

**FOURTH FIVE-YEAR REVIEW REPORT FOR
GENZALE PLATING SUPERFUND SITE
NASSAU COUNTY, NEW YORK**



Prepared by

**U.S. Environmental Protection Agency
Region 2
New York, New York**

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Date

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LIST OF ABBREVIATIONS & ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
gpm	gallons per minute
GPC	Genzale Plating Company
ICs	Institutional Controls
IRIS	Integrated Risk Information System
µg/L	micrograms per liter
MW	Monitoring Well
NCDH	Nassau County Department of Health
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
OU	Operable Unit
PCE	Tetrachloroethene
RAO	Remedial Action Objectives
RI/FS	Remedial Investigation and Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SVE	Soil Vapor Extraction
TCE	Trichloroethene
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compounds

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fourth FYR for the Genzale Plating Superfund Site (Site). The triggering action for this statutory review is the completion of the previous FYR, dated June 30, 2020. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of two Operable Units (OUs). OU1 will be addressed in this FYR. OU1 addresses the on-property contamination at the Site and OU2 addresses the off-property migration of site-related contamination. OU2 is not addressed in this FYR because the determination in the 1995 Record of Decision (ROD) stated that there would be no further action required to address off-site migration of site-related contamination.

The Site FYR team was led by EPA: Emily Wong (remedial project manager), Damian Duda (supervisor), Liana Agrios (hydrogeologist), Marian Olsen (human health risk assessor), Tara Bhat (human health risk assessor), Julie McPherson (ecological risk assessor), and Shereen Kandil (community involvement coordinator). The review began on November 13, 2024.

Site Background

The Site is located in Franklin Square, Nassau County, New York (**Appendix A, Figures 1 and 2**). The Site is comprised of a 0.6-acre former metal-plating facility, Genzale Plating Company, Inc. (GPC), and the off-property groundwater contamination. The GPC Facility lies immediately adjacent to New Hyde Park Road and Kalb Road to the west and east, respectively. The GPC operated from 1915 until 2000. The GPC Facility also included an attached two-story office building, which has since been demolished and replaced, and an undeveloped backyard area which served as a parking lot and storage area. The predominant land use in the Site vicinity is residential although the GPC Facility is zoned for both commercial and residential use.

Operations at the GPC Facility included electroplating small products, such as automobile antennas, ball point pens and bottle openers. The GPC Facility was known to have discharged wastewater containing heavy metals, as well as organic contaminants, into four sub-surface leaching pits at the rear of the facility. These releases resulted in the contamination of the shallow Upper Glacial Aquifer (UGA), one of three aquifers that exist beneath the Site. The UGA overlies the Magothy Aquifer, which, in turn, overlies the Lloyd Aquifer. The Franklin Square Water District provides drinking water from public water supply wells drawing water from the Magothy Aquifer. The supply wells are located within one mile of the Site but were not impacted by the operations at the GPC Facility. In the immediate area of the GPC Facility, groundwater generally flows in a south-southwesterly direction.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Genzale Plating Superfund Site		
EPA ID: NYD980651087		
Region: 2	State: NY	City/County: Franklin Square/Nassau
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: State		
Author name (Federal or State Project Manager): Emily Wong		
Author affiliation: EPA		
Review period: 11/13/2024 – 4/21/2025		
Date of site inspection: 2/6/2025		
Type of review: Statutory		
Review number: 4		
Triggering action date: 6/30/2020		
Due date (<i>five years after triggering action date</i>): 6/30/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Although the GPC Facility was connected to the municipal sewer system in 1955, a 1981 Nassau County Department of Health (NCDH) inspection found that industrial wastewater continued to be discharged into the onsite leaching pits. The GPC was ordered by NCDH to cease the discharge and, as a result, began, but never completed, the excavation of sludge and contaminated soils from the pits. In 1983, the New York State Department of Environmental Conservation (NYSDEC) conducted an investigation of the Site's activities in order to determine the potential threat to public health posed by potential off-site migration of contaminants into the groundwater. Subsequently, in 1988, EPA conducted a Remedial Investigation and Feasibility Study (RI/FS).

