PCE, and TCE.

For adult workers, the estimated cancer risk of $2x10^{-4}$ exceeded the upper bound of EPA's threshold criteria of $1x10^{-6}$ to $1x10^{-4}$, and the site-related COPCs primarily contributing to the elevated risks for future workers were PCE and TCE.

Several metals including arsenic, aluminum, and cobalt also contributed to elevated noncancer hazards and cancer risks for the future child/adult resident and adult worker. However, based on a review of concentration distributions and historical information, these detections were not attributable to specific OU1 sources.

In summary, the HHRA indicated that future potable use of groundwater at OU3 of the Site would result in elevated noncancer hazards and cancer risks that exceed EPA's target threshold values for child/adult residents and workers.

7.1.5 Uncertainties in the Risk Assessment

The procedures and inputs used to assess cancer risks and noncancer hazards in this evaluation are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include the following:

- Environmental chemistry sampling and analysis;
- Environmental parameter measurement;
- Fate and transport modeling;
- Exposure parameter estimation; and
- Toxicological data.

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the COCs, the period over which such exposure would occur, and in the models used to estimate the concentrations of the COCs at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of risk and is highly unlikely to underestimate actual risks related to OU3.

More specific information concerning cancer risks and noncancer hazards, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the HHRA, available in the administrative record file for this action.

7.2 Ecological Risk Assessment

A SLERA was not conducted to assess the risk posed to ecological receptors because contaminated groundwater does not discharge to any surface water bodies within OU3. Since no contaminated groundwater discharges to surface water, exposure pathways are not complete and ecological receptors are not exposed to contaminants from OU3 of the Site.

7.3 Basis for Taking Action

Based on the results of the OU3 RI and HHRA, the response action selected in this OU3 ROD is necessary to protect public health or welfare from actual or threatened releases of hazardous substances into the environment.

8.0 REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs), to-be-considered (TBC) guidance, and site-specific risk-based levels.

The following RAOs have been established for OU3 at the Site:

- Prevent or minimize the potential future human exposure (via dermal, ingestion and inhalation) to Site-related contaminants in groundwater at concentrations in excess of federal maximum contaminant levels (MCLs) and State standards;

- Minimize the potential for further migration of groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards; and

- Restore the impacted aquifer to its most beneficial use as a source of drinking water by

reducing contaminant levels to the more stringent of federal MCLs or New York State standards.

The cleanup levels, or remedial goals for the remedy, are the lower of the federal MCLs and state standards and are identified in Appendix II, Table 7.

9.0 DESCRIPTION OF REMEDIAL ALTERNATIVES

Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1), mandates that remedial actions be protective of human health and the environment, be cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to reduce permanently and significantly the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. Section 121(d) further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. § 9621(d)(4).

Detailed descriptions of the remedial alternatives presented in this ROD can be found in EPA's Feasibility Study Report, dated July 2023.

The construction time for each remedial alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy with any PRPs, procure contracts for design and construction, nor time associated with post-construction operation and maintenance.

9.1 Description of Common Elements of All Alternatives

With the exception of the No Action alternative (Alternative 1), all of the alternatives include the following common components:

Alternative 2 (Groundwater Extraction and Ex-Situ Treatment (Pump & Treat)), Alternative 3 (Enhanced In-Situ Bioremediation and Pump & Treat), and Alternative 4 (In-Situ Chemical Reduction and Pump & Treat) target those areas in the Magothy aquifer near the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. During the remedial design for each of these alternatives, additional groundwater monitoring wells would be installed, and sampling would be performed to refine the areas with contaminant concentrations greater than 1,000 µg/L. Sampling for emerging contaminants, such as PFOA and PFOS, would be performed during the remedial design. Each of these alternatives, however, provide a different method of groundwater treatment in the northern portion of OU3 and are discussed in further detail below.

Alternatives 2 through 4 also rely on the hydraulic control of groundwater in the southern portion of OU3 via a network of extraction (pumping) wells near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L

(referred to in the FS as the downgradient edge of contamination). During the remedial design, additional groundwater monitoring wells would be installed, and sampling would be performed to refine the areas with contaminant concentrations greater than 100 µg/L. Sampling for emerging contaminants, such as PFOA and PFOS, would be performed during the remedial design. It is estimated that, for each alternative, extraction wells would target a depth range from approximately 200 to 500 feet bgs for extraction. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

For Alternatives 2 through 4, a combination of air stripping, granular activated carbon (GAC), as well as advanced oxidation processes, would be used to treat the extracted groundwater at a groundwater treatment plant. Based on the results of the pre-design investigation, the conceptual design for the treatment of the extracted groundwater may be refined to meet discharge requirements.

Treated groundwater would be discharged to one or more of the following: (1) a newly constructed or existing recharge basin; (2) underground infiltration galleries; (3) the sanitary sewer; (4) surface water; and/or (5) reinjection to groundwater. The specific location for the various components of the groundwater extraction and treatment system have not been determined. For cost-estimating and planning purposes, it was assumed in developing the FS that a centralized groundwater treatment plant would be sited in, or in the vicinity of, Eisenhower Park. The assumption included that the treatment plant and discharge of treated effluent would require a total area of approximately 2.5 acres. Given the amount of space required and the limited availability of open space in the area, there are limited options for siting the equipment.

While EPA made certain assumptions in the FS for cost-estimating and planning purposes as part of the remedial design, further evaluation would be conducted to identify potential locations to site the various system components for the selected remedy. If it is determined that parkland, such as Eisenhower Park, is needed to construct and/or operate a portion of the system, EPA would coordinate this effort with Nassau County and endeavor to obtain any necessary approvals (*e.g.*, from the New York State legislature) for the use of parkland for this purpose. As part of this effort, an evaluation would be conducted to determine whether a portion of the treated effluent could be used by the County on a seasonal basis for irrigation purposes at the park.

For these reasons, alternatives to a centralized treatment plant, such as multiple smaller treatment plants, may be considered during the remedial design. In addition, if sufficient capacity were to exist, consideration could be given to treat a portion of the extracted groundwater at a treatment plant intended for a response action at another operable unit of the Site, such as OU1. As indicated previously, the OU1 design is underway, and the development of the design specifications will be refined during the remedial design.

Alternatives 2 through 4 also include long-term monitoring to ensure that groundwater quality improves following implementation of these alternatives until clean up levels are achieved, including areas outside of the area of hydraulic control within OU3. Under Alternatives 3 and

4, the sampling program would also include monitoring geochemical conditions and degradation byproducts generated by the treatment processes. For each of the active alternatives, the long-term monitoring program would include the installation and sampling of an early-warning monitoring well for the East Meadow water supply well located south of Hempstead Turnpike. During the remedial design, the location of the early-warning monitoring well would be determined to ensure sufficient time for the installation of wellhead treatment to address Site-related contamination, if that is determined to be needed.

Alternatives 2 through 4 also include institutional controls that will rely on current groundwater use restrictions in the form of state and local laws. Specifically, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available. The Site and surrounding area is serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in Nassau County without a State permit. To ensure the remedy remains protective, the above State and County well restrictions will be relied upon. It is intended that a Site management plan (SMP) would be developed to provide for the proper operation and maintenance (O&M) of the OU3 remedy post-construction, and as such it would include long-term groundwater monitoring, confirming institutional controls, periodic reviews, and certifications as applicable.

For Alternatives 2 through 4, an estimated remediation time frame of 30 years is used for developing costs associated with annual O&M activities. During remedy implementation, additional information regarding groundwater pumping rates and naturally occuring attenuation processes, such as dilution and dispersion, would be used to refine remediation time frames required for the active remedial alternatives to achieve RAOs. Active remediation will be employed in the area of hydraulic control until the cleanup levels for each of the COCs are attained within the targeted treatment area.

Additionally, because it will take longer than five years to achieve cleanup levels under any of the active alternatives, CERCLA requires that a review of conditions at the Site be conducted no less often than every five years until such time as cleanup levels are achieved. These reviews are not considered part of the remedy; they are an independent requirement required by the Superfund law.

9.2 Description of Remedial Alternatives

Alternative 1: No Action

Capital Cost:	$0
Total O&M Costs:	$0
Total Present-Worth Cost:	$0
Construction Time:	Not Applicable

The NCP requires that a "No Action" alternative be developed as a baseline for comparing other remedial alternatives. Under this alternative, there would be no remedial action conducted at OU3 to control or remove groundwater contaminants. This alternative does not include

monitoring nor institutional controls.

Alternative 2: Groundwater Extraction and Ex-Situ Treatment (Pump & Treat)

Capital Cost:	$51,685,000
Total O&M Costs:	$47,455,000
Total Present-Worth Cost:	$99,140,000
Construction Time:	36 months

This remedial alternative consists of the extraction (pumping) of groundwater from extraction wells and its treatment prior to discharge. Groundwater would be treated to remove contaminant mass from areas of the aquifer with elevated contaminant concentrations, as discussed below.

For the conceptual design, it is estimated that four extraction wells with a combined pumping rate of approximately 450 gallons per minute (gpm) would be installed in the northern portion of OU3, targeting areas of total groundwater contaminant concentrations greater than 1,000 µg/L. In addition, a transect of an estimated five extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge. During the remedial design, pumping tests would be performed to determine capture zones and the exact location and number of extraction wells, pumping rates, and screen locations.

Alternative 3: Enhanced In-Situ Bioremediation and Pump & Treat

Capital Cost:	$151,582,000
Total O&M Costs:	$51,003,000
Total Present-Worth Cost:	$202,585,000
Construction Time:	54 months

This remedial alternative involves the injection of microorganisms and/or nutrients into the subsurface to create conditions to accelerate the biodegradation of contaminants in groundwater. The end products to this destruction process include carbon dioxide, water, and microbial cell mass. For the conceptual design, it is estimated that approximately 452 permanent injection wells screened at depths ranging from 200 to 500 feet bgs would be installed perpendicular to groundwater flow in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L.

During the remedial design, pilot testing and treatability studies would be performed to determine the radius of influence, location, and arrangement of injection wells, the optimal injection material, volumes and composition, and the frequency of injection events.

In addition, a transect of an estimated six extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the Magothy aquifer containing

total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

During the remedial design, pump tests would be performed to estimate capture zones and the exact location and number of extraction wells, pumping rates, and screen intervals.

Alternative 4: In-Situ Chemical Reduction and Pump & Treat

Capital Cost:	$158,113,000
Total O&M Costs:	$39,893,000
Total Present-Worth Cost:	$198,006,000
Construction Time:	54 months

This remedial alternative involves the injection of a solution of oxidizing or reducing agents (usually zerovalent iron (ZVI)) suspended in a microemulsion to chemically convert contaminants in groundwater into less toxic compounds that are more stable, less mobile, and/or inert. The ZVI donates electrons, acting as the reductant in a reaction that removes chlorine atoms from contaminants. For the conceptual design, it is estimated that approximately 452 permanent injection wells screened at depths ranging from 200 to 500 feet bgs would be installed perpendicular to groundwater flow in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L.

During the remedial design, pilot testing and treatability studies would be performed to determine the radius of influence, location, and arrangement of injection wells, the optimal injection material and amendments, volumes, and the frequency of injection events.

In addition, a transect of an estimated six extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

During the remedial design, pump tests would be performed to estimate capture zones and the exact location and number of extraction wells, pumping rates, and screen intervals.

10.0 COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy for a site, EPA considers the factors set forth in Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1), by conducting a detailed analysis of remedial alternatives pursuant to the requirements of the NCP, 40 C.F.R. Section 300.430(e)(9), EPA's *Guidance for Conducting Remedial Investigations and Feasibility Studies*, OSWER Directive 9355.3-01, and EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decisions, and Other Remedy Selection Decision Documents*, OSWER 9200.1-23.P. The detailed analysis consists of

an assessment of each alternative against each of nine evaluation criteria set forth at 40 C.F.R. § 300.430(e)(9)(iii) and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

The following two "threshold" criteria are the most important and must be satisfied by any alternative in order to be eligible for selection:

1. *Overall protection of human health and the environment* addresses whether a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. *Compliance with ARARs* addresses whether a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and regulations, or other requirements that pertain to a site or provide grounds for invoking a waiver. Other federal or state advisories, criteria, or guidance are referred to as "to be considered", or "TBCs". While TBCs are not required to be adhered to under the NCP, the NCP recognizes that they may be useful in determining what is protective or how to carry out certain actions or requirements.

The following five "primary balancing" criteria are used to make comparisons and to identify the major tradeoffs between alternatives:

3. *Long-term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

4. *Reduction of toxicity, mobility, or volume through treatment* is the anticipated performance of the treatment technologies, with respect to these parameters, that a remedy may employ.

5. *Short-term effectiveness* addresses the period needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation of the remedy.

6. *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

7. *Cost* includes estimated capital, operation, and maintenance costs, and present-worth costs.

The following "modifying" criteria are used in the final evaluation of the remedial alternatives after the formal comment period, and they may prompt modification of the preferred remedy that was presented in the Proposed Plan:

8. *State acceptance* indicates whether, based on its review of the RI and FS reports, HHRA, and Proposed Plan, the State concurs with, opposes, or has no comments on the proposed remedy.

9. *Community acceptance* refers to the public's general response to the alternatives described in the RI and FS reports, HHRA, and Proposed Plan.

A comparative analysis of the alternatives considered in this OU3 ROD, based upon the evaluation criteria noted above, follows.

10.1 Overall Protection of Human Health and the Environment

Alternative 1 (No Action) does not provide for adequate protection of human health because it does not mitigate potential future risks posed by contaminated groundwater within OU3. Alternatives 2 through 4 include active remedial components that would address groundwater contamination and are intended to restore groundwater quality over the long-term, and therefore Alternatives 2 through 4 are protective of human health and the environment. In the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L, Alternative 2 relies on the extraction and ex-situ treatment of groundwater to reduce groundwater contaminant concentrations, while Alternatives 3 and 4 rely on biological and chemical processes, respectively, to reduce groundwater contaminant concentrations. In the southern portion of OU3, Alternatives 2 through 4 would all rely on the extraction and ex-situ treatment of groundwater near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L and would also rely on certain natural processes to achieve the cleanup levels for areas outside the area of hydraulic control.

Alternatives 2 through 4 limit exposure to residual contaminants until cleanup levels are achieved, as noted above, through existing institutional controls. Alternatives 2, 3, and 4 would achieve the RAOs. Alternative 1 (No Action) would not achieve RAOs.

10.2 Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

EPA and New York State have promulgated MCLs (at 40 CFR Part 141, and 10 NYCRR, Chapter 1, respectively), which are enforceable standards for various drinking water contaminants (chemical-specific ARARs). The list of chemical-specific, location-specific, and action-specific ARARs can be found in Tables 8, 9, and 10, respectively, of Appendix II.

The aquifer at OU3 of the Site is classified as Class GA (6 NYCRR 701.18), meaning that it is designated as a potable water supply and is a sole source aquifer. Because area groundwater is a source of drinking water, the MCLs are ARARs. The federal MCLs and State standards for OU3 groundwater are identified in Table 7 of Appendix II. If the standards are not the same, compliance with the more stringent standard is required.

Alternative 1 would comply with location- and action-specific ARARs as no work would be conducted and therefore no related requirements would be triggered. However, Alternative 1

does not address existing contamination through treatment and inherently would not include any measures to determine if chemical-specific ARARs are met at any point in the future. Alternative 2 would comply with all chemical-specific ARARs, while Alternatives 3 and 4 may not treat 1,4-dioxane in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. Alternatives 3 and 4 would treat 1,4-dioxane in groundwater near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L through extraction and ex-situ treatment.

Under all the active treatment alternatives, naturally occuring attenuation processes would be relied upon to achieve cleanup levels in areas outside of hydraulic control.

Alternatives 2 through 4 would comply with location-specific ARARs, TBCs or other guidance, such as Federal Emergency Management Agency Executive Order 11988 and NYSDEC Floodplain Management Criteria, in the event any construction activities were to take place within floodplains. Alternatives 2 through 4 would comply with action-specific ARARs, TBCs or other guidance, such as the Clean Water Act and the NYSDEC State Pollution Discharge Elimination System regulations governing discharges of treated water from the treatment plant.

10.3 Long-Term Effectiveness and Permanence

Alternative 1 would not provide long-term effectiveness or permanence because no active remedial measures are proposed. Groundwater extraction and ex-situ treatment under Alternatives 2 through 4 is considered an effective method for addressing groundwater contaminated with the COCs at OU3. Alternative 2 would provide long-term effectiveness and permanence via the pumping and treatment of contaminated groundwater with concentrations greater than 1,000 µg/L. Alternatives 3 and 4 would include in-situ treatment processes to treat areas of total groundwater contaminant concentrations greater than 1,000 µg/L. Alternatives 2 through 4 would all treat contaminants via a pump and treat system near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L. Alternatives 2 through 4 would provide hydraulic control to minimize migration of the contamination.

All three of the active alternatives (Alternatives 2 through 4) rely on a combination of one or more of the following to reduce contaminant levels - treatment, naturally-occuring attenuation processes for areas outside of treatment, and institutional controls.

Alternatives 2, 3 and 4 would require routine groundwater quality, performance, and administrative monitoring, and while required independently from the alternatives, CERCLA five-year reviews would also occur until such time as performance standards are achieved. As such, each of these alternatives provides a similar level of long-term effectiveness and permanence.

Potential site impacts from climate change have been assessed, and the future performance of these alternatives are currently not at risk as a result of the effects of climate change in the region and near the Site.

10.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 1 does not address the contamination through treatment, so there would be no reduction in toxicity, mobility, or volume of contaminants and the alternative does not include long-term monitoring of groundwater conditions. Alternatives 2 through 4 would reduce the toxicity, mobility, and volume of contaminants at OU3 through treatment of contaminated groundwater. Alternative 2 would provide the greatest reduction in mobility, toxicity, and volume of contaminants through the extraction and treatment of the greatest volume of groundwater of the three alternatives. Alternatives 3 and 4 would reduce the toxicity and volume of contaminants in the northern portion of OU3 via in-situ treatment, but they would rely on natural attenuation processes and ex-situ treatment of downgradient groundwater to reduce the toxicity and volume of 1,4-dioxane. Alternative 2 reduces the mobility of contaminants by creating a gradient for contamination migration towards the extraction wells in the northern as well as the southern portion of OU3. Alternatives 3 and 4 would rely on extraction and ex-situ treatment in only the southern portion of OU3 to reduce mobility of contaminants. This is not the case in the northern portion because the injection of amendments in the northern portion of OU3 does not reduce the mobility of contaminants while the degradation processes are underway.

10.5 Short-Term Effectiveness

Alternative 1 would not have short-term impacts since no action would be implemented. Alternatives 2 through 4 would be effective in the short-term at controlling the migration of contaminated groundwater and removing contaminants from the aquifer. Remedy-related construction under Alternatives 2 through 4 would include drilling extraction wells, installing underground conveyance piping, constructing one or more treatment plants, and developing discharge locations. Alternative 2 would involve the construction of expansive groundwater conveyance piping networks in residential neighborhoods and would present potential noise and traffic impacts. Alternatives 3 and 4, in addition to the construction of groundwater conveyance piping, would also involve installing an estimated 452 injection wells to a depth of up to 500 feet bgs, and would present the most potential noise and traffic impacts. Alternatives 2 through 4 present short-term impacts to the local communities, however, these disruptions could be minimized through noise and traffic control plans, as well as community air monitoring during construction to minimize any potential impacts to the community, remediation workers, and the environment.

The potential for remediation workers to have direct contact with the contaminants in the groundwater could also occur when groundwater remediation systems are operating under Alternatives 2 through 4 as groundwater would be extracted to the surface for treatment and could result in increased risks of exposure, ingestion, and inhalation. However, measures could be implemented to mitigate exposure risks through the use of personal protective equipment and standard health and safety practices. Alternatives 2 through 4 include monitoring that would provide the data needed for proper management of the remedial processes and a mechanism to address any potential impacts to the community, remediation workers, and the environment.

Groundwater monitoring and discharge of treated groundwater would have minimal impact on

workers responsible for periodic sampling. The estimated time frame required to implement the construction of Alternative 2 is approximately three years. Alternatives 3 and 4 are estimated to take approximately four and a half years to implement (operating the treatment system for all three alternatives is estimated at 30 years).

For cost estimating and planning purposes, EPA estimated in the FS that RAOs would be achieved for the groundwater in Alternatives 2 through 4 in approximately 30 years. The time frame to meet groundwater RAOs in the areas outside of hydraulic control is difficult to predict but is expected to exceed 30 years.

10.6 Implementability

Alternative 1 is no action and therefore would be the easiest of all the alternatives to implement. The technologies under Alternatives 2 through 4 are established technologies with commercially available equipment and are readily implementable. Each of the active alternatives involve drilling extraction wells, installing underground piping, and constructing a treatment plant for the extracted groundwater. Given the amount of space required and the limited availability of open space in this densely populated area, limited options are available for the siting of a treatment plant and the discharge of treated effluent.

In addition to these challenges, Alternatives 3 and 4 would require the installation of an estimated 452 permanent injection wells, thereby significantly increasing the construction challenges. Alternatives 3 and 4 would also include follow-up injection events, requiring large-scale mobilizations of equipment and materials. Reconfiguration of the injection well networks because of access constraints could potentially significantly impact the effectiveness of the technology. Given the difficulty of installing hundreds of deep injection wells in a densely populated residential area, Alternatives 3 and 4 are considered less implementable than Alternative 2.

Alternatives 2 through 4 would require routine groundwater quality, performance, and administrative monitoring. Although required independently from the Alternatives, five-year reviews will be conducted. Alternatives 2 through 4 also require periodic O&M of the groundwater treatment plant for the duration of the remediation.

10.7 Cost

Cost includes estimated capital and operation and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent. This is a standard assumption in accordance with EPA guidance.

The estimated capital, operation and maintenance costs, and present worth costs assuming a 7% discount rate over a period of 30 years are discussed in detail in the FS Report. The cost estimates are based on the best available information. Alternative 1 has no cost because no activities are implemented. The highest present worth cost is Alternative 3, at $202,585,000. The costs for the alternatives are as follows:

Alternative	Capital Cost	Total O&M Cost	Present Worth Cost
1	$0	$0	$0
2	$51,685,000	$47,455,000	$99,140,000
3	$151,582,000	$51,003,000	$202,585,000
4	$158,113,000	$39,893,000	$198,006,000

10.8 State Acceptance

NYSDEC has consulted with New York State Department of Health, and it concurs with the selected remedy. A letter of concurrence is attached in Appendix IV.

10.9 Community Acceptance

"Community Acceptance" considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

EPA solicited input from the community on the remedial alternatives proposed for OU3 at the Site. Verbal comments were received from community members at the August 10, 2023 public meeting, and they generally related to public health concerns, treatment technologies, and the schedule of remedy implementation. A copy of the public meeting transcript is provided as Attachment C to Appendix V. During the public comment period from July 24, 2023, through October 23, 2023, approximately fifty comment letters were received via e-mail or regular mail. Copies of the comment letters are provided as Attachment D to Appendix V. Copies of the comment letters received after the close of the public comment period are provided as Attachment E to Appendix V.

The majority of comment letters received were submitted from residents of the community expressing their concerns with the disruption, inconvenience, and risk that would be caused by construction activities related to the preferred alternative presented in the Proposed Plan. Many community residents located near areas where drilling and the installation of wells and piping would have its greatest construction impacts oppose active remediation, indicating that treatment is unnecessary and preferring to leave treatment of the water supply to the water districts as it is extracted for distribution to the public. Additionally, the Council of East Meadow Community Organizations forwarded member concerns regarding, among other things, the location of the extraction wells, the conveyance piping, and the treatment plant. Although EPA is not definitively specifying any location for extraction wells or for siting treatment facilities as part of this ROD, the organization cites concerns over impacts to the recreational use of Eisenhower Park in the event that the decision is made to site the treatment plant in the Park.

PRPs for the Site expressed their opposition to the preferred alternative presented in the Proposed Plan, indicating, among other things, that it is premature for EPA to select a remedy for OU3, it is redundant, it fails to take into consideration other response actions occurring or to be occurring at other areas of the Site, and it relies on an over-simplification of groundwater

conditions.

While representatives for Nassau County, Town of Hempstead, and nearby water districts raised questions regarding the nature and extent of contamination, including consideration for addressing emerging contaminants, generally these entities, along with some residents, were supportive of the preferred remedial alternative. Responses to the questions and comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (Appendix V).

11.0 PRINCIPAL THREAT WASTE

The NCP establishes an expectation that the EPA will use treatment to address the principal threats posed by a site whenever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for the migration of contamination to groundwater, surface water, or air, or act as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment in the event that exposure should occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of alternatives, using the remedy selection criteria described above. The manner in which principal threat wastes are addressed provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

Contaminated groundwater is generally not considered to be source material. However, while non-aqueous phase liquid (NAPL) in groundwater may be viewed as potential source material, analytical results from the OU3 RI did not reveal concentrations of contaminants in groundwater indicative of the presence of NAPL. As such, there is no principal threat waste associated with OU3.

12.0 SELECTED REMEDY

Based upon the requirements of CERCLA, the results of OU3 investigations, the detailed analysis of the alternatives, and public comments, EPA has determined that Alternative 2: Groundwater Extraction and Ex-Situ Treatment best satisfies the requirements of CERCLA Section 121, 42 U.S.C. §9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the NCP's nine evaluation criteria, 40 CFR §300.430(e)(9).

12.1 Summary of the Rationale for the Selected Remedy

Alternative 2 is easier to implement than Alternatives 3 and 4 because it would have fewer implementability challenges associated with the densely populated and fully-developed residential setting of the Site, as it has significantly fewer wells to be drilled than Alternatives 3 and 4. In addition to installing the components associated with the extraction, treatment, and discharge of contaminated groundwater in the southern portion of OU3, Alternatives 3 and 4 would also require securing access to install hundreds of injection wells in the residential

neighborhood near the northern portion of OU3. In addition, under Alternatives 3 and 4, multiple injection events are likely to be necessary over time. These activities would cause a significant disturbance to the residential neighborhood. Reconfiguration of the injection well networks because of access constraints could potentially significantly impact the effectiveness of the technology. Access for the purpose of installing extraction wells and constructing and operating the necessary treatment plant(s) and recharge basin under Alternative 2, though still complicated, is more manageable. The conceptual design for the selected remedy is provided as Figure 3 in Appendix I.

Alternative 2 uses proven technologies that can be more readily implemented than the other alternatives. The treatment components can be optimized to improve the treatment effectiveness or decrease the remedial time frame, if required. Groundwater pump and treat has been demonstrated as an effective remedial approach for contaminant mass removal over the long term. Long-term groundwater monitoring would ensure that RAOs are achieved at OU3 of the Site. Alternative 2 is also considerably less expensive than Alternatives 3 and 4.

12.2 Description of the Selected Remedy

The major components of the selected remedy for OU3 at the Site include the following:

- Extraction of groundwater via pumping and ex-situ treatment of extracted groundwater prior to discharge to one or more of the following: a new or existing recharge basin; underground infiltration galleries; the sanitary sewer; surface water, and/or reinjection to groundwater. The location, number, and pumping rates of the extraction wells, specifications for the treatment plant, and discharge locations are to be determined during the remedial design. The extraction well network will be designed to include the placement of extraction wells near the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. In addition, a transect of extraction wells will also be installed near the portion of the Magothy aquifer containing total groundwater contaminant concentrations of approximately 100 µg/L so as to establish hydraulic control and reduce the downgradient migration of contamination. During the remedial design, additional groundwater monitoring wells will be installed, and sampling will be performed to refine the areas with contaminant concentrations greater than 1,000 µg/L and 100 µg/L. Sampling for emerging contaminants, such as PFOA and PFOS, will also be performed during the remedial design. The extracted groundwater from the pumping wells will be conveyed to a groundwater treatment plant for treatment prior to discharge. Extraction and ex-situ treatment of contaminated groundwater will continue until the cleanup levels for each of the COCs are attained within the targeted treatment area.

- As part of the remedial design, further evaluation will be conducted to identify potential locations to site the various system components. If it is determined that parkland, such as Eisenhower Park, is needed as the appropriate location to construct and/or operate a portion of these system components, EPA will coordinate this effort with Nassau County and endeavor to obtain any necessary approvals (*e.g.*, from the New York State legislature) for the use of parkland for this purpose. As part of this effort, an evaluation

will be conducted of whether some of the treated effluent could be used by the County on a seasonal basis for irrigation purposes at the park. Alternatives to constructing one centralized treatment plant, such as utilizing multiple, smaller treatment plants, may be considered during the remedial design. In addition, if sufficient capacity were to exist, consideration could be given to treating a portion of the extracted groundwater at a treatment plant that is or may be constructed for another response action at another operable unit at the Site, such as OU1.

- Implementation of a long-term groundwater monitoring program to ensure that groundwater quality improves following implementation of this selected remedy until clean up levels are achieved, including in areas outside of the area of hydraulic control, which are being addressed through naturally occurring attenuation processes. The long-term monitoring program would include the installation and sampling of an early-warning monitoring well for the East Meadow water supply well that is located south of Hempstead Turnpike. During the remedial design, the location of the early-warning monitoring well will be determined so as to ensure sufficient time for the installation of wellhead treatment to address Site-related contamination, if such treatment is determined to be necessary.

- Institutional controls that will rely on current groundwater use restrictions in the form of state and local laws. Specifically, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available. The Site is serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in Nassau County without a State permit. To ensure the remedy remains protective, the above State and County well restrictions will be relied upon.

- Development of a SMP to provide for the proper O&M of the OU3 remedy post-construction. The SMP will include plans for confirming institutional controls, long-term groundwater monitoring, periodic reviews, and certifications, as applicable.

Individual facilities within the NCIA are considered to be among the sources of groundwater contamination for OU1. Sources of groundwater contamination for Operable Unit 2 at the Site (OU2) are generally located north and east of OU1. Response actions for OU1 and OU2, including the sources of the contamination at those OUs, are not part of this OU3, although the successful mitigation (*i.e.*, source control or cleanup) of the source area(s) at the upgradient, individual source facilities and associated groundwater contamination are anticipated and has been assumed in evaluating the potential for attaining the objectives of the selected remedial alternative for this OU3 ROD.

The environmental benefits of the selected remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with the EPA Region 2's Clean and Green Energy Policy[2] and NYSDEC's Green Remediation Policy. This would include consideration of green remediation technologies and practices, including GAC

[2] See http://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy and http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf

regeneration.

12.3 Summary of the Estimated Selected Remedy Costs

The estimated capital, operation and maintenance, and total present-worth cost of the selected remedy is $99,140,000. The cost estimates are based on available information and are order-of-magnitude engineering cost estimates that are expected to be between +50 to -30 percent of the actual project cost. Changes to the cost estimate can occur as a result of new information and data collected during the design of the remedy.

A cost estimate summary for the selected remedy is presented in Table 11, Appendix II.

12.4 Expected Outcomes of the Selected Remedy

The selected remedy addresses areas of VOC contamination in groundwater at OU3 of the Site. The results of the HHRA indicate that the contaminated groundwater at OU3 presents an unacceptable exposure risk. The response action selected in this OU3 ROD will eliminate risks associated with this pathway. The selected remedy will restore the impacted, sole source aquifer at OU3 of the Site to its most beneficial use as a source of drinking water.

13.0 STATUTORY DETERMINATIONS

EPA has determined that the selected remedy complies with the CERCLA and NCP provisions for remedy selection, meets the threshold criteria, and provides the best balance of tradeoffs among the alternatives with respect to the balancing and modifying criteria. These provisions require the selection of remedies that are protective of human health and the environment, comply with ARARs (or justify a waiver from such requirements), are cost effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the toxicity, mobility, or volume of hazardous substances as a principal element (or justifies not satisfying the preference). The following sections discuss how the selected remedy meets these statutory requirements.

13.1 Protection of Human Health and the Environment

The selected remedy will protect human health and the environment because it will, over the long-term, restore groundwater at OU3 of the Site to drinking water standards. Institutional controls will also assist in protecting human health over both the short- and long-term by helping to control and limit exposure to hazardous substances until RAOs are achieved.

13.2 Compliance with ARARs

The selected remedy is expected to achieve federal MCLs or more stringent state standards for the COCs in the groundwater. The COCs and the relevant cleanup levels are provided in Appendix II, Table 7. A full list of the ARARs, TBCs, and other guidance related to

implementation of the selected remedy is presented in Appendix II, Tables 8, 9, and 10.

13.3 Cost-Effectiveness

A cost-effective remedy is one in which costs are proportional to its overall effectiveness (40 C.F.R. § 300.430(f)(1)(ii)(D)). Overall effectiveness is based on the evaluations of long-term effectiveness and permanence, reduction in toxicity, mobility, and volume through treatment, and short-term effectiveness. Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost-effectiveness.

Each of the alternatives underwent a detailed cost analysis. In that analysis, capital and operation and maintenance costs were estimated and used to develop present-worth costs. In the present-worth cost analysis, operation and maintenance costs were calculated for the estimated life of each alternative. The total estimated present worth cost for implementing the selected remedy is $99,140,000.

Based on the comparison of overall effectiveness to cost, the selected remedy meets the statutory requirement that Superfund remedies be cost effective (40 C.F.R. § 300.430(f)(1)(ii)(D)) in that it represents reasonable value for the money to be spent and is thus cost effective. A 30-year timeframe was used for planning and estimating purposes to remediate groundwater, although remediation timeframes could exceed this estimate.

13.4 Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable

The selected remedy complies with the statutory mandate to utilize permanent solutions, alternative treatment technologies, and resource recovery alternatives to the maximum extent practicable because it represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner for this OU. The selected remedy satisfies the criteria for long-term effectiveness and permanence by permanently reducing the mass of contaminants in the groundwater at the Site, thereby reducing the toxicity, mobility, and volume of contamination.

13.5 Preference for Treatment as a Principal Element

CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous substances as a principal element (or justify not satisfying the preference). Through the use of extraction and ex-situ treatment technologies, the selected OU3 remedy satisfies the statutory preference for remedies that employ treatment as a principal element.

13.6 Five-Year Review Requirements

While the selected remedy would ultimately result in reduction of contaminant levels in

groundwater to levels that would allow for unlimited use and unrestricted exposure, it is anticipated that it will take longer than five years to achieve these levels. As a result, in accordance with CERCLA, the Site is to be reviewed at least once every five years until cleanup levels are achieved and unrestricted use is achieved.

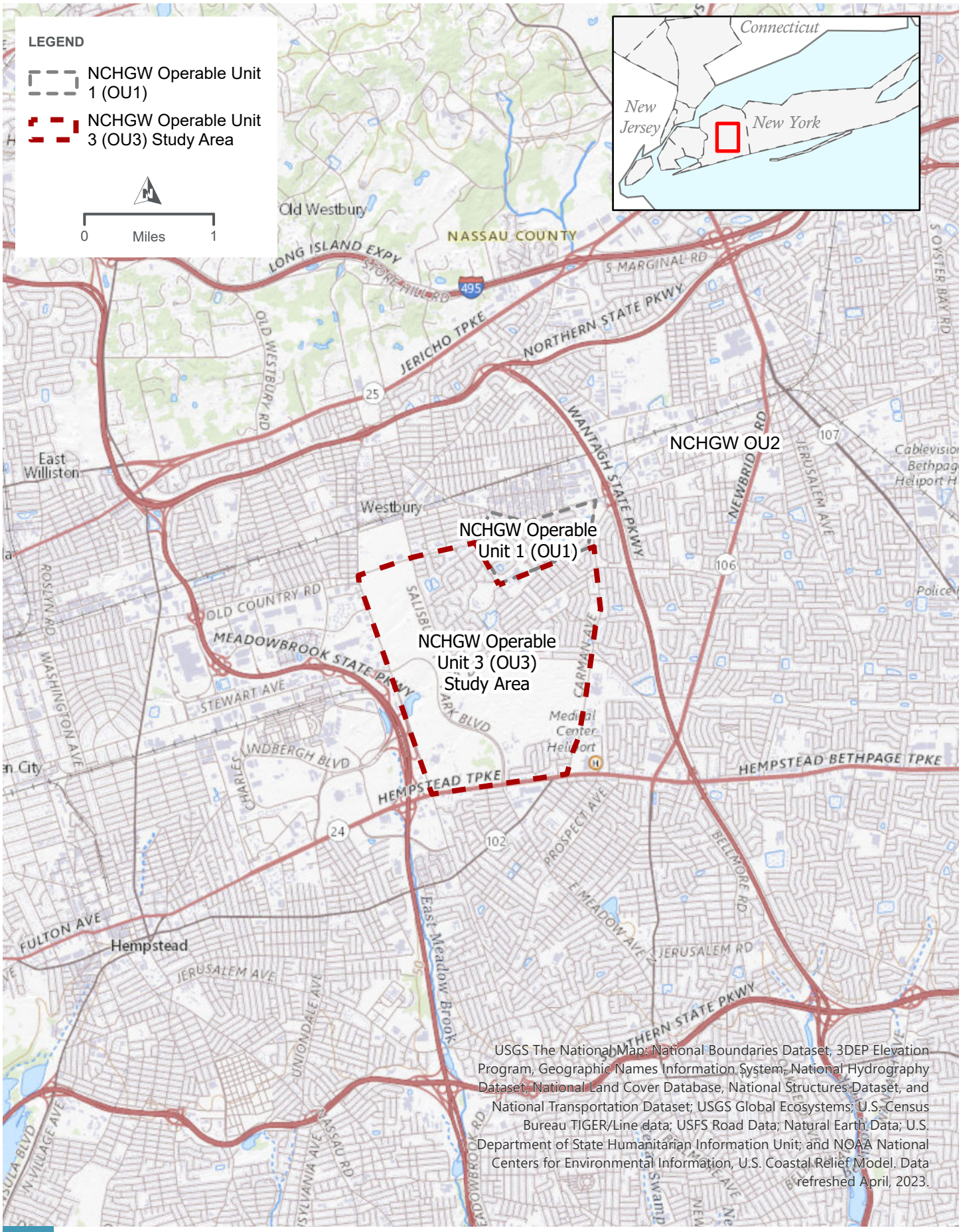
14.0 DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for OU3 of the Site was released on July 24, 2023. The Proposed Plan identified Alternative 2 as the preferred alternative for remediating the contaminated groundwater. EPA received multiple requests to extend the public comment period and extended the public comment period twice until October 23, 2023.

EPA reviewed all written (including electronic formats such as e-mail) and verbal comments received during the public comment period and has determined that no significant changes to the remedy, as originally proposed in the Proposed Plan, are necessary or appropriate.

APPENDIX I

FIGURES



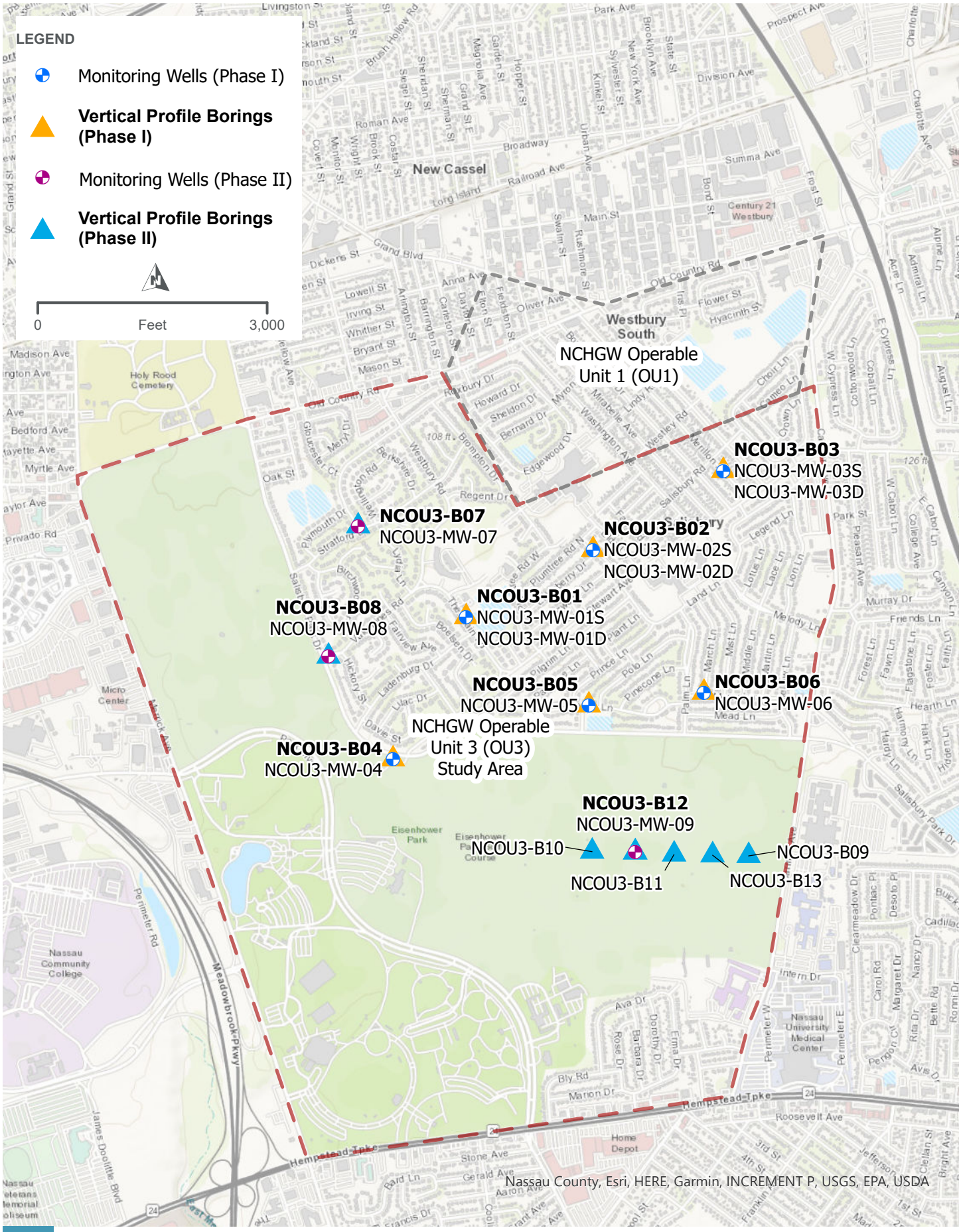
USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.

HDR APTIM
a Joint Venture

SITE LOCATION MAP

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OU3

FIGURE 1



HDR APTIM a Joint Venture

VPB & MW LOCATIONS – PHASES I & II

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OU3

FIGURE 2

Extraction Wells

Extraction Well Piping

10 ug/l COCs Isoconcentration

100 ug/l COCs Isoconcentration

500 ug/l COCs Isoconcentration

1000 ug/l COCs Isoconcentration

NCHGW Operable Unit 1 (OU1)

NCHGW Operable Unit 3 (OU3) Study Area

Note: The location of the groundwater treatment plant (GWTP) and recharge basin will be determined during the Remedial Design Phase through coordination with local and State authorities.

0 Feet 1,000

To GWTP (Location TBD)

NCHGW Operable Unit 1 (OU1)

NCHGW Operable Unit 3 (OU3) Study Area

Westbury South

Salisbury

Eisenhower Park Golf Course

Eisenhower Park

Nassau University Medical Center

Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/ NASA, USGS, EPA, NPS, US Census Bureau, USDA

ALTERNATIVE 2 - GROUNDWATER EXTRACTION AND EX-SITU TREATMENT (PUMP & TREAT)

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OU3

FIGURE 3

APPENDIX II

TABLES

Table 1
Summary of Contaminants of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Contaminant of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)[1]	EPC Units	Statistical Measure
		Min	Max					
Groundwater	TCE	0.58	530	µg/L	28 / 32	212.9	µg/L	95% Student's-t UCL
Groundwater	PCE	0.049	6500	µg/L	28 / 32	1642	µg/L	95% Student's-t UCL
Groundwater	cis-1,2-DCE	0.44J	390	µg/L	27 / 32	127.8	µg/L	95% Student's-t UCL
Groundwater	trans-1,2-DCE	0.058J	10	µg/L	11 / 32	6.453	µg/L	95% Hall's Bootstrap
Groundwater	1,1-DCA	0.064J	11	µg/L	27 / 32	6.414	µg/L	95% KM (t) UCL
Groundwater	1,2-DCA	0.28J	24	µg/L	8 / 32	1.455	µg/L	95% KM (t) UCL
Groundwater	1,2,3-TCP	0.093J	0.26J	µg/L	3 / 20	0.24	µg/L	95% KM (t) UCL
Groundwater	1,1,2-TCA	0.098J	1.1	µg/L	8 / 32	0.368	µg/L	95% KM (t) UCL
Groundwater	Vinyl chloride	0.087J	0.46J	µg/L	5 / 32	0.401	µg/L	95% KM (t) UCL
Groundwater	Benzene	0.081J	6	µg/L	15 / 32	1.981	µg/L	95% Hall's Bootstrap
Groundwater	1,4-dioxane	1.1J	28	µg/L	25 / 27	15	µg/L	95% Adjusted Gamma UCL

Footnotes:

(1) The exposure point concentration (EPC) is the 95% upper confidence limit (UCL) of the arithmetic mean. When the UCL is greater than the maximum detected concentration or ProUCL did not calculate an UCL, the maximum detected concentration is chosen. The most appropriate statistical measure (UCL) is chosen from those ProUCL suggests based on the distribution of the dataset and ProUCL guidance. More information on ProUCL outputs are provided in Attachment B of the human health risk assessment (HHRA).

(2) Only Site-related contaminants of concern (COCs) are included in Table 1. It is also noteworthy that 1,1,1-TCA and 1,1-DCE did not exceed the screening criteria used to determine contaminants of potential concern (COPCs) in the HHRA. Therefore, these chemicals were not quantitatively evaluated for risk or hazard. However, since these chemicals also exceeded state drinking water standards, they were retained as COCs as well.

Definitions:
UCL= upper confidence limit
Max = maximum detected concentration
KM = Kaplan-Meier
µg/L = microgram per liter
J = qualifier for estimated value

Table 2
Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor (Age)	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current	Groundwater	Groundwater	Groundwater (Tap Water)	Residential	Adult/Child	Dermal/Ingestion	None	Residents in the area are connected to the municipal water supply.
				Commercial/Industrial Worker	Adult			Commercial/Industrial Workers in the area are connected to the municipal water supply.
		Bathroom Air	Water Vapors in Bathroom Air	Residential	Adult/Child	Inhalation	None	Residents in the area are connected to the municipal water supply.
		Indoor Air	Indoor Air	Residential	Adult/Child	Inhalation	None	Indoor air vapor intrusion is an incomplete exposure pathway as groundwater contamination is > 100 feet deep in the OU3 study area.
				Commercial/Industrial Worker	Adult			
		Groundwater	Groundwater (Excavation/ Trench)	Construction Worker	Adult	Dermal/Ingestion/ Inhalation	None	Construction workers were not assessed because depth to groundwater >10 feet bgs
		Ambient Air	Ambient Air (Excavation/ Trench)	Construction Worker	Adult	Inhalation	None	Construction workers were not assessed because depth to groundwater >10 feet bgs

Table 2
Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor (Age)	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Groundwater	Groundwater (Tap Water)	Residential	Adult/Child	Dermal/Ingestion	Quant	Future Residents in the area are connected to the municipal water supply. Future residents are being quantitatively evaluated based on the assumption of no action (i.e. assuming the contaminated groundwater beneath the site is used as a potable water source).
				Commercial/Industrial Worker	Adult			Future Commercial/Industrial Workers in the area are connected to the municipal water supply. Future commercial/industrial workers are being quantitatively evaluated based on the assumption of no action (i.e. assuming the contaminated groundwater beneath the site is used as a potable water source).
		Bathroom Air	Water Vapors in Bathroom Air	Residential	Adult/Child	Inhalation	Quant	Future Residents in the area are connected to the municipal water supply. Future Residents are being quantitatively evaluated based on the assumption of no action (i.e. assuming the contaminated groundwater beneath the site is used as a potable water source). Inhalation from bathroom air is based on showering and thus is assessed for Future Residents only.
				Commercial/Industrial Worker	Adult		None	
		Indoor Air	Indoor Air	Residential	Adult/Child	Inhalation	None	Indoor air vapor intrusion is an incomplete exposure pathway as groundwater contamination is >100 feet deep in the OU3 study area.
				Commercial/Industrial Worker	Adult			
		Groundwater	Groundwater (Excavation/ Trench)	Construction Worker	Adult	Dermal/Ingestion/ Inhalation	None	Construction workers were not assessed because depth to groundwater >10 feet bgs
		Ambient Air	Ambient Air (Excavation/ Trench)	Construction Worker	Adult	Inhalation	None	Construction workers were not assessed because depth to groundwater >10 feet bgs

Definitions:
bgs = below ground surface
Quant = quantitative

Table 3
Non-Carcinogenic Toxicity Data Summary

Pathway: Ingestion/Dermal

Contaminants of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD Target Organ	Dates of RfD
TCE	Chronic	0.0005	mg/kg-day	1	0.0005	mg/kg-day	Developmental, Hepatic, Renal, Nervous, Lymphatic, Reproductive	1000/100/10	IRIS	9/28/2011
PCE	Chronic	0.006	mg/kg-day	1	0.006	mg/kg-day	Renal	1000	IRIS	2/10/2012
cis-1,2-DCE	Chronic	0.002	mg/kg-day	1	0.002	mg/kg-day	Renal	3000	IRIS	9/30/2010
trans-1,2-DCE	Chronic	0.02	mg/kg-day	1	0.02	mg/kg-day	Lymphatic	3000	IRIS	9/30/2010
1,1-DCA	Chronic	0.2	mg/kg-day	1	0.2	mg/kg-day	Renal	3000	PPRTV	9/27/2006
1,2-DCA	Chronic	0.006	mg/kg-day	1	0.006	mg/kg-day	Renal	10000	Screening PPRTV	10/1/2010
1,2,3-TCP	Chronic	0.004	mg/kg-day	1	0.004	mg/kg-day	Hepatic	300	IRIS	9/30/2009
1,1,2-TCA	Chronic	0.004	mg/kg-day	1	0.004	mg/kg-day	Lymphatic, Hematologic	1000	IRIS	9/26/1988
Vinyl chloride	Chronic	0.003	mg/kg-day	1	0.003	mg/kg-day	Hepatic	30	IRIS	8/7/2000
Benzene	Chronic	0.004	mg/kg-day	1	0.004	mg/kg-day	Lymphatic	300	IRIS	4/17/2003
1,4-dioxane	Chronic	0.006	mg/kg-day	1	0.006	mg/kg-day	Renal	1000	IRIS	2/10/2012

Pathway: Inhalation

Contaminants of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD Target Organ	Dates of RfC
TCE	Chronic	0.002	mg/m^3	Lymphatic	100/10	IRIS	9/28/2011
PCE	Chronic	0.04	mg/m^3	Nervous	1000	IRIS	2/10/2012
cis-1,2-DCE	Chronic	0.04	mg/m^3	Renal	3000	PPRTV	9/1/2022
trans-1,2-DCE	Chronic	0.04	mg/m^3	Lymphatic, Developmental	3000	PPRTV	10/15/2020
1,1-DCA	NA	NA	mg/m^3	NA	NA	NA	NA
1,2-DCA	Chronic	0.007	mg/m^3	Nervous	3000	PPRTV	10/1/2010
1,2,3-TCP	Chronic	0.0003	mg/m^3	Respiratory	3000	IRIS	9/30/2009
1,1,2-TCA	Chronic	0.0002	mg/m^3	Respiratory	3000	Screening PPRTV	4/4/2011
Vinyl chloride	Subchronic	0.08	mg/m^3	Hepatic	30	ATSDR	7/1/2006
Benzene	Chronic	0.03	mg/m^3	Lymphatic	300	IRIS	4/17/2003
1,4-dioxane	Chronic	0.098	mg/m^3	Hepatic	30	ATSDR	9/1/1997

Footnotes:
The oral RfDs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy. The absorbed RfD for dermal is calculated by the following equation: RfD-oral x GIABS. USEPA recommends that the oral RfD should not be adjusted to estimate the absorbed dose for compounds when the absorption efficiency is greater than 50%.
The inhalation RfCs are taken from the USEPA Regional Screening Levels (RSLs) table, which gathers toxicity reference values from multiple sources using an established hierarchy.

Definitions:
GIABS = Gastrointestinal absorption factor
IRIS = Integrated Risk Information System
PPRTV = Provisional Peer Reviewed Toxicity Values
ATSDR = Agency for Toxic Substances and Disease Registry
mg/kg-day = milligrams per kilogram per day
mg/m^3 = milligrams per cubic meters
NA = not available

Table 4
Cancer Toxicity Data Summary

Pathway: Ingestion/ Dermal

Contaminant of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/Cancer Guideline[1]	Source	Date
TCE	0.046	$(mg/kg\text{-}day)^{-1}$	0.046	$(mg/kg\text{-}day)^{-1}$	Carcinogenic to humans	IRIS	9/28/2011
PCE	0.0021	$(mg/kg\text{-}day)^{-1}$	0.0021	$(mg/kg\text{-}day)^{-1}$	Likely to be carcinogenic in humans	IRIS	2/10/2012
cis-1,2-DCE	NA	$(mg/kg\text{-}day)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	Inadequate information to assess carcinogenic potential	IRIS	9/30/2010
trans-1,2-DCE	NA	$(mg/kg\text{-}day)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	Inadequate information to assess carcinogenic potential	IRIS	9/30/2010
1,1-DCA	NA	$(mg/kg\text{-}day)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	C (Possible human carcinogen)	IRIS	10/1/1990
1,2-DCA	0.091	$(mg/kg\text{-}day)^{-1}$	0.091	$(mg/kg\text{-}day)^{-1}$	B2 (Probable human carcinogen)	IRIS	3/31/1987
1,2,3-TCP	30	$(mg/kg\text{-}day)^{-1}$	30	$(mg/kg\text{-}day)^{-1}$	Likely to be carcinogenic in humans	IRIS	9/30/2009
1,1,2-TCA	0.057	$(mg/kg\text{-}day)^{-1}$	0.057	$(mg/kg\text{-}day)^{-1}$	C (Possible human carcinogen)	IRIS	3/31/1987
Vinyl chloride	0.72	$(mg/kg\text{-}day)^{-1}$	0.72	$(mg/kg\text{-}day)^{-1}$	A (Human carcinogen)	IRIS	8/7/2000
Benzene	0.055	$(mg/kg\text{-}day)^{-1}$	0.055	$(mg/kg\text{-}day)^{-1}$	A (Human carcinogen)	IRIS	1/9/2000
1,4-dioxane	0.1	$(mg/kg\text{-}day)^{-1}$	0.1	$(mg/kg\text{-}day)^{-1}$	Likely to be carcinogenic in humans	IRIS	9/20/2013

Pathway: Inhalation

Contaminant of Concern	Unit Risk	Units	Weight of Evidence/Cancer Guideline[1]	Source	Date
TCE	0.0000041	$(\mu g/m^3)^{-1}$	Carcinogenic to humans	IRIS	9/28/2011
PCE	0.00000026	$(\mu g/m^3)^{-1}$	Likely to be carcinogenic to humans	IRIS	2/10/2012
cis-1,2-DCE	NA	$(\mu g/m^3)^{-1}$	Inadequate information to assess carcinogenic potential	IRIS	9/30/2010
trans-1,2-DCE	NA	$(\mu g/m^3)^{-1}$	Inadequate information to assess carcinogenic potential	IRIS	9/30/2010
1,1-DCA	0.0000016	$(\mu g/m^3)^{-1}$	NA	CalEPA	5/1/2009
1,2-DCA	0.000026	$(\mu g/m^3)^{-1}$	B2 (Probable human carcinogen)	IRIS	3/31/1987
1,2,3-TCP	NA	$(\mu g/m^3)^{-1}$	Likely to be carcinogenic to humans	IRIS	9/30/2009
1,1,2-TCA	0.000016	$(\mu g/m^3)^{-1}$	C (Possible human carcinogen)	IRIS	3/31/1987
Vinyl chloride	0.0000044	$(\mu g/m^3)^{-1}$	A (Human carcinogen)	IRIS	8/7/2000
Benzene	0.0000078	$(\mu g/m^3)^{-1}$	A (Human carcinogen)	IRIS	1/9/2000
1,4-dioxane	0.000005	$(\mu g/m^3)^{-1}$	Likely to be carcinogenic to humans	IRIS	9/20/2013

Footnotes:
(1) Weight of evidence information obtained from IRIS. Categories are as follows:
A = Known human carcinogen
B1 = Probable human carcinogen-indicates that limited human data are available
B2 = Probable human carcinogen based on sufficient evidence of carcinogenicity in animals
C = Possible human carcinogen
D = Not classifiable due to lack of animal bioassays and human studies

Definitions:
IRIS = Integrated Risk Information System
IUR = inhalation unit risk
NA = Not available
(mg/kg-day)-1 = per milligrams per kilogram per day
$(\mu g/m^3)^{-1}$ = per micrograms per cubic meter
SF = slope factor

Table 5
Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
Receptor Population: Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Contaminant Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Dermal Contact	Inhalation	Exposure Routes Total
Groundwater	Groundwater	Tap Water	1,2,3-TCP	Hepatic	0	0.00003	NA	0.001
			PCE	Nervous, Hepatic, Renal	3	0.7	NA	4
			TCE	Developmental, Hepatic, Renal, Nervous, Lymphatic, Reproductive	5	0.3	NA	5
			Vinyl chloride	Hepatic	0.001	0.0001	NA	0.001
			1,4-dioxane	Hepatic, Renal	0.01	0.00001	NA	0.01
							Total Hazard Index (HI) Across All Media[1]=	**11**
							Hepatic HI Across All Media[1]=	**11**

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Contaminant Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Dermal Contact	Inhalation	Exposure Routes Total
Groundwater	Groundwater	Tap Water	1,1,2-TCA	Lymphatic, Hematologic	0.003	0.0002	2	2
			1,1-DCA	Renal	0.001	0.0001	NA	0.001
			1,2,3-TCP	Hepatic	0.002	0.0002	0.7	0.7
			1,2-DCA	Renal	0.01	0.0003	0.2	0.2
			Benzene	Lymphatic	0.01	0.0010	0.06	0.07
			trans-1,2-DCE	Lymphatic	0.01	0.0010	0.10	0.2
			cis-1,2-DCE	Hepatic, Renal	2	0.2	3	5
			PCE	Nervous, Hepatic, Renal	8	5	40	50
			TCE	Developmental, Hepatic, Renal, Nervous, Lymphatic, Reproductive	10	2	90	100
			Vinyl chloride	Hepatic	0.004	0.0003	0.004	0.01
			1,4-dioxane	Hepatic, Renal	0.01	0.0001	0.4	0.5
							Total Hazard Index (HI) Across All Media[1]=	**169**
							Hepatic HI Across All Media[1]=	**169**

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child (0-6 years)

Medium	Exposure Medium	Exposure Point	Contaminant Of Concern	Primary Target Organ(s)	Non-Carcinogenic Hazard Quotient			
					Ingestion	Dermal Contact	Inhalation	Exposure Routes Total
Groundwater	Groundwater	Tap Water	1,1,2-TCA	Lymphatic, Hematologic	0.01	0.0003	1	1
			1,1-DCA	Renal	0.002	0.0001	NA	0.002
			1,2,3-TCP	Hepatic	0.003	0.0003	0.6	0.6
			1,2-DCA	Renal	0.01	0.001	0.2	0.2
			Benzene	Lymphatic	0.02	0.002	0.05	0.08
			trans-1,2-DCE	Lymphatic	0.02	0.002	0.1	0.1
			cis-1,2-DCE	Hepatic, Renal	3	0.4	2	6
			PCE	Nervous, Hepatic, Renal	10	7	30	50
			TCE	Developmental, Hepatic, Renal, Nervous, Lymphatic, Reproductive	20	3	100	100
			Vinyl chloride	Hepatic	0.01	0.0004	0.004	0.01
			1,4-dioxane	Hepatic, Renal	0.02	0.0001	0.4	0.40
							Total Hazard Index (HI) Across All Media[1]=	**169**
							Hepatic HI Across All Media[1]=	**169**

Footnotes:
(1) The HI represents the summed HQs for all contaminants of potential concern (COPCs) at the site, not just those requiring remedial action (i.e., the contaminants of concern [COCs]) which are shown in this table.

Definitions:
NA = not applicable

Table 6
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Contaminant Of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water	1,2,3-TCP	3E-05	NA	1.00E-06	3E-05
			PCE	1E-05	NA	3.00E-06	2E-05
			TCE	4E-05	NA	3.00E-06	4E-05
			Vinyl chloride	1E-06	NA	4.00E-08	1E-06
			1,4-dioxane	6E-06	NA	9.0E-09	6E-06
	Exposure Medium Total[1]=						**2E-04**
Total Excess Cancer Risk Across All Media=							**2E-04**

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult Lifetime

Medium	Exposure Medium	Exposure Point	Contaminant Of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water	1,1,2-TCA	3E-07	2E-08	2E-06	2E-06
			1,1-DCA	NA	3E-06	NA	3E-06
			1,2,3-TCP	4E-04	NA	4E-05	4E-04
			1,2-DCA	2E-06	9E-08	1E-05	1E-05
			Benzene	2E-06	1E-07	5E-06	7E-06
			trans-1,2-DCE	NA	NA	NA	NA
			cis-1,2-DCE	NA	NA	NA	NA
			PCE	5E-05	3E-05	1E-04	2E-04
			TCE	2E-04	3E-05	8E-04	1E-03
			Vinyl chloride	2E-05	1E-06	7E-07	2E-05
			1,4-dioxane	2E-05	7E-08	2E-05	5E-05
	Exposure Medium Total[1]=						**2E-03**
Total Excess Cancer Risk Across All Media=							**2E-03**

Footnotes:
(1) The carcinogenic risk represents the summed carcinogenic for all contaminants of potential concern (COPCs) at the site, not just those requiring remedial action (i.e., the contaminants of concern [COCs]) which are shown in this table.

Definitions:
NA = not applicable

Table 7
Cleanup Levels for Contaminants of Concern

Contaminant of Concern (COC)	NYSDEC Ground Water Quality Standard (µg/L)	NYSDOH Drinking Water Quality Standard (µg/L)	Federal Maximum Contaminant Level (µg/L)	Cleanup level (µg/L)
Tetrachloroethylene	5	5	5	5
Trichloroethylene	5	5	5	5
Cis-1,2-Dichloroethene	5	5	70	5
Trans-1,2-Dichloroethene	5	5	100	5
1,1-Dichloroethene	5	5	7	5
1,1-Dichloroethane	5	5	NS	5
1,2-Dichloroethane	0.6	5	5	0.6
1,2,3-Trichloropropane	0.04	5	NS	0.04
1,1,1-Trichloroethane	5	5	200	5
1,1,2-Trichloroethane	1	5	5	1
Vinyl Chloride	2	2	2	2
Benzene	1	5	5	1
1,4-Dioxane	NS*	1	1	1

Notes:

The cleanup level represents the level to which each COC will be cleaned up to. The cleanup level is the more stringent of the federal or state value listed above. The table does not include all ARARs, TBCs and other guidance that applies to the remedy selected in this ROD.

*NS indicates there is currently no available standard; however, 0.35 µg/L is the NYSDEC ambient water quality guidance value for 1,4-dioxane for discharges to drinking water sources. Treated effluent would meet the New York State 1,4-dioxane effluent limitation of 0.35 µg/L for discharged water.

Table 8
Chemical-Specific ARARs, TBCs, and Other Guidelines

Media	Requirement	Citation	Description
Federal			
Groundwater/ Water	Safe Drinking Water Act	42 U.S.C. §§300f-300j-26	Drinking water standards, expressed as maximum contaminant levels (MCLs), which apply to specific contaminants that have been determined to have an adverse impact on human health.
Groundwater/ Water	USEPA National Primary Drinking Water Regulations	40 CFR §§ 141.1-141-861	Health-based standards for public drinking water systems. Also includes drinking water quality goals that are set at levels at which no adverse health effects are anticipated, with a safety margin.
State of New York			
Groundwater/ Water	NYSDEC - Derivation and Use of Standards and Guidance Values	6 NYCRR Part 702	Basis for derivation of water quality standards and guidance values to control toxic and other deleterious substances.
Groundwater/ Water	NYSDEC - Water Quality Standards and Classifications	6 NYCRR Part 703	Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations
Groundwater/ Water	NYSDEC - Division of Water - Technical and Operational Guidance Series - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (1998)	NYSDEC TOGS 1.1.1	Compilation of ambient water quality standards and guidance values and groundwater effluent limitations for use where there are no standards or regulatory effluent limitations.
Water	NYSDEC - Sources of Water Supply – Standards of Raw Water Quality	10 NYCRR Part 170.4	Raw water quality standards to protect sources of water supply dedicated for present or future public beneficial use for domestic and municipal purposes.
Water	NYSDOH - Ambient Water Quality Standards and Guidance Values	2021 Addendum to June 1998 Division of Water TOGS 1.1.1	New water quality guidance values for emerging contaminants PFOA, PFOS, and 1,4-dioxane.
Water	NYSDOH - Sources of Water Supply - Standards of Raw Water Quality	NYSDOH Part 5, Subpart 5-1.51/52	Maximum contaminant levels, maximum residual disinfectant levels and treatment technique requirements.

Notes:
CFR - Code of Federal Regulations
MCLs - Maximum Contaminant Levels
NYCRR - New York Codes, Rules, and Regulations
NYSDEC - New York State Department of Environmental Conservation
NYSDOH - New York State Department of Health
PFOA - perfluorooctanoic acid
PFOS - perfluorooctane sulfonic acid

Table 9
Location-Specific ARARs, TBCs, and Other Guidelines

Location	Title	Citation	Description
Federal			
Groundwater	Federal Protection of Sole Source Aquifer	40 CFR §§ 149, et seq.	Describes the criteria to define a sole source aquifer and states that programs to reduce or prevent the contamination of sole source aquifers must be implemented when it is reasonably likely that contamination of such aquifers will occur
Floodplains	Federal Emergency Management Agency Executive Order 11988 - Floodplain Management	FEMA EO 11988	Activities taking place within floodplains must be performed to avoid adverse impacts and preserve beneficial values
Floodplains and Wetlands	Floodplain Management and Protection of Wetlands	24 CFR §§ 55.1 et seq.	Regulation that implments FEMA EO 11988
Floodplains and Wetlands	USEPA Statement of Procedures on Floodplain Management and Wetlands Protection	40 CFR Part 6, Appendix A, Section 6	Requirements associated with actions that have impacts on floodplains or wetlands
Wetlands	National Environmental Policy Act Executive Order 11990 - Protection of Wetlands	NEPA EO 11990	Activities performed within wetlands areas must be done to avoid adverse impacts
Wetlands	National Environmental Policy Act of 1969, as amended	42 U.S.C. §§ 4321, et seq.	Act that implements NEPA EO 11990
Floodplains and Wetlands	Office of Solid Waste and Emergency Response - Policy on Floodplains and Wetlands Assessments for CERCLA Actions (2005)	OSWER 9280.0-02	Guidance for implementing executive orders 11988 and 11990
Wetlands	Office of Solid Waste and Emergency Response - Wetlands Protection at CERCLA sites (1994)	OSWER 9280.0-03	Guidance document to be used to evaluate impacts to wetlands at Superfund sites
Historic or Cultural Lands	National Historic Preservation Act	16 U.S.C. §§ 470, et seq and 36 CFR Part 800	Established Requirements for the identification and preservation of historic and cultural resources
Critical Habitat Areas	Endangered Species Act and Fish and Wildlife Coordination Act	16 U.S.C. §§ 661, et seq. and 16 USC. §§ 1531, et seq.	Actions must be taken to conserve critical habitat in areas where they are endangered or threatened species
Floodplains	Resource Conservation and Recovery Act (RCRA) Regulations - Location Standards	40 CFR Part 264.18	Regulates the design, construction, operation, and maintenance of hazardous waste management facilities within the 100-year floodplain.
State of New York			
Critical Habitat Areas	New York State Department of Environmental Conservation - Endangered and Threatened Species of Fish and Wildlife	6 NYCRR Part 182	Provides standards for the protection of threatened and endangered species.
Wetlands	New York State Department of Environmental Conservation - Freshwater Wetlands Permit Requirements	6 NYCRR Part 663.1-663.11	Defines the procedural requirements for any activities taking place within or adjacent to wetlands.
Floodplains	New York State Department of Environmental Conservation - Floodplain Management Criteria for State Projects	6 NYCRR Part 502	Provides floodplain management criteria.

Notes:
CFR - Code of Federal Regulations
EO - Executive Order
FEMA - Federal Emergency Management Agency
NEPA - National Environmental Policy Act
NYCRR - New York Codes, Rules, and Regulations
NYS - New York State
NYSDEC - New York State Department of Environmental Conservation
NYSDOH - New York State Department of Health
OSWER - Office of Solid Waste and Emergency Response
TOGS - Technical and Operational Guidance Series
U.S.C. - United States Code

Table 10
Action-Specific ARARs, TBCs, and Other Guidelines

Action	Title	Citation	Description
Federal			
Disposal of Hazardous Materials	Resource Conservation and Recovery Act - Identification and Listing of Hazardous Wastes	40 CFR Part 261	Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 40 CFR Parts 260 to 266.
Disposal of Hazardous Materials	Resource Conservation and Recovery Act – Hazardous Waste Determination	40 CFR Part 262.11	Describes methods for identifying hazardous wastes and lists known hazardous wastes.
Disposal of Hazardous Materials	Resource Conservation and Recovery Act – Manifesting	40 CFR Part 262, Subpart B	Describes manifest requirements applicable to small and large quantity generators.
Disposal of Hazardous Materials	Resource Conservation and Recovery Act – Recordkeeping	40 CFR Part 262.40	Describes record keeping requirements for generators.
Disposal of Hazardous Materials	Resource Conservation and Recovery Act – Labeling and Marking	40 CFR Part 262 Subpart C	Specifies EPA naming, labeling and container requirements for off-site disposal of hazardous waste.
Disposal of Hazardous Materials	Resource Conservation and Recovery Act - Land Disposal Restrictions	40 CFR Part 268	Restricts land disposal of hazardous wastes that exceed specific criteria. Establishes Universal Treatment Standards to which hazardous waste must be treated prior to disposal.
Generating Hazardous Materials	Resource Conservation and Recovery Act – Accumulation limitations	40 CFR Part 262.14	Allows generators of hazardous waste to store and treat hazardous waste at the generation site for up to 90 days in tanks, containers, and containment buildings without having to obtain a RCRA hazardous waste permit.
Storage and Disposal of Hazardous Materials	Resource Conservation and Recovery Act - Treatment, Storage and Disposal of Hazardous Waste	40 CFR Parts 264/265/270	Specifies requirements for the operation of hazardous waste treatment, storage, and disposal facilities.
Transporting Hazardous Materials	US Department of Transportation - Hazardous Materials Transportation Regulations	49 CFR Parts 171-180	Establishes classification, packaging, and labeling requirements for shipments of hazardous materials.
Transporting Hazardous Materials	RCRA- Standards Applicable to Transporters of Applicable Hazardous Waste	40 CFR Part 263	Establishes the responsibility of off-site transporters of hazardous waste in the handling, transportation and management of the waste. Requires manifesting, recordkeeping and immediate action in the event of a discharge
Generating Air Emissions	Clean Air Act - National Primary and Secondary Ambient Air Quality Standards	40 CFR Parts 50.6 and 50.7	Establishes air quality standard for particles with an aerodynamic diameter less than or equal to a nomal 10 micrometers (PM10) and 2.5 micrometers (PM2.5)
Generating Air Emissions	Clean Air Act - New Source Review and Prevention of Significant Deterioration Requirements	40 CFR Part 52 Subpart HH	New sources or modifications which emit greater than defined thresholds for listed pollutants must perform ambient impact analyses and install controls which meet best available control technology (BACT).
Generating Air Emissions	Clean Air Act - National Emissions Standards for Hazardous Air Pollutants (NESHAP)	40 CFR Part 61; 40 CFR Part 63	Source-specific regulations which establish emissions standards for hazardous air pollutants
Discharging Water	Clean Water Act - Effluent Guidelines and Standards; National Pollutant Discharge Elimination System (NPDES) Program	40 CFR Part 401; 40 CFR Parts 122, 124, and 125	Both on-site and off-site discharges from CERCLA sites to surface waters are required to meet the substantive Clean Water Act limitations, monitoring requirements, and best management practices. NPDES permits are required to discharge treated water to a surface water.
Re-injecting Water	Safe Drinking Water Act – Underground Injection Control Program	40 CFR 144, 146	Establish performance standards, well requirements, and permitting requirements for groundwater re-injection wells.
Remediation	Superfund Green Remediation Strategy	www.epa.gov/superfund/greenremediation/sf-gr-strategy.pdf	Provides the EPA's strategy to clean up hazardous waste sites in ways that use natural resources and energy efficiently and reduces negative impacts on human health and the environment.

Table 10
Action-Specific ARARs, TBCs, and Other Guidelines Continued

Action	Title	Citation	Description
State of New York			
Treatment and Disposal of Hazardous Materials	New York State Department of Environmental Conservation - Standards for Universal Waste and Land Disposal Restrictions	6 NYCRR Part 374-3 6 NYCRR Part 376	These regulations establish standards for treatment and disposal of hazardous wastes.
Transporting Hazardous Materials	New York State Department of Environmental Conservation - Waste Transportation	6 NYCRR Part 364	Regulates the collection, transport, and delivery of regulated waste, originating or terminating at a location within this State.
Management of Hazardous Materials	New York State Department of Environmental Conservation - Hazardous Waste Management System – General	6 NYCRR Part 370	Provides definition of terms and general standards applicable to hazardous waste management systems.
Identification and Listing Hazardous Materials	New York State Department of Environmental Conservation - Identification and Listing of Hazardous Wastes	6 NYCRR Part 371	Outlines criteria for determining if a solid waste is a hazardous waste and is subject to regulation under 6 NYCRR Part 370 to 373, and 376.
Transporting Hazardous Materials	New York State Department of Environmental Conservation - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities	6 NYCRR Part 372	Standards for generators and transporters of hazardous waste and standards for generators, transporters, and treatment, storage or disposal facilities relating to the use of the manifest system and its recordkeeping requirements.
Generating Air Emissions	New York State Department of Environmental Conservation - Air Quality Standards	6 NYCRR Part 257	Standards promulgated to provide protection from the adverse health effects of air contamination; and are intended to protect and conserve the natural resources and environment and to promote maximum comfort and enjoyment and use of property consistent with the economic and social well- being of the community.
Discharging Groundwater	New York State Department of Environmental Conservation - State Pollutant Discharge Elimination System (SPDES)	6 NYCRR Part 750	Governs the discharge of any wastes into or adjacent to State waters that may alter the physical, chemical, or biological properties of State waters, except as authorized pursuant to a NPDES or State permit.
Discharging Groundwater	New York State Department of Environmental Conservation - Classifications - Surface Waters and Groundwaters	6 NYCRR Part 701	Defines discharge water quality requirements into water sources.
Discharging Groundwater	New York State Department of Environmental Conservation - Nassau County Waters	6 NYCRR Part 885	Defines the classifications and standards of quality and purity to all surface waters within the designated drainage basin on the Nassau County waters.
Discharging Groundwater	New York State Department of Environmental Conservation - Protection of Waters Program	6 NYCRR Part 608	Implements regulations that preserve and protect bodies of water including wetlands, lakes, rivers, streams, and ponds.
Decommissioning Groundwater Wells	New York State Department of Environmental Conservation - Groundwater Monitoring Well Decommissioning Policy	NYSDEC CP-43	Provides guidance on the decommissioning of groundwater monitoring wells.
Generating Air Emissions	New York State Department of Environmental Conservation - Prevention and Control of Air Contaminants and Air Pollution: Air Pollution Prohibited and Visible Emissions Limited	6 NYCRR Parts 200 and 211	Provides guidance on air pollution and visible emissions.

Notes:
BACT - Best Available Control Technology CFR - Code of Federal Regulations
NESHAP - National Emissions Standards for Hazardous Air Pollutants NPDES - National Pollutant Discharge Elimination System
NSPS - New Source Performance Standards NYCRR - New York Codes, Rules, and Regulations NYS - New York State
NYSDEC - New York State Department of Environmental Conservation NYSDOH - New York State Department of Health
RCRA - Resource Conservation and Recovery Act TOGS - Technical and Operational Guidance Series

Table 11
Cost Estimate Summary for the Selected Remedy

Item No.	Description	Quantity	Unit	Unit Cost	Total	Notes
	Total Number of Extraction Wells	**9**				
	Number of ~300 ft shallow extraction wells (TTA)	1				
	Number of ~500 ft deep extraction wells (TTA)	3				
	Number of ~500 ft deep extraction wells (HC)	5				
	Total Number of 1,400 GPM (2.0 MGD) Treatment Plants	**1**				
	Total Number of New Recharge Basins	**1**				
1. CAPITAL COSTS:						
1.1	**Pre-Design Investigation**					
1.1.1	Site Preparation	1	LS	$ 147,500.00	$ 147,500	Includes Work Plan, Site Clearing and Well Survey
1.1.2	Well Driller Mob/Demob	1	LS	$ 75,000.00	$ 75,000	
1.1.3	Monitoring Well Installation - Shallow	15	EA	$ 126,300.00	$ 1,894,500	2.5-inch diameter; 300 ft deep.
1.1.4	Monitoring Well Installation - Deep	16	EA	$ 204,800.00	$ 3,276,800	2.5-inch diameter; 500 ft deep; includes one sentinel monitoring well
1.1.5	Groundwater Sampling	70	EA	$ 2,500	$ 175,000	Includes 30 new and 39 existing wells
1.1.6	Pre-Construction Survey	1	LS	$ 30,000	$ 30,000	Aerial/Topographic Survey.
1.1.7	Aquifer Pump Test	1	LS	$ 350,000	$ 350,000	At 2 extraction & 6 monitoring wells, eight location set ups, transducers, 72-hour test frac tank, discharge, and reporting.
1.1.8	Pilot/Treatability Test	1	LS	$ 100,000	$ 100,000	AOP and carbon evaluation.
1.1.9	Data Reduction, Evaluation, and Reporting	1	LS	$ 75,000	$ 75,000	
1.1.10	IDW	1,728,000	Gallons	$ 0.20	$ 345,600	Pumping tests. Assumes 400 gpm for 72 hours and discharge to sewer system through temporary treatment.
	Sub-Total				**$ 6,469,400**	
1.2	**Site Preparation**					
1.2.1	Site Clearing	1	LS	$ 75,000	$ 75,000	
1.2.2	Property Acquisition	3	EA	$ 300,000	$ 900,000	includes for the three wells located within the plume
1.2.3	Pre-Construction Submittals/Permits	1	LS	$ 25,000	$ 25,000	
1.2.4	Baseline Groundwater Sampling	70	EA	$ 2,500	$ 175,000	
	Sub-Total				**$ 1,175,000**	
1.3	**Extraction - Target Treatment Areas**					
1.3.1	Site Preparation (Well Installation)	1	LS	$ 137,500	$137,500	
1.3.2	Mobilization (Well Installation)	1	LS	$ 125,000	$125,000	
1.3.3	Extraction Well Installation (~ 300 feet bgs)	1	EA	$ 464,000	$464,000	
1.3.4	Extraction Well Installation (~ 500 feet bgs)	3	EA	$ 627,200	$1,881,600	
1.3.5	Extraction Well Electrical, Instrumentation and Permitting	4	EA	$ 346,500	$1,386,000	
	Sub-Total				**$ 3,994,100**	
1.4	**Extraction - Hydraulic Containment**					
1.4.1	Site Preparation (Well Installation)	1	LS	$ 137,500	$137,500	
1.4.2	Mobilization (Well Installation)	1	LS	$ -	$0	Included in Task 1.3
1.4.3	Extraction Well Installation (~ 500 feet bgs)	5	EA	$ 627,200	$3,136,000	
1.4.4	Extraction Well Electrical, Instrumentation and Permitting	1	EA	$ 346,500	$346,500	
	Sub-Total				**$ 3,620,000**	
1.5	**Treatment - ~1,400 GPM (2.0 MGD)**					
1.5.1	Land Acquisition for Treatment Plant	1	EA	$ -	$0	No land cost, located within the park
1.5.2	~ 1400 GPM Decentralized Plant Building Construction	1	EA	$ 340,100	$340,100	
1.5.3	Site Work	1	EA	$ 18,700	$18,700	
1.5.4	Electrical & Instrumentation	1	EA	$ 1,025,000	$1,025,000	
1.5.5	Process Equipment	1	EA	$ 5,993,900	$5,993,900	
1.5.6	Start-Up and Reporting	1	EA	$ 321,000	$321,000	
	Sub-Total				**$ 7,698,700**	
1.6	**Discharge - New Recharge Basin (up to 1,400 GPM)**					
1.6.1	Land Cost	2	Acre	$ -	$0	No land cost, located within the park
1.6.2	Site Preparation	1	LS	$ 50,000	$50,000	Mobilization, Soil E & D Control, Site Civil
1.6.3	Recharge Basin Construction	849,420	Cubic Ft	$ 0.65	$552,200	
1.6.4	Miscellaneous Cost	1	LS	$ 193,243	$193,300	
	Sub-Total				**$ 795,500**	
1.7	**Conveyance System**					
1.7.1	Pipe Conveyance	1	LS	$ 11,200,000	$11,200,000	
1.7.2	Pumps and Booster Stations	1	LS	$ 2,500,000	$2,500,000	
	Sub-Total				**$ 13,700,000**	
	Sub-Total				**$ 37,452,700**	Sub-Total All Construction Costs.
	Contingency	15%			$ 5,618,000	10% scope + 5% bid.
	Sub-Total				**$ 43,070,700**	
	Project Management	5%			$ 2,154,000	
	Remedial Design	6%			$ 2,584,000	
	Construction Management	6%			$ 2,584,000	
	Construction Oversight	3%			$ 1,292,000	
	TOTAL CAPITAL COST				**$ 51,685,000**	

2. OPERATIONAL AND MAINTENANCE COSTs:

Item No.	Description	Quantity	Unit	Unit Cost	Total	Notes
2.1	**Annual O & M (Extraction)**					
2.1.1	Annual Power (Extraction)	9	EA	$ 34,900	$314,100	
2.1.2	Annual Power (Pump Stations)	5	EA	$ 52,400	$262,000	
	Sub-Total				**$ 576,100**	
2.2	**Annual O & M - 1,400 GPM (2.0 MGD)**					
2.2.1	Annual Operational Labor	1	EA	$ 136,700	$136,700	
2.2.2	Annual Power (Treatment)	1	EA	$ 322,300	$322,300	
2.2.3	Annual Material/Chemicals Usage	1	EA	$ 615,600	$615,600	
2.2.4	Annual System Maintenance	1	EA	$ 51,400	$51,400	
2.2.5	Treatment Plant Monitoring	1	EA	$ 116,600	$116,600	
	Sub-Total				**$ 1,242,600**	
2.3	**Site-Wide Long-Term Monitoring**					
2.3.1	Site-Wide Long-Term Monitoring	1	EA	$ 150,500	$150,500	
	Sub-Total				**$ 150,500**	
2.4	**Recharge Basin Maintenance**					
2.4.1	Annual Maintenance Costs	1	EA	$ 43,400	$43,400	
	Sub-Total				**$ 43,400**	
	Sub-Total				**$ 2,012,600**	Sub-Total All Annual O & M Costs.
	Contingency	10%			$ 201,000	5% scope + 5% bid.
	Sub-Total				**$ 2,213,600**	
	Project Management	5%			$ 111,000	
	TOTAL ANNUAL O & M COST				**$ 2,324,600**	

3. PERIODIC COSTS:

3.1	**Once in Every 2 Years**						
3.1.1	Extraction Well Pump Rehabilitation	2	9	EA	$ 15,000	$135,000	
	Contingency		10%			$ 14,000	5% scope + 5% bid.
	Sub-Total					**$ 149,000**	
	Project Management		5%			$ 7,000	
	TOTAL PERIODIC COSTS @ EVERY 2 YEARS					**$ 156,000**	
3.2	**Once in Every 5 Years**						
3.2.1	Extraction Well Maintenance	5	9	EA	$ 80,000	$720,000	
3.2.2	Bag Filter Pump Replacement	5	3	EA	$ 25,000	$75,000	
3.2.3	Air Stripper Cleaning	5	2	EA	$ 24,400	$48,800	
3.2.4	Replace Interconnection Piping and Valves	5	1	LS	$ 15,000	$15,000	
3.2.5	Institutional Controls	5	1	LS	$ 25,000	$25,000	
	Sub-Total					**$ 883,800**	
	Contingency		10%			$ 88,000	5% scope + 5% bid.
	Sub-Total					**$ 971,800**	
	Project Management		5%			$ 49,000	
	TOTAL PERIODIC COSTS @ YEAR 5, 10, 15, 20, 25 and 30					**$ 1,020,800**	
3.3	**Once in Every 10 Years**						
3.3.1	Extraction Well Pump Replacement	10	9	EA	$ 85,000	$765,000	
3.3.2	Pump Stations - Pump Replacement	10	5	LS	$ 100,000	$500,000	
	Sub-Total					**$ 1,265,000**	
	Contingency		10%			$ 127,000	5% scope + 5% bid.
	Sub-Total					**$ 1,392,000**	
	Project Management		5%			$ 70,000	
	TOTAL PERIODIC COSTS @ YEAR 10, 20 and 30					**$ 1,462,000**	

PRESENT VALUE ANALYSIS: Rate of Return 7% Inflation Rate 3%

Item No.	Cost Type	Year	Total Cost	Present Value	Notes
A	**1. CAPITAL COSTS:**	0	$ 51,685,000	**$ 51,685,000**	
B	**2. OPERATIONAL AND MAINTENANCE COSTs:**				
	TOTAL ANNUAL O & M COST		$ 2,324,600	$ 40,772,000	Annual cost for the life of the system
	Sub-Total			**$ 40,772,000**	**NPV Assuming 7% Discount Rate**
C	**Periodic Costs**				
3.1	TOTAL PERIODIC COSTS @ EVERY 2 YEARS		$ 156,000	$ 1,221,000	Every 2 years
3.2	TOTAL PERIODIC COSTS @ YEAR 5, 10, 15, 20, 25 and 30		$ 1,020,800	$ 3,314,000	Every 5 years
3.3	TOTAL PERIODIC COSTS @ YEAR 10, 20 and 30		$ 1,462,000	$ 2,148,000	Every 10 years
	Sub-Total			**$ 6,683,000**	**NPV Assuming 7% Discount Rate**
	TOTAL PRESENT VALUE OF ALTERNATIVE			**$ 99,140,000**	

* The annual and periodic costs over the life of the system changes on an annual basis as noted. For simplicity, the total O&M and periodic costs over the 30 years are presented.

APPENDIX III

ADMINISTRATIVE RECORD INDEX

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/24/2023 **REGION ID: 02**

Site Name: NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION
CERCLIS ID: NY0001095363
OUID: 03
SSID: A245
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
676980	07/24/2023	ADMINISTRATIVE RECORD INDEX FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	10	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
654866	07/27/2009	GROUNDWATER INTERIM REMEDIAL MEASURE FINAL PROGRESS REPORT FOR OU2 FOR FORMER GENERAL INSTRUMENT CORPORATION SITE FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	51	Report	(NY STATE DEPT OF ENVIRONMENTAL CONSERVATION (NYSDEC))	(WSP ENVIRONMENTAL STRATEGIES LLC)
563789	05/21/2010	INTERIM PHASE VI REMEDIAL INVESTIGATION REPORT AND SUPPLEMENTAL WORK PLAN FOR FORMER GENERAL INSTRUMENT CORPORATION FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	673	Report		(WSP ENGINEERING OF NEW YORK PC)
178338	05/06/2011	FINAL WORK PLAN OFF-SITE GROUNDWATER CHARACTERIZATION AND FEASIBILITY STUDY FOR THE SYLVANIA CORNING FUSRAP SITE FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1154	Report		(US ARMY CORPS OF ENGINEERS - KANSAS CITY DISTRICT)|(US ARMY CORPS OF ENGINEERS - NEW YORK DISTRICT)
654868	08/15/2012	SVE SYSTEM CLOSURE SAMPLING IN AREA A WORK PLAN FOR OU1 FOR FORMER GENERAL INSTRUMENT CORPORATION SITE FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	6	Work Plan	(NY STATE DEPT OF ENVIRONMENTAL CONSERVATION (NYSDEC))	(WSP ENVIRONMENTAL STRATEGIES LLC)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/24/2023 **REGION ID: 02**

Site Name: NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION
CERCLIS ID: NY0001095363
OUID: 03
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Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
654867	01/21/2013	SVE SYSTEM CLOSURE SAMPLING IN AREA A REPORT FOR OU1 FOR FORMER GENERAL INSTRUMENT CORPORATION SITE FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1132	Report	(NY STATE DEPT OF ENVIRONMENTAL CONSERVATION (NYSDEC))	(WSP ENVIRONMENTAL STRATEGIES LLC)
692289	09/30/2013	RECORD OF DECISION FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	448	Report		MUGDAN,WALTER,E (US ENVIRONMENTAL PROTECTION AGENCY)
684499	10/18/2013	ADMINISTRATIVE RECORD INDEX FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	4	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
473208	12/01/2015	REMEDIAL INVESTIGATION / FEASIBILITY STUDY WORK PLAN OU3, VOLUME 1 OF 2 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	53	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
677478	05/11/2016	PROJECT SPECIFIC HEALTH AND SAFETY PLAN FOR MAY 2016 - DECEMBER 2018 FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	209	Work Plan		(HDR ENGINEERING INCORPORATED)
473209	01/01/2017	QUALITY ASSURANCE PROJECT PLAN OU3, UNIFORM FEDERAL POLICY FOR ARCHITECT-ENGINEERING SERVICE CONTRACT NO. EP-W-09-009 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	247	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)

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458530	05/09/2017	COMMUNITY UPDATE FACT SHEET - EPA STARTS FIELD ACTIVITIES FOR OU3 AT THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
570254	09/30/2017	COMMUNITY UPDATE: EPA CONTINUES FIELD ACTIVITIES FOR OU3 AT THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
537765	03/22/2018	UNILATERAL ADMINISTRATIVE ORDER FOR REMEDIAL DESIGN, INDEX NO. CERCLA-02-2018-2015 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	568	Legal Instrument		PRINCE,JOHN (US ENVIRONMENTAL PROTECTION AGENCY)
688959	05/01/2019	REMEDIAL DESIGN WORK PLAN VOLUME 1 FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	37	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
677481	06/21/2019	REQUEST FOR A WORK ASSIGNMENT AMENDMENT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	5	Email	BACHMANN JR.,JOHN (US ENVIRONMENTAL PROTECTION AGENCY)|MONCINO,KEITH (US ENVIRONMENTAL PROTECTION AGENCY)|MONGELLI,THOMAS (US ENVIRONMENTAL PROTECTION AGENCY)	(HDR ENGINEERING INCORPORATED)

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591025	05/31/2020	US EPA REGION II COMMUNITY UPDATE US EPA CONTINUES REMEDIAL ACTIVITIES MAY 2020 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
654908	09/01/2020	DIRECTIVE 1 TECHNICAL MEMORANDUM FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	368	Memorandum	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
677363	02/08/2021	TASK ORDER PROPOSAL FOR THE TECHNICAL APPROACH FOR THE REMEDIAL INVESTIGATION / FEASIBILITY STUDY FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	15	Memorandum		(HDR)
654864	03/02/2021	FINAL SOIL VAPOR EXTRACTION AND AIR SPARGING PILOT STUDY WORK PLAN FOR OU1 FOR SYLVANIA CORNING FUSRAP SITE FOR NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1869	Work Plan	(US ARMY CORPS OF ENGINEERS)	(ECOLOGY AND ENVIRONMENT INCORPORATED)
677362	06/01/2021	QUALITY ASSURANCE PROJECT PLAN FOR THE REMEDIAL INVESTIGATION / FEASIBILITY STUDY FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	254	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
677479	06/01/2021	PROJECT SPECIFIC HEALTH AND SAFETY PLAN FOR JUNE 2021 - JUNE 2024 FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	179	Work Plan		(HDR ENGINEERING INCORPORATED)

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677480	06/16/2021	COMMUNITY UPDATE JUNE 2021 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
688939	08/05/2021	WESTERN PLUME HEALTH AND SAFETY PLAN FOR AUGUST 2021 - AUGUST 2023 FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	174	Work Plan		(HDR)
688938	08/26/2021	WESTERN PLUME DATA MANAGEMENT PLAN FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	28	Work Plan		(HDR)
688940	08/26/2021	WESTERN PLUME WASTE MANAGEMENT PLAN FOR OU1 THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	17	Work Plan		(HDR)
654861	09/10/2021	FINAL REMEDIAL INVESTIGATION REPORT FOR THE SYLVANIA CORNING FUSRAP SITE FOR NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	378	Report	(US ARMY CORPS OF ENGINEERS)	(WSP ENVIRONMENTAL STRATEGIES LLC)
654862	09/10/2021	FINAL REMEDIAL INVESTIGATION REPORT APPENDIX A - G FOR THE SYLVANIA CORNING FUSRAP SITE FOR NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	4708	Report	(US ARMY CORPS OF ENGINEERS)	(WSP ENVIRONMENTAL STRATEGIES LLC)

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654863	09/10/2021	FINAL REMEDIAL INVESTIGATION REPORT APPENDIX H - N FOR THE SYLVANIA CORNING FUSRAP SITE FOR NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	5954	Report	(US ARMY CORPS OF ENGINEERS)	(WSP ENVIRONMENTAL STRATEGIES LLC)
630406	09/29/2021	COMMUNITY UPDATE SEPTEMBER 2021 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
688937	10/20/2021	FINAL SITE MANAGEMENT PLAN FOR THE CENTRAL PLUME FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1076	Work Plan		(ERM CONSULTING AND ENGINEERING)
625520	11/18/2021	COMMUNITY UPDATE NOVEMBER 2021 FOR THE NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
631153	03/08/2022	COMMUNITY UPDATE MARCH 2022 FOR THE NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
677673	04/01/2022	FINAL FIELD SAMPLING PLAN OF THE EASTERN PLUME FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	181	Work Plan		(ENSAFE INCORPORATED)

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677674	04/01/2022	FINAL HEALTH AND SAFETY PLAN OF THE EASTERN PLUME FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	92	Work Plan		(ENSAFE INCORPORATED)
677675	04/01/2022	FINAL SITE MANAGEMENT PLAN OF THE EASTERN PLUME FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	23	Work Plan		(ENSAFE INCORPORATED)
677676	04/01/2022	FINAL QUALITY ASSURANCE PROJECT PLAN OF THE EASTERN PLUME FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	177	Work Plan		(ENSAFE INCORPORATED)
677361	07/21/2022	PATHWAY ANALYSIS REPORT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	69	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
629633	09/29/2022	ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR A SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT INDEX NO. CERCLA-02-2022-2007 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	40	Legal Instrument		
688906	10/11/2022	WESTERN PLUME VERTICAL BORING LOGS AND CONSTRUCTION LOGS FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	160	Report		(HDR)

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688907	10/11/2022	2022 WESTERN PLUME VERTICAL PROFILE GROUNDWATER SAMPLING DATA FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	22	Chart / Table		(HDR)
688908	10/11/2022	DIRECTIVE 2 TECHNICAL MEMORANDUM FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1612	Memorandum		(HDR)
677359	01/13/2023	DATA EVALUATION REPORT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	794	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
677671	03/23/2023	REVISED QUALITY ASSURANCE PROJECT PLAN FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	385	Work Plan	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
654906	04/01/2023	APRIL 2023 GROUNDWATER ELEVATIONS FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Chart / Table		
654907	04/01/2023	APRIL 2023 GROUNDWATER SAMPLING RESULTS OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	81	Chart / Table		(HDR)

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677477	04/25/2023	NOVEMBER 2022 SEMI-ANNUAL GROUNDWATER MONITORING REPORT FOR OU2 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	1473	Report		
654909	07/06/2023	HUMAN HEALTH RISK ASSESSMENT REPORT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	141	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
654910	07/06/2023	REMEDIAL INVESTIGATION REPORT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2101	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(HDR)
688958	07/14/2023	FEASIBILITY STUDY REPORT FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	207	Report		(HDR)
688957	07/17/2023	PRE-DESIGN INVESTIGATION RELATED DOCUMENTS FOR OU1 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	506	Document Packet		(US ENVIRONMENTAL PROTECTION AGENCY)
654921	07/19/2023	NYSDEC APPROVAL OF THE PROPOSED PLAN FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUND WATER CONTAMINATION SITE	2	Letter	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)	(NY STATE DEPT OF ENVIRONMENTAL CONSERVATION (NYSDEC))

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652560	07/20/2023	PROPOSED PLAN FOR OU3 FOR THE NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SITE	22	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)

APPENDIX IV

STATE LETTER OF CONCURRENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Office of the Director
625 Broadway, 12th Floor, Albany, New York 12233-7011
P: (518) 402-9706 | F: (518) 402-9722
www.dec.ny.gov

March 29, 2024

Mr. Pat Evangelista – Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 10007
Evangelista.Pat@epa.gov

RE: New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3, Nassau County, New York
NYSDEC Site ID No.: 130215 OU3

Dear Mr. Evangelista:

The New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH) have reviewed the United States Environmental Protection Agency's July 2023, Superfund Proposed Plan for the New Cassel/Hicksville Groundwater Contamination Superfund Site, Operable Unit 3, Nassau County, New York.

This Proposed Plan describes the remedial alternatives considered to address contaminated groundwater at a portion of the larger New Cassel/Hicksville Groundwater Contamination Superfund Site (Site) identified as Operable Unit 3 (OU3) and identifies the preferred remedial alternative (Alternative 2) having the following key components:

- extraction of the groundwater *via* pumping;
- *ex-situ* treatment of the extracted groundwater;
- long-term monitoring of groundwater and attenuation processes outside the area of hydraulic control;
- site management and institutional controls.

The location, number, and pumping rates of the extraction wells, specifications for the treatment plant, and discharge locations and limits would be determined during the remedial design. The extraction well network would be designed with the placement of wells in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 ppb total VOCs. In addition, a transect of extraction wells would be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 ppb total VOCs to establish hydraulic control and reduce the downgradient migration of contamination.

A long-term groundwater monitoring program will be implemented to protect public water supply wells that ensures sufficient time for the installation of wellhead treatment on the public water supply wells to address Site-related contamination, as needed.

As part of the RI/FS process, a vapor intrusion screening assessment was conducted by reviewing the vertical distribution of contaminants. The results demonstrated that clean groundwater exists over the deeper OU3 contaminated zones, and that further analysis of vapor intrusion in OU3 due to site contamination was not required.

Based on information currently available, the NYSDEC agrees that the selected Alternative 2 of this Superfund Record of Decision meets the threshold criteria and is protective of human health and the environment. Therefore, the NYSDEC concurs with EPA's selected alternative.

Sincerely,

Janet Brown

Janet Brown, Assistant Director
signing for

Andrew O. Guglielmi, Director
Division of Environmental Remediation

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APPENDIX V

RESPONSIVENESS SUMMARY

APPENDIX V

RESPONSIVENESS SUMMARY

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Appendix V – Attachment A	Proposed Plan
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Appendix V – Attachment C	August 10, 2023 Public Meeting Transcript
Appendix V – Attachment D	Written Comments Submitted During Public Comment Period
Appendix V – Attachment E	Written Comments Submitted After the Public Comment Period

INTRODUCTION

This document is a responsiveness summary prepared by the U.S. Environmental Protection Agency (EPA)[1] regarding its final remedial decision for Operable Unit 3 (OU3) at the New Cassel/Hicksville Groundwater Contamination Superfund site (Site). A responsiveness summary provides a summary of comments and concerns received during a public comment period and responses of EPA to those comments and concerns, and it is required under the regulations promulgated under the Superfund statute. All comments received were considered by EPA in its final decision regarding the selection of the remedy for OU3 at the Site.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

On July 24, 2023, EPA released a Proposed Plan (Attachment A) for the cleanup of OU3 of the Site to the public for comment, along with a remedial investigation (RI) report, feasibility study (FS) report, and a human health risk assessment (HHRA) report. These documents, as well as others that collectively comprise the administrative record for this decision, were made available to the public at the information repositories maintained at the Westbury Public Library, located at 445 Jefferson St, Westbury, New York, and the EPA Region 2 Office in New York City, as well as EPA's website for the Site at www.epa.gov/superfund/new-cassel-hicksville.

EPA published notice of the start of the public comment period and the availability of the above-referenced documents in *Newsday* on July 24, 2023. A copy of the public notice published in *Newsday* can be found as Attachment B. A news release announcing the Proposed Plan, which included the public meeting date, time, and location, was sent to individuals on the Site-mailing list, transmitted to various media outlets, and posted on EPA's website for the Site on July 24, 2023.

On August 10, 2023, EPA held a public meeting at the East Meadow Public Library, located at 1886 Front Street in East Meadow, New York to inform local officials and interested citizens about the Superfund process, to present the Proposed Plan for OU3 of the Site, including the preferred remedial alternative, and to respond to questions and comments from the attendees.

The public meeting was attended by approximately 30 people, including residents, business owners, and state and local government officials. A copy of the public meeting transcript is provided as Attachment C.

The public comment period, originally scheduled from July 24, 2023 to August 23, 2023, was extended to September 22, 2023 after EPA received a request for an extension of time. To inform the public of the extension of the public comment period, an update was posted on EPA's website for the Site and on social media, the extension was announced at the public meeting, and a notice of extension was published in *Newsday* on August 10, 2023. In addition, the notice of extension was sent electronically to individuals on the Site-mailing list, and a press advisory was transmitted to various media outlets. On September 22, 2023, the public comment period was further extended by an additional 30 days to October 23, 2023. To inform the public of this second extension of the

[1] A table listing all the defined abbreviations and acronyms in this Responsiveness Summary is included below for the ease and convenience of the reader.

public comment period, an update was posted on EPA's website for the Site and on social media, and a notice of extension was again published in *Newsday* on September 28, 2023. In addition, the notice of further extension was sent electronically to individuals on the Site-mailing list, and a press advisory was transmitted to various media outlets.

SUMMARY OF COMMENTS AND EPA RESPONSES

Approximately fifty comment letters were received via e-mail or regular mail during the public comment period from July 24, 2023 through October 23, 2023. Copies of the comment letters received during the public comment period, as well as requests for extension of the public comment period, are provided in Attachment D of this Responsiveness Summary. Copies of the comment letters received after the close of the public comment period are provided in Attachment E. EPA, in its discretion, has decided to respond to these comments (to the extent that the comments are not already addressed in other comment responses and where practicable) despite the fact that they were submitted after the comment period closed.

The majority of comment letters received were submitted from residents of the community expressing their concerns with the disruption, inconvenience, and risk that would be caused by construction activities related to the preferred alternative presented in the Proposed Plan. Many community residents located near areas where drilling and the installation of wells and piping would have the greatest construction impacts oppose active remediation, indicating that treatment is unnecessary and preferring to leave treatment of the water supply to the water districts as it is extracted for distribution to the public. Additionally, the Council of East Meadow Community Organizations (CEMCO) forwarded member concerns regarding, among other things, the location of the extraction wells, the conveyance piping, and the treatment plant. Although EPA is not definitively specifying any locations for extraction wells or for siting treatment facilities as part of this Record of Decision (ROD), the organization cites concerns over impacts to the recreational use of Eisenhower Park in the event that the decision is made to site the treatment plant in the Park.

PRPs for the Site expressed their opposition to the preferred alternative presented in the Proposed Plan, indicating, among other things, that it is premature for EPA to select a remedy for OU3, it is redundant, it fails to take into consideration other response actions occurring or to be occurring at other areas of the Site, and it relies on an over-simplification of groundwater conditions. While representatives for Nassau County, Town of Hempstead, and nearby water districts raised questions regarding the nature and extent of contamination, including consideration for addressing emerging contaminants, generally these entities, along with some residents, were supportive of the preferred remedial alternative.

The majority of comments received at the public meeting generally related to public health concerns, treatment technologies, and the remedy implementation schedule. A summary of significant comments contained in the letters, and the comments provided at the public meeting on August 10, 2023, as well as EPA's responses to those comments, are provided below. Comments received and EPA's responses have been categorized below by the following topics:

- Public Health Concerns
- Nature and Extent of Contamination

- Site Cleanup
- Other Comments/Questions
- Comments Submitted After the Public Comment Period

TABLE OF ABBREVIATIONS AND ACRONYMS

bgs - below ground surface
CEMCO - Council of East Meadow Community Organizations
COCs - contaminants of concern
COPCs - contaminants of potential concern
CVOC - chlorinated volatile organic compound
EJ - Environmental Justice
EPA - U.S. Environmental Protection Agency
FS - feasibility study
FUSRAP - Formerly Utilized Site Remedial Action Program
GPM - gallons per minute
HHRA - human health risk assessment
MCL - maximum contaminant level
msl - mean sea level
NAPL - non-aqueous phase liquid
NCIA - New Cassel Industrial Area
NCP - National Oil and Hazardous Substance Contingency Plan
ng/L - nanograms per liter
NYSDEC - New York State Department of Environmental Conservation
NYSDOH - New York State Department of Health
O&M - operation and maintenance
OSWER - Office of Solid Waste and Emergency Response
OU - operable unit
PCE - tetrachloroethylene
PDI - pre-design investigation
PFAS - per- and polyfluoroalkyl
PFOA - perfluorooctanoic acid
PFOS - perfluorooctane sulfonate
POTW - public owned treatment works
ppb - parts per billion
PPE - personal protective equipment
PRPs - potentially responsible parties
RAOs - remedial action objectives
RI - remedial investigation
RI/FS - remedial investigation/feasibility study
ROD - record of decision
Site - New Cassel/Hicksville Groundwater Contamination Superfund Site
SRIR - Supplemental RI Report (for OU2)
TCE - trichloroethylene
VOCs - volatile organic compounds
VPB - vertical profile borings
USACE - U.S. Army Corps of Engineers
USGS - U.S. Geological Survey
µg/L - micrograms per liter

PUBLIC HEALTH CONCERNS

Comment #1: A representative of the schools located at 1196 Prospect Avenue and 111 Cantiague Rock Road asked whether the schools are part of the Site. The individual inquired as to whether the soil or water at the two school properties are impacted or have the potential to be impacted by the Site?

Response to Comment #1: While the aforementioned schools are not located within the boundaries of the study area for OU3 of the Site, the 111 Cantiague Rock Road property is located across the street (to the west) of the properties located at 70, 100, and 140 Cantiague Rock Road, Hicksville, New York (the Sylvania Properties) and the 1196 Prospect Avenue property is located adjacent (to the south) of the former Sulzer Metco facility. The Sylvania Properties have been previously identified as a source of the groundwater contamination for OU2[2] of the Site, and contamination at the Sulzer Metco facility is being addressed under New York State's superfund program.

The Sylvania Properties are a source of groundwater contamination at OU2 of the Site, which is a separate area at the Site being addressed independently. As part of the remedial investigation that is being conducted at the Sylvania Properties by the US. Army Corps of Engineers (USACE) (USACE RI) under the Formerly Utilized Sites Remedial Action Program (FUSRAP), which is part of the OU2 study area, extensive soil samples were collected to determine the nature and extent of soil contamination, however, soil samples were not collected beyond the Sylvania Properties' property lines. Soil contamination resulting from operations at the Sylvania Properties is not anticipated to impact off-property soils. In addition, the soils at the Sylvania Properties are not expected to pose unacceptable risks under existing or similar future site conditions. A copy of the USACE 2021 RI Report for the Sylvania Properties is included in the Administrative Record file for OU3 and is available at https://www.nan.usace.army.mil/Missions/Environmental/Environmental-Remediation/FUSRAP/Sylvania/. The results of investigations conducted by New York State Department of Environmental Conservation (NYSDEC) at the Sulzer Metco facility and other facilities in the vicinity of the Site can be found at https://extapps.dec.ny.gov/data/DecDocs/130178/. Questions regarding the Sulzer Metco facility should be addressed to Alexander Klein with NYSDEC at Alexander.Klein@dec.ny.gov. EPA continues to evaluate whether the Sylvania Properties and/or Sulzer Metco are also contributing to the contamination at OU1 and OU3 of the Site.

It is EPA's understanding that the properties referred to by the commentor are connected to the municipal public water supply. Because water districts often blend potable water from multiple supply wells located across a geographic area prior to distribution, identifying the source of the potable water for a specific location sometimes is not feasible. However, municipal water supplies in the area are treated prior to distribution to ensure that strict federal and state drinking water

[2] There are currently three Operable Units designated for the Site, namely OU1, OU2, and OU3, that are in varying stages in the Superfund cleanup process. OU1 is directly north and upgradient of OU3, and OU2 is north/northeast of OU3.

standards are being met. For more information regarding the drinking water regulations and routine testing of your local water supply, please visit https://www.health.ny.gov/environmental/water/drinking/

In addition, separate from EPA's investigations at the Site, the New York State Department of Health (NYSDOH) conducted vapor intrusion testing in the building located at 1196 Prospect Avenue property. The indoor air sampling results did not reveal that soil vapor is a concern.

Comment #2: A commentor at the public meeting inquired as to how residents in the future could be exposed to the contamination as discussed in the Proposed Plan?

Response to Comment #2: As part of the OU3 RI/FS, a baseline HHRA was conducted consistent with EPA guidance to estimate the risks and hazards associated with the current and future effects of contaminants on human health and the environment. A baseline HHRA is an analysis of the potential adverse human health effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate these exposures under current and future site uses. Under the future land use scenario, the HHRA evaluated the potential exposures for residents (both the child and adult) via the ingestion of and dermal contact with groundwater and inhalation of vapors during bathing/showering activities. In addition, the potential exposure for the commercial/industrial worker associated with the ingestion of and dermal contact with groundwater under a future land use scenario was also evaluated. The HHRA results indicated that there could be unacceptable risks under this future use scenario. However, no one is currently exposed to contaminated groundwater at the Site. The municipal water supplies in the area are treated prior to distribution to ensure that strict federal and state drinking water standards are being met.

In addition, Article IV of the Nassau County Public Health Ordinance currently prohibits the use of private wells where public water systems are available. The Site and surrounding area are serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in Nassau County without a State permit. In the absence of these existing groundwater use restrictions, a resident and/or commercial/industrial worker could be exposed to the contaminated groundwater.

Comment #3: A commentor wrote that public drinking water should be tested regularly.

Response to Comment #3: Public drinking water supplies are tested regularly. They are subject to requirements for periodic testing and reporting of the results to the public. For more information regarding the drinking water regulations and routine testing of your local water supply, please visit https://www.health.ny.gov/environmental/water/drinking/

Comment #4: The Hicksville Water District noted that per- and polyfluoroalkyl (PFAS) compounds were not addressed in the HHRA. Based on current and proposed regulatory action, the commentor asserted that risk assessment must address health risks associated with PFAS compounds.

Response to Comment #4: Groundwater samples collected as part of the RI for OU3 did not include the analysis for PFAS compounds. However, samples for PFAS compound analysis were

collected by EPA Region 2 personnel in November 2018 from select wells at the Site as part of a broader sampling event being coordinated with NYSDEC at various Superfund sites. One monitoring well located within OU3 was sampled (NCOU3-MW-03S). The detected concentrations of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) in NCOU3-MW-03S were below the New York State Maximum Contaminant Level (MCL) for PFOA and PFOS (10 nanograms per liter (ng/L)), as well as the New York State Ambient Water Quality Guidance Values for PFOA and PFOS of 6.7 ppt and 2.7 ppt, respectively. The results of the 2018 sampling event are provided in the OU3 RI Report and Proposed Plan, and more information can be found in the OU3 Administrative Record found at https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.ars&id=0203974&doc=Y&colid=67288&region=02&type=AR.

Given the limited data set, risk from PFAS was not able to be evaluated in the HHRA for OU3. On August 17, 2023, EPA announced steps to better align the agency's work with the latest available science on PFOA and PFOS contamination to groundwater. Given that the science on PFOA and PFOS is rapidly changing, as part of the remedial design phase for OU3, sampling for emerging contaminants, such as PFOA and PFOS, will be performed.

Comment # 5: Some of the potentially responsible parties (PRPs) at the Site note in several different comments that EPA's documents, such as the HHRA, indicate the absence of risk to the community under the current use scenario because the drinking water supply for area residents and businesses is serviced by municipal water supplies. They point out that in addition to treatment of extracted groundwater to remove contaminants prior to distribution, water quality is closely monitored by NYSDEC and NYSDOH. Furthermore, ecological receptors are not exposed, and other potential exposure pathways, such as vapor intrusion, were eliminated from further evaluation because of the depth of contamination. These commentors also state that EPA can assure that the future use scenario does not occur, while remaining consistent with the National Contingency Plan (NCP), the Superfund regulations, by requiring continued use of engineering controls (*e.g.,* wellhead treatment) as well as existing institutional controls for groundwater. These commentors further note that even after the implementation of the preferred remedy, municipal water supply providers would still need to treat extracted groundwater prior to distribution to the public. As a result, these commentors assert that implementation of the preferred alternative would not result in public drinking water being any safer than it already is, and therefore, there is no rational basis for the OU3 proposed alternative.

Response to Comment # 5: In accordance with EPA guidance, the HHRA for OU3 was conducted to determine current and future effects of site-related contaminants on human health in the absence of any actions to control or mitigate exposure (*i.e.*, no engineering or institutional controls). EPA concluded in the HHRA that exposure pathways to contaminated groundwater are currently incomplete because there are engineering controls at public water supply wells and institutional controls in the form of well restriction regulations. The results set forth in the HHRA indicated there is an unacceptable risk under the future exposure scenarios for the future child and adult resident and site worker. Therefore, remedial alternatives were evaluated to mitigate that risk, consistent with EPA's policy.

The purpose of institutional controls is to ensure continued protection, including prohibiting the development of any new drinking water wells so as to limit exposure to contaminated groundwater. Although exposure pathways to contaminated groundwater are currently incomplete, as mentioned above, consistent with EPA risk guidance, potential future exposures to contaminated groundwater in the absence of any treatment were evaluated.

The aquifer at OU3 of the Site is classified as Class GA, meaning that it is designated as a potable water supply and is a sole source aquifer, and the best usage is as a source of potable water. Consistent with the NCP, a remedial action under CERCLA should seek to restore the aquifer to its beneficial use wherever practicable. Treatment at the well-head would provide potable drinking water but would not be designed to restore the groundwater in the aquifer. While treating groundwater at the wellhead for the purpose of providing drinking water may, over time, result in some localized improvement in groundwater quality, the effect is tangential to, but not designed or intended to, address aquifer restoration. EPA's proposed alternative for OU3 at the Site, in combination with the selected remedy for OU1 and other nearby potential source facilities, will restore the aquifer to its beneficial use.

The commentors accurately note that municipal water supplies would likely still need to treat groundwater prior to distribution until remedial action objectives (RAOs) established for the remedy are achieved. Refer to EPA's Response to Comment #64, below, regarding the use of wellhead treatment, which was referred to as an engineering control by the commentor.

Comment # 6: A PRP at the Site wrote that there is an unnecessary risk to workers from the groundwater extraction system. They assert that because the preferred alternative laid out in the Proposed Plan would require the groundwater to be transferred under pressure to the centralized treatment plant, there is a risk of release of contaminated groundwater. The miles of trenching piping through roadways would create significant risks to the public such as during open excavations in the form of dust and noise as well as similar risks to site workers. Further, they believe piping in roadways would pose a risk of utility damage. There is no indication in the Proposed Plan of the possible health risks that may be introduced by implementing the preferred alternative, such as increased pollution as a result of construction and the pumping of contaminated groundwater to a treatment plant. They feel that the Proposed Plan introduces short-term risks without achieving any reduction of long-term risks.

Response to Comment # 6: The short-term impacts of the remedial alternatives were evaluated as part of the FS and in the Proposed Plan. As indicated in the FS, exposure of the site workers, the surrounding community, and the local environment to contaminants during the implementation of the selected remedy would be minimal. The activities during the installation of the conveyance piping will not involve contaminated groundwater because the trenching and piping will occur at depths that are much shallower than the depth of contaminated groundwater.

Measures that could be implemented to mitigate exposure risks during construction activities include safety techniques, air monitoring in the community, and noise and traffic control plans that could be implemented during construction activities. Site workers would wear appropriate personal protective equipment (PPE) to minimize exposure to contamination and protection from

physical hazards. Controls, such as fencing/barriers, could be put in place to prevent public trespassing into the areas of construction, and traffic controls such as temporary barriers, traffic cones, flagmen, and temporary road closures could be used to safely manage traffic. Directional drilling could potentially be used to install conveyance piping across major roadways to reduce impacts to traffic and open excavations.

During system operation, extraction of contaminated groundwater to the surface for treatment may increase the risks of contaminant exposures to workers, the community, and the environment. However, the pump and treat system workers would wear appropriate PPE to minimize exposure to contamination and as protection from physical hazards. A fence and other potential security measures would be installed around the treatment system facilities to restrict access, discourage trespassers, and limit potential exposure. Additional secondary containment measures within the groundwater treatment plant would be installed as safeguards against the release of contaminated groundwater in the event of system failures. In addition, alarmed monitoring equipment would be used to minimize risks from failures of treatment system components.

The potential for damage to the conveyance piping will be mitigated by several measures that will be evaluated and included in the remedial design, including the use of double-walled pipe made from high-density polyethylene. This is a material suitable for subsurface utility construction, and the double-walled pipe provides an additional safeguard where the inner wall conveys the water, and the outer wall acts as a secondary containment that will contain the water if the inner wall were to fail. The conveyance piping would be registered as part of the "Call Before You Dig" program so it will be marked out prior to excavation, and underground utility marking tape would be installed above the pipe to warn excavators of the conveyance piping.

Comment # 7: A PRP at the Site noted that EPA released a Pathways Analysis Report in July 2022 to "serve as a preliminary planning document to allow USEPA and stakeholders to review and comment on the approach to the identification of Constituents of Potential Concern [sic], the exposure assessment, and the toxicological evaluation before work on the baseline HHRA is initiated, so that appropriate changes can be made to the assumptions that will be used to estimate exposure and risk." They state that there is no documentation of who the "stakeholders" are, of the report being released to stakeholders for input, or of any steps in developing the report that included reaching out to stakeholders.

Response to Comment # 7: The July 2022 Pathways Analysis Report was prepared to identify the potential exposure points and routes of exposure for each exposure pathway, as well as parameters regarding human receptor characteristics and behavior. The Report was developed as a preliminary planning document to allow EPA and NYSDEC to review the approach to the identification of contaminants of potential concern (COPCs), the exposure assessment, and the toxicity assessment.

NATURE AND EXTENT OF CONTAMINATION

Comment # 8: A commentor at the public meeting asked if EPA conducted vapor intrusion studies in the area of the Site.

Response to Comment # 8: Between 2006 and 2009, NYSDEC conducted vapor intrusion investigations downgradient of the New Cassel Industrial Area (NCIA) to assess whether volatile organic compounds (VOCs) from the NCIA may be entering structures in the vicinity of the NCIA. No further action was taken following the investigations. Based on the sampling conducted, NYSDEC determined that installation of vapor mitigation systems was not warranted. For more information regarding the NYSDEC investigations, please refer to Section 5.5 of the Record of Decision (ROD) for the OU1 remedy, which can be found in the Administrative Record file for OU3.

In addition, EPA conducted a Vapor Intrusion Screening Assessment as part of the HHRA. This screening assessment reviewed data collected during the RI, and EPA concluded that the depth to contaminated groundwater was greater than 100 feet below ground surface (bgs), and the shallowest interval that exhibited a groundwater concentration exceeding standards was at 147 feet bgs. In EPA's *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (OSWER 9200.2-154, June 2015), the recommended distance for an initial vapor intrusion evaluation is approximately 100 feet vertically from the contaminated groundwater up to the bottom floor of a building. As the depth to contaminated groundwater throughout the OU3 study area exceeds 100 feet bgs at each vertical profile boring (VPB), it was determined that further vapor intrusion investigation was not necessary.

Comment # 9: A representative of the Town of Hempstead Department of Water commented that existing Nassau County Department of Health public supply well water quality data and available NYSDEC well completion report records indicate that a minimum of nine deep (> 500 ft. deep) public supply wells and one lower level irrigation well from five water districts (East Meadow, Bowling Green, Hicksville, Roosevelt Field, Westbury) and Nassau County have been impacted by VOCs at concentrations above guidance values necessitating groundwater treatment in nine of these wells. It was asserted that in order to improve the vertical delineation of the OU3 contamination, additional deep monitoring wells should be installed.

Response to Comment # 9: Each of the 13 VPBs drilled as part of the RI for OU3 were completed to the top of the Raritan clay formation. With the exception of boring NCOU3-B10, which was terminated at a depth of 577 feet bgs, groundwater data was collected to depths of at least 595 feet bgs. While these VPBs provide adequate vertical delineation for the purpose of the RI/FS, it is anticipated that additional VPBs will be drilled as part of a pre-design investigation (PDI) to inform the design of the OU3 selected remedy.

During the development of the PDI work plan, the projected drilling depths for each borehole could be evaluated. EPA anticipates that some of the VPBs may be drilled to the top of the Raritan clay formation.

Comment # 10: A representative from the Nassau County Department of Public Works noted that wells around the perimeter of Eisenhower Park have total depths between 523 and 604 feet below land surface. Groundwater treatment was added to some of these wells as early as 1995, indicating that VOCs have been present at screened elevations from -348 feet/mean sea level (msl) to -512 feet/msl for decades. To better evaluate the historic conditions that caused and influenced the migration of groundwater contaminants, the commentor suggested that a transient groundwater flow model should be considered for the area because the substantial number of active public supply wells, industrial wells, and inactive or abandoned wells that have operated locally during the last 70 years have likely had a profound effect on the distribution of volatile organics and emerging contaminants throughout the aquifer.

Response to Comment # 10: During the remedial design, an evaluation will be conducted to determine whether groundwater modeling is necessary.

Comment # 11: A representative from the Nassau County Department of Public Works commented that the groundwater flow patterns in the area could be better defined by collecting synoptic water level measurements during periods of "high aquifer stress" created by increased seasonal pumping activity. This would include measurements of all available wells in June, July, and August. The commentor indicated that water level measurements and subsequent plume maps were created during periods of low aquifer stress and thus may not be entirely accurate. Ideally, future water level measurements should be collected quarterly to better assess aquifer conditions throughout the year.

Response to Comment # 11: As part of the RI for OU3, EPA conducted three rounds of synoptic water level measurements (January of 2019, April of 2022, and May of 2022). The possibility that supply wells may have impacted water levels was considered both during the collection and evaluation of the OU3 synoptic water level monitoring. In total, 65 monitoring wells were measured over each of the three events. EPA used the water level measurements to develop groundwater flow patterns across four aquifer zones: the Upper Glacial, the Upper Magothy, the Middle Magothy, and the Lower Magothy.

The findings of the water level measurements were consistent with previous investigations, indicating a general groundwater flow direction of south-southwest, and the magnitude and direction of horizontal gradients were relatively uniform in all four of the aquifer zones. Water levels were generally between one and three feet higher in 2022 compared to 2019, which is consistent with higher levels of precipitation and recharge occurring during spring compared to winter months. However, the general groundwater flow directions remained consistent across the three rounds of measurement. For more information regarding the results of the synoptic water level measurements, please refer to the OU3 RI Report Table 3-1 and Figures 3-6 through 3-17.

The frequency and timing of future synoptic water level measurements for the purpose of designing the selected remedy for OU3 of the Site will be evaluated during the remedial design.

Comment # 12: A representative from the Nassau County Department of Public Works commented that as part of the PDI, additional permanent groundwater monitoring wells or monitoring well clusters screened at various intervals in the aquifer should be installed near the

existing well clusters in the area. Monitoring wells could be installed starting at depths greater than two hundred feet extending to the top of the Raritan confining unit. Wells could be screened in previously mapped target zones to provide continuous access and repeatable measurements of both water quality and water levels across a much thicker (deeper) portion of the Magothy aquifer.

Response to Comment # 12: While the installation of additional VPBs and/or groundwater monitoring wells is expected as part of the remedial design, the evaluation to determine the locations, depths, and construction methods would be conducted as part of the PDI work plan development. Additional groundwater monitoring wells may be installed as part of the long-term groundwater monitoring program for the selected remedy.

Comment # 13: A representative of the Nassau County Department of Public Works commented that an expanded and deepened group of permanent monitoring wells at the existing cluster #7 would confirm the vertical extent of the OU1 eastern plume and allow for future monitoring of plume movement and recovery. If deepened, clusters #8 and #14 could bound the Eastern limit of the plume. Cluster #16 and #17, located at the southern edge of Eisenhower Park and less than 4,000 feet upgradient of the East Meadow wellfield, provides the ideal locations for two permanent sentinel wells. Existing monitoring well clusters if expanded and deepened would expand the monitoring well network and assist in defining the extent of VOCs and emerging contaminants and provide suitable locations for sentinel wells to protect the East Meadow Water District.

Response to Comment # 13: Refer to EPA's Response to Comment #12 regarding the installation of additional monitoring wells.

Comment # 14: A representative of the Nassau County Department of Public Works commented that a comprehensive network of existing monitoring wells in the area should be sampled quarterly for one year as part of the PDI to assess the presence of emerging contaminants, including 1,4-dioxane and PFAS. The data collected to date has been collected from a limited number of monitoring wells, and the number of sampled wells should be expanded as part of the PDI to support the data already collected.

Response to Comment # 14: As part of the remedial design, EPA anticipates collecting additional samples to assess the presence of emerging contaminants, including 1,4-dioxane and PFAS compounds. The number and locations of wells to be sampled, as well as the frequency of the sampling events will be determined during the remedial design.

Comment # 15: Several commentors suggested that full horizontal and vertical delineation of the groundwater plumes should be performed as part of the remedial design phase.

Response to Comment # 15: Refer to EPA's Response to Comment #12 regarding the additional work that is anticipated to be performed as part of the PDI.

Comment # 16: The Town of Hempstead Department of Water commented that figures in the Proposed Plan indicate a concentration line of 10 parts per billion (ppb) along the western property line of Eisenhower Park at Stewart Avenue, however, it was stated that the Town of Hempstead Department of Water is experiencing and treating for concentrations of trichloroethylene (TCE) at

Roosevelt Field Well # 10 nearing levels of 100 ppb and will soon be adding additional treatment at Roosevelt Field Well # 10 because of these increasing concentrations.

Response to Comment # 16: The public water supply well mentioned in the comment, Roosevelt Field Well # 10, is located outside of and west of OU3. The two closest monitoring wells, NCOU3-MW-04 and NCOU3-MW-08, are located approximately 3,500 feet east and 3,100 feet east-northeast of the Roosevelt Field Well #10, respectively. TCE results from NCOU3-MW-04 ranged from 8.1 micrograms per liter (µg/L) in January 2019 to 67 µg/L in March 2022. TCE results from NCOU3-MW-08 ranged from 30 µg/L to 33 µg/L in two samples collected in early 2022, suggesting that the contamination impacting Roosevelt Field Well #10 is likely from a source not investigated as part of this OU.

EPA anticipates that there may be additional OUs for the Site, including the area west of OU3. Any such subsequent OUs would be studied and addressed as appropriate through the remedy selection process.

Comment # 17: A representative of the Hicksville Water District requested that EPA revisit the discussion regarding the natural attenuation of contamination outside of the zone of hydraulic control. PFAS compounds and 1,4-dioxane are not subject to the same natural degradation processes as the chlorinated VOCs such as tetrachloroethylene (PCE) and TCE.

Response to Comment # 17: In Section 5.4 of the OU3 RI Report, the natural attenuation properties of the contaminants of concern (COCs), including 1,4-dioxane, were evaluated. As part of the selected remedy for OU3, a long-term monitoring program will be developed to ensure that groundwater quality improves following implementation of this remedy until clean up levels are achieved, including areas outside of the area of hydraulic control through naturally occurring attenuation processes. In addition to degradation processes, dispersion and dilution were considered in the natural attenuation evaluation.

Comment # 18: A representative of the Town of Hempstead Department of Water commented that a number of Town of Hempstead Department of Water public supply wells are impacted by site-related contamination, however, given that the investigation work is partially incomplete with numerous data gaps, there should be reference to all of the affected or potentially affected wells included in the report.

Response to Comment # 18: As indicated in the Proposed Plan, site remediation activities are sometimes separated into different phases or Operable Units (OUs) so that remediation of different, discrete environmental media or geographic areas of a site can proceed separately, whether sequentially or concurrently, resulting in a more efficient and expeditious cleanup of an entire site. EPA anticipates that there may be additional OUs for the Site. Any such subsequent OUs would be studied and addressed as appropriate through the remedy selection process.

This OU3 remedy described in this decision document only addresses OU3. Public supply wells impacted in other areas of the Site would be evaluated and addressed, as appropriate, through the remedy selection process at any such OUs.

Comment # 19: A representative of the Town of Hempstead Department of Water noted that the Proposed Plan calls for installation of "an early-warning monitoring well for the East Meadow water supply well located south of Hempstead Turnpike." It was stated that this falls short of the need to monitor additional public supply wells that could potentially be impacted, as well as to install additional outpost monitoring wells upgradient and side-gradient of the public supply wells to allow for early detection of site contaminants.

Response to Comment # 19: Refer to EPA's Response to Comment #18 regarding monitoring of public supply wells that are not part of OU3. As part of the remedial design, an evaluation will be conducted to determine the appropriate location and number of monitoring wells and/or sampling ports to provide sufficient, early-warning monitoring for the East Meadow water supply well located south of Hempstead Turnpike.

Comment # 20: A PRP at the Site noted that EPA guidance (from 2008) states that both a conceptual site model and definition of the nature and extent of contamination are part of the first steps to be completed before proceeding to the evaluation of remedial action alternatives. Because the full extent of the OU3 groundwater plume has yet to be defined, recommending a preferred remedial action is premature at this time.

Response to Comment # 20: EPA's guidance, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*, OWSER Directive 9355.3-01, states that "[t]he objective of the RI/FS process is not the unobtainable goal of removing all uncertainty, but rather to gather information sufficient to support an informed risk management decision regarding which remedy appears to be most appropriate for a given site."

As part of the RI for OU3, EPA installed VPBs, permanent groundwater monitoring wells, collected water level measurements, evaluated geochemical parameters, and reviewed historical data in order to develop a conceptual site model for OU3 of the Site. The OU3 RI Report indicates that the nature and extent of contamination at OU3 of the Site encompasses an area approximately 8,000 feet wide by up to 9,000 feet long, beginning at the downgradient OU1 boundary. The downgradient limit of chlorinated VOC (CVOC) contamination was delineated in the central portion of the OU3 study area, however, it was not delineated in the eastern and western portions of the OU3 study area. Groundwater quality data indicated that the CVOC contamination enters the OU3 study area between the approximate elevations of -50 and -400 feet msl and does not migrate more than another 50 feet downward throughout its entire flow path through the OU3 study area. For more detailed information regarding the conceptual site model and nature and extent of contamination at OU3 of the Site, please refer to the OU3 RI Report, dated July 2023.

While the objectives of the RI/FS have been met, it is anticipated that during the remedial design phase additional data will be collected and evaluated to better inform the design of the OU3 selected remedy.

Comment # 21: A PRP at the Site stated that the evaluation of alternatives presented in the OU3 FS report was not completed within industry standards. The evaluation of hydraulic containment achieved by groundwater extraction wells is completed using an analytical solution that assumes uniform aquifer properties and groundwater flow conditions in a two-dimensional flow field.

Remediation timeframes were evaluated using analytical solutions, a simplistic batch-flushing model was applied to evaluate remedial timeframes within the hydraulic containment area, and the analytical solution BIOCHLOR was used to evaluate remedial timeframes beyond the 100 µg/L groundwater plume via natural attenuation processes within a uniform groundwater flow field. These analytical solutions grossly over-simplify the complex, three-dimensional, heterogenous, anisotropic, and dynamic nature of the groundwater flow regime within the Upper Glacial and Magothy aquifers. The over-simplification of the groundwater flow regime renders the results unreliable and non-defensible. The commentor asserts that current state-of-the-science evaluation tools should be applied to assess the performance of the remedial action alternatives for OU3 rigorously.

Response to Comment # 21: EPA does not agree with the commentor's assertion that the FS report was not completed within industry standards and that the alleged over-simplification of the groundwater flow regime renders the results unreliable and non-defensible. As part of the OU3 FS, EPA utilized analytical tools to estimate flow rates, well locations, and remedial timeframes for cost estimating and planning purposes. These analytical tools are sufficient to estimate cleanup time, overall extraction rates, and approximate the number of wells for the FS.

The remediation time frame was estimated for the use of developing costs associated with annual operation and maintenance (O&M) activities. The time frame to meet groundwater RAOs in the areas outside of hydraulic control is difficult to predict but is expected to exceed 30 years. In order to refine the amount of time required for the active remedial alternatives to achieve RAOs, during the remedial design additional information regarding groundwater pumping rates and naturally occurring attenuation processes, such as dilution and dispersion, will be developed to refine remediation time frames.

In addition, as part of the remedial design phase, the existing data and groundwater flow regime could be evaluated further to determine if additional analytical solutions, such as numerical flow modeling, may be required to better design the components of the selected remedy.

Comment # 22: A PRP at the Site stated that EPA's selected remedy is arbitrary and capricious because EPA failed to consider important information being generated during the OU1 PDI that is currently ongoing. Specifically, two key documents associated with the ongoing OU1 PDI have not been published and therefore were not available for EPA's review and consideration during the preparation of the OU3 FS. Therefore, the current understanding of the OU3 contamination could and likely will change following the design, installation, operation, and monitoring of the eventual OU1 remedial components.

Response to Comment # 22: The key documents referred to by the commentor, namely the OU1 PDI Directive 2 Technical Memorandum and the OU1 PDI Recommendations Report, were not available at the time of the publication of the OU3 FS, however, data collected as part of the OU1 PDI was reviewed and considered by EPA in the development of the OU3 RI/FS. The data collected as part of the OU1 PDI, including groundwater quality sampling, groundwater level measurements, well construction logs, and VPB data, was considered as part of the OU3 decision and is included in the OU3 Administrative Record file for this action.

As part of the OU3 remedial design, the existing data could be evaluated, including the two documents referenced, to inform the installation, operation, and monitoring of the OU1 and OU3 remedies. The conceptual design of the treatment technologies employed at the treatment plant will be optimized during the remedial design to improve treatment effectiveness.

See EPA's Response to Comment #114, below, related to the commentor's claim that EPA was arbitrary and capricious.

Comment # 23: A PRP at the Site commented that EPA failed to incorporate forthcoming data from OU2 when considering a remedy for OU3. The results from the USACE pilot study at the former Sylvania Site, conducted in 2022, has not been published. Additionally, the Supplemental RI Report (SRIR) for the former General Instruments facility has not been completed or published. As such, it is arbitrary and capricious for EPA to select a remedy without considering and incorporating these essential data and related analyses into the final remedy selection.

Response to Comment # 23: The two documents referred to by the commentor were not available at the time of the publication of the Proposed Plan, however, the draft SRIR was received on October 25, 2023 and the receipt of the USACE pilot study results is anticipated in Spring 2024. The OU3 FS assumes that the upgradient sources of contamination will be addressed separately. An RI/FS is underway for OU2 of the Site, including the Sylvania Properties, and a future Proposed Plan and remedy to address conditions at OU2, as appropriate, through the remedy selection process will occur.

Comment # 24: Commentors stated that the plume dynamics at OU3 are not yet sufficiently known. EPA has only conducted two comprehensive rounds of groundwater quality sampling. The assertion was made that there are insufficient data regarding OU3 to assess the temporal trends in groundwater quality, including the expansion or lack thereof of the downgradient edge of the plume, and the rates of natural attenuation at the upgradient and downgradient boundaries of OU3. EPA did not develop a robust groundwater flow or contaminant fate and transport model to assess how the proposed remedy at OU3 will impact the OU1 plumes. The commentor also felt that EPA did not conduct a thorough assessment of the rate of biologically mediated attenuation and degradation of CVOCs in OU3. As such, it is believed that EPA's selected remedy lacks critical data and a complete understanding of plume dynamics.

Response to Comment # 24: As part of the OU3 RI, three rounds of groundwater sampling were conducted from January 2019 through April 2022. Groundwater quality data from the OU3 RI indicates that elevated concentrations of CVOCs are present in the downgradient portions of the OU3 study area, with concentrations decreasing with increased distance downgradient from OU1. As discussed in the OU3 RI Report, there is currently insufficient data to evaluate concentration trends over time in OU3 and OU1. However, the current understanding of the nature and extent of contamination is sufficient to inform the selection of a remedy.

Synoptic water level measurements were collected in three rounds from January 2019 through May 2022 to gain a better understanding of groundwater flow conditions in the OU3 study area. The groundwater flow direction was determined to be consistent with previous studies at the Site and confirmed a flow generally oriented in a south-southwest direction. Water levels were

generally between one and three feet higher in 2022 compared to 2019, which may be the result of seasonal and annual variations in precipitation and/or fluctuations caused by pumping at nearby water supply wells.

An evaluation of natural attenuation conditions was conducted as part of the OU3 RI to characterize conditions that may support or inhibit microbial degradation of chlorinated solvents through the process of reductive dechlorination. Reductive dechlorination is a natural attenuation process that can degrade CVOCs by transforming chlorinated compounds such as TCE to other compounds. To assess degradation processes on site-related contamination, laboratory analyses were performed in 2022 for a series of geochemical parameters to provide information on geochemical conditions, which can impact natural attenuation processes.

The natural attenuation evaluation indicated that anaerobic conditions necessary for reductive dechlorination are not widespread throughout the OU3 study area. The presence of certain geochemical parameters indicates that anaerobic conditions favorable for microbial degradation are present in isolated areas but are not widespread throughout OU3. The results of the natural attenuation evaluation is detailed in the OU3 RI Report, including the Technical Memorandum provided in Appendix B of the OU3 FS Report. This assessment will be updated as groundwater sampling conducted during the remedial design will include additional sampling of these geochemical parameters, and a long-term monitoring program will be implemented as part of the remedial action to ensure the groundwater quality improves following implementation of the remedy until cleanup levels are achieved, including areas outside of the zone of hydraulic control, through naturally occurring attenuation processes.

The results from the OU3 RI confirm EPA's understanding of the groundwater contamination, groundwater flow direction, and geochemical conditions and provides sufficient information upon which to select a remedy.

Comment # 25: A commentor noted that text in the Proposed Plan indicates that there are natural attenuation processes that, if occurring, will naturally reduce the contamination over time. The commentor points out that while there is an indication in the Proposed Plan that anaerobic conditions have been found in most wells with a depth greater than 400 feet bgs, there is no indication as to the depth of the wells that are currently being used. Both iron/magnesium and sulfate levels appear to support natural attenuation. Findings in the Proposed Plan also indicates that chlorine was detected in the groundwater in each sample collected and that this may be an indicator of the potential for natural attenuation. The commentor suggests that additional information should have been included in the report to identify where natural attenuation is currently occurring, to describe the difference in natural attenuation as a function of water depth, and to indicate from what depths water is currently being extracted.

Response to Comment # 25: In the OU3 RI Report, EPA evaluated the role of several natural attenuation processes on the contaminants in OU3, the most important of which being biological decay through the process of reductive dechlorination. In that Report, EPA acknowledges that degradation is taking place in parts of the aquifer where conditions are favorable. This includes deeper strata below 400 feet where oxidation reduction potential levels range from low positive

numbers (*e.g.,* 7-30 millivolts) to negative values (-80 to -522 millivolts), indicating reducing conditions. The Report indicates that the dechlorination process appears to be stalling at 1,2-dichloroethene and does not appear to be proceeding to full destruction of the chlorinated ethenes. Refer to EPA's Response to Comment #24 for additional information regarding groundwater sampling efforts and the evaluation of natural attenuation processes.

Comment # 26: A PRP at the Site commented that in the RI for OU3, EPA incorrectly concluded that the PCE plumes emanating from OU2 are comingling with the OU1 plumes. This conclusion is not supported by the data from the USACE RI for the former Sylvania Site. There is not adequate data or scientific analysis to support EPA's assertion that there is a contribution of PCE (or any other hazardous substance) from the Sylvania site to the eastern CVOC plume in OU1 or to OU3. EPA's suggestion is not substantiated and cannot be resolved until the contribution of unknown sources are identified and quantified. EPA's remedy selection at OU3 should not proceed without analysis of the extent of any mass contribution from OU2 to OU3.

Response to Comment # 26: As indicated in the OU3 RI Report and mentioned above, the properties located at 70, 100, and 140 Cantiague Rock Road, Hicksville, New York (Sylvania Properties) are considered to be a potential source of OU3 groundwater contamination based upon several lines of evidence. Firstly, the use and on-property disposal of PCE and TCE at the Sylvania Properties has been documented. The USACE RI indicates that, based on contaminant ratios of PCE to TCE, certain wells in the vicinity of OU1 are impacted by the Sylvania Properties, sources at the NCIA, the former General Instruments, and an unknown upgradient TCE plume. In the USACE RI, there is an indication that the lateral extent of the modeled PCE plume also commingles with the OU1's eastern plume. Based on groundwater flow directions in the vicinity of OU1, OU2, and OU3, and because OU1 is a source of OU3 groundwater contamination, and contamination emanating from the Sylvania Properties impacts OU1, the Sylvania Properties are potential sources of OU3 groundwater contamination.

Further, EPA's selection of a remedy for a particular operable unit is a technical determination regarding the nature and scope of contamination, and the sources and attributions of sources is not relevant to the selection of what is determined to be an appropriate remedy to address the contamination that is present.

Comment # 27: A PRP at the Site noted that in the OU3 RI Report it is stated that, "Based on groundwater flow directions at the Site…the former Sylvania Properties and General Instruments facility…are…sources of … OU3 groundwater contamination." This commentor feels that this statement is based on groundwater elevation contour maps interpreted using groundwater elevation data that are limited to within, or in close proximity to, OU1 and OU3 at the Site. The analysis in the OU3 RI Report should have included consideration of measured groundwater elevation data throughout the region beyond OU1 and OU3 in developing elevation contours. The commentor believes doing so would have avoided erroneously concluding that the former Sylvania Properties and General Instruments facility are directly upgradient of OU1 and OU3 and are sources of OU3 groundwater contamination.

Response to Comment # 27: The groundwater flow directions in the OU3 RI Report are based on three rounds of synoptic water level measurements collected from permanent monitoring wells within OU1, OU3, the USACE study area, Nassau County monitoring and irrigation wells, a U.S. Geological Survey (USGS) well, and the area west of the OU3 study area in January 2019, April 2022, and May 2022. Piezometric surface (water table) and potentiometric surface contour maps for the three rounds of synoptic measurements can be found in the OU3 RI Report Figures 3-6 through 3-17.

The groundwater elevations were contoured for the Upper Glacial Aquifer, Upper Magothy Aquifer, Middle Magothy Aquifer, and the Lower Magothy Aquifer. The magnitude and direction of horizontal gradients were relatively uniform in all four of the monitored zones. The results indicate that groundwater generally flows to the south-southwest in the OU3 study area. As discussed in the RI report, site-specific contour maps were consistent with regional mapping performed by the USGS and reported in the report Como, M.D., Finkelstein, J.S., Rivera, S.L., Monti, J. and Busciolano, R., 2018, *Water-Table and Potentiometric-Surface Altitudes in the Upper Glacial, Magothy and Lloyd Aquifers of Long Island, New York, April-May 2016*.

As discussed in the OU3 RI Report, the impact of the former Sylvania Properties and former General Instruments facility on OU3 groundwater was based on findings of the USACE study that indicated OU2 PCE plumes commingling with the NCIA groundwater and OU1 plumes within the NCIA and the OU1 areas. Groundwater passing beneath these areas, in turn, flows into the OU3 study area.

As part of the remedial design, the need for additional water level measurements and groundwater flow contours will be evaluated to support the design of the OU3 selected remedy, including the location for installation of extraction and hydraulic control wells.

Comment # 28: A PRP at the Site provided groundwater elevation contour maps based on groundwater elevations measured throughout OU1 and OU3 of the Site and the surrounding region. The commentor states that the groundwater flow path in the figures demonstrates that groundwater flow from the former Sylvania Properties and the General Instruments facility is directed southward and side-gradient of OU3. Thus, they feel that the groundwater flow from the afore-mentioned OU2 properties is not directed to the southwest into OU1 or OU3, and the properties are not directly upgradient of OU1 or OU3, as stated in the OU3 RI Report. The commentor asserts that the southward, rather than southwestern, groundwater flow direction from the OU2 properties has persisted throughout the period when the Bowling Green public supply wells (which are located to the southwest in the OU1 area) were in operation, notwithstanding the fact that pumping at the Bowling Green wells of several hundred to over 1,000 gallons per minute (GPM) was occuring from the Magothy aquifer, when pumping at these rates would have had the greatest potential to draw groundwater towards OU1 and OU3. The commentor states that the flow paths demonstrate that the groundwater from the Frost Street properties (located in the NCIA) flows directly into OU1 and OU3, and therefore, the groundwater contamination within the NCIA is directly upgradient of OU1 and OU3 and is the source of the OU3 groundwater contamination.

Response to Comment # 28: Refer to EPA's Response to Comment #27 regarding groundwater flow directions at and in the vicinity of OU3. In addition, notwithstanding the comment, the groundwater elevation contour maps provided by the commentor indicate that the groundwater flow direction in the western portion of the USACE study area flows in a southwest direction (see Figures 1-3, and Figures 6-9 included in the comment letter).

Furthermore, as discussed in the OU3 RI Report, groundwater in Nassau County has been withdrawn for municipal, irrigation, and industrial purposes since the early twentieth century, and several wells actively extract groundwater in and near the OU3 study area. A summary of the supply wells in the OU3 study area and their operational status can be found in the OU3 RI Report, Table 3-1 and Figure 3-5. In the OU1 ROD, the impact of the Bowling Green water supply wells on Site groundwater is discussed, and it is concluded that the wells are likely to influence groundwater flow direction above the depth of their production interval of approximately 470 to 580 feet bgs and consequently produce a significant downward vertical groundwater gradient in the vicinity of the NCIA. It is likely that these supply wells, which are no longer in operation, impacted the groundwater flow direction from OU2 towards OU1 and OU3.

Continuous water level studies conducted during the USACE RI indicate that operation of water supply wells can impact monitoring wells located on the order of 4,000 feet from the supply wells. The USACE RI indicates a generally south-southwest groundwater flow direction in the shallow, intermediate, and deep portions of the aquifer (USACE RI, Section 3.5 and Figures 3-4 through 3-7). This data is consistent with regional flow from the USGS 2018 publication (2016 data) listed above.

Comment # 29: A PRP at the Site commented that applying what it characterized as rudimentary analytical solutions to evaluate remedial action alternatives for OU3 results in a high degree of uncertainty as to whether the recommended design will perform as intended and be effective at providing hydraulic containment and achieving mass removal over a reasonable timeframe. It asserts that a three-dimensional groundwater flow and fate and transport model calibrated to industry standards is the only design tool that can account for the following variables: aquifer heterogeneity; three-dimensional flow field; transient groundwater conditions caused by variable supply and industrial well pumping; seasonal variations in groundwater recharge conditions; initial contaminant mass; on-going contamination sources; mass flux; mass removal by groundwater extraction; natural attenuation processes; concentration back-diffusion from lower permeability silt/clay lenses; and interaction/interference of the OU3 remedy with the OU1 remedy that has yet to be determined/designed.

Response to Comment # 29: Refer to EPA's Response to Comment #12 regarding the additional work that is anticipated to be performed as part of the PDI, and EPA's Response to Comment #21 regarding groundwater modeling.

Comment # 30: Several PRPs commented that EPA does not account for multiple sources and/or releases at different times, including groundwater impacts from sources north of the OU1 and OU2 source areas.

Response to Comment # 30: As part of the RI for OU3, potential sources in the vicinity of the OU3 study area were evaluated. The OU3 RI includes conclusions that other nearby or hydraulically upgradient sources have contributed or may in the future contribute to the groundwater contamination in OU3. In addition to sources within the NCIA, the evaluation included sites over a wide area, including 123 Post Avenue northwest of OU3, Carman Cleaners in the eastern portion of OU3, and further upgradient sites including Sulzer Metco and Anchor Chemicals, which are located northeast of OU3, and Solvent Finishers located approximately two miles north of OU3. In addition to key contaminants associated with these sites, groundwater flow direction and rates were reviewed to evaluate their potential impact on OU3. The primary contaminants for the sites are similar to those of the NCIA.

As indicated in the Proposed Plan, response actions for OU1, OU2, and the sources of the contamination at those OUs are not part of this OU3. However, the successful completion (*i.e.,* source control and/or cleanup) of addressing the source areas at these upgradient, individual source facilities and the resulting groundwater contamination are anticipated and was assumed in evaluating the potential for attaining the objectives of the selected OU3 remedy. To ensure the effectiveness of the selected remedy, EPA has outlined provisions whereby EPA may elect to evaluate additional options in a future OU pursuant to CERCLA at individual sources if they are not successfully addressed.

Comment # 31: A PRP at the Site commented that the FS cost estimates for some alternatives break remediation costs up by "Eastern," "Central," and "Western" Plumes (which is an OU1 naming convention), with no accounting for OU2 contribution.

Response to Comment # 31: The conceptual design for Alternative 3, Enhanced In-Situ Bioremediation and Pump & Treat, and Alternative 4, In-Situ Chemical Reduction and Pump & Treat, in the Proposed Plan for OU3 included transects across the areas of total groundwater contaminant concentrations greater than 1,000 µg/L. These three areas were described as the eastern, central, and western plumes; however, the cost estimates provided in the FS Report are only intended to be used for cost estimating and planning purposes for system components and are not intended to attribute costs based on the sources of contamination.

Comment # 32: A commentor noted that the Proposed Plan identifies sources of contamination such as the Sylvania Properties and General Instruments facility. It indicates that the greatest contamination from the Sylvania site was at 80 feet bgs. There is no indication as to the depth of the greatest contamination from the General Instruments site. The Proposed Plan further indicates how cleanup activities have been performed at both sites. However, it appears that the final reports as to the current state of contamination at both sites have not been completed. The commentor believes that nothing should be started until the final reports as to the current state of contamination are completed.

Response to Comment # 32: Refer to EPA's Response to Comments #22 and #23 regarding the reports that were unavailable at the time of the issuance of the OU3 Proposed Plan.

Beginning in 1992, investigations and removal activities were conducted at the Sylvania Properties to determine the nature and extent of contamination. Cleanup activities included the excavation of

soils and the removal of underground storage tanks. The USACE published the USACE RI Report in 2021 detailing the results of investigations conducted at the Sylvania Properties.

Beginning in 1980, cleanup activities under the authority of NYSDEC at the General Instruments facility included the removal of underground storage tanks and the excavation of soil, followed by the installation of a soil vapor extraction (SVE) system and later an in-well air-stripping system. These response actions are documented in the *Interim Phase VI Remedial Investigation Report and Supplemental Work Plan* (2010) and the *SVE System Closure Sampling in Area A Work* (2013) reports that are included in the Administrative Record file for this action. The General Instruments facility submitted a draft SRIR to EPA on October 25, 2023 detailing the nature and extent of contamination related to the General Instruments facility.

The nature and extent of contamination at OU3 of the Site is well understood, and sufficient information exists regarding the known sources of upgradient contamination to inform the selection of the OU3 remedy.

Comment # 33: A commentor stated that the Proposed Plan does not indicate if there are any other sites in the area that have been and may still be introducing contaminants into the groundwater. The commentor states that it appears that the first thing that should be done should be to ensure that there are no current sources of contaminants continuing to impact the groundwater in OU3. If the sources of contamination are eliminated, the commentor feels the level of contamination should be decreasing over time, and the Proposed Plan does not indicate the history of contamination levels over many years. The Proposed Plan should have included indications as to all the current sources of contamination and a chart showing the history of contamination levels.

Response to Comment # 33: Refer to EPA's Response to Comments #26 and #30 regarding EPA's evaluation of potential sources contributing to contamination in OU3 and the cleanups conducted to date.

While the three rounds of groundwater sampling conducted as part of the OU3 RI is not sufficient to evaluate historical trends, as indicated in EPA's Response to Comment #24, a long-term monitoring program will be developed. This monitoring program will enable the development of trend charts.

Comment # 34: A commentor stated that the Proposed Plan does not describe the current processing of groundwater being extracted by the public supply water districts, the amount of contamination that currently exists in the processed water, and what is expected to happen to the level of contamination in the processed water if Alternative 1 (the "No Action" alternative) is implemented. It is also unclear as to why monitoring is not included in Alternative 1. Monitoring would provide an indication as to whether natural attenuation is occuring as well as providing an indication if contamination is actually increasing (perhaps because of currently unknown sources of contamination or contamination coming from sources that were assumed to be cleaned). Construction should not be started until this has been fully analyzed.

Response to Comment # 34: For information regarding the current treatment processes being implemented by public supply water districts and the water quality data in the treated processed water, please contact your local water supplier.

The NCP requires that a "No Action" alternative be developed and considered as a baseline for comparing other remedial alternatives. Under this alternative, there would be no remedial action conducted at the Site for OU3. Consistent with EPA guidance, the "No Action" alternative includes no future activities to contain or treat contaminants at the Site, monitoring, or legal and/or administrative mechanisms for protection of human health and the environment beyond establishing cleanup criteria and recognizing those mechanisms that are already in place. Furthermore, for the reasons outlined in EPA's Response to Comment #5, above, the OU3 FS did not include an alternative consisting of wellhead treatment and monitoring.

Comment # 35: PRPs at the Site commented that the complex groundwater contamination in the area of the Site has attempted to be described by specifying plumes or specific areas of groundwater movement impacted by contamination. The commentors feel that identification of groundwater plumes, however, is not always able to be done with precision as to the identity of the sources of or the extent of contamination, and that there remain many, yet-to-be remediated sources of groundwater contamination in the area, particularly in the area known as OU2 that lack necessary contamination source control and which contributes to issues in OU3. The commentors believe that these sources must be addressed, and failure to do so demonstrates a lack of a comprehensive strategy to address the contamination across the Site.

Response to Comment # 35: As indicated in EPA's Response to Comment #18, EPA site remediation activities are often separated into different phases or OUs, so that remediation of different, discrete environmental media or geographic areas of a site can proceed separately, whether sequentially or concurrently, resulting in a more efficient and expeditious cleanup of an entire site. EPA believes that separating the Site into multiple OUs is appropriate for a site of this magnitude. To date, EPA has designated three OUs for the Site. Numerous measures have been taken at the direction of NYSDEC to address sources of contamination at the site.

Refer to EPA's Response to Comments #1 and #32 for an outline of the response actions taken at the Sylvania Properties and GI Instruments facility. EPA expects that a future Proposed Plan and remedy will be selected for OU2 that will complement remedies selected for OU1 and OU3.

Comment # 36: A PRP at the Site stated that it is not clear if other non-chlorinated VOCs (*e.g.,* acetone and benzene) are fully considered in the proposed OU3 remedy. While certain compounds were eliminated from consideration during the FS, other non-chlorinated VOCs still exist and could impact proposed treatment processes.

Response to Comment # 36: Groundwater quality sampling conducted as part of the OU3 RI included non-chlorinated VOCs, such as acetone and benzene. Although acetone was detected in 93 of the 225 VPB samples at a maximum concentration of 3,300 µg/L, acetone was only detected in three of the 56 samples collected from permanent monitoring wells and at a maximum concentration of 9.4 µg/L (at well EX-1, which is located in OU1). For the purposes of the OU3 RI, VPB data is considered as a screening tool and used on a qualitative basis in the HHRA because

the data cannot be replicated. Data from the permanent monitoring wells is used as the quantitative basis for evaluating risks in the HHRA because the same screen interval in the well can be resampled and thus replicated.

Because acetone was not detected above the screening criteria of 50 µg/L in any of the samples collected from permanent monitoring wells in OU3, acetone was not identified as a COPC in the HHRA.

Benzene was detected in 49 of the 224 VPB samples at a maximum concentration of 290 µg/L and in 25 of the 56 samples collected from permanent monitoring wells and at a maximum concentration of 6 µg/L. Four samples from two wells exceeded the screening criteria for benzene (1 µg/L), namely MW-11D and MW-13, and both are located in OU1, however, concentrations of benzene did not exceed the screening criteria in any of the permanent monitoring wells located in OU3. Because benzene was not detected above the screening criteria of 1 µg/L in any of the samples collected from permanent monitoring wells in OU3, benzene was not identified as a COPC in the HHRA. For more detailed information regarding the evaluation of COPCs, please refer to Section 3.3 in the OU3 RI Report.

The conceptual design for the groundwater treatment plants includes granular activated carbon and advanced oxidation processes to remove VOCs and 1,4-dioxane prior to discharge of the treated effluent. While acetone and benzene were not identified as COCs for OU3 of the Site, both of the aforementioned treatment processes are also effective in treating acetone and benzene to meet the discharge criteria set by NYSDEC.

Comment # 37: A PRP at the Site asserted that acetone and other non-chlorinated VOCs are not delineated within EPA's OU3, and thus they feel source(s) are not sufficiently identified. They claim that EPA chose not to include acetone or other non-chlorinated VOCs as COPCs, and therefore they state that there is no discussion in the RI Report of the acetone and non-chlorinated VOC exceedances with the exception of benzene. Consequently, they claim that EPA cannot confirm nor affirm that all source areas are remediated and that contribution to groundwater contamination from such unidentified sources will not continue to occur. They feel that before a remedy can be appropriately selected for OU3, EPA should identify the source(s) of the acetone and other non-chlorinated VOC contamination and ensure source control is in place and that the resulting groundwater contamination and its impact on OU3 is fully understood.

Response to Comment # 37: Refer to EPA's Response to Comment #36 regarding EPA's evaluation of data for the non-chlorinated VOCs mentioned above, including acetone and benzene. Refer also to EPA's Response to Comment #30 regarding EPA's evaluation of potential sources contributing to contamination in OU3 and the successful source control measure at those individual facilities. As part of the ongoing remedial design for OU1, during the 2023 OU1 groundwater sampling event, acetone and benzene were detected in permanent monitoring wells in OU1 at concentrations up to 21 µg/L and 5.1 µg/L, respectively. Subsequent to the completion of the OU1 remedial design, the implementation of the OU1 selected remedy as identified in the OU1 ROD is anticipated to address the further migration of such contaminants.

Furthermore, source control is not a pre-requisite for remedy selection in a downgradient OU, such as OU3. Additional decision documents addressing areas outside of the footprint of OU1 and OU3 are also anticipated to assist in addressing other sources of contamination, including those in OU2. Therefore, EPA disagrees with the commentor's assertion that all sources need to be addressed before selecting a remedy for downgradient contamination because contamination has already migrated into the OU3 area above MCLs.

Comment # 38: A PRP at the Site asserted that omitting acetone as a COPC and not addressing the other non-chlorinated VOCs is not appropriate because, according to the OU3 RI Report, acetone is the 4th most frequently detected compound in the OU3 RI. COPCs such as 1,1-dichloroethene, 1,1,1-trichloroethane, and cis-1,2-dichloroethene were detected less frequently, and at smaller orders of magnitude compared to their respective standard than the acetone detections. The acetone and other non-chlorinated VOC exceedances are present above and beneath the CVOC plumes targeted for remediation in the Proposed Plan. They state that acetone and other non-chlorinated VOCs were also detected during the OU1 PDI at similar orders of magnitude and depths. The presence of acetone and other non-chlorinated VOC contamination demonstrates, to them, that the conceptual site model is incomplete.

Response to Comment # 38: Refer to EPA's Response to Comment #36 regarding EPA's evaluation of data for the non-chlorinated VOCs, including acetone, and refer to EPA's Response to Comment #37 regarding the detection of acetone and other non-chlorinated VOC contamination during the OU1 PDI.

Comment # 39: A PRP at the Site asserted that successful remediation and treatment of groundwater will be hindered by the presence of metals, acetone, other non-chlorinated VOCs, and other compounds not listed as COPCs. Their view is that in addition to acetone and other non-chlorinated VOCs that will remain because targeted extraction for CVOCs would not extract from the depths at which acetone and non-chlorinated VOCs are present, the presence of metals and other compounds will hinder treatment and potentially foul well screens. They feel that the presence of inorganics can pose significant treatment issues, including causing back pressure on the treatment system by reducing available porosity as well as undue expense as a result of the need for more frequent filter media replacement. It is also the commentors' view that the presence of non-COC organics may also interfere geochemically with degradation of CVOCs, thereby resulting in additional costs. These compounds may serve as co-solvents and actually exacerbate the dissolution of CVOCs that may be adsorbed onto aquifer matrix, thereby increasing the concentration/volume of volatiles requiring treatment.

Response to Comment # 39: Refer to EPA's Response to Comment #36, above, regarding EPA's evaluation of data for the non-chlorinated VOCs mentioned above, including acetone. As part of the OU3 RI/FS, EPA also collected groundwater quality data to evaluate the presence of metals, inorganic compounds, and organic compounds. Metals, including naturally occuring metals such as iron, manganese, sodium, arsenic, and other metals that were historically documented in the NICA such as lead, chromium, and barium, were detected in groundwater samples collected at OU3.

While the conceptual design of the groundwater treatment system includes a treatment process for metals removal to reduce downstream fouling in the treatment facility components, further evaluations during the remedial design may be necessary to refine treatment processes to meet discharge requirements and realize efficiencies in the O&M of the treatment plant.

Comment # 40: A PRP at the Site asserted that EPA contends that TCE is present at the leading edge of the OU1 eastern plume because of biodegradation of PCE. However, the commentor states that the TCE present at the leading edge, and deeper, is more likely indicative of multiple sources/releases. Data collected from monitoring wells installed throughout the OU1 eastern plume demonstrates that there are at least two CVOC plumes present – a shallower PCE-dominant plume and a deeper TCE-dominant plume that contains other compounds such as non-chlorinated VOCs, chloroform, carbon tetrachloride, and acetone. These plumes remain separated throughout OU1, but the commentor feels they demonstrate a convergence in OU3, with the TCE plume extending further south into Eisenhower Park than the PCE plume. They further feel that the data demonstrate that the deeper TCE contamination likely emanates from another source further upgradient of the identified OU3 source area in the NCIA.

Response to Comment # 40: Although data collected as part of the OU1 PDI (of which the commentors are participating in the performance) was considered as part of the OU3 RI/FS and included in the Administrative Record for this action, the commentors' interpretation of the OU1 PDI data as it relates to OU1 has not been accepted by EPA. This data will be the subject of future discussion between the commentors and EPA as the OU1 remedial design proceeds. As the commentor is aware, the groundwater sampling conducted in 2023 as part of the OU1 PDI also included the sampling of permanent monitoring wells installed in OU3 to better understand sitewide conditions. At one of these monitoring well pairs, NCOU3-MW-03S/D, the sampling results revealed PCE at a concentration of 350 µg/L in the shallow interval (380 ft bgs), whereas TCE was detected at a concentration of only 34 µg/L. The deep interval (470 ft bgs), however, exhibited PCE at a concentration of 290 µg/L and TCE at a concentration of 210 µg/L. In addition, each of the sampling intervals between 380 and 470 ft bgs in the VPB revealed exceedances of both PCE and TCE, indicating a continuous column of commingled contamination. As part of the FS, the conceptual design addresses the remediation of this contamination collectively. However, the purpose of the OU3 RI/FS was not intended specifically to attribute source contribution from the individual facilities to the contamination within OU3.

Comment # 41: A PRP at the Site asserted that EPA's assumption that non-aqueous phase liquid (NAPL) is not present at OU3 is inconsistent with EPA's own guidance and has no support or rationale. They state that the highest concentration of PCE in OU3 is 6,500 µg/L, therefore, the presence of NAPL in OU3 cannot be ruled out, at least not without evidence or data to support that conclusion, which they state EPA does not provide. Further, they feel that EPA guidance states that NAPL can negatively affect the performance and longevity of pump and treat remedies.

Response to Comment # 41: No DNAPL was observed in any of the samples collected as part of the OU3 RI, nor was evidence of NAPL observed in the soil cores that were collected and observed for signs of visual or olfactory impacts from NAPL. While dissolved phase concentrations may be

indicative of the potential presence of NAPL, other lines of evidence were reviewed to support the determination that NAPL is not present in OU3.

Comment # 42: A PRP at the Site asserted that the depiction of the groundwater contamination plumes is inconsistent among figures in the OU3 RI Report. More specifically, they state that the OU1/OU3 plumes on Figure 1-5 of the OU3 RI Report are inconsistent with the depiction on the Proposed Plan remedy figures, where the Proposed Plan figures do not depict the OU2 plume, which EPA has acknowledged is a contributing source to the OU3 groundwater contamination. They suggest the OU2 plume depiction in the OU3 RI is not supported by actual data and is highly suggestive and speculative. The commentors claim that OU2 plumes are bound using wells W-36-390, W-36-448, and MW-219-560 – which is not appropriate because concentrations are detected over 200 times the MCLs, and that data collected during the OU1 PDI demonstrate that the OU2 plume likely extends at least 600 feet further west into OU1 than depicted on Figure 1-5.

Response to Comment # 42: EPA did not bound the OU2 groundwater contamination as part of the OU3 RI/FS. Figure 1-5 of the OU3 RI Report is taken directly from the USACE RI Report, Figure 4-18, entitled "Sylvania Corning FUSRAP Modeled vs. Observed PCE Groundwater Plume and Other VOCs in Vicinity of the Site", dated 2021. Data depicting the OU1 groundwater plumes in Figure 1-5 of the OU3 RI Report is from sampling conducted prior to 2011.

Figure 3 of the OU3 Proposed Plan depicts only the conceptual site model of the preferred remedial alternative (Alternative 2 – Groundwater Extraction and Ex-Situ Treatment). The purpose of the figure is not to depict the OU2 plume or its contribution to the OU3 groundwater contamination. The purpose of the conceptual design figure is for cost estimating and planning purposes to determine the approximate number and location of extraction wells. The conceptual design of the selected remedy will be refined during the remedial design phase.

SITE CLEANUP

Comment # 43: A commentor at the public meeting asked when New York State became involved in investigations at the Site.

Response to Comment # 43: Beginning in the 1990s, NYSDEC conducted site assessment activities at various facilities within the NCIA in an effort to identify sources of groundwater contamination detected by Nassau County Department of Health. NYSDEC and NYSDOH involvement at the Site, and at numerous facilities acting as sources of groundwater contamination in the area, has continued over the decades since that time.

Comment # 44: A commentor at the public meeting asked when the work outlined in the Proposed Plan will begin.

Response to Comment # 44: EPA's "enforcement first" policy promotes the "polluter pays" principle, thereby allowing the Agency to conserve Superfund resources for the cleanup of contaminated sites where there are no viable PRPs. In accordance with this policy, EPA considers its enforcement options, such as entering into an agreement with PRPs for their performance of the required work, issuance of an order requiring the performance of the work, or EPA performing the work itself and seeking recovery of the associated costs. EPA's preference is for negotiated

settlements. Before the work set forth in the OU3 ROD may begin, EPA will consider all available enforcement tools to determine the best path forward for OU3 of the Site, in light of the enforcement first policy.

Prior to constructing the remedy, the remedial design must be prepared. EPA anticipates that the remedial design phase for OU3 could take several years to complete. Assuming the PRPs agree to perform or pay for construction of the remedy, the remedy could be implemented shortly after completion of the remedial design. EPA estimates that it will take three years to construct the remedy, as noted in the Proposed Plan for Alternative 2.

Comment # 45: A commentor at the public meeting asked if there is a similar Site on Long Island that has employed the technology presented in this Proposed Plan where the outcome has been successful in remediating the contamination.

Response to Comment # 45: Groundwater extraction and treatment is a commonly used technology to address VOC-contaminated groundwater in the Magothy aquifer on Long Island. As an example, a groundwater pump and treat system has been operating effectively to remediate groundwater at the Old Roosevelt Field Contaminated Groundwater Area Superfund site, located approximately one mile west of the Site, since 2011. Another example is the remediation of VOC-contaminated groundwater under New York State authority at the Purex-Mitchel Field site, located in East Garden City, New York, where groundwater extraction and treatment and has proven to be highly effective.

Comment # 46: A commentor at the public meeting asked how EPA ensures that the remediation goals are met over the estimated timeframe for remediation of approximately 30 years, as outlined in the Proposed Plan.

Response to Comment # 46: Once construction of the treatment facility is completed and operational, periodic groundwater sampling is conducted as part of the long-term monitoring program to monitor groundwater quality over time and ensure that RAOs are met. O&M of the remedial systems, including operating and completing necessary maintenance to the system, will be performed to ensure protectiveness as well as long-term groundwater monitoring. This monitoring includes collecting samples and other field data that track the progress of the remediation and the groundwater quality. Additionally, EPA will perform reviews every five years after the remedy is constructed to evaluate the remedy to ensure that the remedy remains protective. If any issues or recommendations are identified as part of the five-year review process, those items are noted and addressed.

The estimated remediation time frame of 30 years is an estimate developed for cost-estimating and planning purposes as part of the FS. The time frame to meet groundwater RAOs in the areas outside of hydraulic control is difficult to predict but is expected to exceed 30 years.

Comment # 47: A commentor asserted that there is no indication as to the effect of pumping large amounts of groundwater when added to the current amount of water being extracted. There is nothing in the Proposed Plan that describes problems, if any, that may occur at the groundwater treatment plant, and there is also no indication where and how the treated water will be discharged.

There is an indication that the location of the groundwater treatment plant and recharge basin will be determined during the remedial design phase, but the commentor feels that no alternative should be selected and implemented until this analysis is completed. After that analysis is completed, the commentor suggests that the public should be afforded another opportunity to comment on the location of the groundwater treatment plant and recharge basin as well as the routes needed to transfer contaminated water from the extraction wells to the groundwater treatment plant.

Response to Comment # 47: Extraction of the volume of groundwater necessary for remediation purposes is not expected to have an adverse impact to the aquifer. The selected remedy includes discharge options that would allow for the recharge of the aquifer, thereby preserving the natural resource. Short-term impacts of the selected remedy and mechanisms to address potential impacts are presented in the "Evaluation of Alternatives" section of the Proposed Plan and this ROD.

Because of the densely populated area, limited space exists for the construction of the groundwater treatment plant and its related various treatment system components. Further evaluation will be conducted during the remedial design to identify potential locations to site the various system components. EPA anticipates conducting additional community outreach throughout the remedial design process regarding the location and design of the treatment system and components, including prior to the commencement of construction activities.

Comment # 48: A representative of the Hicksville Water District asked when EPA anticipates the treatment system will be on-line and what the proposed operating parameters would be?

Response to Comment # 48: Refer to EPA's Response to Comment #44 regarding the timeframe for the construction of the selected remedy. Prior to constructing the remedy, the remedial design must be prepared. During the remedial design phase, the plans and specifications detailing the construction and operating parameters of the selected remedy will be developed.

Comment # 49: A PRP at the Site asserted that one of the RAOs of the OU3 remedy is to meet drinking water standards throughout the aquifer. Given the current lack of hydrogeologic and groundwater quality data, the commentor feels that EPA cannot state with any certainty that the proposed remedy will achieve this RAO within any specific timeframe. The RAO is unachievable and cannot be used to evaluate potential remedial measures.

Response to Comment # 49: Refer to EPA's Response to Comment #21 regarding EPA's estimated time frame for the selected remedy to achieve RAOs. A significant amount of hydrogeologic and groundwater quality data was collected as part of the OU3 RI. The existing data suffices to establish an estimate of remediation timeframes for cost-estimating and planning purposes, and it would be refined as additional data is collected during the remedial design phase.

For the northern portion of the OU3 study area, an estimated remediation time frame of 30 years was developed, however the time frame to meet groundwater RAOs in the areas outside of the zone of hydraulic control is more difficult to predict but is expected to exceed 30 years. For more information regarding the development of the remediation timeframes, refer to Section 8.1.2 of the OU3 FS.

Comment # 50: The Hicksville Water District requested an expedited cleanup schedule based on recent sampling data from the Hicksville Water District's Plant No. 5 for VOCs, 1,4-dioxane, and PFAS.

Response to Comment # 50: Hicksville Water District's Plant No. 5, located at 110 Stewart Avenue in Hicksville, New York, is not located within the OU3 study area. Hicksville Water District Plant No. 5 is located within the OU2 study area, and it is EPA's understanding that the water district currently treats water extracted from the Plant prior to distribution.

A schedule for activities related to OU2 of the Site has not been fully developed yet. Before EPA can issue a Proposed Plan for OU2 at the Site, an RI/FS must be completed. EPA is currently reviewing a draft SRIR submitted to EPA on October 25, 2023 by Vishay GSI, Inc. Once this report is finalized, options for performance of a FS will be considered, taking into consideration the findings of both the Vishay GSI, Inc. SRIR and the USACE RI Report. EPA anticipates further coordination with the local and state authorities and water districts as the RI/FS for OU2 of the Site progresses.

Comment # 51: The Town of Hempstead Department of Water commented that they highly support the efforts to address the plume in the area known as OU3, however, it has serious concerns about both the ultimate location of and time required to install the hydraulic containment wells and the necessary treatment conveyance and recharge system. The concerns, which are based on physical data as well as past experience with investigation activities and similar remediation work in nearby service areas, are detailed below:

- High concentrations of COCs will not be captured and will be allowed to migrate towards public water production wells. The proposed alternative fails to provide for timely containment because the well locations are located within the current plume shell, rather than in advance of it. The Proposed Plan, if installed and operated today, would fail to fully contain the lower concentrations of the plume and allow total COC concentrations of 100 ppb or more to advance towards public supply wells and rely on wellhead treatment as a method of remediation. If the implementation time to construct the OU3 remedy is 3-5 years, the plume will likely migrate towards the East Meadow water district, placing the burden on ratepayers, which is unacceptable. A plan should be adopted to account for future advancement of the contaminant plumes between the selection of the remedy and the time of its implementation so as to address the plume in its entirety.
- Natural attenuation will not reduce the COCs outside of the area of hydraulic control to concentrations below drinking water standards, and natural attenuation of some of the COCs is not practical given their chemical properties.
- The proposed extraction wells within Eisenhower Park will require plans for use and legislative action from New York State for parkland alienation, and this is a potentially time-consuming process that could further delay construction and implementation.
- The Proposed Plan fails to contemplate a conceptual plan for disposal of treated water beyond the possibility of seasonal disposal via parkland irrigation.

Response to Comment # 51: EPA recognizes the Town of Hempstead's concern with respect to the schedule. However, as indicated in EPA's Response to Comment # 44, EPA will consider all enforcement tools available to determine the best path forward for implementation of the remedial design and remedial action at OU3 of the Site. With respect to the specific concerns outlined in the comment, EPA provides the following additional information:

During the remedial design, groundwater contour figures will be updated to include additional data collected as a result of additional well installation and groundwater sampling events. The conceptual design for the location of extraction wells will be updated to ensure that the targeted contamination is addressed.

A long-term monitoring program will be developed to track the progress of natural attenuation processes for areas outside of active treatment.

While EPA recognizes that constructing a treatment plant and installing extraction wells within Eisenhower Park is potentially a time-consuming process, alternative options are limited. As part of the remedial design, an effort will be made to identify and prioritize steps that may require long lead times.

During the remedial design, options for disposal of the treated water would be evaluated further. The seasonal disposal via parkland irrigation was one of the options included in the Proposed Plan. Other options included discharge to a newly constructed or existing recharge basin, underground infiltration galleries, the sanitary sewer, surface water, and/or reinjection to groundwater.

Comment # 52: A commentor at the public meeting asked if there are provisions in the proposed cleanup plan to treat for emerging contaminants, such as 1,4-dioxane.

Response to Comment # 52: The selected remedy calls for the ex-situ treatment of contaminated groundwater, including 1,4-dioxane, at a groundwater treatment plant. While the conceptual design includes the use of proven technologies to treat 1,4-dioxane, such as advanced oxidation in the treatment process, the specifications of the groundwater treatment process will be determined during the remedial design phase. Refer to EPA's Response to Comment #55 below regarding the treatment of other emerging contaminants such as PFAS compounds.

Comment # 53: A commentor at the public meeting asked how it is determined that these contaminants are the result of past industrial activity as opposed to more current industrial activity.

Response to Comment # 53: Numerous individual source facilities have been investigated and, where necessary, remediated under New York State authority. Information such as the depth and distance of contamination from these facilities were used to link the contamination to past activities. Practices of waste disposal in the past generally included discharge of spent solvents and other chemicals into drywells and drains prior to the facilities eventually being connected to the sanitary sewer system for waste disposal. These waste disposal practices commonly resulted in groundwater contamination at, and downgradient of, individual source facilities. Hazardous waste regulations have since banned these past practices and instituted strict regulations for the management of hazardous waste.