Based on the evaluations presented in the risk assessment of the RI, the chemicals of concern (COCs) were identified for soils at the GPC Facility and groundwater at the Site. The COCs for soils were determined to be cadmium, chromium, nickel, barium, lead, copper, arsenic, trichloroethene (TCE), bis (2-ethyl-hexyl) phthalate, and chrysene. The COCs for groundwater were volatile organic compounds

(VOCs), including TCE, 1,1,1-trichloroethane (TCA), 1,1-dichloroethene (DCE), tetrachloroethene (PCE) and metals, including cadmium, chromium, copper, lead, and nickel. EPA's baseline risk assessment indicated that the most significant public health risk results from the ingestion of groundwater, inhalation of groundwater VOCs (*i.e.*, while showering), and direct contact and ingestion of soils.

Response Actions

OU1 ROD

The remedial action objectives (RAOs) for the OU1 ROD are as follows:

- To reduce the concentrations of contaminants in the onsite soils to levels which are protective of human health and the environment,
- To reduce the concentrations of contaminated groundwater underlying the facility in order to reduce the risk associated with the contaminants and
- To prevent further deterioration of the area groundwater.

In March 1991, EPA selected a remedy to address the on-property soil and groundwater. The selected remedy included:

Groundwater

- Containment of the most highly contaminated portion of contaminant plume;
- Treatment, via metal precipitation and air stripping, of contaminated groundwater in the UGA to drinking water standards prior to reinjection;
- Disposal of treatment residuals at a RCRA Subtitle C facility; and
- Collection of data on aquifer and contaminant response to remediation measures.

Soils

- In-situ vacuum extraction for volatile organics followed by surface excavation over the entire property, and deeper excavation of leaching pit "hot spots";
- Off-site treatment and disposal of excavated material at a RCRA subtitle C facility; and,
- Backfill with clean soil.

OU2 ROD

The groundwater portion of the OU1 remedy was considered an interim action. In order to complete the groundwater investigation, OU2 was developed to determine whether the off-property groundwater warranted remediation and to establish final cleanup goals for the overall groundwater. The RAO for OU2 was to address the downgradient groundwater contamination attributable to the Site. The overall goal of remediation was to reduce the concentrations of contaminants to levels which are protective of human health and the environment.

In September 1995, EPA selected a remedy to address the off-property groundwater. The selected remedy for the off-property groundwater was as follows:

- No Further Action – the downgradient groundwater contamination is determined to be limited and does not pose a significant threat to human health or the environment; and, therefore, remediation is not appropriate.

Explanations of Significant Differences for OU1 and OU2

In July 2004, EPA issued an Explanation of Significant Differences (ESD) to the OU1 ROD in order to address the additional excavation and offsite disposal of a buried production well and associated contaminated soils that were discovered during excavation on the Site. In addition, the ESD also noted that “institutional controls (ICs) may need to be established to ensure that soil contamination left at the site, if any remains, is undisturbed and inaccessible.”

In March 2017, EPA issued an ESD to both the OUI and OU2 RODs to clarify and to document that the final groundwater remedy for the Site is a groundwater restoration remedy which established numerical cleanup levels for the remaining COCs in the groundwater at the Site.

A list of Site documents reviewed for this FYR is provided in **Appendix B**. A chronology of Site events is presented in **Appendix C**.

Status of Implementation

The VOC-contaminated soils in the rear portion of the GPC Facility were addressed by treatment through soil vapor extraction (SVE) technology followed by excavation and offsite treatment and disposal of those soils contaminated with metals. In May 1996, the SVE unit was shut down and dismantled after soil sampling established that the soils had reached the cleanup level of 1 milligram per kilogram (mg/kg) for the VOCs.

In 1997, contaminated soils from the leaching pits were excavated from the GPC Facility. Approximately 1,100 tons of hazardous and 4,425 tons of nonhazardous soils were excavated and shipped offsite for disposal. Subsequently, EPA installed five new monitoring wells to sample the aquifer beneath the GPC Facility in order to analyze the groundwater response to the SVE remedy. Sampling of the new monitoring wells revealed that some residual contaminant levels warranted the construction and operation of the groundwater extraction and treatment (GWET) system, selected in the 1991 ROD.