Comment # 54: A commentor wrote that the contaminated water should be cleaned up, and the clean water should be released to the surface water or into a recharge basin.

Response to Comment # 54: The selected remedy calls for extraction and ex-situ treatment of the contaminated groundwater prior to discharge. The conceptual design includes a combination of air stripping, granular activated carbon, as well as advanced oxidation processes to treat the extracted groundwater at a groundwater treatment plant.

The selected remedy also calls for the discharge of treated groundwater to one or more of the following: a newly constructed or existing recharge basin, underground infiltration galleries, the sanitary sewer, to surface water, and/or reinjection to groundwater. During the remedial design, additional data will be collected to update the conceptual design and detailed specifications for construction of the treatment plant, and the discharge of the treated groundwater will be developed. The selected remedy also includes a long-term monitoring program to ensure that groundwater quality improves following implementation of the remedy until cleanup levels are achieved.

Comment # 55: A representative of the Hicksville Water District commented that EPA should consider both long and short chained PFAS compounds in its selection of a remedy.

Response to Comment # 55: As outlined in the Proposed Plan, the OU3 selected remedy calls for groundwater extraction and ex-situ treatment through a combination of air stripping, granular activated carbon, and advanced oxidation processes, which is considered an effective method for addressing groundwater contaminated with the COCs at OU3 of the Site. Granular activated carbon is an effective treatment process for both long and short chain PFAS. The contact time with treatment media, known as the empty bed contact time, differs for long and short chain PFAS. While PFAS compounds were not identified as COCs at OU3 of the Site, during the remedial design phase, additional sampling for emerging contaminants such as PFOA and PFOS, which are PFAS compounds regulated by NYSDEC, would be performed.

Because the science of PFOA and PFOS is rapidly changing, EPA is committed to advancing the latest science and protecting communities from PFAS. As a result, additional data collected during the PDI will provide information on which specific PFAS compounds might need to be treated to meet discharge requirements, and the treatment process would be designed to meet the discharge requirements.

Comment # 56: A representative of the Hicksville Water District commented that EPA should reassess OU1 and OU2 for the presence of emerging contaminants through coordination with the NYSDEC and the USACE.

Response to Comment # 56: The selected remedy includes sampling for emerging contaminants as part of the remedial design phase for OU3. The on-going PDI at OU1 of the Site includes a PDI Recommendations Report, which is anticipated to be completed in 2024. The PDI Recommendations Report will evaluate the potential presence of emerging contaminants at OU1 of the Site. If determined to be necessary, revisions to the conceptual design as outlined in the selected remedy at OU1 of the Site may be necessary, including additional provisions to treat emerging contaminants prior to discharge.

It is anticipated that the RI/FS for OU2 of the Site will include an evaluation of emerging contaminants.

Comment # 57: A representative of the Hicksville Water District commented that the design of the OU3 treatment facility should take into account contaminants and concentrations observed in OU2, provided OU1's remedial design objectives and remedial action timeline promotes the success of OU3. Otherwise, OU3 should also account for OU1.

Response to Comment # 57: The contaminants observed at OU2 of the Site are similar to the contaminants observed at OU3 of the Site. The primary groundwater contaminants include VOCs, such as PCE and TCE. Similar concentrations of VOCs have been detected across the Site.

The selected remedy at OU3 of the Site is anticipated to treat the contamination detected in the OU3 study area. The specific location for the various components of the groundwater extraction and treatment system have not been determined.

The development of the design specifications for the OU1 selected remedy are underway. The additional data being collected as part of the OU1 PDI will be used in the development of the remedial design and technical specifications for the OU1 cleanup.

EPA is currently overseeing the preparation of a SRIR by Vishay GSI, Inc. for the former General Instruments facility to determine the nature and extent of contamination at OU2 of the Site related thereto. Upon completion of the SRIR, a FS will be developed incorporating the results of the SRIR and the USACE RI, and ultimately EPA will select a remedy for OU2 of the Site.

Response actions for OU1 and OU2, including the sources of contamination at those OUs, are not part of this OU3, although the successful mitigation (*i.e.*, source control and/or cleanup) of the source area(s) at the OU1 and OU2 individual source facilities and the associated groundwater contamination are anticipated in evaluating the potential for attaining the objectives of the selected remedy for OU3 of the Site.

Comment # 58: Several commentors asserted that the proposed remedy for OU3 is based on an incomplete conceptual site model that does not fully consider possible remedies at OU1 and what impacts they may have on placement of recovery wells in OU3. Nor does the proposed remedy for OU3 evaluate its impacts on the long-term tandem operation of either the OU1 remedy or the OU3 remedy. Given the considerable costs and disturbance to residents associated with the OU3 remedy, it is critical that EPA consider a more comprehensive conceptual site model that includes the OU1 remedy. A comprehensive strategy to address groundwater contamination will result in expedited remediation at a significantly lower cost than estimated for OU1 and OU3 separately. Potential remedies in OU1 currently in the pre-design phase will likely be in place to significantly reduce the future concentrations of VOCs entering OU3, eliminating the need for EPA to require such an elaborate remedial design for OU3.

Response to Comment # 58: EPA disagrees with the commentors' assertions that the conceptual site model developed for OU3 does not take into account the remedy selected for OU1. With regard to the placement of recovery wells as part of the OU3 selected remedy, the OU3 FS provides a conceptual design for the locations. EPA has worked with PRPs with respect to the implementation

of the OU1 PDI, and as work progresses, the placement of the extraction wells in OU3 will be further refined. The selected remedy for OU3 would complement the work that has been conducted and/or is being conducted at OU1 of the Site. During the remedial design phase of OU1, actions being taken at OU1 of the Site will continue to be considered and coordinated with OU3 remedy planning and implementation. For example, the Proposed Plan for OU3 states that if sufficient capacity were to exist, consideration could be given to treat a portion of the extracted OU3 groundwater at a treatment plant intended for a response action at another operable unit of the Site, such as OU1.

However, as contamination above MCLs has already migrated into the OU3 area, contrary to the commentors' assertions, the remedy selected for OU1 is insufficient to address the contamination that is present in OU3. In addition, the selected remedy at OU3 alone would be insufficient to address all the contamination in OU1 given the concentrations of contaminants detected in OU1. The ongoing actions at OU1, however, are not the focus of this OU3 remedy, although the successful remedy implementation at OU1 is anticipated and was assumed in evaluating the potential for attaining the objectives of the selected remedy at OU3.

Comment # 59: Several commentors asserted that the Proposed Plan is inconsistent with the NCP. They feel that the OU3 remedy does not consider the other OUs and their existing or potential remedies and whether treating the impacted groundwater more wholistically would be less costly and potentially remediate the contamination more quickly. They also claim that EPA failed to evaluate and weigh the NCP balancing criteria properly, failed to consider other alternatives, and cannot at this time effectively evaluate the effectiveness, implementability, and costs for the selected remedy.

Response to Comment # 59: The commentors' assertions are not correct. The OU3 selected remedy takes into consideration the remedy for OU1 and the on-going RI for OU2. EPA presumes the commentors are referring to wellhead treatment as a more wholistic approach and a less costly and faster remedial approach to remediating the contaminated groundwater. Refer to EPA's Response to Comment # 5 for an explanation for not relying on wellhead treatment as an alternative. Contrary to the commentors' assertions, the NCP balancing criteria were evaluated and discussed in the Evaluation of Alternatives section of the Proposed Plan.

Comment # 60: A PRP at the Site asserted that neither a groundwater flow or solute transport model were not conducted to better understand the impacts of the OU3 remedy on the overall water budget of the aquifer and thus the efficacy of the OU3 recovery wells in remediating the plumes. They ask if EPA has considered what impact these recovery wells may have on the local water supplies, or vice-versa?

Response to Comment # 60: Refer to EPA's Response to Comment # 21 regarding the use of groundwater modeling during the remedial design.

Supply wells within the OU3 study area are limited to irrigation wells in Eisenhower Park. Public water supply wells are located to the south (East Meadow), to the east (Hicksville), and to the west (Roosevelt Field and Westbury) of OU3. There were also supply wells to the north of OU3 in OU1 (Bowling Green) however, these wells are no longer in service. Industrial supply wells also operate

west of OU3 near the Meadowbrook Parkway. Some of these wells operate on a continual basis, and some operate on a seasonal basis, with fluctuations in withdrawal rates throughout the year.

Continuous water level studies conducted by the USACE as part of the 2021 USACE RI report indicate that the operation of public water supply wells can impact water levels as far as 4,000 feet from the supply well. The closest extraction well assumed in the conceptual design of the OU3 selected remedy is approximately one-half-mile east of the nearest public water supply well, Hempstead-Roosevelt Field Well #10. While within the 4,000-foot impact area, it is unlikely that the volume of extraction from the hydraulic control wells would cause any impacts to water districts (the estimated extraction rate as utilized in the FS is approximately 150 GPM). Nevertheless, during the remedial design, coordination with the nearby water districts is anticipated to minimize impacts to the water districts.

Comment # 61: Several PRPs asserted that EPA's preferred alternative suggests that the treated water could be discharged to recharge basins, surface waters, or a public owned treatment works (POTW) facility, however, restoring contaminated groundwater to beneficial use as drinking water should be a priority for EPA. EPA should properly vet discharge of partially treated water to a POTW as the POTW treatment system could limit the need for certain steps in the overall treatment of impacted groundwater, which could result in significant space, time, and cost reductions. The commentors feel that extracting and treating groundwater for no useful purpose instead of for drinking water purposes in this scenario lacks common sense and is not scientifically sound.

Response to Comment # 61: As set forth in the Proposed Plan, the selected remedy involves the discharge of treated water to a new or existing recharge basins, underground infiltration galleries, the sanitary sewer, surface water, and/or reinjection to groundwater. During the remedial design phase, the specifications for the discharge options, volumes, and locations would be determined.

EPA Region 2's Clean and Green Policy establishes a preference for remedies that minimize impacts to water quality and water resources and that conserve natural resources and energy. Discharge to a POTW generally does not conserve the extracted groundwater as a resource in the manner that discharges to recharge basins, underground infiltration galleries, surface water, and/or reinjection to groundwater do to reintroduce the water to the underlying aquifer. Because of the volume of contaminated groundwater that will need to be extracted and treated in order to restore the aquifer to its most beneficial use (as a source of drinking water), the discharge of treated water to a POTW may result in a substantial loss of natural resources.

Comment # 62: Numerous commentors asserted that the OU3 remedy will have significant impacts on the local community, including the following: (a) at least three years of construction, not including nine months of drilling prior to the construction, (b) installation of approximately 24,000 linear feet of conveyance piping on public roads in residential neighborhoods and in a public park, (c) wells and trenching in the neighborhood adjacent to homes and schools that would require ongoing maintenance and monitoring, (d) risks to utilities and infrastructure during trenching, (e) significant truck traffic, and (f) associated noise, dust, and visual disturbances related thereto. Minimizing the piping necessary should have been a priority in the overall remedy decision because of its costs and the disturbance to local communities. In addition, concerns were

raised regarding the conveyance of contaminated groundwater through piping in neighborhoods that could pose an inherent risk to pipe damage and leaks from freeze/thaw, utility strikes by others, and could create secondary issues/contamination. The Proposed Plan failed to adequately consider the community impacts and disruption that the proposed remedy will have on the local community while providing no added benefit to the drinking water.

Response to Comment # 62: Refer to EPA's Response to Comment #6 regarding efforts that would be taken to minimize disruptions to the local community and site workers. Refer also to EPA's Response to Comment #5 regarding the protection provided by the selected remedy for OU3.

During the remedial design phase, options will be evaluated to minimize the amount of piping and to mitigate resulting disturbances to the local community, including potentially using directional drilling where possible to install conveyance piping across major roadways to reduce traffic impacts and road disturbance. The amount of piping necessary to transport the extracted groundwater to the treatment plant will be determined by the location of the extraction wells and treatment plant. Efforts to mitigate the resulting disruption to the local community when undertaking activities related to the construction and implementation of the selected remedy will be documented in a community impact mitigation plan.

Comment # 63: A representative of the Hicksville Water District commented that effective hydraulic control and remediation of the commingled groundwater contamination is essential to the effectiveness of the proposed cleanup plan. Wellhead treatment for public water supply wells must be a measure of last resort.

Response to Comment # 63: Comment noted, and the conceptual design for the OU3 remedy incorporates the elements advocated by the commentor.

Comment # 64: Several PRPs asserted that wellhead treatment, a proven technology to address groundwater contamination used at other sites, including the nearby Fulton Avenue Superfund Site in EPA Region 2 and the San Gabriel Valley (Area 1) Superfund Site in EPA Region 9, was not evaluated as a remedial alternative in the Proposed Plan. As a result, the PRPs argue that EPA did not evaluate all available alternatives in accordance with the NCP. The PRPs suggest that an alternative that included wellhead treatment would be a better approach to address groundwater contamination; providing their rationale as to how the evaluation criteria for how an alternative that included wellhead treatment would be met and compare to EPA's preferred alternative.

Response to Comment # 64: Consistent with the NCP, a remedial action under CERCLA should seek to restore the aquifer to its beneficial use wherever practicable. The aquifer underlying OU3 has been designated a Class GA (fresh) aquifer by the NYSDEC, and the best use of Class GA waters is as a source of potable water supply. While pumping and treating groundwater at the wellhead with the primary purpose of providing drinking water may, over time, result in some localized improvement in groundwater quality at some sites, the effect is likely tangential to, but not specifically designed to address, aquifer restoration given that the location for the installation of a public supply well was based on the objective of distributing potable water and not cleaning up the aquifer. The deepest existing pumping well within OU3 is operated by Nassau County as

an irrigation well and has a screen interval of approximately 545 – 645 feet bgs. However, the majority of the pumping wells operated by Nassau County within OU3 range from 200 – 270 feet bgs. As such, these wells are too shallow compared to the depths necessary as targeted in the conceptual design for OU3 to result in RAOs being achieved. Furthermore, the Bowling Green Supply Wells 1 and 2, located within OU1, have been out of service since 2015, and the East Meadow Water District Supply Wells 3 and 5 are located downgradient of the eastern most portion of OU3. Locations of documented operating municipal, industrial, and irrigation extraction wells are provided in Figure 3-5 of the OU3 RI Report.

While one of the RAOs for the OU3 remedy is to restore the aquifer to its most beneficial use as a source of drinking water, the RAOs for the selected remedy for OU1 at the Fulton Avenue Superfund site are to (i) minimize and/or eliminate the potential for future human exposure to site contaminants via contact with contaminated drinking water, and (ii) help reduce migration of contaminated groundwater. In this instance, two Village of Garden City public supply wells (13 and 14) are located within the spine of the PCE plume and are significantly impacted by site contamination. The Fulton Avenue Superfund site OU1 ROD calls for the continued operation of the treatment systems currently installed on Village wells 13 and 14 in order to protect the public from exposure to site-related VOCs, including PCE, in groundwater entering those wells. The Village wells 13 and 14 treatment systems also will have the incidental benefit of removing and treating contaminants in groundwater that enter those wells, and thereby reducing the mass and mobility of VOCs in the OU1 part of the groundwater plume. EPA is conducting additional investigations as part of OU2 of the Fulton Avenue Superfund Site that will address a different portion of the plume and the Fulton Avenue Superfund site OU2 ROD is expected to establish RAOs for the entire site; consistent with CERCLA, aquifer restoration will be evaluated as part of the final (OU2) remedy at the Fulton Avenue Superfund Site.

Comment # 65: Several PRPs assert that the preferred alternative is redundant and not cost-effective.

Response to Comment # 65: The OU3 selected remedy, in conjunction with the OU1 remedy and the yet to be selected remedy for OU2, is necessary to achieve Site remedial action objectives. While the OU1 remedy is intended to address elevated groundwater concentrations downgradient of the NCIA, EPA anticipated conducting a separate investigation in the far-field area further downgradient of OU1. This far-field area has since been defined at OU3. The extraction of contaminated groundwater in OU1 and OU3 addresses the contamination where it is found, which is intended to reduce remediation timeframes rather than allowing the contaminated groundwater to travel longer distances and, in the process, becoming more widespread. While groundwater sampling has revealed a decrease in certain VOC concentrations within OU1, the most recent groundwater sampling conducted as part of the OU1 PDI continues to demonstrate elevated concentrations of Site-related contamination. As a result, it is not appropriate to eliminate the OU1 remedy. For example, the OU1 PDI revealed maximum concentrations of PCE and TCE of 11,000 µg/L and 1,900 µg/L, respectively. A more widespread plume generally results in a greater volume of water that needs to be extracted and longer remediation timeframes. Details regarding the cost-effectiveness of the selected remedy is provided in Section 7 of the FS, in the "Basis for the

Remedy Preference" section of the Proposed Plan and the "Statutory Determinations" section of the OU3 ROD.

Comment # 66: PRPs asserted that impacted supply wells will likely require treatment for decades into the future and, in the hypothetical scenario in which a new water district is formed or new supply wells are drilled in areas that could intersect with the groundwater plumes, will require treatment prior to distribution.

Response to Comment # 66: The commentor is likely correct that until RAOs are achieved, existing, impacted water districts and newly created water districts within the boundaries of the Site will require treatment of extracted groundwater prior to distribution. However, the commentor fails to recognize the negative impacts resulting from failure to implement the selected remedy, among which is the significantly longer duration that the water districts would have to continue their wellhead treatment if no restoration activities were to be implemented.

Comment # 67: PRPs state that EPA did not consider the impact of the OU1 remedy or pumping of supply wells to achieve mass extraction or hydraulic containment in the OU3 remedy.

Response to Comment # 67: Section 9.4.1 of the OU3 FS states that the alternatives evaluated rely on and assume that the potential sources of groundwater contamination (associated with NCIA/OU1/OU2) are properly controlled/remediated at the source. See EPA's Response to Comment #64, above, regarding pumping of supply wells.

Comment # 68: Several PRPs suggest that EPA should consider a comprehensive strategy for addressing the entire Site.

Response to Comment # 68: Given the large area that the Site encompasses, the contaminant concentrations, and multiple sources of contamination, EPA is addressing the Site in discrete phases or operable units, but this phased approach does not mean there is not a comprehensive strategy being employed at the Site.

Comment # 69: A PRP stated that EPA's proposal to continuously pump two million gallons of groundwater per day from OU3 for an unknowable period until drinking water criteria are attained is a waste of natural resources.

Response to Comment # 69: The option(s) evaluated during design for discharge of the treated water include a newly constructed or existing recharge basin; underground infiltration galleries; discharge to surface water; and/or reinjection to groundwater, all of which would result in the return of the treated groundwater to the aquifer, in addition to the sanitary sewer option. The discharge option(s) would be determined during design based on various appropriate factors, including, but not limited to, reasonable consideration for limiting the potential loss of the resource.

Comment # 70: A PRP at the Site asserted that the proposed extraction wells south of the OU1 western and central plumes will provide limited remedial benefit when compared to the costs and disruptions associated with their installation and operation. While they may serve as hydraulic containment for areas of lower groundwater contamination concentrations (100 μg/L and less),

EPA should reconsider their necessity given that concentrations of COCs are minimal and wellhead treatment is already in place at downgradient public water supply points. Any water pumped from these extraction wells would likely be further diluted by surrounding clean water thereby reducing the efficiency of treatment by raising the gallons pumped and treated to mass recovered ratio.

Response to Comment # 70: Refer to EPA's Response to Comment #64 regarding wellhead treatment as a remedial alternative. The RAOs set forth in the Proposed Plan include minimizing the potential for further migration of groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards, among others. The transect of an estimated five extraction wells in the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L is to establish hydraulic control and reduce the downgradient migration of contamination.

Common to most treatment plants, during the remedial design the concentrations of the influent requiring treatment would be calculated based on a total influent concentration from the extraction wells rather than the individual sampling results obtained from a particular monitoring well screen interval. Based on these calculations, a determination would be made regarding the necessary treatment to meet discharge requirements without reducing the efficiency of the treatment system.

Comment # 71: A PRP at the Site commented that the public supply wells that could be impacted by the OU3 plumes are currently being treated in a variety of ways to address drinking water quality. They posit that even if VOCs were removed entirely from the aquifer (note that they assert that the Proposed Plan will not accomplish that), these additional treatment methods would remain. The treatment systems currently employed at public supply wells are appropriate remedial actions because these systems minimize the release of hazardous substances. The proposed $100 million remedial measure is unreasonable when there is already a safe and effective drinking water treatment system in place. The NCP is designed specifically to avoid this type of unnecessary spending.

Response to Comment # 71: Refer to EPA's Responses to Comments #5 and #64 regarding the evaluation of wellhead treatment as a viable remedial alternative and EPA's selection of the OU3 remedy in accordance with the NCP. As indicated in the afore-mentioned responses to comments, EPA recognizes that pumping at a water supply well and treating groundwater at the wellhead to primarily provide drinking water may, over time, result in some localized improvement in ground or surface water quality; however, for reasons noted in Response to Comment #64, the effect here would at best be tangential to, and not specifically designed to address, the objective of aquifer restoration. EPA's selected remedy for OU3 is a proven and effective approach to restoring the aquifer which is consistent with the NCP.

Comment # 72: Several PRPs commented that the Proposed Plan includes a design that is unnecessarily intrusive, redundant, and costly with miles of trenching and piping through roadways. This would require extensive asphalt restoration, utility relocation and protection, etc. EPA should consider wellhead treatment/discharge as well as trenching in Eisenhower Park where utilities would be much less frequent and asphalt restoration would not be required.

Response to Comment # 72: Refer to EPA's Responses to Comments #5 and #64 regarding the evaluation of wellhead treatment as a viable remedial alternative. EPA recognizes that the construction of the selected remedy would result in short term impacts to the local community from installation of the conveyance piping networks, extraction wells, and one or more groundwater treatment plants.

Refer also to EPA's Response to Comment #6 regarding efforts that would be taken to minimize disruptions to the local community and site workers during the construction of the selected remedy, including potentially using directional drilling where possible to install conveyance piping across major roadways to reduce traffic impacts and road disturbance.

Comment # 73: A PRP at the Site commented that the Proposed Plan is not necessary to address the irrigation wells within Eisenhower Park. Sampling of the irrigation wells in 2017 and 2019 indicated only low levels of CVOCs, with the highest total VOC concentrations detected in the deepest well screened in the western part of Eisenhower Park. Nassau County concluded that concentrations are higher at the end of the irrigation season than the start. Thus, they feel that it can be assumed that VOCs are drawn towards the irrigation wells throughout the season, with highest impacts seen at the end of the irrigation pumping season. They state that the total VOC concentrations detected in the irrigation wells are very low, and although above MCLs, they do not currently require treatment. Should concentrations increase, temporary carbon treatment can be easily mobilized to address these concentrations.

Response to Comment # 73: The sampling results from the irrigation wells within Eisenhower Park mentioned by the commentors can be found in the Administrative Record for OU3 in the *Eisenhower Park OU-3 Supplemental Sampling Program Report* (Nassau County Department of Public Works, 2019).

The OU3 FS Report provides Figure 3-4, *Interpreted COC Isococentration Contours*, which depicts the concentrations of COCs detected in permanent monitoring wells sampled during the OU3 RI/FS in the vicinity of the irrigation wells within Eisenhower Park. Figure 3-4 illustrates the interpreted 100 µg/L COC isoconcentration contour in Eisenhower Park. The selected remedy calls for an estimated six extraction wells to be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of that contamination. While the commentor notes that temporary carbon treatment could be easily mobilized to address a potential future increase in concentrations at these wells, in that event a separate response action would be necessary since this OU3 decision document does not call for active treatment at these irrigation wells.

Comment # 74: A PRP at the Site commented that the only potential siting location of a groundwater treatment plant that EPA has suggested, Eisenhower Park, would likely be met with a host of community challenges. The commentor noted that this area is bordered by areas considered potential Environmental Justice (EJ) communities. With such significant uncertainties regarding the location of the treatment plant, it is impossible to evaluate the feasibility of siting, designing, and installing a treatment plant, and evaluating its cost-effectiveness effectively and fully.

Response to Comment # 74: EPA recognizes the challenges with respect to siting a groundwater treatment plant and recharge basin at OU3 at the Site. Given the amount of space required and the limited availability of open space in the area, there are limited options for siting the various components of the selected remedy. While the FS contains certain assumptions for cost-estimating and planning purposes, as part of the remedial design phase, further evaluation would be conducted to identify potential locations to site the various system components of the selected remedy.

As part of the RI/FS for OU3 of the Site, EPA conducted an environmental justice evaluation of the OU3 study area using EJScreen. EPA uses EJScreen as a preliminary step when considering environmental justice in certain situations. The agency uses it to screen for areas that may be candidates for additional consideration, analysis or outreach as EPA develops programs, policies and activities that may affect communities. As set forth in the EJScreen Report, the OU3 study area, which is approximately 2.64 square miles, includes a population of approximately 8,157. EJ indices, which combine data on demographics with a single environmental factor, such as Hazardous Waste Proximity, Particulate Matter 2.5 and Air Toxics Cancer Risk. The EJ indices for the OU3 study area are approximately in the 50th percentile as compared to other areas of New York State. Environmental justice is of the utmost priority to the Agency, and as work progresses at the Site, EPA will endeavor to meaningfully engage the community through additional community outreach activities and to minimize impacts to the community as much as possible.

For more information regarding EJScreen, EPA's EJ screening and mapping tool, please visit https://ejscreen.epa.gov/mapper/

Comment # 75: A PRP at the Site asserted that EPA failed to act in a timely and cost-effective manner and has failed to enforce source control for the General Instruments facility and Sylvania Properties plumes in OU2. The Proposed Plan relies on the existence of source control; however, there is no source control for OU2, which the commentor states is a significant contributor of contamination to OU3. Moving forward with a remedial action without source control is inconsistent with the NCP and does not make technical or logical sense.

Response to Comment # 75: The statement that there is no source control at OU2 is not correct. Vishay GSI, Inc., a corporate successor to the General Instruments Corporation, is conducting certain response actions associated with the former General Instruments facility in accordance with a consent order issued by NYSDEC in 1990. Prior to the execution of the 1990 consent order with NYSDEC, the General Instruments Corporation implemented several investigative and remedial activities between 1980 and 1990 under the review and approval of the Nassau County Department of Health and NYSDEC. Remedial activities performed at the former General Instruments facility beginning in 1980 included removal of leaking underground storage tanks, excavation of impacted soils, backfill of excavated areas with clean fill, excavation and closure of the former wastewater lagoon, installation of groundwater circulation wells and soil vapor extraction systems, connection of the facility to the sanitary sewer system, as well as the implementation of a sub-slab depressurization system at the former facility to mitigate potential vapor intrusion. Closure testing was conducted at two former source areas at the former facility in 2001 and 2002, and closure was approved by NYSDEC in 2003. Groundwater monitoring is conducted on an annual basis under NYSDEC authority.

Certain responsible parties associated with the Sylvania Properties conducted investigative and remedial activities as early as 1992 under a voluntary cleanup agreement with NYSDEC that included the excavation of soils and removal of underground storage tanks. For more information regarding the remedial activities conducted at the Sylvania Properties, please refer to the USACE RI Report, dated September 2021, which can be found in the Administrative Record for OU3.

As indicated in the Proposed Plan, response actions for OU1, OU2, and the sources of the contamination at those OUs are not part of this OU3. However, the successful completion (*i.e.,* source control and/or cleanup) of addressing those source areas and the resulting groundwater contamination at the upgradient, individual source facilities is anticipated and is assumed in evaluating the potential for attaining the objectives of the OU3 selected remedy. To ensure the effectiveness of the OU3 selected remedy, EPA has outlined provisions whereby EPA may elect to evaluate additional options in a future OU pursuant to CERCLA at individual sources if they are not successfully addressed.

Comment # 76: A PRP at the Site noted that areas of PCE soil contamination over 1,000,000 mg/kg to depths up to 60 feet below ground surface are identified in the USACE RI Report. They assert that because there is currently no remedial system in place to address this contamination, it remains a contributing source to OU2 groundwater contamination that ultimately migrates to OU3. Therefore, the basis of the OU3 Proposed Plan is not accurate and does not reflect actual site conditions. Further, they feel that remediation of that OU2 soil contamination at those concentrations is unlikely to occur in a timely fashion given the current stage of the remedial process.

Response to Comment # 76: The USACE RI Report, dated September 2021, details the cleanup activities that took place at the Sylvania Properties beginning in 1992, which included extensive soil excavations on the properties. Although remediation activities were performed at the Sylvania Properties, the 2021 USACE RI Report does indicate that residual contamination remains in the soils at the Sylvania Properties. For more information regarding the results of the USACE 2021 RI Report, refer to the Administrative Record index or visit https://www.nan.usace.army.mil/Missions/Environmental/Environmental-Remediation/FUSRAP/Sylvania/

The USACE is currently conducting an FS for the on-property contamination at the Sylvania Properties, including a pilot study testing the effectiveness of air sparging and SVE to remediate soils and shallow groundwater contaminated with VOCs. EPA anticipates receiving a report summarizing the results of the pilot study in Spring 2024. EPA anticipates that a response action will be taken to address the remaining on-property contamination (whether under CERCLA or FUSRAP), but nonetheless, contamination from OU2 has already migrated into the OU3 area above MCLs that requires remediation under this OU3 remedy.

Comment # 77: A PRP at the Site asserted that remedial efforts have been undertaken at most, if not all, of the NCIA sites that have been identified as contributors to OU3 groundwater contamination. Those sources of groundwater contamination have been removed and/or are controlled such that they no longer contribute additional groundwater contamination. As a result,

the levels of groundwater contamination migrating from the NCIA will continue to decrease, and the residual levels can be monitored to ensure that they are being further reduced by natural attenuation.

Response to Comment # 77: The OU3 selected remedy anticipates and assumes successful source control and/or cleanup of the source area(s) at upgradient, individual NCIA facilities that are under NYSDEC oversight in evaluating the potential for attainment of the objectives of this OU3 selected remedy. It is anticipated that source control measures within the NCIA will result in a decline in groundwater contaminant concentrations within the NCIA and downgradient thereof.

Based on data collected as part of the OU3 RI, the concentrations of contaminants observed in OU1 and in OU3 have not exhibited a decrease across all wells and aquifer intervals. As shown in the OU3 RI Report Figures 4-2a, 4-3a, and 4-4a, groundwater quality data from 2019 through 2022 indicate that contaminant concentrations continue to exceed MCLs. In some instances, an increase in total VOC concentrations has been observed at some monitoring wells. For example, monitoring well NCOU3-MW-05, which is located more than one mile from Old Country Road and the NCIA, exhibited total VOC concentrations of 95.2 µg/L in 2019 and 116.6 µg/L in 2022. Monitoring well NCOU3-MW-04, which is located more than one mile from Grand Boulevard and the NCIA, exhibited total VOC concentrations of 93.7 µg/L in 2019 and 360.37 µg/L in 2022. Monitoring well MW-17D, located in OU1 less than one-third mile from Old Country Road and the NCIA, exhibited increased total VOC concentrations from 1,954.3 µg/L in 2019 to 6,904.9 µg/L in 2022.

Refer also to EPA's Response to Comment #24 regarding EPA's natural attenuation evaluation that was conducted during the OU3 RI. The evaluation of naturally occuring attenuation indicated that anaerobic conditions necessary for reductive dechlorination are not widespread throughout the OU3 study area. The presence of certain geochemical parameters indicates that anaerobic conditions favorable for microbial degradation are present in isolated areas but are not widespread throughout OU3.

Comment # 78: A PRP at the Site asserted that EPA arbitrarily and capriciously divided the Site into OUs and proceeded on two separate tracks for OU1 and OU3 to address the same migrating groundwater contamination plumes, and that source control measures of the OU1 eastern plume source area have made remediation within OU1 unnecessary. They state that EPA's management of the Site's groundwater contamination plumes in separate OUs is not based on any data or technical reasoning, is not cost-effective, does not facilitate expedited cleanup, continues to hinder progress, is not appropriate for site conditions, was not necessary or appropriate to achieve significant risk reduction quickly, and is contradictory to the NCP and EPA guidance. Based on the data they have submitted to EPA regarding the Frost Street sites that demonstrates that the groundwater contamination plumes at OU1 have migrated south, EPA should have amended the OU1 remedy, consistent with EPA guidance, rather than dividing the plumes into two separate OUs. Having the same groundwater plumes managed separately by EPA under different project teams, following different timelines and strategies, is not consistent with the NCP and not cost-effective or time efficient.

Response to Comment # 78: Data continues to affirm that groundwater contamination within OU1 is not under control, continues to migrate south, and contains elevated concentrations of contaminants requiring treatment. Therefore, whether the Site is addressed as a single OU or multiple OUs does not change EPA's determination that the selected remedy for OU1 and OU3 are both necessary to achieve the RAOs. EPA's determination that the areas encompassing OU1 and OU3 should be addressed under two separate decision documents is not inconsistent with the NCP and EPA guidance.

While OU1 and OU3 are being managed by two different remedial project managers at EPA, coordination between the OUs is ongoing and will continue as the response actions at the Site progress. Furthermore, having more than one remedial project manager at a Superfund site or separate timelines for different stages or portions of work is not uncommon and not inconsistent with NCP.

Refer to EPA's Response to Comment #30 regarding the source control measures that have been taken at individual source facilities, including those associated with the OU1 eastern plume source area.

Comment # 79: A PRP at the Site asserted that, similar to OU1, the Proposed Plan for OU3 envisions a remedy with a PDI, presumably similar in scope to that of the OU1 PDI. This assumption is based on references throughout the OU3 documents, including extensive downgradient hydraulic control at the southern portion of OU3. It is assumed that the remedial timeline for OU3 will be similar to that of the northern portion of the plumes in OU1, which means actual remediation of groundwater is at best a decade away. The Proposed Plan for OU3 is not time-effective because it is being performed separately, and years after remedial activities in OU1, yet the remediation is to address the same groundwater plumes. Furthermore, they feel that because the plume in question would be remediated just downgradient of the source area (at the Frost Street sites in the NCIA), as well as at the leading edge of OU3, and given the lack of receptors in the OU1 area between the source area and the leading edge of OU3, no groundwater extraction in OU1 is necessary to meet the RAOs for both OU1 and OU3.

Response to Comment # 79: Prior to constructing the OU3 remedy, its remedial design must be prepared. It is anticipated that a PDI would be conducted as an initial step of the remedial design phase to better inform the design of the OU3 remedy. EPA anticipates that the remedial design phase for OU3 could take several years to complete. If the PRPs agree to perform or pay for construction of the remedy, the remedy could be implemented shortly after completion of the remedial design. EPA estimates that it will take three years to construct the remedy, as stated in the Proposed Plan (see description of Alternative 2).

For cost-estimating and planning purposes as part of the OU3 FS, an estimated remediation time frame of 30 years is used for developing costs associated with annual O&M activities. The time frame to meet groundwater RAOs in the areas outside of the zone of hydraulic control is difficult to predict but is expected to exceed 30 years.

Response actions for OU1 and other OUs at the Site are not part of this OU3, although the successful completion (*i.e.*, source control and/or cleanup) of addressing the source area(s) at the

upgradient, individual source facilities and the resulting groundwater contamination are anticipated and was assumed in evaluating the potential for attaining the objectives of the selected remedy for OU3 of the Site.

Comment # 80: A PRP at the Site asserted that EPA's preferred remedy at OU3 ignores the important role of natural attenuation processes as a viable remedial strategy. The potential variability of biological degradation of CVOCs in the southern portion of the OU3 study area was not considered as part of the OU3 FS report. EPA failed to collect the data necessary to evaluate the role of natural attenuation processes meaningfully when it evaluated alternatives. This, in the commentors view, has resulted in a selection bias in the FS.

Response to Comment # 80: Please refer to EPA's Response to Comment #24 regarding EPA's natural attenuation evaluation conducted as part of the OU3 RI. The evaluation of naturally occuring attenuation indicated that anaerobic conditions necessary for reductive dechlorination are not widespread throughout the OU3 study area. The presence of certain geochemical parameters indicates that anaerobic conditions favorable for microbial degradation are present in isolated areas but are not widespread throughout OU3.

As part of the remedial design phase, the role of natural attenuation in the OU3 area outside of the zone of hydraulic control will be evaluated.

Comment # 81: A PRP at the Site commented that the Proposed Plan is not cost-effective because the third RAO, to "restore the aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the more stringent of federal MCLs or New York State standards" would not be attained because concentrations of acetone and other non-chlorinated VOCs would remain above MCLs because they are not addressed in the OU3 remedy. Therefore, the aquifer would remain unsuitable for its "most beneficial use" despite spending nearly $100 million on remediation.

Response to Comment # 81: Refer to EPA's Response to Comments #36 and #37 regarding EPA's evaluation of acetone and non-chlorinated VOCs. The groundwater treatment system components of the selected remedy include processes that are effective in treating acetone and non-chlorinated VOCs. As such, sufficient information exists to support the conclusion that the RAO for restoration of the aquifer to its most beneficial use can be attained.

Comment # 82: A PRP at the Site commented that the alternative set forth in the Proposed Plan is not cost-effective because the preferred alternative involves placing extraction wells in the middle of the plumes as well as at the toe of the plumes. They feel that seeing as there are no receptors, supply wells, etc., in the middle of the plumes, extraction in the middle of the plume is unnecessary to achieve all three of the RAOs, and it also significantly increases the impact to the neighborhood and community, which should be of paramount importance to EPA. They feel that removing the extraction wells from the middle of the plumes would yield a significant cost savings, reducing the cost of the remedy by approximately 50%, while still achieving all three RAOs.

Response to Comment # 82: EPA estimated that four extraction wells with a combined pumping rate of approximately 450 GPM would be installed in the northern portion of OU3, targeting areas

of total groundwater contaminant concentrations greater than 1,000 µg/L. Based on the results of groundwater sampling as part of the RI/FS, it is necessary to effectuate contaminant mass removal in areas of total groundwater contaminant concentrations greater than 1,000 µg/L to reduce downgradient migration of contamination. The OU3 selected remedy of groundwater pump and treat has been demonstrated as an effective remedial approach for contaminant mass removal. The specific location of extraction wells will be determined as part of the remedial design, but the removal of all mid-plume extraction wells would reduce the effectiveness of the remedy.

Comment # 83: A PRP at the Site commented that the preferred alternative is not cost-effective because of the following: it is excessive and unnecessary to achieve the RAOs, it includes unnecessary and exorbitant costs, it would not remediate acetone and other non-chlorinated VOCs present in the groundwater, it includes unnecessary extraction wells in the neighborhood north of Eisenhower Park, it is unnecessary to address the irrigation wells within Eisenhower Park, and it is not effective to have multiple systems in place to bring VOC concentrations below drinking water standards. The costs far outweigh the short-term effectiveness, the long-term effectiveness, and the reduction of toxicity, mobility, or volume through treatment.

Response to Comment # 83: It is EPA's current judgment that the OU3 selected remedy is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Based on the information currently available, EPA has determined that the selected remedy provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The estimated present worth cost of the selected remedy is $99.1 million, approximately $100 million less than Alternative 3 ($202.6 million) and Alternative 4 ($198 million). The groundwater treatment system components of the selected remedy include processes that are effective in treating acetone and non-chlorinated VOCs.

During the remedial design phase, additional data will be collected and evaluated to inform the design of the selected remedy. Further evaluation will be conducted during the remedial design to identify the most suitable location for the installation of the various treatment system components, including the extraction wells in the northern portion of OU3 and the treatment system itself.

Comment # 84: A PRP at the Site commented that the OU3 remedy has multiple elements that may not be necessary and add significantly to initial, capital costs and long-term O&M costs, including multiple recovery points and associated piping south of the Central and Western plumes in Eisenhower Park that will likely provide limited remedial benefit and potentially unnecessary treatment steps such as metals removal and separate 1,4-dioxane treatment that would require additional space and power to operate and result in additional waste and costs.

Response to Comment # 84: Refer to EPA's Response to Comments #65 and #83 regarding the costs associated with the selected remedy.

Comment # 85: A PRP at the Site commented that the Proposed Plan provides estimated pumping rates and the number and location of extraction wells, etc., but there is no backup documentation of the modeling or calculations performed to develop these pumping rates. There are no references to driller or subcontractor quotations or references to cost guidance such as RSMeans. Because

there is no cost basis for this design, the cost estimates are not reliable, and therefore the cost-effectiveness of the remedy cannot be adequately evaluated.

Response to Comment # 85: For cost-estimating and planning purposes as part of the OU3 FS, estimates are provided for the number and location of extraction wells, pumping rates, and costs for other potential components of the treatment system. The cost estimate is expected to be accurate within a range of +50% to -30% of the final cost of the remedy.

OTHER COMMENTS/QUESTIONS

Comment # 86: A commentor at the public meeting asked if the Bowling Green water district is able to treat emerging contaminants?

Response to Comment # 86: The Bowling Green water supply wells 1 and 2, located within the OU1 area of the Site, operated until September 2015, and were taken out of service in 2018. Questions regarding the engineered treatment system that was used at the Bowling Green wells or by the water district at other supply wells should be directed to the operator of the water supply system.

Comment # 87: A commentor at the public meeting asserted that EPA should consider the future regulations regarding the different PFAS compounds and expand the treatment technologies under consideration with these future regulations in mind.

Response to Comment # 87: Please refer to EPA's Response to Comment #4 regarding EPA's evaluation of PFAS compounds as part of the RI/FS. PFAS compounds are not considered to be COCs at OU3 of the Site. As part of the OU3 remedial design phase, it is anticipated that additional data will be collected to determine the presence of emerging contaminants, such as PFAS compounds.

Comment # 88: A commentor at the public meeting asked if there is a better success rate with Alternative 3 or Alternative 4 as compared to Alternative 2, and why was Alternative 2 the preferred alternative, other than the inconvenience of installing the injection wells?

Response to Comment # 88: The selected remedy for OU3 (Alternative 2) utilizes groundwater extraction and ex-situ treatment (groundwater pump and treat), a proven technology that has been successfully implemented on other nearby sites, including the Old Roosevelt Field Contaminated Groundwater Area Superfund Site (See EPA's Response to Comment #45). While the in-situ treatment technologies proposed under Alternatives 3 and 4 are also proven technologies, they cannot be relied upon to treat emerging contaminants, such as 1,4-dioxane and PFAS compounds, in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L.

Additionally, as discussed in detail in the FS, Alternative 2 provides the best balance of tradeoffs among the alternatives with respect to the balancing and modifying criteria set forth in the NCP.

Comment # 89: A commentor at the public meeting asked if the plan to construct the Sands Casino complex would have any effect on the remediation activities being proposed?

Response to Comment # 89: The construction project referred to by the commentor is not anticipated to have any effects on the remediation activities. The complex is anticipated to be connected to the public municipal water supply.

Comment # 90: A representative of the Hicksville Water District commented that the cleanup levels in the preferred alternative should be set to either the MCLs or to non-detection limits of contaminants in order to prevent any detectable contaminants from entering the aquifer subsequently that would impact downgradient water quality.

Response to Comment # 90: The cleanup goals for OU3 groundwater are the federal MCLs and State standards identified in Table 7 of Appendix I. If the standards are not equivalent, compliance with the more stringent is required. In addition, the discharge of treated water from the treatment plant will be designed and constructed to comply with the Clean Water Act and the NYSDEC State Pollution Discharge Elimination System regulations. Targeting areas with total contaminant concentrations greater than 100 µg/L for active remediation is not inconsistent with other decision documents at this Site and at other Superfund sites on Long Island, including Old Roosevelt Field Contaminated Groundwater Area Superfund Site, Peninsula Boulevard Groundwater Plume Superfund Site, and others. Refer to EPA's Response to Comment #46 regarding the long-term monitoring program that would be implemented to ensure that groundwater quality improves for areas beyond the areas of hydraulic control until cleanup levels are achieved through naturally occuring attenuation processes.

Comment # 91: A representative of the Hicksville Water District commented that PFAS compounds should be included as cleanup goals for the OU3 remedy with a treatment goal of non-detection.

Response to Comment # 91: In 2020, NYSDEC set maximum contaminant levels of 10 ng/L for both PFOA and PFOS. A sample collected from one of the OU3 monitoring wells in 2018 revealed the presence of PFOA and PFOS at concentrations of 2.18 ng/L and 0.92 ng/L, respectively, which are below the maximum contaminant levels of 10 ng/L promulgated by NYSDEC, and also below the New York State Ambient Water Quality Guidance Values for PFOA and PFOS of 6.7 ppt and 2.7 ppt, respectively. In August 2023, EPA announced steps to better align the agency's work with the latest available science on PFOA and PFOS contamination. Sampling for emergent contaminants, such as PFOA and PFOS, from additional monitoring wells will be performed during the remedial design.

Comment # 92: A representative of the Hicksville Water District asserted that, according to EPA's 2013 OU1 ROD, sampling for 1,4-dioxane was to be conducted during the OU1 remedial design. Has 1,4-dioxane and PFAS sampling been conducted as part of the OU1 remedial design?

Response to Comment # 92: As part of the OU1 PDI, a comprehensive sampling event was conducted in April 2023 comprised of sampling 66 permanent groundwater monitoring wells associated with the OU1's eastern, central, and western plumes. This sampling revealed concentrations of 1,4-dioxane up to 77 µg/L in monitoring well MW-3, located in the central portion of OU1. The samples were not analyzed for PFAS compounds. The complete sampling results are provided in the document *Pre-Design Investigation Related Documents for OU1 for the*

New Cassel/Hicksville Ground Water Contamination Superfund Site in the Administrative Record file for this action.

To date, PFAS compounds have not been included in the sampling performed as part of the OU1 remedial design. However, as part of NYSDEC's state-wide initiative, in 2018 several wells at the Site were sampled for emerging contaminants, including PFAS compounds. The results of the 2018 sampling revealed concentrations of PFOA up to 19.9 ng/L and PFOS up to 14.7 ng/L, both in monitoring well MW-14, located within OU1. EPA expects that additional groundwater sampling for PFAS compounds will be performed to support the remedial design for OU1.

Comment # 93: A representative of the Hicksville Water District commented that EPA should implement a proactive management approach of the entire Site, including close coordination with NYSDEC, USACE, and public water suppliers, to provide water quality sampling schedules and results during the remedial design phase and quarterly sampling and operating reports, and to consider quarterly video conference meetings to track and facilitate progress.

Response to Comment # 93: While Site remediation activities have been separated into different phases, or OUs, so that remediation of different geographic areas of the Site can proceed separately, the Agency is coordinating activities at the different OUs to promote an efficient cleanup of the entire Site, including sharing data as it becomes available at each OU. As the remedial designs for OU1 and OU3 progress, EPA expects to coordinate closely with NYSDEC, USACE, and local authorities and water districts regarding sampling results and schedules.

Comment # 94: A PRP at the Site commented that new sources of groundwater contamination are still being identified in OU2 and will need to be addressed and appropriately remediated. They feel that some parties that EPA considers to be PRPs did not significantly contribute contaminants to the larger groundwater plume or have already addressed their minor contamination found on-site, which represents their contributions to the successful reduction of the potential contamination sources. These properties cannot and do not contribute to the ongoing contaminant plume issues, and thus the commenters feel that such parties should be removed from being considered as responsible for the costs of the further efforts to address the OU3 contamination. EPA should reach out to those smaller contributors and/or those that have adequately remediated their properties and offer *de minimis* settlement proposals.

Response to Comment # 94: Refer to EPA's Response to Comment #75 regarding source control at OU2 of the Site. Any previously unidentified sources of contamination at the Site would need to be evaluated. However, even if sources have been identified and addressed, the impact that such a prior contaminant source may have on groundwater can still persist.

The purpose of the OU3 RI/FS was not intended specifically to attribute source contribution from the individual facilities to the contamination within OU3, or to determine enforcement strategy.

Comment # 95: A PRP at the Site asserted that EPA's preferred alternative for OU3 fails to consider the environmental footprint associated with the construction and long-term operation, maintenance, and monitoring of the proposed groundwater pump and treat system. The plan is

inconsistent with EPA's principles for greener cleanups. Further, EPA failed to undertake a climate resilience vulnerability assessment for the Site when selecting the preferred remedy.

Response to Comment # 95: The OU3 remedy will be designed consistent with EPA Region 2's Clean and Green Policy. Pursuant to the Clean and Green Policy, EPA considers the factors set forth in CERCLA in selecting a remedy by conducting a detailed analysis of the viable remedial alternatives in accordance with the NCP, 40 CFR Section 300.430(e)(9)(iii) and the Office of Solid Waste and Emergency Response (OSWER) Directive 9355.3-01. The environmental benefits of the selected remedy may be enhanced by giving consideration during the remedial design to technologies and practices that are sustainable as discussed in EPA Region 2's Clean and Green Policy.

The goal of the Clean and Green Policy is to enhance the environmental benefits of federal cleanup programs by promoting technologies and practices that are sustainable, while complying with all applicable laws and regulations. The objectives of green remediation are to: protect human health and the environment by achieving remedial action goals; support human and ecological use and reuse of remediated land; minimize impacts to water quality and water resources; reduce air emissions and greenhouse gas production; minimize material use and waste production; and conserve natural resources and energy.

The principles outlined in the policy are not intended to allow cleanups that do not satisfy threshold requirements for protectiveness, or do not meet other site-specific cleanup objectives, to be considered greener cleanup. The principles are not intended to trade cleanup program objectives for other environmental objectives.

Potential site impacts from climate change have been assessed, and the future performance of the selected remedy is currently not at risk as a result of the effects of climate change in the region and near the Site. The various components of the OU3 selected remedy, including the treatment plant, are not expected to be impacted by more frequent and intense precipitation events as a result of climate change because the treatment plant would be constructed in compliance with building codes and is not expected to be constructed within an area prone to flooding. Additionally, power disruptions caused by storms can be mitigated by having a backup power source with remote operation capabilities.

Comment # 96: A PRP at the Site asserted that remediation at the OU1 eastern plume source areas has made the integral components of the EPA OU1 remedy unnecessary. They state this because they believe the need for in-situ chemical oxidation to treat elevated concentrations has been eliminated with the improvement of groundwater conditions as a consequence of the 2014 optimization of the air sparging/soil-vapor extraction system in the Frost Street source areas. They feel this is because of the optimization as well as the 2018 installation and operation of the Frost Street groundwater extraction system downgradient of the source area. Further, they believe that the need for additional data and remediation in the northern portion of the OU1 eastern plume can be eliminated because of the Frost Street sites' remedial systems that have reduced contaminant concentrations.

Response to Comment # 96: While not related to the OU3 remedy, the following is a response to this comment.

In 2013, EPA selected a remedy for OU1 that is intended to address groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the NCIA. The OU1 remedy included in-situ treatment of groundwater via in-well vapor stripping, extraction of groundwater via pumping and ex-situ treatment, and/or in-situ chemical treatment to target high concentration areas, as appropriate. The OU1 remedy also includes the implementation of long-term monitoring and institutional controls to limit exposure to contaminated groundwater. It should be noted that during the development of the remedial design work plan for the OU1 eastern plume group, the conceptual design for the location of monitoring wells and potentially extraction wells was adjusted, and well locations were moved further downgradient. However, based on the results of the OU1 PDI data collection efforts, the commentors' assertions that the data and remediation in the northern portion of the OU1 eastern plume was or can be eliminated is not accurate. It remains a necessary component of the overall approach to addressing widespread groundwater contamination at the Site.

Comment # 97: A PRP at the Site asserted that EPA's Proposed Plan and public meeting figures were presented on a base map, not an aerial base. This makes it difficult for the public to fully understand the impact of the preferred alternative. Extraction wells are located near schools as well as hundreds of homes and businesses. Further, Eisenhower Park is one of the biggest revenue generators of Nassau County's park system. As such, interruption of its revenue and use as a park for Nassau County residents should be avoided to the extent possible.

Response to Comment # 97: EPA provided visual aids at the public meeting to help inform the public about the details of the conceptual design of the preferred alternative. The elements of the conceptual design, including the extraction wells mentioned by the commentor, are only intended to be used for cost estimating and planning purposes. During the remedial design phase, the location and configuration of the treatment system components will be finalized. Refer to EPA's Response to Comment #47 for more information regarding the location and configuration of the various treatment system components and EPA's expected coordination efforts with State and local authorities if the use of parkland is determined to be necessary. Furthermore, while the configuration of this equipment in the Proposed Plan is conceptual, the selected remedy is not anticipated to result in an interruption of the Nassau County's revenue. It should be noted that as part of the OU3 RI, numerous VPBs were drilled, and permanent monitoring wells were installed in Eisenhower Park without, to our knowledge, any disruption of use of the park by residents or any interruption of the County's revenue.

Comment # 98: A PRP at the Site asserted that the adverse impacts to the community resulting from construction of the OU3 remedy are numerous, significant, and have not been adequately evaluated. The August 10, 2023 public meeting (held during summer vacation season) was not well publicized, and attendance was sparce. In their opinion, EPA failed to perform proper outreach to inform the public of the proposed remedy within the public comment period. They feel that EPA has an obligation to consider the significant impacts that the proposed remedy will

impose on the community and balance those impacts against the perceived benefits of an unnecessary remedial action.

Response to Comment # 98: EPA published notice of the start of the public comment period and the availability of the Proposed Plan and documents relating to the Proposed Plan in *Newsday* on July 24, 2023. A copy of the public notice published in *Newsday* can be found as Attachment B. A news release announcing the Proposed Plan, which included the public meeting date, time, and location, was sent to individuals on the Site-mailing list, and it was transmitted to various media outlets and posted on EPA's website for the Site on July 24, 2023.

On August 10, 2023, EPA held a public meeting at the East Meadow Public Library located at 1886 Front Street, East Meadow, New York to inform local officials and interested citizens about the Superfund process, to present the Proposed Plan for OU3 of the Site, including the preferred remedial alternative, and to respond to questions and comments from the attendees. The public meeting was attended by approximately 30 people, including residents, business owners, and State and local government officials.

The public comment period, originally scheduled to be from July 24, 2023, to August 23, 2023, was extended by thirty additional days to September 22 after EPA received a request for an extension of time. To inform the public of the extension of the public comment period, an update was posted on EPA's website for the Site, social media, and a notice of the extension of the public comment period was published in *Newsday* on August 10, 2023. In addition, the notice of extension was sent electronically to individuals on the Site-mailing list and a press advisory was transmitted to various media outlets.

On September 22, 2023, the public comment period was further extended by an additional 30 days to October 23, 2023. To inform the public of this second extension of the public comment period, an update was posted on EPA's website for the Site, social media, and a notice of extension was published in *Newsday* on September 28, 2023. In addition, the notice of further extension was sent electronically to individuals on the Site-mailing list and a press advisory was transmitted to various media outlets. Copies of the requests for extension of the public comment period are provided in Attachment D.

EPA has taken into consideration the significant comments submitted by the public during the public comment period. Refer to EPA's Response to Comment #6 regarding short-term impacts to the community and EPA's Response to Comment #71 regarding the commentors claim of unnecessary remediation efforts.

As indicated in EPA's Response to Comment #74, EPA anticipates conducting additional community outreach activities as work at the Site progresses, including virtual and/or in-person public information sessions to present the selected remedy for OU3 of the Site and answer questions from the community.

C**omment # 99:** A PRP at the Site commented that the real burdens on the community far outweigh any theoretical benefit from the proposed remedy. They claim that EPA has stated there are no current exposure pathways or risks of harm to humans from the OU3 groundwater plumes. Instead

of considering wellhead treatment, EPA has developed what they believe are three costly, unnecessary alternatives with significant impacts to the community, especially when considering that without remediation there are no risks of harm to humans by the groundwater plumes. They state that EPA also assumes no costs would be incurred to obtain land from Nassau County to construct a treatment facility – this is based simply on an assumption without input from Nassau County. This calls into question the cost-effectiveness of the proposed alternative. The remedial techniques being selected are environmentally unsuitable for the community because they require an enormous use of electricity, fossil fuels, and construction materials and are not designed in accordance with the EPA Region 2's Clean and Green Energy Policy. Further, the reinjection of treated water back to the ground creates mounding at the subsurface and can potentially impact the temperature and characteristics of the groundwater. Furthermore, they believe EPA has not adequately reached out to the public, nor provided adequate time or information to facilitate review of the remedy.

Response to Comment # 99: Refer to EPA's Response to Comment #2 regarding human health exposure pathways, EPA's Response to Comment #83 regarding the cost estimate, EPA's Response to Comment #54 regarding discharge options that will be evaluated during the remedial design, EPA's Response to Comment #64 regarding wellhead treatment, and EPA's Response to Comment #98 regarding notice of the public comment period. The Statutory Determinations section of the OU3 ROD provides the rationale for EPA's expectation that the selected remedy satisfies the statutory requirements of CERCLA. The environmental benefits of the selected remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with both EPA Region 2's Clean and Green Energy Policy and NYSDEC's Green Remediation Policy.

Comment # 100: Several residents of the community wrote letters to inform EPA of a flyer that was received at their properties from an anonymous sender regarding EPA's plan to proceed with the cleanup in which its authors urged residents to contact EPA and oppose the preferred alternative. The mailing was said to have been sent out under a US Postal Service bulk mailing permit, which read on one side "EPA PROPOSES PIPING IN OUR BACKYARDS! WE MUST OPPOSE THIS PLAN!" with reference on the back to EPA's Proposed Plan and potential negative impacts, and it provided a QR code for scanning to obtain further information. Some residents wrote in expressing concern regarding the source of the flyer, which was said to encourage neighbors to oppose EPA's remediation of the contamination. One resident felt that it was a corporation with money who distributed the flyer who would oppose cleaning up contamination because it may affect profit or be inconvenient.

Response to Comment # 100: EPA is not aware of the source of the flyer referenced by multiple residents. EPA did not directly receive nor distribute the flyer.

Comment # 101: In response to the anonymous flyer, several residents wrote in confusion about the contents of the flyer and EPA's proposed cleanup plan. A resident asked why we would spend so much money to try to move the contaminated water when we can safely leave it, and unnecessarily risk disturbing utility services. Other residents asked why the proposed plan was

necessary when there was no demonstrated risk of human exposure to drinking water reported by the Town of Hempstead.

R**esponse to Comment # 101:** Refer to EPA's Response to Comment #2 regarding the risk assessment that was conducted to estimate the risks and hazards associated with the current and future effects of contaminants on human health and the environment. The risk assessment is an analysis of potential adverse human health effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate these exposures under current and future site uses.

The selected remedy for OU3 was determined to be necessary based on the results of the RI and the risk assessment. EPA has determined that the actual or threatened releases of hazardous substances that are present at OU3, if not addressed by the preferred alternative, may present a threat to human health or welfare or the environment. It is EPA's current judgement that the OU3 selected remedy is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment and to restore the aquifer to its most beneficial use as a source of drinking water.

Comment # 102: A resident wrote with regard to the anonymous flyer that, "[m]y biggest concern is that the remediation will not create any further contamination of the communities by virtue of the disturbance of the contaminated soil and water lines during said remediation. My presumption is that the EPA has considered all the possible negative implications and has addressed all safety concerns to the community and residents. We've been living with the contamination threat for years, and truck traffic and construction inconvenience does not compare or equate to the possible cancer or illnesses caused by contamination to our community. After speaking with many neighbors in my community, they were unaware of the meetings that have taken place about this and they were unaware of the extent of this situation, and certainly do not wish to have the remediation thwarted. With that in mind, a large number of the communities will not necessarily respond to tell the EPA that they want the remediation accomplished for a few reasons. As I mentioned, a good portion still do not know about the situation, and many people were confused by the flyer and were scared by the sound of the proposal. In addition, please keep in mind that many people just aren't emailers or vocal about community situations because they don't know who to contact or simply don't think that their one comment will be meaningful. So please, do not let the EPA decide against such a very important remediation based on the fact that an unknown entity with a great deal of monetary resources has tried to "spook" a community into opposing something so important that the EPA set up a remediation program to deal with it in the first place."

Response to Comment # 102: While there will be some short-term impacts to the community during the construction of the OU3 selected remedy, there will not be any unacceptable short-term health risks that results from the construction activities or operation of the treatment system. Impacts such as minor noise and traffic disruption, as well as other potential quality of life-related concerns will be addressed through mitigation plans. Efforts will be taken to minimize disruption to the local community when undertaking activities related to the construction and implementation of the selected remedy.

Comment # 103: A resident expressed concern about the possibility that EPA's plan would not safely address the issues that it was devised to correct. The resident indicated that they believe clean drinking and groundwater would be a priority over inconvenient construction projects. The resident asked EPA to consider the long-term well-being of the residents, and that the residents would tolerate construction and inconvenience if it means the contamination can be eliminated safely without further contamination of the groundwater.

Response to Comment # 103: EPA recognizes the concerns from the commentor and believes that the selected remedy addresses the concerns raised by the resident. Refer to EPA's Response to Comment #6 regarding the efforts to minimize disruption to the community during the construction and implementation of the selected remedy.

Comment # 104: Approximately thirty area residents wrote in to voice their opposition to the Proposed Plan, citing various reasons for their opposition. In general, residents expressed their concern with the disruptions that would be caused by the drilling and installation of extraction wells, digging or trenching of roadways for conveyance piping, and the construction of the groundwater treatment plant.

Residents expressed concern that main roads for the community, including several elementary schools and high schools, would be detoured or closed, causing significant disruptions and impacts to the community over a long period. A resident asked if the construction activities and truck traffic would close roads, impact access to the Bowling Green School rear entrance for students and parents and disrupt access to homes. Another resident commented that the proposal should never have been considered in a residential area containing four schools because of the uncalled-for disruptions, and alternative options such as county land should be considered.

Residents also expressed concern because of the proximity of the proposed treatment system components or construction activities to their homes and how that may impact daily life in the community with potential disruptions and invasive actions for years to come.

Several residents expressed concern that the digging or trenching activities would unnecessarily risk damage to existing utilities and infrastructure in the neighborhoods and increase truck traffic. One resident indicated that the streets near their home were just recently paved for the first time since 1978. Several residents also expressed concerns that the construction activities in the proposed cleanup plan would be detrimental to property values in the area or decrease quality of life because of noise and disruptions caused by construction activities.

Response to Comment # 104: Numerous groundwater monitoring wells have already been installed at the Site as part of recent investigations. Some of this drilling has been performed in close proximity to schools. Safety is of the utmost priority to EPA. Work performed at a Superfund site is performed in accordance with strict health and safety plans to ensure the safety of the workers and the surrounding community. While the construction activities present short-term impacts to the local communities, these disruptions are minimized through noise and traffic control plans, as well as community air monitoring during construction to minimize any potential impacts to the community, remediation workers, and the environment.

While many factors are involved in the valuation of a property, proximity to a nationally listed Superfund site may very well be one of those factors. In EPA's experience, the cleanup of a site, rather than leaving it un-remediated, is likely to have a positive impact on property values and enhance the value in the longer term.

Comment # 105: A resident commented that the well recently drilled in front of their home caused a major inconvenience to their family. The rig was present for approximately nine weeks and was very loud, shaking the whole house during operation. They are concerned that their property value will decrease because of ongoing construction, and they oppose the installation of additional wells or pipelines anywhere near their home.

Response to Comment # 105: EPA is not aware of the particular well referenced by the commentor, however acknowledges that the use of the sonic drill rigs at the Site results in moderate noise in the immediate vicinity. Because of space constraints at the Site, and the depth of the contaminated groundwater, sonic drilling is the only viable, commercially available technology to drill VPBs and install permanent monitoring wells. EPA and its contractors implement actions when necessary to minimize disruptions to the local community, including noise dampening barriers and operating the equipment during weekday business hours. Prior to the commencement of drilling activities, properties in the immediate vicinity of the drilling will be notified.

Refer to EPA's Response to Comment #104 regarding impacts to property values.

C**omment # 106:** A number of residents commented that there was a lack of notice to the impacted community regarding the current state of affairs and EPA's proposed cleanup plan. Several commentors felt that the timing of the release of the Proposed Plan and the public meeting during the summer did not afford the public the opportunity to review the plan thoroughly, and it greatly reduced the number of people aware of and participating in the meeting and providing comments on the preferred alternative. Several homeowners in the area commented that they did not receive any information about the meetings held to address concerns and provide additional information until the anonymous flyer was received in the mail and that they were disappointed to not have been informed sooner.

One commentor stated that, regardless of EPA's compliance with statutory or regulatory notice requirements, the vast majority of the community had no real notice of what is being proposed. The commentor felt that the fact that EPA may have "buried" notices in a couple of newspaper classified ads and has a website where people could have searched for information if they knew enough to sign up is not sufficient notice to the community. The commentor felt a single information session held at the local public library at which they expect virtually no one in the community was aware of was not sufficient. The commentor notes that they would like to know how many community residents attended the meeting.

The commentor also asserted that EPA should give the community the information it deserves regarding a significant environmental and health issue in its backyard rather than doing the bare minimum required, effectively leaving most of the community in the dark.

Response to Comment # 106: Refer to EPA's Response to Comment #98 regarding the community outreach activities that EPA conducted to inform the community of the Proposed Plan.

Comment # 107: Several commentors requested that, because of the lack of communication to area residents, additional meetings should be held so that the community can gain a better understanding of what is being proposed and an opportunity to meet face-to-face to ask questions and gain clarification. One resident commented that they just heard of EPA's proposal to create a Superfund site in their backyard, and that it should be stopped immediately with a hearing done in the neighborhood because there was no communication to residents.

Commentors generally indicated that they were not aware of the public meeting and requested that any additional information, including additional meetings, should also be passed along to residents as the cleanup progresses to ensure their neighbor's health be valued.

Response to Comment # 107: As indicated in EPA's Response to Comment #98, EPA expects to conduct additional community outreach prior to the commencement of construction activities, including communicating with the local and State authorities with respect to the location of the treatment system components, as well as virtual and/or in-person public information sessions to present the selected remedy for OU3 of the Site and answer questions from the community.

Comment # 108: The Town of Hempstead Department of Water wrote to thank EPA staff for their attendance at the public meeting held at the East Meadow Public Library, however, it felt that the timing of the meeting and comment period greatly reduced the number of people aware of and participating in the meeting and providing comments on the Proposed Plan.

Response to Comment # 108: Refer to EPA's Response to Comment #101 regarding the community outreach activities conducted to inform the public of the comment period and the extensions granted.

Comment # 109: A resident inquired about a postcard received in the mail stating that the Town of Hempstead was granted an exemption from the restrictions on 1,4-dioxane. The notice reads "IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER. The New York State Department of Health has conditionally granted an exemption from the 1,4-dioxane MCL to the Town of Hempstead Water Department in order to meet changes in potable water requirements for the compound, 1,4-dioxane. The Town of Hempstead Water Department has always worked to exceed all local and New York State requirements in supplying quality potable water to our customers. Your water continues to be acceptable for all uses. To learn more about the exemption and what the Town of Hempstead Water Department is doing to remove these contaminants: Please visit: https://hempsteadny.gov/263/emerging-contaminant-information-ECI or call the District Office at (516) 794-8300 or email us: waterinfo@hempsteadny.gov" The resident asked if this is related to the proposed cleanup plan, if the cleanup will resolve the need for the exemption, and will the exemption be rescinded when the EPA plan has been completed.

Response to Comment # 109: The postcard referenced in the comment was not distributed in relation to EPA's Proposed Plan to address groundwater contamination at OU3 of the Site. EPA does not believe that the selection of the OU3 remedy will have any bearing on the exemption,

however, that question is best directed to the Town of Hempstead Water Department or NYSDOH. For more information regarding the postcard and the exemption, please visit the above-referenced website. As indicated in EPA's Response to Comment #52, the OU3 selected remedy addresses numerous contaminants, including 1,4-dioxane, and is expected to restore the aquifer to its most beneficial use as a source of drinking water.

Comment # 110: One commentor requested more information on the contaminated water in Salisbury and surrounding areas. The commentor also asked what is the alternative to the current plan of putting in pipes to pump out contaminated water.

Response to Comment # 110: The Site comprises an area of widespread groundwater contamination within the Town of Hempstead (which encompasses the Hamlet of Salisbury), North Hempstead, and Oyster Bay in Nassau County, New York. For more information regarding the Site, including the public documents and data associated with the Site, as well as the Administrative Record file for this action, please visit www.epa.gov/superfund/new-cassel-hicksville.

As part of the OU3 FS Report, various technologies and process option were screened to address the contaminated groundwater. As a result of the screening process, four remedial alternatives were developed. The remedial alternatives are as follows: (1) No Action (taking no action); (2) Groundwater Extraction and Ex-Situ Treatment (Pump and Treat); (3) Enhanced In-Situ Bioremediation and Pump and Treat; and (4) In-Situ Chemical Reduction and Pump and Treat. Each of the active alternatives (Alternatives 2 - 4) involve drilling extraction wells, installing underground piping, and constructing a treatment plant for the extracted groundwater. The No Action alternative, required by the statute to be used as a baseline for comparison, would not involve any construction activities.

Comment # 111: One commentor suggested a mailing be distributed from EPA describing the activities in the Proposed Plan, and an estimate of the length of time the plan would take to implement.

Response to Comment # 111: As response actions at the Site progress, EPA will consider a widespread mailer such as the commentor suggests. While drilling activities were underway as part of the investigation, EPA did mail flyers to each of the residents in the immediate vicinity of the work. To inform the public of the release of the Proposed Plan and public comment period, including the two extensions of the public comment period, information was posted on EPA's website for the Site, social media, and notices were published in Newsday. The notice was also sent electronically to those individuals who signed up for the Site-mailing list, and a press advisory was transmitted to various media outlets. In addition, on August 10th, 2023, EPA held a public meeting at the East Meadow Public Library to present the conclusions of the RI/FS, to elaborate further on the reasons for recommending the preferred alternative, and to receive public comments.

Individuals interested in joining EPA's Site-mailing list for the Site should visit www.epa.gov/superfund/new-cassel-hicksville and select "Sign up for this Superfund site's mailing list" or send an email to Greally.maya@epa.gov with the Subject line "Add me to the New Cassel/Hicksville Groundwater Contamination Superfund site mailing list."

Comment # 112: A PRP at the Site requested a meeting with EPA to discuss the most productive, effective, and efficient way forward for both EPA and the potential remedial parties to comprehensively address the groundwater contamination at the Site.

Response to Comment # 112: Requests by PRPs for a meeting with EPA can be directed to Sharon Kivowitz, Assistant Regional Counsel, at Kivowitz.sharon@epa.gov or 212-637-3183.

Comment # 113: The Town of Hempstead Department of Water has requested copies of all monitoring well test results to date to allow for a comprehensive review and for future planning of treatment, given the over $200 million in investments in treatment for emerging contaminants.

Response to Comment # 113: Analytical results for sampling conducted by EPA to date are available in the Administrative Record files for OU1 and OU3 of the Site, respectively. The distribution of future sampling results will be coordinated with the Town of Hempstead Department of Water.

Comment #114: Various PRPs commented that EPA acted arbitrarily and capriciously and not consistent with the NCP for the following reasons: (1) not considering information generated from the OU1 PDI, the OU2 USACE pilot study at the Sylvania Properties, and the OU2 SRIR; (2) dividing the Site into operable units thereby proceeding on separate tracks to address the same migrating plume; (3) failing to consider critical data; (4) failing to consider source control at the Frost Street Parties' source areas; (5) the lack of source control at OU2 and other upgradient sources; (6) failing to consider well-head treatment as a remedy; (7) failing to consider the lack of risk at the Site; (8) failing to develop information on source contribution; (9) failing to develop information on plume dynamics; and (10) failing to develop information on costs.

Response to Comment #114: EPA disagrees that it acted arbitrarily and capriciously. Section 113(j)(2) of CERCLA requires that a court apply the highly deferential "arbitrary and capricious standard" to any challenges to EPA's selection of a remedy. Under this standard, the court can overturn a selected remedy only if a challenger can show on the administrative record that the remedy decision was arbitrary and capricious. Courts have determined that an agency acts arbitrarily and capriciously when (1) the agency relies on factors Congress did not intend, (2) the agency fails to consider important aspects of the problem, (3) the decision runs counter to the evidence, and (4) the decision is implausible and not a product of agency expertise. Here, EPA relied on a comprehensive set of documents that are part of the administrative record for this Proposed Plan that provide the underpinnings for the selection of the remedy for OU3. EPA weighed the evidence against the evaluation criteria set forth in Section 121 of CERCLA and in Section 300.430(e)(9) of the NCP. Among other things, EPA considered the available data in determining the nature and extent of contamination in OU3, followed its guidance on determining the risk posed by the contamination, and evaluated costs as required by CERCLA and the NCP and in accordance with guidance and industry practices.

For example, see EPA's Response to Comment #22 regarding EPA's consideration of the data generated during the OU1 PDI in the development of the OU3 RI/FS, and EPA's Response to Comment #23 regarding the unavailability of the OU2 SRIR and the OU2 USACE pilot study. See EPA's Responses to Comments #18, #78, and #93 regarding EPA's decision to divide the Site into

operable units. See EPA's Response to Comment #24 regarding the critical data EPA relied on in selecting the remedy. See EPA's Responses to Comments #1, #26, #30, #32, #35, #57, #76, #78, and #79 regarding the impact of source control on EPA's remedy selection for OU3. See EPA's Responses to Comments #5 and #64 regarding the reasons EPA did not select wellhead treatment as the remedy for OU3. See EPA's Response to Comment #2 regarding how EPA assessed the risk at the Site.

COMMENTS SUBMITTED AFTER THE PUBLIC COMMENT PERIOD

Comment # 115: On October 26, 2023, after the close of the public comment period, the Council of East Meadow Community Organizations (CEMCO) provided several comments and thanked EPA for providing CEMCO a copy of the PowerPoint presentation from the August 10th public meeting. CEMCO used the presentation material for a community information meeting it held on October 18, 2023, at the East Meadow Public Library. CEMCO stated that it understands and supports the need to address the contamination before it spreads even further into the East Meadow community, however, the organization has serious concerns regarding the proposed locations of six of the proposed extraction wells, those being the ones shown within Eisenhower Park. CEMCO noted the recreational and cultural significance of Eisenhower Park and stated that the installation of extraction wells and conveyance piping within Eisenhower Park is ill-conceived, reckless, and a 'non-starter' from the community's perspective.

Response to Comment # 115: EPA recognizes CEMCO's concerns regarding the proposed location of the extraction wells and conveyance piping, particularly given the recreational and cultural significance of Eisenhower Park.

Because the Site is situated in a densely populated area, limited space exists for the construction of the treatment plant and various treatment system components, including extraction wells. During the remedial design, EPA expects that additional data will be collected to refine the conceptual design. Based on the results of the additional data, EPA will determine the most suitable location for the installation of the treatment system and finalize the configuration of the treatment system. Consideration will be given to reconfiguring locations for the treatment system components, however, modifications to location configurations will need to be balanced with considerations regarding any potential impacts, such as effectiveness.

For example, in order to properly effectuate removal of contaminated groundwater and provide hydraulic control, extraction wells will need to be installed in residential areas downgradient of the highest OU3 contaminant concentrations. The extraction wells located further to the south in Eisenhower Park would provide hydraulic control and prevent further migration of the contamination. As stated previously, while there is flexibility with regard to the exact location of the treatment facility based on many factors, the location of the extraction wells is less so and will be finalized during the remedial design, and the locations of the wells will in large part be dictated by technical determinations related to location and concentrations of the contamination itself.

EPA will seek to coordinate with the impacted local governments and property owners to obtain access for an appropriate location to construct the various treatment system components as additional data becomes available.

Comment # 116: CEMCO commented that the placement of the hydraulic containment extraction wells as detailed in the Proposed Plan would not capture the plume in its entirety and would allow elevated concentrations of contaminants to remain untreated. Additionally, the proposed locations within the Park would require access agreements with Nassau County and alienation legislation from New York State, creating additional delays in the construction timeline.

CEMCO proposes a more effective and practical location for the hydraulic containment extraction wells along the sidewalk or meridian of Hempstead Turnpike along Merrick Avenue, where the wells would serve to provide more complete extraction and treatment and reduce the time required to acquire property rights during the construction phase. The commentor feels these locations afford readily accessible rights of way for direct pipeline installation.

Response to Comment # 116: While the location of extraction wells at adjacent to the Hempstead Turnpike could potentially reduce the time and complexity associated with acquiring access, EPA does not believe that this location would provide for more "complete extraction". The location is too distant from the more highly contaminated groundwater that needs to be actively addressed in order to meet the remedial action objective. Refer to EPA's Response to Comment #51 regarding the location of the hydraulic containment extraction wells. In addition, the drilling of extraction wells and trenching for installation of associated piping along the roads identified by the commentor would pose additional logistical challenges based on the presence of underground and overhead utilities as well as resulting in additional, short-term impacts, including temporary road closures. Also refer to EPA's Response to Comment #47 for more information regarding the location and configuration of the various treatment system components and EPA's expected coordination efforts with state and local authorities if the use of parkland is determined to be necessary.

Comment # 117: CEMCO indicated that a resident noted that the Proposed Plan mentions the NCIA as the source of groundwater contamination and asks if the properties east of the Wantagh Parkway may also be subject to contamination.

Response to Comment # 117: Refer to EPA's Response to Comment #1 for more information regarding the sources of contamination east of the Wantagh Parkway at OU2 of the Site.

Comment # 118: CEMCO stated that another resident asked if the Sylvania Properties and General Instruments facility have been penalized for what they did, and if the contaminants are affecting the soil.

Response to Comment # 118: Refer to EPA's Response to Comment #1 and #32 for more information regarding the contamination at the Sylvania Properties and General Instruments facility. As indicated in EPA's Response to Comment #44, the Superfund program operates on the principle that polluters should pay for the cleanups, rather than passing the costs to taxpayers. PRPs for the Sylvania Properties and General Instruments facility have performed studies and some cleanup at the properties under agreement with NYSDEC. Vishay GSI, Inc., a PRP responsible for the General Instruments facility, also entered into an agreement with EPA in September 2022, and it is currently conducting a supplemental RI. EPA will endeavor to enter into additional agreements with PRPs to perform future aspects of the work at the Site.

ATTACHMENT A

PROPOSED PLAN

New Cassel/Hicksville Groundwater Contamination Superfund Site Operable Unit 3 Nassau County, New York

July 2023

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the remedial alternatives considered to address contaminated groundwater at a portion of the New Cassel/Hicksville Groundwater Contamination Superfund Site (Site), herein identified as Operable Unit 3 (OU3), and identifies the preferred remedial alternative with the rationale for this preference. OU3 is generally located east of Merrick Avenue, north of Hempstead Turnpike, west of Carman Avenue, and south of Old Country Road and OU1, as depicted in Figure 1. OU3 is the area referenced in the 2013 Record of Decision for a separate OU, *i.e.*, OU1 (OU1 ROD), as the far-field area.

This Proposed Plan was developed by the U.S. Environmental Protection Agency (EPA), the lead agency for the Site, in consultation with the New York State Department of Environmental Conservation (NYSDEC), the support agency. EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, also known as Superfund), as amended, and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The nature and extent of contamination at OU3 of the Site and the remedial alternatives summarized in this Proposed Plan are more fully described in the Remedial Investigation (RI) Report, dated July 2023, and the Feasibility Study (FS) Report, dated July 2023, as well as other documents in the Administrative Record file for this decision. EPA encourages the public to review these documents to gain a more comprehensive understanding of the Site, the Superfund activities that have been conducted, the remedial alternatives that have been considered, and the remedial alternative that is being proposed.

The purpose of this Proposed Plan is to inform the public of EPA's preferred alternative and to solicit public comments pertaining to all of the remedial alternatives evaluated, including the preferred alternative.

The preferred alternative includes the extraction and on-Site treatment of contaminated groundwater. The treated groundwater effluent would be discharged to a recharge basin, underground infiltration galleries, reinjected to groundwater, to surface water, and/or to the sanitary sewer. The preferred alternative also includes long-term performance monitoring and institutional controls.

The remedy described in this Proposed Plan is the preferred alternative for OU3 of the Site. Changes to the preferred alternative, or a change from the preferred alternative to another remedial alternative described in this Proposed Plan, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selection of a remedy will be made after EPA has taken into consideration all public comments. For this reason, EPA is soliciting public comments on all of the alternatives considered in the Proposed Plan and on the detailed analysis section of the FS Report because EPA may select an alternative other than the preferred alternative.

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

July 24th, 2023 to August 23rd, 2023
EPA will accept written comments on the Proposed Plan during the public comment period.

IN PERSON PUBLIC MEETING:

August 10th, 2023 at 6:30 p.m.

East Meadow Public Library, 1886 Front St, East Meadow, New York 11554

652560

COMMUNITY ROLE IN SELECTION PROCESS

EPA relies on public input to ensure the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, this Proposed Plan has been made available to the public for a public comment period which begins on July 24th, 2023 and concludes on August 23rd, 2023.

A public meeting will be held on August 10th, 2023 at the East Meadow Public Library at 1886 Front St, East Meadow, New York at 6:30 p.m. to present the conclusions of the RI/FS, to elaborate further on the reasons for recommending the preferred alternative, and to receive public comments.

Comments received at the public meeting, as well as written comments received during the public comment period, will be documented in a Responsiveness Summary that will be a portion of a Record of Decision (OU3 ROD), the document that will memorialize the selection of a remedy for this OU3.

Written comments on the Proposed Plan should be addressed to:

Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866
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SCOPE AND ROLE OF ACTION

This Proposed Plan addresses groundwater contamination in OU3, referred to as the far-field area in EPA's 2013 OU1 ROD at the Site. A Site location map is provided as Figure 1.

As indicated above, site remediation activities are sometimes separated into different phases, or Operable Units (OUs), so that remediation of different, discrete environmental media or geographic areas of a site can proceed separately, whether sequentially or concurrently, resulting in a more efficient and expeditious cleanup of the entire site. To date, EPA has designated three OUs for the New Cassel/Hicksville Groundwater Contamination Superfund Site. EPA recognizes that there may be additional OUs for the Site, and subsequent Proposed Plans and RODs would address any such OUs.

PUBLIC INFORMATION REPOSITORIES

Copies of this Proposed Plan and supporting documentation are available at the following information repositories.

Westbury Public Library
Reference Section
445 Jefferson Street
Westbury, New York 11590
(516) 333-0176
Hours: Monday: 10AM – 8PM
Tuesday – Thursday: 9AM – 8PM
Friday – Saturday: 9AM – 5PM
Sunday: 1PM – 5PM

USEPA – Region II
Superfund Records Center
290 Broadway, 18th Floor
New York, New York 10007
(212) 637-4308
Hours: Monday – Friday: 9AM – 5PM

EPA's website for the New Cassel/Hicksville Groundwater Contamination Superfund Site
www.epa.gov/superfund/new-cassel-hicksville

On September 30, 2013, EPA signed the OU1 ROD, which addressed groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the New Cassel Industrial Area (NCIA).

OU2 includes the groundwater contamination at and downgradient of the General Instruments facility located at 600 West John Street, Hicksville, New York (referred to as the "GI Facility") and other properties, including 70, 100, and 140 Cantiague Rock Road, Hicksville, New York (referred to as the "Sylvania Properties").

OU3 addresses volatile organic contaminants (VOCs) in groundwater generally located east of Merrick Avenue, north of Hempstead Turnpike, west of Carman Avenue, and south of Old Country Road and OU1, as depicted in Figure 1. OU3 is the area referenced in the OU1 ROD as the far-field area downgradient of OU1 and the western portions of OU2.

SITE BACKGROUND

Site Description

The Site comprises an area of widespread groundwater contamination within the Towns of Hempstead, North Hempstead, and Oyster Bay in Nassau County, New York. The Site is currently estimated to include approximately 6.5 square miles, characterized by contaminated groundwater

that has impacted several public supply wells, including four Town of Hempstead wells (Bowling Green wells 1 and 2, Roosevelt Field well 10, and Levittown well 2A), six Hamlet of Hicksville wells (4-2, 5-2, 5-3, 8-1, 7-3, and 9-3), and one Village of Westbury well (11).

Public supply water districts monitor water quality regularly and have previously installed treatment systems to remove VOCs from groundwater prior to distribution. Residents of the Hempstead, Hicksville, and Westbury areas receive drinking water from public water supplies that have treatment systems installed so that the drinking water meets federal and State standards.

Past industrial and commercial activities in the area have contributed to the groundwater contamination at the Site, a source of drinking water. Contaminants detected at the Site include, but are not limited to, tetrachloroethylene (PCE), trichloroethylene (TCE), their breakdown components such as cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCE), and 1,4-dioxane.

The area encompassing OU3 consists primarily of residential properties, some light commercial use, and parkland such as Eisenhower Park and Eisenhower Golf Course. It is expected that the future land use in this area will remain the same. According to EPA's EJScreen tool, there are no demographic indicators for the New Cassel/Hicksville OU3 that would indicate a community with environmental justice concerns. Within OU3, the community is in the 51st percentile for hazardous waste proximity, and the 71st percentile for Ozone EJ index. The proposed remedy is not anticipated to result in adverse impacts to environmental resources that would affect low income or minority populations living within the vicinity of OU3.

Site Geology & Hydrogeology

The aquifer at OU3 of the Site is classified as Class GA (6 NYCRR 701.18), meaning that it is designated as a potable water supply. The principal hydrogeologic units underlying the Site are the glacial outwash and morainal deposits known as the Upper Glacial Aquifer (UGA) and the underlying Magothy Formation and Matawan Group (Magothy). Beneath these two units are the clay member and the Lloyd Sand member of the Raritan Formation.

The UGA is estimated to be 40 to 65 feet thick and consists predominantly of coarse-grained sands and gravels. Unconfined groundwater is generally found at the Site between 40 and 65 feet below ground surface (bgs), which is near the estimated boundary between the UGA and Magothy aquifer. The underlying Magothy Formation sediments are characterized by sand and silty sand with discontinuous clay and silt layers. The Magothy is approximately 500 feet thick at the Site. Geologic studies in the area have indicated that sediments tend to become finer in size fraction the deeper that they are located in the Magothy Formation, except within the basal portion where coarse-grained sands and gravels are prevalent. The Lloyd aquifer is a confined aquifer, separated from the Magothy aquifer by the clay member of the Raritan Formation. The top of the clay member of the Raritan Formation is encountered at a depth of approximately 600 feet bgs.

Site History

<u>Operable Unit 1</u>

The NCIA was developed for industrial use during the 1950s through the 1970s and remains densely occupied with industrial and commercial properties. As discussed in further detail in EPA's OU1 ROD, in 1986, Nassau County Department of Health identified extensive groundwater contamination throughout the NCIA.

Numerous investigations conducted by NYSDEC since 1986 indicated that groundwater contamination from the upgradient NCIA properties impacted the Bowling Green water supply wells, and the area south of Old Country Road and Grand Boulevard, identified as EPA's OU1. Groundwater sampling data indicated that the contaminants of concern (COCs) are PCE, TCE, trichloroethane (TCA), and other minor constituents and breakdown products. NYSDEC identified three groundwater plumes (eastern, central, and western) emanating from the NCIA. NYSDEC, under its state hazardous waste cleanup program, initiated and continues to oversee response actions at individual properties within the NCIA that have been determined to be impacting groundwater, including extraction wells installed north of Old Country Road that have been operated since 2018 to remove contaminated groundwater along the eastern portion of the NCIA.

In 2003, NYSDEC selected a remedy under its State authorities to address groundwater contamination downgradient of the NCIA. While NYSDEC conducted pre-design investigation activities, the State-selected remedy was never constructed. Thereafter, NYSDEC requested that EPA list the Site on the National Priorities List (NPL). On September 16, 2011, EPA listed the Site on the NPL and this area south (downgradient) of the NCIA was identified by EPA as OU1. As outlined above, the listing of the Site on the NPL does not alter the oversight of the individual response actions undertaken under State authority.

On September 30, 2013, EPA selected a remedy for OU1 which addressed groundwater contamination in the area downgradient of Old Country Road, Grand Boulevard, and the NCIA. Three groundwater plumes exist at OU1 (the eastern, central, and western plumes). The OU1 remedy included in-situ treatment of groundwater via in-well vapor stripping, extraction of groundwater via pumping and ex-situ treatment, and/or in-situ chemical treatment to target high concentration areas, as appropriate. The OU1 remedy also includes the implementation of long-term monitoring and institutional controls to limit exposure to contaminated groundwater.

The design of the OU1 remedy is underway. As part of the remedy design, from 2020 to 2022, EPA installed additional vertical profile borings (VPBs) and groundwater monitoring wells in the western plume, and additional VPBs and monitoring wells were installed in the eastern and central plume by potentially responsible parties (PRPs) under EPA's direction. Maximum concentrations of PCE and TCE detected in each of the plumes during drilling of the VPBs is provided in Table 1.

Table 1: Maximum OU1 Remedial Design VPB Groundwater Sample Results (2020 to 2022)

	PCE	TCE
Eastern Plume	10,300	1,090
Central Plume	176	714
Western Plume	1,700	810

Note: Concentrations are reported in micrograms per liter (µg/L).

Following the installation of the permanent monitoring wells, a comprehensive round of sampling of the OU1 permanent monitoring wells was conducted in Spring 2023. The sampling results will be provided in a technical memorandum that EPA expects to release this summer, and the data will be used in the development of the remedial design and technical specifications for the OU1 cleanup.

Operable Unit 2

OU2 includes the groundwater contamination at and downgradient of the GI Facility and Sylvania Properties, among others. The Sylvania Properties are located immediately north of the GI Facility in Hicksville, New York. Below is a summary of the investigations and response actions conducted at OU2.

The Sylvania Properties were used for industrial and manufacturing operations from as early as 1942. From 1952 to 1966 the facilities were involved in the research, development, and fabrication of nuclear elements. Beginning in 1992, investigations and removal activities were conducted to determine the nature and extent of contamination at the Sylvania Properties. Investigations revealed concentrations of PCE in soils up to 40,000 milligrams per kilogram (mg/kg) at a depth of 16 feet bgs. Cleanup activities conducted at the Sylvania Properties by certain responsible parties associated with the Sylvania Properties under a voluntary cleanup agreement with NYSDEC included the excavation of soils and the removal of underground storage tanks (USTs).

In September 2021, the U.S. Army Corps of Engineers (USACE) published an RI report for the Sylvania Properties, performed under the federal Formerly Utilized Sites Remedial Action Program (FUSRAP), and it detailed the contaminants associated with the early atomic energy program, including certain VOCs that are contaminants of potential concern (COPCs) at the Site. The RI report indicates that historical operations at the Sylvania Properties resulted in releases of wastes to the ground surface, leach pools, drywells, and recharge basins/sumps, resulting in primarily PCE, uranium, and nickel impacts to soils and groundwater.

The USACE RI report provides detailed information regarding the extent of contamination, including PCE plumes emanating from multiple, on-property features, extending up to 8,500 feet south of the Sylvania Properties. Concentrations of PCE in groundwater were generally highest immediately downgradient of the eastern portion of the Sylvania Properties (at concentrations between 8,000 to 16,000 µg/L) at a depth of 80 feet bgs. Nickel and uranium plumes were also identified, however, these plumes were found to be limited in extent to beneath the former Sylvania Properties. Additional information regarding the findings of the RI can be found in the USACE RI report, dated September 2021.

In 2022, the USACE performed a pilot study on the eastern portion of the Sylvania Properties to evaluate the effectiveness of air sparging/soil vapor extraction to remediate soils and shallow groundwater contaminated with VOCs. EPA anticipates receiving a report summarizing the results of the pilot study soon.

The former GI Facility, located on West John Street and adjacent to the Sylvania Properties to the south, was constructed in 1960 for the manufacture of electric components including semiconductor products and circuits. Operations continued at the property until 1993.

Investigations at the GI Facility began in 1971 and identified PCE, TCE, 1,2-dichlorobenzene (1,2-DCB),

toluene, ethylbenzene, and xylene as the primary contaminants resulting from releases at two areas in the vicinity of USTs. Beginning in 1980, cleanup activities under the authority of NYSDEC at the GI Facility included the removal of USTs and the excavation of approximately 25 cubic yards of soil. Soil samples indicated concentrations of total VOCs greater than 20,000 mg/kg. In 1994, an SVE system was installed as an interim remedial measure under the authority of the NYSDEC, however, the system was shut down in 1995 because of mechanical problems.

In March 1997, NYSDEC selected a remedy under its State authorities to address the on-property soil contamination that included an expansion of the SVE system at three areas. The SVE system operated to address on-property soil contamination before being discontinued in two areas in 2003, and completely shut-down in 2012. For more information regarding the SVE system, refer to *Operable Unit 1, SVE System Closure Sampling in Area A*, dated 2013.

In 2003, under NYSDEC oversight, Vishay GSI, Inc. (Vishay), the successor corporate entity to General Instruments Corporation, installed an in well air stripping system to treat VOC-contaminated groundwater attributable to the GI Facility. Through 2009, the system treated approximately 224 million gallons of groundwater and removed approximately 2,559 pounds of VOCs. An evaluation of five years of system performance since its inception resulted in Vishay shutting down the system in 2009. For more information regarding the operation of this system, refer to *Operable Unit 2 – Groundwater IRM Final Progress Report*, dated 2009.

EPA is currently overseeing the preparation of a supplemental RI report by Vishay to determine the nature and extent of contamination at OU2 of the Site related to the GI Facility.

Operable Unit 3

In 2015, EPA began an RI/FS of the groundwater contamination at OU3, the subject of this Proposed Plan. The investigation, conducted in two phases, included drilling vertical profile borings, installing permanent monitoring wells, and groundwater sampling. As part of the OU3 RI, a total of 12 permanent groundwater monitoring wells were installed and sampled.

RESULTS OF THE OU3 REMEDIAL INVESTIGATION

Phase I

The first phase of work began in 2016. Six VPBs were drilled during Phase I: NCOU3-B01 through NCOU3-B06 (refer to Figure 2). As part of the drilling process, groundwater samples were collected at 20 to 30-foot intervals as the boreholes were advanced. The method employed ensured that a representative groundwater sample was collected from each interval. The samples collected as part of the VPB effort are referred to as groundwater screening profile samples. At each borehole, sample collection began at the water table, and then from either 147 to 197 feet bgs, depending on the borehole location, to the borehole termination depth at the top of the Raritan Formation, around 600 feet bgs.

During Phase I, 103 VPB groundwater screening profile samples were collected and analyzed for VOCs. The VPB results indicated a 'clean' lens of groundwater to a depth of approximately 200 feet bgs. Generally, the highest levels of contamination were observed in the eastern portion of OU3 between depths of 350 to 500 feet bgs, with levels of contamination decreasing with increased depth from that interval. The highest detection of total VOCs in VPB groundwater screening profile samples during Phase I was observed in NCOU3-B03 (8,667 µg/L) at a depth of 382 feet bgs.

Nine monitoring wells were subsequently installed and developed in the completed VPB boreholes during Phase I (NCOU3-MW-01S/D, NCOU3-MW-02S/D, NCOU3-MW-03S/D, NCOU3-MW-04, NCOU3-MW-05, and NCOU3-MW-6) (Figure 2). Monitoring well screen depths were selected based on groundwater profile screening sampling results and other observed conditions, such as lithology.

Following the installation of the monitoring wells, a round of synoptic water level measurements were collected in January 2019 to gain a better understanding of groundwater flow conditions in the OU3 study area. The groundwater flow direction was determined to be consistent with previous studies at the Site and confirmed a flow generally oriented in a south-southwest direction.

In addition, groundwater samples were collected in January 2019 from each of the Phase I monitoring wells in OU3, as well as 13 existing monitoring wells located within OU1 and Eisenhower Park. The parameters for this sampling event were expanded to include additional compounds, such as metals and semi-volatile organic compounds

(SVOCs). The highest concentrations of PCE (6,500 µg/L) and TCE (530 µg/L) in OU3 were detected in NCOU3-MW-03S at a depth of 380 feet bgs. Other frequently detected VOCs included 1,1,1-trichloroethane (1,1,1-TCA), 1,1-DCE, and cis-1,2-DCE, at maximum concentrations of 17 µg/L, 120 µg/L, and 610 µg/L, respectively. These maximum concentrations were detected in monitoring wells MW-4, MW-3, and MW-MW-17D, respectively, located within OU1. Other compounds detected included iron, sodium, and 1,4-dioxane at maximum concentrations of 52,900 µg/L, 169,000 µg/L, and 22 µg/L, respectively. These maximum concentrations were all detected in monitoring well NCOU3-MW-06, located in OU3.

In addition, in November 2018, a sample collected by EPA personnel from one of the OU3 monitoring wells and analyzed by a laboratory under contract with NYSDEC as part of a State-wide screening for emergent contaminants at Superfund sites revealed the presence of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) at a concentration of 2.18 ng/L and 0.92 ng/L, respectively.

Phase II

The second phase of investigative RI work began in 2021 and was an expansion of the work conducted in Phase I, targeting areas further downgradient. Using the same drilling and sampling methods as Phase I, seven VPBs were drilled, and groundwater screening profile samples were collected and analyzed for VOCs. During Phase II, 125 VPB groundwater screening profile samples were collected and analyzed for VOCs. VPB groundwater screening profile samples from Phase II revealed generally lower concentrations of VOCs than during Phase I. Generally, the highest levels of contamination during the drilling of VPBs in Phase II were observed at depths of approximately 400 to 570 feet bgs, indicating that contamination tends to move with groundwater flow, migrating vertically and horizontally through the subsurface. During Phase II, the highest detection of total VOCs in VPB groundwater screening profile samples was observed in NCOU3-B08 (6,877 µg/L) at a depth of 444 feet bgs.

Several other compounds were detected in the VPB groundwater screening profile samples collected during Phases I and II, with acetone and benzene being the most frequently detected non-chlorinated VOCs, with maximum concentrations of 3,300 µg/L and 290 µg/L, respectively.

Following the drilling of the VPBs, in 2021, three monitoring wells were installed and developed (NCOU3-MW-07, NCOU3-MW-08, and NCOU3-MW-09) to further define the nature and extent of groundwater contamination. The location of each of the VPBs and monitoring wells installed during Phases I and II are shown in Figure 2. The furthest downgradient (south) monitoring well, NCOU3-MW-09, was installed approximately one mile north of the East Meadow water district. The water district supply wells are located south (downgradient) of the Site and Hempstead Turnpike.

Between January and April 2022, EPA conducted two groundwater sampling events, collecting groundwater samples from 26 monitoring wells in OU3 and the surrounding area. The results from these two sampling events were consistent with the previously analyzed groundwater screening profile sampling results. The highest concentrations of PCE, TCE and cis-1,2-DCE detected from the permanent monitoring wells installed as part of the OU3 RI were generally observed in the eastern portion of OU3. The maximum groundwater contaminant concentrations from permanent monitoring wells installed as part of the OU3 RI are included in Table 3 below.

As indicated above, as part of the OU3 RI, the 2022 groundwater sampling events included the collection of samples from select monitoring wells located within OU1. The results indicated the highest concentrations of PCE (5,300 µg/L) and TCE (750 µg/L) were detected in OU1 monitoring well MW-17D at a depth of 280 feet bgs. This monitoring well is located in the eastern plume, upgradient of NCOU3-MW-03S (PCE 3,400 µg/L and TCE 11 µg/L). Therefore, while contaminant concentrations generally reveal a decreasing trend in concentrations with increasing distance from OU1, instances of higher concentrations have been revealed.

During Phase II, other frequently detected VOCs in the OU3 groundwater monitoring wells included 1,1,1-TCA, 1,1-DCE, and cis-1,2-DCE, at maximum concentrations of 8.1 µg/L, 23 µg/L, and 190 µg/L, respectively. These maximum concentrations were detected in NCOU3-MW-08, NCOU3-MW-08, and NCOU3-MW-04, respectively. 1,4-dioxane, a SVOC, was detected during OU3 sampling at a maximum concentration of 28 µg/L in monitoring well NCOU3-MW-06. Additional contaminants considered to be Site-related based on historical OU1 information were detected, and the maximum concentrations for these contaminants are included in Table 3 below. Metals such as sodium, iron, and arsenic were detected in OU3 during Phase II at maximum concentrations of 128,000 µg/L, 109,000 µg/L, and 40.1 µg/L, respectively. These maximum concentrations were all detected in monitoring

well NCOU3-MW-06, located in OU3. However, metals are not considered to be Site-related. Some of the metals detected are naturally occuring in the Magothy Formation, while others may have resulted from urban runoff and stormwater recharge to the aquifer system unrelated to releases at the Site.

For more detailed information regarding the results of the remedial investigation, including a comprehensive analysis of vertical profile boring and groundwater monitoring well samples, please refer to Section 4 of the OU3 RI Report, dated July 2023.

In April and May 2022, EPA collected two additional rounds of synoptic water level measurements. To provide a better understanding of groundwater flow directions at the Site, groundwater elevations were collected from a total of 127 monitoring, municipal, and irrigation wells located in the general area. The data confirmed that groundwater within the UGA and Magothy aquifer in OU3 generally flows in a south-southwest direction with local variations to the southwest and may be impacted by the pumping of active municipal and industrial supply wells and the functioning of stormwater retention basins. The supply wells in the study area range in depth from 200 feet bgs to more than 600 feet bgs. The wells operate for a range of purposes, from municipal water supply and irrigation wells to private industrial wells used for cooling equipment. Water levels were generally between one and three feet higher in 2022 compared to 2019. The difference in groundwater levels may be the result of a combination of seasonal and annual variations in precipitation and/or fluctuations caused by pumping at nearby water supply wells.

An evaluation of natural attenuation conditions was conducted as part of the RI to characterize conditions that may support or inhibit microbial degradation of chlorinated solvents through the process of reductive dechlorination.

Reductive dechlorination is a natural attenuation process that can degrade chlorinated VOCs (CVOCs) by transforming chlorinated compounds such as TCE to other compounds. Other natural attenuation processes can include degradation, dispersion, dilution, sorption, and volatilization. The primary process of attenuation at a site can change through time if subsurface chemical conditions are altered. To assess degradation processes on Site-related contamination, laboratory analyses were performed in 2022 for a series of geochemical parameters to provide information on geochemical conditions, which can impact natural attenuation processes. The following is a summary of the conclusions of the analysis.

- Reductive dechlorination only occurs in anaerobic conditions (less than 0.5 mg/L of dissolved oxygen (DO). DO levels measured in the OU3 study area indicated a broad range of conditions in the aquifer ranging from oxygen depleted to oxygenated approaching saturation. In general, wells with depths greater than 400 feet bgs showed anaerobic conditions (oxygen depleted). The analyses indicated that anaerobic conditions necessary for reductive dechlorination are not widespread throughout the OU3 study area.
- Iron and manganese play a role in both biotic (biological) and abiotic (physical or chemical) degradation of CVOCs, and increased concentrations can be indicative of their reduction to more soluble forms as a result of microbial degradation. Elevated levels of iron and manganese were observed in select monitoring wells.
- For reductive dechlorination to occur, sulfate in the groundwater must be less than 20 mg/L. Analytical results indicate that sulfate levels were below this value throughout the OU3 study area, indicating the potential for natural attenuation to occur.
- Chloride is produced during reductive dechlorination and can be an indicator of biological activity. Chloride was detected in each sample collected as part of the RI, indicating the potential for natural attenuation to occur. Chloride in groundwater could also be naturally occuring or related to urban run-off impacting groundwater.

Geochemical characteristics indicate that anaerobic conditions favorable for microbial degradation are present in isolated areas but are not widespread throughout OU3. The presence of PCE and TCE metabolites indicate that CVOC degradation is occuring to some degree, but the lack of vinyl chloride indicates that reductive dechlorination is not moving beyond 1,2-DCE on a wide scale. Anaerobic conditions favorable for microbial degradation of CVOCs may be present in isolated areas within silts and clays at greater depths in the aquifer. The presence of 1,1-DCE indicates that abiotic degradation of TCA may also be occuring. Some degree of dilution and dispersion are also expected to occur as contamination migrates downgradient.

The OU3 RI Report contains additional details for all sampling results, including an in-depth analysis of the fate and transport and nature and extent of contamination in the study area. The OU3 RI Report, Feasibility Study, and other Site-related documents are included in the Administrative Record file for this action, which is available at the Public Information Repositories and online. EPA encourages the public to review these documents to gain a more

comprehensive understanding of the Site and the Superfund activities that have been conducted.

PRINCIPAL THREAT WASTE

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (40 CFR § 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. Source material includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or air, or acts as a source for direct exposure. Principal threat wastes are source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. Contaminated groundwater is generally not considered to be source material. As such, there are no principal threat wastes in OU3. Please refer to the text box, "What is a Principal Threat", for more information on the principal threat concept.

WHAT IS A "PRINCIPAL THREAT"?

The National Oil and Hazardous Substances Pollution Contingency Plan establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, non-aqueous phase liquids in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

RISK SUMMARY

As part of the RI/FS, a baseline human health risk assessment (HHRA) was conducted for OU3 to estimate the risks and hazards associated with the current and future effects of contaminants on human health and the environment. A baseline HHRA is an analysis of the potential adverse human health effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate these exposures under current and future site uses. A screening level ecological risk assessment was not conducted because the purpose of such an assessment is to assess the risk posed to ecological receptors, and because the OU3 contaminated groundwater does not discharge to any surface water bodies within the OU3 study area, exposure pathways are not complete, and ecological receptors are not exposed to contaminants from OU3 of the Site.

In the HHRA, the cancer risk and noncancer health hazard estimates are based on current reasonable maximum exposure scenarios and were developed by taking into account various health protective estimates about the concentrations, frequency and duration of an individual's exposure to chemicals selected as COPCs, as well as the toxicity of these contaminants.

Human Health Risk Assessment

A four-step human health risk assessment process was used for assessing Site-related cancer risks and noncancer health hazards in the absence of any remedial action. The four-step process is comprised of: Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization (see text box on page 10, "What is Risk and How is it Calculated") for more details on the risk assessment process.

The HHRA began with selecting COPCs in groundwater that could potentially cause adverse health effects in exposed populations. COPCs are selected by comparing the maximum detected concentrations of each chemical identified with state and federal risk-based screening values.

The COPC screening conducted in the HHRA identified 27 COPCs, including 13 VOCs and 1,4-dioxane. All identified COPCs can be found in Table 3-3 of the HHRA, and the identified COPCs were evaluated further in the risk assessment. COPCs at concentrations similar to background or not considered to be Site-related are carried through the quantitative portion of the HHRA but not identified as primary COPCs for OU3 of the Site.

The exposure assessment identified potential human receptors based on a review of current and reasonably foreseeable future land use at the Site. The area encompassing OU3 consists primarily of residential properties, some light commercial use, and Eisenhower Park and Eisenhower Golf Course. It is expected that the future land and groundwater use in this area will remain the

same. Based on the current zoning and land use, the HHRA evaluated residential and commercial uses at OU3 of the Site.

Under the current land use scenario, there are no current exposures, however, exposures were considered under the future land use scenario as follows:

- Resident (child/adult): ingestion of and dermal contact with groundwater and inhalation of vapors during bathing/showering activities
- Commercial/Industrial Worker (adult): ingestion of and dermal contact with groundwater

In this assessment, exposure point concentrations (EPCs) were estimated using either the maximum detected concentration of a contaminant or the 95% upper confidence limit of the average concentration. Chronic daily intakes were calculated based on the reasonable maximum exposure (RME), which is the highest exposure reasonably anticipated to occur at OU3 of the Site. The RME is intended to estimate a conservative exposure scenario that is still within the range of possible exposures. A complete summary of all exposure scenarios can be found in the baseline human health risk assessment section of the RI, which can be found in the Administrative Record for OU3 of the Site.

In the risk assessment, two types of toxic health effects were evaluated for COPCs, cancer risk and noncancer hazard. Calculated cancer risk estimates for each receptor were compared to EPA's target risk range of $1x10^{-6}$ (a one-in-one million excess cancer risk) to $1x10^{-4}$ (one-in-ten thousand excess cancer risk). The calculated noncancer hazard index (HI) estimates were compared to EPA's target threshold value of 1. The following section provides an overview of the cancer risks and noncancer hazard estimates associated with exposure to groundwater at the Site.

Cancer risks and noncancer hazards were evaluated for future exposure representative of sitewide groundwater. The populations of interest evaluated were child/adult residents and adult workers. As shown in Table 2, the estimated cancer risk for the child/adult resident of $2x10^{-3}$ exceeded the upper bound of EPA's threshold criteria of $1x10^{-6}$ to $1x10^{-4}$, and the hazard index (169) for the child/adult resident also exceeded the threshold of 1. The COPCs that primarily contributed to elevated noncancer hazards and cancer risks for the child/adult residents were 1,1,2-trichloroethane (1,1,2-TCA), 1,2,3-trichloropropane (1,2,3-TCP), cis-1,2-DCE, PCE and TCE.

Although several metals including arsenic, aluminum, and cobalt also contributed to elevated noncancer hazards and cancer risks for the child/adult resident, these metals are not Site-related.

For adult workers, the estimated cancer risk of $2x10^{-4}$ exceeded the upper bound of EPA's threshold criteria of $1x10^{-6}$ to $1x10^{-4}$, and the hazard index (11) for the worker also exceeded the threshold of 1. COPCs primarily contributing to the elevated risks for future workers were PCE and TCE. In addition, although 1,1,1-TCA, trans-1,2-DCE, 1,1-DCE, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), benzene, vinyl chloride, and 1,4-dioxane were not associated with elevated risk, these chemicals are considered Site-related and exceeded federal and state drinking water and/or groundwater quality standards.

Table 2: Summary of Hazards and Risks Associated with Groundwater

Receptor	Hazard Index	Cancer Risk
Resident - Child (<6 years)	**169**	**2×10^{-3}**
Resident - Adult	**169**	
Worker - Adult	**11**	**2×10^{-4}**

Note: **Bold** indicates value above the acceptable risk range

Vapor Intrusion

A vapor intrusion screening assessment was conducted by reviewing the vertical distribution of contaminants in the OU3 VPB data collected for the RI. The results demonstrated that the upper glacial (0-85 feet bgs) and upper Magothy (85-185 feet bgs) aquifer zones are mostly not contaminated with CVOCs, and the shallowest screening criteria exceedance of any individual compound was at a depth of 147 feet bgs in the OU3 study area. The depth to contaminated groundwater exceeded 100 feet in all VPB sampling conducted. As 'clean' lenses of shallow groundwater have been demonstrated to exist over the deeper OU3 contaminated zones, vapor intrusion in OU3 was not further analyzed.[1]

Summary of Human Health Risks

In summary, the HHRA indicated that future potable use of groundwater at OU3 of the Site would result in elevated noncancer hazards and cancer risks that exceed EPA's

[1] In accordance with the EPA 2015 *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air.*

target threshold values for child/adult residents and workers. Based on the results of the RI and the risk assessment, EPA has determined that the actual or threatened releases of hazardous substances that are present at OU3 of the Site, if not addressed by the preferred alternative, may present a threat to human health or welfare or the environment. It is EPA's current judgement that the preferred remedial alternative identified in this Proposed Plan is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs), to-be-considered (TBC) guidance, and site-specific risk-based levels.

The following RAOs have been established for OU3:

- Prevent or minimize the potential future human exposure (via dermal, ingestion and inhalation) to Site-related contaminants in groundwater at concentrations in excess of federal maximum contaminant levels (MCLs) and State standards;
- Minimize the potential for further migration of groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards; and
- Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the more stringent of federal MCLs or New York State standards.

The groundwater preliminary remediation goals (PRGs) established for OU3 are identified in Table 3.

WHAT IS HUMAN HEALTH RISK AND HOW IS IT CALCULATED?

Human Health Risk Assessment: A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these releases under current- and anticipated future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure (RME) scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at the site in various media (*i.e.*, soil, fish, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants in air, water, soil, etc. that were identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated fish. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" RME scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other noncancer health hazards, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer risks and noncancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten-thousand excess cancer risk;" or one additional cancer may be seen in a population of 10,000 people as a result of exposure to Site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk. For noncancer health effects, a "hazard index" (HI) is calculated. The key concept for a noncancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which noncancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at a site and are referred to as chemicals of concern, or COCs, in the final remedial decision document or the Record of Decision.

Table 3: Preliminary Remediation Goals (PRGs) and Maximum OU3 Groundwater Contaminant Concentrations

Contaminants of Potential Concern (COPCs)[1]	NYSDEC Ground Water Quality Standards (µg/L)	NYSDOH Drinking Water Quality Standards (µg/L)	National Primary Drinking Water Standards (µg/L)	Permanent Monitoring Well Sample Maximum Concentration (µg/L)	Monitoring Well ID	Sample Depth (bgs)
1,1,1-TCA	5	5	200	13 J*	NCOU3-MW-03S	380
1,1,2-TCA	1	5	5	1.1	NCOU3-MW-03D	470
1,1-DCE	5	5	7	23	NCOU3-MW-08	385
1,1-DCA	5	5	NS	11	NCOU3-MW-01S/ NCOU3-MW-07	385/ 425
1,2,3-TCP	0.04	5	NS	0.26 J	NCOU3-MW-05	380
1,2-DCA	0.6	5	5	2.4	NCOU3-MW-04	404
Cis-1,2-DCE	5	5	70	390	NCOU3-MW-03S	380
PCE	5	5	5	6,500	NCOU3-MW-03S	380
Trans-1,2-DCE	5	5	100	9.9	NCOU3-MW-06	440
TCE	5	5	5	530	NCOU3-MW-03S	380
Vinyl Chloride	2	2	2	0.46 J	NCOU3-MW-02D	512
Benzene	1	5	5	0.96	NCOU3-MW-02D	512
1,4-Dioxane	NS**	1	1	28	NCOU3-MW-06	440

*J value indicates estimated concentration.
**NS indicates there is no currently available standard; however, 0.35 µg/L is the NYSDEC ambient water quality guidance value for 1,4-dioxane for discharges to drinking water sources. Treated effluent would meet the New York State 1,4-dioxane effluent limitation of 0.35 µg/L for discharged water.
Note: As indicated above, the PRGs for each COPC is identified based on the more stringent of federal MCL or New York State standard.
Note: Table 3 provides the maximum contaminant concentrations for permanent monitoring wells installed in OU3 as part of the RI/FS.

SUMMARY OF REMEDIAL ALTERNATIVES

Section 121(b)(1) of CERCLA, 42 U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, be cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to reduce permanently and significantly the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. Section 121(d) further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4).

Detailed descriptions of the remedial alternatives for addressing the contamination associated with OU3 of the Site can be found in the FS Report, dated July 2023.

The FS Report presents four groundwater alternatives, including a required "no action" alternative.

The duration for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy with any potentially responsible parties, if possible, or procure contracts for design and construction.

Common Elements

Alternatives 2 through 4 target discrete areas near the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. During the remedial design for each of these alternatives, additional groundwater monitoring wells would be installed, and sampling would be performed to refine the areas with contaminant concentrations greater than 1,000 µg/L. Sampling for emerging contaminants, such as PFOA and PFOS, would be performed during the remedial design. Each of these alternatives, however, provide a different method of groundwater treatment in the northern portion of OU3 and are discussed in further detail below.

[1] The COPCs listed in Table 3 include all site-related contaminants that exceed the federal MCL or New York State groundwater quality standard.

Alternatives 2 through 4 also rely on the hydraulic control of groundwater in the southern portion of OU3 via a network of extraction (pumping) wells near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L (referred to in the FS as the downgradient edge of contamination). During the remedial design, additional groundwater monitoring wells would be installed, and sampling would be performed to refine the areas with contaminant concentrations greater than 100 µg/L. Sampling for emergent contaminants, such as PFOA and PFOS, would be performed during the remedial design. It is estimated that, for each alternative, extraction wells would target a depth range from approximately 200 to 500 feet bgs for extraction. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

For Alternatives 2 through 4, a combination of air stripping, granular activated carbon (GAC), as well as advanced oxidation processes would be used to treat the extracted groundwater at a groundwater treatment plant. Based on the results of the pre-design investigation, the conceptual design for the treatment of the extracted groundwater may be refined to meet discharge requirements.

Treated groundwater would be discharged to one or more of the following: (1) a newly constructed or existing recharge basin; (2) underground infiltration galleries; (3) the sanitary sewer; (4) to surface water; and/or (5) reinjection to groundwater. The specific location for the various components of the groundwater extraction and treatment system have not been determined. For cost-estimating and planning purposes, it was assumed in developing the FS that a centralized groundwater treatment plant would be sited in or in the vicinity of Eisenhower Park. The assumption included that the treatment plant and discharge of treated effluent would require a total area of approximately 2.5 acres. Given the amount of space required and the limited availability of open space in the area, there are limited options for siting the equipment.

While EPA made certain assumptions in the FS for cost-estimating and planning purposes, as part of the remedial design, further evaluation would be conducted to identify potential locations to site the various system components comprising the preferred alternative. If it is determined that parkland, such as Eisenhower Park, is needed to construct and/or operate a portion of the system, EPA would coordinate this effort with Nassau County and endeavor to obtain any necessary approvals (e.g., from the New York State legislature) for the use of parkland for this purpose. As part of this effort, an evaluation would be conducted to determine whether a portion of the treated effluent could be used by the County on a seasonal basis for irrigation purposes at the park.

For these reasons, alternatives to a centralized treatment plant, such as multiple smaller treatment plants, may be considered during the remedial design. In addition, if sufficient capacity were to exist, consideration could be given to treat a portion of the extracted groundwater at a treatment plant intended for a response action at another operable unit of the Site, such as OU1. As indicated previously, the development of the design specifications for the OU1 selected remedy are underway.

Alternatives 2 through 4 also include long-term monitoring to ensure that groundwater quality improves following implementation of these alternatives until clean up levels are achieved, including areas outside of the area of hydraulic control within OU3 through naturally occurring attenuation processes. Under Alternatives 3 and 4, the sampling program would also include monitoring geochemical conditions and degradation byproducts generated by the treatment processes. For each of the active alternatives, the long-term monitoring program would include the installation and sampling of an early-warning monitoring well for the East Meadow water supply well located south of Hempstead Turnpike. During the remedial design, the location of the early-warning monitoring well would be determined to ensure sufficient time for the installation of wellhead treatment to address Site-related contamination, if that is determined to be needed.

Alternatives 2 through 4 also include institutional controls that will rely on current groundwater use restrictions in the form of state and local laws. Specifically, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available. The Site and surrounding area is serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in Nassau County without a State permit. To ensure the remedy remains protective, the above State and County well restrictions will be relied upon. It is intended that a Site management plan (SMP) would be developed to provide for the proper operation and maintenance (O&M) of the OU3 remedy post-construction, and as such it would include long-term groundwater monitoring, confirming institutional controls, periodic reviews, and certifications as applicable.

For Alternatives 2 through 4, an estimated remediation time frame of 30 years is used for developing costs associated

with annual O&M activities. In order to refine the amount of time required for the active remedial alternatives to achieve RAOs, during remedy implementation additional information regarding groundwater pumping rates and naturally occuring attenuation processes, such as dilution and dispersion, would be used to refine remediation time frames. Active remediation would be employed in the area of hydraulic control until the PRGs for each of the COPCs are attained within the targeted treatment area.

Additionally, because it will take longer than five years to achieve cleanup levels under any of the active alternatives, CERCLA requires that a review of conditions at the Site be conducted no less often than every five years until such time as cleanup levels are achieved. These reviews are not considered part of the remedy; they are an independent requirement required by the Superfund law.

Alternative 1: No Action

Capital Cost:	$0
Total O&M Costs:	$0
Total Present-Worth Cost:	$0
Construction Time:	Not Applicable

The NCP requires that a "No Action" alternative be developed as a baseline for comparing other remedial alternatives. Under this alternative, there would be no remedial action conducted at the Site for OU3. This alternative does not include monitoring.

Alternative 2: Groundwater Extraction and Ex-Situ Treatment (Pump & Treat)

Capital Cost:	$51,685,000
Total O&M Costs:	$47,455,000
Total Present-Worth Cost:	$99,140,000
Construction Time:	36 months

This remedial alternative consists of the extraction (pumping) of groundwater from extraction wells and its treatment prior to discharge. Groundwater would be treated to remove contaminant mass from areas of the aquifer with elevated contaminant concentrations, as discussed below.

For the conceptual design, it is estimated that four extraction wells with a combined pumping rate of approximately 450 gallons per minute (gpm) would be installed in the northern portion of OU3, targeting areas of total groundwater contaminant concentrations greater than 1,000 µg/L. In addition, a transect of an estimated five extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge. During the remedial design, pumping tests would be performed to determine capture zones and the exact location and number of extraction wells, pumping rates, and screen locations.

The conceptual design is depicted in Figure 3 of this Proposed Plan and Figure 8-2 in the FS Report. The conceptual design would be refined during the remedial design phase if this alternative is selected.

Alternative 3: Enhanced In-Situ Bioremediation and Pump & Treat

Capital Cost:	$151,582,000
Total O&M Costs:	$51,003,000
Total Present-Worth Cost:	$202,585,000
Construction Time:	54 months

This remedial alternative involves the injection of microorganisms and/or nutrients into the subsurface to create conditions to accelerate the biodegradation of contaminants in groundwater. The end products to this destruction process include carbon dioxide, water, and microbial cell mass. For the conceptual design, it is estimated that approximately 452 permanent injection wells screened at depths ranging from 200 to 500 feet bgs would be installed perpendicular to groundwater flow in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L.

During the remedial design, pilot testing and treatability studies would be performed to determine the radius of influence, location, and arrangement of injection wells, the optimal injection material, volumes and composition, and the frequency of injection events.

In addition, a transect of an estimated six extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

During the remedial design, pump tests would be performed to estimate capture zones and the exact location

and number of extraction wells, pumping rates, and screen intervals.

The conceptual design is depicted in Figure 8-3 in the FS Report. The conceptual design would be refined during the remedial design phase if this alternative is selected.

Alternative 4: In-Situ Chemical Reduction and Pump & Treat

Capital Cost:	$158,113,000
Total O&M Costs:	$39,893,000
Total Present-Worth Cost:	$198,006,000
Construction Time:	54 months

This remedial alternative involves the injection of a solution of oxidizing or reducing agents (usually zero-valent iron (ZVI)) suspended in a microemulsion to chemically convert contaminants in groundwater into less toxic compounds that are more stable, less mobile, and/or inert. The ZVI donates electrons, acting as the reductant in a reaction that removes chlorine atoms from contaminants. For the conceptual design, it is estimated that approximately 452 permanent injection wells screened at depths ranging from 200 to 500 feet bgs would be installed perpendicular to groundwater flow in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L.

During the remedial design, pilot testing and treatability studies would be performed to determine the radius of influence, location, and arrangement of injection wells, the optimal injection material and amendments, volumes, and the frequency of injection events.

In addition, a transect of an estimated six extraction wells with a combined pumping rate of approximately 900 gpm would be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge.

During the remedial design, pump tests would be performed to estimate capture zones and the exact location and number of extraction wells, pumping rates, and screen intervals. The conceptual design is depicted in Figure 8-4 in the FS Report. The conceptual design would be refined during the remedial design phase if this alternative is selected.

EVALUATION OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria set forth in the NCP, namely, overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, cost, and state and community acceptance. Refer to the text box, "Evaluation Criteria for Superfund Remedial Alternatives" for a description of the evaluation criteria.

This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how each compares to the other options under consideration. A more detailed analysis of alternatives can be found in the FS Report.

Overall Protection of Human Health and the Environment

A threshold requirement of CERCLA is that the selected remedial action be protective of human health and the environment. An alternative is protective if it reduces current and potential future risk associated with each exposure pathway at a site to acceptable levels.

Alternative 1 (No Action) does not provide for adequate protection of human health because it does not mitigate potential future risk posed by contaminated groundwater within OU3. Alternatives 2 through 4 include active remedial components that would address groundwater contamination and are intended to restore groundwater quality over the long-term, and therefore Alternatives 2 through 4 are protective of human health and the environment. In the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L, Alternative 2 relies on the extraction and ex-situ treatment of groundwater to reduce groundwater contaminant concentrations, while Alternatives 3 and 4 rely on biological and chemical processes, respectively, to reduce groundwater contaminant concentrations. In the southern portion of OU3, Alternatives 2 through 4 would rely on the extraction and ex-situ treatment of groundwater near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L and would also rely on certain natural processes to achieve the cleanup levels for areas outside the area of hydraulic control.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

Overall Protectiveness of Human Health and the Environment evaluates whether and how an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the Site, or whether a waiver is justified.

Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

Reduction of Toxicity, Mobility, or Volume (TMV) of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

State/Support Agency Acceptance considers whether the State agrees with EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Finally, Alternatives 2 through 4 limit exposure to residual contaminants until PRGs are achieved through existing institutional controls, as noted above.

Alternatives 2, 3, and 4 would achieve the RAOs. Alternative 1 (No Action) would not achieve RAOs. Because Alternative 1 is not protective, and this criteria is a threshold criteria, it is eliminated from consideration in this evaluation of the nine criteria.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

EPA and New York State have promulgated MCLs (at 40 CFR Part 141, and 10 NYCRR, Chapter 1, respectively), which are enforceable standards for various drinking water contaminants (chemical-specific ARARs). Chemical-, location-, and action-specific ARARs were identified in the July 2023 FS Report.

The aquifer at OU3 of the Site is classified as Class GA (6 NYCRR 701.18), meaning that it is designated as a potable water supply and is a sole source aquifer. Because area groundwater is a source of drinking water, the MCLs are applicable or relevant and appropriate requirements. The federal MCLs and State standards for OU3 groundwater are identified in Table 3, above. If the standards are not equivalent, compliance with the more stringent standard is required.

Alternative 2 would comply with all chemical-specific ARARs, while Alternatives 3 and 4 may not treat 1,4-dioxane in the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. Alternatives 3 and 4 would treat 1,4-dioxane in groundwater near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L through extraction and ex-situ treatment.

Under all the active treatment alternatives, naturally-occuring attenuation processes would be relied upon to achieve PRGs in areas outside of hydraulic control. Table 3 provides the PRGs for each of the COPCs in groundwater at OU3. Refer to Table 4-1A in the FS Report for information regarding chemical-specific ARARs.

Alternatives 2 through 4 would comply with location-specific ARARs, TBCs or other guidance, such as Federal Emergency Management Agency Executive Order 11988 and NYSDEC Floodplain Management Criteria, in the event any construction activities were to take place within floodplains. Alternatives 2 through 4 would comply with action-specific ARARs, TBCs or other guidance, such as the Clean Water Act and the NYSDEC State Pollution Discharge Elimination System regulations governing discharges of treated water from the treatment plant. Refer to Table 4-1B and Table 4-1C in the FS Report for details.

Long-Term Effectiveness and Permanence

Groundwater extraction and ex-situ treatment under Alternatives 2 through 4 is considered an effective method for addressing groundwater contaminated with the COPCs at this OU. Alternative 2 would provide long-term

effectiveness and permanence via the pumping and treatment of contaminated groundwater. Alternatives 3 and 4 would include in-situ treatment processes to treat areas of total groundwater contaminant concentrations greater than 1,000 µg/L, while contaminants not treated in-situ would be extracted for treatment via a pump and treat system near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L. Alternatives 2 through 4 would provide hydraulic control to minimize migration of the contamination.

All three of the active alternatives rely on a combination of one or more of treatment, naturally-occuring attenuation processes for areas outside of treatment, and institutional controls.

Alternatives 2, 3 and 4 would require routine groundwater quality, performance, and administrative monitoring, and while required independently from the alternatives, CERCLA five-year reviews would also occur. As such, each of these alternatives provides a similar level of long-term effectiveness and permanence.

Potential site impacts from climate change have been assessed, and the future performance of these alternatives are currently not at risk as a result of the effects of climate change in the region and near the Site.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives 2 through 4 would reduce the toxicity, mobility, and volume of contaminants at OU3 through treatment of contaminated groundwater. Alternative 2 would provide the greatest reduction in mobility, toxicity, and volume of contaminants through the extraction and treatment of the greatest volume of groundwater of the three alternatives. Alternatives 3 and 4 would reduce the toxicity and volume of contaminants in the northern portion of OU3 via in-situ treatment, but they would rely on natural attenuation processes and ex-situ treatment of downgradient groundwater to reduce the toxicity and volume of 1,4-dioxane. Alternative 2 reduces the mobility of contaminants by creating a gradient for contamination migration towards the extraction wells in the northern as well as the southern portion of OU3. Alternatives 3 and 4 would rely on extraction and ex-situ treatment in only the southern portion of OU3 to reduce mobility of contaminants. This is not the case in the northern portion because the injection of amendments in the northern portion of OU3 does not reduce the mobility of contaminants while the degradation processes are underway.

Short-Term Effectiveness

Alternatives 2 through 4 would be effective in the short-term at controlling the migration of contaminated groundwater and removing contaminants from the aquifer. Remedy-related construction under Alternatives 2 through 4 would include drilling extraction wells, installing underground conveyance piping, constructing one or more treatment plants, and developing discharge locations. Alternatives 3 and 4 would also involve installing an estimated 452 injection wells to a depth of up to 500 feet bgs, and would present the most noise impacts, while Alternative 2 would involve the construction of expansive groundwater conveyance piping networks in residential neighborhoods, resulting in the greatest potential impacts to traffic. Alternatives 2 through 4 present short-term impacts to the local communities, however, these disruptions could be minimized through noise and traffic control plans, as well as community air monitoring during construction to minimize any potential impacts to the community, remediation workers, and the environment.

The potential for remediation workers to have direct contact with the contaminants in the groundwater could also occur when groundwater remediation systems are operating under Alternatives 2 through 4 as groundwater would be extracted to the surface for treatment and could result in increased risks of exposure, ingestion, and inhalation. However, measures could be implemented to mitigate exposure risks through the use of personal protective equipment and standard health and safety practices. Alternatives 2 through 4 include monitoring that would provide the data needed for proper management of the remedial processes and a mechanism to address any potential impacts to the community, remediation workers, and the environment.

Groundwater monitoring and discharge of treated groundwater would have minimal impact on workers responsible for periodic sampling. The estimated time frame required to implement the construction of Alternative 2 is approximately three years. Alternatives 3 and 4 are estimated to take approximately four and a half years to implement (operating the treatment system for all three alternatives is estimated at 30 years).

For cost estimating and planning purposes, EPA estimated in the FS that RAOs would be achieved for the groundwater in Alternatives 2 through 4 in approximately 30 years. The time frame to meet groundwater RAOs in the areas outside of hydraulic control is difficult to predict but is expected to exceed 30 years.

Implementability

The technologies under Alternatives 2 through 4 are established technologies with commercially available equipment and are readily implementable.

Each of the active alternatives involve drilling extraction wells, installing underground piping, and constructing a treatment plant for the extracted groundwater. Given the amount of space required and the limited availability of open space in the densely populated area, limited options are available for the siting of a treatment plant and the discharge of treated effluent.

In addition to these challenges, Alternatives 3 and 4 would require the installation of an estimated 452 permanent injection wells, thereby significantly increasing the construction challenges. Alternatives 3 and 4 would also include follow-up injection events, requiring large-scale mobilizations of equipment and materials. Reconfiguration of the injection well networks because of access constraints could potentially significantly impact the effectiveness of the technology. Given the difficulty of installing hundreds of deep injection wells in a densely populated residential area, Alternatives 3 and 4 are considered less implementable than Alternative 2.

Alternatives 2 through 4 would require routine groundwater quality, performance, and administrative monitoring. Although required independently from the Alternatives, five-year reviews will be conducted. Alternatives 2 through 4 also require periodic O&M of the groundwater treatment plant for the duration of the remediation.

Cost

The estimated capital, O&M, and present worth costs assuming a 7% discount rate over a period of 30 years are presented in Table 4 below and discussed in detail in the FS Report. The cost estimates are based on the best available information. Alternative 1 has no cost because no activities are implemented. The present worth cost for the preferred alternative, Alternative 2, is $99.1 million.

Table 4: Summary of Costs

Alternative	Capital Cost	Total O&M Costs	Present Worth*
1	$0	$0	$0
2	$51,685,000	$47,455,000	$99,140,000
3	$151,582,000	$51,003,000	$202,585,000
4	$158,113,000	$39,893,000	$198,006,000

* 30-year present worth cost calculations includes a 7% discount rate.

State/Support Agency Acceptance

NYSDEC has consulted with NYSDOH and concurs with the preferred alternative.

Community Acceptance

Community acceptance of the preferred alternative will be evaluated after the public comment period ends, and a Responsiveness Summary will be prepared to address significant comments and be included as a section of the ROD memorializing the selection of any remedy for OU3.

PREFERRED ALTERNATIVE

Based upon an evaluation of the remedial alternatives, EPA, in consultation with NYSDEC, proposes Alternative 2, Groundwater Pump and Treat, as the preferred alternative for OU3.

The preferred alternative has the following key components: (1) extraction of the groundwater via pumping; (2) ex-situ treatment of the extracted groundwater prior to discharge to a new or existing recharge basin, underground infiltration galleries, the sanitary sewer, surface water, and/or reinjection to groundwater; (3) long-term monitoring of groundwater and attenuation processes outside the area of hydraulic control; and (4) institutional controls. The location, number, and pumping rates of the extraction wells, specifications for the treatment plant, and discharge locations would be determined during the remedial design. The extraction well network would be designed with the placement of extraction wells near the northern portion of OU3 where total groundwater contaminant concentrations are greater than 1,000 µg/L. In addition, a transect of an estimated six extraction wells would be installed near the portion of the plume containing total groundwater contaminant concentrations of approximately 100 µg/L to establish hydraulic control and reduce the downgradient migration of contamination. During the remedial design, additional groundwater monitoring wells would be installed, and sampling would be performed to refine the areas with contaminant concentrations greater than 1,000 µg/L and 100 µg/L. Sampling for emergent contaminants, such as PFOA and PFOS, would be performed during the remedial design. The extracted groundwater from the pumping wells would be conveyed to a groundwater treatment plant for treatment prior to discharge. Extraction and ex-situ treatment of contaminated groundwater would continue until the cleanup levels for each of the COPCs are attained within the targeted treatment area.

The preferred alternative includes the following additional elements:

- Implementation of a long-term monitoring program to ensure that groundwater quality improves following implementation of this alternative until clean up levels are achieved, including areas outside of the area of hydraulic control through naturally occurring attenuation processes. The long-term monitoring program would include the installation and sampling of an early-warning monitoring well for the East Meadow water supply well that is located south of Hempstead Turnpike. During the remedial design, the location of the early-warning monitoring well would be determined to ensure sufficient time for the installation of wellhead treatment to address Site-related contamination, if needed.

- Institutional controls that will rely on current groundwater use restrictions in the form of state and local laws. Specifically, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available. The Site is serviced by public water systems. In addition, New York State Environmental Conservation Law Section 15-1527 prohibits the installation and use of public drinking water wells in Nassau County without a State permit. To ensure the remedy remains protective, the above State and County well restrictions will be relied upon.

- It is anticipated that a SMP would be developed to provide for the proper O&M of the OU3 remedy post-construction, and it would include plans for long-term groundwater monitoring, confirming institutional controls, periodic reviews, and certifications as applicable.

As part of the remedial design, further evaluation would be conducted to identify potential locations to site the various system components. If it is determined that parkland, such as Eisenhower Park, is needed to construct and/or operate a portion of the system, EPA would coordinate this effort with Nassau County and endeavor to obtain any necessary approvals (e.g., New York State legislature) for the use of parkland for this purpose. As part of this effort, an evaluation would be conducted to evaluate whether some of the treated effluent could be used by the County on a seasonal basis for irrigation purposes at the park.

Alternatives to constructing a centralized treatment plant, such as multiple smaller treatment plants, may be considered during the remedial design. In addition, if sufficient capacity were to exist, consideration could be given to treat a portion of the extracted groundwater at a treatment plant intended for a response action at another operable unit of the Site, such as OU1.

The environmental benefits of the preferred alternative may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with both EPA Region 2's Clean and Green Energy Policy and NYSDEC's Green Remediation Policy.[1] This would include consideration of green remediation technologies and practices, including GAC regeneration.

The total estimated present-worth cost for the preferred alternative is $99,140,000. This is an engineering cost estimate that is expected to be within the range of plus 50 percent to minus 30 percent of the actual project cost. Further detail on the cost is presented in Appendix A of the FS Report.

While the preferred alternative would ultimately result in reduction of contaminant levels in groundwater such that levels would allow for unlimited use and unrestricted exposure, it is anticipated that it would take longer than five years to achieve these levels. As a result, in accordance with CERCLA, the Site is to be reviewed at least once every five years until cleanup levels are achieved and unrestricted use is permissible.

Basis for the Remedy Preference

EPA is proposing Alternative 2 because of the difficulty in implementing Alternatives 3 and 4 in the densely populated and fully-developed residential setting of the Site. In addition to installing the common components associated with the extraction, treatment, and discharge of contaminated groundwater, Alternatives 3 and 4 would also require securing access to install hundreds of injection wells in the residential neighborhood near the northern portion of OU3. In addition, under Alternatives 3 and 4, multiple injection events are likely to be necessary over time. These activities would cause a significant disturbance to the residential neighborhood. Reconfiguration of the injection well networks because of access constraints could potentially significantly impact the effectiveness of the

[1] See http://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy and http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf

technology. Access for the purpose of installing extraction wells and constructing and operating the necessary treatment plant(s) and recharge basin under Alternative 2, though still complicated, is more manageable.

Alternative 2 uses proven technologies that can be more readily implemented than the other alternatives. The treatment components can be optimized to improve the treatment effectiveness or decrease the remedial time frame, if required. Groundwater pump and treat has been demonstrated as an effective remedial approach for contaminant mass removal over the long term. Long-term groundwater monitoring would ensure that RAOs are achieved at OU3 of the Site. The preferred alternative is also considerably less expensive than Alternatives 3 and 4.

Groundwater within the Magothy at the Site generally flows in a south-southwest direction with local variations to the southwest. OU3 is generally downgradient of OU1 and referenced as the far-field area. Individual facilities within the NCIA are considered to be among the sources of groundwater contamination for OU1. Sources of groundwater contamination for OU2 are generally located east of OU1. Response actions for OU1, OU2, and the sources of the contamination at those OUs are not part of this OU3, although the successful completion (i.e., source control or cleanup) of addressing the source area(s) at the upgradient, individual source facilities and the resulting groundwater contamination are anticipated and was assumed in evaluating the potential for attaining the objectives of the preferred alternative for this OU3 ROD.

Based on information currently available, EPA, in conjunction with NYSDEC, believes that Alternative 2, Groundwater Pump and Treat, meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. The EPA expects the preferred alternative to satisfy the following statutory requirements of Section 121(b) of CERCLA: (1) the preferred alternative is protective of human health and the environment; (2) it complies with ARARs; (3) it is cost-effective; (4) it utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) it satisfies the preference for treatment as a principal element. With respect to the two modifying criteria of the comparative analysis, state acceptance and community acceptance, NYSDEC concurs with the preferred alternative, and community acceptance will be evaluated upon the close of the public comment period.

Figure 1: Site Location Map

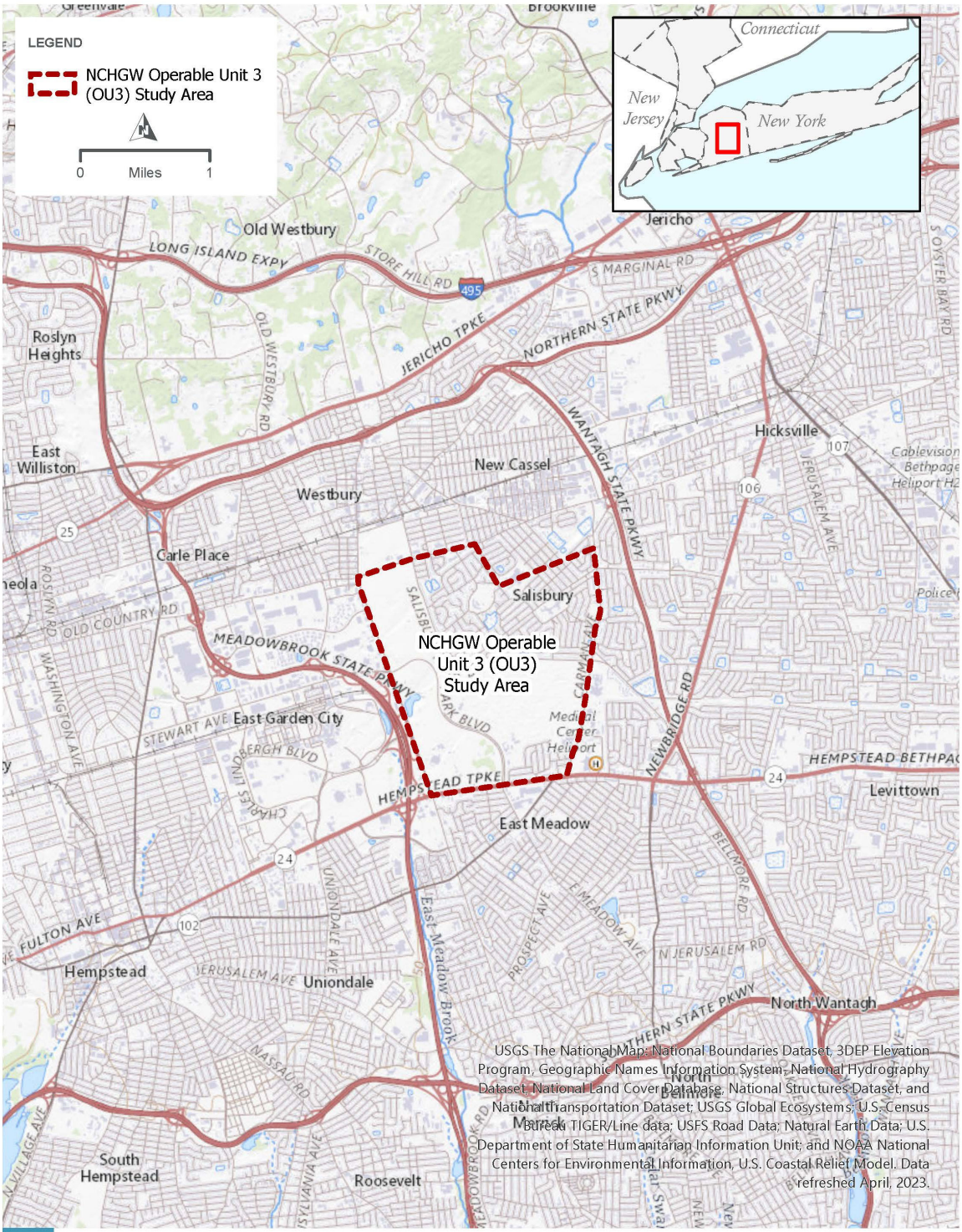


Figure 2: Location of VPBs and Monitoring Wells

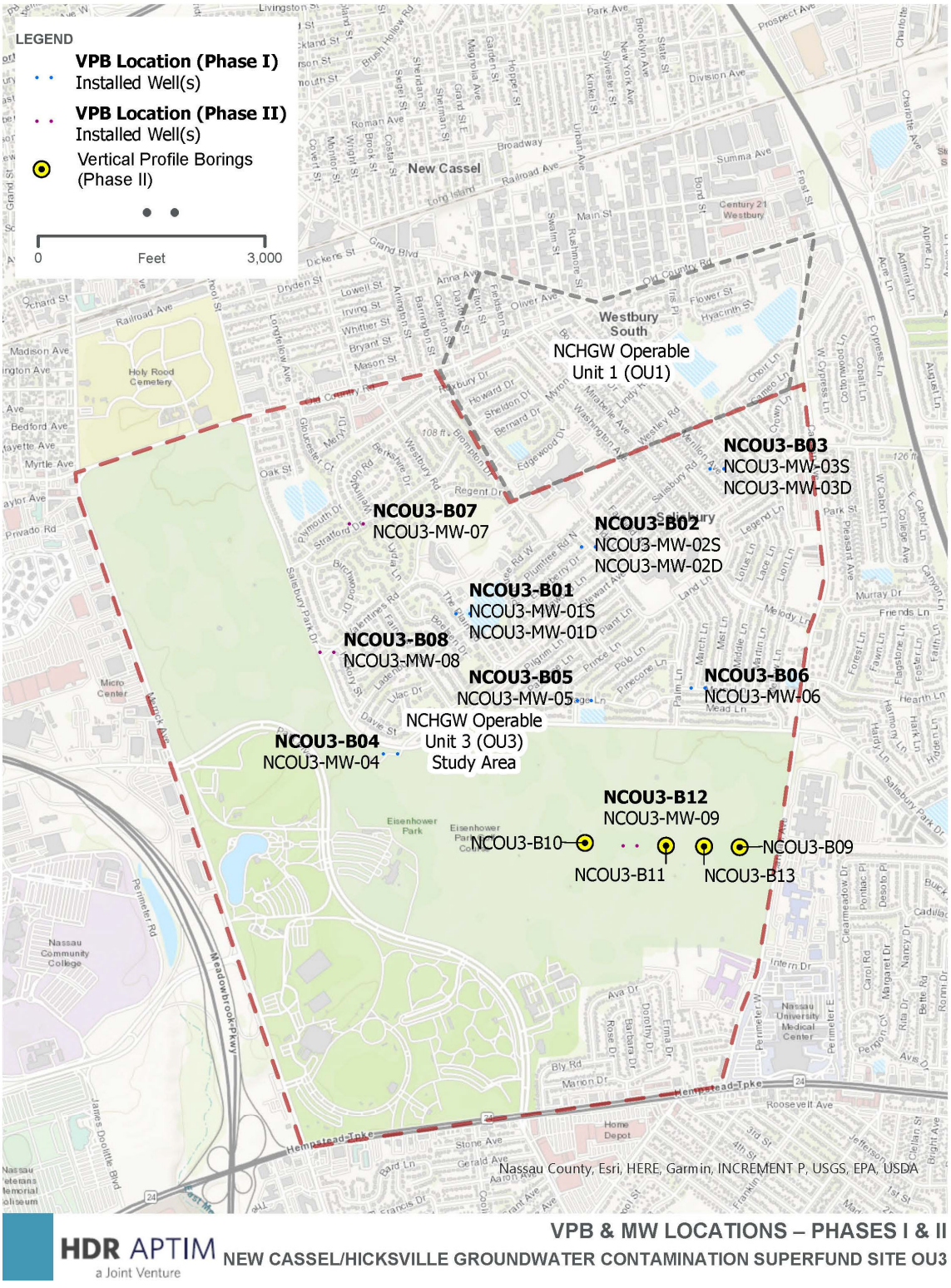
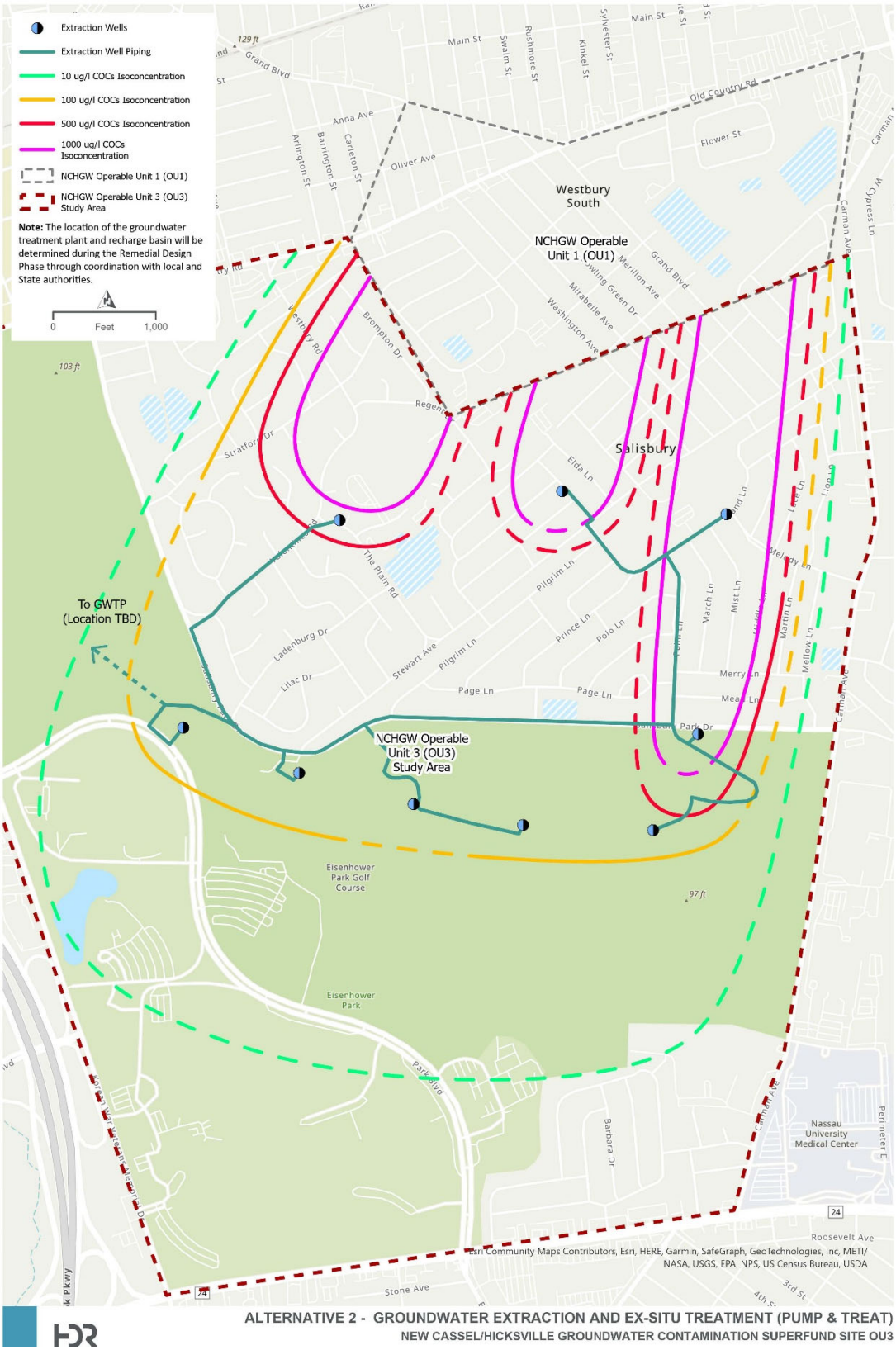


Figure 3: Conceptual Design of Preferred Alternative – Alternative 2 Groundwater Extraction and Ex-Situ Treatment (Pump & Treat)



ATTACHMENT B

PUBLIC NOTICE

EPA Invites Public Comment on a Proposed Cleanup Plan for New Cassel/Hicksville Groundwater Contamination Superfund Site in Nassau County, New York

The U.S. Environmental Protection Agency (EPA) announces the opening of a 30-day public comment period for the proposed plan to address contaminated groundwater at a portion of the New Cassel/Hicksville Groundwater Contamination Superfund site. EPA's plan proposes constructing a water treatment facility and installing a network of wells and underground pipes. The contaminated groundwater would be pumped out of the ground to the water treatment facility where it will be treated until it is safe for drinking, then released. The plan also includes long-term performance monitoring and institutional controls.

A 30-day public comment period on the proposed plan begins on **July 24, 2023** and ends on **August 23, 2023**. As part of the public comment period, EPA will hold an in-person public meeting on **August 10, 2023** from **6:30 to 8:30 p.m.** at **the East Meadow Public Library, 1886 Front St, East Meadow, NY 11554.**

Written comments on the proposed plan must be postmarked no later than **August 23, 2023** and mailed to **Aidan Conway**, Remedial Project Manager, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, NY 10007 or sent electronically to the following address: conway.aidan@epa.gov.

The proposed plan and other site documents are available on EPA's website: www.epa.gov/superfund/new-cassel-hicksville. The public can also contact EPA's Community Involvement Coordinators Maya Greally at 212-637-3588 or greally.maya@epa.gov and Joel Waddell at 212637-3590 or waddell.joel@epa.gov with any questions.

LEGAL NOTICES

Legal Notice # 21797589
Notice of formation of MJCS23 LLC. Articles of Organization filed with the Secretary of State of New York SSNY on 03/31/2023. Office located in Nassau. SSNY has been designated for service of process. SSNY shall mail copy of any process served against the LLC 7823 Langdale Street, New Hyde Park, NY 11040 . Purpose: any lawful purpose.

Legal Notice # 21798881
Notice of formation of Safe Haven Home Inspections LLC. Articles of Organization filed with the Secretary of State of New York SSNY on 6/27/2023. Office located in Nassau County. SSNY has been designated for service of process. SSNY shall mail copy of any process served against the LLC 176 Home St Valley Stream, NY 11580. Purpose: any lawful purpose.

Legal Notice # 21802871
537 Belen Lane LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/13/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to 71 Elizabeth Dr., Bethpage, NY 11714. General Purpose

Legal Notice # 21802572
NOTICE TO BIDDERS SEALED PROPOSALS, invited by Veolia Water Long Island Inc, will be received by the Veolia Water Supply Chain Manager, at the Cedar Creek Water Pollution Control Plant, Building "A", Reception Area, 3340 Merrick Road, Wantagh, New York, no later than **Monday August 21, 2023 until 3:00 PM.** The bids will then be privately opened and reviewed under the supervision of a Nassau County Representative. MBE/WBE contractors are encouraged to bid on this project. Contractors must have an Approved Apprenticeship program to be considered. The contract will be awarded as soon thereafter as practicable for: **Emergency Manhole Repairs.** For more information, Please contact Kenneth Carmine via Phone No. (516) 254-2046 or email Kenneth.Carmine@Veolia.com.

Legal Notice # 21803072
NOTICE TO BIDDERS: Request for Proposals: 008-2023 "Marketing, Branding and Digital Platform Development". Nassau Health Care Corporation a/k/a NuHealth ("NuHealth"), a public benefit corporation created under the laws of the State of New York, seeks: Proposals from providers of Health Care Public Relations and Marketing Firms to meet the needs of Nassau University Medical Center and A. Holly Patterson Extended Care Facility. Proposals will be accepted until 3:00 p.m. on August 7, 2023. A copy of the Request for Proposals may be obtained by referring to the Doing Business with NuHealth link on the NuHealth website: www.numc.edu or during normal business hours (9:00 a.m. to 5:00 p.m. – Weekdays) from: Megan C. Ryan Nassau Health Care Corporation 2201 Hempstead Turnpike East Meadow, NY 11554 (516) 572-6062 mlowe@numc.edu

Legal Notice # 21796732
NOTICE OF SALE SUPREME COURT OF THE STATE OF NEW YORK: COUNTY OF QUEENS. BO KNOWS JY L.P., Pltf v. KINGS EMPIRE GROUP, LLC, et al., Defts. Index No. 713024/2022. Pursuant to judgment of foreclosure and sale dated June 9, 2023 and entered in the Queens County Clerk's office on June 13, 2023, I will sell at public auction at the Queens County Supreme Court located at 88-11 Sutphin Boulevard, Jamaica, New York 11435, on the Courthouse steps, on August 4, 2023 at 11:30 a.m., prem. k/a 112-45 Roosevelt Avenue, Corona, New York, 11368 (Block 1786 Lot 60) and 39-14 114th Street, Corona, New York 11368 (Block 1786, Lots 27 & 61). Approx. amt of judgment is $2,085,165.11 plus costs, attorneys' fees, and interest. Sold subject to terms and conditions of filed judgment and terms of sale. DOMINIC CHIARIELLO, ESQ., Referee. Jacobowitz Newman Tversky LLP, Attys. for Plaintiff, 377 Pearsall Ave., Ste C, Cedarhurst, NY.

Legal Notice # 21802894
40 Midway LV NY LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/7/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to Ms. Carol McKey Harrington, 12 Meadow Pl., Locust Valley, NY 11560. General Purpose

Legal Notice # 21790836
Notice of Formation of a Limited Liability Company (LLC). The name of the LLC is: 225 E. 86TH STREET #302, LLC Articles of Organization were filed with the Secretary of State of New York (SSNY) office on: May 15, 2023 The County in which the Office is to be located: NASSAU The SSNY is designated as agent of the LLC upon whom process against it may be served. The address to which the SSNY shall mail a copy of any process against the LLC is: George Conforti, 97 Brower Avenue, Rockville Center, NY 11570-3037 Purpose: any lawful activity.

Legal Notice # 21802895
Driskies LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/5/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to C/O Schack, 91 Balsar Ct., Syosset, NY 11791. General Purpose

Legal Notice # 21802996
NOTICE TO BIDDERS
Nassau Community College is soliciting Sealed Bids for Bid # CY98-081523-1331; Title: Maintenance and Repair of Barrier Gates Sealed Bids are due by August 15, 2023 at 2:00pm. Bid submittal instructions are contained in the College's Bid document. Site Visit – August 2, 2023 at 10am. All Sealed Bids must be submitted on the College's Bid document only, subject to College terms, conditions and detailed specifications. Bid document can be obtained by download from our website, www.ncc.edu/aboutncc/ourpeople/administration/procurement/aspx/Default.aspx
Dated: 7/20/2023
Office of Procurement

Legal Notice # 21802990
The New York Racing Association, Inc. (NYRA) is soliciting bids to provide various fiber optic and data cabling installation, termination and testing at Belmont Park Racetrack, 2150 Hempstead Turnpike, Elmont, New York 11003. The term of the agreement will be for one year with two optional one-year renewals.
Interested parties may email their request to be added to the bidder listing for the Request for Quotation to procurement@nyrainc.com

NEWSDAY BUY & SELL
Read for savings
Advertise for results!!
631-843-7653(SOLD)

Legal Notice # 21790828
Notice of Formation of a Limited Liability Company (LLC). The name of the LLC is: 13 YARMOUTH RD LLC Articles of Organization were filed with the Secretary of State of New York (SSNY) office on: February 24, 2020 The County in which the Office is to be located: NASSAU The SSNY is designated as agent of the LLC upon whom process against it may be served. The address to which the SSNY shall mail a copy of any process against the LLC is: George Conforti, 97 Brower Avenue, Rockville Center, NY 11570-3037 Purpose: any lawful activity.

Legal Notice # 21800264
Notice of formation of Limited Liability Company. Name: SADA OZ FUND II LLC ("LLC"). Articles of Organization filed with the Secretary of State of the State of New York ("SSNY") on October 12, 2022. NY office location: Nassau County. The SSNY has been designated as agent of the LLC upon whom process against it may be served. The SSNY shall mail a copy of any process to The Limited Liability Company, 1044 Northern Blvd, 2nd Floor, Roslyn, NY 11576. Purpose/character of LLC is to engage in any lawful act or activity.

Legal Notice # 21790835
otice of Formation of a Limited Liability Company (LLC). The name of the LLC is: 111 BRINY AVE #2503, LLC Articles of Organization were filed with the Secretary of State of New York (SSNY) office on: May 15, 2023 The County in which the Office is to be located: NASSAU The SSNY is designated as agent of the LLC upon whom process against it may be served. The address to which the SSNY shall mail a copy of any process against the LLC is: George Conforti, 97 Brower Avenue, Rockville Center, NY 11570-3037 Purpose: any lawful activity.

Legal Notice # 21790837
Notice of Formation of a Limited Liability Company (LLC). The name of the LLC is: 3852 APPLEGATE LANE, LLC Articles of Organization were filed with the Secretary of State of New York (SSNY) office on: May 15, 2023 The County in which the Office is to be located: NASSAU The SSNY is designated as agent of the LLC upon whom process against it may be served. The address to which the SSNY shall mail a copy of any process against the LLC is: George Conforti, 97 Brower Avenue, Rockville Center, NY 11570-3037 Purpose: any lawful activity.

Legal Notice # 21800259
Notice of formation of Limited Liability Company. Name: BRONX PRESERVATION DEVELOPERS LLC ("LLC"). Articles of Organization filed with the Secretary of State of the State of New York ("SSNY") on October 12, 2022. NY office location: Nassau County. The SSNY has been designated as agent of the LLC upon whom process against it may be served. The SSNY shall mail a copy of any process to The Limited Liability Company, 1044 Northern Blvd, 2nd Floor, Roslyn, NY 11576. Purpose/character of LLC is to engage in any lawful act or activity.

Legal Notice # 21800261
Notice of formation of Limited Liability Company. Name: SADA BRONX PRESERVATION LLC ("LLC"). Articles of Organization filed with the Secretary of State of the State of New York ("SSNY") on October 12, 2022. NY office location: Nassau County. The SSNY has been designated as agent of the LLC upon whom process against it may be served. The SSNY shall mail a copy of any process to The Limited Liability Company, 1044 Northern Blvd, 2nd Floor, Roslyn, NY 11576. Purpose/character of LLC is to engage in any lawful act or activity.

Legal Notice # 21802610
The New York Racing Association, Inc. (NYRA) is soliciting bidders to provide pricing, furnish and install Pre-Cast Concrete (T-Shaped) Walls for material storage structures at Belmont Park, in Elmont, NY 11003.
M/W/DBE participation is encouraged.
Interested parties may email their request to be added to the bidder listing for the Request for Quotation to procurement@nyrainc.com.

Legal Notice # 21802543
LEGAL NOTICE
WATER AUTHORITY OF WESTERN NASSAU COUNTY
NEW HYDE PARK, NEW YORK
NOTICE TO BIDDERS
NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Directors of the Water Authority of Western Nassau County, New Hyde Park, New York, until 10:30 a.m. on August 17, 2023 at which time they will be publicly opened and read and the contract awarded as soon thereafter as practicable for a one year contract to supply Mueller Super Centurion 250 Fire Hydrants to the Water Authority of Western Nassau County, in accordance with its requirements.
Detailed specifications, the proposed contract and bid forms for the above mentioned contract are presently available for inspection at the office of the Water Authority of Western Nassau County, 1580 Union Turnpike, New Hyde Park, New York, and copies thereof may be obtained, on regular business days between the hours of 9 a.m. and 4 p.m.
All bids shall be submitted upon the forms provided therefor by the Water Authority of Western Nassau County.
Each bid proposal must be accompanied by a Bid Deposit payable to the Water Authority of Western Nassau County by certified check, bank check or bid bond in the sum of One Thousand ($1,000.00) Dollars.
Bids must be addressed to the Board of Directors, Water Authority of Western Nassau County, 1580 Union Turnpike, New Hyde Park, New York 11040, and submitted in a sealed envelope marked "Proposal - Fire Hydrants" not later than 10:30 a.m. on the date above stated.
No bid may be withdrawn after its acceptance or for a period of forty-five (45) days after being publicly opened and read.
All bid deposits except that of the successful bidder will be returned upon award of the bid. The bid deposit for the successful bidder will be returned within ten (10) days of commencement of the Agreement.
The Board of Directors of the Water Authority of Western Nassau County reserves the right to reject any and all bids in the whole or in part and to waive any informality in the bids and to accept the bid and award the Contract to the lowest, responsible, formal Bidder deemed most favorable to the interests of the Water Authority of Western Nassau County therefor, pursuant to Section 103 of the General Municipal Law.
Upon acceptance of the bid, if the successful bidder fails to enter into a contract pursuant to the requirements of said Board of Directors, then at the sole option of the Water Authority the bid deposit shall be forfeited to the Water Authority of Western Nassau County as liquidated damages and not as a penalty, and the Water Authority shall retain all of its other remedies for damages provided by law.
Dated: July 24, 2023 WATER AUTHORITY OF WESTERN
New Hyde Park, New York NASSAU COUNTY
By: John E. Ryan
Chairmans

Legal Notice # 21801748
NOTICE TO BIDDERS
Sealed Bids will be received in the Office of Procurement at Nassau Community College: One Education Drive, Garden City, New York, Tower Building, 4th Floor until 2:00pm, on August 17, 2023, at which time the Bids, where accompanied with and presented separate from the required Bid Security, will be publicly opened and read aloud on the 11th Floor of the Tower Building, and the contract awarded soon thereafter as practicable for:

Bid No. CY98-081723-1329
Tower Bathroom Renovations
General Construction Contract No. B70089-02G

The project entails the complete gut renovation of all Tower core men's and women's bathrooms located on floors 2 through 12 of the Tower Administration building, as well as the private bathroom located in the Nassau Community College President's office. Work shall include all Architectural; Mechanical, Electrical, Plumbing (MEP); Finishes & Equipment (FE). Principal features of the project include bulk ACM abatement; demolition of all plumbing fixtures; accessories; floor and wall tiles; lighting fixtures and controls; and replacements with new components, as well as modification of existing exhaust and heating systems per Contract documents.
Instructions to Bidders, Form of Bid Bond, Proposal, Form of Agreement, Specifications and the Plans, herein called the "Contract Documents", may be viewed and downloaded at: www.ncc.edu/aboutncc/ourpeople/administration/procurement/aspx/Default.aspx from Monday, July 17, 2023 until Monday, August 14, 2023 at 2:00 pm.
A PROJECT LABOR AGREEMENT, negotiated between Nassau Community College and the Construction Trades Council of Nassau and Suffolk Counties, will be attached in a future addendum.
Security for Bid and List of Subcontractors as set forth herein must be presented with the Bid. FAILURE TO PROVIDE THE REQUIRED SECURITY WILL RENDER THE BIDDER NON RESPONSIVE AND THE BID WILL NOT BE ACCEPTED, OPENED OR READ ALOUD.
All bidders will be held to have accepted all terms and conditions of the bid and Contract Documents, to have examined the site and conditions that may affect the work and to have fully informed themselves of all requirements they will be held responsible to perform. No claim for relief of mistakes in the bid will be entertained after bid response.
SITE VISIT
The pre-bid meeting/walk-through for prospective bidders will be held on Wednesday, July 26, 2023 at 10:00 AM starting on the 11th Floor – Administration Tower (T Bldg.), One Education Drive, Garden City NY 11530. The walk-through shall then proceed to view typical men's and women's bathrooms on the 11th Floor of the Tower. All prospective bidders are encouraged to attend.
This Contract will be subject to Nassau County Local Law No. 9-2002, which requires that firms entering into contracts must participate in registered and approved apprenticeship training programs. At the time of bid submission, the Contractor and its proposed Subcontractors shall submit as part of its bid an affidavit of participation in approved apprenticeship training programs that are appropriate for the type and scope of work to be performed under the Agreement. The apprenticeship training programs shall be registered with, and approved by, the New York State Commissioner of Labor in accordance with Article 23 of the New York State Labor Law. Note that if the Contractor does not comply with these requirements, the College may declare the Contractor's bid proposal non-responsive and award the Contract to the next lowest responsible Bidder.

Notice of formation of Limited Partnership. Name: UNION HOUSING PRESERVATION L.P. ("LP"). Certificate of Limited Partnership filed with the Secretary of State of the State of New York ("SSNY") on October 19, 2022. NY office location: Nassau County. The SSNY has been designated as agent of the LP upon whom process against it may be served. The SSNY shall mail a copy of any process to The Limited Partnership, 1044 Northern Boulevard, Floor 2, Roslyn, NY 11579. The latest date upon which the LP shall dissolve is 12/31/2199 unless sooner dissolved by mutual consent of the partners or by operation of the law. Name/address of each general partner available from SSNY. Purpose: any lawful activity.

Legal 2180177201

EPA United States Environmental Protection Agency

EPA Invites Public Comment on a Proposed Cleanup Plan for New Cassel/Hicksville Groundwater Contamination Superfund Site in Nassau County, New York

The U.S. Environmental Protection Agency (EPA) announces the opening of a 30-day public comment period for the proposed plan to address contaminated groundwater at a portion of the New Cassel/Hicksville Groundwater Contamination Superfund site. EPA's plan proposes constructing a water treatment facility and installing a network of wells and underground pipes. The contaminated groundwater would be pumped out of the ground to the water treatment facility where it will be treated until it is safe for drinking, then released. The plan also includes long-term performance monitoring and institutional controls.

A 30-day public comment period on the proposed plan begins on **July 24, 2023** and ends on **August 23, 2023**. As part of the public comment period, EPA will hold an in-person public meeting on **August 10, 2023** from **6:30 to 8:30 p.m.** at **the East Meadow Public Library, 1886 Front St, East Meadow, NY 11554.**

Written comments on the proposed plan must be postmarked no later than **August 23, 2023** and mailed to **Aidan Conway**, Remedial Project Manager, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, NY 10007 or sent electronically to the following address: conway.aidan@epa.gov.

The proposed plan and other site documents are available on EPA's website: www.epa.gov/superfund/new-cassel-hicksville. The public can also contact EPA's Community Involvement Coordinators Maya Greally at 212-637-3588 or greally.maya@epa.gov and Joel Waddell at 212637-3590 or waddell.joel@epa.gov with any questions.

2180177201

COINS
All American & Foreign Coins Bought. Gold, Silver, Proof sets 60 Yrs Exp. Dan 516-816-1711
All US & Foreign Coins, Stamps bought gold, silver watches Andy 516-508-8473

COLLECTIBLES
BASEBALL Card & Memorabilia
I Buy It All! Pvt. 631-384-6647
CASH 4 COMICS
516-692-1947 Buying Collections, Comics, All Cards, Toys, Toy Soldiers, & Comic Art. Instant Cash!

MERCHANDISE WANTED
BUYING BASEBALL CARDS Also buying FTBL, BBALL, hockey cards. PAYING TOP$$$ lg or sm collections. Prefer pre1980. Also buying graded cards and certified memorabilia Call/text Henry 917-273-2353
$ I BUY SPACE/ AVIATION $
Airlines, Grumman, NASA, Etc. (631) 804 - 5955
$ MILITARY ITEMS WANTED $
FIRE HELMETS ALSO Flight Jackets, Uniforms, Pins, Medals, Swords, Photos, Flags, Bayonets, Knives, Helmets, Patches. All wars 631-804-5955
Old Schwinn Sting-Ray Bikes & Comic books. 516-398-4787
OLD WATCHES WANTED $
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• Auctions
• Home furnishings
• Miscellaneous

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ROCKVILLE CENTRE 11570
INVITED ESTATE SALES!
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SISTERS IN CHARGE
AMITYVILLE, NY 11701
THURS 7/27
72 PURDY LANE
TOO MUCH TO LIST
SISTERS IN CHARGE
FLORAL PARK, NY 11001
TUES 7/25
85 VIOLET AVE
TOO MUCH TO LIST
SMITHTOWN 11787
INVITED ESTATE SALES!
20 Winston Dr Mon 7/24 9:30a Furn, linens, art, records, vntg, tools, shed, gar...

ANTIQUES
ALL THINGS OPTICAL
Cameras, Telescopes, Transits, Microscopes 631 - 235 - 2995
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HELP WANTED
To place a help wanted ad in Newsday please call 631-843-SOLD (7653)
DID YOU KNOW THAT YOU CAN SEE NEWSDAY'S BUY & SELL ADS ON THE INTERNET? www.newsday.com/classifieds

LEGAL NOTICES

Legal Notice # 21803971
SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NASSAU
LAKEVIEW LOAN SERVICING, LLC,
Plaintiff,
-vs- **SUPPLEMENTAL SUMMONS**
Index No. 614162/2018
THYIAS E. PINNOCK; MINOR HEIRS AND UNKNOWN HEIRS TO THE ESTATE OF DANIEL G. DUNN A/K/A DANIEL DUNN; UNITED STATES OF AMERICA O/B/O INTERNAL REVENUE SERVICE; NEW YORK STATE DEPARTMENT OF TAXATION AND FINANCE;
Defendants.
Mortgaged Premises: 1228 WATERVIEW DRIVE ROCKVILLE CENTRE, NY 11570 TO THE ABOVE NAMED DEFENDANT(S):
YOU ARE HEREBY SUMMONED to answer the Complaint in the above entitled action and to serve a copy of your Answer on the plaintiff's attorney within twenty (20) days of the service of this Summons, exclusive of the day of service, or within thirty (30) days after service of the same is complete where service is made in any manner other than by personal delivery within the State. The United States of America, if designated as a defendant in this action, may answer or appear within sixty (60) days of service. Your failure to appear or to answer will result in a judgment against you by default for the relief demanded in the Complaint. In the event that a deficiency balance remains from the sale proceeds, a judgment may be entered against you, unless the Defendant obtained a bankruptcy discharge and such other or further relief as may be just and equitable.

NOTICE
YOU ARE IN DANGER OF LOSING YOUR HOME
If you do not respond to this summons and complaint by serving a copy of the answer on the attorney for the mortgage company who filed this foreclosure proceeding against you and filing an answer with the court, a default judgment may be entered and you can lose your home.
Speak to an attorney or go to the court where your case is pending for further information on how to answer the summons and protect your property.
Sending a payment to your mortgage company will not stop this foreclosure action.

NATURE AND OBJECT OF ACTION
The object of the above action is to foreclose a Purchase Money Mortgage held by the Plaintiff and recorded in the County of NASSAU, State of New York as more particularly described in the Complaint herein.
TO THE DEFENDANT(S), except THYIAS E. PINNOCK the plaintiff makes no personal claim against you in this action.
TO THE DEFENDANT(S), except THYIAS E. PINNOCK:
IF, AND ONLY IF, you have received or will receive a Bankruptcy Discharge Order which includes this debt, the plaintiff is solely attempting to enforce its mortgage lien rights in the subject real property and makes no personal claim against you. In that event, nothing contained in these or any papers served or filed or to be served or filed in this action will be an attempt to collect from you or to find you personally liable for the discharged debt.
YOU MUST RESPOND BY SERVING A COPY OF THE ANSWER ON THE ATTORNEY FOR THE PLAINTIFF (MORTGAGE COMPANY) AND FILING THE ANSWER WITH THE COURT.
NASSAU County is designated as the place of trial. The basis of venue is the location of the mortgaged premises.
Dated: June 8, 2023
VICTOR SPINELLI, ESQ. FEIN, SUCH & CRANE, LLP
Attorneys for Plaintiff
28 EAST MAIN ST., SUITE 1800
ROCHESTER, NY 14614
Telephone No.585/226-7310
NYFC@FEINSUCH.COM XNSRN059

Legal 2180551101

MALVERNE UNION FREE SCHOOL DISTRICT
MALVERNE, NEW YORK
LEGAL NOTICE
CLAIMS AUDITOR

Notice is hereby given that separate bids, submitted in sealed envelopes for **CLAIMS AUDITOR** will be received on:

Wednesday, August 23, 2023 at 10:00 a.m.
301 Wicks Lane, Malverne, NY 11565
Malverne Administration Building

Sealed bids are to be addressed to the attention of Christopher Caputo, Assistant Superintendent for Business, Malverne Union Free School District, 301 Wicks Lane, Malverne, New York 11565.

All bids must be submitted to the Assistant Superintendent, on or before the date and time of opening in sealed envelopes, bearing on the outside the name and address of the bidder and the title of the bid in the lower left-hand corner.

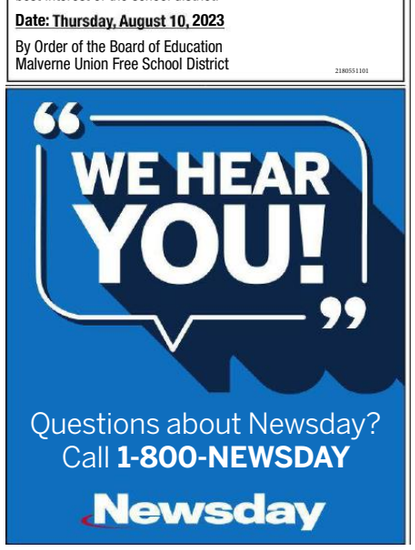
Contact Donna Fecht at **dfecht@malverneschools.org** for the RFP.

The Board of Education reserves the right to award all or a part of this bid or to reject all bids or to make awards which are in the best interest of the school district.

Date: Thursday, August 10, 2023

By Order of the Board of Education
Malverne Union Free School District

2180551101



Legal Notice # 21802046
Notice of formation of RK Anesthesia, PLLC. Articles of Organization filed with SSNY on 07/07/2021. Office located in QUEENS COUNTY. Ryan Kwon designated as agent of the PLLC upon whom process against it may be served. SSNY shall mail copy of any process served against the PLLC to Ryan Kwon at 2728 Thomson Ave #804 Long Island City, NY 11101. Purpose: any lawful purpose.

Legal Notice # 21802467
VERITUS CAPITAL F1 GP LLC . Filed: 6/29/23 . Office: Nassau Co. Org. in Delaware: 4/14/2022. SSNY desig. as agent for process & shall mail to : 152 Oxford Blvd., Garden City, NY 11530. Foreign add: United Corporate Services, Inc., 800 N State St Ste 304, Dover, DE 19901. Arts. of Org. filed with Jeffrey W Bullock Secy Of State Div Of Corporations, 401 Federal St, Dover, DE 19901. Purpose: General.