From May to June 2000, the GPC Facility ceased operations, the building was vacated and all appurtenances were decommissioned. All wastes generated during the decommissioning were disposed of offsite. Subsequently, sampling of the soil and groundwater underlying the vacated building at the GPC Facility indicated high concentrations of contaminants in soil of total chromium up to 82,000 mg/kg, hexavalent chromium up to 28,100 mg/kg and PCE up to 16 mg/kg. As a result, in September 2002, EPA conducted a time-critical removal action which included the installation of an SVE system to reduce the concentrations of VOCs within the soils on the GPC Facility and adjacent homes.

In 2003, EPA conducted a vapor intrusion (VI) investigation and collected subslab and indoor air samples at the GPC Facility building and the surrounding residences. Based on the results of the sampling, three homes were temporarily provided with granular activated carbon air filtration systems to address VI concerns. An SVE system, which comprised of extraction and monitoring wells, was installed at the GPC Facility and was found to be effective in removing the VOC-contamination which had migrated into the adjacent homes. The SVE and home treatment systems operated until February

2005 when the final remnants of the GPC Facility demolished building were excavated and removed and the underlying soils were excavated. All materials were disposed offsite. The home filtration systems were also removed during this time.

Immediately following the excavation of the GPC facility property, new monitoring wells were installed to sample the aquifer beneath the GPC Facility. Analysis of the groundwater showed that residual contaminant levels observed still warranted building and operating the GWET system selected in the 1991 ROD. From July through September 2005, EPA completed construction of the on-property GWET system. During the construction, the GWET system was modified to utilize specialized carbon to address residual VOC contamination, with subsequent discharge of treated effluent to the sanitary sewer. A new two-story office building also was added to the property during this time.

Pilot Study

In Spring of 2015, in an effort to expedite restoration of the on-property groundwater, EPA initiated a pilot study which called for the injection of a proprietary reducing agent (ABC+), including the reinjection of low pH water, in order to immobilize residual metals contamination. These injections were conducted in the source area of the former GPC Facility (former source area) near MW-3S and MW-15S. Approximately 5,500 gallons of ABC+ were injected at 11 locations.

In June 2015, EPA performed early post-injection groundwater sampling which showed a substantial reduction in the chromium and nickel concentrations in monitoring wells MW-3S and MW-6S to 12 micrograms per liter ($\mu\text{g/L}$) and 70 $\mu\text{g/L}$ for total chromium and 94 $\mu\text{g/L}$ and non-detect for nickel, respectively. In September 2016, a second round of injections was performed. In 2016, after completing the second round of injections, EPA transferred the Operation and Maintenance (O&M) responsibilities of the GWET system to NYSDEC. NYSDEC decided to continue the stabilization injection pilot study. As a result, additional injections were conducted in December 2021 at eight locations (**Figure 2**).

In order to confirm the long-term efficacy of the injection treatments, groundwater sampling was conducted by NYSDEC after the injections were completed. Several existing on-property monitoring wells were sampled at approximately three, six and ten months post-treatment to monitor performance. Results showed that the COCs rebounded to far lesser concentrations than observed before the pilot study began. Monitoring wells with reported elevated concentrations of hexavalent chromium during baseline sampling events reported low to non-detect concentrations during the 2022 performance monitoring (discussed below). As a result of the effectiveness of the injection treatments, NYSDEC authorized the decommissioning of the on-property GWET system and the on-property trailer. The major system components of the GWET system were removed between July and August 2022. In January 2025, the former extraction and injection wells were grouted and abandoned in place by Environmental Assessment & Remediations, NYSDEC's contractor, under NYSDEC monitoring well abandonment policy and guidelines.

IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	GPC Facility	Future excavation is limited to a depth of less than 15 feet below the existing ground surface, and which prevents disturbance of the remaining portions of the facility foundation	Deed Notice – June 2011
Groundwater	Yes	No	Entire Site	ICs 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.	New York Sanitary Code (Title 10 of the New York Code of Rules and Regulations Section 5-2.4)

ICs for groundwater were not considered in the ROD since Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available.