Legal Notice # 21802208
NASSAU - INDEX NO.: 615850/2022 – SUMMONS. Plaintiff designates NASSAU COUNTY as the place of trial based upon the location of the premises herein described having tax map Section 32, Block 606, Lot 162A & 162B, ELMONT, NY, County of NASSAU – CMG MORTGAGE, INC., PLAINTIFF, -against – AQUIRA NEAL-CLARKE A/K/A AQUIRA CLARKE, AS HEIR TO THE ESTATE OF SHANTAY NEAL, UNITED STATES OF AMERICA – INTERNAL REVENUE SERVICE, NEW YORK STATE DEPARTMENT OF TAXATION AND FINANCE, Any and all persons unknown to plaintiff, claiming, or who may claim to have an interest in, or generally a specific lien upon the real property described in this action; such unknown persons being herein generally described and intended to be included in the following designation, namely: the wife, widow, husband, widower, heirs-at law, next of kin, descendants, executors, administrators, devisees, legatees, creditors, trustees, committees, lienors, and assignees of SHANTAY NEAL, deceased, any and all persons deriving interest in or lien upon, or title to said real property by, through or under them and their respective wives, widows, husbands, widowers, heirs-at law, next of kin, descendants, executors, administrators, devisees, legatees, creditors, trustees, committees, lienors, and assignees, all of whom and whose names, except as stated, are unknown to plaintiff, "JOHN DOE #2" through "JOHN DOE #12," the last twelve names being fictitious and unknown to plaintiff, the persons or parties intended being the tenants, occupants, persons or corporations, if any, having or claiming an interest in or lien upon the premises, described in the complaint, DEFENDANTS. YOU ARE HEREBY SUMMONED to answer the complaint in this action and to serve a copy of your answer, or, if the complaint is not served with this summons, to serve a notice of appearance on the Plaintiff's Attorney within 20 days after the service of this summons, exclusive of the day of service (or within 30 days after the service is complete if this summons is not personally delivered to you within the State of New York); and in case of your failure to appear or answer, judgment will be taken against you by default for the relief demanded in the complaint. NOTICE YOU ARE IN DANGER OF LOSING YOUR HOME If you do not respond to this Summons and Complaint by serving a copy of the answer on the attorney for the mortgage company who filed this foreclosure proceeding against you and filing the answer with the court, a default judgment may be entered against you and you can lose your home. Speak to an attorney or go to the court where your case is pending for further information on how to answer the summons and protect your property. Sending a payment to your mortgage company will not stop this foreclosure action. YOU MUST RESPOND BY SERVING A COPY OF THE ANSWER ON THE ATTORNEY FOR THE PLAINTIFF (MORTGAGE COMPANY) AND FILING THE ANSWER WITH THE COURT. Dated: Syosset, New York, July 13, 2023. Roach & Lin, P.C., attorney for Plaintiff, 6851 Jericho Turnpike, Suite 185, Syosset, NY 11791. Tel: 516-938-3100. To the above named defendants: The foregoing summons is served upon you by publication pursuant to an Order of the Hon. David P. Sullivan, a Justice of the Supreme Court, State of New York, dated April 19, 2023 and filed with the NASSAU County Clerk together with the supporting papers thereon. This is an action to foreclose a mortgage held by Plaintiff on the premises known as Section 32, Block 606, Lot 162A & 162B, ELMONT, NY, County of NASSAU as described in the complaint on file and commonly known as 1588 WOODSTOCK STREET, ELMONT, NY 11003. 77192

Legal Notice # 21806274
LEGAL NOTICE
WATER AUTHORITY OF WESTERN NASSAU COUNTY
NEW HYDE PARK, NEW YORK
NOTICE TO BIDDERS
NOTICE IS HEREBY GIVEN that sealed bids will be received by the Board of Directors of the Water Authority of Western Nassau County, New Hyde Park, New York, until 10:30 a.m. on September 6, 2023, at which time they will be publicly opened and read and the contract awarded as soon thereafter as practicable for a one year contract to furnish and deliver liquid zinc orthophosphate to the Water Authority of Western Nassau County, in accordance with its requirements.
Detailed specifications, the proposed contract and bid forms for the above mentioned contract are presently available for inspection at the office of the Water Authority of Western Nassau County, 1580 Union Turnpike, New Hyde Park, New York, and copies thereof may be obtained, on regular business days between the hours of 9 a.m. and 4 p.m.
All bids shall be submitted upon the forms provided therefor by the Water Authority of Western Nassau County.
Each bid proposal must be accompanied by a Bid Deposit payable to the Water Authority of Western Nassau County by certified check, bank check or bid bond in the sum of Two Thousand ($2,000.00) Dollars.
Bids must be addressed to the Board of Directors, Water Authority of Western Nassau County, 1580 Union Turnpike, New Hyde Park, New York 11040, and submitted in a sealed envelope marked "Proposal - Liquid Zinc Orthophosphate" not later than 10:30 a.m. on the date above stated.
No bid may be withdrawn after its acceptance or for a period of forty-five (45) days after being publicly opened and read.
All bid deposits except that of the successful bidder will be returned upon award of the bid. The bid deposit for the successful bidder will be returned within ten (10) days of commencement of the Agreement.
The Board of Directors of the Water Authority of Western Nassau County reserves the right to reject any and all bids in the whole or in part and to waive any informality in the bids and to accept the bid and award the Contract to the lowest, responsible, formal Bidder deemed most favorable to the interests of the Water Authority of Western Nassau County therefor, pursuant to Section 103 of the General Municipal Law.
Upon acceptance of the bid, if the successful bidder fails to enter into a contract pursuant to the requirements of said Board of Directors, then at the sole option of the Water Authority the bid deposit shall be forfeited to the Water Authority of Western Nassau County as liquidated damages and not as a penalty, and the Water Authority shall retain all of its other remedies for damages provided by law.
Dated: August 10, 2023 WATER AUTHORITY OF WESTERN
New Hyde Park, New York NASSAU COUNTY
By: John E. Ryan, Chairman

Legal Notice # 21802474
VERITUS CAPITAL SG SPV LLC . Filed: 6/29/23 . Office: Nassau Co. Org. in Delaware: 4/6/2023. SSNY desig. as agent for process & shall mail to : 152 Oxford Blvd., Garden City, NY 11530. Foreign add: Zenbusiness Inc., 611 S Dupont Hwy Ste 102, Dover, DE 19901. Arts. of Org. filed with Jeffrey W Bullock Secy Of State Div Of Corporations, 401 Federal St, Dover, DE 19901. Purpose: General.

Legal Notice # 21802908
90 HIDDINK LLC. Filed 6/19/23. Office: Nassau Co. SSNY desig. as agent for process & shall mail to: 390 N Broaway, Ste 200, Jericho, NY 11753. Registered Agent: Robert A Seeman, 1764 White St, North Bellmore, NY 11710. Purpose: General.

Legal Notice # 21803037
NOTICE OF SALE SUPREME COURT QUEENS COUNTY
U.S. BANK TRUST, N.A., AS TRUSTEE FOR LSF9 MASTER PARTICIPATION TRUST, Plaintiff
against
SCOTT GORDON, ESQ., AS LIMITED ADMINISTRATOR FOR THE ESTATE OF KEVIN M. CLAIBORNE AND KEVIN M. CLAIBORNE'S RESPECTIVE HEIRS-AT-LAW, NEXT-OF-KIN, DISTRIBUTEES, EXECUTORS, ADMINISTRATORS, TRUSTEES, DEVISEES, LEGATEES, ASSIGNEES, LIENORS, CREDITORS, AND SUCCESSORS IN INTEREST AND GENERALLY ALL PERSONS HAVING OR CLAIMING UNDER, BY OR THROUGH SAID DEFENDANT WHO MAY BE DECEASED, BY PURCHASE, TITLE OR INTEREST IN THE REAL PROPERTY DESCRIBED IN THE COMPLAINT HEREIN, et al Defendant(s)
Attorney for Plaintiff(s) Fein, Such & Crane, LLP, 28 East Main Street, Suite 1800, Rochester, NY 14614 .
Pursuant to a Judgment of Foreclosure and Sale entered May 19, 2023, I will sell at public auction to the highest bidder at steps of Queens County Supreme Court, 88-11 Sutphin Boulevard, Jamaica, NY 11435 on August 25, 2023 at 10:00 AM. Premises known as 68-09 60th Street, Ridgewood, NY 11385. Block 3513 Lot 8. All that certain plot, piece or parcel of land, situate, lying and being in the Borough and County of Queens, City and State of New York. Approximate Amount of Judgment is $1,164,947.74 plus interest, fees, and costs. Premises will be sold subject to provisions of filed Judgment Index No 703042/2017.
The foreclosure sale will be conducted in accordance with 11th Judicial District's Covid-19 Policies and foreclosure auction rules. The Referee shall enforce any rules in place regarding facial coverings and social distancing. Referee will only accept a certified bank check made payable to the referee.
Nicole D. Katsorhis, Esq., Referee AYSJC048

Legal Notice # 21800828
Dorsainvil Consulting LLC. Filed 4/29/23. Office: Nassau Co. SSNY desig. as agent for process & shall mail to: Frantz Dorsainvil, 281 Pemaco Lane, Uniondale, NY 11553. Purpose: General.

Legal Notice # 21802020
Notice of formation of Devin Phillips Architect PLLC. Articles of Organization filed with the Secretary of State of New York SSNY on 03/29/23. Office located in Queens. SSNY has been designated for service of process. SSNY shall mail a copy of any process served against the PLLC 205-15 Murdock Ave, Saint Albans, NY 11412. Purpose: any lawful purpose.

Legal Notice # 21804724
AG16 LLC . Filed: 6/27/23 . Office: Nassau Co. Org. in DELAWARE: 06/21/2023. SSNY desig. as agent for process & shall mail to : 45 N Station Plz Ste 214, Great Neck, NY 11021. Foreign add: 8 The Green Ste A,, City Of Docer, DE 19901. Arts. of Org. filed with Secy Of State, Division Of Corporations, Jeffery W. Bullock, Townsend Building, 401 Federal St, Ste 3, Dover, DE 19901. Purpose: General.

Legal Notice # 21805358
NOTICE OF SALE SUPREME COURT NASSAU COUNTY
JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, Plaintiff against
KENNETH LEE, et al Defendant(s)
Attorney for Plaintiff(s) Fein Such & Crane, LLP, 28 East Main Street, Suite 1800, Rochester, NY 14614.
Pursuant to a Judgment of Foreclosure and Sale entered June 16, 2015, I will sell at public auction to the highest bidder at North Side Steps of the Nassau County Supreme Court at 100 Supreme Court Drive, Mineola, NY 11501 on September 12, 2023 at 3:30 PM. Premises known as 883 Keene Lane, Woodsburgh, NY 11598. Sec 41 Block 38 Lot 733. All that certain plot, piece or parcel of land, with the buildings thereon erected, situate, lying and being in the Incorporated Village of Woodsburgh, Town of Hempstead, County of Nassau and State of New York. Approximate Amount of Judgment is $1,724,701.58 plus interest, fees, and costs. Premises will be sold subject to provisions of filed Judgment Index No 009767/2009.
The foreclosure sale will be conducted in accordance with 10th Judicial District's Covid-19 Policies and foreclosure auction rules. The Referee shall enforce any rules in place regarding facial coverings and social distancing. If proper social distancing cannot be maintained or there are other health or safety concerns, then the Court Appointed Referee shall cancel the foreclosure auction. Foreclosure Auctions will be held "Rain or Shine."
Mark Ricciardi, Esq., Referee FWMN750

Legal Notice # 21802484
Ikusei Management L.L.C. . Filed: 2/2/22 . Office: Queens Co. Org. in WYOMING: 06/10/2022. SSNY desig. as agent for process & shall mail to its foreign add: 5830 E 2nd St, Ste 7000 #5653, Casper, WY 82609. Arts. of Org. filed with Karl Allred, Herschler Building East, 122 W 25th Ste 100 & 101, Cheyenne, WY 82002-0020. Purpose: General.

Legal Notice # 21803983
EAST HUDSON CAPITAL LLC Auth. filed with SSNY on 07/21/2023. Office: Queens. LLC formed in DE on 10/16/2018. SSNY desg. as agent of LLC upon whom process against it may be served. SSNY mail process to: 27-01 QUEENS PLAZA NORTH , LONG ISLAND CITY, NY, 11101. Arts. of Org. filed with DE SOS. Townsend Bldg. Dover, DE 19901. Any lawful purpose.

Legal Notice # 21805147
NOTICE OF ACTION
Queens County
BEFORE THE BOARD OF MASSAGE THERAPY
IN RE: The license to practice as a Massage Therapist
Mingshu Chi, L.M.T.
14725 Northern Blvd.
3H
Flushing, NY 11354
CASE NO.: 2022-20662
LICENSE NO.: MA72072
The Department of Health has filed an Administrative Complaint against you, a copy of which may be obtained by contacting, H. Michael Farnsworth, Assistant General Counsel, Prosecution Services Unit, 4052 Bald Cypress Way, Bin #C65, Tallahassee Florida 32399-3265, (850) 245-4119.
If no contact has been made by you concerning the above by September 14, 2023, the matter of the Administrative Complaint will be presented at an ensuing meeting of the Board of Massage Therapy in an informal proceeding.
In accordance with the Americans with Disabilities Act, persons needing a special accommodation to participate in this proceeding should contact the individual or agency sending this notice not later than seven days prior to the proceeding at the address given on the notice. Telephone: (850) 245-4640, 1-800-955-8771 (TDD) or 1-800-955-8770 (V), via Florida Relay Service.

Legal Notice # 21806438
Notice of Formation of Fortune Castle III 123 L.P. Certificate filed with Secy. of State of NY (SSNY) on 07/17/23. Duration: 12/31/2173. Office location: Queens County. SSNY designated as agent of LP upon whom process against it may be served. SSNY shall mail process to: Fortune Castle III 123 L.P., c/o The Fortune Society, Inc., 29-76 Northern Boulevard, Long Island City, NY 11101. Name/address of each genl. ptr. available from SSNY. Purpose: any lawful activities.

Legal 2180624201



EPA Extends Public Comment on a Proposed Cleanup Plan for New Cassel/Hicksville Groundwater Contamination Superfund Site in Nassau County, New York

The U.S. Environmental Protection Agency (EPA) issued a proposed plan to address contaminated groundwater at a portion of the **New Cassel/Hicksville Groundwater Contamination Superfund site**. EPA's plan proposes constructing a water treatment facility and installing a network of wells and underground pipes. The contaminated groundwater would be pumped out of the ground to the water treatment facility where it will be treated until it is safe for drinking, then released. The plan also includes long-term performance monitoring and institutional controls.

The public comment period on the proposed plan has been extended an additional 30-days. **The comment period now closes on September 22, 2023**. Written comments on the proposed plan must be postmarked no later than **September 22, 2023** and mailed to **Aidan Conway**, Remedial Project Manager, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, NY 10007 or sent electronically to the following address: conway.aidan@epa.gov.

The proposed plan and other site documents are available on EPA's website: www.epa.gov/superfund/new-cassel-hicksville. The public can also contact EPA's Community Involvement Coordinators Maya Greally at 212-637-3588 or greally.maya@epa.gov and Joel Waddell at 212-637-3590 or waddell.joel@epa.gov with any questions.

Legal Notice # 21800250
Notice of Formation of Maple Insight, LLC. Arts. of Org. filed with Secy. of State of NY (SSNY) on 6/28/23. Office location: Queens County. SSNY designated as agent of LLC upon whom process against it may be served. SSNY shall mail process to: 44-28 Purves St, Apt 23G, Long Island City, NY 11101. Purpose: any lawful activity.

Legal Notice # 21800832
Hidden Intelligence LLC. Filed 5/12/23. Office: Queens Co. SSNY desig. as agent for process & shall mail to: C/O David Situ, 14110 Booth Memorial Ave, Flushing, NY 11355. Purpose: General.

Legal Notice # 21800869
Joyas Alma LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 6/13/2023. Cty: Queens. SSNY desig. as agent upon whom process against may be served & shall mail process to 35-30 94th St., Ste. 2C, Jackson Heights, NY 11372. General Purpose

Legal Notice # 21800874
Jam Venture Holdings LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 2/7/2022. Cty: Queens. SSNY desig. as agent upon whom process against may be served & shall mail process to 104-04 47th Ave., Corona, NY 11368. General Purpose

Legal Notice # 21802312
171-71 46TH AVENUE, LLC, Arts. of Org. filed with the SSNY on 07/10/2023. Office loc: Queens County. SSNY has been designated as agent upon whom process against the LLC may be served. SSNY shall mail process to: The LLC, 17 Juego Road, Santa Fe, NM 87508. Purpose: Any Lawful Purpose.

Legal Notice # 21802359
132 LOCUST STREET LLC Articles of Org. filed NY Sec. of State (SSNY) 7/17/23. Office in Nassau Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 144 Nassau Blvd., West Hempstead, NY, 11552, which is also the principal business location. Purpose: Any lawful purpose.

Legal Notice # 21802732
4better Services LLC. Filed 3/1/23. Office: Queens Co. SSNY desig. as agent for process & shall mail to: 6901 62nd St, B14,, Ridgewood, NY 11385. Registered Agent: United States Corporation Agents, Inc., 7014 13th Ave Ste 202, Bklyn, NY 11228. Purpose: General.

Legal Notice # 21804738
4Z CONSULTING SERVICES LLC. Filed 7/10/23. Office: Nassau Co. SSNY desig. as agent for process & shall mail to: 205 Chester Ave, Massapequa Park, NY 11762. Registered Agent: United States Corporation Agents, Inc., 7014 13th Ave , Ste 202, Bklyn, NY 11228. Purpose: General.

Legal Notice # 21804975
MONTERO 9615 LLC. Arts. of Org. filed with the SSNY on 12/09/22. Office: Queens County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 24-16 40th Avenue, Apartment 18, Long Island City, NY 11101. Purpose: Any lawful purpose.

Legal Notice # 21804987
G&E CONSULTING SERVICES LLC Articles of Org. filed NY Sec. of State (SSNY) 7/31/23. Office in Nassau Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 254-43 Pembroke Ave., Great Neck, NY 11020, which is also the principal business location. Purpose: Any lawful purpose.

Legal Notice # 21806318
Jem NYC Consulting LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/4/2023. Cty: Queens. SSNY desig. as agent upon whom process against may be served & shall mail process to Bobby Boruknov, 58-25 Laurel Hill Blvd., Ste. 2, Woodside, NY 11377. General Purpose

LEGAL NOTICES

Legal Notice # 21809684 Franklyn Holdings, LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/10/2023. Cty: Suffolk. SSNY desig. as agent upon whom process against may be served & shall mail process to 534 Broadhollow Rd., Ste. 302, Melville, NY 11747. General Purpose

Legal Notice # 21809685 Grand Central Bowls, LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 5/5/2023. Cty: Suffolk. SSNY desig. as agent upon whom process against may be served & shall mail process to 1488 Deer Park Ave., #145, North Babylon, NY 11703. General Purpose

Legal Notice # 21809692 John The Plumber LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/26/2023. Cty: Suffolk. SSNY desig. as agent upon whom process against may be served & shall mail process to 27 Washburn St., Lake Grove, NY 11755. General Purpose

Legal Notice # 21810776 2053 East 53rd Place LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/12/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to Michael Sarrel, 2110Smith St., Merrick, NY 11566. General Purpose

Legal Notice # 21810780 2141 Batchelder Street LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 7/12/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to Michael Sarrel, 2110Smith St., Merrick, NY 11566. General Purpose

Legal Notice # 21810852 Kotetsi LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/29/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to George Nerantzinis, 5 Wilshire Rd., Old Bethpage, NY 11804. General Purpose

Legal Notice # 21813981 Notice of Formation of 1421 Taylor Ave. LLC. Arts. of Org. filed with NY Dept. of State on 6/1/23. Office location: Queens County. NY Sec. of State designated agent of the LLC upon whom process against it may be served, and shall mail process to 8537 111th St, Richmond Hill, NY 11418. Purpose: any lawful activity.

Legal Notice # 21814809 DENTAL SMILE SERVICES PLLC Art. Of Org. Filed Sec. of State of NY 9/21/2023. Off. Loc.: Suffolk Co. SSNY designated as agent upon whom process against it may be served. SSNY to mail copy of process to The PLLC, 236 Wyngate Drive, Massapequa, NY 11758-2715, USA. Purpose: The Profession of Dentistry.

Legal Notice # 21808251 85 BAYVIEW 1976 LLC. Arts. of Org. filed with the SSNY on 07/21/23. Office: Suffolk County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 85 Bayview Avenue, Patchogue, NY 11772. Purpose: Any lawful purpose.

Legal Notice # 21808317 CHAMPLIN HOLDINGS, LLC. Arts. of Org. filed with the SSNY on 08/11/23. Office: Suffolk County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 23 7th Street, Locust Valley, NY 11560. Purpose: Any lawful purpose.

Legal Notice # 21808321 HOCKEY FILMS LLC. Arts. of Org. filed with the SSNY on 08/18/23. Office: Queens County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 9608 72nd Road, Forest Hills, NY 11375. Purpose: Any lawful purpose.

Legal Notice # 21810860 German Consstticon LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/25/2023. Cty: Queens. SSNY desig. as agent upon whom process against may be served & shall mail process to 137-54 Westgate St., Jamaica, NY 11413. General Purpose

Legal Notice # 21811149 407 SCANEATELES REALTY LLC Articles of Org. filed NY Sec. of State (SSNY) 8/18/23. Office in Nassau Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 14 Deering Ln., East Rockaway, NY 11158. Purpose: Any lawful purpose.

Legal Notice # 21811153 6 CEDAR PLACE MASTIC, LLC Articles of Org. filed NY Sec. of State (SSNY) 8/24/23. Office in Suffolk Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 251 Commack Rd., Mastic Beach, NY 11951. Purpose: Any lawful purpose.

Legal Notice # 21811993 111 5th Realty LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/30/2023. Cty: Suffolk. SSNY desig. as agent upon whom process against may be served & shall mail process to 502 Ackerson Blvd., Brightwaters, NY 11718. General Purpose

Legal Notice # 21812054 SLB Stables BBG, LLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/24/2023. Cty: Suffolk. SSNY desig. as agent upon whom process against may be served & shall mail process to John Lapolla, 85 Brook Ln., Southold, NY 11971. General Purpose

Legal Notice # 21809676 LAUREL RENTAL LLC. Arts. of Org. filed with the SSNY on 08/25/23. Office: Suffolk County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 205 Oakview Avenue, Farmingdale, NY 11735. Purpose: Any lawful purpose.

Legal Notice # 21809814 Notice of Formation of CHELSEA 115 LLC. Arts. Of Org. filed with SSNY on 07/31/2023. Office location: Queens SSNY desg. As agent of LLC upon whom process against it may be served. SSNY mail process to 136-68 ROOSEVELT AVE, SUITE 6C, FLUSHING, NY 11354. Any lawful purpose.

Legal Notice # 21810768 Diane Grassi RN PLLC, Arts of Org. filed with Sec. of State of NY (SSNY) 8/15/2023. Cty: Nassau. SSNY desig. as agent upon whom process against may be served & shall mail process to 7 Wendy Ln., Massapequa park, NYU 11762. Purpose: Registered Professional Nursing

Legal Notice # 21810819 ROYAL FAMILY ASSETS LLC Articles of Org. filed NY Sec. of State (SSNY) 8/22/23. Office in Suffolk Co. SSNY design. Agent of LLC upon whom process may be served. SSNY shall mail copy of process to The LLC 21 Nidzyn Ave PO Box 829 Rembsenburg NY 33064. Purpose: Any lawful activity.

Legal Notice # 21810866 SEAWAY HOME, LLC Articles of Org. filed NY Sec. of State (SSNY) 8/24/23. Office in Suffolk Co. SSNY design. Agent of LLC upon whom process may be served. SSNY shall mail copy of process to Brent Kirmish 218 Dogwood Dr Wading River NY 11792. Purpose: Any lawful activity.

Legal Notice # 21811982 ACE TT, LLC. Arts. of Org. filed with the SSNY on 08/11/23. Office: Suffolk County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 34 Arthur Avenue, Brookhaven, NY 11719. Purpose: Any lawful purpose.

Legal Notice # 21813155 ADAM DANIEL REALTY LLC. Arts. of Org. filed with the SSNY on 08/09/23. Office: Suffolk County. SSNY designated as agent of the LLC upon whom process against it may be served. SSNY shall mail copy of process to the LLC, 11 Livingston Street, Bay Shore, NY 11706. Purpose: Any lawful purpose.

Legal Notice # 21813585 RONKONKOMA TAP ROOM LLC, Arts. of Org. filed with the SSNY on 09/19/2023. Office loc: Suffolk County. SSNY has been designated as agent upon whom process against the LLC may be served. SSNY shall mail process to: The LLC, 47 Park Ave, Bay Shore, NY 11706. Purpose: Any Lawful Purpose.

Legal Notice # 21812184 ONH RIDGEWOOD, LLC Articles of Org. filed NY Sec. of State (SSNY) 8/10/23. Office in Queens Co. SSNY design. Agent of LLC upon whom process may be served. SSNY shall mail copy of process to The LLC 149 E 39th St NY, NY 10016. Purpose: Any lawful activity.

Legal Notice # 21813312 Plushie Town LLC Articles of Org. filed NY Sec. of State (SSNY) 06/30/2023. Office in Queens Co. SSNY designated Agent of LLC whom process may be served. SSNY shall mail copy of process to 30-94 32nd Street, Astoria NY 11102. Purpose: Any lawful activity.

Legal Notice # 21813403 286 LAKE LLC, Arts. of Org. filed with the SSNY on 09/19/2023. Office loc: Suffolk County. SSNY has been designated as agent upon whom process against the LLC may be served. SSNY shall mail process to: Yamah Omar, 3 Nora Ct, Saint James, NY 11780. Purpose: Any Lawful Purpose.

Legal Notice # 21813666 35-06 REALTY LLC Articles of Org. filed NY Sec. of State (SSNY) 6/22/23. Office in Queens Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 2-21 148th St., Whitestone, NY 11357, which is also the principal business location. Purpose: Any lawful purpose.

Legal Notice # 21814706 COLLINS PLACE LLC Articles of Org. filed NY Sec. of State (SSNY) 9/22/23. Office in Suffolk Co. SSNY desig. agent of LLC whom process may be served. SSNY shall mail process to 150 W. Jericho Tpke., Huntington Station, NY 11746. Purpose: Any lawful purpose.

Legal Notice # 21814899 PRESS MAS LLC, Arts. of Org. filed with the SSNY on 09/26/2023. Office loc: Suffolk County. SSNY has been designated as agent upon whom process against the LLC may be served. SSNY shall mail process to: Juan Paula, 17 Harrison St, Brentwood, NY 11717. Purpose: Any Lawful Purpose.

Legal 2181474501



EPA Further Extends Comment Period on Proposed Cleanup Plan for New Cassel/Hicksville Groundwater Contamination Superfund Site in Nassau County, New York

The U.S. Environmental Protection Agency (EPA) issued a proposed plan to address contaminated groundwater at a portion of the **New Cassel/Hicksville Groundwater Contamination Superfund site**. EPA's plan proposes constructing a water treatment facility and installing a network of wells and underground pipes. The contaminated groundwater would be pumped out of the ground to the water treatment facility where it will be treated until it is safe for drinking, then released. The plan also includes long-term performance monitoring and institutional controls.

The original public comment period was scheduled to end on August 23, and was first extended to September 22. The public comment period on the proposed plan has been further extended an additional 30-days. **The comment period now closes on October 23, 2023**. Written comments on the proposed plan must be postmarked no later than **October 23, 2023** and mailed to **Aidan Conway**, Remedial Project Manager, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, NY 10007 or sent electronically to the following address: conway.aidan@epa.gov.

The proposed plan and other site documents are available on EPA's website: www.epa.gov/superfund/new-cassel-hicksville. The public can also contact EPA's Community Involvement Coordinators Maya Greally at 212-637-3588 or greally.maya@epa.gov and Joel Waddell at 212-637-3590 or waddell.joel@epa.gov with any questions.

2181474501

Merchandise

- Auctions
- Home furnishings
- Miscellaneous

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Freeport- Sat. 9/30 10am-4pm Thomasville furn, clothing, christmas items, dishes, shoes, books, tools, etc. 43 Wilson Pl.

Jamaica Est 11423 Holliswood 19025 Nero Ave "houses sold" everything must go. furniture brick China 2 organs BBQ silver plate bar needs planters art mirrors basement garage. 9/28, 29, 30; 10/1. 10am-4pm

Mattituck Huge yard sale on 09/30,8:30 AM -1:00 Pm. No early birds. Tent, Johnson outboard motor, WS full dinner service. Kitchen Aid, kitchenware. Art, Decor, books, clothing. DR table, 6 chairs, table cloths, lamps. Girl's petite dance costumes. 4605 Wickham Ave.

MERRICK Sat 9/29 and Sun 10/1 9a-4p new winter clothing, collectibles, tote bags, household itmes, fine china, antiques 2024 Brian Dr.

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West Hempstead, 841 Myrna Dr. 9/29, 9/30, 10/1. multi-family garage sale, clothes, holiday & kitchen items, something for everyone

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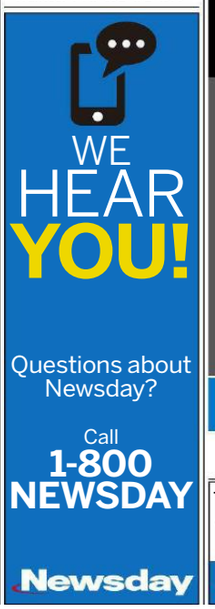
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ATTACHMENT C

PUBLIC MEETING TRANSCRIPT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

- x

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OPERABLE UNIT 3: CONTAMINATED GROUNDWATER

PUBLIC MEETING

- x

East Meadow Public Library
1886 Front Street
East Meadow, New York 11554

August 10, 2023
6:30 p.m.

P R E S E N T:

AIDAN CONWAY,
Remedial Project Manager

MAYA GREALLY,
Community Involvement Coordinator

DEMETRIOS KLERIDES,
Project Manager

JOEL WADDEL,
Community Involvement Coordinator

PETE MANNINO,
EPA Section Supervisor

STEPHANIE KIM,
EPA Human Health Risk Assessor

TOM LIEBER,
EPA Office of Regional Counsel

JULIO VASQUEZ,
Remedial Project Manager

NYSDEC:
Rob DeCandia
Alexander Klein

NYSDOH:
Jacquelyn Nealon

NANCY SILBERGER,
Official Court Reporter

MS. GREALLY: Hi everyone. My name is Maya. I'm here with Joel, we are the community involvement coordinators for the site. Thank you for coming out to the New Cassel/Hicksville Groundwater Contamination Superfund Site Proposed Plan Public Meeting for Operable Unit 3. I'm just going to take a second to go over some logistics and what tonight is going to look like.

So we have bathrooms right out here to the right, in case you need those, and so everyone is aware there are exits on both sides the front here. We are having a stenographer transcribe this meeting so we ask that you hold all your questions until the end of the presentation. At the end of the presentation there will be a Q and A session, and when you ask your question we just ask that you say your name, your affiliation, and then your question.

So I would say, like, my name is Maya. I'm from the EPA, and I want to know where the site is located. And I will go over that again too. This is right before the Q and A.

So now we'll go through the agenda for tonight which is a quick welcome, we'll introduce you to everyone who is here helping out the presentation and are here to answer your questions. We'll have our presentation from Aidan over here and then we'll have the Q and A.

So this is Aidan. He's the Remedial Project

Manager; Maya and Joel, Community Involvement Coordinators. We are the point people if you have any questions or concerns. We have Pete, the EPA section supervisor, and Steph, who is our Human Health Risk Assessor, and Tom Lieber, from the Office of Regional Counsel, and a couple of people from the State, Rob and Alexander, and also Jacqueline. Perfect. So that's our entire crew here to answer anything that comes up. And now I'll toss it over to Aidan.

MR. CONWAY: So thanks everybody for coming out tonight. We are going to be talking about the New Cassel/Hicksville Groundwater Contamination Superfund Site and the proposed cleanup plan to address the groundwater contamination at what we call Operable Unit 3.

So I'm going to start the presentation by giving you some background on the Superfund process, the site itself, and then the investigations that we've conducted. And then we'll go over the results and the proposed cleanup plan and then, like Maya says, we'll have time for any questions.

So the Superfund process begins with what we call a preliminary assessment of the site so when contamination is identified at a source facility we conduct this preliminary assessment to figure out what kind of contamination is present at the site and, based upon that preliminary

assessment, we rank the hazards, and if the Site exceeds certain hazards, it is listed on the National Priority List, and that is what elevates it to the Superfund program. And after it becomes a Superfund site we undertake what's called a remedial investigation. That's, basically, trying to figure out the nature and extent of the contamination that's present at that site. And once we figure that out we conduct what's called feasibility study where we evaluate the remedial alternatives in order to clean up that site.

And once that is complete, that's where we are today, at the proposed plan stage in the Superfund process. So EPA releases a proposed cleanup plan and remedial alternatives to address that contamination, and we involve the community throughout this process to make sure that the community is aware of what's going on in the neighborhood, what the EPA is doing to clean up this contamination. And after 30 days of a comment period, which for this site we've already extended it. We have a 60-day public comment period to allow the community to weigh in, after which we compile what's called the record of decision document which is going to formalize the selection of a remedy at the site.

And then once we have selected a remedy, we go through the remedial design process where we design a remedy and then we'll construct and implement that remedy. And then depending on what that remedy entails after the

construction is completed we will conduct long-term maintenance to make sure that that remedy is cleaning up the contamination.

So today we are obviously talking about the New Cassel/Hicksville Groundwater Contamination Superfund Site. It's located in Nassau County and, specifically, today we are talking about Operable Unit 3, which is, you can see is in red here. It encompasses Salisbury and Eisenhower Park, and with large, complex Superfund sites like the New Cassel/Hicksville groundwater site we split it up into multiple phases, or operable units as we like to call them, so that we can address different geographic areas of contamination or different types of contamination to make sure we are cleaning the Superfund site up in the most efficient way possible.

So to date we have three operable units identified at this site. Operable Unit 1 is located up here, it is south of Old Country Road and Grand Boulevard. Operable Unit 3 in red here is located south of, or down gradient of that, and Operable Unit 2 is the area to the east of there near the Wantagh Parkway.

So to give you a little background on the site and the site history. Investigations began with the State, and in 2011 the site was transferred to the National Priorities List, that's why the EPA took over the site. We compiled

all the data that had been collected prior to that and we issued a supplemental remedial investigation and feasibility study and selected a remedy for the operable unit in 2013. That's that discrete area of groundwater contamination we discussed earlier south of Old Country Road and Grand Boulevard.

Shortly thereafter we began the remedial design process for Operable Unit 1, and as part of that we discovered the contamination in what was called the far-field area, which we call Operable Unit 3 that I just showed you there. So these operable units are being cleaned up kind of concurrently at the same time. In 2016 we began the remedial investigation of that Operable Unit 3 to better identify the contamination there.

In 2018 we issued an order to the potentially responsible parties for those facilities that may have contributed contamination to the site in order for them to conduct the remedial design in Operable Unit 1.

Then in 2019, the EPA continued our remedial investigation by collecting water levels and measurements and groundwater samples from Operable Unit 1 and Operable Unit 3. We drilled six profile borings and installed 9 groundwater monitoring wells. And I'll talk a little bit more about what kind of information that gives us.

Then in 2021 we continued by drilling an additional

seven profile borings, and three more monitoring wells in Operable Unit 3. And with all the data that we collected, we issued the proposed plan in July of 2023 to address groundwater contamination in Operable Unit 3.

So Operable Unit 1 is that area south of Old Country Road and Grand Boulevard. In 2013 we issued that record of decision, and the remedy that was selected included a combination of treatment technologies. So it included the treatment of groundwater with in-well air stripping, which is the forced circulation of groundwater within these wells in order to transfer the contaminants from a liquid to a gas phase, and the primary contaminants that we are seeing in the groundwater are called volatile organic compounds. So these are readily volatilized and transferred from the liquid to the gas phase, and that's one way that we treat them.

We also treat the groundwater by pumping and treating it. So it would be pumped out of the ground and sent to a treatment facility for treatment. And in 2013 the record of decision also included chemical treatment in areas of high contaminant concentrations. In this figure to the right it kind of shows you the conceptual design, and since then we've undertaken the remedial design at OU1. You can see here a number of profile borings and monitoring wells have been installed by the EPA, as well as potentially

responsible parties. A lot of progress has been made in that area.

Those vertical profile borings are installed to give us a better understanding, through drilling into the aquifer or the groundwater, and we can sample the groundwater and the geology at discrete intervals to figure out what kind of contamination is present and at what depths, and we also collected groundwater samples in 2023, back in April, so that we can monitor the groundwater quality over time.

So Operable Unit 2 is that area located to the east of Operable Unit 1 and the New Cassel Industrial Area. There is a couple of source facilities here, including the Sylvania properties -- I'll zoom in here -- located next to Cantiague Park.

The Sylvania properties were involved in the research and development of nuclear elements as a part of the early atomic energy program from about 1952 to about 1966. Cleanup and investigations have been conducted here since about 1992, and using data that has been collected over decades, the Army Corp. of Engineers published a remedial investigation report which detailed the extent of contamination resulting from the atomic energy program.

In 2022, the Army Corp. of Engineers performed a pilot study of the properties to try and evaluate what kind

of treatment technology may be viable there.

The General Instruments site is located just south of and down gradient from the Sylvania properties, and they manufactured electrical components here from the 1960s to about 1993, and investigation and cleanup activities have been conducted since 1971. Currently, EPA is overseeing the preparation of a supplemental remedial investigation report so that we can better understand the contamination in this area.

So now moving on to Operable Unit 3 and the remedial investigation that we have been conducting since 2016, we conducted it in two phases. And the first phase looked at the area here in Salisbury, in the northern portion of the study area. As part of the first phase we installed six vertical profile borings and nine monitoring wells, including three shallow/deep well pairs. So that allows us to look at the groundwater quality in different areas of the aquifer over time.

We also collected water level measurements to better understand groundwater flow directions and flow patterns, and collected groundwater samples for tracking groundwater quality over time.

As part of Phase 2, we looked at the area a little bit further south, or down gradient. In this area we installed an additional seven vertical profile borings and

another three monitoring wells. In the aquifer formation, we collected water level measurements and groundwater samples, and we did geophysical surveys to get a better understanding of the geologic conditions there.

And so what we found through the remedial investigation was that there were a number of primary contaminants of potential concern, and those are those volatile organic compounds that I talked about a little bit earlier. So those include things like Tetrachloroethylene, or PCE, Trichloroethylene, or TCE, and the breakdown components of those compounds.

As those sit in the groundwater, over time they will slowly degrade naturally, and they will break down into other components at a very slow rate, including Cis-1,2-Dichloroethene, Trans-1,2-Dichloroethene and 1,1-dichloroethene, and Vinyl Chloride, and we also discovered 1,4-dioxane in the groundwater.

In this chart, it might be a lot to look at. Just to kind of give you an understanding of some of the contaminants of concern, what concentration we found, in which monitoring well, and at what depth below the ground.

So at the top of this list we have PCE detected at 6,500 micrograms per liter in the groundwater at a depth of 380 feet below the ground surface. In monitoring well 3, as you can see, TCE and Cis-1,2 DCE were also found in high

concentrations in the same monitoring well at the same depth. And after those compounds you can see the maximum detected concentrations drop off pretty significantly. And it's important to also note that you can see the sample depth of these maximum contaminant concentrations are generally about 350 to 515 feet below the ground surface. We are installing very deep wells and we are tracking the water quality in very deep portions of the aquifer formation.

So with the data that we collected through the remedial investigation, EPA conducts what is called the human health risk assessment in order to evaluate potential future exposures to contaminated groundwater. And that's important to point out because currently there are no completed exposure pathways to the contaminated groundwater and nobody can install drinking water wells to access the contaminated groundwater. So the Human Health Risk Assessment only looked at future exposures. Residents in the area receive their drinking water from the public municipal water suppliers that treat their water prior to distribution and to meet all federal and state standards.

So this risk assessment looked at potential future exposures if groundwater were to come in contact with residents in these future scenarios without any treatment.

And what we found was that the future use of

drinkable groundwater would result in elevated risk for child and adult residents, as well as workers at the site. And these are the primary contaminants of potential concern that contributed to the risk: PCE, TCE, Cis-1,2-DCE, as well as 1,1,2-Trichloroethane.

So with that information at hand, the EPA develops what are called Remedial Action Objectives that we put in place to ensure that whatever remedy we implement that it meets the Remedial Action Objectives; and the first one is going to be to prevent or minimize the potential future human exposure through dermal exposure, that's contact with the skin, ingestion or inhalation of site-related contaminants in groundwater at concentrations in excess of federal and state standards.

The second objective is going to be to minimize the potential for any further migration of that groundwater contamination at concentrations that exceed federal and state standards.

And the last Remedial Action Objective is going to restore the impacted aquifer to its most beneficial use, which is a source of drinking water, and by reducing the contaminant levels to the more stringent of the federal or New York State standard.

So now we are going to be talking about the proposed cleanup plan that we put out July 24th which

evaluated four remedial alternatives to clean up the contamination.

The first alternative is a no action alternative. This is required by CERCLA. This alternative would involve no further action at the site. It wouldn't cost anything. However, it would not meet those remedial action objectives. So we really use it as a baseline for comparison while we look at the evaluation of the following alternatives, which I'll talk about in a little more detail in the coming slides.

Alternative 2 is the groundwater pump and treat; alternative 3 is the Enhanced In-Situ Bioremediation and Pump and Treat; and Alternative 4 is the In-Situ Chemical Reduction and Pump and Treat.

And it's important to note that there are some common elements to all of these alternatives that have been proposed. So that includes groundwater pump and treat at the down gradient edge of contamination where you see a total concentration of contaminants of about 100 micrograms per liter in the groundwater. After the groundwater is pumped to a treatment facility it would be treated and discharged. We would also monitor the groundwater quality in the long-term to ensure that it is meeting the remedial action objectives, and we would ensure that institutional controls, such as groundwater use restrictions, would remain

in place to prevent that future exposure.

So the first common element is that groundwater pumping and treatment, and we have proposed a couple of processes for treating contaminants in Operable Unit 3. So the first would be air stripping. This is probably the most common treatment process. It uses groundwater forced through a tower with media to aerate the groundwater and volatilize those contaminants from the liquid to the gas phase where they can be pumped out and treated and discharged. It also includes granular-activated carbon and advanced oxidation processes in order to treat some of the contaminants that may not be treated otherwise.

Then, once the groundwater is treated to meet all federal and state standards it would discharged in one or more of these following options. So either a new or an existing recharge basin, through reinjections to the groundwater, through the underground infiltration galleries, or through discharge to the sanitary sewer system or surface water.

So now we'll talk a little bit more in detail about each of the other alternatives, and you can see this figure to the right here shows you the conceptual design that we came up with for each of the alternatives, and I'll try to break it down into some components.

So Alternative 2 is groundwater pump and treat and

it involves the installation of a series of groundwater extraction wells in order to pump the contaminated groundwater out of the deep portion of the aquifer that we have been talking about. So there is kind of two different types of groundwater extraction wells that would be installed here.

The first component looks at the portion of the study area where there was deemed higher contaminant concentrations, specifically, about 1,000 micrograms per liter of total contaminant concentrations. Those wells would be used to remove the maximum contaminant concentrations.

And in the southern portion of the study area, a series of extraction wells would be installed to create a line of hydraulic control. This would prevent the further migration of groundwater contamination past this point. And then after the groundwater was pumped out of the ground it would be conveyed to a groundwater treatment plant through an underground piping network where it would then be treated, again, to meet federal and state standards, and then discharged through one of those options that we talked about. The total cost of implementing this alternative is estimated to be about $99.1 million dollars.

Alternative 3 is Enhanced In-Situ Bioremediation, and it is similar to Alternative 2. However, when you look

at the northern portion of this study area, rather than installing extraction wells we would install a series of injection well transects perpendicular with the groundwater flow. These injection wells would be used to inject amendments, such as microorganisms and nutrients into the deep groundwater formation in order to aid and accelerate the contaminant biodegradation that is already happening to some extent, albeit on a limited scale.

So these would be installed in the northern portion of the study area where we are seeing about 1,000 micrograms per liter of total contaminants. And then in the southern portion of the study area where we are seeing about 100 micrograms per liter at the downgradient edge of the contamination, a similar series of extraction wells would be installed to create that line of hydraulic control to prevent further contaminant migration.

Similarly, all of that contaminated groundwater would be piped into a new treatment plant where it would then be treated and discharged. And the total cost of this remedial alternative is estimated to be about $202.6 million.

The last alternative that we evaluated is called In-Situ Chemical Reduction. It is very similar to Alternative 3. In the northern portion of the study area we would also install a series of injection wells. It is

estimated that for Alternatives 3 and 4, we may need up to about 450 injection wells in order to achieve remediation.

Here we would install injection wells in order to inject reducing agents, rather than microorganisms and nutrients. So this could be something along the lines of zero-valent iron, and that would accelerate the contaminant degradation that is happening right now at a very slow rate.

Similarly, in the southern portion of the study area, we would have a line of hydraulic control extraction wells. You would have piping to convey the groundwater to the treatment plant for treatment, and then the groundwater would be discharged. The total cost of this alternative is estimated to be about $198 million.

So now that we know all the remedial alternatives that we looked at, EPA then conducts a comprehensive evaluation of these using the nine criteria that you can see here. And the first two are called the Threshold Criteria. We would not select a remedy that did not meet the two threshold criteria. So the remedy has to protect human health and the environment, and it has to comply with state and federal regulations.

Then the following five criteria are balancing, and those are kind of used to compare pros and cons, in order to compare all the alternatives and to allow us to select our preferred.

So that includes things like how well do they treat the contamination in the short term; would they be effective in the long-term; are they going to reduce the toxicity; how implementable are they, and how cost effective are they. And then once we have done that we evaluate them on the modified criteria at the close of the public comment period. And that's going to look at the state and community acceptance of the alternative.

So with all that information in hand, EPA selected Alternative 2 as the preferred alternative. That's groundwater pump and treat, for a couple of different reasons. So it's going to be the most readily implementable. As I had mentioned, Alternatives 3 and 4 involve the construction of approximately 450 injection wells in the northern portion of the study area, which would present a significant disturbance to the community.

Alternative 2 through Alternative 4 all involve the installation of extraction wells, conveyance piping, a treatment plant and a recharge basin. However, Alternative 2 does not require installation of all of those injection wells. So it's going to be the least disruptive to the community and the most implementable.

It's also going to use proven technology, such as the air stripping, the granular-activated carbon, and the advanced oxidation processes we know can treat the

contamination present in the groundwater, and it is also the most cost-effective alternative. If you noticed, it's about a hundred million dollars cheaper than the next most cost-effective alternative.

So the actual cost to construct a plan like this, we estimated to be about $52 million. And in order to operate and maintain the remedy over the course of 30 years, which is what we estimated for the feasibility study, would be about $47.5 million, bringing the total present worth cost to about a little under $100 million dollars.

And so with that, that kind of concludes the presentation. For the next steps, as I had mentioned, the public comment period for the proposed plan is open right now. We have extended it an additional 30 days to allow the community to thoroughly review the documents that we published and to submit comments, after which point on September 22nd we will compile all the comments into what's called a responsive summary. And there we will compile them and respond to each and every comment and we will prepare a record of decision which is going to formalize the selection of the remedy at the site.

So you can address those written comments to me. This is the physical address of the office. You can e-mail them to me at my e-mail up here. You can also find more resources for the site. So we maintain public information

repositories at the Westbury Public Library north of here, as well as the EPA Records Center in Manhattan.

You can also contact the community involvement coordinators if you have any questions, or myself. And you can find all of the information that you need on our website for the New Cassel/Hicksville site. The address is down here. And these slides will be posted there so if you do need anything, you can find that information there. And with that, I think we have plenty of time for any questions and comments.

I think Joel will pass out a microphone, if need be. Otherwise, that conclude today's presentation. Thanks everybody for sitting through that. Any questions right off the bat?

MR. CARDOZO: Dick Cardozo. I was on the original committee which I'm told goes back to the 1990s. You gave the date of 2011 on there. I'm just curious, do you happen to know when the State got involved before the feds did?

MR. CONWAY: Yes. So If I'm not mistaken, I think, initially, the Nassau County Department of Health began investigations in 1986, and then the State took over and conducted some response actions.

MR. BRUCIE: Thank you very much for an excellent presentation. My name is Joseph Brucie. I am President of the council in this community of various organizations.

First question is, assuming that this public commentary period, there was no relation to the communities, when will this work actually start?

MR. CONWAY: So that's a good question. It's kind of variable and it's hard for me to say right now when that work would start. We go through the remedial design phase next. So we would collect additional information following the selection of a remedy. That process could take a few years, if I'm not mistaken, after which point then we would actually begin constructing and implementing that remedy.

MR. BRUCIE: All right. Second question that might lead to a third. The second question, do you have a reference point where you have had a similar situation here on Long Island and this technology has been deployed to do remediation? Do we have like -- like, for example, have you done this before in other areas of Long Island where this technology has been deployed and the outcome has been successful?

MR. CONWAY: Yes. Not in one of my sites, specifically, but maybe, Pete, do you have anything come to your mind maybe?

MR. MANNINO: Yes. The closest site would be the old Roosevelt Field Superfund site. And there we did a pump and treat system for about seven or eight years, and that's been effective.

MR. BRUCIE: And it's been effective, obviously?

MR. MANNINO: In reducing contaminant concentrations, approaching the cleanup levels that are provided in the ROD.

MR. BRUCIE: All right. And one more question, if I may. I think I understood that once this gets started it goes over 30 years. So that's a long time period and I'm not sure you will be around after 30 years, but how does this work and how does the EPA transition to new teams to make sure that this gets done and gets done effectively?

MR. CONWAY: That's a really great question. So my job as the remedial project manager is to oversee the Superfund site for as long as I'm here. So I will oversee the remedial design phase and the next stages of this process. If I were to leave, somebody else would take my place. Pete probably won't be here for too much longer, but a --

MR. BRUCIE: Well, if the project gets started and then somebody would go, that's my concern.

MR. MANNINO: No. The EPA has sufficient resources to see this to completion.

MR. CONWAY: And a lot of these sites take many, many years, sometimes decades, to clean up. So we always ensure that we are doing what it takes to meet those objectives.

MR. BRUCIE: I'm assuming at the end of the 30-year period there will be a notification sent out to say it's all done?

MR. CONWAY: Yes. So what will happen, in sites where the remedy carries on for many years, we conduct what are called the five-year reviews. So after the remedy is constructed and implemented, we begin the five-year review process. So all of our sites, every five years, I believe, do what's called the five-year review with my team of hydro geologists, risk assessors, and we evaluate what kind of progress is being made at the site, if there are any changes that need to be made to the remedy; make any recommendations for the next five years, that kind of thing. So that's part of that process.

MR. BRUCIE: I guess the local water companies are on board?

MR. TROIANO: We're here. My name is Robert Troiano, I'm the Counsel to the Town of North Hempstead, and I've got an interest, governmentally, and then I've got a -- there is a personal interest, as well. It wasn't clear from your presentation if New Cassel enhances it's water and needs to be treated by this project.

MR. CONWAY: So the New Cassel/Hicksville Groundwater Contamination Superfund site comprises a widespread area of groundwater contamination. I believe it

encompasses a number of different well fields over the span of about six-and-a-half square miles. So I think I'm not sure exactly which area within New Cassel you are talking about, but there are a number of State investigations occurring in that area, as well, that could be potentially contributing to the water contamination.

MR. TROIANO: Firstly, you have the New Cassel Industrial Park?

MR. CONWAY: Yes. The New Cassel Industrial area that's right here; is what you are talking about?

MR. TROIANO: Well, yeah. That was in the area that's a little bit south of the industrial park on the left-hand side. That's the part of New Cassel, part of the Town of North Hempstead. So in those two areas their groundwater is still contaminated. I know that they are of working in that area for a long time now. So I'm not sure if that's still going to be a part of this treatment project.

MR. CONWAY: So, I mean, we don't have the exact specifications of that treatment project where that would be sited just yet. That would be done during the remedial design phase. There were two public water supply wells here, the Bowling Green wells, they are no longer in service. So the residents in that area would receive their water from a public municipal water supplier elsewhere. I'm

not exactly sure where it would come from.

MR. TROIANO: So then you mentioned that because these areas are being serviced by a local water company, and they do a great job of making sure the water is potable. But then you also said that future residents, and that people may in some way come close to contaminated water, or make it airborne somehow. I just want to understand how that would happen. And when you say "future," are we talking about 30 years from now, are we talking about five years?

MR. CONWAY: Yes. That's a good question. So the contamination that we are looking at, again, is in the deep portion of the aquifer. So the potential future exposures that would occur would be if somebody illegally installed a well that could reach that contaminated groundwater.

Currently, there are prohibitions on that. In Nassau County you can't install that without a permit, and they do have groundwater use restrictions that would prevent that.

Also, it's very costly to dig down that far. It costs us a lot of money to install a well down there. So I don't think anybody would want to do that. But that's kind of how somebody would be able to come in contact with the contaminated groundwater.

MR. MANNINO: I would just add that we are required

to evaluate the alternatives, as well as any risks absent any institutional controls. So currently there are governmental controls in place that restrict drilling of wells for drinking water purposes. So you are required, under the NCP, to evaluate, absent those controls, would there be potentially unacceptable risks. So the exposure that they describe would be in the event that those institutional controls were no longer in place.

MR. TROIANO: So what I believe they are saying is it really takes a manmade action to bring that water up to the surface level where it could impact people.

MR. MANNINO: That is correct, yes.

MS. GLISCI: Anita Glisci, G-L-I-S-C-I. I am a resident of Merillon Avenue, and my concern is the air intrusion. Have you done any air intrusion studies from what happens to our basements if there are cracks in the aquifer area on the sandy areas going into our homes as a result of these VOCs occurring?

MR. CONWAY: Yes. That's a good question. So as part of the Operable Unit 3 investigation, we evaluated vapor intrusion as a potential pathway. We found that that pathway could not exist at Operable Unit 3 due to the depth of the groundwater contamination. So we didn't encounter any volatile organic compounds until about 170 feet below the ground surface, at which point that vapor intrusion

pathway could not exist. There is enough clean groundwater between that and the top of the water table that we would not expect that to occur.

As part of the Operable Unit 1 work that was done in the earlier 2000's, I believe that the New York State Department of Health conducted a vapor intrusion evaluation. I think it was in like 2007 or 2009, and they tested a couple of properties and a school, and I believe no action was taken at those properties. And one was scheduled for monitoring.

MS. GLISCI: I'm sorry. My question is emerging contaminants. What could we have -- do we have any provisions in this proposal for new emerging contaminants coming out that could be impacting this area? Like, we just found one for 1,4-dioxane a few years ago. We didn't know that it existed. And now we have the technology to be able to test for that. So any future contaminants, would they be included in this proposal to strip -- air strip and remediate?

MR. CONWAY: Yes. So one of the treatment technologies that we talked about in -- a little bit later in the presentation was advanced oxidation processes. And that's kind of the treatment technology to treat for 1,4-Dioxane, and we have included that in this proposed plan.

MS. GLISCI: Will that be part of the Bowling Green water districts ability to treat that?

MR. CONWAY: I don't know if I can speak on that. Is there anybody that can --

MR. REINHART: John Reinhart, Commissioner, Town of Hempstead, Department of Water. For the purposes of this meeting, I guess we are responsible for the Bowling Green water district, the Roosevelt Field water district, the East Meadow water district, and the Levittown water district.

All four of those districts, in one way or the other, are potentially being impacted by this. As we stated earlier, the wells in Bowling Green have actually been offline now for ten years. We took them offline back in 2013, as we felt that there was a contaminant, and it was known as the unregulated contaminant monitoring rule, those were called at that time.

So since that time, Bowling Green has been getting its water from Roosevelt Field and East Meadow. It has been pumped in from those two districts. We have installed an AOP, that's advanced oxidation process treatment, at our wells that are impacted with Dioxane currently over the MCL, and we will continue to keep moving forward on that process to remove any and all presences of Dioxane for our customers. That's a commitment of over $225 million at this point that the Town board has made with that respect.

Right here with me, since we are talking about water, is Paul Granger from the Hicksville water district, equally impacted by this.

Councilman Troiano asked before about the Westbury area, the Westbury water district. I actually was with the Westbury Water District yesterday. The wells that we are talking about, they actually have recently put treatment on those wells and there is another well that they are putting treatment on soon. Right now it's out of service, but as Paul can attest to, or any of us can attest to in this industry, we are held to very, very high standards.

We do a tremendous amount of testing on the water to make sure that any appearances that are out there we are meeting or exceeding those standards for you. It's a very, very costly process. We are monitoring this very, very closely. We will be putting in another comments along with Paul, I'm sure, as we do have some concerns about the -- we appreciate the method of the proposal. We have some questions about the methodology that was mentioned because we would need to make sure that the districts are properly protected in this case.

MS. GLISCI: Fine. So that the well that's located on Iris Lane is no longer with the VOC power? It's no longer --

MR. REINHART: Neither of those two wells have been

used. We still use the current storage tanks, we fill it from the other districts, and then we pump it out to maintain pressure.

MR. GRANGER: Just one question. Paul Granger, Superintendent, Hicksville Water District, just to follow-up with regard to the emerging contaminants. On the surface we need to do a deeper dive, but we just need the right treatment technology to address emergent contaminants. One concern I had with regard to the comments, if one change is to the GAC, my concern is as the State and the EPA looks to regulate these compounds more, it would be the short chain compounds, which are inactivated carbon and certain compounds, this is the best choice.

So just the comment would be I would like to have EPA look into the future, and we are not looking into the long-term future, but it's a relatively short-term future here. I think these compounds will be regulated so now is the time to do some cleaning or, perhaps, some expansion to accommodate those comments. Thank you.

MR. CONWAY: Any other questions?

MR. SACKMAN: Joe Sackman, resident of Hicksville, also co-chair of the Long Island Press Coalition. The question is about the options for remediation. Is there a better success rate with Option 3 or 4 compared to 2? And why, other than the inconvenience of additional injection

wells, would you prefer Option 2?

MR. CONWAY: Yeah. So one of the things that we looked at is, you know, how well these alternatives might do in similar sites, like Pete had mentioned the old Roosevelt Field. We are using proven technologies to treat the contaminants that we know are present. As we are talking about the emergent contaminants, there are contaminants in the groundwater that may not be treated through the injection amendments, whether that is In-Situ Bioremediation or In-Situ chemical reduction. We can't rely on those treatment technologies to treat certain types of contamination.

So with groundwater pumping and treating, we can make sure that all of that, the different types of contaminants are sent through that whole treatment train so we can ensure that everything is taken care of. Does that make sense?

So it's not just about the methodology of it and the disruption to the neighbors. It's about how well that the treatment will -- how effective it is.

MR. JOSEPH: Jeremy Joseph. How is it determined that these contaminants are the result of past industrial activity as opposed to more recent current industrial activity, because a lot is happening in the New Cassel industrial area. I'm just curious about the process.

MR. CONWAY: So individual source facilities response actions are taken there. So the State has a pretty comprehensive program for tracking and cleaning up those sites in this area. And where we are finding groundwater contamination is several hundred feet below the ground surface, far away from any potential source areas, we are kind of able to link the past use of those chemicals back when they were being used in the '60s, '70s, that kind of thing, and we can kind of use those contaminants to identify source facilities and things like that. Does that answer your question?

MR. JOSEPH: Yes. It's not particularly ambiguous. You are able to make pretty clear connections to past contaminants?

MR. CONWAY: Yes. Anybody else?

MR. SACKMAN: Joe Sackman. So I remember reading the report that the flow of the water is southwest, et cetera, and there is a plan -- the Sands Casino is planning to build a large complex next door, and I don't know -- and I'm not an expert -- but would such a development -- it would probably have a large demand on the water supply, affect the remediation to be pulling the water in that direction, such like you are not going to start pulling the water up or, you know, does it have any kind of negative effect on what you are trying to do in that sense, if you

had a large construction that comes in and there is a large demand? There is a lot of people coming in. I'm sure they will all want to drink water and bathe, et cetera. So would that have any kind of effect?

MR. CONWAY: What was the facility? You said it was a casino?

MR. SACKMAN: The Sands casino. So right next door to Eisenhower Park is the Nassau Coliseum. Currently, there is a hotel there, but they are supposedly going to be building a casino there, or some sort of resort. A lot of people are going to come in, they will be doing whatever they are going to do. I'm sure there will be a large demand. The water district might have better answers. I'm just curious of what kind of effect it might have on what you are trying to do in terms of resolving that issue?

MR. CONWAY: Yes. I mean, you might be in better position to answer that.

MR. REINHART: John Reinhart. So before I listed the four water districts. For this purpose, the Uniondale Water District is one of the water districts, and the Mitchell Field water supply area are the two areas in which the proposed Sands facility would be located. Any development there is going to be connecting to the existing public water supply. So the water would not necessarily be from that site. It's from existing public supply wells over

there.

Potentially, additional wells will be drilled to meet the demand. We are talking to the developers about that now. Any siting of that well, all -- not just this particular site, but the old Roosevelt Field site that we discussed earlier, the Paisley site is one of the sites that are out there. They are all taken into consideration when we site wells.

So, yes, while it will create a demand on the water supply, it would not be specifically a demand at that site right there. It would be the existing public water supply wells.

MR. CONWAY: Does that answer your question? Any last questions?

So I appreciate everybody coming out tonight. This is a really important part of the community involvement process through the Superfund program. So we do value everybody's input. I have some business cards if you guys need to reach out to me at some point down the line. Feel free to take a business card. You can contact me that way, and thanks for coming out. I appreciate it.

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I hereby certify the foregoing to be a true and accurate transcript of the proceeding.

Nancy Silberger

Nancy Silberger,
Official Court Reporter

ATTACHMENT D

WRITTEN COMMENTS

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September 22, 2023

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Re: New Cassel/Hicksville Groundwater Contamination Superfund Site Comment on EPA Proposed Plan (dated July 2023) for OU-3

Dear Mr. Conway:

This firm represents Next Millennium Realty LLC and 101 Frost Street LLC (the "Frost Street Parties"). The purpose of this letter is to provide public comment on the United States Environmental Protection Agency's ("EPA" or the "Agency") "Superfund Proposed Plan" for the New Cassel/Hicksville Groundwater Contamination Superfund Site ("NC/HGCS Site"), Operable Unit No. 3, dated July 2023 (the "Proposed Plan").

As set forth in further detail below, and the enclosed letter submitted by EnSafe, Inc. ("EnSafe") providing further technical comments (the "EnSafe Letter"), and attached hereto as **Attachment 1**, (a) the NC/HGCS Site OU-1 and OU-3 (referred to herein as "EPA OU-1" and "EPA OU-3") should be managed and addressed comprehensively, as one OU, with one remedy; (b) the Proposed Plan and selected remedy are arbitrary and capricious because EPA fails to consider critical data and other material information; (c) the Proposed Plan is inconsistent with the National Contingency Plan ("NCP"); (d) the Proposed Plan will be disruptive to the local community and will provide no added benefit; and (e) the appropriate remedy for the NC/HGCS Site (including EPA OU-1 and EPA OU-3) is continued wellhead treatment at public water supply wells with monitored natural attenuation.

Along with submission of these comments, we respectfully request a meeting with EPA to discuss the most productive, effective, and efficient way forward for both EPA and the potential remedial parties to comprehensively address these groundwater contamination plumes.

I. Relevant Background

a. *Historic Investigations and Remediation Under DEC Oversight*

For over 35 years, the New York State Department of Environmental Conservation ("DEC" or the "Department") and potentially responsible parties have been investigating and remediating soil and groundwater contamination originating at various sites in the New Cassel Industrial Area ("NCIA").

In 1998, DEC performed a Remedial Investigation ("RI") of the historic groundwater contamination emanating from 89 Frost Street, 101 Frost Street, and 770 Main Street within the NCIA (the "Frost Street Sites") – designated by DEC as OU-2 (the "Frost Street DEC OU-2)." The Frost Street DEC OU-2 addressed groundwater contamination emanating from the Frost Street Sites source area to Old Country Road.

In March of 2000, based on the RI, DEC selected a groundwater remedy for the Frost Street Sites (the "Frost Street DEC OU-2 Remedy"). The Frost Street DEC OU-2 Remedy included an air sparging/soil vapor extraction system ("AS/SVE") to treat soil contamination and shallow groundwater contamination (also the DEC OU-1 Remedy for Frost Street Sites soil contamination), and in-well vapor stripping for groundwater to 150' bgs. Groundwater from 150 to 250' bgs was managed separately by DEC, and DEC was in the process of designing a deep but separate in-well vapor stripping remedy for groundwater between 150' bgs and 250' bgs.

But sixteen (16) years after DEC's selection of the OU-2 Remedy, the Frost Street Parties finally convinced the Department that operation and optimization of the AS/SVE resulted in reduced groundwater contamination; this result, along with scientific analysis of the plume compelled a modified approach. Specifically, EnSafe prepared a Significant New Information and Response Alternatives Analysis ("SNIRAA") concluding that in-well vapor stripping would not be successful in remediation of the groundwater plume, and that groundwater extraction was a more appropriate and cost-effective remedy for the improved groundwater condition.

The Frost Street Parties also proposed that groundwater extraction could easily and cost-effectively address the groundwater contamination from 150 to 250' bgs that was being managed separately by DEC at that time. The DEC agreed and issued an "Explanation of Significant Difference" ("ESD") for the Frost Street DEC OU-2 "Combined Groundwater Contamination" based upon EnSafe's SNIRAA in May 2017. Specifically, DEC modified the in-well vapor stripping portion of the Frost Street DEC OU-2 Remedy to provide for groundwater extraction ("GWE") via a series of four extraction wells installed at Old Country Road (the "Frost Street GWE System"), consistent with EnSafe's SNIRAA.

The Frost Street Parties promptly implemented this chosen remedy under the ESD, and it has been highly effective, as predicted by EnSafe in the SNIRAA.

Due to the location of the Frost Street GWE System along Old Country Road (see, e.g, Extraction Wells "EX-1A/B/C/D" on **Attachment 2**), and the rate of pumping and subsequent capture zones, the Frost Street GWE System captures, and remediates, the groundwater contamination that has migrated downgradient from the Frost Street Sites and the neighboring Utility Manufacturing Site (Site No. 1-30-043H) source areas. The Frost Street GWE System also remediates groundwater contamination south of Old Country Road within a northern portion of the area now designated as EPA OU-1. *See* **Attachment 3**.

Since operation of the Frost Street GWE System began, over 382 million gallons of contaminated groundwater have been extracted. Over the past 30 years, the Frost Street Parties have incurred over $27M in costs related to the investigation and remediation of soil and groundwater at, and emanating from, the Frost Street Sites.

The entire record of data since DEC listed the NCIA as a hazardous waste site in 1988 (thirty-five years ago) establishes beyond doubt that the contamination has been dramatically reduced by the Frost Street Parties' efforts. This has been achieved through a combination of source area remediation and natural reduction/dilution of the plume as it travels downgradient. Further, the record shows that the contamination is dynamic, and is moving increasingly southward and deeper in the aquifer.

As described in the enclosed EnSafe Letter:

> *Since June 2018, the Frost Street Parties have operated a groundwater extraction system at the northern boundary of OU1, that includes four wells screened collectively from 50 to 240 feet below ground surface (bgs). In the over 5 years this system has operated, groundwater concentrations at downgradient extraction wells located in the northern portion of OU1 (FSMW-13 and FSMW-14) have reduced by up to 99%. For example, FSMW-14A, which had a tetrachloroethene (PCE) concentration of 3,100 micrograms per liter (µg/L) at the start of system operation, exhibited a PCE concentration of just 32 µg/L during the most recent sampling event. At present, all but one of the FSMW-13 and FSMW-14 wells, located in the northern portion of OU1, are below the OU1 ROD action level (100 µg/L). As a result of this success, the U.S. EPA removed the northernmost transect of the OU1 remedy in 2021. Continued operation of this system will not only continue to prevent migration of the Frost Street Sites groundwater plume into OU1, but it will also improve groundwater conditions further into OU1 as time goes on.*
>
> *Assuming the Proposed Plan for OU3 is implemented as the U.S. EPA envisions, including extensive downgradient hydraulic control at the southern portion of OU3,*

> *the plume would be remediated just downgradient of the source area (Frost Street Sites groundwater extraction system) as well as the leading edge in OU3. Given the lack of receptors between the northern boundary of OU1/Frost Street Sites groundwater extraction system and the proposed extraction wells in OU3, no extraction in OU1 is necessary to meet the remedial action objectives (RAOs) for both OU1 and OU3.*

EnSafe Letter, Section I, D.

In addition to the Frost Street Parties' DEC OU-2 remedy, over the past several decades, municipalities and water districts have also implemented wellhead treatment at all public water supply wells. EnSafe Letter, Section II, A. As noted by EnSafe, "the Nassau County Department of Health and each of the approximately 50 public water suppliers in Nassau County routinely monitor and test both treated and untreated water from the supply wells to assure that the drinking water meets Maximum Contaminant Level (MCLs) for VOCs as well as other compounds." EnSafe Letter, Section II, B.

Thus, currently there is more than sufficient source control for the Eastern Plume of EPA OU-1 and OU-3. In addition, wellhead treatment at public supply wells have ensured that there are no exposure pathways for the groundwater contamination designated as EPA OU-1 and OU-3 (i.e., the contamination is not affecting drinking water).

b. *Investigation Under EPA Oversight (EPA OU-1, OU-2, and OU-3)*

In 2000, over twenty-three years ago, DEC issued the Record of Decision ("ROD") for DEC OU-3 (off-site groundwater contamination migrating downgradient from the NCIA, south of Old Country Road) – now referred to as EPA OU-1. It was not until 2013, thirteen years thereafter, that EPA issued the ROD for that same area of groundwater contamination (i.e., EPA OU-1).

For the past seven years, the Frost Street Parties have been advocating to EPA for a comprehensive remedy for EPA OU-1 and OU-3. The Frost Street Parties have repeatedly pointed out that the Eastern Plume (as well as the other EPA OU-1 plumes) have likely migrated beyond OU-1, and in the interest of time, remedial efforts must be expanded to encompass the entirety of the plumes.

Put simply, a comprehensive strategy for the groundwater contamination plumes in their entirety (i.e., including EPA OU-1 and EPA OU-3) will result in expedited remediation at a significantly lower cost than estimated for EPA OU-1 and OU-3 separately.

Yet, for the past thirteen years since EPA listed the NC/HGCS Site on the National Priorities List, EPA has ignored the Frost Street Parties and failed to act in a timely and cost-effective manner.

EPA has also failed to enforce source control for the GI/Sylvania EPA OU-2 plume, which EPA's OU-3 RI Report states contributes to contamination in EPA OU-3.

Instead of following the NCP by enforcing source control for EPA OU-2 plume, and taking a comprehensive approach with respect to the combined plumes of EPA OU-1 and OU-3, EPA arbitrarily and capriciously divided up the groundwater contamination plumes, ignored the lack of source control for EPA OU-2 (although, remarkably, the Proposed Plan is based on the assumption that such source control exists), and proceeded on two separate tracks for EPA OU-1 and OU-3 to address the same migrating groundwater contamination plumes. Throughout this process, the contamination plumes have continued to migrate, and EPA's analysis and remedial strategy have not caught up with the data, despite EPA having ample opportunity to do so by simply combining EPA OU-1 and OU-3 remedial efforts.

With EPA's narrow focus and insistence on managing the same groundwater plumes in pieces, EPA has missed and/or ignored countless opportunities to comprehensively remediate the plumes in a timely fashion. In fact, had EPA considered the reasonable proposals developed by the Frost Street Parties and others over the years that were consistent with the NCP (and nearby site precedent, discussed in further detail herein), remediation of the Eastern Plume within both OU-1 and OU-3 could have already been in place. Instead, EPA continues to hold steadfast to the segregation of remedial efforts within arbitrary boundaries, all while aggressive source area remediation, at least of the Eastern Plume source area (i.e., the Frost Street DEC OU-2 Remedy), have made remediation within EPA OU-1 completely unnecessary.

By EPA's own design, a lengthy pre-design investigation for OU-1 is in progress. During this time, as well as the time that pre-dates the EPA OU-1 ROD, the Eastern Plume has been remediated, which has made integral components of the EPA OU-1 remedy unnecessary, as summarized below:

- The need for in-situ chemical oxidation to treat elevated concentrations in the "hot spots" was eliminated by the improved groundwater condition due to the 2014 optimization of the AS/SVE in the source area of the Frost Street Sites as well as the 2018 installation and ongoing operation of the Frost Street Sites GWE system, located at the southern boundary of the Frost Street Sites, downgradient of the source area.

- Subsequently, the need for the pre-design investigation and remediation for the northern transect of the Eastern Plume within OU-1 was eliminated by the Frost Street Sites remedial systems that reduced concentrations from over 15 parts per million to under 200 parts per billion in its over 5 years of operation.

Continued management of the plumes in a piecemeal approach will result in continued delays and modifications, all while the plumes continue to migrate. The plumes should be managed as one OU, and the Proposed Plan should be amended such that remediation can occur in a timely and cost-effective manner. Otherwise, EPA needs to account for the passage of time and project

the status of the plumes within the aquifer at the time any contemplated remedy is implemented. This has not been done. Enforcing the implementation of a remedy that will be out of date by the time it is constructed is not consistent with the NCP. Managing EPA OU-1 in this manner is what resulted in the need for EPA OU-3. At this rate, the contamination may continue south of Eisenhower Park over the next decade before remediation is in place.

While remediation has been slow-going for nearly two decades, treatment at the municipal water supply wellheads has been ongoing and successful in protecting human health and the environment for over thirty years. Wellhead treatment is expected to be a necessity in perpetuity, not just because of the VOC plumes moving, but to also address other contamination (described herein) as well as compounds in the groundwater that need to removed/addressed for acceptable drinking water quality. In accordance with the NCP, the impact of this existing wellhead treatment must be modeled along with the fate of the plumes before any remedy is selected.

Despite the ongoing PDI efforts in EPA OU-1, the lack of source control for EPA OU-2, and the lack of exposure pathways due to wellhead treatment at public water supply wells in EPA OU-1 and OU-3, EPA is now proposing a costly remedial action, for EPA OU-3 only, to include an extensive groundwater extraction and treatment system ("pump and treat") at an estimated cost of $99,140,000. This is beyond overkill for groundwater contamination plumes that have no exposure pathways and thus no risk to human health. Compounding the problem, this proposal will have significant negative impacts to the local community including:

- At least 3 years of construction, not including at least 9 months of drilling prior to the construction for the pre-design investigation.
- Upwards of 2 miles of trenching and piping for conveyance for treatment in residential neighborhoods.
- Wells and trenching in the neighborhood sited adjacent to hundreds of homes as well as the Bowling Green Elementary School, Long Island Montessori School, W.T. Clarke Middle School, and W.T. Clarke High School.
- Risks to existing utilities and infrastructure due to the hundreds of utility crossings that would occur during trenching.
- Significant truck traffic, carrying equipment, materials, soil, and water across neighborhood roadways during this long construction period.
- Associated noise, dust, and visual disturbances.

In addition, in the long-term, these wells would be in operation for 30 years or more. The wells would require ongoing maintenance and monitoring including well cleanings, pump replacement, well replacement, etc. Furthermore, conveyance piping carrying contaminated groundwater throughout the neighborhood would pose an inherent risk to pipe damage and leaks from freeze/thaw, utility strikes by others, etc. which could create secondary issues/contamination.

EPA's failure to comprehensively review and evaluate all of the information available, including the presence and impact of the Frost Street Parties' DEC OU-2 remedy, the lack of source

control for the sites that make up EPA OU-2, and the alternative remedy of continued wellhead treatment at public supply wells, has resulted in a selected remedy that is arbitrary and capricious, and not consistent with CERCLA nor the NCP.

As set forth in the EnSafe Letter, based on current data, including the significant impact of the Frost Street DEC OU-2 Remedy on the Eastern Plume within EPA OU-1, and the fact that wellhead treatment at public supply wells is preventing any human exposure pathways, the appropriate approach, consistent with CERCLA and the NCP, would be to combine EPA OU-1 and OU-3 and select a remedy that includes continued wellhead treatment at public supply wells with monitored natural attenuation.

II. Comments on the Proposed Plan

Under CERCLA, EPA is authorized to respond to releases of hazardous substances. CERCLA § 104(a); 42 U.S.C. § 9604(a). However, there are limits to this authority, including that all EPA remedial actions, and decisions relating thereto, must not be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law. *See* Administrative Procedures Act § 706. EPA remedial actions must also be consistent with the NCP. CERCLA § 104(a); 42 U.S.C. § 9604(a). EPA is not authorized to recover response costs for remedial actions that are arbitrary and capricious or inconsistent with the NCP. *See Washington State Dept. of Transp. v. Washington Natural Gas Co., Pacificorp*, 59 F.3d 793, 805 (9th Cir. 1995); *see also Matter of Bell Petroleum Services, Inc.*, 3 F.3d 889, 907 (5th Cir. 1993).

An EPA action and/or decision is arbitrary and capricious if (a) the agency relied on factors that Congress did not intend it to consider, (b) the agency failed to consider important aspects of the problem, (c) the agency's explanation for its decision runs counter to the evidence before it, or (d) the decision is implausible and not a product of agency expertise. *See U.S. v. Burlington Northern R. Co.*, 200 F.3d 679, 689 (10th Cir. 1999) *quoting Motor Vehicle Mfrs. Ass'n of U.S. v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 43 (1983).

The NCP provides the organizational structure and procedures that EPA must follow in responding to releases of hazardous substances, including site evaluation, establishment of remedial priorities, investigation, and remedy selection. *See* 40 C.F.R. §§ 300.400 to 300.440. The NCP requires, among other things, that each remedial action selected must be cost-effective. *See* 40 C.F.R. § 300.430(f)(1)(ii)(D); *Town of Oyster Bay v. Northrop Grumman Systems Corporation*, 2009 WL 10691086, *11 (E.D.N.Y. 2009).

a. EPA's Management of the Groundwater Contamination Plumes in Separate Operable Units is arbitrary and capricious and not consistent with the NCP.

EPA's management of the NC/HGCS Site groundwater contamination plumes in separate OUs is arbitrary and capricious because it is not based on any data or technical reasoning and is completely contradictory to the NCP and EPA guidance. *See Matter of Bell Petroleum Services,*

Inc., 3 F.3d 889, 904-906 (5th Cir. 1993) (EPA's decision to furnish an alternative water source was not based on technical reasoning or evidence and thus its implementation was arbitrary and capricious, leading to a denial of recovery of those costs under CERCLA § 107). It is also inconsistent with the NCP because it is not cost-effective, and it is contrary to EPA precedent at nearby sites.

Under the NCP, OUs should be used "when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup." 40 C.F.R. § 300.430(a)(1)(ii)(A). The NCP further provides that OUs "should not be inconsistent with nor preclude implementation of the expected final remedy." *See* 40 C.F.R. § 300.430(a)(1)(ii)(B).

As noted, for the past seven years, the Frost Street Parties have been submitting data to EPA demonstrating that the groundwater contamination plumes at EPA OU-1 have migrated further south. Instead of amending the EPA OU-1 ROD, consistent with EPA guidance (*see* EnSafe Letter, at Section I, B.), EPA arbitrarily drew a line through the groundwater contamination plumes and divided them into two separate OUs (now, EPA OU-1 and OU-3).

EPA's decision was not based on any available data or agency expertise, nor was it necessary or appropriate to achieve significant risk reduction quickly, given the size or complexity of the site, or to expedite the total site cleanup. *See* 40 C.F.R. § 300.430(a)(1)(ii)(A).

In fact, EPA's decision to manage the groundwater contamination plumes separately has done the exact opposite of what the NCP contemplates. As noted in the EnSafe Letter:

> *Given current groundwater data and hydrogeologic evidence, the continued separation of the site into OU1 and OU3 does not facilitate expedited cleanup, but instead continues to hinder its progress and is not appropriate for site conditions. More importantly, the U.S. EPA's continued adherence to this boundary and associated separation, which was drawn based on upon data that is nearly two decades old, seems antithetical to the science-based approach of the NCP.*

EnSafe Letter, Section I, B.

Completion of just the preliminary design investigation and subsequent design for EPA OU-1 – which is now completely unnecessary in light of the Proposed Plan for EPA OU-3 – is still years away, with construction and actual remediation of groundwater is even further away.

Furthermore, EPA's decision is inconsistent with the NCP because it is not cost-effective. One of the cornerstone requirements of the NCP is that a selected remedial action must be cost-effective. 40 C.F.R. § 300.430(f)(1)(ii)(D); *Town of Oyster Bay v. Northrop Grumman Systems Corporation*, 2009 WL 10691086 *19 (E.D.N.Y. 2009).

As detailed in the EnSafe Letter, "[h]aving the same groundwater plumes managed separately under the U.S. EPA by different project teams, following different timelines and strategies, is not consistent with the NCP and not cost effective or time efficient." EnSafe Letter, Section I, A.

As noted in the EnSafe Letter, a comprehensive strategy for the groundwater contamination plumes in their entirety (i.e., EPA OU-1 and EPA OU-3), as advocated for by the Frost Street Parties, will result in expedited remediation at a significantly lower cost than estimated in the EPA OU-3 Proposed Plan.

b. EPA's Proposed Plan is arbitrary and capricious.

EPA's Proposed Plan fails to take into consideration a number of critical factors and relied on other factors that are implausible and imaginary. Thus, the remedy selection is arbitrary and capricious. *See U.S. v. Washington State Dept. of Transp*., 2007 WL 445972, *26-*27 (WD Wash. 2007) (EPA failed to consider availability of new wells to meet demands for clean drinking water, as well as fact that City of Tumwater blended water from various wells before delivery to customers, among other facts that EPA failed to consider, rendering EPA's decision to instigate removal action arbitrary and capricious).

For example, EPA did not appropriately evaluate all available alternatives in accordance with the NCP. *See* EnSafe Letter, Section II, A., and Section IV, C. Under the NCP, EPA is required to evaluate alternatives prior to selection of a remedy. *See* 40 C.F.R. §§ 300.430(d) and (e). Failure to consider alternative remedies is inconsistent with the NCP. *See Town of Oyster Bay v. Northrop Grumman Systems Corporation*, 2009 WL 10691086, *23 (E.D.N.Y. 2009), citing *Sealy Connecticut, Inc. v. Litton Industries.*, 93 F. Supp. 2d 178, 183 (D. Conn. 2000); *see also Washington State Dept. of Transp. V. Washington Natural Gas Co., Pacificorp*, 59 F.3d 793, 803-804 (9th Cir. 1995) (WSDOT failed to subject alternatives "to the kind of thorough analysis that the NCP requires," resulting in inconsistency with the NCP, rendering action arbitrary and capricious and preventing recovery under CERCLA § 107). As set forth in the EnSafe Letter, EPA, without reason, failed to consider continued wellhead treatment and monitored natural attenuation as an alternative remedy.

The EnSafe Letter identifies numerous additional critical factors that EPA failed to take into consideration, as well as other factors relied upon by EPA that were implausible, imaginary, and not grounded in any technical data or expertise. For example:

- EPA failed to accord sufficient weight to the fact that the potential exposure pathways evaluated for groundwater contamination are not present. The only remotely conceivable exposure pathway is through drinking contaminated water, which is not possible (i.e., implausible, and imaginary) given the public water supply and existing wellhead treatment and monitoring that has been in place for several decades. EPA and DEC have

acknowledged that there is currently no exposure pathway that would create a public health risk so long as the engineering controls (e.g., wellhead treatment) are present at the public supply wells. However, EPA ignored this fact and relied upon an entirely hypothetical scenario that such treatment would be discontinued in the future. EPA's reliance on this hypothetical scenario ignores that fact that the water suppliers are required to implement wellhead treatment where contamination is present. Thus, the hypothetical scenario is completely unrealistic and EPA's reliance on it is arbitrary and capricious. *See* EnSafe Letter, Section II, A.

- The Proposed Plan does not depict the EPA OU-2 plume, which EPA has acknowledged is a contributing source to the EPA OU-3 groundwater contamination. *See* EnSafe Letter, Section III, A.

- The configuration of the groundwater contamination plumes is inconsistent among figures in EPA's OU-3 RI Report and the OU-2 plume depiction is not supported by actual data and is highly suggestive and speculative. *See* EnSafe Letter, Section III, A.

- The Proposed Plan relies on the existence of source control – however, there is no source control for EPA OU-2, which is a significant contributor of contamination to EPA OU-3. *See* EnSafe Letter, Section III, B.

- EPA does not account for multiple sources and/or releases at different times, including groundwater impacts from sites north of the OU-1 and OU-2 source areas. *See* EnSafe Letter, Section III, C.

- Acetone and non-chlorinated volatile organic compounds within EPA OU-3 are not delineated and source(s) are not identified. Therefore, EPA cannot confirm nor affirm that all source areas are remediated and that contribution to groundwater contamination will not continue to occur. *See* EnSafe Letter, Section III, D.

- EPA's assumption that non-aqueous phase liquid is not present is inconsistent with EPA's own guidance. *See* EnSafe Letter, Section III, E.

- The Proposed Plan, including the figures and descriptions, fail to adequately represent the community impact to this remedial action—extraction well locations and proposed trenching are near to/adjacent to three East Meadow School District schools as well as hundreds of homes and businesses. *See* EnSafe Letter, Section V.

- EPA failed to give sufficient weight to significant impact and disruption the proposed remedy will have on the local community with no added benefit to the drinking water. *See* EnSafe Letter, Section V.

Because EPA failed to consider important aspects of the investigation, including available alternatives, the present data concerning contribution sources, and community impact, the remedy selection was arbitrary and capricious.

c. <u>The Appropriate Remedy is Continued Wellhead Treatment at the Public Water Supply Wells with Monitored Natural Attenuation</u>

Under the NCP, EPA is required to develop alternatives "that protect human health and the environment by recycling waste or by eliminating, reducing, and/or controlling risks posed through each pathway by a site." 40 C.F.R. § 300.430(e)(2). In developing alternatives, EPA is also required to develop remedial action objectives ("RAOs") that rely on "applicable or relevant and appropriate requirements."

Here EPA developed the following RAOs for EPA OU-3:

- Prevent or minimize the potential future human exposure (via dermal, ingestion and inhalation) to Site-related contaminants in groundwater at concentrations in excess of federal maximum contaminant levels (MCLs) and State standards;

- Minimize the potential for further migration of groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards; and

- Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the more stringent of federal MCLs or New York State standards.

As set forth in the EnSafe Letter, the appropriate remedy for EPA OU-3, is continued municipal water supply wellhead treatment and monitored natural attenuation. *See* EnSafe Letter, Section II. This alternative would be protective of human health and the environment (i.e., the only possible exposure pathway is drinking water, which is already treated at the water supply wells) and would allow EPA to monitor the plumes moving forward as they continue to attenuate. The treatment that is currently in place at the water supply wells ensures that the aquifer is being used as a source of drinking water – its most beneficial use – and that contaminants do not exceed federal or state MCLs. Despite the foregoing, and despite this alternative being considered and chosen at other EPA sites, EPA failed to even consider it as an alternative for this site.

Instead, EPA developed its list of alternatives, and selected a remedy, while failing to consider a number of critical factors and relying on other factors that were implausible and imaginary (i.e., the hypothetical scenario that the well head treatment would be discontinued in the future – a scenario which EnSafe explains is completely implausible given that the water providers are required to treat contaminated drinking water).

d. The Selected Remedy is Not Consistent with the NCP

i. There is no source control.

As noted, the Proposed Plan is based on the assumption that there is source control for all sites contributing to groundwater contamination in EPA OU-3, including EPA OU-2. However, there **is no source control for EPA OU-2**. In addition to this assumption being arbitrary and capricious, moving forward with a remedial action without source control is also inconsistent with the NCP. *See* 40 C.F.R. §§ 300.400 to 300.440. It also makes no technical nor logical sense.

Indeed, the fundamental importance of source control is why EPA has such powerful emergency power, removal authority and interim remedial authority. *See* 42 U.S.C. 9604; *see also* 40 C.F.R. §§ 300.400 to 300.440. These powers are pertinent to engagement in the first order of Agency business at any polluted site—source control. It is particularly crucial that EPA OU-2 have source controls, consistent with the NCP, because the fate of the groundwater plume from EPA OU-2 is the exact contamination the Agency is engaged in remediating.

ii. The selected remedy is not cost-effective.

Under CERLCA and the NCP, remedial actions selected by EPA must be cost-effective. *See* 42 U.S.C. § 9621(a); 40 C.F.R. § 300.430(f)(1)(ii)(D). Cost-effectiveness is determined by comparing costs to overall effectiveness of the remedy. Overall effectiveness is determined by evaluating long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; and short-term effectiveness. EPA is not authorized to recover response costs for remedial actions that are not cost-effective. *See State v. Kalman W. Abrams Metals, Inc.,* 155 F.3d 1019, 1026 (8th Cir. 1998).

As detailed in the EnSafe Letter, with respect to cost:

- The Proposed Plan is excessive and unnecessary to achieve the remedial action objectives;

- The Proposed Plan includes unnecessary and exorbitant costs;

- The costs of the Proposed Plan are unreasonably high compared to the overall effectiveness – i.e., (a) it is not cost effective to have multiples systems in place to bring VOC concentrations below drinking water standards, (b) extraction wells in the neighborhood north of Eisenhower Park are not necessary to achieve all RAOs, and (c) the Proposed Plan is not necessary to address the irrigation wells within Eisenhower Park; and

- The Proposed Plan contemplates a $100M remedial effort that would not remediate Acetone and other non-chlorinated volatile organic compounds present in the groundwater plumes.

The EnSafe Letter details how these costs far outweigh the short-term effectiveness; the long-term effectiveness; and the reduction of toxicity, mobility or volume through treatment. *See* EnSafe Letter, Sections IV, D, E, and F.

III. Conclusion

Based on the foregoing, along with submission of these comments, we respectfully request a meeting with EPA to discuss the most productive, effective, and efficient way forward for both EPA and the potentially responsible parties to comprehensively address these groundwater contamination plumes.

Thank you for your consideration of this matter.

Very truly yours,

/s/ *Thomas J. Ruane*

Thomas J. Ruane

Enclosures

cc: Alex Stark, EnSafe
Phil Coop, EnSafe
John Privitera, Whiteman Osterman & Hanna LLP

ATTACHMENT 1

ENSAFE
creative thinking. **custom solutions.** ®

September 22, 2023

Mr. Aidan Conway
Remedial Project Manager
United States Environmental Protection Agency
290 Broadway, 17th Floor
New York, New York 10007-1866

via email: conway.aidan@epa.gov

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3
Superfund Proposed Plan Comments

Dear Mr. Conway,

On behalf of Next Millennium Realty LLC and 101 Frost Street Associates, LP ("Frost Street Parties"), EnSafe Inc. has prepared these Comments to the United States Environmental Protection Agency (U.S. EPA) Proposed Plan for Operable Unit 3 of the New Cassel/Hicksville Groundwater Contamination Superfund Site. These Comments are provided as an attachment to this letter.

The Frost Street Parties request a technical meeting with the U.S. EPA to discuss the most productive, effective, and efficient way forward for both the U.S. EPA and the potentially responsible parties to address these groundwater contamination plumes.

Sincerely,

EnSafe Inc.

Alexandra M. J. Stark

By: Alexandra Stark, PE
Project Engineer

Attachment Comments to the Proposed Plan for Operable Unit 3 of the New Cassel/Hicksville Groundwater Contamination Superfund Site

COMMENTS TO THE PROPOSED PLAN FOR OPERABLE UNIT 3 OF THE NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE

The United States Environmental Protection Agency (U.S. EPA) has proposed a Remediation Plan for Operable Unit 3 (OU3) of the New Cassel/Hicksville Groundwater Contamination Superfund Site (Proposed Plan) that is flawed and inconsistent with law.

I. U.S. EPA'S INSISTENCE ON MANAGING THE GROUNDWATER CONTAMINATION IN PARTS (OU1 AND OU3) INSTEAD OF COMPREHENSIVELY, IS INCONSISTENT WITH THE NATIONAL CONTINGENCY PLAN AND NEGATES ANY COST EFFECTIVENESS OF ANY SELECTED REMEDY FOR EITHER OPERABLE UNIT.

Next Millennium Realty LLC and 101 Frost Street Associates LP ("Frost Street Parties"), potentially responsible parties to the Eastern Plume in OU1, have been advocating for a comprehensive OU1/OU3 remedy for over 7 years.

Throughout multiple submittals over the last 7 years, the Frost Street Parties have identified that the Eastern Plume (as well as the other OU1 plumes) had likely migrated beyond OU1, and in the interest of time, efforts should be expanded to encompass the entirety of the plumes, consistent with the U.S. EPA guidance described herein. These requests, works plans, and presentations to U.S. EPA have included a nearly identical remedy (i.e., groundwater extraction) with extraction wells cited in nearly identical geographic locations to that of the OU3 Proposed Plan (Next Millennium Realty LLC and 101 Frost Street Associates, LP, April 24, 2020 and attached EnSafe Memorandum, April 24, 2020).

A comprehensive strategy would result in expedited remediation at a significant lower cost than estimated in the OU3 Proposed Plan. However, instead of revising or amending the U.S. EPA OU1 Record of Decision (ROD), U.S. EPA designated a new OU, OU3, to address the same contamination that was being addressed by U.S. EPA OU1, which is inconsistent with the U.S. EPA's own guidance and precedent at nearby sites.

A. Managing the same contamination under separate operable units is inconsistent with the National Contingency Plan because it is not cost- or time efficient.

EPA is bound by the requirements of the National Contingency Plan (NCP). The NCP requires that "Each remedial action selected shall be cost-effective…." 40 C.F.R. §300.430(f)(1)(ii)(D). "The NCP is designed to make the party seeking response costs choose a cost-effective course of action to protect the public health and the environment." United States v. Chapman, 146 F.3d 1166, 1170 (9th Cir. 1998).

Having the same groundwater plumes managed separately under the U.S. EPA by different project teams, following different timelines and strategies, is not consistent with the NCP and not cost effective or time efficient.

For comparison purposes, the OU1 ROD was signed in September 2013, and at present, only the first two of five phases of the U.S. EPA-designed pre-design investigation (PDI)—the predecessor to the remedial design and implementation—have been performed for OU1. The PDI began in 2019, and there are still three more phases of the PDI to complete before the design can even begin, let alone construction of an actual remedy. By the U.S. EPA's own scope and schedule requirements, the OU1 PDI alone (with no delays), is at least a 5-year effort from start to finish.

Despite these efforts, the U.S. EPA is now proposing an additional remedy at the leading edge of the plumes, rendering the efforts of the OU1 PDI, and any resulting OU1 remedy, useless.

Similar to OU1, the Proposed Plan for OU3 envisions a remedy with a PDI, presumably similar in scope to that of the OU1 PDI based on references to the purposes of a "PDI" throughout the OU3 documents:

> *"Additional testing, including pumping tests to estimate capture zones of the extraction system operating at full capacity [sic]", "plus wells installed during the PDI [sic]",* and *"VPBs, monitoring well installations, monitoring well redevelopment, groundwater water level measurements, groundwater sampling, treatability studies for groundwater treatment technologies, and pump testing [sic]."*

It is safe to assume that the remedial timeline for OU3 will follow that of the northern portion of the plumes in OU1, which means **actual remediation of groundwater is at best a decade away.**

Based on these references, the OU3 Proposed Plan cannot be considered cost effective or time efficient because it is being performed separate—and years away—from remedial activities in OU1, yet remediation is of the same groundwater plumes.

B. Managing the same contamination under two separate operable units is inconsistent with the National Contigency Plan and U.S. EPA guidance and the operable units should be combined.

The NCP acknowledges that an "operable unit" as defined therein, is useful in remediating groundwater when that unit, as a "discrete portion of a remedial response, manages migration." 40 C.F.R. §300.5. The NCP also states that "sites should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup." 40 C.F.R. §300.430(a)(1)(ii)(A).

Given current groundwater data and hydrogeologic evidence, the continued separation of the site into OU1 and OU3 does not facilitate expedited cleanup, but instead continues to hinder its progress and is not appropriate for site conditions. More importantly, the U.S. EPA's continued adherence to this boundary and associated separation, which was drawn based on upon data that is nearly two decades old, seems antithetical to the science-based approach of the NCP.

The U.S. EPA guidance document *Clarifying the Definition of 'Site' Under the National Priorities List* (May 1996) states the following regarding site boundaries:

- *"…a 'site' is best defined as that portion of a facility that ·includes the location of a release (or releases) of hazardous substances and wherever hazardous substances have come to be located. As such, the extent of a site is not limited by property boundaries, and does not include clean areas within a facility's property boundaries. Furthermore, at the listing stage only a limited amount of information has been gathered in a preliminary assessment and site inspection. These screening tools focus on identifying the possible threat posed by a site, not on delineating the site boundary. Therefore, the extent of contamination (site extent) may not be precisely determined at the time a site is listed· on the NPL.* ***In fact, the extent of the site may change significantly as the cleanup process progresses."***

- *"The extent and nature of a release becomes more refined as information from the remedial investigation (RI) is gathered. During the RI stage, EPA samples the site more extensively. This investigation frequently results in finding or verifying additional contamination that was unknown or undocumented in the site inspection.* ***After the RI is completed, enough information is generally available to determine areas to which contamination has spread and, therefore, determine site boundaries."***

- *"For example, if during the site inspection contamination is discovered in ground water as well as in a nearby wetland, the ground water plume and contaminated portions of the wetland are considered to be part of the site. If, during remedial actions, contamination is found to be either less or more extensive, site boundaries shift again.* ***This is especially true for ground water contamination plumes, since their boundaries are in constant motion.****"*

Despite the foregoing, and the Frost Street Parties' request that the U.S. EPA expand OU1, the U.S. EPA insisted on designating groundwater contamination south of OU1 as the new OU3.

C. Managing the same contamination under separate operable units is inconsistent with nearby sites and precedent.

At the nearby Former Naval Weapons Industrial Reserve Plant and Northrop Grumman Bethpage Facility sites (New York State Department of Environmental Conservation Site Nos 130003A and 130003B), there are multiple groundwater plumes, migrating downgradient and deeper in depth as time goes on; similar to the New Cassel/Hicksville Groundwater Contamination Superfund Site.

As time has progressed, the plumes migrated further south, requiring the need for additional remediation. However, in this case, additional sites and/or OUs were not established, and instead the original ROD was amended to include the portions of the groundwater plumes that had migrated for miles beyond their configuration at the time of the original ROD issued in 2003) (New York State Department of Environmental Conservation, Amended ROD, December 2019).

D. Treating the plumes as contemplated in the OU3 Proposed Plan negates the need for remediation in OU1.

Since June 2018, the Frost Street Parties have operated a groundwater extraction system at the northern boundary of OU1, that includes four wells screened collectively from 50 to 240 feet below ground surface (bgs). In the over 5 years this system has operated, groundwater concentrations at downgradient extraction wells located in the northern portion of OU1 (FSMW-13 and FSMW-14) have reduced by up to 99%. For example, FSMW-14A, which had a tetrachloroethene (PCE) concentration of 3,100 micrograms per liter (µg/L) at the start of system operation, exhibited a PCE concentration of just 32 µg/L during the most recent sampling event. At present, all but one of the FSMW-13 and FSMW-14 wells, located in the northern portion of OU1, are below the OU1 ROD action level (100 µg/L). As a result of this success, the U.S. EPA removed the northernmost transect of the OU1 remedy in 2021. Continued operation of this system will not only continue to prevent migration of the Frost Street Sites groundwater plume into OU1, but it will also improve groundwater conditions further into OU1 as time goes on.

Assuming the Proposed Plan for OU3 is implemented as the U.S. EPA envisions, including extensive downgradient hydraulic control at the southern portion of OU3, the plume would be remediated just downgradient of the source area (Frost Street Sites groundwater extraction system) as well as the leading edge in OU3. **Given the lack of receptors between the northern boundary of OU1/Frost Street Sites groundwater extraction system and the proposed extraction wells in**

OU3, no extraction in OU1 is necessary to meet the remedial action objectives (RAOs) for both OU1 and OU3.

II. CONTINUED WELLHEAD TREATMENT AT PUBLIC SUPPLY WELLS PLUS MONITORED NATURAL ATTENTION IS THE APPROPRIATE REMEDY.

A. The exposure pathways that are the basis of the OU3 Proposed Plan are unrealistic and imaginary.

The U.S. EPA's proposed remedy for OU3 fails to accord sufficient weight to the fact that the potential exposure pathways evaluated for groundwater contamination are not present. The only remotely conceivable exposure pathway is through drinking contaminated water, which is not possible given the public water supply and existing wellhead treatment and monitoring that has been in place for several decades.

Treatment systems at public supply wells are appropriate remedial actions as the OU3 RAOs (refer to Comment IV.A.i) and the Comprehensive Environmental Response, Compensation, and Liability Act explicitly contemplates remedial actions that are designed only to "prevent or minimize"—not eliminate—"the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment." 42 U.S.C. §9601(24). The statute lists examples of remedial action that would minimize contamination/exposure pathways but not "remediate the underlying source" of contamination, including "confinement," "clay cover," "diversion," and "provision of alternative water supplies." *Id*. In fact, by removing volatile organic compounds (VOCs) from the groundwater drawn into public supply wells, the treatment systems do more to address the underlying groundwater contamination than these statutory examples. These systems do in fact "clean[] contaminated water" and "rid[] the environment of contamination. And thereby minimize the release of hazardous substances "to protect the public health and welfare." *Id*.

The U.S. EPA, the New York State Department of Environmental Conservation, and the New York State Department of Health have acknowledged that there is currently no exposure pathway that would create a public health risk so long as the engineering controls (e.g., wellhead treatment) are present at the public supply wells. Moreover, the Human Health Risk Assessment (HDR/APTIM, July 2023), is based on an entirely hypothetical scenario that the treatment would be discontinued in the future. Therefore, the premise of the risk assessment on which the U.S. EPA has selected the remedy is based on an entirely imaginary scenario that almost certainly will never occur. The U.S. EPA can further assure that this hypothetical scenario does not occur, while remaining consistent with the NCP, by requiring continued use of the engineering controls as well as institutional controls on the use of groundwater. Refer to 40 CFR 300.400(a)(1)(iii)(D).

Furthermore, most—if not all—of the NCIA sites that have been identified as contributors to OU3 groundwater contamination have undertaken remedial efforts such that sources of groundwater contamination have been removed and/or are controlled such that they no longer contribute additional groundwater contamination. As a result, the levels of groundwater contamination migrating from the NCIA will continue to decrease and the residual levels can be monitored to ensure that they are being further reduced by natural attenuation.

B. New water districts or public supply wells would be protected by treatment systems similar to or already in place.

The Nassau County Department of Health and each of the approximately 50 public water suppliers in Nassau County routinely monitor and test both treated and untreated water from the supply wells to ensure that the drinking water meets Maximum Contaminant Level (MCLs) for VOCs as well as other compounds. In the hypothetical scenario in which a new water district is formed or new supply wells are drilled in areas that could intersect with the groundwater plumes migrating south of the NCIA, they will have treatment similar to that described in Comment IV.A.iii. Therefore, if VOCs are detected in these wells, they will be handled in the same successful fashion as being currently done. This would fully eliminate the potential exposure pathway on which the OU3 Proposed Plan is based.

III. U.S. EPA'S CONCEPTUAL SITE MODEL — THE BASIS OF THE PROPOSED PLAN — IS INCOMPLETE AND INCONSISTENT

A. The OU2 source area and plume are not depicted on the OU3 Proposed Plan figures and the configuration of plumes is inconsistent among figures in U.S. EPA's OU3 Remedial Investigation Report. The OU2 plume depiction is not supported by actual data and is highly suggestive and speculative.

The OU3 RI identifies the GI/Sylvania sites and associated groundwater plume (OU2) as sources to OU3. However, the OU3 remedy figures do not depict the OU2 plume or show how it contributes to OU3 contamination. Moreover, the U.S. EPA's Feasibility Study cost estimates for some alternatives break remediation costs up by "Eastern," "Central," and "Western" Plumes (OU1-naming convention), with no accounting for OU2 contribution.

- The depiction of the OU1/OU3 plumes on RI Figure 1-5 is inconsistent with the depiction on the Proposed Plan Remedy figures. That is, the Proposed Plan figures do not depict the OU2 plume or its contribution to OU3 at all. The OU2 plumes are shown bounded using wells W-36-390, W-36-448, and MW-219-560 (identified in red on the markup of Figure 1-5 provided on Page 7). However, concentrations at these wells are extremely elevated, with chlorinated volatile organic compound (CVOC) concentrations ranging from approximately 350 to over 1,500 µg/L. These wells are not appropriate for bounding the western edge of the OU2 plume as sample concentrations are more than **200 times the MCLs**. In fact, there are wells with lower CVOC concentrations within the OU2 plume itself.

- Furthermore, the depiction of the OU2 plume on RI Figure 1-5 is not consistent with data collected during the OU1 PDI (EnSafe/ERM, July 2023). RI Figure 1-5 shows the OU2 plume only slightly overlapping with the Eastern Plume in the eastern edge of Drainage Basin 51 in OU1 which has been disproven by OU1 PDI data as presented below.

  OU1 PDI profile boring PDI-41 (identified in pink on the Page 7) is located 1,000 feet west of W-36-390 and W-36-448. PDI-41 samples collected from 405 and 420 feet bgs had results with similar composition to those samples from W-36-390 and W-36-448. This demonstrates that the OU2 plume likely extends at least 600 feet further west into OU1 than depicted on Figure 1-5.

	OU1 Profile Boring		OU2 Monitoring Wells	
Well ID	**PDI-41**		**W-36**	
Depth (feet bgs)	**405**	**420**	**390**	**448**
PCE	142	114 J	110	78
TCE	626 J	403	520	220
Cis-1,2-DCE	3.2	8 J-	120	51
Trans-1,2-DCE	ND	ND	9.4	3
1,1,1-TCA	52.9 J	44.2 J	1.2 J	0.67 J
Freon-113	6.1	12.6 J	4.1 J	2.7
1,1-DCA	1.1	3.6 J	1.8 J	1 J
1,1-DCE	166 J	135 J	2.6 J	1.2 J
Carbon Tetrachloride	1.1	3.5 J	19	6
Chloroform	7.0 J	8.9 J	2.5 J	1.1 J

Notes:

bgs = below ground surface
PCE = tetrachloroethene
TCE = trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
trans-1,2-DCE = trans-1,2-dichloroethene
1,1,1-TCA = 1,1,1-trichloroethane
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
J = estimated value
ND = not detected

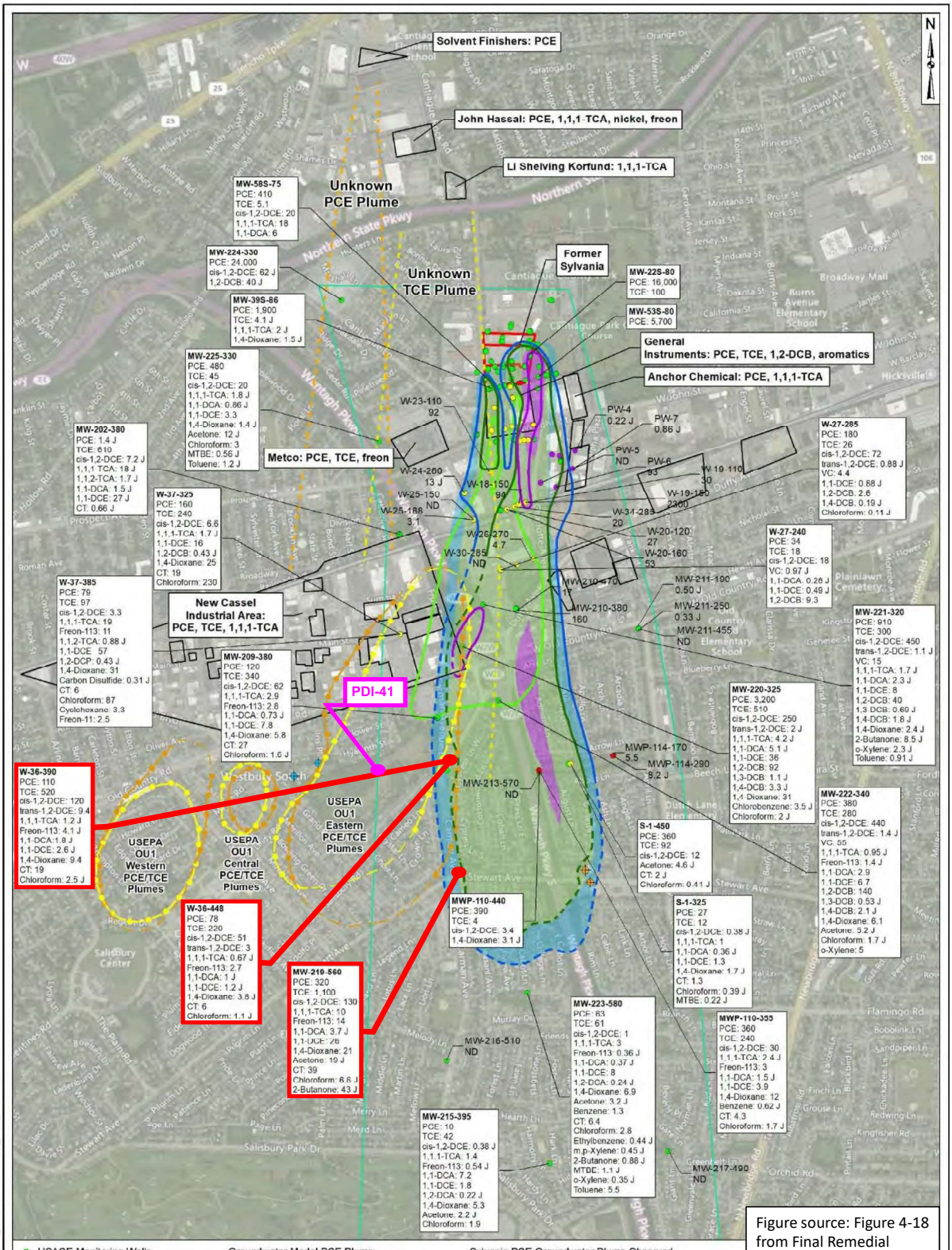


Figure source: Figure 4-18 from Final Remedial Investigation Report, Sylvania Corning FUSRAP Site, September 2021, USACE (USACE, 2021)

Data depicting the OU1 groundwater plumes is from sampling conducted prior to 2011.

SYLVANIA CORNING FUSRAP SITE
SYLVANIA CORNING FUSRAP MODELED VS. OBSERVED PCE GROUNDWATER PLUME AND OTHER VOCS IN VICINITY OF THE SITE
HICKSVILLE, NASSAU COUNTY, NEW YORK

Service Layer Credits: © 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS © 2021 TomTom

FIGURE 4-18
July 2021

B. OU2 source control is not in place.

The OU2 RI Report (WSP, July 2022) identified areas of **PCE soil contamination over 1,000,000 micrograms per kilogram to depths up to 60 feet below grade.** There is currently no remedial system in place to address this contamination; therefore, it is still contributing to OU2 groundwater contamination that ultimately migrates to OU3. Therefore, the basis of the OU3 Proposed Plan, excerpted below, is not accurate and does not reflect actual site conditions. Furthermore, remediation of soil contamination at those concentrations is unlikely to occur in a timely fashion, considering the site only just completed the RI phase and still has the Feasibility Study, design, and construction phase to complete before remediation of soil can begin.

> *"Response actions for OU1, OU2, and the sources of the contamination at those OUs are not part of this OU3, although the successful completion (i.e., source control or cleanup) of addressing the source area(s) at the upgradient, individual source facilities and the resulting groundwater contamination are anticipated and was assumed in evaluating the potential for attaining the objectives of the preferred alternative for this OU3 ROD."*

C. The U.S. EPA does not account for multiple sources and/or relases at different times, including groundwater impacts from sites north of the OU1 and OU2 source areas.

The U.S. EPA contends trichloroethene (TCE) is present at the leading edge of the Eastern Plume due to biodegradation of PCE. However, the TCE present at the leading edge, and deeper, is more likely indicative of multiple sources/releases.

Monitoring wells and profile borings have been installed throughout the OU1 Eastern Plume, from the northern source area site (within the NCIA) to the south and into Eisenhower Park. There have also been samples collected from wells immediately upgradient of the NCIA/Frost Street Sites. The data demonstrates that there are at least two CVOC plumes present—a shallower PCE-dominant plume and a deeper TCE-dominant plume that contains other compounds such as non-chlorinated volatile organic compounds (NCVOCs), chloroform, and carbon tetrachloride. These plumes remain separated throughout OU1, but demonstrate a convergence in OU3, with the TCE plume extending further south into Eisenhower Park than the PCE plume. There is also the acetone/NCVOC plume of unknown origin/composition present in the area. The data to support this is provided on Pages 9 and 10, with locations identified from north to south as shown on the figure on Page 11. Data was obtained from the following sources:

- *U.S. EPA OU3 RI Report* (HDR/APTIM, July 2023)
- *Frost Street Sites Source Area Delineation Summary* Report (Roux Associates, Inc. 2011)
- *Frost Street Sites 2022 Annual Groundwater Monitoring Report* (EnSafe, December 2022)
- Frost Street Sites profile boring data transmitted to the U.S. EPA on August 14, 2017
- Frost Street Sites monthly reports that are provided to the U.S. EPA OU1 Project Manager and includes quarterly analytical data from the extraction wells
- *OU1 PDI Directive 2 Technical Memorandum* (ERM/EnSafe, July 2023); data tables with full results are available as Administrative Record Document 688957

Summary

The data below demonstrates that the deeper TCE contamination likely comes from another source, one that is further upgradient of the identified OU3 source area sites in the NCIA. Potentially, the Metco Site, or the site that is the source of the "unknown TCE plume" depicted on RI Figure 1-5 and figure on Page 11. This would explain why the TCE plume is deeper and further south than the PCE-dominant plume emanating from the Frost Street Sites.

Well/Boring	Depth (feet bgs)	Summary of Data
Upgradient of NCIA (Metco Site and "Unknown TCE Plume")		
MW-202 Monitoring Well	380	Deep Plume (other sources): High concentrations of TCE as well as detections of compounds seen at deep depths in OU1 and OU3 (carbon tetrachloride, 1,1,1-TCA, 1,1,-DCA, and 1,1-DCE).
W-37 Monitoring Well	325 385	Deep Plume (other sources): Just west of the Frost Street Sites source area, but screened nearly 300 feet deeper than the Frost Street release area. Concentrations here present TCE dominance, as well as detections of compounds seen at deep depths in OU1 and OU3 (chloroform, carbon tetrachloride, 1,1,1-TCA, 1,1,-DCA, and 1,1-DCE).
Eastern Plume Source Area within NCIA		
Frost Street Sites Source Area	40-55	Area of PCE soil contamination; source of the Frost Street Sites groundwater plume.
FSMW-2 Monitoring Well	FSMW-2A 60-70	Shallow Plume: Nearly two decades of samples with elevated CVOCs (historical data to 25 mg/L) with PCE dominance. This well is adjacent to and at/just below the elevation of the Frost Street Sites Source Area.
	FSMW-2B 114-124	Separation Zone: Nearly two decades of samples with non-detect/low detections of CVOCs.
	—	Deep Plume (other sources): Not identifiable at this location since this is a monitoring well pair, not profile boring with continuous samples and a deep well was not installed.
FSMW-4 Monitoring Well	FSMW-4A 60-70	Shallow Plume: Nearly two decades of samples with elevated CVOCs (historical data up to 124 mg/L) with PCE dominance. This well is adjacent to and at/just below the elevation of the Frost Street Sites Source Area.
	FSMW-4B 137-147	Separation Zone: Nearly two decades of samples with non-detect/low detections of CVOCs.
	—	Deep Plume (other sources): Not identifiable at this location since this is a monitoring well pair, not profile boring with continuous samples and a deep well was not installed.
FSMW-8 Monitoring Well	FSMW-8A 64-74	Shallow Plume: Nearly two decades of samples with elevated CVOCs with PCE dominance (historical data up to 45 mg/L). This well is downgradient and just below the elevation of the Frost Street Sites Source Area.
	FSMW-8B 132-142	Separation Zone: Nearly two decades of samples with non-detect/low detections of CVOCs.
	—	Deep Plume (other sources): Not identifiable at this location since this is a monitoring well pair, not profile boring with continuous samples and a deep well was not installed
EX-1D Profile Boring	65-135	Shallow Plume: Elevated CVOCs with PCE dominance.
	145-225	Separation Zone: Non-detect/low detections of CVOCs.
	235	Deep Plume (other sources): Elevated CVOCs with TCE dominance and carbon tetrachloride. NCVOC toluene is also above SC in the 225 and 235 feet bgs samples.
EX-1 Extraction Wells	EX-1A 50-100	Shallow Plume: PCE dominance with concentrations above the SC, but an order of magnitude lower than EX-1B and TCE concentrations below the SC.
	EX-1B 100-150	Shallow Plume: Highest CVOC concentrations with PCE dominance and TCE just above the SC.
	EX-1C 150-200	Separation Zone: Concentrations are lowest in this well and are reducing over time. Although PCE is present at concentrations just above the SC, it is at an order of magnitude lower than EX-1B. TCE is present below the SC. This is likely due to the vertical effects of pumping (i.e., contamination is coming from depths above/below the screen interval).
	EX-1D 200-245	Deep Plume (other sources): PCE-dominance, but TCE is present at the same order of magnitude. 1,1,-DCE is also present above the SC as well as lower detections of 1,1,1-TCA, 1,1-DCA, carbon tetrachloride, and chloroform.
U.S. EPA OU1		
FSMW-13 Monitoring Wells	FSMW-13A 69-79	Shallow Plume: Nearly two decades of samples with elevated CVOCs with PCE dominance.
	FSMW-13B 119-129	Shallow Plume: Nearly two decades of samples with elevated CVOCs with PCE dominance.
	—	Separation Zone: Not identifiable at this location since this is a monitoring well cluster, not profile boring with continuous samples.
	FSMW-13C 239-249	Deep Plume (other sources): Nearly two decades of samples with elevated CVOCs with TCE dominance and 1,1,1-TCA, 1,1-DCA, 1,1-DCE, carbon tetrachloride, and chloroform.

Well/Boring	Depth (feet bgs)	Summary of Data
FSMW-14 Monitoring Wells	FSMW-14A 119-129	Shallow Plume: Nearly two decades of samples with elevated CVOCs with PCE dominance.
	FSMW-14B 159-169	Shallow Plume: Nearly two decades of samples with elevated CVOCs with PCE dominance.
	—	Separation Zone: Not identifiable at this location since this is a monitoring well cluster, not profile boring with continuous samples.
	FSMW-14C 239-249	Deep Plume (other sources): Nearly two decades of samples with elevated CVOCs with TCE-dominance and 1,1,1-TCA, 1,1-DCA, 1,1-DCE, carbon tetrachloride, and chloroform.
PDI-40 Profile Boring	240-300	Shallow Plume: Elevated CVOCs with PCE dominance.
	320-340	Separation Zone: Non-detect/low detections of CVOCs.
	360+	Deep Plume (other sources): Elevated CVOCs with TCE dominance and acetone and chloroform. NCVOCs benzene and toluene are also present above SC in the 395 feet bgs sample.
PDI-43 Profile Boring	340-400	Shallow Plume: Elevated CVOCs with PCE dominance except for the 400 feet bgs sample which was TCE dominant.
	420	Separation Zone: Non-detect/low detections of CVOCs.
	440-480	Deep Plume (other sources): Elevated CVOCs with TCE dominance and 1,1-DCE, 1,1,1-TCA, 1,1,2-trichloro-1,2,2-trifluoroethane, carbon tetrachloride, acetone, and chloroform.
U.S. EPA OU3		
NCOU3-B03 Profile Boring	350-470	Shallow Plume: Elevated CVOCs with PCE dominance. The permanent well installed at 470 feet bgs, NCOU3-MW-03D, had generally equivalent values of PCE and TCE.
	503	Separation Zone: Non-detect/low detections of CVOCs.
	580*	Deep Plume (other sources): Acetone and benzene above SC.
	*Note: samples collected from 533 and 567 feet bgs show elevated levels of trihalomethanes (bromodichloromethane, bromoform, dibromochloromethane,) which indicate drilling water may have entered the sample string and these samples may exhibit falsely low concentrations. Therefore, it is possible that the Deep Plume begins at a shallower depth at this location.	
NCOU3-B06 Profile Boring	437-463	Shallow Plume: While not specifically PCE-dominant, samples collected from these depths show elevated PCE compared to TCE.
	—	Separation Zone: Not present; this location is likely proximate to where the Shallow and Deep Plumes converge.
	437-522	Deep Plume (other sources): Samples with elevated CVOCs with TCE dominance and 1,1-DCE 1,1,1-TCA, 1,1,2-TCA, acetone, benzene, styrene, and toluene.
NCOU3-B11 Profile Boring	—	Shallow Plume: PCE was not detected above SC in this profile boring; the PCE-dominant shallow plume is not present. **It can be presumed that the PCE-dominant shallow plume ends somewhere between NCOU3-B06 and NCOU3-B11/B13/B09.**
	—	Separation Zone: Not applicable.
	447+	Deep Plume (other sources): PCE not present/not above SC, TCE above SC, and benzene and toluene above SC at 569 feet bgs.
NCOU3-B13 Profile Boring	—	Shallow Plume: PCE was not detected above SC in this profile boring; the PCE-dominant shallow plume is not present. **It can be presumed that the PCE-dominant shallow plume ends somewhere between NCOU3-B06 and NCOU3-B11/B13/B09.**
	—	Separation Zone: Not applicable.
	427-525	Deep Plume (other sources): TCE above SC, and benzene and toluene above SC at 525 feet bgs.
NCOU3-B09 Profile Boring	—	Shallow Plume: PCE was not detected above SC in this profile boring; the PCE-dominant shallow plume is not present. **It can be presumed that the PCE-dominant shallow plume ends somewhere between NCOU3-B06 and NCOU3-B11/B13/B09.**
	—	Separation Zone: Not applicable.
	447-568	Deep Plume (other sources): TCE was present above SC and benzene above SC at 568 feet bgs.

Notes:

Blue font = Indicative of Eastern Plume
Red font = Indicative of Other Sources
bgs = below ground surface
NCIA = New Cassel Industrial Area
TCE = trichloroethene
OU = Operational Unit
1,1,1-TCA = 1,1,1-trichloroethane
1,1-DCA = 1,1-dichloroethane
1,1-DCE = 1,1-dichloroethene
PCE = tetrachloroethene
CVOC = chlorinated volatile organic compound
mg/L = milligrams per liter
NCVOC = non-chlorinated volatile organic compound
SC = Screening Criteria, Table 4-1 of EPA OU3 RI Report
U.S. EPA = U.S. Environmental Protection Agency



LEGEND

- EXTRACTION WELL
- MONITORING WELLS
- VERTICAL PROFILE BORING
- NCHGW OPERABLE UNIT (OU1)
- NCHGW OPERABLE UNIT (OU3)
- STUDY AREA

NAD 1983 STATE PLANE
NEW YORK LONG ISLAND FEET

0 800 1,600

SCALE IN FEET

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

X:\FrostStreet\Figure3v2.mxd

D. The acetone and other non-chlorinated volatile organic compounds within OU3 are not delineated and source(s) are not identified. Therefore, the U.S. EPA cannot confirm or affirm that all source areas are remediated and contribution to groundwater contamination will not continue to occur.

The Proposed Plan identifies a list of contaminants of potential concern (COPCs) that include CVOCs as well as the NCVOC benzene and semivolatile organic compound 1,4-dioxane. The U.S. EPA has chosen to not include acetone or other NCVOCs as a COPCs, and simply states on Page 40 of the RI Report that "acetone is not a site-related contaminant and the spatial distribution was not assessed." (HDR/APTIM, July 2023). There is also no discussion in the RI Report of the acetone and NCVOC exceedances with the exception of benzene.

Omitting acetone as a COPC and not addressing the NCVOC contamination is not appropriate for the following reasons:

- Page 36 of the RI Report states that acetone is the 4th most frequently detected compound in the RI, with 93 detections in 225 samples and concentrations up to 3,300 µg/L. The New York State Technical and Operational Guidance Series 1.1.1/6 CRR Part 703.5 criteria for acetone is 50 µg/L. Page 36 shows that COPCs 1,1-dichloroethene, 1,1,1-trichloroethane, and cis-1,2-dichloroethene were detected less frequently, and at smaller orders of magnitude compared to their respective standard than the acetone detections.

- As shown on Figure 4-1 in the RI Report, these acetone and NCVOC exceedances are present above and beneath the CVOC plumes targeted for remediation by the Proposed Plan.

- This OU3 data is not anomalous; acetone and NCVOCs were detected in samples collected for the OU1 PDI at similar orders of magnitude and depths, including exceedances of applicable criteria (EnSafe/ERM, July 2023).

The presence of acetone and other NCVOC contamination demonstrates that the conceptual site model is incomplete, and the following assumption stated in the Proposed Plan is not accurate. That is, source control cleanup of the individual source facilities and resulting contamination is not "successfully complete."

> *"Response actions for OU1, OU2, and the sources of the contamination at those OUs are not part of this OU3, although the successful completion (i.e., source control or cleanup) of addressing the source area(s) at the upgradient, individual source facilities and the resulting groundwater contamination are anticipated and was assumed in evaluating the potential for attaining the objectives of the preferred alternative for this OU3 ROD."*

Before a remedy can be appropriately selected for OU3, the U.S. EPA should identify the source(s) of the acetone and NCVOC contamination and ensure source control is in place and that the resulting groundwater contamination and its impact on OU3 is fully understood.

E. The U.S. EPA's asumption that non-aqueous phase liquid is not present is inconsistent with the U.S. EPA's own guidance.

The U.S. EPA's assumption that there is no non-aqueous phase liquid (NAPL) has no support or rationale (i.e., backup documentation or references) and is inconsistent with *Evaluation of the Likelihood of DNAPL Presence at NPL Sites — National Results* (U.S. EPA — 9355.4-13 U.S. EPA 540-R-93-073 PB93-963343, September 1993).

"The concentrations that are now generally accepted by the research community as indicating subsurface DNAPL across a wide range of site types are on the order of 1% or more of a compound's solubility" (Cherry and Feenstra 1991, U.S. EPA Fact Sheet, Cohen and Mercer, 1993).

The solubility of PCE is 150 milligrams per liter (mg/L); 1% is 1,500 µg/L. The highest concentration of PCE in OU3 6,500 µg/L. Therefore, the presence of NAPL in OU3 cannot be ruled out, at least not with evidence/data to support, which the U.S. EPA does not provide.

Furthermore, *Design Guidelines for Conventional Pump-and-Treat Systems (*U.S. EPA/540/S-97/504, September 1997) states that NAPL can negatively affect the performance and longevity of pump and treat remedies as shown below.

"Subsurface NAPL trapped as ganglia at residual saturation or contained in pools can be a long-term source of ground-water contamination, as illustrated in Figure 8-d, due to its limited aqueous solubility that may greatly exceed drinking water standards. At many sites, NAPL pools will continue to contaminate ground water long after residual fingers and ganglia have dissolved completely (Cohen and Mercer, 1993). If NAPLs are not removed (e.g., by excavation) or contained (as depicted in Figure 2), then tailing and rebound will occur during and after P&T operation, respectively, in and downgradient of the NAPL zone. Above residual saturation, NAPL will flow unless it is immobilized in a stratigraphic trap or by hydrodynamic forces. NAPL movement can greatly expand the subsurface volume where restoration is impractical. A critical element of site characterization, therefore, is to delineate the nature and extent of mobile and residual NAPL so that these source areas can be removed or contained." Detailed guidance on NAPL site characterization is provided by American Petroleum Institute (1989), U.S. EPA (1992a), Cohen and Mercer (1993), and Newell et al. (1995).

IV. THE PROPOSED PLAN IS INCONSISTENT WITH THE NCP

The Proposed Plan is inconsistent with the NCP because it is not cost effective, does not consider all alternative remedies, is not effective in the long or short term, and any reduction of toxicity, mobility, or volume is not necessary for public health because there is already a water treatment system in place that capably removes VOCs to below MCLs.

A. The Proposed Plan is not cost-effective.

The NCP states that "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." 40 C.F.R. §300.430(f)(1)(ii)(D). Overall effectiveness is determined by balancing the following primary balancing criteria: (1) long-term effectiveness and performance; (2) reduction in toxicity, mobility, and volume through treatment; and (3) short-term effectiveness. *Id*. Overall effectiveness is then compared to the cost. *Id*. The Proposed Plan does not meet this legal requirement.

i. The Proposed Plan is excessive and unnecessary to achieve the remedial action objectives.

The OU3 RAOs presented in the Proposed Plan are:

- *Prevent or minimize the potential future human exposure (via dermal, ingestion and inhalation) to Site-related contaminants in groundwater at concentrations in excess of federal maximum contaminant levels (MCLs) and State standards;*

- *Minimize the potential for further migration of groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards; and*

- *Restore the impacted aquifer to its most beneficial use as a source of drinking water by reducing contaminant levels to the more stringent of federal MCLs or New York State standards.*

The first two RAOs are based on minimizing contamination and potential exposure/migration, not fully eliminating it. This can be achieved far more economically via wellhead treatment and institutional controls (discussed further in detail in Comment II). The third RAO is not addressed by the Proposed Plan because concentrations of acetone and NCVOCs would remain above MCLs because they are not addressed (Refer to Comment IV.A.iv).

Furthermore, the Proposed Plan places extraction wells in the middle of the plumes as well as at the toe of the plumes. As there are no receptors, supply wells, etc., in the middle of the plumes, not only is extraction in there unnecessary to achieve all three of the RAOs listed above, it also significantly increases the impact to the neighborhood and community, which should be of paramount importance to U.S. EPA.

Removing the extraction wells from the middle of the plumes would **yield a significant cost savings while still achieving all three RAOs listed above**. While the U.S. EPA did not itemize costs in the Feasibility Study, it can be assumed that the cost of the remedy would be reduced by at least 50% should this change be made.

ii. The Proposed Plan includes unnecessary and exorbitant costs.

In addition to the Proposed Plan being excessive for the RAOs, the Proposed Plan includes a design that is unnecessarily intrusive and costly with miles of trenching and piping through roadways. This would require extensive asphalt restoration, utility location and protection, etc. The U.S. EPA should consider well-by-well treatment/discharge as well as trenching in Eisenhower Park where utilities would be much less frequent and asphalt restoration would not be required.

iii. The costs of the Proposed Plan are unreasonably high compared to overall effectiveness.

1. <u>It is not cost effective to have multiple systems in place to bring VOC concentrations to below safe drinking water standards</u>.
   The public supply wells that could be impacted by the OU3 plumes (East Meadow, Hempstead, and Roosevelt Field wells) are currently being treated in a variety of ways to address drinking water quality, including, but not limited to VOC removal. As described in the Village of Hempstead Water Department Annual Drinking Water Quality Reports, these treatments include:

Method	Purpose	Chemicals Added
Chlorination	Disinfection	Sodium hypochlorite, Calcium hypochlorite
Air stripping	VOC Removal	None
Nozzle stripping	Oxidation of iron, VOC, and carbon dioxide	None
Iron filtration	Iron removal and improve aesthetics/reduce staining	Sodium hypochlorite Potassium permanganate

Method	Purpose	Chemicals Added
Iron sequestering	Improve aesthetics/reduce staining	Sodium hexametaphosphate, blend of poly and ortho-phosphates
Corrosion control	Reduce metals leaching from household plumbing	Caustic soda (sodium hydroxide), blend of poly and ortho-phosphates

As shown above, potable water receives a variety of treatments for a variety of reasons; even if VOCs were removed entirely from the aquifer (Note: The Proposed Plan will not do that as described in Comment IV.A.iv), these additional treatment methods would remain. A nearly $100-million remedial measure is unreasonable when there is already a safe and effective drinking water treatment system in place. The NCP is designed specifically to avoid this type of unnecessary spending.

2. Extraction wells in the neighborhood north of Eisenhower Park are not necessary to achieve all RAOs.

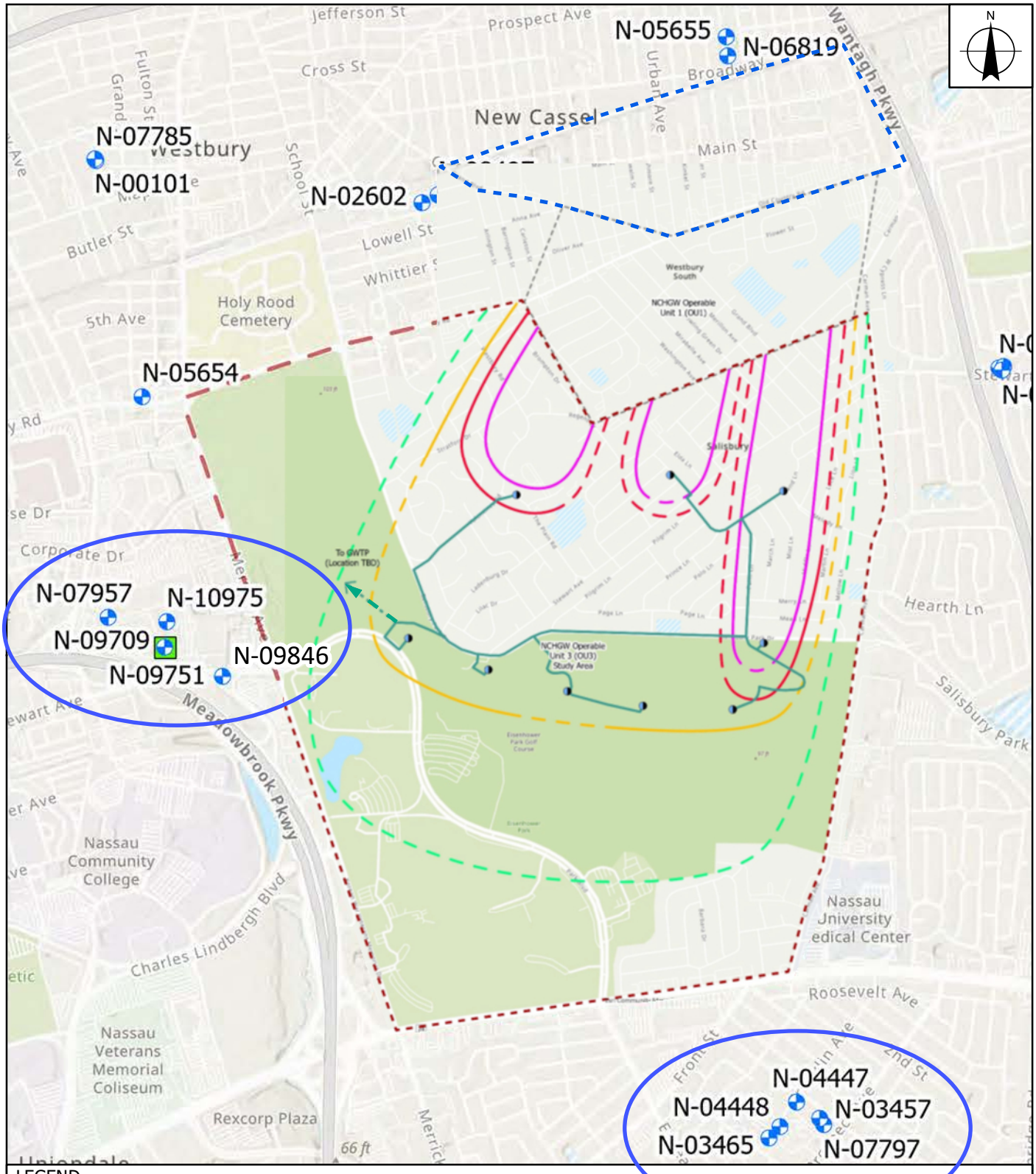
   There are currently no receptors within OU3; the only potential receptors are present only in the unlikely and hypothetical case where the water supply wells would not have treatment. These water supply wells are located downgradient of Eisenhower Park and downgradient of the southern line of extraction wells in Eisenhower Park placed at the toe of the plumes (the locations of these wells are circled in blue on Page 16).

   Therefore, incremental treatment is not necessary and placement of the extraction wells in the neighborhood provide no measurable benefit to the OU3 remediation and not only add unnecessary costs, but also create significant burdens for residents of the neighborhood (Refer to Comment V.B).

3. The Proposed Plan is not necessary to address the irrigation wells within Eisenhower Park.

   Irrigation wells in Eisenhower Park were sampled in Summer 2017 and Summer 2019 as presented in the *Eisenhower Park OU-3 Supplemental Sampling Program Report* (Nassau County Department of Public Works, June 2019). In the Summer 2017 sampling, CVOCs were detected at only low levels, with highest concentrations being PCE (23.5 µg/L), cis-1,2-dichloroethene (22 µg /L), and TCE (4.7 µg/L). The highest total VOC concentrations were 46.4 µg/L and 51.4 µg/L, with the highest concentrations from the deepest well screened 400 to 457 feet bgs in the western part of Eisenhower Park. Other irrigation wells in the central and eastern part of Eisenhower are over 200 feet shallower and presented total VOC concentrations and order of magnitude lower. The shallow wells were resampled in Spring 2019 and VOCs were not detected. Nassau County concluded that concentrations are higher at the end of the irrigation season than the start. It can be assumed that as pumping continues throughout the irrigation season, VOCs are drawn towards the irrigation wells, with highest impacts seen at the end of the pumping season.

   The total VOC concentrations detected in the irrigation wells are very low, and although above MCLs, do not currently require treatment. Should concentrations increase, temporary carbon treatment can be easily mobilized to address these concentrations.


N-05655
N-06819
N-07785
N-00101
N-02602
N-05654
N-07957
N-10975
N-09709
N-09846
N-09751
N-04447
N-04448
N-03457
N-03465
N-07797
New Cassel
Westbury
Holy Rood Cemetery
Nassau Community College
Nassau Veterans Memorial Coliseum
Nassau University edical Center
Rexcorp Plaza
Meadowbrook Pkwy
Wantagh Pkwy
Charles Lindbergh Blvd
Roosevelt Ave
Hearth Ln
Salisbury Park
Jefferson St
Prospect Ave
Cross St
Broadway
Main St
Lowell St
Butler St
5th Ave
Corporate Dr
Fulton St
School St
Urban Ave
66 ft
To GWTP (Location TBD)
NCHGW Operable Unit 1 (OU1)
NCHGW Operable Unit 3 (OU3) Study Area
Westbury South
Salisbury
N
LEGEND
PROPOSED EXTRACTION WELLS
POTABLE WELL
PROPOSED EXTRACTION WELL PIPING
10 UG/L COCS ISOCONCENTRATION (DASHED WHERE INFERRED)
100 UG/L COCS ISOCONCENTRATION (DASHED WHERE INFERRED)
500 UG/L COCS ISOCONCENTRATION (DASHED WHERE INFERRED)
1,000 UG/L COCS ISOCONCENTRATION (DASHED WHERE INFERRED)
NEW CASSEL INDUSTRIAL AREA
NCHGW OPERABLE UNIT (OU1)
NCHGW OPERABLE UNIT (OU3) STUDY AREA
NAD 1983 STATE PLANE NEW YORK LONG ISLAND FEET
0
1,000
2,000
SCALE IN FEET
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iv. Acetone and other non-chlorinated volatile organic compounds would not be remediated based on the Proposed Plan, which would result in the aquifer not being fully remediated, despite the proposed $100-million remedial effort.

The U.S. EPA has no basis for the conclusion that "acetone is not a site-related contaminant." Historical activities at identified source area sites (as well as those yet to be identified) are not fully known or documented. The only reason these compounds were not identified during the RI of OU1 is because available sample data was not from deep enough sampling intervals. That is, until the OU1 PDI was performed as described in Comment III.D.

Regardless of acetone being "site-related" it is still present in OU3 at depths that do not align with those of the COPCs/where groundwater extraction would be targeted. Therefore, the selected remedy and other alternatives cannot be considered cost effective as they would not address all of the contamination in the aquifer and therefore, the aquifer would remain unsuitable for its "most beneficial use" (e.g., drinking water source), despite spending nearly $100 million on remediation.

v. Successful remediation and treatment of groundwater will be hindered by the presence of metals and other compounds not listed as contaminants of potential concern.

Although not COPCs, the presence of metals, acetone, NCVOCs, and other compounds will hinder groundwater treatment. In addition to acetone and NCVOCs remaining because targeted extraction for CVOCs would not extract from the depths that acetone and NCVOCs are present, the presence of metals and other compounds will hinder treatment and potentially foul well screens.

Inorganics, in particular, can pose significant treatment issues. Once groundwater is extracted, it enters an oxygenated environment, which causes dissolved metals to precipitate out of solution. In pump and treat systems, this precipitate will tend to accumulate and *cake* onto filter media. This effectively can cause back pressure on the system by reducing available porosity as well as undue expense due to more frequent filter media replacement. The presence of non-chemical of concern organics (acetone, NCVOCs) may also interfere geochemically with degradation of CVOCs, thereby creating additional costs. These compounds may serve as cosolvents, and actually exacerbate the dissolution of CVOCs that may be adsorbed onto aquifer matrix, thereby increasing the concentration/volume of volatiles requiring treatment.

B. The U.S. EPA does not present the basis of their design or cost estimate.

The Proposed Plan provides estimated pumping rates, number and location of extraction wells, etc., but there is no backup documentation of the modeling or calculations performed to develop these pumping rates in the Proposed Plan or Feasibility Study. Because there is no basis for this design, the cost estimates are not reliable and therefore the cost-effectiveness of the remedy cannot be adequately evaluated.

The cost estimate does not provide backup for where costs were obtained. There are no references to driller or subcontractor quotations or references to cost guidance such as RSMeans. Therefore, the cost effectiveness of the remedy cannot be adequately evaluated.

C. The U.S. EPA did not appropriately evaluate all available alternatives (e.g., wellhead treatment at supply wells).

Wellhead treatment at supply wells has been proven to remediate VOCs at the supply wells. It is a viable remedial strategy that was not identified nor evaluated in the Feasibility Study.

In addition to this being inconsistent with the NCP, this is also inconsistent with precedent. In 2015, at a nearby site in the Village of Garden City, Nassau County, New York — Fulton Avenue Superfund Site — the U.S. EPA changed the originally selected remedy (groundwater extraction and treatment and *in situ* chemical oxidation) to instead continue the operation and maintenance of the existing wellhead treatment systems for the potable supply wells. This included modifying the RAOs as follows:

Original RAOs

- *Reduce contaminant levels in the drinking water aquifer to Applicable or Relevant and Appropriate Requirements*
- *Prevent further migration of contaminated groundwater*

Modified RAOs

- *Minimize and/or eliminate the potential for future human exposure to site contaminants via contact with contaminated drinking water*
- *Help reduce migration of contaminated water*

This change was by in large due to input by the Village of Garden City as well as uncertainty as to whether the proposed remedy would significantly shorten the time to achieve the groundwater MCLs. The U.S. EPA did not provide the basis of their design or calculate estimates of clean-up time for the OU3 Proposed Plan; therefore, this same uncertainty is present at OU3. Furthermore, the U.S. EPA has not adequately reached out to the public, nor provided adequate time or information to facilitate review of the remedy (Refer to Comments V.A and V.B).

D. Long-term effectiveness and permanence

Long-term effectiveness and performance is assessed using the following factors: (1) magnitude of the residual risk remaining from untreated waste or treatment residuals remaining at the conclusion of the remedial activities; and (2) the adequacy and reliability of controls such as containment systems and institutional controls that are necessary to manage treatment residuals and untreated waste. 40 C.F.R. §300.430(e)(9)(iii)(C).

There is no residual risk remaining from untreated water at the site because there is water treatment in place that effectively removes VOCs to below MCLs. Even after the installation of the Proposed Plan, the water supply will still require treatment before consumption to address residual VOCs as well as other compounds. In summary, **the proposed remedy does not make the drinking water any safer than it already is.**

There is nothing effective in treating contamination, where treatment is already being provided to eliminate public risk, and the proposed additional treatment will not change those effective risk controls already in place.

E. Short-term effectiveness

The short-term impacts are evaluated using the following factors: (1) short-term risks that might be posed to the community during implementation of an alternative; (2) potential impacts on workers during remedial action and the effectiveness and reliability of protective measures; (3) potential environmental impacts of the remedial action and the effectiveness and reliability of mitigation measures; and (4) the time until protection is achieved. 40 C.F.R. §300.430(e)(9)(iii)(E).

There is an unnecessary risk to workers from the groundwater extraction system. Since the Proposed Plan requires the groundwater to be transferred under pressure to the centralized treatment plant, there is a risk of release of contaminated groundwater. The Proposed Plan includes miles of trenching piping through roadways, which creates significant risks to the public such as: open excavations, dust, and noise as well as similar risks to site workers. Furthermore, piping in roadways would require precise utility location and protection to ensure no utility strikes or damage.

Overall, the Proposed Plan introduces short-term risks without achieving any reduction of long-term risks.

F. Reduction of toxicity, mobility, or volume through treatment

Reduction of toxicity, mobility, or volume concerns the degree to which the alternatives employ recycling or treatment that reduces toxicity, mobility or volume. 40 C.F.R. §300.430(e)(9)(iii)(D). The following factors are considered: (1) the treatment or recycling processes the alternatives employ and the materials they will treat; (2) the amount of hazardous substances, pollutants, or contaminants that will be destroyed, treated, or recycled; (3) the degree of expected reduction in toxicity, mobility, or volume of the waste; (4) the degree to which the treatment is irreversible; (5) the type and quantity of residuals that will remain following treatment; and (6) the degree to which the treatment reduces the inherent hazards posed by the principal threats at the site. *Id.*

Although the Proposed Plan will result in the reduction of CVOCs, such reduction is not necessary for public health because there is already a water treatment system in place that capably removes VOCs to below MCLs. The *inherent hazard* posed by the contamination will not be reduced, to any degree, by the Proposed Plan.

V. THE PROPOSED PLAN WILL BE DISRUPTIVE TO THE COMMUNITY AND WILL PROVIDE LIMITED BENEFIT

A. The August 10, 2023 Public Meeting was inadequately promoted and poorly attended and overall public outreach efforts for OU3 have been inadequate.

The adverse impacts to the community that will result from construction of the Proposed Plan are numerous, significant, and have not been adequately evaluated. The August 10, 2023 public meeting (held during summer vacation season) was not well publicized and, aside from local government agencies, etc., attendance was sparce. This limited outreach and subsequent limited attendance shows that the U.S. EPA has failed to perform the proper outreach to inform the public of the proposed remedy within the public comment period. The U.S. EPA has an obligation to consider the significant impacts that the proposed remedy will impose on the community and balance these impacts against the perceived benefits of unnecessary remedial action; especially considering the impact public comment has had on remedies at nearby sites (Refer to Comment IV.C).

Furthermore, the U.S. EPA released a Pathway Analysis Report in July 2022 to "serve as a preliminary planning document to allow USEPA and stakeholders to review and comment on the approach to the identification of Constituents of Potential Concern [sic], exposure assessment, and the toxicological evaluation before work on the baseline Human Health Risk Assessment (HHRA) is initiated, so that appropriate changes can be made to the assumptions that will be used to estimate exposure and risk." However, there is no documentation of who the "stakeholders" are, the report being released to stakeholders for input, or any steps in developing the report that included reaching out to stakeholders.

B. Proposed Plan figures and descriptions fail to adequately represent the community impact from this remedial action—extraction well locations and proposed trenching are near to/adjacent to three East Meadow School District schools as well as hundreds of homes and businesses.

The U.S. EPA's Proposed Plan and public meeting figures were presented on a map base, not an aerial base. Not showing remedial components on an aerial base makes it difficult for the public to fully understand the impact of the remedy. Extraction wells are located near to/adjacent to three East Meadow District schools as well as hundreds of homes and businesses, as shown on the figure on Page 21.

Furthermore, it has been brought to the attention of the Frost Street Parties that of Nassau County's entire park system, Eisenhower Park is one of the biggest revenue generators and offers the best facilities. As such, interruption of Nassau County's revenue as well as its use as a park for Nassau County residents should be avoided to the extent possible.

C. The real burdens on the community far outweigh any theoretical benefit from the proposed remedy.

The U.S. EPA has stated that there are currently no exposure pathways or risks of harm to humans from the OU3 groundwater plumes. These assurances are powerful support for proposed Alternative 1 – No Further Action. Despite this, the U.S. EPA rejected the no further action remedy and failed to even consider a wellhead treatment remedy.

Instead, the U.S. EPA has developed three costly alternatives, with costs ranging from nearly 100 million to nearly 200-million dollars. These remedies include groundwater extraction and treatment ("pump and treat") alone as well as enhanced remediation via injection in concert with pump and treat. These alternatives are costly, unnecessary, and have a significant impact to the community; especially when compared to the fact that even **without remediation, there are no risks of harm to humans by the groundwater plumes.** Although not the selected remedies, the two with injection components include nearly 500-injection points cited in the neighborhood with multiple rounds of injections. The selected remedy includes miles of trenching and piping throughout the neighborhood, as well as establishment of a centralized treatment facility at a to-be-determined location. The U.S. EPA assume no costs would be incurred to obtain this land from Nassau County, but this is based simply on an assumption without input from Nassau County. This information calls into question the cost effectiveness of the proposed remedy.

The U.S. EPA has proposed remedial techniques that are environmentally unsuitable for the community because they require an enormous use of electricity, fossil fuels, and construction materials and are not designed in accordance with the U.S. EPA Region 2's Clean and Green Energy Policy, which necessitates consideration of green remediation technologies and practices. The reinjection of treated water back into the ground creates mounding at the subsurface and can


W.T. CLARK MIDDLE AND HIGH SCHOOLS
EAST MEADOW SCHOOL DISTRICT, L.I. MONTESSORI SCHOOL AND RECREATIONAL FIELDS
BOWLING GREEN ELEMENTARY SCHOOL
TO GWTP (LOCATION TBD)
EISENHOWER PARK
N
LEGEND
PROPOSED EXTRACTION WELLS
PROPOSED EXTRACTION WELL PIPING
SCHOOL PROPERTY BOUNDARY
EISENHOWER PARK BOUNDARY
NAD 1983 STATE PLANE NEW YORK LONG ISLAND FEET
0
450
900
SCALE IN FEET
Source: Google Earth Pro Imagery - 06/19/2022
X:\FrostStreet\Figure2.mxd

potentially impact the temperature and characteristics of the groundwater into which it is reinjected; the very public resource sought to be protected.

Against these many risks and community concerns, the U.S. EPA must balance the limited and uncertain value of reducing contaminant levels in deep groundwater when those contaminants have no exposure pathway to the public. The theoretical benefit of such treatment is far outweighed by the disruption and risks to the public. Accordingly, the U.S. EPA's proposed remedy is inconsistent with the requirements of the Comprehensive Environmental Response, Conservation, and Recovery Act and the NCP.

CONCLUSION

For all these reasons outlined above, the Proposed Plan is not consistent with the NCP and should not be implemented.

ATTACHMENT 2



FIGURE 3
MONITORING PLAN
FROST STREET SITES
WESTBURY, NEW YORK

LEGEND

- ACTIVE MONITORING WELL - SEMIANNUAL
- ACTIVE MONITORING WELL - ANNUAL
- EXTRACTION WELLS
- IDLE MONITORING WELL

NAD 1983 STATE PLANE
NEW YORK LONG ISLAND FEET

0 100 200

SCALE IN FEET

REQUESTED BY:	AS
DRAWN BY:	MS
DATE:	12/17/2020
PROJECT:	0888820265

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Data Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

X:\FrostStreet\Figure3_CaptureZonesV9.mxd

ATTACHMENT 3

N

SVE-1
AS-10B
SVE-6B
AS-12B
AS-13B
AS-3
AS-2
SVE-2
AS-1
SVE-3
AS-5
AS-4
AS-7
AS-6
AS-16B (Pilot Well AS-1)
AS-8
AS-9
SVE-3A
SVE-4
AS-11
AS-10
AS-13
AS-12
SVE-5
SVE-6
AS-15
AS-16
AS-14
SVE-7
AS-17
AS-19
AS-18
EX-1A/B/C/D
0 100 200
SCALE IN FEET

LEGEND

- ACTIVE MONITORING WELL - ANNUALLY (5TH QUARTER)
- ACTIVE MONITORING WELL - QUARTERLY
- IDLE MONITORING WELL
- ACTIVE SVE WELL (2005)
- ACTIVE SVE WELL (2015)
- IDLE SVE WELL (2014)
- ACTIVE AS WELL (2005)
- ACTIVE AS WELL (2015)
- IDLE AS WELL (2014)
- EXTRACTION WELL
- MODEL SIMULATED DESIGN CAPTURE ZONE EX-1A1
- MODEL SIMULATED DESIGN CAPTURE ZONE EX-1A2
- MODEL SIMULATED CAPTURE ZONE EX-1B
- MODEL SIMULATED CAPTURE ZONE EX-1C
- MODEL SIMULATED CAPTURE ZONE EX-1D

NAD 1983 STATE PLANE
NEW YORK LONG ISLAND FEET
0 150 300
SCALE IN FEET

Figure 4
Remediation Systems
Frost Street Sites
Westbury, New York

REQUESTED BY:	AS
DRAWN BY:	MS
DATE:	8/1/2019
PROJECT:	0888823286

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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September 22, 2023

VIA EMAIL AND FIRST-CLASS MAIL

Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
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New York, New York 10007-1866
Telephone: (212) 637-4227
Email: conway.aidan@epa.gov

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site – Comments on Proposed Plan for Operable Unit 3

Dear Mr. Conway:

On behalf of GTE Operations Support Incorporated ("GTEOSI"), I write to submit these comments regarding the United States Environmental Protection Agency's ("EPA") Proposed Plan to address contaminated groundwater at a portion of the New Cassel/Hicksville Groundwater Contamination Superfund Site (the "Site") identified as Operable Unit 3 ("OU3"). As discussed herein, EPA (a) misapplied the applicable regulations including the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300 *et seq.*, (b) failed to fully develop the data necessary to justify a preferred remedy that calls for the removal of billions of gallons groundwater from a threatened aquifer, and (c) failed to identify a public health threat necessitating immediate action at OU3, as opposed to waiting for the development of additional critical data points. The remedy selected is arbitrary and capricious because EPA did not develop necessary information on source contribution, plume dynamics, costs, and alternatives. It also fails to incorporate EPA's green remediation principles. EPA should not move forward with selecting the remedy in the Proposed Plan without consideration of the below points.

I. Background

The Site comprises approximately 6.5 square miles in Nassau County, New York, characterized by chlorinated volatile organic compound ("CVOC") groundwater contamination and associated source areas. To date, EPA has designated three OUs for the Site.

- **OU1** is a discrete portion of contaminated groundwater hydrologically downgradient of the New Cassel Industrial Area ("NCIA"), where it has been determined that hazardous substances have been deposited, stored, disposed of, placed, or otherwise come to be located.

- **OU2** includes the contaminated groundwater plume that extends downgradient from the properties located at 70, 100, and 140 Cantiague Rock Road (the "former Sylvania Site") and the former General Instruments Facility located at 600 West John Street, Hicksville, New York. The former Sylvania Site is being remediated under the Formerly Utilized Sites Remedial Action Program ("FUSRAP") by the U.S. Army Corps of Engineer ("USACE"). A Remedial Investigation Report ("RI") was issued in September 2021 that investigated groundwater below and from the former Sylvania Site. The successor to General Instruments, Vishay GSI, Inc. ("Vishay"), is currently preparing a Supplemental OU2 RI report ("SRI Report") under a settlement agreement with EPA to determine the nature and extent of contamination of OU2.

- **OU3**, the subject of EPA's Proposed Plan and these comments, includes groundwater contamination located hydrologically downgradient from OU1.

II. The Proposed Remedy Does Not Comply with the NCP

The NCP requires EPA to analyze nine criteria as part of the remedy selection process. *See* 40 CFR § 300.430(f). The NCP categorizes the criteria into three groups: threshold criteria, primary balancing criteria, and modifying criteria. *Id.* The threshold criteria require that a remedy be protective of human health and the environment and comply with applicable or relevant and appropriate requirements of state and federal law ("ARARs"). EPA must then evaluate remedy alternatives against the five primary balancing criteria, which include long-term effectiveness; reduction of toxicity, mobility or volume through treatment; short-term effectiveness; implementability; and cost. 40 C.F.R. §300.430(e)(9)(iii). Finally, EPA must evaluate the two modifying criteria, state acceptance and community acceptance. EPA failed to properly evaluate and weigh the balancing criteria in evaluating and selecting a preferred remedy for OU3.

First, EPA failed to consider the possibility of using the existing municipal supply well treatment systems as a cost-effective mechanism to reduce or contain the OU3 groundwater contamination. *See* Exhibit 1 at Paragraph 11. Treatment at the public supply wellheads serves to both contain the plume and provide treated, safe drinking water to the local population, benefitting all community stakeholders, including local water districts, townships, and residents. Using the existing wellheads would also avoid

issues involved with overpumping. The overpumping of groundwater is threatening drinking-water wells on Long Island generally, with water districts in the area having to limit their pumping due to lack of adequate supply in the sole-source aquifer. Municipal supply wells in OU3 (and the other OUs at the Site) utilize existing treatment systems to remove CVOCs. EPA failed to consider the potential use of these existing treatment systems for either mass reduction or hydraulic containment – an alternative that would serve an important public benefit.

Second, every aspect of the remedy selected by EPA presents logistical challenges that EPA has not adequately considered. *See* OU3 Feasibility Study at 9-6. The selected remedy involves extraction of groundwater from newly installed extraction wells, treatment of the groundwater, and discharge. However, EPA itself acknowledges that "[g]iven the residential location of the groundwater plume, staging areas for the water treatment system are limited. This could result in groundwater needing to be pumped significant distances from extraction locations to a water treatment system, which would increase operational costs." *Id.* at 7-4. The only potential siting location EPA has suggested – Eisenhower Park – would likely be met with a host of community challenges. *See id.* at 9-5 ("Due to space constraints within NCHWGW OU3 area, the final location of the treatment system would be determined during the design and through coordination with State and local authorities to identify the optimal location. For the FS cost-estimate and planning purposes, the treatment plant is assumed to be located within Eisenhower Park."). Further, it should be noted that this area is bordered by areas considered potential Environmental Justice (EJ) communities. With such significant uncertainties regarding its location, it is impossible to effectively and fully evaluate the feasibility of siting, designing, and installing a treatment plant, let alone evaluate its cost effectiveness. Evaluating this remedy against projected costs – a requirement under the NCP – is simply not possible where basic information about the treatment system is unknown.

Even if these impediments did not exist, EPA's selected remedy leaves open the question of what will be done with the billions of gallons of treated groundwater. While EPA suggests that the treated water could be discharged to recharge basins, surface waters, or a POTW, these options ignore the realities on Long Island. Restoring contaminated groundwater to beneficial use as drinking water should be a priority for EPA. Extracting and treating groundwater for no useful purpose instead of for drinking water purposes in this scenario lacks common sense and is not scientifically sound.

In sum, EPA's proposed remedy for OU3 does not comply with the NCP because EPA failed to consider other alternatives, and cannot at this time effectively evaluate the effectiveness, implementability, and costs for the selected remedy.

III. The Proposed Plan Is Arbitrary and Capricious

CERCLA provides that courts "shall uphold [the EPA's] decision in selecting the response action unless the objecting party can demonstrate, on the administrative record, that the decision was arbitrary and capricious or otherwise not in accordance with law." 42 U.S.C. § 9613(j)(2). The Administrative Procedures Act ("APA") requires a reviewing court to "hold unlawful and set aside" agency action that is arbitrary or capricious. 5 U.S.C. §

706(2).

An agency decision is arbitrary and capricious if "the agency has relied upon factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *See Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co*., 463 U.S. 29, 43 (1983); *Great Basin Mine Watch v. EPA*, 401 F.3d 1094, 1098 (9th Cir. 2005). The APA "demands that agency decisions not be based on unreasonable evidence..." *McElmurray v. U.S. Dep't of Agriculture*, 535 F. Supp. 2d 1318, 1325 (S.D. Geo. 2008). While courts give great deference to agency decision-making under CERCLA, "the arbitrary and capricious standard...contemplates a searching 'inquiry into the facts' to determine 'whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment.'" *United States v. E.I. DuPont de Nemours & Co., Inc*., 432 F.3d 161, 179 (3d Cir. 2005). Judicial review must be based on something more than trust and faith in EPA's experience. *See In re Bell Petroleum Serv. Inc*., 3 F.3d 889, 905 (5th Cir. 1993).

EPA's selected remedy is arbitrary and capricious because the agency failed to consider the following points.

A. Source Contribution

OU3 is immediately downgradient of OU1. The OU3 RI/FS concludes that OU1 is the principal, if not sole source area for OU3. OU1 is currently in the Pre-Design Investigation ("PDI") phase, and the collection and analysis of data generated from the ongoing OU1 PDI is required before separate Remedial Designs can even be started for each of the three OU1 plumes. Two key documents associated with the ongoing OU1 investigation, the PDI Directive 2 Technical Memorandum and the PDI Directive 2 Recommendations Report, have not been published and therefore were not available for EPA's review and consideration during the preparation of the OU3 Feasibility Study. The current status of the OU1 investigation necessarily means that the data picture for OU3 is incomplete – and more so, that this picture could and likely will change following the design, installation, operation, and monitoring of the eventual OU1 remedies, which will have an impact on mass flux reduction and CVOC plume dynamics at OU3. Given the likely effect of the OU1 remedial action on the effectiveness and costs of any OU3 remedy, EPA should incorporate these resulting benefits into the selection of the remedy at OU3. Given that OU3 is directly downgradient from OU1, and that contamination from OU1 is continuing to migrate into OU3, the implementation of remedies at both OUs should be viewed holistically. *See* Exhibit 1 at Paragraph 7.

Further, EPA's remedy selection at OU3 should not proceed without analysis of the extent of any mass contribution from OU2 to OU3. In particular, EPA's RI for OU3 incorrectly concluded that the PCE plumes emanating from OU2 are comingling with the OU1 plumes. *See* OU3 Remedial Investigation Report at p. 10. This conclusion is not supported by the data from the FUSRAP RI for the former Sylvania Site. There is not adequate data or scientific analysis (both groundwater quality and hydrogeologic) to support EPA's

assertion that there is a contribution of PCE (or any other hazardous substance) from the Sylvania FUSRAP site to the eastern CVOC plume in OU1 or OU3. EPA's suggestion of commingling of CVOC plumes is not substantiated and cannot be resolved until the contribution of unknown sources are identified and quantified. *See* Exhibit 1 at Paragraph 8-9.

EPA also failed to consider the benefit of incorporating forthcoming data from OU2 when considering a remedy for OU3. The USACE conducted a pilot study at the former Sylvania Site in 2022, and these results have not yet been published. Additionally, the SRI for the former General Instruments facility has not been published. The additional data points from these two studies/investigations will provide critical source contribution information for OU3. It is arbitrary and capricious for EPA to select a remedy without considering and incorporating these essential data and related analyses into the final remedy selection process. *See id.*

B. Plume Dynamics

EPA's selected remedy is also arbitrary and capricious because the plume dynamics at OU3 are not yet sufficiently known. *See id.* at Paragraphs 3-6. There are insufficient data regarding temporal trends in groundwater quality in OU3 to assess the life cycle stage of the CVOC plume, including whether the downgradient edge of the plume is expanding, stable, or contracting, and what the intrinsic rate of natural attenuation is at the upgradient and downgradient boundaries of OU3. In the absence of these data, EPA has prematurely concluded that the plume is expanding and, therefore, pump-and-treat for mass recovery and containment are required. This conclusion cannot be made without a more complete understanding of plume dynamics.

EPA has only completed two comprehensive rounds of groundwater quality samples to assess VOC concentrations in OU3. *See* Exhibit 1 at Table 1 (compiling sampling results). EPA has also not developed a robust groundwater flow or contaminant fate and transport model (e.g., MODFLOW and MT3D) to assess the dynamics of the CVOC plumes in OU3 and analyze, for example, whether arresting migration of the OU3 plumes is required, and how the proposed remedy at OU3 will impact the OU1 plumes. EPA has also not conducted a thorough and meaningful assessment of the occurrence and intrinsic rate of biologically mediated attenuation/degradation of CVOCs, and has instead acknowledged that assumptions were made in this area due to an absence of sufficient data.

In sum, the selected remedy is arbitrary and capricious due to the critical lack of comprehensive data and understanding of plume dynamics at OU3. *See* Exhibit 1 at Paragraphs 3-6, Table 1.

C. Remedial Action Objective

One of the Remedial Action Objectives ("RAO") of the OU3 remedy is to meet drinking water standards throughout the aquifer. Given the current dearth of requisite hydrogeologic and groundwater quality data, EPA cannot state with any certainty that its proposed remedy will achieve this RAO within 30, 100, or any set number of years. This

RAO is simply an unachievable theoretical construct and therefore cannot be used to evaluate potential remedial measures. Moreover, EPA's proposal to continuously pump two million gallons per day of groundwater from OU3 for mass extraction and hydraulic containment, for an unknowable period of time until drinking water criteria are theoretically attained, is a waste of a natural resource and ignores the important role of natural attenuation processes as a viable remedial strategy. EPA failed to collect the required empirical data and evaluate in a meaningful way the significance of natural attenuation processes when evaluating alternatives. *See* Exhibit 1 at Paragraph 10.

D. EPA's Proposal Is Premature

At the public meeting held on August 10, 2023, EPA repeatedly confirmed the absence of risks to the community from the Site, noting that the contamination at OU3 is deep in the aquifer and presents no risk whatsoever to the public under current conditions. *See* Transcript of August 10, 2023 Public Meeting, available with Record of Decision, 11:10-21.

The Human Health Risk Assessment Report for OU3 correctly notes that residents and workers in the area are currently connected to the municipal water supply, and are not exposed to OU3 contamination because of the presence of treatment systems to remove contaminants from the public drinking water supply. Future exposure is assessed on the assumption of "no action (i.e., assuming the contaminated groundwater beneath the site is used as a potable water source)" – a contemplated scenario that is highly unlikely to occur given the depth of the contamination (below the water intakes) and federal and state regulations governing the treatment of public water supply. *See* HHRA Report at Table 1. Nassau County Public Health Ordinance restricts the use of private water wells and New York State Environmental Conservation Law Section 15-1527 requires permits for public water supply. These controls provide notice to future residents and workers of current conditions and provide safeguards against accidental exposure. Accordingly, the exposure assumptions that serve as the basis for EPA's risk calculations are unfounded and do not reasonably reflect either current or future conditions.

In sum, under current conditions, there is no reasonably anticipated or expected future adverse risk to human health posed by the OU3 contamination due to existing controls and, therefore, no rational basis for EPA to rush to select a remedy for OU3 until necessary data are released and a holistic and cost-effective remedy may be fully considered. *See* Exhibit 1 at Paragraphs 1-2.

E. EPA Failed to Consider Environmental Impacts of Pump and Treat

Pump-and-treat systems operating over multiple decades have large environmental footprints associated with their construction and long-term operation, maintenance, and monitoring. Though EPA has suggested methods of reducing or minimizing the environmental footprint of these systems (see https://clu-in.org/greenremediation/docs/GR_fact_sheet_pump_treat.pdf), the OU3 Proposed Plan fails to consider these environmental impacts, and is inconsistent with EPA's principles for greener cleanups. Similarly, EPA failed to undertake a climate resilience vulnerability assessment for the Site when selecting its preferred remedy.

IV. Conclusion

For all of the foregoing reasons, EPA should not approve the selected remedy at this time. At the very least, additional investigation and evaluation is needed before a remedy can be identified. Finally, GTEOSI also joins and adopts the comments to the OU3 Proposed Plan submitted by Vishay GSI, Inc.

Respectfully submitted,

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Exhibit 1

Comments Regarding EPA's July 2023 Proposed Remedy
New Cassel/Hicksville Groundwater Contamination Superfund Site, Operable Unit 3

1. EPA's human health risk calculations (July 2023 Risk Assessment) associated with future potable use of groundwater by an adult/child resident and worker are hypothetical and do not accurately reflect "reasonably foreseeable future land use." The first of EPA's three stated Remedial Action Objectives (RAO) for OU3 is to "Prevent or minimize the potential future human exposure (via dermal, ingestion and inhalation) to Site-related contaminants in groundwater at concentrations in excess of federal maximum contaminant levels (MCL) and State standards." Given existing controls, this RAO has already been achieved. As concluded by EPA: "Public supply water districts [within Operable Units 1, 2 and 3] monitor water quality regularly and have previously installed treatment systems to remove VOCs from groundwater prior to distribution." "Residents of the Hempstead, Hicksville, and Westbury areas receive drinking water from public water supplies that have treatment systems installed so that the drinking water meets federal and State standards." Further, EPA has concluded that "it is expected that the future land use in this area will remain the same." Moreover, institutional controls are in place through the Nassau County Department of Health to regulate and monitor the installation of new private and public water supply wells. Accordingly, the exposure assumptions that serve as the basis for EPA's risk calculations are unfounded and do not reasonably reflect current or future conditions. As a consequence, the calculated potential risk of ingesting contaminated groundwater within OU3 are overstated and EPA's first identified RAO (noted above) has been achieved and will continue to be achieved in the future without implementing EPA's selected remedy for OU3.

2. EPA has attempted to justify its use of an unrealistic hypothetical future exposure scenario by stating the following: "Residential properties in the NCGHGW OU3 area are connected to a public water supply managed by various local water departments. However, in accordance with EPA guidance (EPA 1989, 1991), the groundwater will be evaluated in the absence of treatment and institutional controls for the future exposure pathway. In addition, the EPA memorandum titled Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions (EPA 1991) requires the assumption of no treatment of the water source and no institutional (e.g., restrictive ordinances) or engineering (e.g., point of entry treatment) controls."[1] First, this statement represents an acknowledgement by EPA that its future exposure scenario is hypothetical and does not reflect reasonable future conditions. Second, in the absence of any reasonably anticipated/expected future adverse risk to human health or ecological receptors, as discussed in Paragraph 1, above, the above-noted RAO has already been achieved and the foundation upon which a risk to benefit analysis regarding EPA's proposed OU3 groundwater remedy has been fundamentally changed. The implementation of the selected remedy will not result in any reduction in the potential risk to human health.

3. There are insufficient data regarding the spatial distribution and temporal trends in groundwater quality in OU3 to assess the life cycle stage of the chlorinated volatile organic compound (CVOC) plumes. Specifically, there is a dearth of empirical data to answer the fundamental questions of whether the downgradient edges of the plumes are expanding, stable or contracting, and what the intrinsic rate of natural attenuation is at the upgradient and downgradient hydraulic boundaries of OU3. In the absence of these empirical data, EPA has prematurely concluded that the plumes are

[1] July 2023 Remedial Investigation Report, Appendix L, Human Health Risk Assessment, page 16.

expanding and therefore pump and treat for both mass recovery and containment are required. For example, the EPA has acknowledged the following:

- "Sufficient historical data within the NCHGW OU3 study area **does not exist** to establish long term contaminant trends at this time." (July 2023 Remedial Investigation Report, page 75).

- "The downgradient limit of CVOCs **were not delineated** in the eastern and western portions of the study area and **it is not known** if the plume extends beyond the downgradient NCHGW OU3 boundary in these areas. The downgradient limit in the central portion of the NCHGW OU3 study area was established by monitoring well N-11396 located at the downgradient boundary." (July 2023 Remedial Investigation Report, page 74).

- "There is currently **not sufficient** spatial distribution of monitoring wells within NCHGW OU3 to delineate between the three NCHGW OU1 plumes that extend into NCHGW OU3." (July 2023 Remedial Investigation Report, page 75).

- "**The data set described above was limited to only two data points for each well separated by a period of two years**. With these limitations, sample variability from sample collection and data analysis may impact the trend and short-term trends may not be representative of long-term trends" (February 3, 2023 Memorandum from: HDR-APTIM JV, to: Aidan Conway, USEPA, Re: Monitored Natural Attenuation Evaluation, page 2).

- "**There is no clear, overall trend that can be established** in either NCHGW OU1 or NCHGW OU3 based on the data reviewed. Evaluation of the limited data set indicates that additional sampling is needed to better evaluate contaminant mass and/or concentration trends in NCHGW OU3" (February 3, 2023 Memorandum from: HDR-APTIM JV, to: Aidan Conway, USEPA, Re: Monitored Natural Attenuation Evaluation, page 2).

4. To date, only two comprehensive rounds of groundwater quality samples have been collected from monitoring wells in OU3 to assess VOC concentrations. Moreover, only one round of sampling has been conducted to assess natural attenuation indicator parameters. Specifically, as summarized in Table 1 (attached), samples were collected and subjected to VOC analysis in January 2019 and March 2022. The data presented on Table 1 are from monitoring wells in the eastern and central portions of OU3 and one upgradient well in OU1 (MW-17D). As summarized, tetrachloroethene (PCE) concentrations in three of the seven wells (MW-03S, MW-06 and MW-17D) decreased between 2019 and 2022. Two of the wells (MW-02S and MW-05) reported no change in PCE concentrations, while two wells (MW-02D and MW-03D) demonstrated a slight increase during the same period. As concluded by EPA, these data are insufficient to assess either short-term or long-term temporal trends in groundwater quality. Consequently, there presently is a dearth of data to estimate contaminant mass flux throughout the CVOC plumes and assess the dynamic state of each plume (i.e., life-cycle stage: expanding, stable or contracting). In the absence of the requisite data, EPA has prematurely concluded that the plume is expanding and therefore requires hydraulic containment at its leading edge. This unfounded assumption served as a foundation for the conceptual site hydrogeologic model for purposes of assessing remedial alternatives during the Feasibility Study.

5. In the absence of sufficient groundwater quality data to establish the spatial distribution and concentration trends regarding the three CVOC plumes in OU3 (western, central and eastern) the

contaminant mass flux entering the upgradient hydraulic boundary of OU3 and within OU3 cannot presently be evaluated. The ability to assess contaminant mass flux (and changes in flux over time) is an essential element when formulating a conceptual site hydrogeologic model. Most importantly, a robust conceptual site hydrogeologic model, including an understanding of contaminant mass flux, is required to determine the potential for future plume migration and conduct a meaningful Feasibility Study of potential remedial alternatives. The available data do not provide EPA with sufficient information to assess contaminant mass flux or plume migration potential. In the absence of these data, EPA has relied upon a simple analytical groundwater flow algorithm to assess the need and scope of its proposed mass recovery and hydraulic containment remedy. Specifically, EPA notes that it has relied upon the Grubb, 1993 Analytical Model for Estimation of Steady-State Capture Zones of Pumping Wells in Confined and Unconfined Aquifers, to determine the need, number and location of proposed mass recovery and hydraulic containment wells (July 2023 Feasibility Study Report, page 8-2). Moreover, EPA states that it incorporated regional estimates for input parameters to the Grubb solution and that "additional testing, including pumping tests to estimate capture zones" is required (July 2023 Feasibility Study Report, page 8-2). The Grubb solution is not capable of assessing contaminant fate and transport processes, including mass flux. In fact, EPA states that "calculations were based on analytical methods that provide reasonable estimates of actual site conditions but do not account for complexities in site geology, groundwater movement, well and pump hydraulics, and fate and transport processes." (July 2023 Feasibility Study, page 9-21) To date, EPA has not developed a robust groundwater flow or contaminant fate and transport model (e.g., MODFLOW and MT3D) to assess the dynamics of the CVOC plume in OU3 or support a viable Feasibility Study. In the absence of these requisite analyses, EPA has made assumptions regarding the dynamic state of the CVOC plumes in OU3 for purposes of completing its Feasibility Study. Specifically, EPA's identified second RAO is to "minimize the potential for further migration of the groundwater with Site-related contaminant concentrations in excess of federal MCLs and State standards". At this juncture, EPA cannot answer the fundamental question of whether the CVOC plumes in OU3 are expanding, and therefore whether arresting migration is required. Additionally, EPA cannot answer whether its proposed pumping of two million gallons per day of groundwater from OU3 for purposes of contaminant mass recovery and hydraulic containment will adversely impact the OU1 CVOC plumes by increasing contaminant mass flux at the upgradient boundary of OU3 or hydraulically downgradient from the three proposed OU3 mass recovery wells. For these reasons, EPA's selection of the OU3 remedy is unfounded and premature, and effectively puts the cart before the horse.

6. To date, EPA has not conducted a thorough and meaningful assessment of the occurrence and intrinsic rate of biologically mediated attenuation/degradation of CVOCs in OU3. In its February 3, 2023, memorandum regarding Monitored Natural Attenuation Evaluation, EPA stated the following:

   - "Evaluation of the limited data set indicates that additional sampling is needed to better evaluate contaminant mass and/or concentration trends in NCHGW OU3" (page 2); and

   - "There were also limitations to input parameters for the screening process. Data for several scoring parameters were not collected: including ferrous iron, methane, carbon dioxide, hydrogen, volatile fatty acids, ethane, ethene, and dichloromethane. A total of 16 points are eligible based on those scoring parameters, therefore the lack of results may skew the points low" (page 5).

   Simply put, EPA has concluded that the absence of sufficient data has likely biased its assessment, leading to the determination that natural attenuation/degradation are not significant. Despite these

limitations, EPA concluded: a) "the presence of DCE provides the strongest evidence that biological degradation is occurring in the study area"; and b) "portions of the plume more distant from the source area and in the deeper portions of the aquifer have conditions more favorable for anaerobic biodegradation." With respect to the second conclusion, Table 1 (attached) provides oxidation-reduction potential (ORP) data for monitoring wells in the central and eastern portion of OU3. The negative ORP values reported in wells MW-02D, MW-05 and MW-06 are demonstrative of conditions that support anaerobic reductive dichlorination of PCE and TCE. These three wells are in the area where EPA is proposing the installation and long-term pumping of five wells (with an estimated combined extraction rate of 1.3 million gallons per day) to maintain hydraulic containment. The potential viability of intrinsic and/or enhanced biological degradation of CVOCs in this area (in leu of pumping) was not considered as part of the Feasibility Study. Rather, the above-noted Memo simply concluded that a "standalone MNA remedy would likely not fully achieve a remedial action objective of meeting MCLs or NYSDEC ambient water quality criteria in a reasonable amount of time" (page 8). There are presently insufficient data to assess the time required to achieve this objective assuming implementation of EPA's proposed remedy, much less provide a basis for comparing the time required to achieve the same objective by replacing the extraction/treatment of 1.3 million gallons of groundwater per day for hydraulic containment with an MNA remedy. These relevant and important questions were not answered in the July 2023 Feasibility Study.

7. EPA's July 2023 Remedial Investigation Report concludes that OU1 is the principal, if not sole, source area for the CVOC plumes identified in OU3. Specifically, EPA stated the following:

   - "Results of the NCHGW OU3 RI are consistent with the NCIA as a source." (July 2023 Remedial Investigation Report, pg.73); and

   - "NCHGW OU3 monitoring wells and VPBs show a distribution of contaminants that is consistent with observed horizontal and vertical hydraulic gradients in the NCHGW OU1 and NCHGW OU3 study areas." (July 2023 Remedial Investigation Report, pg. 73)

   EPA states in its proposed OU3 remedy that the design for OU1 is underway. In fact, the Remedial Design for OU1 is not underway, but rather three separate Preliminary Design Investigations (PDIs) are presently ongoing to further assess the vertical and horizontal distribution of CVOC contamination associated with the eastern, central and western plumes in OU1. Due to the recalcitrance of certain responsible parties, EPA has had to intervene and conduct the PDI for the western plume. The collection and analysis of data generated from the ongoing PDIs is required before separate Remedial Designs can be started for each of the three OU1 plumes. Two key documents associated with the ongoing OU1 investigation: 1) the PDI Directive 2 Technical Memorandum; and 2) the PDI Directive 2 Recommendations Report, have not been published and therefore were not available for EPA's review/ consideration during the preparation of the OU3 Feasibility Study. In the absence of designing, installing, operating, and monitoring the OU1 remedies and assessing their impact on mass flux reduction and CVOC plume dynamics, EPA has prematurely moved forward with the selection of the downgradient OU3 remedy. Neither the collection/assessment of requisite empirical data nor a rigorous fate and transport model analysis have been conducted to assess: a) the impact of the OU1 remedies on the mass flux entering the upgradient hydraulic boundary of OU3; or b) the potential detrimental impact (e.g., exacerbation) on the mass flux and spatial distribution of the OU1 CVOC plumes resulting from the proposed pumping of two million gallons per day of groundwater from the OU3 extraction wells.

8. The available data from the September 2021 United States Army Corps of Engineers (USACE) Remedial Investigation of the Sylvania Formerly Utilized Sites Remedial Action Program (FUSRAP) site does not establish a contribution of CVOCs (in particular PCE) from this site to the eastern CVOC plume identified in OU1. These data are contrary to EPA's statement: "These PCE plumes are shown to commingle with the NCIA and NCHGW OU1 plumes within the NCIA and NCHGW OU1" (July 2023 Remedial Investigation Report, pg. 10). Figure 1-5 in EPA's July 2023 OU3 RI report is the same as Figure 4-18 from the September 2021 USACE RI for the Sylvania FUSRAP site. Both Figures 1-5 and 4-18 employ dashed isoconcentration lines where the interpreted 2015/2016 PCE distribution in groundwater is inferred and not known. The purported overlap between PCE plumes associated with the Sylvania FUSRAP site and OU1 is depicted by the USACE with dashed isoconcentration lines; therefore, this interpretation is inferred and not established through empirical data. Moreover, as depicted on Figure 1-5 and 4-18, the USACE has concluded that unknown sources of PCE and TCE to the northwest of the Sylvania FUSRAP site have contributed to the inferred distribution of the FUSRAP PCE plume. Consequently, EPA's suggestion of commingling of CVOC plumes is not substantiated and cannot be resolved until the contribution of unknown sources are identified and quantified. There is not adequate data or scientific analysis (both groundwater quality and hydrogeologic) to support EPA's assertion that there is a contribution of PCE (or any other hazardous substance) from the Sylvania FUSRAP site to the eastern CVOC plume in OU1 or OU3.

9. To the extent EPA claims there is a contribution of PCE from the Sylvania FUSRAP site to either the eastern CVOC plume in OU1 or OU3, the impact of prior or future remedial actions at the FUSRAP site have not been considered in EPA's Feasibility Study or proposed remedy for OU3. For example, findings from the 2022 USACE SVE pilot study at the former Sylvania FUSRAP site were not available when the OU3 Feasibility Study was conducted. Consequently, EPA did not (and could not) consider this information when evaluating its proposed remedy for OU3. Similarly, the supplemental RI being overseen by EPA at the former General Instrument site is not complete and has not been (could not be) considered when evaluating the remedy for OU3.

10. EPA's third (and final) RAO of restoring affected groundwater in OU3 to the more stringent of federal MCLs or New York standards is not achievable within a quantifiable period of time (certainly not within the 30-year period considered in the July 2023 Feasibility Study). Given the current dearth of requisite hydrogeologic and groundwater quality data, EPA cannot state with any certainty that its proposed remedy will achieve its third RAO in 30 or 100 years. This RAO is simply an unachievable theoretical construct and therefore a meaningless metric to evaluate potential remedial measures. Moreover, EPA's proposal to continuously pump two million gallons per day of groundwater from OU3 (for mass extraction and hydraulic containment) for an unknowable period of time until drinking water criteria are theoretically attained, is a waste of a natural resource and ignores the important role of natural attenuation processes as a viable remedial strategy. EPA's failure to collect the required empirical data and evaluate in a meaningful way the significance of natural attenuation processes has resulted in a selection bias when conducting its Feasibility Study.

11. EPA notes that four Town of Hempstead wells (Bowling Green Wells 1 and 2, Roosevelt Field Well 10, Levittown Well 2A and the Village of Westbury Well 11) have been impacted with CVOCs emanating from OU1, and, moreover, that certain of these wells have previously been equipped with treatment systems to remove groundwater contaminants. Yet, EPA did not consider in its Feasibility Study the continued pumping of these wells (or reactivation of pumping in the instance of Bowling Green Wells 1 and 2) to achieve either the mass extraction or hydraulic containment proposed in its OU3 remedy. The use of Point of Entry Treatment (POET) systems on municipal supply wells to implement or

supplement remedial measures has been employed at other federal and state-lead groundwater contaminated sites. For example, the South El Monte Operable Unit of the San Gabriel Valley Area 1 Superfund Site utilized wellhead treatment at production wells as part of the remedy. Moreover, although EPA proposes the treatment of COCs to drinking water standards from mass extraction and hydraulic containment wells, reuse of this water as a municipal supply was not considered in the Feasibility Study. Rather, EPA proposes to discharge this treated water to either municipal sewers, the ground surface, or back into the aquifer. In its September 2, 2020, response to OU1 responsible parties, EPA (Pat Evangelista, Director Superfund and Emergency Management Division, page 5), notes that "NYSDEC has determined that the extracted groundwater is a natural resource" derived from Long Island's sole source aquifer. Discharging half a million gallons of groundwater a day to a POTW would ultimately result in a loss of this natural resource to the ocean. Despite this comment with respect to OU1, EPA's proposed OU3 remedy incorporates the potential for discharging two million gallons per day of drinking water quality (i.e., treated) groundwater to the municipal sewer systems where it ultimately would be discharged to the ocean. Considering the sole source nature of the Long Island aquifer and the importance of drinking water to its residents, the use of existing municipal water supply wells should have been considered in EPA's OU3 remedy.

Table 1
Available Groundwater VOC Concentration Data - OU3

NCOU3-MW-02S (267.5')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/28/2019	66.1	ND	20	ND	ND	1.1J	250
3/29/2022	68.32	ND	8	ND	ND	1.4J	291

NCOU3-MW-02D (512')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/28/2019	65.76	7.1	37	ND	ND	2.8	-291
3/29/2022	68.07	32	120	11	ND	6.6	-120

NCOU3-MW-03S (380')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/29/2019	67.3	6500	530	390	13J	9.2	166
3/29/2022	69.65	3400	11	29J	6	8.7J	335

NCOU3-MW-03D (470')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/29/2019	66.87	170	130	22	7.7	17	36
3/29/2022	69.97	220	280	31	7.6	19	151

NCOU3-MW-05 (380')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/29/2019	63.34	5.4	67	6.1	ND	3.9	-155
3/29/2022	64.93	6.7	60	ND	ND	2.4	167

NCOU3-MW-06 (440')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
1/29/2019	62	140	370	140	7.8	22	-522
3/29/2022	64.79	120	270	120	ND	28	-468

MW-17D (280')

	GW Elev.	PCE	TCE	cis-DCE	111-TCA	1,4-Dioxane	ORP
	(ft)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mV)
12/1/2019		7000	900				
4/4/2022		5300	750	780	ND	NS	374

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22 September 2023

Mr. Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866

Subject: New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3 Proposed Remedy

Dear Mr. Conway:

The following comments on the proposed remedy for Operable Unit 3 (OU-3) are provided by ERM on behalf of the OU-1 Group B Respondents for the Central Plume (Arkwin Industries, Inc. (Arkwin), Tishcon Corporation (Tishcon) and Patel Trust July 29, 1977(Patel)). OU-1 is just north and upgradient of OU-3.

ERM is the consultant currently managing remediation being conducted by the Group B Respondents in the cleanup of Operating Unit-1 ("OU-1") which as you know is part of the total federal New Cassel/Hicksville Groundwater Contamination Site (NCHGWC) Superfund site designated by EPA in 2011. Thus, ERM has already been approved by and has been working with EPA in OU-1. Respondents responsible for the cleanup of OU-1 include not only Arkwin, Tishcon and Patel, but also the Frost Street Parties in the Eastern area of OU-1. Thus, ERM and the Group B Central Plume Respondents already have many years of experience with the history and conditions of the entire Site.

As stated in the July 2023 EPA Announcement of a Proposed Plan to address the contaminated groundwater at the NCHGWC Superfund Site OU-3, changes to the method of remediation preferred by EPA for the OU-3 area may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. Thus, we provide the following comments and request a change in the EPA preferred remedy and/or a postponement of the Proposed Plan for OU-3.

The EPA Conceptual Site Model for OU-3 is Incomplete thus Fundamentally Flawed

The proposed OU-3 remedy is based on an incomplete Conceptual Site Model (CSM) which does not fully consider possible OU-1 remedies and what impacts they may have on placement of recovery wells in OU-3. Nor does the proposed OU-3 remedy evaluate its impacts on the long-term tandem operation of either the OU-1 or the OU-3 remedy. Given the considerable costs and disturbance to residents from installing numerous recovery wells and associated piping that is being proposed for OU-3, it is critical that the USEPA consider a more comprehensive CSM that includes OU-1 and the possibility that one or more of the OU-3 proposed recovery wells may be duplicative and of limited benefit if upgradient impacted groundwater is controlled by the OU-1 remedy ultimately implemented.

Furthermore, it does not appear that any groundwater flow or solute transport modeling of this complex hydrogeological and chemical system was done to better understand the impacts of the proposed remedy on the overall water budget of the aquifer, and thus the efficacy of the proposed OU-3 recovery wells in remediating the plumes. Has EPA considered what impact this may have on local water supply? For example, one of the municipal water supply department representatives mentioned at the public meeting that there were already efforts underway to identify new supply well locations to meet demand with groundwater that may not be impacted. Should this occur, there is nothing in the Proposed Plan to indicate that EPA has considered or evaluated how pumping from new supply wells in the area south of OU-3 might affect the OU-3 remedy or vice-versa.

It is also not clear if other non-chlorinated compounds (VOCs) (e.g., acetone, benzene) are fully considered in the overall remedy. While certain compounds were eliminated from consideration during the Feasibility Study, they still exist and could impact proposed treatment processes.

The Proposed Plan is Inconsistent with National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

The NCP states that "*EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site".*[1]

It does not appear that the proposed remedy for OU-3 really considers the other Operable Units and their potential remedies and whether treating the impacted groundwater issue more wholistically would be less costly and potentially remedy the situation faster. The NCP preamble also indicates that in certain situations it may be appropriate to address the contamination as one waste management area for purposes of the groundwater point of compliance; for example, this may be protective of public health and the environment at certain sites where there are multiple sources from closely spaced waste management areas.

The preamble to the NCP specifically states:

"In such cases, the most feasible and effective ground-water cleanup strategy may be to address the problem as a whole, rather than source~by-source, and to draw the point of compliance to encompass the sources of release. In determining where to draw the point of compliance in such situations, the lead agency will consider factors such as the proximity of the sources, the technical practicability of ground-water remediation at that specific site, the vulnerability of the ground water and its possible uses, exposure and likelihood of exposure and similar consideration."

ERM agrees that such a wholistic approach should be taken at OU-3. As previously stated herein, the OU-3 proposed remedy does not consider the problem as a whole since it ignores the likely remedial components that may be implemented in OU-1.

The OU-3 proposed remedy also ignores the significant Institutional Controls (ICs) that are already in place with respect to water use in this area. The use of groundwater is strictly regulated by New York State Department of Environmental Conservation (NYSDEC) and the New York State

[1] 40 CFR 300.430(a)(1)(iii)(F)

Department of Health (NYSDOH) who require permits for withdrawals and closely monitor water quality prior to distribution to residents. In fact, the EPA itself states in the Proposed Plan Risk Summary that ecological receptors are not exposed to contaminants from OU-3 nor are there any human health risks since OU-3 groundwater does not discharge to any surface water bodies and vapor intrusion was eliminated as an exposure pathway. While it is understood that the Human Health Risk Assessment typically considers uncontrolled exposures to drinking water via ingestion and dermal contact, there already are significant ICs in place to ensure that these exposures do not occur.

The EPA Chosen Remedy is Unnecessarily Expensive and Highly Disruptive to Residents

The proposed OU-3 remedy has multiple elements that may not be necessary as they add significantly to initial capital costs and long-term operation and maintenance (O&M) costs. These include:

- Multiple recovery points and associated piping south of the Central and Western Plumes in Eisenhower Park that will likely provide limited remedial benefit;
- Potentially unnecessary treatment steps;
    - metals removal is expensive and creates long-term O&M difficulties and will require an additional waste stream to handle sludge from this process. This additional waste stream adds to the cost, adds truck traffic to haul waste to already overcrowded landfills, and adds the overall carbon footprint of the proposed remedy;
    - A separate treatment step for 1,4 dioxane is costly and adds to O&M and waste generation, further evaluation should be considered as to the necessity of this treatment step given the well head treatment already implemented or contemplated by possibly impacted public water suppliers;
    - Each additional treatment process adds to the space required for a treatment building, and power required to operate and generates additional waste that must be handled in a densely and largely residential area.
- Use of Public Owned Treatment Works (POTW) should be properly vetted as discharge to this system could effectively limit the need for certain steps in the overall treatment of impacted groundwater which could result in significant space, time, and cost reductions.
- Proposed pumping points south of the Western and Central Plumes in OU-3 will provide limited remedial benefit when compared to the costs and disruption associated with their installation and operation. While these proposed pumping points may serve as hydraulic containment for lower concentration (100 ug/l and less) parts of the plume, EPA should consider if this is truly necessary given that concentrations of contaminants of concern (COCs) are minimal and wellhead treatment is already in place at downgradient public water supply points. Any water pumped from these locations for hydraulic control will likely be further diluted by surrounding clean water thereby reducing the efficiency of treatment by significantly raising the gallons pumped and treated to mass recovered ratio.

- The proposed remedy calls for some 24,000 feet of piping to be installed on public roads and in a public park. Minimizing the piping necessary should have been a priority in the overall remedy decision due to its cost and the up to three-year proposed disturbance to the local communities. This is again where multiple and possibly duplicative recovery wells could be eliminated with better coordination with the efforts that may be undertaken in OU-1.

Wellhead Treatment Should be Considered as a Remedy for OU-3

There is no discussion of the potential to use existing public supply wellhead treatment as a supplemental and/or more cost-effective remedy.

The proposed plan does not specifically identify the well fields that will be protected by the OU-1 and OU-3 remedies. However, where supply wells are already impacted and treatment is already in-place, and regardless of what active remedies are implemented in OU-1 or OU-3, it is highly likely that treatment will be required for decades into the future (i.e., 30+ years), not to just meet the MCLs but most water purveyors have a non-detect goal/policy/requirement for water provided to the public supply system.

As noted above, there are portions of the OU-3 remedy that are redundant since EPA is engaged in active remediation in OU-1. Thus, funding well-head treatment is an obvious cost-effective approach using existing supply wells/well-head treatment infrastructure in conjunction with the remedies that may be implemented in OU-1. The savings in capital expenses from OU-3 could be used to fund future long-term operation, maintenance, and monitoring (OM&M) of the already required well-head treatment systems. Contamination levels in groundwater entering the supply wells could be regularly and frequently monitored, and the treatment systems would be maintained and replaced or upgraded as needed in order to ensure that water distributed to the public complies with those federal and state requirements that are applicable or relevant and appropriate (ARARs).

This Wellhead Treatment approach is better because it meets both threshold and balancing criteria specified in the NCP[2], would likely also meet the modifying criteria, and provides a better balance of the use of capital and OM&M monies than the preferred remedy in the Proposed Plan. This Wellhead Treatment approach would:

- Ensure the protection of the public drinking water supply and impacts to human health, and be protective of the environment;
- Comply with ARARs;
- Meet the expectation of both short-term and long-term effectiveness, and permanence as the requirement to provide clean public water supply will inevitably continue without interruption;
- Meet the statutory preference for remedies that employ treatment that reduce toxicity, mobility, or volume as a principal element of the selected remedy;

[2] 40 CFR 300.430(f)

- Have the incidental benefit of removing and treating contaminants in groundwater that enters these high-capacity public supply pumping wells (i.e., higher than those contemplated by the selected remedy in the Proposed Plan), and thereby reducing the mass and mobility of VOCs present in the aquifer system beneath OU-3;
- Continue to help reduce migration of the groundwater plumes toward other public supply wells systems downgradient of OU-3 and already impacted public supply;
- Be more readily implementable because it does not involve the construction of nearly as extensive an extraction and treatment system as that contemplated in the OU-3 Proposed Plan.
- Be cost-effective by directing more monies toward wellhead treatment OM&M which has to, and will occur even under the No Action alternative;
- Have fewer short-term negative impacts on residents and workers in the community;
- Likely be readily accepted by New York State and the community at large.

Lastly, the environmental benefits of the approach to use well-head treatment coupled with potential OU-1 remedies may be enhanced by employing design technologies and practices that are more sustainable in accordance with the EPA Region 2's Clean and Green Energy Policy, available at:

- https://www.epa.gov/superfund/superfund-green-remediation and
- https://www.epa.gov/greenercleanups/superfund-green-remediation-strategy.

In conclusion, the OU-1 Group B Respondents for the Central Plume feel that the OU3 Proposed Plan is premature in that its conceptual site model is incomplete and flawed, inconsistent with the NCP, and does not consider potentially more cost effective and less disruptive remedial approaches and the existence of already in place institutional and engineering controls such as wellhead treatment. Potential remedies in OU-1 currently in the pre-design phase will likely be in place to significantly reduce the concentrations of volatile organic compounds (VOCs) in OU-1, which will therefore reduce the future concentrations of VOCs entering OU-3 eliminating the need for EPA to require such an elaborate remedial design for OU-3.

Yours sincerely,

Ernest Rossano, P.G.
Partner

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Consulting Director

cc: Suzanne Avena, Esq., Garfunkel Wild, P.C.
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October 23, 2023

Aiden Conway
Western New York Remediation Section
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290 Broadway, 19th Floor
New York, New York 10007-1866

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site
Comment on EPA's Proposed Plan for Operable Unit 3 (July 2023)

Dear Mr. Conway:

These comments are submitted into the public record on behalf of Utility Manufacturing Co, Inc. and Nest Equities, Inc. ("Utility and Nest Equities"), located at 700 Main Street, Westbury, New York (the "Property"), which our firm represents.[1]

Thank you for the opportunity to meaningfully participate in the public comment process for this Proposed Plan.

[1] Utility Manufacturing Co, Inc. is the current tenant, and Nest Equities, Inc. is the owner of the Property.

The purpose of this letter is to comment on the U.S. Environmental Protection Agency's ("USEPA") Proposed Plan for remediation of contaminated groundwater in the Operable Unit 3 ("EPA OU3") portion of the New Cassel/Hicksville Groundwater Contamination Superfund Site ("NC/HGCS").[2] These comments supplement and add to comments of others addressing issues in the NC/HGCS. The development and implementation of the Proposed Plan is estimated to cost approximately $100 million and will take many years to fully develop, construct and operate. Utility and Nest Equities urge the USEPA to revisit and to reconsider its Proposed Plan for the for the reasons set forth herein in response to these, and to other public comments.

The NC/HGCS encompasses a widespread area of ubiquitous groundwater contamination underlying an area of about 6.5 square miles of central Long Island. The complex groundwater contamination has in this area has attempted to be described by specifying plumes or specific areas of groundwater movement impacted by contamination. The identification of groundwater plumes, however, is not always able to be done with precision as to the identity of the sources of or the extent of contamination, and efforts to do so are often iterative, resource intensive, and can take a significant time period, yet ultimately be inconclusive with respect to some parties. Nonetheless, parties located within the NC/HGCS have implemented source removal and source control at the direction of USEPA and prior to that, by NYSDEC.

These contaminated groundwater areas are impacted by solvents from many sources. Despite remedial efforts at the contaminant source, contaminated groundwater often requires the installation and operation of wellhead treatment systems to remove contaminants from water extracted at public supply wells before the water is distributed to the public. This wellhead treatment approach is also common as scientific information becomes available about health impacts of previously unidentified chemical contaminants. For the past 30 years, public water supply treatment systems south of NC/HGCS have ensured the public is not exposed to any harmful contaminants from the groundwater. Realistically, these treatment systems will be required in perpetuity. They will never be terminated.

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[2] An "Operable Unit" is a discreet phase of a remedial action under most environmental remediation programs, and typically addresses an environmental media, such as soil or groundwater, in a specified area of a site. Both USEPA and, prior to USEPA's involvement, the New York State Department of Environmental Conservation ("NYSDEC") use the Operable Unit term in their site remediation programs. At the NC/HGCS, both NYSDEC and USEPA have implemented several Operable Unit responses over the past decades. In this letter, for clarity, each is referred to by the respective agency initials and Operable Unit number, e.g., "NYSDEC OU1" or "EPA OU1".

Since the 1980's, some responsible parties, such as Utility and Nest Equities have been complying with various governmental agencies such as the Nassau County Health Department and NYSDEC to perform testing on their properties. Utility and Nest Equities have complied and effectively addressed on-site groundwater concerns. For example, NYSDEC's current fact sheet notes that "remediation of the [Utility] site is complete, except for natural attenuation of off-site contaminated groundwater."[3] The most recent sampling of Utility and Nest Equities' off-site groundwater indicated that solvent concentrations downgradient of the Property were comparable to concentrations migrating onto the Property from other upgradient sources, indicating the Property is not negatively impacting groundwater quality.

However, there remain many as yet un-remediated sources of groundwater contamination in the NC/HGCS area, particularly in the area designated as USEPA OU2 that lacks necessary contamination source control and which contributes to issues in OU3. These sources must be addressed and failure to do so demonstrates the drawbacks of a lack of a comprehensive strategy to address the contamination in the entire NC/HGCS. However, these ongoing sources of contamination, combined with the widespread intermingled nature of the groundwater plumes and previous remedial efforts, and the lack of public exposure to the contaminated groundwater, make EPA's OU-3 Proposed Plan, and to some degree EPA's OU1 remediation plan, inefficient, and not cost effective. Upon final analysis, these reasons demonstrate how the Proposed Plan is inconsistent with the National Contingency Plan for addressing United States Superfund sites.

COMMENT 1:

The proposed EPA OU3 remedy should not be adopted by the agency. It is costly, redundant and disruptive to impacted communities, and ultimately no more protective of human health and the environment than the continued operation of existing and planned wellhead treatment at the public supply wells supplemented by source contaminant removal at newly identified properties. The proposed EPA OU3 is not focused on 1) the entirety of the widespread nature of the industrial contamination, and 2) the presence of ongoing and continuing sources of groundwater contamination from OU2, and 3) the fact that there is no pathway of human exposure to the remaining contamination. Therefore, implementation of the OU3 Proposed Plan would be inconsistent with the National Contingency Plan.

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[3] *See,* "Environmental Site Remediation Database Search Details" for Utility Manufacturing/Wonderking, *available at* https://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=1, *last visited on* October 21, 2023.

- Properties that have addressed the minor contamination found on-site, such as Utility and Nest Equities Property, demonstrate their contribution to the successful reduction of this potential contamination. Such *de minimis* identified contaminants cannot and do not contribute to the ongoing contaminant plume issues. Thus, parties, such as Utility and Nest Equities, should be removed from being considered as responsible for the costs of further efforts to address contamination in the NC/HGCS, such as the Proposed Plan for OU3.

COMMENT 2

The EPA OU3 system is intended to address contamination that by-passed EPA OU1 before it reaches the treatment systems already installed at the public supply wells.

- The presence of the public water supply treatment systems ensures the public has no exposure to the underlying contaminated groundwater. These systems are currently operating successfully and cost effectively. Realistically, these treatment systems will operate in perpetuity. The addition of the EPA OU3 system, and to some degree the EPA OU1 system, are redundant and not cost-effective, thereby not in compliance with the National Contingency Plan.

- Wellhead treatment, along with continued contaminant source control, has been selected as the appropriate CERCLA remedy by USEPA at other complex area-wide groundwater contamination sites and is appropriate for selection at the NC/HGCS.

COMMENT 3:

The USEPA, and other state agencies, have often had to address instances of ubiquitous groundwater contamination in highly urban areas with significant demands on drinking water aquifers. The need to clean up these aquifers, and the simultaneous requirement to properly protect public health and prevent human exposure have made the use of wellhead treatment at public water supply wells part of the CERCLA remedy, either as a stand-alone solution or as part of a larger comprehensive remedial strategy that includes source control. USEPA must include consideration of the existing wellhead treatment south of the NC/HGCS when developing a Proposed Plan for OU3. USEPA has chosen this type of permanent wellhead treatment associated with water supply wells to be part of its CERCLA remedy for at least 24 other National Priority List sites nationwide.[4]

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[4] *See,* "Superfund Data and Reports," available at https://www.epa.gov/superfund/superfund-data-and-reports, *last visited* October 23, 2023.

For example, at the San Gabriel Valley Groundwater Site and the San Fernando Valley Superfund site, both of which address multi-source intermingled groundwater plumes in highly urbanized settings, the implemented remedy in several large areas includes the use of pre-existing water supply wells in conjunction with modern treatment plants to control the migration of the contaminants, treat the groundwater, and then beneficially use the treated groundwater in the drinking water system. USEPA should consider such a comprehensive strategy for the entirety of the NC/HGCS.

COMMENT 4:

Environmental investigations in the general area of the NC/HGCS have been ongoing since the 1980's and some are still underway, with additional source locations being identified.

Some investigations were conducted under the oversight of NYSDEC, USEPA, and some with the oversight and direction of the U.S. Army Corps of Engineers. Further, new sources of contamination are still being identified in OU2. Whereas numerous major contaminant sources have been identified in and around the NC/HGCS, they will continue to need to be addressed and sources appropriately remediated. Additionally, some parties currently considered Potentially Responsible Parties did not significantly contribute contaminants to the larger groundwater plume or have acted to remediate contamination found at their property, or based upon location and timing of releases, could not have had their contamination reach the extensive plume areas proposed to be addressed by EPA OU3. These parties are exemplified by Utility and Nest Equities. In light of this, USEPA should reach out to those smaller contributors and/or those that have adequately remediated their properties with *de minimis* settlement proposals.

CONCLUSION

The USEPA Proposed Plan for remediation should be revisited by the agency based upon the substantive and significant issues raised in these public comments, and by other similarly situated parties that are challenging the underlying assumptions used to justify the Proposed Plan.

Public health and human exposure to environmental contaminants, most importantly, can be effectively addressed if a more comprehensive approach is taken. Revisiting the remedial approach, without implementing the Proposal Plan is necessary. The effective alternative of fully implementing continued wellhead treatment at the public supply wells as primary solution

to the remaining groundwater plume contamination must be considered as an integral and necessary component, along with addressing newly identified sources of contamination, rather than implementing the $100 million EPA OU3 Proposed Plan as drafted. A revised OU3 Proposed Plan could free up resources to address identified sources of contaminants and provide far more benefits than the Proposed Plan. The USEPA has adopted this approach successfully in similarly contaminated areas that rely upon impacted groundwater. Consideration of this approach, as a key part of a comprehensive remedy for the remaining contamination, merits USEPA's review prior to making any decision about the Proposed Plan.

Further, a reassessment of the parties, particularly those that have not contributed to the plume contamination, such as Utility and Nest Equities, will finally, and equitably, address the allocation of costs associated with ongoing efforts and proposed future efforts to address the challenges posed by the NC/HGCS contamination upon reconsideration of the Proposed Plan.

Respectfully submitted,

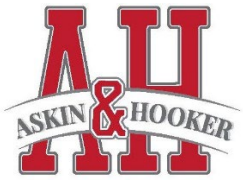
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September 22, 2023

VIA EMAIL
Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: **New Cassel/Hicksville Groundwater Contamination Superfund Site**

Dear Mr. Conway:

On behalf of Vishay GSI, Inc. ("VGSI"), we write to submit the attached comments regarding the United States Environmental Protection Agency's ("EPA") Proposed Plan to address contaminated groundwater at a portion of the New Cassel/Hicksville Groundwater Contamination Superfund Site (the "Site") identified as Operable Unit 3 ("OU3"). In addition to the enclosed comments, VGSI incorporates by reference herein the legal arguments and technical comments submitted by Morgan, Lewis & Bockius on behalf of GTEOSI. EPA should not move forward with selecting the remedy in the Proposed Plan without consideration of the comments submitted herewith and the aforementioned GTEOSI comments.

Respectfully submitted,

Todd M. Hooker, Esq.

TMH/mvs
Enclosures

Comment 1: Section 8 of the OU3 Remedial Investigation (RI) (HDR, 2023a[1]) states that "*Based on groundwater flow directions at the Site …. the former Sylvania Properties and General Instruments facility … are … sources of NCHGW OU3 groundwater contamination.*" This statement is based on groundwater elevation contour maps interpreted using groundwater elevation data that are limited to within, and in close proximity to, the NCHGW OU1 and OU3. Interpreting groundwater flow directions, or flow paths, based on groundwater elevation contour maps is directly related to the spatial coverage of the observed groundwater elevation data used to develop the groundwater elevation contours. Using measured groundwater elevations over a wider geographical area to develop groundwater elevation contour maps provides more reliable interpreted groundwater flow paths.

Groundwater elevation contour maps based on groundwater elevations measured throughout the NCHGW OU1 and OU3 and the surrounding region are presented on the attached Figures 1 to 9, as follows:

- Figure 1 – Groundwater elevation contours for the Upper Glacial Aquifer in May-June 1990
- Figures 2 to 5 – Groundwater elevation contours for the Upper Glacial Aquifer and upper, middle, and lower portions of the Magothy Aquifer in May-July 2012
- Figures 6 to 9 – Groundwater elevation contours for the Upper Glacial Aquifer and upper, middle, and lower portions of the Magothy Aquifer in May 2022

The aquifer elevation intervals are the same as that applied in the OU3 RI. On each of Figures 1 to 9, an approximate groundwater flow path is interpreted based on the groundwater elevation contours from immediately downgradient (i.e., south) of the former Sylvania Properties and the General Instruments facility. For each date and aquifer elevation interval, the groundwater flow path demonstrates that groundwater flow from the former Sylvania Properties and the General Instruments facility is directed southward and side-gradient of OU3. Thus, groundwater flow from the former Sylvania Properties and the General Instruments facility is not directed to the southwest into OU1 or OU3, and the former Sylvania Properties and the General Instruments facility are not directly upgradient of OU1 or OU3 as stated in the OU3 RI. The southward groundwater flow direction from the former Sylvania Properties and the General Instruments facility persists throughout the time period when the Bowling Green supply wells were in operation and pumping a significant quantity of groundwater from the lower portion of the Magothy Aquifer (i.e., during 1990 and 2012 as shown on Figures 1 to 5 when the Bowling Green supply wells were pumping at several hundreds to over 1,000 gallons per minute). Groundwater pumping from the Bowling Green supply wells would have had the greatest potential to draw groundwater from the former Sylvania Properties and the General Instruments facility towards OU1/OU3, but this was not the case as demonstrated by the groundwater elevation contour maps for 1990 and 2012.

The OU3 RI should have considered measured groundwater elevation data throughout the region beyond the NCHGW OU1 and OU3 in developing groundwater elevation contours. Doing so would have avoided erroneously concluding that former Sylvania Properties and the General Instruments facility are directly upgradient of the NCHGW OU1 and OU3 and asserting that the former Sylvania Properties and General Instruments facility are sources of NCHGW OU3 groundwater contamination.

Figures 1 to 9 also show interpreted groundwater flow paths from the location of the Frost Street Properties within the New Castle Industrial Area. The flow paths demonstrate that groundwater from the Frost Street Properties flows directly to OU1 and OU3. Therefore, groundwater contamination within the New Castle Industrial Area is directly upgradient of OU1 and OU3 and is the source of the OU3 groundwater contamination.

Comment 2: The evaluation of remedial action alternatives for the NCHGW OU3 presented in the OU3 Feasibility Study (FS) (HDR, 2023b[2]) is not completed consistent with industry standards. The evaluation of hydraulic containment achieved by groundwater extraction wells is completed using an analytical solution

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1 HDR APTIM (HDR), 2023a. Remedial Investigation Report, New Castle/Hicksville Groundwater Contamination Superfund Site – Operable Unit 3, Nassau County, New York, July.

2 HDR APTIM (HDR), 2023b. Feasibility Study Report, New Castle/Hicksville Groundwater Contamination Superfund Site – Operable Unit 3, Nassau County, New York, July.

(i.e., Grubb [1993[3]]) that assumes uniform aquifer properties and groundwater flow conditions in a two-dimensional flow field. Remediation timeframes are also evaluated using analytical solutions. A simplistic batch-flushing model (Brusseau, 1996[4]) was applied to evaluate remedial timeframes within the hydraulic containment area provided by the extraction wells (i.e., inside the 100 micrograms per liter [µg/L] groundwater plume limit). The analytical solution BIOCHLOR [USEPA, 2000[5]]) was used to evaluate remedial timeframes beyond the 100 µg/L groundwater plume limit via natural attenuation processes within a uniform groundwater flow field. These analytical solutions grossly over-simplify the complex three-dimensional, heterogeneous, anisotropic, and dynamic nature of the groundwater flow regime within the Upper Glacial and Magothy Aquifers. The gross over-simplification of the groundwater regime within OU3 necessary to apply these analytical solutions renders the results obtained from these analytical solutions as unreliable and non-defensible. Current state-of-the-science evaluation tools should be applied to rigorously to assess the performance of the remedial action alternatives for OU3, such as developing a three-dimensional groundwater flow and fate/transport model that is calibrated to observed groundwater flow conditions and observed historical contaminant migration. A three-dimensional groundwater flow and fate/transport model calibrated to industry standards is the only design tool that can account for aquifer heterogeneity, a three-dimensional groundwater flow field, transient groundwater conditions caused by variable supply and industrial well pumping, seasonal variations in groundwater recharge conditions, initial contaminant mass, on-going contamination sources, mass flux, mass removal by groundwater extraction, natural attenuation processes, concentration back-diffusion from lower permeability silt/clay lenses present throughout the Upper Glacial and Magothy Aquifers, interaction/interference of the OU3 remedy with the OU1 remedy that has yet to be determined/designed, etc.

USEPA (2008[6]) states that analytical solutions are suitable for "*two-dimensional flow systems with isotropic and homogeneous*" conditions. USEPA (2008) states that "*numerical simulation codes such as MODFLOW (U.S. Geological Survey) allow for simulation of more complex systems (three dimensional geometry including aquifer heterogeneity and complex boundary conditions*", where complex boundary conditions are created within OU3 by variable pumping from municipal and industrial supply well pumping that occurs throughout the Upper Glacial and Magothy Aquifers.

USEPA (2008) further states:

> "*Determining the appropriate types of calculations to perform should be based on site complexity. For instance, numerical simulation of heads for evaluating capture may not be necessary for sites with very simple hydrogeology and only minor heterogeneity of aquifer parameters*."

This statement then infers that complex sites with a three-dimensional, heterogeneous, and anisotropic aquifers and dynamic groundwater flow conditions require application of a numerical three-dimensional groundwater flow and fate/transport model to provide a defensible evaluation of remedial action alternatives.

Applying the rudimentary analytical solutions to evaluation remedial action alternatives for OU3 results in a high degree of uncertainty as to whether the recommended design will perform as intended and be effective at providing hydraulic containment and achieving mass removal over a reasonable timeframe.

Comment 3: Section 9.4.1 of the OU3 FS states that the "*extent and distribution of contaminant mass was partially delineated during the RI and requires further delineation*…" Since the full extent of the OU3 groundwater plume has yet to be defined, recommending a preferred remedial action is premature at this time. USEPA (2008) states that both a conceptual site model and definition of the nature and extent of

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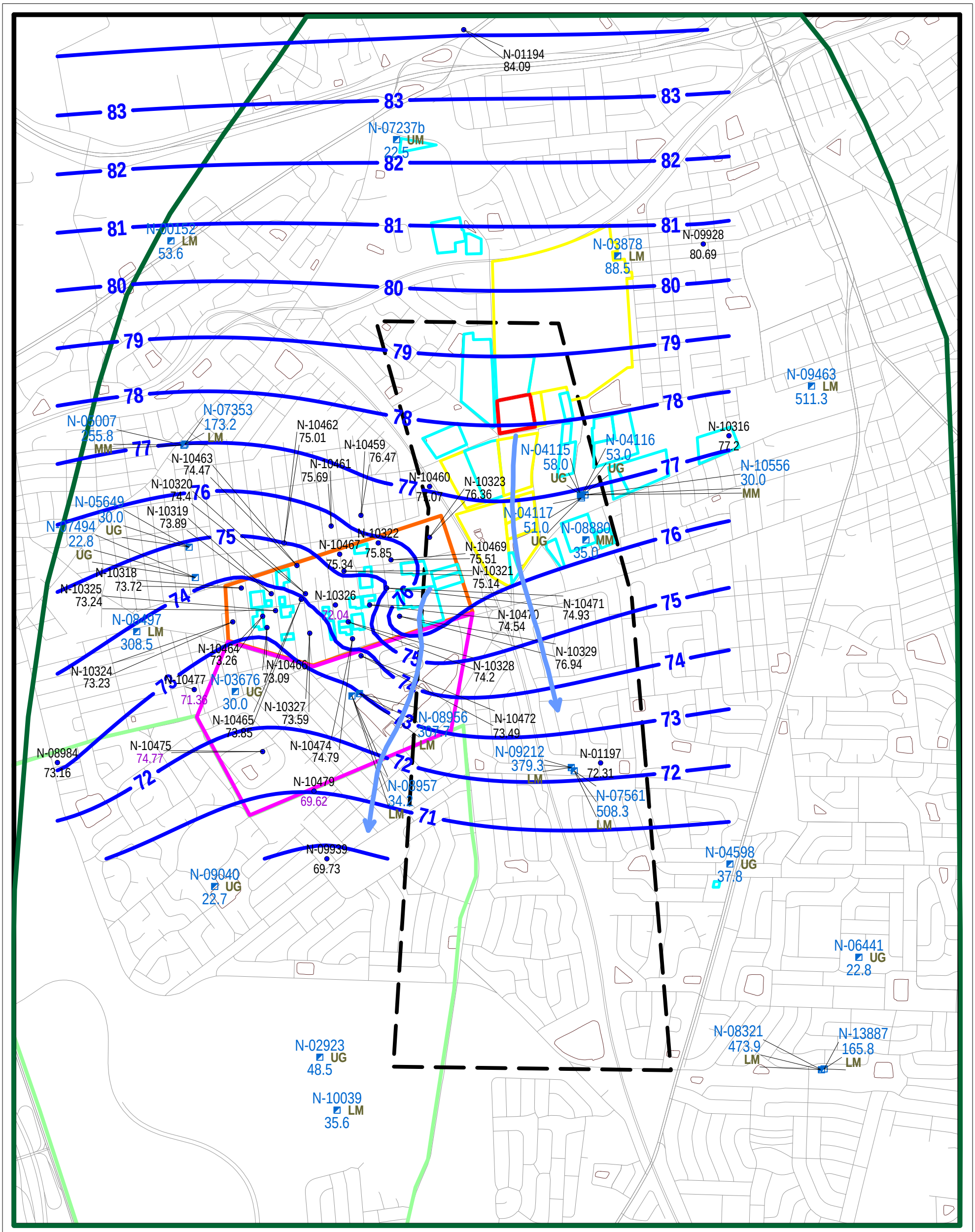
[3] Grubb, S., 1993. Analytical Model for Estimation of Steady-State Capture Zones of Pumping Wells in Confined and Unconfined Aquifers, Groundwater, Vol. 31, No. 1, p. 27-32.

[4] Brusseau, 1996. Evaluation of Simple Methods for Estimating Contaminant Removal by Flushing, Groundwater, Volume 34, Issue 1. January 1996.

[5] USEPA, 2000. BIOCHLOR Natural Attenuation Decision Support System, User's Manual, Version 1.0, https://nepis.epa.gov/Adobe/PDF/P1000YUW.pdf, January 2000.

[6] USEPA, 2008. A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, Office of Research and Development, EPA 600/R-08/003, January.

contamination are part of the first steps to be completed before proceeding to evaluation of remedial action alternatives.



LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
- USEPA OU3 OF THE SITE
- NEW CASSEL INDUSTRIAL AREA
- PARCEL
- SITE WITH KNOWN CHLORINATED SOLVENT USE
- MODEL DOMAIN
- ACTIVE MODEL DOMAIN
- MONITORING WELL LOCATION
- 77.82 — MEASURED GROUNDWATER ELEVATION USED IN CONTOUR INTERPOLATION (ft AMSL)
- 77.82 — MEASURED GROUNDWATER ELEVATION NOT USED IN CONTOUR INTERPOLATION (ft AMSL)
- 60 — GROUNDWATER ELEVATION CONTOUR (ft AMSL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- N-08321 / LM / 473.9 — ACTIVE PUMPING WELL, PUMPING RATE (GPM), AND SCREENED AQUIFER DEPTH(1)

0 850 1,700ft

Note:
(1) Active pumping well (pumping more than 20 GPM) from aquifer depth intervals: UG - Upper Glacial Aquifer (< -15 ft AMSL); UM - Upper Magothy Aquifer (-15 to -85 ft AMSL); MM - Middle Magothy Aquifer (-85 to -185 ft AMSL); and LM - Lower Magothy Aquifer (> -185 ft AMSL).

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GHD

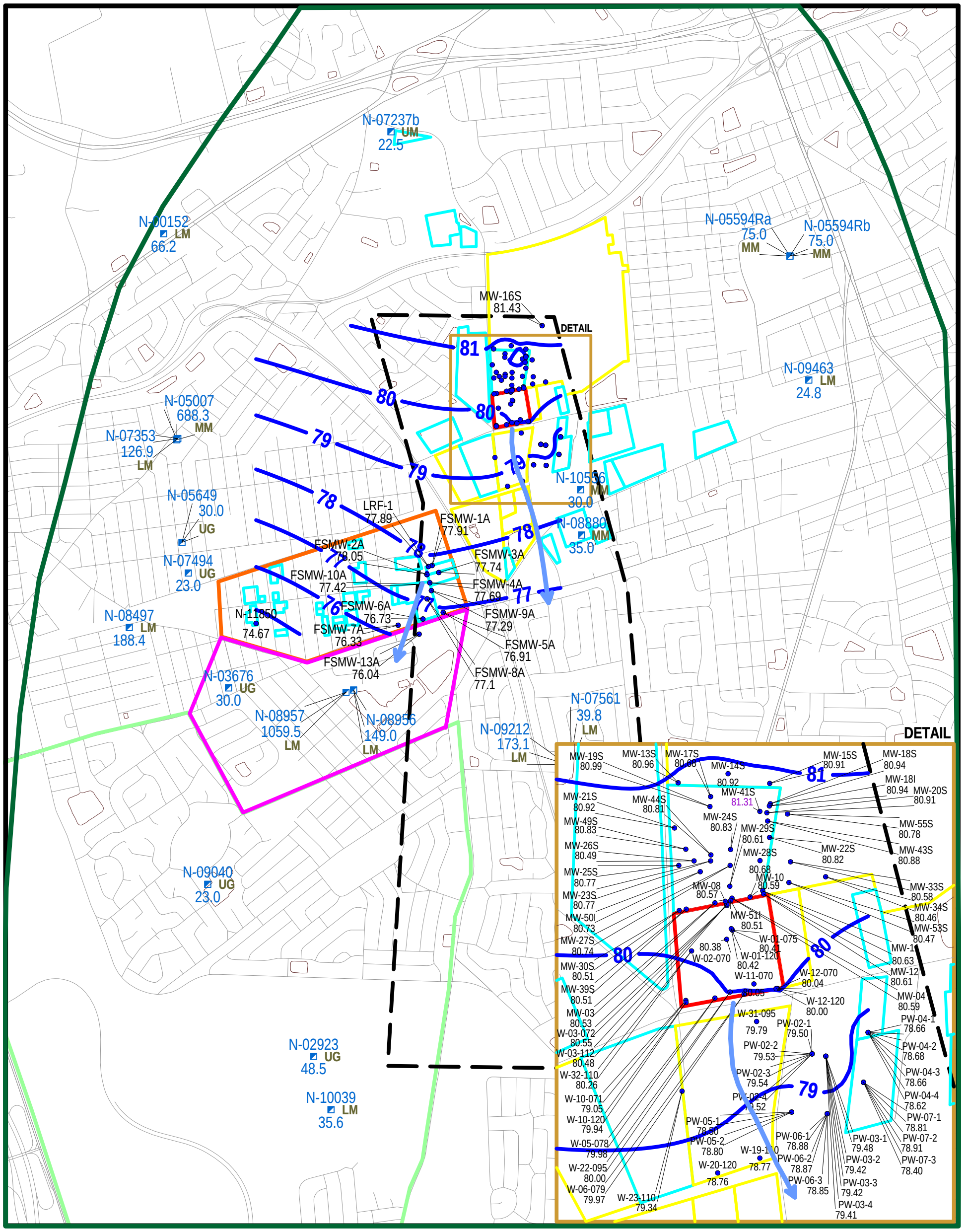
ASKIN & HOOKER, LLC
FORMER GIC SITE, OU2 OF THE NCHGCS SITE
SRIR

GROUNDWATER ELEVATION CONTOUR MAP UPPER GLACIAL AQUIFER MAY-JUNE 1990

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 1

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-MayJun1990-UG.srf
Plot Date: September 21 2023 4:09 PM



LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
- USEPA OU3 OF THE SITE
- NEW CASSEL INDUSTRIAL AREA
- PARCEL
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0 850 1,700ft

Note:
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GHD

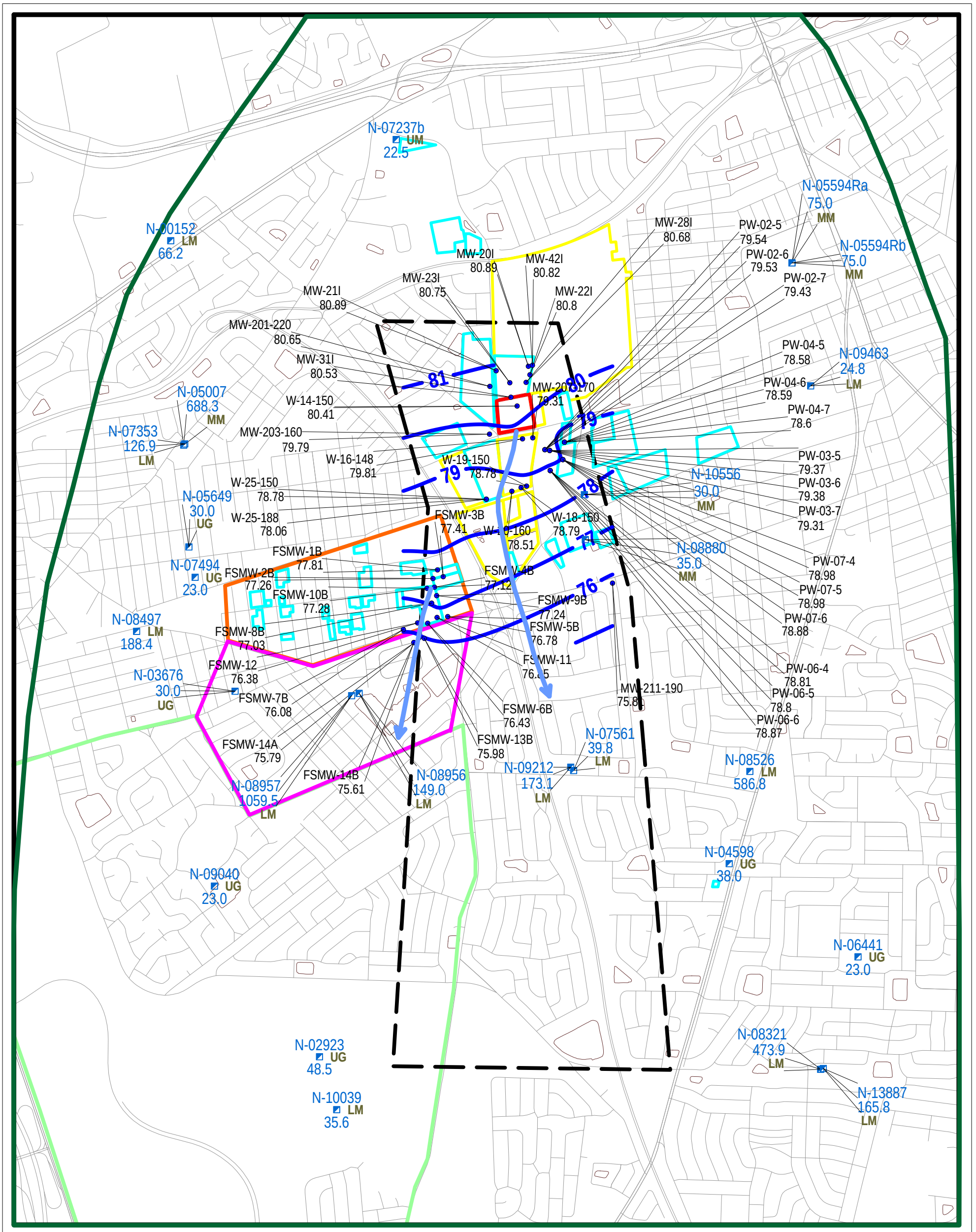
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FORMER GIC SITE, OU2 OF THE NCHGCS SITE
SRIR

GROUNDWATER ELEVATION CONTOUR MAP
UPPER GLACIAL AQUIFER
MAY-JULY 2012

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 2

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-MayJuly2012-UG.srf
Plot Date: September 21 2023 4:09 PM



LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
- USEPA OU3 OF THE SITE
- NEW CASSEL INDUSTRIAL AREA
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- ACTIVE MODEL DOMAIN
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0 850 1,700ft

Note:
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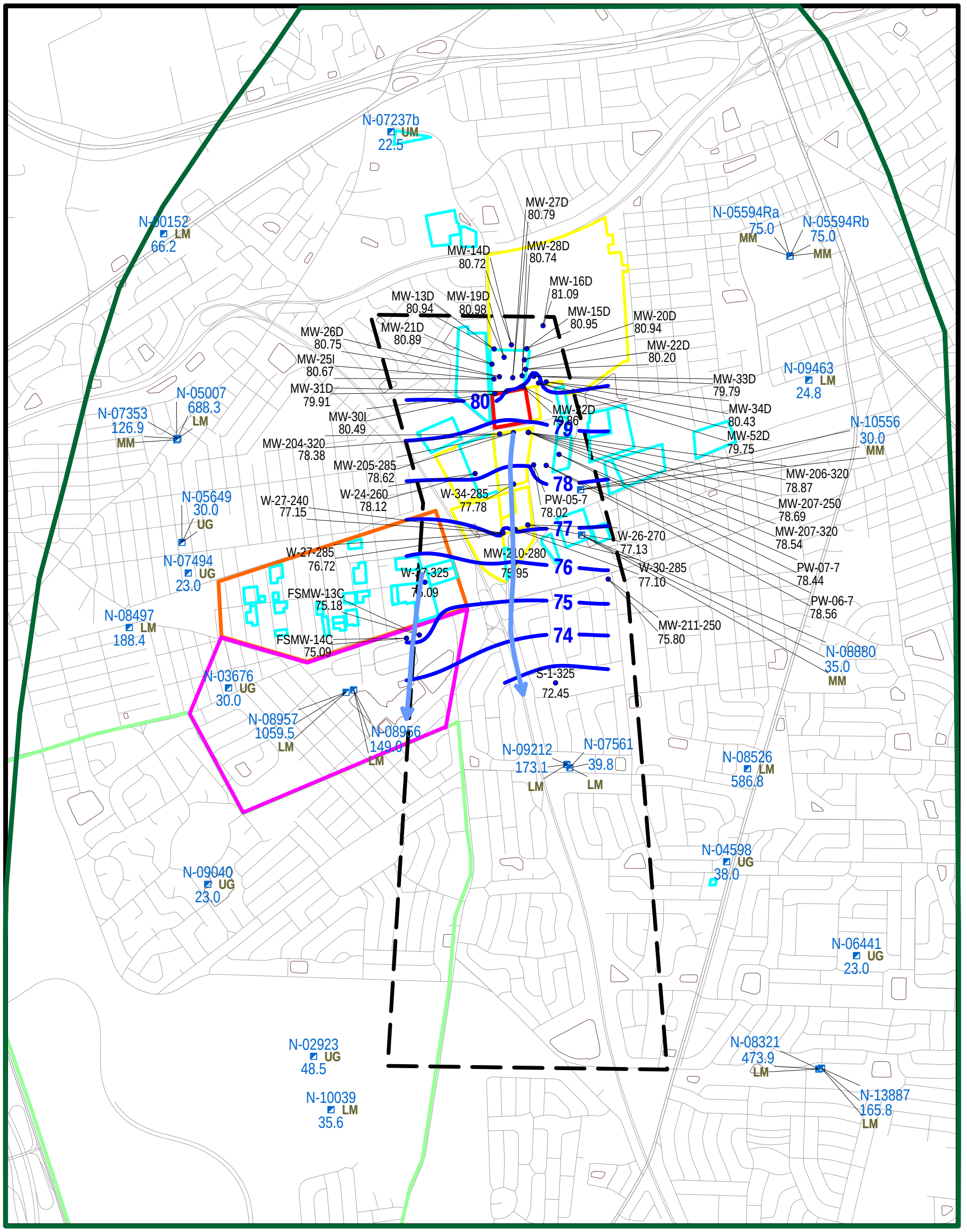
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FORMER GIC SITE, OU2 OF THE NCHGCS SITE
SRIR

GROUNDWATER ELEVATION CONTOUR MAP UPPER MAGOTHY AQUIFER MAY-JULY 2012

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 3

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-MayJuly2012-UM.srf
Plot Date: September 21 2023 4:09 PM



LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
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0 850 1,700ft

Note:
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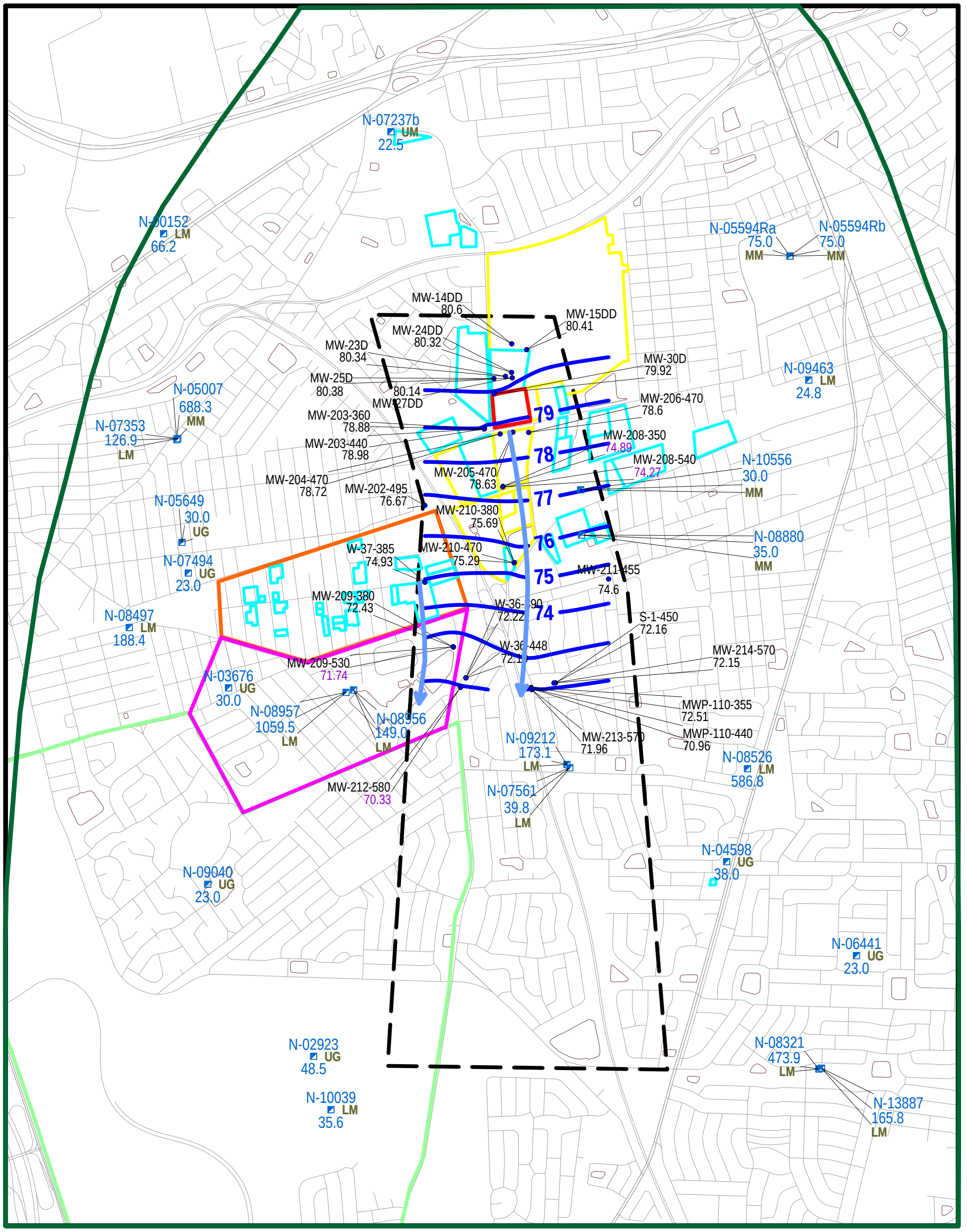
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GROUNDWATER ELEVATION CONTOUR MAP
MIDDLE MAGOTHY AQUIFER
MAY-JULY 2012

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 4

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-MayJuly2012-MM.srf
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LEGEND

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0 850 1,700ft

Note:
(1) Active pumping well (pumping more than 20 GPM) from aquifer depth intervals: UG - Upper Glacial Aquifer (< -15 ft AMSL); UM - Upper Magothy Aquifer (-15 to -85 ft AMSL); MM - Middle Magothy Aquifer (-85 to -185 ft AMSL); and LM - Lower Magothy Aquifer (> -185 ft AMSL).

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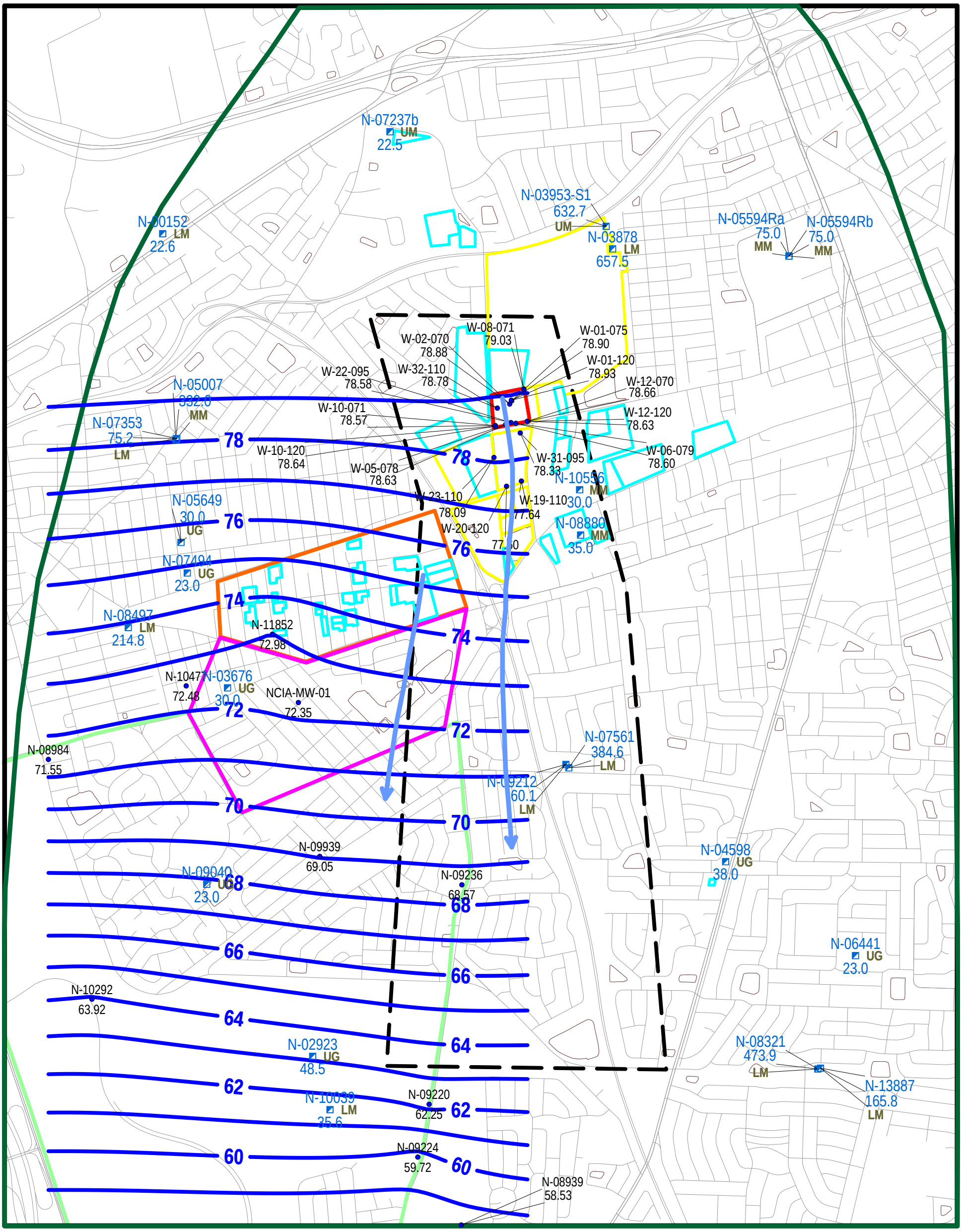
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GROUNDWATER ELEVATION CONTOUR MAP LOWER MAGOTHY AQUIFER MAY-JULY 2012

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 5

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-MayJuly2012-LM.srf
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LEGEND

- FACILITY
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0 850 1,700ft

Note:
(1) Active pumping well (pumping more than 20 GPM) from aquifer depth intervals: UG - Upper Glacial Aquifer (< -15 ft AMSL); UM - Upper Magothy Aquifer (-15 to -85 ft AMSL); MM - Middle Magothy Aquifer (-85 to -185 ft AMSL); and LM - Lower Magothy Aquifer (> -185 ft AMSL).

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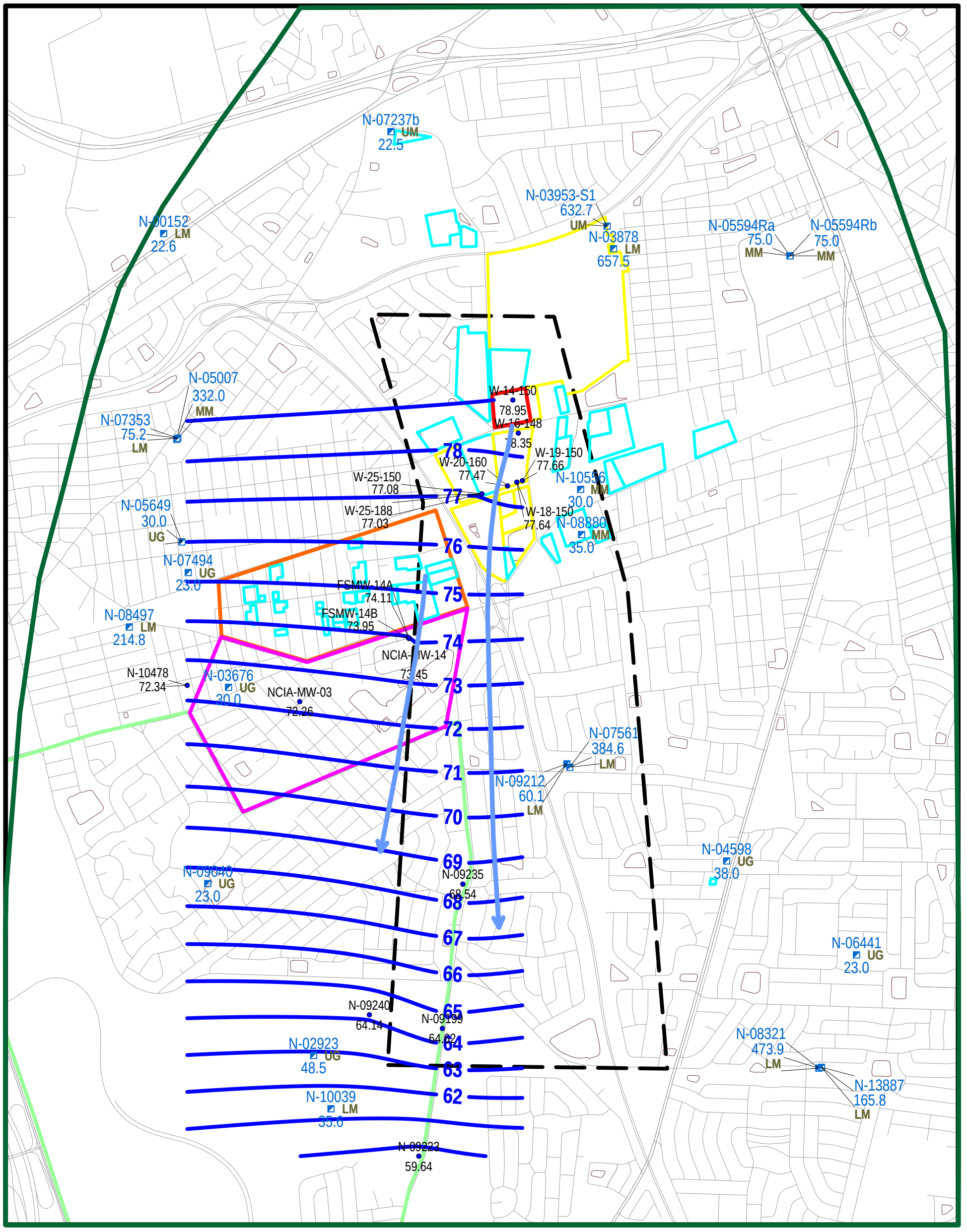
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GROUNDWATER ELEVATION CONTOUR MAP UPPER GLACIAL AQUIFER MAY 2022

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 6

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-May2022-UG.srf
Plot Date: September 21 2023 4:09 PM



LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
- USEPA OU3 OF THE SITE
- NEW CASSEL INDUSTRIAL AREA
- PARCEL
- SITE WITH KNOWN CHLORINATED SOLVENT USE
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- ACTIVE MODEL DOMAIN
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0 850 1,700ft

Note:
(1) Active pumping well (pumping more than 20 GPM) from aquifer depth intervals: UG - Upper Glacial Aquifer (< -15 ft AMSL); UM - Upper Magothy Aquifer (-15 to -85 ft AMSL); MM - Middle Magothy Aquifer (-85 to -185 ft AMSL); and LM - Lower Magothy Aquifer (> -185 ft AMSL).

N

GHD

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GROUNDWATER ELEVATION CONTOUR MAP UPPER MAGOTHY AQUIFER MAY 2022

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 7

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-May2022-UM.srf
Plot Date: September 21 2023 4:09 PM

N-07237b
UM
22.5

N-03953-S1
632.7
UM

N-00152
LM
22.6

N-03878
LM
657.5

N-05594Ra
75.0
MM

N-05594Rb
75.0
MM

N-05007
332.0
MM

N-07353
75.2
LM

W-24-260
77.17

W-34-285
76.92

N-10556
MM
30.0

W-26-270
76.38

W-27-240
76.41

N-08880
35.0
MM

N-05649
30.0
UG

W-37-325
74.77

W-27-285
76.09

W-30-285
76.53

N-07494
UG
23.0

N-08497
LM
214.8

NCIA-MW-16S
72.49

NCIA-MW-17S
72.47

S-1-325
72.57

S-1-325
72.59

N-03676
UG
30.0

NCIA-MW-16D
72.32

NCIA-MW-17D
71.97

N-07561
384.6
LM

NCIA-MW-12
69.85

N-09212
60.1
LM

NCIA-MW-11S
69.55

NCIA-MW-11D
69.65

NCOU3-MW-02S
68.31

N-04598
UG
38.0

N-03940
UG
23.0

N-09234
68.5

N-06441
UG
23.0

N-09239
63.96

N-02923
UG
48.5

N-08321
473.9
LM

N-13887
165.8
LM

N-10039
63.17

N-10039
LM
35.6

N-10662
57.19

75 76 74 75 73 74 72 73 71 72 70 71 69 70 68 69 67 68 66 67 65 66 64 65 63 64 61 62 63

LEGEND

- FACILITY
- USACE STUDY AREA
- USEPA OU1 OF THE SITE
- USEPA OU3 OF THE SITE
- NEW CASSEL INDUSTRIAL AREA
- PARCEL
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- N-08321 / LM / 473.9 — ACTIVE PUMPING WELL, PUMPING RATE (GPM), AND SCREENED AQUIFER DEPTH(1)

0 850 1,700ft

N

Note:
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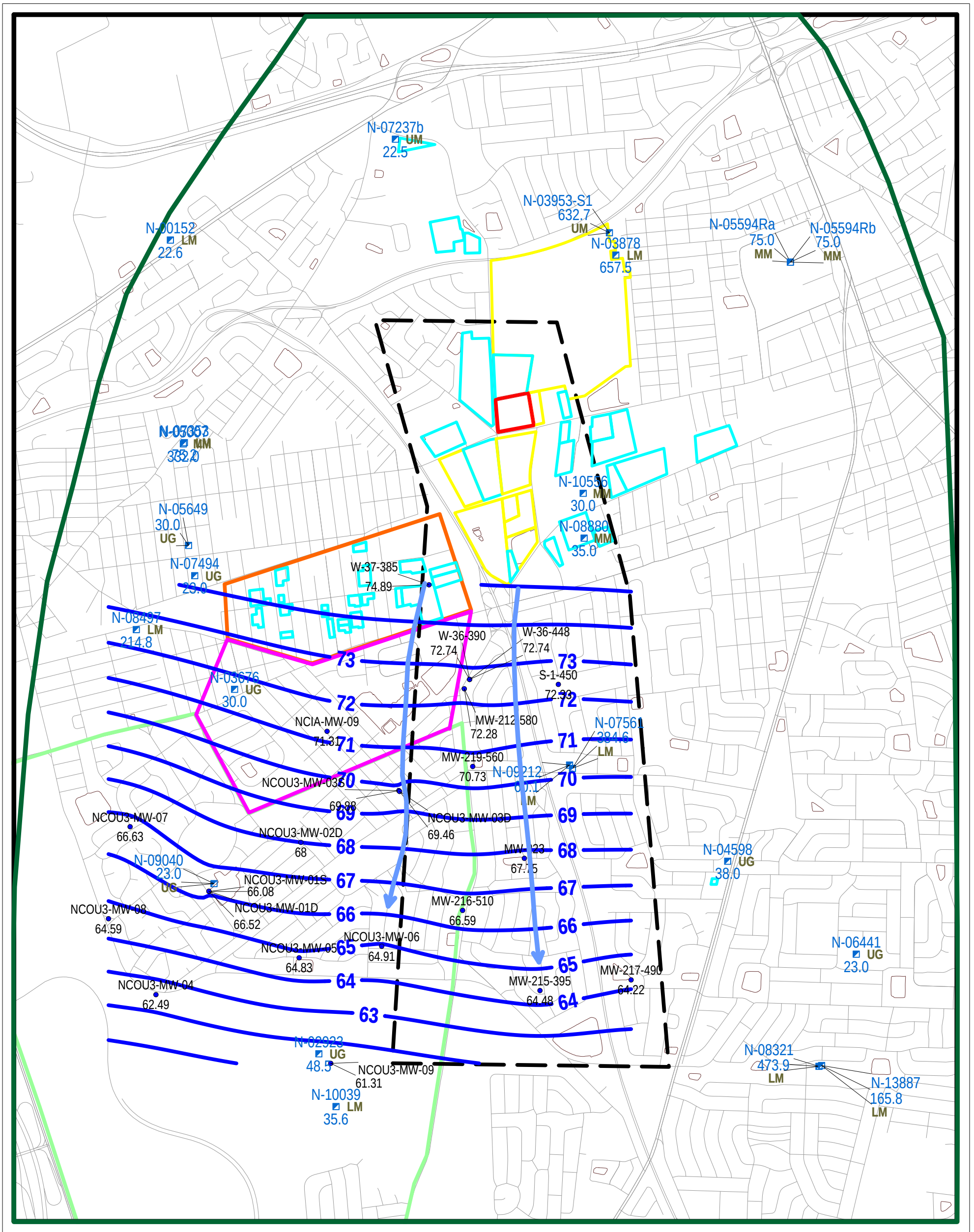
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GROUNDWATER ELEVATION CONTOUR MAP MIDDLE MAGOTHY AQUIFER MAY 2022

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 8

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-May2022-MM.srf
Plot Date: September 21 2023 4:09 PM



LEGEND

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0 850 1,700ft

Note:
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N

GHD

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FORMER GIC SITE, OU2 OF THE NCHGCS SITE
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GROUNDWATER ELEVATION CONTOUR MAP LOWER MAGOTHY AQUIFER MAY 2022

Project No. **12598008**
Date **Sep 21, 2023**

FIGURE 9

Filename:Z:\HEG\11219404\MOD(GHD)\F66T65PCEgicSylv(PCE32000)\Cal\HistoricalObserved_Simulated-Plots\12598008-May2022-LM.srf
Plot Date: September 21 2023 4:09 PM

From: rdgrassony@gmail.com
To: Conway, Aidan
Subject: Superfund Proposed Plan, U.S. Environmental Protection Agency, Region 2, July 2023
Date: Saturday, October 14, 2023 12:17:36 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Aidan,

I read the Superfund Proposed Plan for the New Cassel/Hicksville Groundwater Contamination Superfund Site, Operable Unit 3, Nassau County, New York, July 2023. I understand the concerns about contaminated groundwater at this site.

The report identifies sources of contamination such as Sylvania Properties and General Instruments Facility. It's indicated that the greatest contamination from the Sylvania site was at 80 feet bgs. There is no indication as to the depth of the greatest contamination from the General Instruments site.
The report further indicates how cleanup activities have been performed at both sites. However, it appears that final reports as to the current state of contamination at both sites have not been completed. I believe that nothing should be started until the final reports as to the current state of contamination are completed.

The report does not indicate if there are any other sites in the area that have been and may still be introducing contaminates into the groundwater. It appears to me that the first thing that should be done should be to ensure there are no current sources of contaminates getting into the groundwater. I am not an expert in the area, but if the sources of contamination have been eliminated, it would appear that the level of contamination should be lowering over time. The report does not indicate the history of contamination levels over many years. I feel that the report should have included indication as to all the current sources of contamination and a chart showing the history of contamination levels.

The report indicates that there are natural attenuation processes that, if occurring, will naturally reduce the contamination over time. Three components necessary for natural attenuation are (1) anerobic conditions, (2) iron and magnesium, and (3) sulfate. The report indicates anerobic conditions have been found in most wells with a depth greater than 400 feet bgs. For wells less than 400 feet bgs, there is a range from oxygen depleted to oxygen saturated. However, there is no indication as to the depth of the wells that are currently being used. Both iron/magnesium and sulfate levels appear to support natural attenuation. The report also indicates chlorine in the groundwater was detected in each sample collected and this may be an indicator of the potential for natural attenuation. I feel that additional information should have been included in the report to identify where natural attenuation is currently occurring, describing the difference in natural attenuation as a function of water depth, and an indication as to what depths water is currently being extracted.

The report includes a summary of human health risks due to the current contamination. However, there is no indication of the possible health and other risks that may be introduced by the

implementation of Alternative solutions 2-4 such as increased pollution during the 3 to 4.5 years of construction and pumping contaminated groundwater to treatment plants for at least 5 years. There is no indication as to the effect of pumping large amounts of groundwater water which adds to the current amount of water being extracted. There is also no indication as to where and how the treated water will be dispersed. There is an indication that "The location of the groundwater treatment plant and recharge basin will be determined during the Remedial Design Phase…" but I feel that no alternative solution should be started until this analysis is completed. After this analysis is done, the public should have the opportunity to comment on the location of the groundwater treatment plant and recharge basin as well as the routes needed to transfer contaminated water from the extraction wells to the groundwater treatment plant. There is also noting in the report that describes problems, if any, that may occur at the groundwater treatment plant.

The report does not describe the current processing of groundwater being extracted by the public supply water districts, the amount of contamination that currently exists in the processed water, and what is expected to happen to the level of contamination in the processed water if Alternative 1 is implemented. I also do not understand why monitoring is not included in Alternative 1. Monitoring would provide an indication as to whether natural attenuation is occurring as well as providing an indication if contamination is actually increasing (perhaps due to currently unknown sources of contamination or contamination coming from sources that were assumed to be cleaned).

Therefore, I feel that no construction should be started until the above items have been fully analyzed.

Bob Grasso
rdgrassony@gmail.com

October 19, 2023

Subject: Comments with respect to Superfund Proposed Plan for New Cassel/Hicksville Groundwater Contamination Superfund Site Operable Unit 3, Nassau County, NY dated 7/23

I have reviewed the proposed plan dated July 2023 with respect to actions potentially to be taken at the New Cassel/Hicksville Operable Unit 3 site. I have been an over 60 year resident of the Salisbury,Westbury area, first within the site designated as Operable Unit 1, and for the last 22 years within Operable Unit 3. I have some familiarity with the history of the site and the circumstances surrounding its Superfund designation, and am aware of the continued monitoring conducted by EPA Region 2 and others over the years.

So I was extremely surprised, to say the least, to receive a mailing last week from an unidentified entity, sent out under a US Postal Service bulk mailing permit, which read on one side "EPA PROPOSES PIPING IN OUR BACKYARDS! WE MUST OPPOSE THIS PLAN!" with reference on the back to EPA's proposed plan and potential negative impacts, and providing a QR code for scanning for further information. When I spoke with you last week, you indicated that you had received this mailing as well.

I am not going to comment on the substance or the merits of the proposed plan and the proposed alternatives. What I am going to comment on is what I consider to be a lack of any kind of constructive notice to the impacted community of the current state of affairs and what has been proposed. Regardless of whether EPA has complied with the strict statutory and/ or regulatory notice requirements, I believe the vast majority of this community has no real notice of what is happening here now and what has been proposed. The fact that EPA may have "buried" notice in a couple of newspaper classified ads and has a website where people could have searched for information if they knew enough to sign up, in reality isnt really notice to the community.

I understand a single information session was held at the local public library which I expect virtually no one in the community knew anything about. I would like to know how many community residents actually attended that meeting.
.
I believe EPA should give this community the information that it deserves regarding a significant environmental and health issue within its backyards rather than the bare minimum required, which effectively leaves most of the community in the dark.

Please do the right thing and set up some additional meetings so people can have an understanding of this matter.

Respectfully submitted,

Linda Rosenthal

7 Pride Lane
Westbury, NY 11590
516-876-2650
linda.b.rosenthal@gmail.com

From: alansueskind
To: Conway, Aidan
Subject: EPA proposal
Date: Saturday, October 7, 2023 1:00:56 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Re the proposal for the Westbury area:
NO.

Sent from my Verizon, Samsung Galaxy smartphone

From: tgsalame@gmail.com
To: Conway, Aidan
Subject: Opposed EPA"S Plan
Date: Friday, October 13, 2023 6:15:46 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

THIS EMAIL IS TO CONFIRM OUR OPPOSTION TO [EPA'S PLAN] IN SALISBURY STATES COMMUNITY
WE RESIDE AT 876 EDGEWOOD DRIVE, AND FULLY OPPOSED THIS PLAN 100%.
PLEASE LET US KNOW IF YOU NEED ANY FURTHER IFNORMATION TO VOICE OUR CONCERNS.
THANKS SO MUCH FOR STANDING TALL AGAINST THESE TYPE OF DISRUPTIONS & EXPOSURES.
SINCERELY YOURS,
ANTHONY SALAME

From: Bonnie
To: Conway, Aidan
Subject: Pump & Treat
Date: Monday, October 9, 2023 1:01:03 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am strongly opposed to
the EPA plan.

Bonnie M. Barbosa, homeowner
Sent from my iPhone

Mr. & Mrs. Carmen Puma
35 Middle Lane
Westbury, NY 11590-6307

Oct. 17, 2023

Mr. Aidan Conway
Remedial Project Manager
US Environmental Protection Agency
290 Broadway 19th Floor
New York, NY 10007

Re: Deep Water Ground Cleanup

Dear Sir,

We are opposed to the deep water ground clean up in our area.

Thanking you in advance for your kind attention to this matter.

Very truly yours,

Mr & Mrs Carmen Puma

From: carolyn taylor
To: Conway, Aidan
Subject: Contest EPA Plan
Date: Sunday, October 15, 2023 6:54:35 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am writing to voice our family's opposition to the New Cassel/Hicksville Groundwater Contamination Superfund Site Operable Unit 3 Nassau County NY Plan. This is also the opinion of the four other households of our family in Salisbury.
Thanks you,
Mr and Mrs M Taylor

Sent from my iPhone

Sent from my iPhone

From: Kidcrgiver
To: Conway, Aidan
Subject: Deep groundwater cleanup
Date: Tuesday, October 10, 2023 12:44:34 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hello
I live in the proposed area for deep groundwater cleanup. (East Meadow/Westbury/Salisbury)
I received a mailing from an anonymous sender regarding the EPA's plan to proceed with this cleanup. Since this will definitely disrupt our daily lives, I would like to suggest a mailing be distributed from your agency describing exactly what will occur and an estimate of the length of time this will take. Even better than a mailing would be a face to face opportunity for the community to hear your explanation and ask questions. It is only fair to those of us who will be effected by your plan.
We all want and need clean water but clarification is needed

Thank you
Chris Reilly

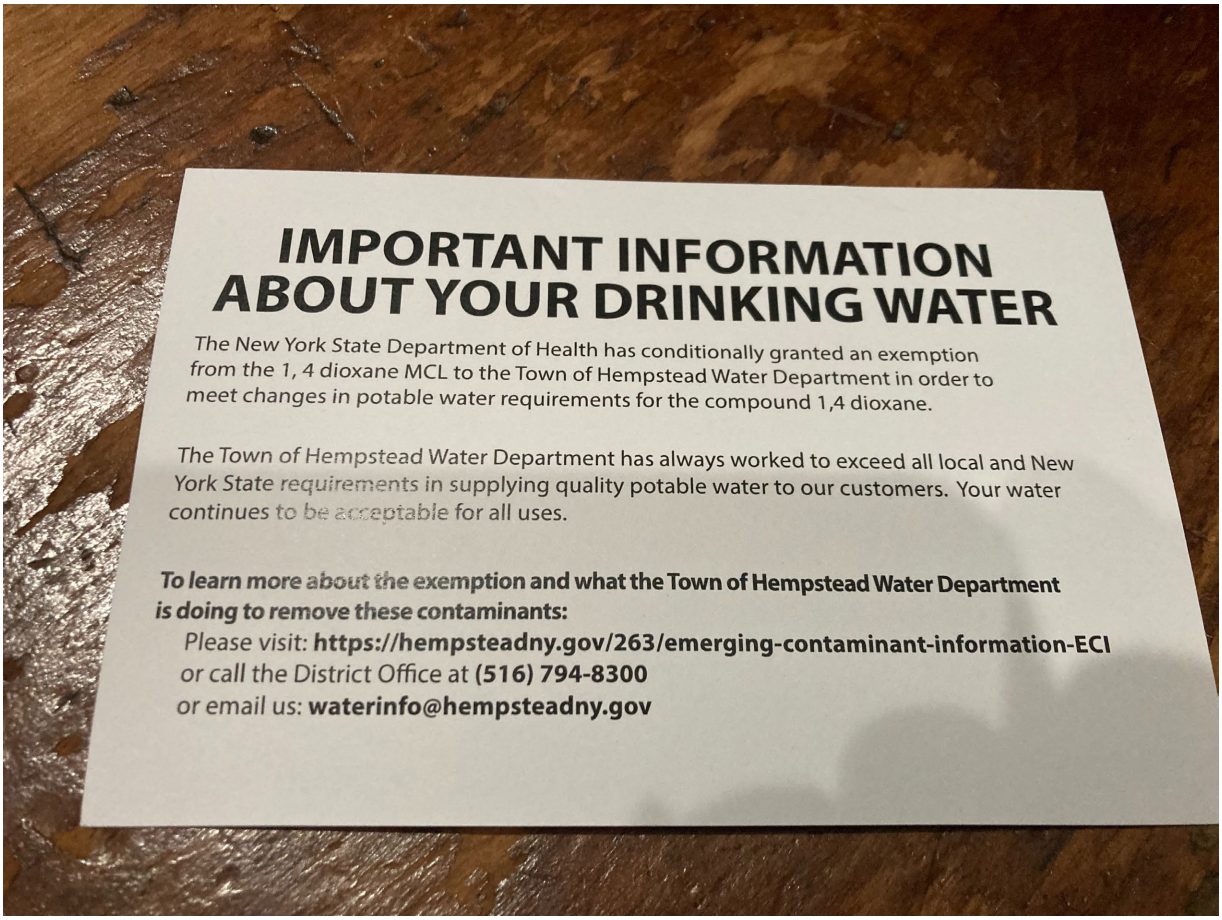
Sent from the all new AOL app for iOS

From: clappinorth
To: Conway, Aidan
Subject: EPA Proposal for Salisbury, Hicksville, New Cassel NY
Date: Monday, October 23, 2023 10:04:05 AM

> **Caution:** This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Mr Conway,

I am writing to you in regards to the proposed remediation of the the contamination of water in our community. I know you are aware of the flier that was circulated (by mass mailing) to residents in our area, which pressed residents to contact you and oppose the EPA Proposal for clean up. I don't know who produced the flier(I find it concerning) or why they would object to the remediation plan.
As a resident, my main concern would be the possibility that the EPA plan does not safely address the issues which it was devised to correct. I believe clean dinking and ground water would be a priority over inconvenient construction projects.
I also have another question regarding this contaminated water issue;
Not long ago (3 weeks perhaps) I received a postcard from the Town of Hempstead Department of Water stating that the town was granted an exemption from the restrictions on 1,4 dioxane. I assume this is related to the clean-up proposal? Will the clean-up resolve the need for the exemption and will the exemption be rescinded when the EPA Plan has been completed? I am attaching an image of the communication from TOHWD



Thank you for your time. Please consider the long term wellbeing of the people who live here and pay taxes here. I will tolerate construction inconvenience if it means the contamination can be eliminated safely without further contamination of our ground water, well water and drinking water.

Sincerely,
Claire Clappi
Resident Salisbury NY

Sent from the all new AOL app for iOS

From: [redacted]
To: [redacted]
Subject: EPA Map Attached
Date: Tuesday, October 3, 2023 6:23:23 PM



Caution: This email originated from outside EPA. please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Mr. Aiden Conway,

I received this card in my mail today. There is no return address or indication who sent it. I agree with some points for the opposition such as why are we connecting to the contaminated water and trying to move it when we can safely leave it? Why are we risking disturbing other utility services? I would like to hear more about this but at this point I feel I'm against this proposal. Why are we spending this amount of money when it doesn't sound necessary?

Daniel Reich

Sent from my iPhone

From: Deborah Sloane
To: Conway, Aidan
Subject: EPA PROPOSED PIPING SOUTH WESTBURY NY
Date: Saturday, October 21, 2023 1:00:54 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

To the Attention of Aidan Conway:

As a Project Manager for the EPA proposal in our area of South Westbury, we are expressing our opposition to the EPA'S present plan.
Our area will be very disabled due to drilling, digging, construction etc. for quite some time disturbing the Ebb & Flow of our present neighborhood. All the main roads to our community including an Elementary School and the High School athletic fields will be detoured or closed. As it stands now the Elementary School area roads are already compromised… The present plan of operation is extremely close to our home and we are very concerned about the many threats that will impact our daily lives for the long haul!
In brief we strongly OPPOSE this disruption to our community and request delaying plans to reconsider other options!

Thank you for your time,
Mr. & Mrs. Sloane

From: mountainaire2@aol.com
To: Conway, Aidan
Subject: opposition to the EPA Plan
Date: Monday, October 23, 2023 5:17:24 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Aidan,
I am writing to express my opposition to the EPA's proposed Plan. I have lived in the South Westbury area over 70 years and this proposed plan impacts us dearly. The invasiveness of the entire plan is unacceptable. Please contest this Proposed Plan.

Sincerely,
Debra McDermott

From: Edward Matuszak
To: Conway, Aidan
Subject: Opposed to the plan of digging in Salisbury
Date: Sunday, October 8, 2023 1:21:20 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I'm opposed to the epa plan to dig and drill in Salisbury

Ed Matuszak

From: Frances Posillico
To: Conway, Aidan
Subject: Westbury/Salisbury Pump & Treat plan
Date: Tuesday, October 17, 2023 5:00:40 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Sir:
I am writing in opposition of the EPA plan to dig up our streets for piping and wells.
While our water is of significant value to our lives and the quality of such is very important,
this plan will have a huge negative impact on our neighborhoods.
The Town of Hempstead has been fully protecting our water supply.
The digging could cause years of disruption and invasive actions to our quality of life.
It can also cause risk to the existing utilities and infrastructure in our neighborhoods.
I strongly oppose your plan.

From:	Husain Bootwala
To:	Conway, Aidan
Cc:	Husain Bootwala
Subject:	New Cassel/Hicksville Groundwater Contamination Superfund Site
Date:	Wednesday, October 11, 2023 7:34:59 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hello

I just heard about the proposal that EPA wants to create a superfund site in my backyard. This should be stopped immediately and and hearing done in the neighborhood with area residents given the opportunity to hear what is going on. There was no communication of this to area residents.

This has to stop immediately!

Husain Bootwala

From: jcantinieri@verizon.net
To: Conway, Aidan
Subject: EpA propose piping
Date: Friday, October 13, 2023 6:55:18 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I oppose this plan

Sent from AOL on Android

From: jddamico@optonline.net
To: Conway, Aidan
Subject: OPPOSE PROSED EPA PIPING
Date: Saturday, October 7, 2023 7:48:20 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

MANY NEGATIVE IMPACTS FOR THIS EAST MEADOW, SALISBURY, WESTBURY PROPOSAL.

From: mamolouis@yahoo.com
To: Conway, Aidan
Subject: Deep groundwater
Date: Saturday, October 7, 2023 5:29:10 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am extremely opposed to your plan to destroy my neighborhood for the purpose the of cleaning water deep in the ground,especially when this is the water we Do Not Use As Drinking Water. Digging up streets,breaking under ground pipes (water and gas and communication cables) for many months and years to come is unacceptable. This project will destroy Salisbury. DO NOT DO THIS. Louis and Jeanette Mamo

From:	Julianne Curley-Laurie
To:	Conway, Aidan
Subject:	No!! To clean up in new castle hicksville Westbury
Date:	Saturday, October 7, 2023 8:13:10 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Do not come into Westbury and destroy our lives. I vote no!!!!

Sent from my iPhone

From: Julie Truono
To: Conway, Aidan
Subject: Salisbury clean up
Date: Saturday, October 21, 2023 7:23:32 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Mr Conway

I appreciate the proposed clean up of salisbury area

I would like to be informed of any further meet ups at east meadow public library. I was very disappointed on not knowing of your previous library sessions . I have been very involved in the library but after pandemic communication has been poor there.I moved to this community when I was 5 months old and have been here since .I wanted my neighbors health to be valued. Please notify me about any meeting of clean up plans. This neighborhood means so much to me.

Thank you Julie Truono julie.truono@gmail.com

From:	Karen D
To:	Conway, Aidan
Subject:	I OPPOSE EPA"s proposed plan to pump and treat my neighborhood
Date:	Monday, October 9, 2023 7:14:16 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I own a home on Berkshire Drive in Westbury (Salisbury) NY and I absolutely oppose the EPA proposed plan.
The impact to my property and neighborhood will be a severe hardship to me.

Karen Dunleavy

From: GARY KLIMKOWSKI
To: Conway, Aidan
Subject: Re: EPA plan New Cassel/Hicksville Groundwater Contamination
Date: Saturday, October 21, 2023 7:11:40 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Sent from my iPad

> On Oct 21, 2023, at 7:08 PM, GARY KLIMKOWSKI <gakkkkkek@aol.com> wrote:
>
> I'm writing about the proposed plan for digging and installing pipes and wells in the
> Salisbury/Westbury area for the treatment of the New Cassel/Hicksville groundwater contamination. This plan seems to indicate that there will be significant impact on our neighborhoods daily activities for some time. Is all of the digging going to limit access to our area with the trucks and road closing? What about the impact on the access to the Bowling Green School back entrance for the students and parents? How about the access and disruption to our homes?
> We did not receive any information about the meetings held to address our concerns and additional information.
> It is scary to us as homeowners since we did not receive any communication about this until last week when we received a flyer in the mail but your website indicates that the meetings took place months ago.
>
> Is there going to be any additional meetings where we can get the needed information to ensure that this will have minimal impact on our neighborhood?
>
> Please send me any additional information in regards to this.
> Thank you.
>
> Kathy Klimkowski
>
>
> Sent from my iPad

From:	Lorraine Bauer
To:	Conway, Aidan
Cc:	Lorraine Bauer
Subject:	New Cassel/Hicksville Groundwater Contamination Superfund Site
Date:	Sunday, October 22, 2023 4:02:59 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Mr. Conway,

I'm writing to express my concern regarding the mass mailing flier recently received, encouraging my neighbors to oppose the EPA's remediation of the contamination in the above Superfund Site. My neighbors and I feel it is a corporation with money that was able to send this flier which does not identify the sender nor explain why a company would want to oppose cleaning up contamination in a community that most likely they don't live in, but perhaps do business and profit in and the unsightly or inconvenient cleanup may effect their profits.

My biggest concern is that the remediation will not create any further contamination of the communities by virtue of the disturbance of the contaminated soil and water lines during said remediation. My presumption is that the EPA has considered all the possible negative implications and has addressed all safety concerns to the community and residents.

We've been living with the contamination threat for years, and truck traffic and construction inconvenience does not compare or equate to the possible cancer or illnesses caused by contamination to our community. After speaking with many neighbors in my community, they were unaware of the meetings that have taken place about this and they were unaware of the extent of this situation, and certainly do not wish to have the remediation thwarted.

With that in mind, a large number of the communities will not necessarily respond to tell the EPA that they want the remediation accomplished for a few reasons. As I mentioned, a good portion still do not know about the situation, and many people were confused by the flier and were scared by the sound of the proposal. In addition, please keep in mind that many people just aren't emailers or vocal about community situations because they don't know who to contact or simply don't think that their one comment will be meaningful.

So please, do not let the EPA decide against such a very important remediation based on the fact that an unknown entity with a great deal of monetary resources has tried to "spook" a community into opposing something so important that the EPA set up a remediation program to deal with it in the first place.

Thank you for your consideration.

Sincerely,

Lorraine R. Bauer

From: mariablvt
To: Conway, Aidan
Subject: Oppose pump and treat plan
Date: Monday, October 9, 2023 1:02:18 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am strongly opposed to the EPA plan
Maria Berezowski

Sent from my T-Mobile 5G Device

From: Mark T
To: Conway, Aidan
Subject: EPA proposed plan/Westbury/Salisbury
Date: Tuesday, October 10, 2023 7:44:57 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I oppose the proposed plan
This work will be done near schools and trenching with up uproot neighborhoods. There was no risk of human exposure to drinking water that has been reported by the town of Hempstead. I believe there is no need for this proposed plan to go forward.

Sincerely
Mark Tomasino
Neighbor- within the plan area

Thank you

From: MICHAEL TAYLOR
To: Conway, Aidan
Subject: Opposition to plan
Date: Sunday, October 15, 2023 6:54:32 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am writing to voice my family's opposition to the New Cassel/ Hicksville Groundwater Contamination Superfund Site Operable Unit 3 Nassau County NY Plan.
Thank you,
M Taylor and family
Sent from my iPhone

From: pitzla928@gmail.com
To: Conway, Aidan
Subject: The Salisbury pump & treat
Date: Monday, October 23, 2023 1:13:56 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am writing to let you know that as a homeowner for 30 years in the neighborhood I am deeply opposed to the proposed pump and well project. This will not only cause disruptions to the neighborhood, also noise quality and value of our property. We pay high taxes and also moved to have a better quality of life. Please present my concerns along along with many others opposing this project.
Patricia Itzla
1115 Washington Ave.
Westbury NY , 11590

Sent from my iPhone

From: Peter
To: Conway, Aidan
Subject: NO PIPING PROJECTS IN NASSAU
Date: Sunday, October 8, 2023 12:53:59 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I oppose to that,

peter papiewski

From:	Ruping Lee
To:	Conway, Aidan
Subject:	cleaning the deep ground water
Date:	Saturday, October 7, 2023 8:48:58 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Please abandon the plan to clean the deep groundwater in our area.

Resident @ Westbury Ny 11590

From: Itzla, Rich
To: Conway, Aidan
Subject: Salisbury Pump & Treat
Date: Monday, October 23, 2023 1:01:43 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Dear Sir or Madam

I am a 30 + year resident of Salisbury & expect to remain in the community during retirement.

I am in opposition to the EPA's proposed Pump & Treat Plan. Such a proposal should have never been considered in a residential neighborhood containing 4 schools. The disruption and risk to infrastructure is uncalled for.

There is an abundance of non- residential county land nearby that should be considered as an alternative.

Richard Itzla
1115 Washington Ave
Westbury, NY 11590
(516) 333 - 9778

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From: Robert Walsh
To: Conway, Aidan
Subject: piping
Date: Saturday, October 7, 2023 5:09:15 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I strongly disapprove. Of your intention to dig up our streets because #1 we just got our streets paved 1st time since 1978. #2. it would destroy our property values. #3 it will cause pipe damage. #4. too much truck traffic in neighborhoods #5 the trenching will take too long to complete. #6 too much risk to existing utilities.

thank you,
Robert Walsh
6-lace lane
Westbury N.Y. 11590

From: Rosalyn Dorn
To: Conway, Aidan
Date: Friday, October 13, 2023 6:24:55 PM

> **Caution:** This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Oppose the plan!!!!!!!!!!! the EPA's proposed plan (PUMP AND TREAT)

Sent from Mail for Windows

From: Tagui Mangual
To: Conway, Aidan
Subject: Pump and treat
Date: Sunday, October 15, 2023 5:47:59 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am contacting you in opposition of the proposed plan , pump and treat.

Get Outlook for iOS

From: Tom Newman
To: Conway, Aidan
Subject: proposed water well remediation plan
Date: Saturday, October 7, 2023 3:08:10 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hello Mr Conway

I am writing requesting further information on the proposed "pump and treat' plan for Bowling Green / Town of hempstead water.

In general I am in support of efforts to remediate the pfas plumes from the Nortrup Grumman and Navy violations.

Today I have received an anonymous mail piece regarding this issue. I think its telling the mailpiece is anonymous. However, they had no trouble including your email address, Cowards?

Please feel free to email or phone me at 516 680 1658

Tom Newman
7 Middle Lane
Westbury, NY 11590

From: Scarpitta, Wayne
To: Conway, Aidan
Subject: Proposed drilling in Westbury
Date: Monday, October 23, 2023 9:52:03 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

I am a long time resident of the community. Last year a test well was drilled in front of my home at 886 Grand Blvd.
This caused a major inconvenience to me and my family . The rig was there for close to 9 weeks. Not only was it an eyesore, but
It was very load and my whole house was shaking when it was in operation. I do not wish to see any other homeowner put this
this process. I am concerned that my property value will decease due to the ongoing construction. It am against any future wells and/or
the installation of pipelines on my property or anywhere near my home.

Wayne Scarpitta

From: Elaine Peters
To: Conway, Aidan
Subject: Re: Hicksville Superfund Cur
Date: Thursday, August 31, 2023 8:26:38 AM

Hello
This contaminated water must be cleaned up and we must have a new treatment facility for it. Please consider that we release the cleaned up water released to surface water, or into a recharge basin; public drinking water should be regularly be tested.
Thanks
Elaine Peters
Sent from my iPhone

From: Sharon McDermott
To: Conway, Aidan
Subject: Proposed Water Clean Up in Salisbury, Long Island
Date: Saturday, October 14, 2023 1:03:35 PM

> **Caution:** This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hi,

I would like more information about contamination of the water in Salisbury and surrounding areas. What is the alternative to the current plan of putting in pipes to pump out contaminated water? I would appreciate your response.

Best regards,

--
Sharon McDermott, L.Ac., CBD (LIDA)
Licensed Acupuncturist
Board Certified Chinese Herbologist
Certified Birth Doula (LIDA)
Healthy Healing
55 Post Avenue, Suite 206
Westbury, NY 11590
516-410-4297
www.healthyhealingli.com

Young Living Essential Oils distributor
LIKE US ON Facebook: Healthy-Healing

From: Steve Jacob
To: Conway, Aidan
Subject: Superfund site cleanup
Date: Tuesday, July 25, 2023 1:00:20 PM
Attachments: image001.jpg

Mr. Conway,

My name is Steve Jacob. I am the Safety Coordinator for Nassau County. I read the article in Newsday about the Superfund site cleanup for the New Cassel/ Hicksville Superfund site. We wanted to check if two of our schools are within the zone.
The first school is the Joseph M. Barry Career & Tech Ed. Center located at 1196 Prospect Ave. Westbury, NY 11590. The school is within the Westbury Water District.
The second school is the Career Preparatory High School at 111 Cantiague Road Rd., Westbury, NY. The school is within the Hicksville Water District.
If either school is within the Superfund zone, what does that mean for the soil on the property and the water coming into the building?

Thank you for your help.

Steve M. Jacob
Safety Coordinator
Nassau BOCES
p: (516) 396-2401
sjacob@nasboces.org
www.nassauboces.org



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Hicksville Water District

4 Dean Street, Hicksville, N.Y. 11801
Phone: (516) 931-0184, Fax: (516) 931-6506

Board of Water Commissioners
Nicholas J. Brigandi
Commissioner
William E. Schuckmann
Commissioner
Karl M. Schweitzer
Commissioner

Superintendent
Paul J. Granger, P.E.

District Treasurer
Vincent Abbattiello

Effective, responsible water resource management, since 1921

September 11, 2023

Via email conway.aidan@epa.gov

Aiden Conway, Remedial Project Manager
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-2866

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3 - Superfund Proposed Plan

Dear Mr. Conway,

Thank you for providing the Hicksville Water District (District) with the opportunity to review and provide comments concerning the New Cassel/Hicksville Groundwater Contamination Superfund Site Proposed Plan for OU3 (Plan), issued July 2023. Our comments were formulated in conjunction with the review of the Plan by our consulting engineer. The intent of the review and formulation of comments is to ensure that the proposed remedial recommendations will protect the interest and public health of our residents that we mutually serve. Based on our review we offer the following for consideration:

1. **Plume Delineation:** Full horizontal and vertical delineation of the groundwater plumes must be performed including the testing of 1,4 dioxane and PFAS compounds. Therefore, the proper location, depth and amount of vertical profile borings (VPB) and monitoring wells (MW) must be properly planned and designed as part of the upcoming remedial design phase.

2. **Treatment for Current and Pending Regulations**: Prior testing and studies have been and still are woefully inadequate for the testing of recent New York State (NYS) regulated emerging compounds of concern. These compounds presently include 1,4-dioxane, PFOA, and PFOA. Notification levels are currently being considered for various other emerging compounds of concern including additional long and short chain PFAS compounds. On October 4, 2022 the New York State Department of Health (NYSDOH) announced that was issuing proposed regulations for 23 additional emerging contaminants in drinking water in the State Register on October 5. The proposed rulemaking was developed with input and support by the New York State Drinking Water Quality Council (DWQC) in accordance with amendments to Public Health Law signed by the Governor. Action has been delayed so that state action can be potentially reconciled and coordinated with the recent March 2023 EPA proposal to regulate PFAS compounds at the federal level.

   On March 14, 2023, EPA announced the proposed National Primary Drinking Water Regulation (NPDWR) for six PFAS including perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). EPA anticipates finalizing the regulation by the end of 2023. Based on state and federal regulatory actions and proposals, 1,4 dioxane testing is imperative along with the myriad of perfluorinated compounds that are or will be subject to regulatory action. The "Human Health Risk Assessment" detailed in the Plan does not address PFAS compounds. Based on current and proposed regulatory action the Plan must address human

health risks associated with PFAS compounds. PFAS testing must employ EPA drinking water Methods 533 and 537.1 for full delineation and remediation of the emerging compounds of concern that may be detected within the plumes. Therefore, the proposed recommended remedial treatment measures (Alternatives 2 through 4) consisting of a combination of air stripping, granular activated carbon (GAC), as well as advanced oxidation processes must consider both long and short chained PFAS compounds.

3. **Treatment Goals:** Table 3 of the Plan, "Preliminary Remedial Goals and Maximum OU3 Groundwater Contaminant Concentrations" remediation goals currently reflect state and federal quality standards. The goals should be to the Maximum Contaminant Level Goal (MCLG), where one exists, and/or to non-detection limits as today's technology is capable of meeting such limits. This approach will eliminate contamination from the environment completely during discharge. Otherwise, any detectable contaminants reentering the aquifer will only continue to affect downgradient water quality. Additionally, PFAS must be included in the Table, and with a treatment goal of non-detection.

4. **Hydraulic Control & Source Water Protection:** Over the past 35 years, the EPA and NYS has continued to set forth more stringent requirements for public drinking water as detailed in the above. These more stringent measures primarily have initiated more rigorous wellhead treatment measures required to be implemented by water suppliers.

   The regulatory actions have and will continue to clearly result in far higher wellhead treatment costs as supply wells become impacted. This has directly translated into higher water rates that impacts affordability. The USEPA has determined that pursuant to the Safe Drinking Water Act, (42 U.S.C. Part 300), that the Aquifer is "the principal source of drinking water" for Nassau and Suffolk Counties and that "if the aquifer system were contaminated, it would create a significant hazard to public health". [Federal Register Notice, June 21, 1978]. Accordingly, the impacted Magothy aquifer, is a federally designated sole source aquifer. Therefore, effective hydraulic control and remediation of the commingled plumes is essential.

   Wellhead treatment for public water supply wells must be a measure of last resort. Wellhead treatment is essential for contaminated supply wells. However, it is not acceptable, under state regulations, if other alternatives are available, including hydraulic containment. NYSDEC regulations specifically provide that wellhead treatment "shall be considered as a measure of last resort," 6 NYCRR _375-1.8(c)(4). In addition, according to the EPA, "*Source water is untreated water from streams, rivers, lakes or underground aquifers that is used to provide public drinking water, as well to supply private wells used for human consumption. Some water treatment is usually necessary, so public utilities treat most of the drinking water before it enters the home. However, the cost of this treatment, as well as the risks to public health, can be reduced by protecting source water from contamination. EPA, other federal agencies, states, local communities, businesses and citizens all play a role in ensuring that drinking water is protected.*"[1] This importance was underscored by the federal Safe Drinking Water Act (SDWA) Amendments of 1996 that created a Source Water Assessment Program (SWAP) to evaluate existing and potential threats to the quality of public drinking water supplies throughout the U.S. The foundation of SWAP is to ensure safe drinking water through the multiple-barrier approach. To carry out this program in New York, the Bureau of Water Supply Protection of the NYSDOH developed the Long Island SWAP Plan.

   Proactive and effective hydraulic control and remediation is the most desirable alternative that provides cost effective and optimum public health protection. Wellhead treatment must be only a measure of last

[1] http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/basicinformation.cfm

resort since such systems add complexity and another potential failure point in the water supply process. Adding additional infrastructure and points of failure add to system vulnerability. Additional infrastructure also significantly increases energy consumption and increases our carbon footprint and adversely impacts sustainability. Wellhead treatment also reduces water system reliability since contamination breakthrough can occur thereby requiring a supplier to take a supply source offline. This generally translates into reduced fire flow protection for the community.

5. **Contaminant Degradation:** The Plan mentions the natural attenuation of contamination outside of hydraulic control. It should be noted that PFAS contaminants have been deemed to be "forever compounds" in the environment by the federal government. Please review, clarify and revise (as necessary) the narrative with respect to PFAS compounds. Additionally, 1,4-dioxane is completely miscible in water and has a low affinity of sorption onto organic matter in soil. Unlike CVOCs such as PCE and TCE, 1,4-dioxane is not subject to the same natural degradation processes. Based on these properties, 1,4-dioxane will migrate with groundwater flow, unimpeded by degradation and sorption.

6. **Emerging Contaminant Testing & Unified Approach for All OUs:** The EPA must promptly reassess OU1 and OU2 for emerging contaminants as detailed above. Coordination and collaboration with the NYSDEC and U.S. Army Corp of Engineers (USACE) is essential. A unified delineation, testing and treatment approach is necessary for all three operable units to ensure the area is comprehensively addressed.

   It is of concern that a unified approach among the OUs is not being implemented. Based on the cleanup progress schedule presented on the EPA website, OU2 RI/FS/ROD are not scheduled until 2024. Design of OU3 is estimated to start in 2024 while the design of OU2 is estimated to start one year later, in 2025. While OU1 remedial design has begun, accounting for emerging contaminants is necessary for comprehensive cleanup. According to the 2013 ROD for OU1, 1,4-dioxane would be sampled for during remedial design. Has this task been completed along with sampling for all 29 PFAS?

   In Section 9 of the Draft Feasibility Study (FS) for OU3, dated July 2023, among the uncertainties listed are the status of upgradient remediation efforts. Furthermore, the nature and extent of contamination for OU3 assumes that the sources of groundwater contamination associated with OU1 and OU2 are "properly controlled/remediated at the source." It should be noted that the likelihood of this is low based on the pace remediation efforts have historically taken. Additionally, based on the results of the OU3 RI Phase 1, highest levels of contamination were observed in the eastern portion of OU3. As shown on Figure 2-2 of the Draft FS, most of the eastern border of OU3 overlaps with half of the western portion of OU2.

   Taking into account the information above and unsynchronized timelines, OU3 treatment design should take into account contaminants and concentrations observed in OU2, provided OU1's remedial design objectives and remedial action timeline promotes the success of OU3. Otherwise, OU3 should also account OU1.

7. **Treatment Timeline:** When does the EPA anticipate the treatment system to be on-line and what are the proposed operating parameter? The Hicksville Water District's Plant No. 5 is currently the de-facto treatment site as it is experiencing elevated VOCs, PFAS, and 1,4-dioxane with significant increases in VOCs over the past 10 years. The most recent sampling of our Plant 5 documented raw water PFOS levels to be 130 ppt which is an astronomical 13 times greater than the current New Yorks State regulatory limit and more than 32 times the proposed EPA maximum contaminant level. It is evident that the OU2 and OU3 treatment needs are immediate Therefore, the District requests an expedited schedule.

8. **EPA Management:** The EPA must implement a proactive management approach:
    a. Manage New Cassel / Hicksville plume holistically and closely coordinate with the NYSDEC, USACE and impacted and threatened water suppliers. This includes:
        i. Providing water quality sampling schedule and results throughout design and operation.
        ii. Provide anticipated hours of operation schedule.
        iii. Once in operation, provide quarterly sampling and operating reports, including major scheduled and unscheduled maintenance.
    b. Develop action items and tracking system.
    c. Review and monitor progress / schedule.
    d. Review issues and action items.
    e. Establish accountability.
    f. Consider quarterly meetings at a minimum and increase frequency as needed.
    g. Use technology to facilitate meetings to minimize travel expenses (Conduct video conference meetings).

    In summary basic management principals need to be implemented starting with having unified management of the plume investigation and remediation operations, communicate often and effective, establish schedules and milestones and establish accountability. Time is of the essence.

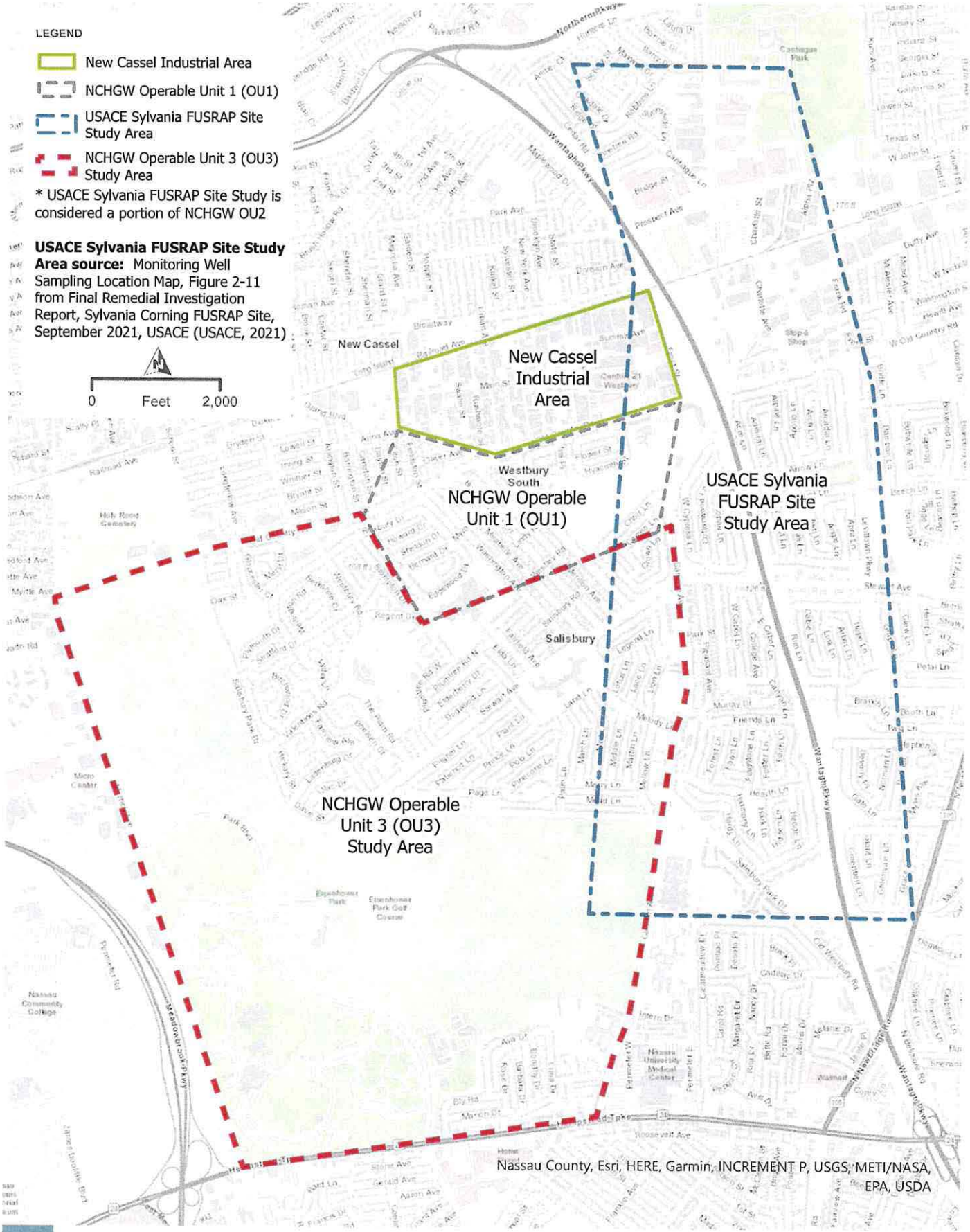
On closing, we appreciate the opportunity to provide you with the above comments. We look forward to working with you and all involved agencies collaboratively in our mutual mission of protecting the public health of the residents we serve.

Please feel free to contact the undersigned if you should have any questions or require any additional information.

Very truly yours,
HICKSVILLE WATER DISTRICT

Paul J. Granger, P.E.
Superintendent

cc: Board of Commissioners (HKWD)
Richard Humann, P.E. (H2M)
Timothy McGuire P.E. (H2M)
Angela Pettinelli, Director of Environmental Programs, NCDH
Jacquelyn Nealon, NYSDOH
Kenneth G. Arnold, P.E. Commissioner of Public Works, NCDPW
Michael Flaherty, PG, Hydrogeologist III, NCDPW
Daniel M. Kennedy, USACE
Robert DeCandia, NYSDEC
John Reinhardt, TOH Water District



NCHGW OU3 OPERABLE UNIT INVESTIGATION AREAS

HDR APTIM a Joint Venture

NEW CASSEL/HICKSVILLE GROUNDWATER CONTAMINATION SUPERFUND SITE OU3

FIGURE 2-2

BRUCE A. BLAKEMAN
NASSAU COUNTY EXECUTIVE

KENNETH G. ARNOLD, P.E.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS
1194 PROSPECT AVENUE
WESTBURY, NEW YORK 11590-2723

September 13, 2023

Mr. Pietro Mannino, Section Chief
U.S. Environmental Protection Agency – Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: NCIA plume treatment proposal / PDI supporting information / Ike Park irrigation wells complete sampling history 1992 - 2023

Dear Mr. Mannino:

In our effort to support and assist in the development of an efficient treatment system suitable for the collection and remediation of the plume of Volatile and Emerging Contaminants emanating from the New Cassel Industrial Area (NCIA - OU3) the Nassau County Department of Public Works (NCDPW) would like to provide you with a summary of volatile and emerging contaminant sampling results collected to date (see attached). The summary includes sampling data collected from current / active irrigation wells (N-10038, N-10039, N-07500) and inactive wells (N-03243 and N-10662).

The data was compiled from NCDPW and NCDH records and from a review of a ***Study of Five Nassau County Wells in the Mitchel Field Water Supply Area – February 1993***. These results can help define both the lateral and vertical extent of the plume(s). Please note the presence of volatile organic compounds (VOC's) in inactive irrigation well ***N-03243*** (see attached) in samples collected in 1992 and 2014 from a screened interval of 248 to 298 feet below land surface. These detections extend the approximate limit of the current 5 ppb isocontour further to the south with the first detection at that depth occurring ***over 31 years ago***. The detection of VOCs in irrigation well ***N-10662*** at a screened interval of 142 to 200 feet below land surface also extends the limits of the plume further to the west at that shallow screen interval.

Active irrigation wells (***N-07500***, ***N-10038*** and ***N-10039***) were sampled by NCDPW staff on August 1, and August 23, 2023, for VOCs and Emerging Contaminants 1,4 – dioxane and PFAS compounds (please see attached). Review of these data indicate the presence of multiple PFAS compounds in groundwater collected from N-10038 (9 compounds) and N-10039 (7 compounds). NYSDOH guidance values of 10 ng/l were exceeded for PFOA and PFOS in samples collected from N-10038 and N-10039. There was a single detection of PFOA at a concentration of 8.8 ng/l in irrigation well N-07500. 1,4 – Dioxane was detected in all three wells in samples collected on August 23, 2023, at concentrations below the NYSDOH guidance value of 1 mg/l.

Re: NCIA plume treatment proposal / PDI supporting information / Ike Park irrigation wells complete sampling history 1992 - 2023

The Department will continue to coordinate with the EPA in its remedial efforts in the New Cassel / Eisenhower Park area and with the implementation and construction of the selected remedial alternative for the New Cassel Industrial Area plume(s).

If you have any questions regarding the enclosed map or technical comments, please contact Mr. Michael Flaherty, PG at (516) 571-7514.

Very truly yours,

Kenneth G. Arnold, P.E.
Commissioner of Public Works

KGA:VF:rp
Attachments
c: Vincent Falkowski, Deputy Commissioner for Environmental Programs
Jane Houdek, Attorney for Public Works
Michael Flaherty, PG, Hydrogeologist III
Angela Pettinelli, Director of Environmental Programs, NCDH
Timothy Messner, Deputy Commissioner, Dept. of Parks, Recreation & Museums
Aidan Conway, Project manager, USEPA
Robert DeCandia, NYSDEC
Alexander Klein, NYSDOH
Jacquelyn Nealon, NYSDOH
Paul J. Granger, PE, Hicksville Water District
John Reinhardt, TOH Water District

NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
WORD PROCESSING REQUEST FORM

DATE: 9/12/2023

AUTHOR: Mike Flaherty

TYPIST: Rosemary Perfetti

AIM WORK ORDER #: _____

INITIAL FOR APPROVAL:	DATE:
LAS/JM:	
AUTHOR: MF	9/12/23
UNIT HEAD:	
OTHER:	
MS:	
JH:	
RD:	
VF: VF	9/12/23
RM:	
WSN:	
JGP:	
ECP:	
KGA:	

SPECIAL INSTRUCTIONS:

Procedure for typing and preparation of letters/memos for Commissioner's signature:

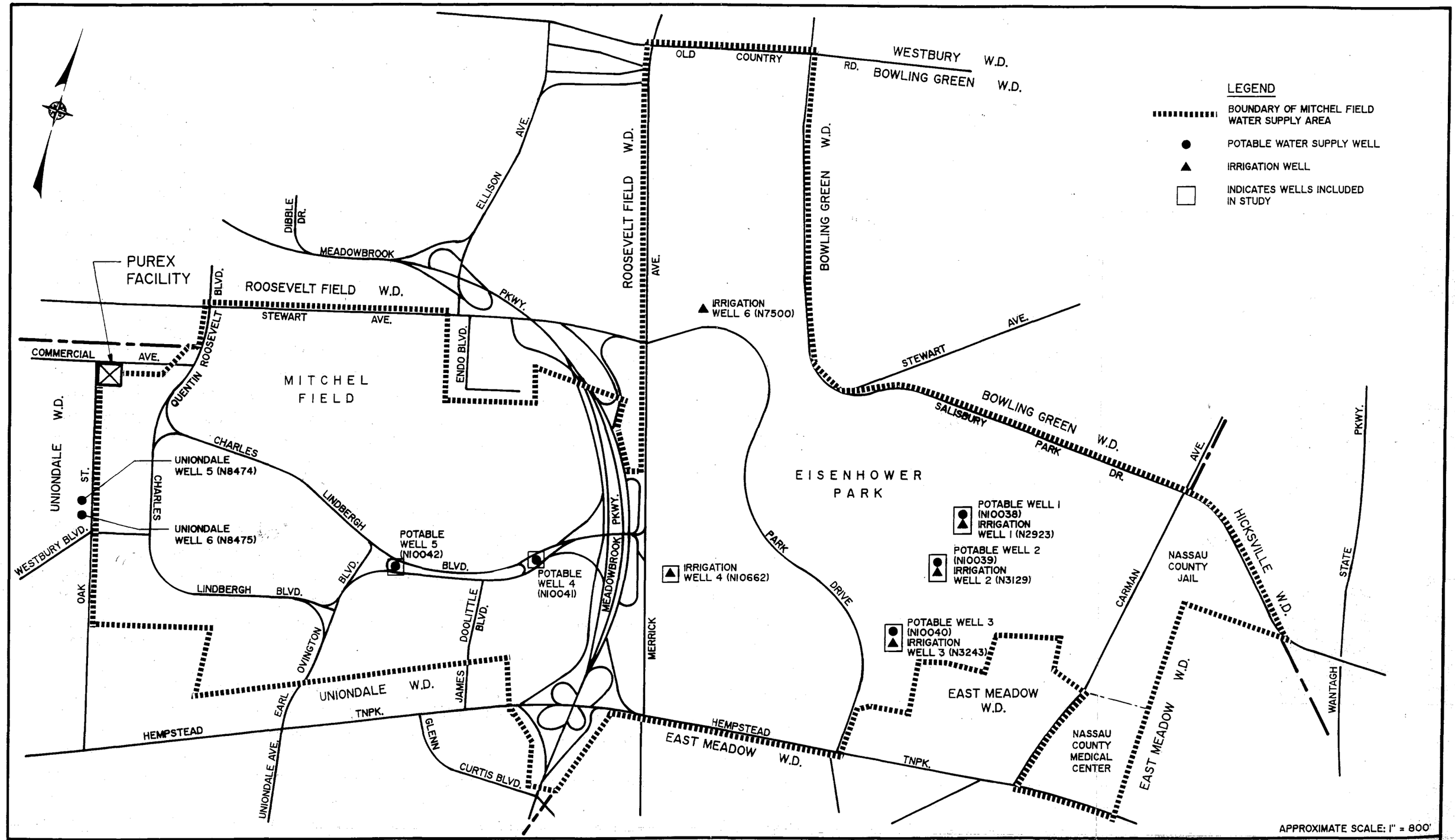
1. Read all instructions on Word Processing Request form.
2. Put your name on the Word Processing Request form.
3. Make sure you do not change the name of the document and save in appropriate directory and folder.
4. Use correct letterhead/memohead.
5. Add the Directory to the footer.
6. Correct salutation used: To Whom It May Concern:/Dear Mr. Jones:
7. Correct Heading Segment: TO, FROM, DATE,SUBJECT **(bold)**
8. Correct closing used: Very truly yours,
9. Check to make sure you have made all changes/corrections to the document.
10. Spellcheck all documents.
11. Check date to insure that there is sufficient time for all personnel to initial before it is signed by Commissioner's Office.
12. Please ensure that documents are completed in a timely fashion.
13. Review entire document before submission:

Checklist for Typist:

a) Correct letterhead/memohead used
b) Times New Roman font used
c) Font size are all the same (largest size 12, smallest size 10)
d) No misspelled words
e) Directory Footer added (size 8 font)
f) Margins are justified (1.1" narrowest – 0.9" widest)
g) No extra spaces or returns
h) Second page header in correct order (if applicable)
i) Correct initials in initial block
j) Attachments/Enclosures listed below initial block (if applicable)
k) AIM Work Order number listed below initial block (if applicable)
l) Copy list and titles in correct order

After initialing process is complete ensure that all attachments/enclosures (if applicable) are included in the package along with an original letter/memo and one (1) copy for review and signature by the Commissioner's Office.

S:\ADMIN\Letters for Signature\Water Management\Perfetti\ltr to EPA Manino PDI irrigation well summary draft (001) 9-11-23.doc



NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
MITCHEL FIELD WATER SUPPLY AREA

STUDY AREA

Dvirka and Bartilucci CONSULTING ENGINEERS

FIGURE 1 - 1

EISENHOWER PARK Irrigation Well
SAMPLING RESULTS for September 2014 thru August 2023
VOLATILE ORGANICS COMPOUNDS (ppb)

	WELL N-10038 (No.1) DATE SAMPLED							WELL N-10039 (No.2) DATE SAMPLED							WELL N-07500 (No.6) DATE SAMPLED						Inactiive Wells: WELL N-03243 DATE SAMPLED		WELL N-10662 DATE SAMPLED	
	9/23/14	8/9/17	8/31/17	5/9/19	9/28/21	8/1/23	8/23/23	8/9/17	8/31/17	11/8/18	5/9/19	9/28/21	8/1/23	8/23/23	8/9/17	8/31/17	11/8/18	9/28/21	8/1/23	8/23/23	7/14/92	9/23/14	9/29/92	10/19/17
1,1,1,2-Tetrachloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	BDL	**0.7**	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**1.6**	BDL	**1.4**	BDL
1,1,2-Trichloro-1,1,2-trifluoroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NA	BDL
1,1,2-Trichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	**2.4**	**2.2**	**2.2**	BDL	BDL	**1.4**	**1.3**	NS	**1.4**	**0.6**	BDL	BDL	**1.2**	**1.1**	**1.1**	**1**	**1.3**	BDL	**1.8**	**1.8**	**3.1**	**2.4**	**1.6**	**1.4**
1,1-Dichloroethene	**0.8**	**1.3**	**1.6**	BDL	BDL	BDL	BDL	NS	**1**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**0.6**	BDL	**1**	**1**	BDL	**0.8**	BDL	BDL
1,2,3-Trichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichloropropane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4,5-Tetramethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-T-Dichloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**1.3**	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acetone	BDL	BDL	20.2*	20.2*	BDL	BDL	BDL	NS	31.9*	BDL	BDL	BDL	BDL	BDL	BDL	21.5*	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromochloromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**0.4**	BDL	**0.2**	BDL
Chlorobenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorodifluoromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	BDL	**0.5**	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloromenthane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
cis-1,2-Dichloroethylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	**22**	**20.9**	**12**	**28.4**	**21.6**	**20.8**	BDL	BDL	BDL	BDL
Dichlorodifluoromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2 - Hexanone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl t-Butylether (MTBE)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl Ethyl Ketone	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
n-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
n-Propylbenzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
o-Xylene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Ethyltoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Isopropyltoluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
sec-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
t-1,2 Dichloroethene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
tert-Butyl Benzene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethylene	**0.7**	**0.9**	**1.2**	BDL	BDL	BDL	BDL	NS	**1.6**	BDL	BDL	BDL	BDL	BDL	**19**	**23.5**	**16**	**42.1**	**24**	**34.8**	BDL	**0.9**	BDL	BDL
Toluene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichlorodifluoromethane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethylene	**0.7**	**0.6**	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	**4.3**	**4.7**	**2.8**	**5.8**	**5.1**	**5.4**	BDL	**0.6**	BDL	**1.6**
Vinyl Chloride	BDL	BDL	BDL	BDL	BDL	BDL	BDL	NS	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TVOC	**4.6**	**6.2**	**5.0**	**0.0**	**0.0**	**1.4**	**1.3**	**0.0**	**4.0**	**0.6**	**0.0**	**0.0**	**1.2**	**1.1**	**46.4**	**51.4**	**32.7**	**76.3**	**53.5**	**62.8**	**5.1**	**4.7**	**3.2**	**3.0**

BDL - Below detection limits

- Exceeds Class GA standard

Screen intervals
N-07500 = 405 to 457 ft.
N-03243 = 248 to 298 ft.
N-10622 = 142 to 200 ft.
N-10038 = 201 TO 266 ft.
N-10039 = 201 TO 262 ft.

B - Analyte detected in associated Method Blank
*** - Calibration outside accepted limits - biased high**

All results in ppb

FIREMAN'S TRAINING CENTER

1,4 - DIOXANE SAMPLING RESULTS FOR 2015 - 16

VOLATILE ORGANICS COMPOUNDS (ppb)

	WELL BP-2A		**WELL BP-2B**		**WELL BP-4B**		**WELL BP-4i**		**WELL BP-12B**		**WELL BP-12C**		**WELL N-07438**		**WELL N-10457**	
	DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED		DATE SAMPLED	
	8/20/14	4/6/15	9/18/14	3/26/15	9/15/14	3/24/15	10/6/14	3/24/15	9/17/14	3/17/15	9/17/14	3/17/15	10/22/15	9/6/16	9/12/14	4/13/15
1,4 - Dioxane	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.15	BDL	BDL	BDL
TVOC	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.15**	**0.0**	**0.0**	**0.0**

BDL - Below detection limits **B** - Analyte detected in associated Method Blank All results in ppb ***Proposed MCL 0.25 - 1 ppb***

- BSP irrigation Well

EISENHOWER PARK Inoperable Well Data
SAMPLING RESULTS for September 2014 thru August 2023

VOLATILE ORGANICS COMPOUNDS (ppb)

	WELL N-03243 DATE SAMPLED		WELL N-10662 DATE SAMPLED		WELL N-07500 (No.6) DATE SAMPLED					
	9/23/14	10/22/15	N/A	10/19/17	8/9/17	8/31/17	11/8/18	9/28/21	8/1/23	8/20/23
1,1,1,2-Tetrachloroethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloro-1,1,2-trifluoroethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	**2.4**		NA	**1.4**	**1.1**	**1**	**1.3**	BDL	**1.8**	**1.8**
1,1-Dichloroethene	**0.8**		NA	BDL	BDL	BDL	**0.6**	BDL	**1**	**1**
1,2,3-Trichlorobenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichloropropane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4,5-Tetramethylbenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-T-Dichloroethene	BDL		NA	BDL	BDL	**1.3**	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Acetone	BDL		NA	BDL	BDL	21.5*	BDL	BDL	BDL	BDL
Benzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromochloromethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorodifluoromethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroform	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloromenthane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
cis-1,2-Dichloroethylene	BDL		NA	BDL	**22**	**20.9**	**12**	**28.4**	**21.6**	**20.8**
Dichlorodifluoromethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2 - Hexanone	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Isopropylbenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl t-Butylether (MTBE)	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methyl Ethyl Ketone	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
n-Butyl Benzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
n-Propylbenzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
o-Xylene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Ethyltoluene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
p-Isopropyltoluene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
sec-Butyl Benzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
t-1,2 Dichloroethene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
tert-Butyl Benzene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethylene	**0.9**		NA	BDL	**19**	**23.5**	**16**	**42.1**	**24**	**34.8**
Toluene	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichlorodifluoromethane	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethylene	**0.6**		NA	**1.6**	**4.3**	**4.7**	**2.8**	**5.8**	**5.1**	**5.4**
Vinyl Chloride	BDL		NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL
TVOC	**4.7**	**0.0**	NA	**3.0**	**46.4**	**51.4**	**32.7**	**76.3**	**53.5**	**62.8**

BDL - Below detection limits

All results in ppb

B - Analyte detected in associated Method Blank

*** - Calibration outside accepted limits - biased high**

- Exceeds Class GA standard

Screen intervals

N-07500 = 405 to 457 ft.

N-10038 = 201 TO 266 ft.

N-10039 = 201 TO 262 ft.

Eisenhower Park irrigation Wells
PFAS SAMPLING RESULTS August 2023 (ppt)

	WELL N-10038 DATE SAMPLED		WELL N-10039 DATE SAMPLED		WELL N-10040 DATE SAMPLED		WELL N-07500 DATE SAMPLED	
Compound	8/1/23		8/1/23		8/1/23		8/1/23	
Perflourobutanoic acid	8.4		7.0		NA		ND	
Perflouropentanoic acid	9.0		9.4		NA		ND	
Perflourohexanoic acid	9.3		8.9		NA		ND	
Perflourodecanoic acid	ND		ND		NA		ND	
Perflourobutanesulfonic acid	2.0		ND		NA		ND	
Perflouroheptanesulfonic acid	2.1		ND		NA		ND	
Perflourohexanesulfonic acid	5.5		5.3		NA		ND	
Perflouroheptanoic acid	8.6		7.3		NA		ND	
Perflourooctonoic acid (PFOA)	**21**		**17.0**		**NA**		**8.80**	
Perflourooctanesulfonic acid (PFOs)	**12**		**11.0**		**NA**		**ND**	
Perflouroctanesulfanic acid	ND		ND		NA		ND	
Perflourononanoic acid	ND		ND		NA		ND	
(PFOA / PFO) Total	**33.0**	**0.0**	**28.0**	**0.0**	**0.0**	**0.0**	**8.8**	**0.0**

ND - Not Detected

NA - Not Available

BRUCE A. BLAKEMAN
NASSAU COUNTY EXECUTIVE

KENNETH G. ARNOLD, P.E.
COMMISSIONER

COUNTY OF NASSAU
DEPARTMENT OF PUBLIC WORKS
1194 PROSPECT AVENUE
WESTBURY, NEW YORK 11590-2723

August 30, 2023

Mr. Pietro Mannino, Section Chief
U.S. Environmental Protection Agency – Region 2
290 Broadway, 19th Floor
New York, New York 10007-1866

Re: New Cassel Industrial Area Investigation – OU3 plume treatment plan review – Technical Comments

Dear Mr. Mannino:

The Nassau County Department of Public Works has completed its review of the ***New Cassel / Hicksville Groundwater Contamination Superfund Site – Operable Unit 3 Proposed plume treatment plan, Nassau County, New York***, The Nassau County Department of Public Works (NCDPW), Water and Wastewater Engineering Unit has also reviewed the Remedial Investigation (RI) and the Feasibility Study (FS) for the site and offers the following technical comments for your consideration, some of which were previously provided to your agency in our April 7, 2021 workplan review.

Vertical Plume Definition / Migration

Examination of existing NCDH public supply well water quality data and available NYSDEC Well completion report records indicate that a minimum of nine (9) deep (> 500 ft.) public supply wells and one lower level irrigation well from five water Districts including East Meadow, Bowling Green, Hicksville, Roosevelt Field, Westbury and Nassau County have been impacted by of volatile organic compounds (VOC's) at concentrations above guidance values necessitating groundwater treatment in nine (9) of these wells (see table below, N-07500 is non-potable). To improve the vertical definition of the OU3 plume(s), additional deep monitoring wells should be installed.

New Cassel Superfund Investigation (OU-3) - Public Supply Wells w/treatment Construction Details

Public Supply Wells	Well Number	Method of Installation	Date VOC Treatment Initiated	Total Depth (ft.)	operator/ Water District	Year(s) of Installation	Casing Diameter	Casing Material	Screen Type	Slot Size	Screen Length	Authorized Capacity (gpm)	Screen Interval elevation (ft/msl.)
Irrigation Wells													
N-03456	*No. 1*	Rotary	1/2/2013	555	E.Meadow	*1951/ 1975*	12 in.	Blk. Steel	SS-cont. wrap	50 slot	61 feet	1,500	-409 to -470
N-03465	*No. 3*	Rotary	4/22/2013	580	E.Meadow	*1951/ 1975*	12 in.	Blk. Steel	SS-cont. wrap	50 slot	61 feet	1,500	-434 to -495
N-05654	*No. 11*	Rotary	*VOC no trtmnt*	538	Westbury	*1956/ 1986*	12 in.	Blk. Steel	SS-cont. wrap	60 slot	64 feet	NA	-374 to -438
*N-07500**	*No. 6*	Rotary	*VOC no trtmnt*	457	Nassau	*1963*	12 in.	Blk. Steel	SS-cont. wrap	65 slot	52 feet	***1,200***	*405 - 457*
N-08956	*No. 1*	Rotary	7/19/1996	530	Bowling Grn	*1975*	12 in.	Blk. Steel	shutter	No. 7	60 feet	1,400	*-350 to -440*
N-08957	*No. 2*	Rotary	7/19/1996	584	Bowling Grn	*1975*	12 in.	Blk. Steel	shutter	No. 7	60 feet	1,400	*-404 to -464*
N-07957	*No. 5*	Rotary	5/28/1997	523	Roosevlet Fld	*1965*	12 in.	Blk. Steel	SS-cont. wrap	70 slot	85 feet	1,400	*-348 to -434*
N-09846	*No. 10*	Rotary	9/17/2003	594	Roosevlet Fld	*1981*	12 in.	Blk. Steel	SS-cont. wrap	50 slot	86 feet	1,350	*-426 to -512*
N-07561	*No. 5-2*	Rotary	1990	550	Hicksville	*1964*	12 in.	Blk. Steel	SS-cont. wrap	50 slot	70 feet	1,400	*-348 to -435*
N-03553	*No. 5-1*	Rotary	VOC abnd 1980	152	Hicksville	*1951*	12 in.	Blk. Steel	SS-cont. wrap	60 slot	53 feet	1,400	*NA*
N-09212	*No. 5-3*	Rotary	1995	604	Hicksville	*1977*	12 in.	Blk Steel	SS-cont. wrap	50 slot	85 feet	1,200	-423 to -489

- well deepened = Active Wells w/ treatment * - irrigation well

Basal Magothy Contamination / Groundwater Model

There are a significant number of public supply wells located around the perimeter of Eisenhower Park, which have been impacted by VOCs. These wells have total depths (TD) between 523 and 604 feet below land surface. Groundwater treatment was added to some of these wells as early as twenty-six years ago (1995). This indicates that VOC's have been present at screened elevations from -348 ft./ msl to -512 ft/msl for decades.
To better evaluate the **historic** conditions which caused volatile organic contamination to spread from the New Cassel Industrial Area, a transient groundwater model should be considered for the study area. The substantial number of active public supply wells with treatment, industrial, inactive or abandoned wells which have operated locally during the last 70 years have likely had a profound effect on the distribution of volatile organics and emerging contaminants throughout the aquifer.

Groundwater Flow and Plume movement

The local groundwater flow direction and the subsequent dimensions of the plume of volatile organic contamination mapped beneath Eisenhower Park and areas downgradient of the NCIA OU-1 source area could be better defined by collecting synoptic water level measurements (as before) during periods of "***High aquifer stress***" created by increased seasonal pumping activity. This would include measurements of all available wells in June, July and August. Existing water level measurements and subsequent plume maps were created using water level measurements collected during periods of "***Low aquifer stress***" during the months of January, April, and May. Ideally, future measurements should be collected quarterly to better assess aquifer conditions throughout the year.

Installation of additional permanent monitoring wells

The installation of additional permanent monitoring well clusters should be considered as part of the **Pre-design Investigation**. The NCDPW operated two large scale (> 1 MGD) "***pump and treat***" groundwater recovery systems at the Nassau County Fire Service Academy (aka Fireman's Training Center) in Old Bethpage and at the former Purex Industries site in Uniondale, New York for periods of 12 and 21 years, respectively. During their operation over 10 billion of gallons of contaminated groundwater were treated and returned to the aquifer system.

At those sites, multiple permanent groundwater monitoring well clusters screened at various levels in the Magothy and Upper Glacial aquifer(s) were used to monitor water quality. These wells were also essential in understanding the hydraulic interaction of nearby public supply wells and the three (3) operating remedial system(s). Over time, different pumping configurations or "schemes" were developed in response to changes in water quality in both nearby public supply wells, plume recovery wells and the monitoring well network. The various pumping schemes which were employed increased plume capture, operational efficiency, and reduced risk of VOC contamination to local water suppliers.

As part of the **Pre-Design Investigation** (PDI) additional permanent OU3 groundwater monitoring wells should be added to the existing Nassau County monitoring network located in Eisenhower Park, which was installed, developed, monitored, and sampled as part of a joint recharge project, conducted by Nassau County Department of Public Works (NCDPW) and the USGS in the 1980's.
The results of this study are included in a U.S. Geological Survey Water Resources Investigations Report 85 – 4323**,** entitled: ***Hydrologic Effects of Artificial-Recharge Experiments with Reclaimed Water at East Meadow, Long Island, New York – 1987.***

Several of the well clusters used in the joint study were located and sampled in 2017 and 2019 by NCDPW personnel and demonstrated to be viable. The results of these sampling efforts were provided in two reports: ***Eisenhower Park – Survey of Environmental Conditions and potential groundwater Impacts, September 2017,*** and ***Eisenhower Park – OU-3 Supplemental Sampling Program, June 2019***.

The location (see attached map) and construction information for these monitoring well clusters are provided below:

NEW CASSEL OU-3 INVESTIGATION

NCDPW OBSERVATION WELL (6-inch) CONSTRUCTION DETAILS

Monitoring Well	MP Elevation (Feet Above Mean Sea Level)	DTW Taken from MP 6/22/17	Date Installed	Method Of Drilling	Screen Interval (Feet Below Ground Surface) Top Of Screen	Bottom Of Screen	Casing	Screen
N-9234 (1A)	105.04	41.48*	1979	Auger	200	205	FIBERGLASS	Stainless Steel
N-9235 (1B)	105.03	41.27*	1979	Auger	100	105	FIBERGLASS	Stainless Steel
N-9236 (1C)	105.04	41.2*	1979	Auger	45	50	FIBERGLASS	Stainless Steel
N-9239 (7A)	97.79	38.43	1979	Auger	200	205	FIBERGLASS	Stainless Steel
N-9240 (7B)	97.79	38.23	1979	Auger	100	105	FIBERGLASS	Stainless Steel
N-9241 (7C)	97.79	38.21	1979	Auger	40	45	FIBERGLASS	Stainless Steel
N-9199 (8A)	98.49	38.45	1977	Auger	100	105	FIBERGLASS	Stainless Steel
N-9200 (8B)	98.49	38.46	1977	Auger	40	45	FIBERGLASS	Stainless Steel
N-9219 (14A)	94.21	36.36	1980	Auger	90	95	FIBERGLASS	Stainless Steel
N-9220 (14B)	94.21	36.36	1980	Auger	40	45	FIBERGLASS	Stainless Steel
N-9221 (16A)	92.69	35.50	1980	Auger	90	95	FIBERGLASS	Stainless Steel
N-9222 (16B)	92.68	35.47	1980	Auger	40	45	FIBERGLASS	Stainless Steel
N-9223 (17A)	90.71	37.23**	1979	Auger	103	108	FIBERGLASS	Stainless Steel
N-9224 (17B)	90.70	37.15**	1979	Auger	40	45	FIBERGLASS	Stainless Steel
N-9225 (20)	NA	NA	1980	Auger	39	44	FIBERGLASS	Stainless Steel
NCDPW OBSERVATION WELL (4-inch) CONSTRUCTION DETAILS								
N-9804	76.60	NA	1981	Mud Rotary	123	143	PVC	Stainless Steel
N-9805	76.60	NA	1981	Mud Rotary	53	58	PVC	Stainless Steel
N-9939	105.05	NA	1982	Mud Rotary	69	74	PVC	Stainless Steel
N-9078	83.62	NA	1975	Mud Rotary	60	65	Black Steel	Stainless Steel
N-11396	82.74	NA	1989	Mud Rotary	540	560	Black Steel	Stainless Steel
N-11397	82.63	NA	1989	Mud Rotary	260	280	Black Steel	Stainless Steel
N-11570	83.03	NA	1989	Mud Rotary	850	870	Black Steel	Stainless Steel

Monitoring wells could be installed near the existing well clusters, starting at depths greater than two hundred feet extending to the top of the Raritan confining unit. Wells could be screened in previously mapped ***target zones*** to provide continuous access and repeatable measurements of both water quality and water levels across a much thicker (deeper) portion of the Magothy Aquifer.

Multiple (two (2) and three (3) well clusters which extend to depths of approximately two hundred feet below grade are present along the approximate axis of the Eastern Plume and hydraulically downgradient of OU-1 source areas. Existing cluster #7 lies within the 100 ppb isocontour and just beyond the 500 ppb isocontour. An expanded and deepened group of permanent monitoring wells at this location would confirm the vertical extent of the ***Eastern Plume*** and allow for future monitoring of plume movement and recovery.

Four (4) cluster locations #8, #14, #16 and #17 are located beyond the 100 ppb isocontour. If deepened clusters #8 and #14 could bound the Eastern limit of the plume. Cluster #16 and #17 are located at the southern edge of Eisenhower Park less than 4,000 feet upgradient of the East Meadow wellfield providing ideal locations for two (2) permanent ***sentinel wells***.

The proximity of the OU-3 plume mapped during the Remedial Investigation, (particularly the eastern portion) relative to the existing NCDPW monitoring well network installed in Eisenhower Park in the 1980's provides a unique opportunity to expand the permanent monitoring well network laterally and vertically to assist in definition and extent of volatile organic compounds and Emerging Compounds (1,4-Dioxane, PFAS). Existing monitoring well clusters if expanded and deepened would also provide suitable locations for sentinel wells to protect public supply wells in the East Meadow Water District.

Emerging Contaminants

A comprehensive group of existing monitoring wells and all available irrigation wells in the OU-3 area should be sampled quarterly for a period of one year for the presence of emerging contaminants including 1,4 – Dioxane and PFAS. The data collected to date has been collected from a limited number of monitoring wells. The number of sampled wells should be expanded as part of the PDI to support the EC data collected by the EPA in the OU-3 study area in 2018.

The Department will continue to coordinate with the EPA in its remedial efforts in the New Cassel / Eisenhower Park area and with the subsequent implementation and construction of the selected remedial alternative for the New Cassel Industrial Area plume(s). The Nassau County Department(s) of Public Works and Parks will assist in the selection of sites for both plume recovery and recharge within the boundaries of Eisenhower Park if required.

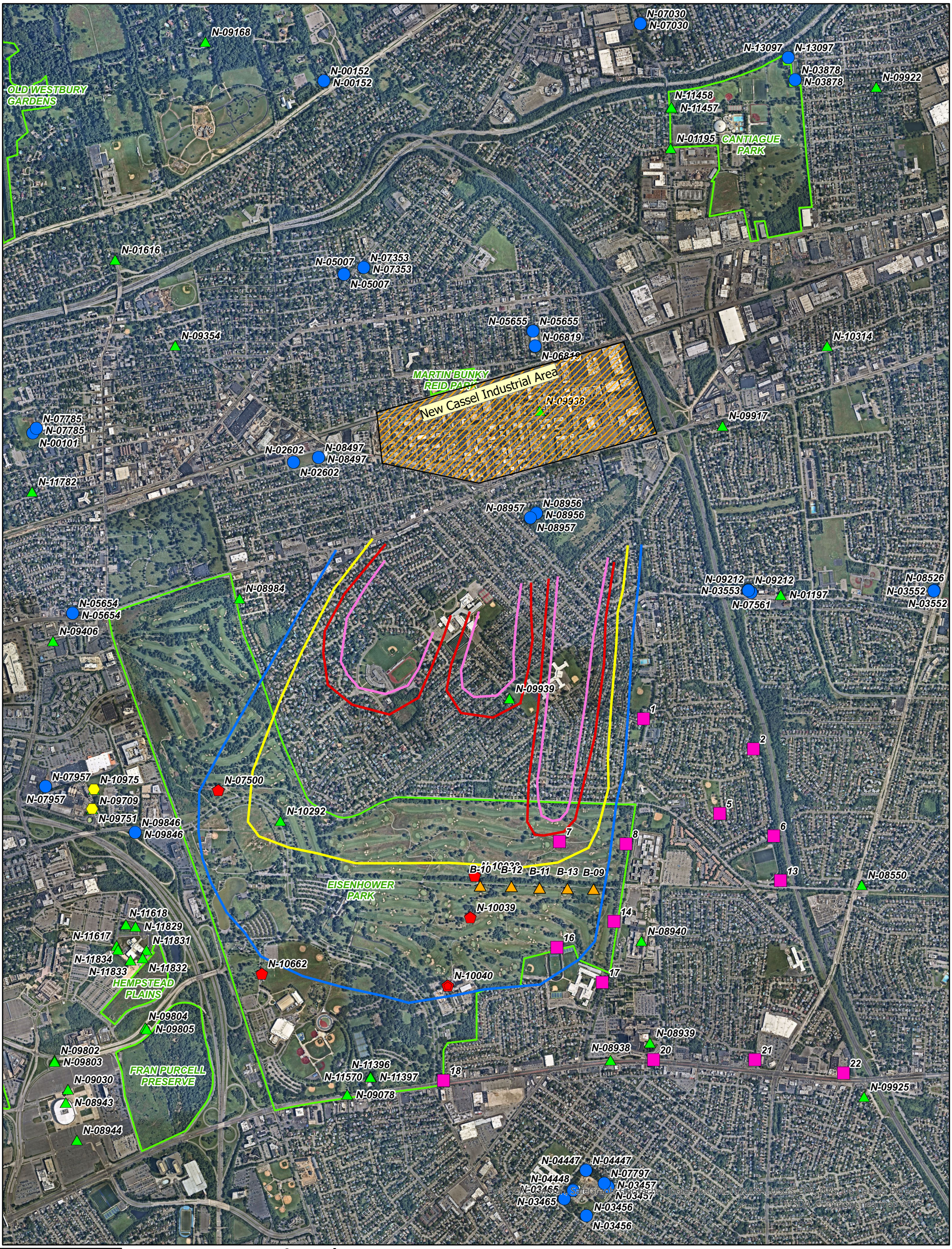
If you have any questions regarding the enclosed map or technical comments, please contact Mr. Michael Flaherty, PG at (516) 571-7514.

Very truly yours,

Kenneth G. Arnold, P.E.
Commissioner of Public Works

KGA:VF:rp
Enclosure
c: Vincent Falkowski, Deputy Commissioner for Environmental Programs
Jane Houdek, Legal Counsel for Public Works
Michael Flaherty, PG, Hydrogeologist III
Angela Pettinelli, Director of Environmental Programs, NCDH
Timothy Messner, Deputy Commissioner Parks, and Recreation
Aidan Conway, Project manager, USEPA
Robert DeCandia, NYSDEC
Alexander Klein, NYSDOH
Jacquelyn Nealon, NYSDOH
Paul J. Granger, PE, Hicksville Water District
John Reinhardt, TOH Water District

NCIA / Ike Park – Approximate extent of OU3 plume(s) - 2023



Legend

- 10ug/1 COC Isoconcentration
- 100ug/1 COC Isoconcentration
- 500ug/1 COC Isoconcentration
- 1000ug/1 COC Isoconcentration
- Public Supply Wells
- Vertical Profile Boring
- 6 Inch Observation Wells
- Industrial Wells
- Public Supply Wells
- Irrigation Wells
- Monitoring Wells
- Parks

N
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S

0 500 1,000 2,000 3,000 4,000 Feet

NASSAU COUNTY · STATE OF NEW YORK ·

Document Path: D:\Users\pciampi\Documents\ArcGIS\Projects\Eisenhower Park wells\Eisenhower Park wells.aprx

Council Members
DOROTHY L. GOOSBY
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THOMAS E. MUSCARELLA
CHRISTOPHER CARINI
MELISSA MILLER
LAURA A. RYDER

KATE MURRAY
Town Clerk

JEANINE C. DRISCOLL
Receiver of Taxes

JOHN L. REINHARDT
Commissioner

TOWN OF HEMPSTEAD
DEPARTMENT
OF
WATER
1995 PROSPECT AVENUE, EAST MEADOW, N.Y. 11554-3100
(516) 794-8300 FAX# (516) 794-1355

DONALD X. CLAVIN, JR.
Supervisor

September 20, 2023

Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th floor
New York, New York 10007-4227
Sent via email to Conway.aidan@epa.gov

Re: New Cassel/Hicksville Groundwater Contamination
Superfund Site, Operable Unit 3, Nassau County
PRAP Comments

Dear Mr. Conway:

Thank you for allowing us this opportunity to comment on this very important and long overdue plan to address the contamination emanating from these sites and the associated plume. Additionally, I would like to thank the EPA staff for their attendance at the public meeting held earlier this summer at the East Meadow Public Library. Unfortunately, we feel that the timing of this meeting and comment period have greatly reduced the number of people aware of and participating in the meeting and providing comments to this plan.

As you are aware, Long Island obtains all its drinking water from our sole source aquifer and, as the operator of six water districts in Nassau County serving 37,000 connections, the quality of our aquifer is critical to our day-to-day operations. Given the importance of the aquifer to our supply, we highly support the efforts to address the plume emanating from these sites, an area now known as Operable Unit 3 (OU3), however we have serious concerns about both the location of and time required to install the hydraulic containment wells and construct the necessary treatment conveyance and recharge system. Our concerns are based on both physical data as well as our past experience with investigation activities and remediation work similar to this in our service areas.

The Proposed Plan issued July 2023 for OU3 contains detailed information about the site, site history, site description and the geological and hydrogeological background of the site. In the site description a number of Town of Hempstead Department of Water (TOHDOW) public supply wells are listed as impacted by site contamination however, given that the investigation work is partially incomplete with numerous gaps including the lack of downgradient wells showing no site contaminants or the placement of outpost monitoring wells at potentially affected wells, we believe that these assumptions are flawed. Given the proximity of the plume to numerous Town owned supply wells, we believe that reference to all of the affected or potentially affected wells must be included in the report. These include the mentioned wells Bowling Green wells 1 and 2, Roosevelt Field Well 10 and Levittown Well 2A as well as Roosevelt Field Well 5, Levittown Wells 1A and 12 and East Meadow Wells 1, 3, 5, 10 and 11 all of which are located proximate to the OU3 area. The Town feels it would be prudent for the

next phase of monitoring well and vertical profile boring installation to include outpost monitoring wells upgradient/side gradient of all of these wells to allow for early detection of site contaminants. The current plan calls for installation of "an early-warning monitoring well for the East Meadow water supply well located south of Hempstead Turnpike". This falls short of the need to monitor the above listed wells.

Included figures in the appendix of the plan show interpolated lines of various concentrations for the contaminants of concern (COCs) which indicate a concentration line of 10ppb along the western property line of the Park at Stewart Avenue, however the Town is experiencing and treating for concentrations of TCE at Roosevelt Field Well 10 nearing 100ppb and will soon be adding additional treatment at well 10 due to increasing concentrations.

As discussed in the report, the 2003 NYSDEC selected remedy for OU1 related to the New Cassell Industrial Avea (NCIA) was never constructed. This inaction for 20 years allowed the offsite plume emanating from the NCIA to advance to the state that it is today, impacting or threatening to impact many more public supply wells. For this reason, we are concerned that a plan be adopted that accounts for future advancement between the time of adoption and the time of implementation and addresses the plume in its entirety. The current planned placement of extraction wells, if installed and operated today, would fail to fully contain the lower concentrations of the plume and allow total COC concentrations of 100ppb or greater to continue to advance towards public supply wells and rely on wellhead treatment as a method of remediation. If the actual implementation time is 3-5 years, given the distance of the leading edge of the identified plume delineation, the plume will most certainly migrate the 3500' to the Prospect Avenue well field of the East Meadow water district. Allowing this to occur and placing this burden on the ratepayers of the surrounding districts is unacceptable.

At this time the TOHDOW is requesting copies of ALL monitoring well test results to date to allow for a comprehensive review to allow for future planning of treatment. Over the past three years we have invested over $200 million in treatment for emerging contaminants including 1,4 dioxane and based all design criteria on publicly available data, concentrations of 1,4 dioxane nearing 30 ppb up and side gradient of our wells presents very real concerns when weighed against our design criteria. VOC and SVOC concentrations in monitoring well NCOU3-MW-06 are alarming when it is considered that the apparent location of the extraction well for this area is so close to the monitoring well location. Once again, the concern exists that high concentrations of COCs will not be captured and will be allowed to migrate towards TOHDOW production wells.

While the general concept of hydraulic containment is supported by the TOHDOW, the proposed implementation must be reconsidered. As discussed above, time is of the essence when it comes to protecting as many as ten TOHDOW wells. The current plan fails to provide for the timely containment for the following reasons:

- The proposed extraction well locations are located within the current plume shell, not in advance of it.
- The proposed extraction wells are to be located in an area believed to be approximately 100 ppb TCOC and expecting natural attenuation to address the remaining concentrations. There is doubt that natural attenuation will reduce these COCs to concentrations below drinking water standards. Additionally, natural attenuation of some of the COCs is not practical given their chemical properties.
- The proposal calls for the installation of extraction wells within a Nassau County Park with the understanding that an effort will be required to obtain plans for use of this land

from the County as well as legislative action from New York State for parkland alienation. This is a potentially time-consuming ordeal that could further delay construction and implementation.

- The proposed plan fails to contemplate even a conceptual plan for disposal of treated water beyond the possibility of seasonal disposal via parkland irrigation.

Given the above detailed and summarized concerns, while hydraulic containment is a valid and encouraged means of isolating and treating the plume, the planned well locations and unknown timeline to clear the hurdles and bring a treatment system online as proposed must be revisited and alternate downgradient locations considered to ensure protections to area public supply wells. Additionally, we reassert our request for comprehensive and complete monitoring well data.

Once again, we thank you for the opportunity to review and comment on the proposed plan and look forward to a positive response to our comments and timely implementation of remediation efforts to address this ever-growing plume and protect our customers and residents.

Sincerely,
<s>
John Reinhardt
Commissioner

ANTHONY D'ESPOSITO
4TH DISTRICT, NEW YORK

WASHINGTON OFFICE:
1508 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-3204
(202) 225-5516

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Congress of the United States
House of Representatives
Washington, DC 20515-3204

COMMITTEE ON
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TECHNOLOGY

COMMITTEE ON
TRANSPORTATION
AND INFRASTRUCTURE

COMMITTEE ON
HOUSE ADMINISTRATION

September 21, 2023

The Honorable Michael S. Regan
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20004

Dear Administrator Regan,

I write to you on behalf of the constituents of New York's 4th Congressional District about extending the public comment period an additional 30 days for the Environmental Protection Agency's proposed plan to remove contaminated groundwater at the New Cassel/ Hicksville Groundwater Contamination Superfund Site Operable Unit 3.

The plan proposes installing wells and underground pipelines in residential neighborhoods and Eisenhower Park, located within the Town of Hempstead, New York. These installations would pump and move contaminated groundwater to a new water treatment site. I understand that your Administration will determine where the wells and water treatment facility will be built. However, there is not a substantial plan in place for where the facility should be developed. Moreover, the water treatment facility is supposed to be of considerable size, and my constituents have little to no decision-making authority. Residents of this area will be directly affected by the construction of these projects, as well as the beloved Eisenhower Park. Construction will disrupt events at Eisenhower Park and cause increased traffic and noise pollution.

This large project costs millions of dollars and has multifaceted features. Approval, operations, and coordination require different stakeholders and levels of government; therefore, the proposal must have adequate time for review. Also, the plan set out now will be different in the future due to evolving contamination results; it is disadvantageous for your agency, the Town of Hempstead, and Long Island at large to rush approving this plan without hearing more from the people that would be affected most by the project.

Over the summer, your agency granted a 30-day period for public comment and hosted a meeting to speak with stakeholders about the proposed plan at the East Meadow Public Library on August 10, 2023. The period for public comment was July 24 to August 23, 2023, and was extended another 30 days to September 22. The public comment periods were introduced during the height of the summer, a period when Long Island families vacation and prepare for the new school year. Furthermore, there was little outreach to inform the public about the period for public comment and the meeting. As we advance, I believe we can solve issues if there are clear lines of communication and improvement in notifying the public. The meeting your agency hosted was attended by a few people, which is ineffective for your agency to know the community's

concerns. It is mutually beneficial for everyone involved to hear more thoughts on this matter rather than just a few individuals' perspectives.

We are grateful for the agency's efforts to ensure the public safety of Nassau County neighbors and that environmental priorities are met. However, the community needs more time to review, discuss, and comment on project alternatives if needed. Due to feedback from community leaders and individuals, I would like you to extend the time for public comment by 30 more days.

Sincerely



Anthony D'Esposito
Member of Congress

Cc: Regional Administrator Lisa F. Garcia
Chairwoman Cathy McMorris Rodgers
Subcommittee Chairman Bill Johnson

COUNCIL OF EAST MEADOW COMMUNITY ORGANIZATIONS
P.O. Box 532, East Meadow, NY 11554-0532
516-542-7609

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Stephen Moser
Harry Ellerton

Mr. Aidan Conway
Remedial Project Manager
US Environmental Protection Agency (EPA)
September 21st, 2023

Subject: New Cassel/Hicksville Ground Water Contamination Superfund Site

Dear Mr. Conway:

It is our understanding that the US Environmental Protection Agency (EPA) is seeking public comments on the proposed New Cassel/Hicksville Ground Water Contamination Superfund site in the Town of Hempstead.

However, the comment period is due to expire on September 23rd, 2023, giving the public little time to do so. Therefore, CEMCO is requesting an extension to the comment period to October 31, 2023.

The project was unveiled at a time when people were involved in summertime activities or on vacation. Now people are back to work and involved in community affairs, they need to be made aware of the proposed Superfund project.

CEMCO needs the time to get the information to its members and the community at large as well.

CEMCO is requesting that the comment period be extended. This would enable our organization to fulfill its purpose which is the dissemination of information. When people are informed, they are likely to voice their concerns.

Very truly yours,

Joseph Parisi

Joseph Parisi,
President
Council of East Meadow Community Organizations

From: Helen
To: Greally, Maya; Kivowitz, Sharon (she/her/hers); Conway, Aidan
Subject: Groundwater Contamination Superfund Site
Date: Monday, September 18, 2023 6:03:26 PM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Helen Meittinis

34 Mist Lane

Westbury, NY. 11590

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Ms. Maya Greally

United States Environmental Protection Agency

Dear Ms. Greally:

My name is Helen Meittinis and I am President of Community Association of Stewart Avenue. I am reaching out to you with regard to the New Cassel/Hicksville Groundwater Contamination Superfund Site and, specifically, the United States Environmental Protection Agency's recently issued Proposed Plan for Operable Unit 3, dated July 2023. Our organization represents the neighborhood which will be substantially impacted by the proposed plan, and as such, we have concerns regarding the potential impacts of the selected remedial measure on our local community.

We have only recently obtained a copy of the Proposed Plan and many of our neighbors were not aware of the public meeting held in early August. We also understand the public comment period ends September 22, 2023. It is very important that our neighborhood be given ample opportunity to study and understand what EPA is proposing and how our neighborhood will be affected

by it. Not being familiar with environmental matters, the comment period put forth by the EPA, particularly in late summer when many of our neighbors were away on vacation, did not afford us sufficient time to organize a proper meeting to inform homeowners about this proposal.

Based on the foregoing, we respectfully and strongly urge the EPA to provide a 60-day extension on the comment period so that we may have time to further review the Proposed Plan, including the potential impacts to the local community, and submit comments accordingly.

Thank you very much for your consideration of this request.

Sincerely,

Helen Meittinis
<!--[if !supportLineBreakNewLine]-->
<!--[endif]-->

JOHN R. FERRETTI, JR.
LEGISLATOR - 15TH DISTRICT

COMMITTEES:
Chairman, BUDGET REVIEW
Chairman, GOVERNMENT SERVICES & OPERATIONS
Vice-Chair, FINANCE
ASSESSMENT
PUBLIC SAFETY



NASSAU COUNTY LEGISLATURE
THEODORE ROOSEVELT EXECUTIVE AND LEGISLATIVE OFFICE BUILDING
1550 FRANKLIN AVENUE, MINEOLA, NEW YORK 11501
(516) 571-6215 • jferretti@nassaucountyny.gov

September 21, 2023

The Honorable Michael S. Regan
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, D.C. 20004

Dear Administrator Regan,

I write to you on behalf of the constituents of Nassau County's legislative district 15 which includes Salisbury and East Meadow, New York. Salisbury and East Meadow are directly affected by the EPA's July 2023 Proposed Plan for the "New Cassel Hicksville Groundwater Contamination Superfund Site." Based on my review of the Proposed Plan, it appears that the project could have significant impacts on these communities.

On August 10, 2023 The Environmental Protection Agency held a meeting at the East Meadow Public Library to hear from stakeholders with regard to the proposed plan. As this meeting was held in the middle of the summer, when many residents are away on vacation, it was sparsely attended. Additionally, there was inadequate notice to the community that this meeting was taking place.

As such, I am requesting the public comment period be extended an additional 30 days. Additionally, I am requesting an additional public meeting be scheduled with proper notice to residents so that the Environmental Protection Agency can hear the perspectives of the community, rather than a few individuals. I believe this will be mutually beneficial to all those involved.

I thank you for your kind consideration.

Very truly yours,

John R. Ferretti
Nassau County Legislator, district 15

Cc: Aiden Conway
Sharon Kivowitz
Maya Greally

Morgan Lewis

John McGahren
Partner
+1.609-919-6641
John.mcgahren@morganlewis.com

July 31, 2023

VIA EMAIL AND FIRST-CLASS MAIL

Aidan Conway
Western New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866
Telephone: (212) 637-4227
Email: conway.aidan@epa.gov

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site – Operable Unit 3 – Proposed Plan – 30-Day Extension Request

Dear Mr. Conway:

This firm represents GTE Operations Support Incorporated ("GTEOSI"), the current owner of the properties located at 70, 100, and 140 Cantiague Rock Road (collectively referred to as the Sylvania Site), one of the properties located in OU-1 of the New Cassel/Hicksville Groundwater Contamination Superfund Site. GTEOSI timely submits this request for an extension of the comment period for the Proposed Plan for OU-3 (which is currently scheduled to end on August 23, 2023) in accordance with 40 CFR Section 300.430(f)(3)(i)(C), which provides that "upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days." GTEOSI respectfully requests that EPA extends the comment period for 30 days to **Friday, September 22, 2023**, as explained below.

Because of the complex environmental setting of the New Cassel/Hicksville Groundwater Contamination Superfund Site, the initial 30-day comment period is not sufficient to allow GTEOSI to complete a review of the Proposed Plan and the voluminous OU-3 RI/FS materials, and to provide necessary comments.

Additionally, public comments are currently due only 13 days following EPA's Public Meeting scheduled for August 10, which does not leave sufficient time to evaluate the additional information provided by EPA in its public presentation and prepare GTEOSI's comments. Accordingly, GTEOSI respectfully requests that EPA grant its request for a 30-day extension to the comment period, to **September 22, 2023**, in order to permit it to sufficiently review and prepare comments to the Proposed Plan.

If you have any questions regarding this request, please do not hesitate to contact me at (609) 919-6641.

Sincerely,

s/ John McGahren

John McGahren

THE ASSEMBLY & THE NEW YORK SENATE
STATE OF NEW YORK
ALBANY

September 22, 2023
VIA EMAIL – Conway.aidan@epa.gov

Mr. Aidan Conway
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 10007

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site
Operable Unit 3, Nassau County, New York

Dear Mr. Conway:

The U.S. Environmental Protection Agency sought public comment on a proposed cleanup plan to pump out contaminated groundwater from part of the New Cassell/Hicksville Groundwater Contamination Superfund site in the Town of Hempstead, New York and treat it at a water treatment facility.

The EPA hosted a public meeting regarding the above to present their proposed cleanup plan and take comments from the public on August 10, 2023 from 6:30pm to 8:30pm at the East Meadow Public Library, 1886 Front Street, East Meadow, NY 11554. This meeting was not made public to the East Meadow/Salisbury community and was held during summertime when most residents are on vacation.

Our residents were not properly informed due to the copies of the Proposed Plan and supporting documentation being only available at the information repositories in the Westbury Public Library and the USPA-Region II Superfund Records Center at 290 Broadway, New York, New York.

Due to these concerns, we respectfully request a one-month adjournment of the proposed cleanup plan to accommodate a proper public comment period and public meeting.

Kindly advise us of the decision via email to rae@nyassembly.gov

Thank you.

Very truly yours,

Senator Steve Rhoads
Senate District 5

Assemblyman Ed Ra
Assembly District 19

Assemblyman John K. Mikulin
Assembly District 17

WHITEMAN
OSTERMAN
& HANNA LLP

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One Commerce Plaza
Albany, New York 12260
518.487.7600

Thomas J. Ruane
Associate
518.487.7698 phone
truane@woh.com

September 15, 2023

Via Email and Federal Express
Aidan Conway
Remedial Project Manager
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York
10007
Conway.aidan@epa.gov

Re: New Cassel/Hicksville Groundwater Contamination Superfund Site
Environmental Protection Agency Proposed Plan for OU-3
Request for Extension of Public Comment Period

Dear Mr. Conway:

This firm represents property owners within the New Cassel Industrial Area that have also been identified as potentially responsible parties by the Environmental Protection Agency ("EPA") for Operable Unit No. 1 of the New Cassel/Hicksville Groundwater Contamination Superfund Site.

These parties and their consultants are in receipt of, and are currently reviewing, EPA's Proposed Plan for Operable Unit No. 3. The public comment period for the Proposed Plan currently ends September 22, 2023.

As set forth in the administrative record, and the Proposed Plan, the proposed remedial action will have a significant impact on both the local community and any party responsible for its implementation and/or costs incurred by the EPA.

Based on the foregoing, we respectfully request that EPA extend the public comment period by 60-days to give ample time for all parties potentially impacted by the Proposed Plan to review and provide comments.

Thank you for your consideration in this matter,

/s/ *Thomas J. Ruane*

Thomas J. Ruane

ATTACHMENT E

WRITTEN COMMENTS SUBMITTED AFTER PUBLIC COMMENT PERIOD

From:	Joseph Parisi
To:	Conway, Aidan
Cc:	Greally, Maya; Kandil, Shereen (she/her/hers); Richard Cardozo; Waddell, Joel; Gonsalves, Norma; tule1029; bblakeman@nassaucountyny.gov; McKevitt, Thomas (NASSAU); repanthonydesposito@mail15.housecommunications.gov; rhoads@nysenate.gov; John Mikulin
Subject:	Re: EPA Extends Public Comment Period for New Cassel/Hicksville Groundwater Contamination Superfund site
Date:	Thursday, October 26, 2023 11:14:43 AM

Caution: This email originated from outside EPA, please exercise additional caution when deciding whether to open attachments or click on provided links.

Hello Mr. Conway,

Thank you for your earlier response and for the Powerpoint Presentation regarding the New Cassel / Hicksville Groundwater Contamination. The Council of East Meadow Community Organizations (CEMCO) used this EPA document for a community meeting held on October 18th at the East Meadow Public Library. I would like to provide you with our feedback as well as a few questions from the residents.

While CEMCO understands and supports the need to address this plume before it spreads even further into the East Meadow community, we as an organization have serious concerns about the proposed method to address it. Specifically, we have an issue with the proposed locations of six of the proposed extraction wells; those being the ones shown within Eisenhower Park.

To better understand our concerns you must better understand the park. Eisenhower Park is to Nassau County residents like Central Park is to Manhattan and in fact is larger than Central Park. This is the flagship park of the Nassau County Parks system housing three 18 hole golf courses, including the Red Course which is home to the Commerce Bank PGA Championship as well as a world class aquatics facility and the Northwell Health Ice, the practice sheet for the New York Islanders. A plan that disturbs these facilities by drilling several extraction wells and laying of thousands of feet of pipe is ill-conceived and reckless and while it could be tolerated if this were the best option for protection the community and environment, we could see a means of understanding and compromise; it being a poor location to afford these protections makes them a non-starter in the community's eyes.

Placement of these hydraulic containment extraction wells in the locations indicated in the proposed plan, if drilled and operational today, would not capture the plume in its entirety and would allow contaminant concentrations more than 20 times the drinking water standard to remain untreated in our sole source aquifer. Given that these wells are proposed in a public park will require alienation legislation from New York State in addition to acquiring access agreements and easements with Nassau County all which would create an extended timeline to begin construction and bring these wells online. These delays make the locations chosen even less effective.

It is the opinion of CEMCO along with numerous professionals in the environmental remediation and engineering fields we have spoken with that more effective and practical locations for these wells would be in the sidewalk area or median of Hempstead Turnpike and along Merrick Avenue. These locations offer several benefits; first they afford a placement more advance of the actual plume face providing more complete extraction and treatment of contaminants from the aquifer, second they reduce the time required to acquire property rights as they remove the lengthy time of parkland alienation and third, they afford readily accessible rights of way for more direct and straight line pipeline installation.

Resident Questions:

Sylvania and General Instruments are east of Wantagh Parkway yet the study mentions New Cassel Industrial area as the source. Wouldn't properties east of Wantagh Parkway also be subject to contamination? Al Swiderski - swideze@verizon.net.

Have Sylvania and General Instruments been penalized for what they did? Are the contaminants affecting our soil? Steven Klan - Sklan133@gmail.com

Thank you,
Joseph Parisi
President
Council of East Meadow Community Organizations