Systems Operations/Operation & Maintenance

EPA operated the on-property GWET system for 10 years until the Agency transferred the O&M to NYSDEC in 2016. During this current FYR period, the GWET system was permanently shut down and removed. The on-property injection and extraction wells were also properly abandoned in place after completion of the pilot study. Continued performance monitoring groundwater sampling events will be conducted, as directed by NYSDEC. EPA recommends that sampling events should be conducted on an annual basis to evaluate the ongoing effectiveness of the pilot study.

Remedy Resilience Considerations

Potential Site impacts from severe weather events have been assessed, and the performance of the remedy is currently not at risk due to these expected effects in the region and near the Site. Refer to **Appendix D** for further details.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** FYR as well as the recommendations from the **last** FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2020 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Short-term Protective	The remedy protects human health and the environment in the short-term because contaminated soils have been excavated and Nassau County well restrictions prevent exposure to contaminated groundwater. In order to be protective in the long term, further evaluation of trends following the next round of injections is needed to provide information about the long-term efficacy of the amendment.
Sitewide	Short-term Protective	The remedy protects human health and the environment in the short-term because contaminated soils have been excavated and Nassau County well restrictions prevent exposure to contaminated groundwater. In order to be protective in the long term, further evaluation of trends following the next round of injections is needed to provide information about the long-term efficacy of the amendment.

Table 3: Status of Recommendations from the 2020 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	Concentration of metals rebounded	Following the next round of injections, further evaluation of decreasing trends is needed in order to provide information about the long-term efficacy of the stabilizer amendment.	Ongoing	The last round of injections was completed in 2021. Performance of the injection treatments were evaluated through multiple groundwater sampling events and initially showed decreasing concentrations of contaminants. However, continued evaluation of VOC and heavy metals trends is necessary. During this FYR period, the groundwater data shows increasing concentrations of 1,1,1-TCA, TCE, total chromium, and nickel at one well (MW-18S). If these trends continue, additional treatments may be needed.	

In addition to the issue and recommendation defined above, the following consideration was included as follows:

- MW-6S should be included in the groundwater sampling network. NYSDEC will also coordinate with the lab to ensure future data analysis does not result in data quality issues.

MW-6S was not added to the groundwater sampling network because the monitoring well could not be located and has likely been abandoned. As a result of the effectiveness of the injection treatments, NYSDEC has no plans to install additional monitoring wells downgradient of the GPC Facility. NYSDEC and EPA will continue to monitor contaminant trends at the Site to evaluate the ongoing impacts of the pilot study.

During the previous FYR period, the Agencies determined that the total chromium data set had quality assurance issues which suggested that the data should be only used qualitatively. Since then, multiple rounds of samples have been collected and analyzed without issue to inform the overall progress of the remedy. However, in 2023, the lab exceeded the holding times for chromium analysis which required the samples to be recollected. NYSDEC will continue to work with the lab to prevent any future data quality issues.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2024, the EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, and Puerto Rico, including the Genzale Plating Superfund Site. The announcement can be found at the following web address: <https://www.epa.gov/superfund/R2-fiveyearreviews>.

In addition to this notification, the EPA Community Involvement Coordinator, or CIC for the Site, Shereen Kandil, posted a public notice on the EPA website <https://www.epa.gov/superfund/genzale-plating> and provided the notice to the Town of Franklin Square and Nassau County by email on April 23, 2025 with a request that the notice be posted in municipal offices and on the town and county webpages. This notice indicated that a FYR would be conducted at the Genzale Plating Superfund Site to ensure that the cleanup at the Site continues to be protective of people's health and the environment. Once the FYR is completed, the results will be made available at the following repositories: Franklin Square Public Library, 19 Lincoln Road, Franklin Square, NY and the U.S. EPA Region 2 office at 290 Broadway, 18th Floor, New York, NY.

In addition, the final report will be posted on the following website: <https://www.epa.gov/superfund/genzale-plating>. Efforts will be made to reach out to local public officials to inform them of the results.

Data Review

Groundwater Monitoring

Groundwater samples were collected from five monitoring wells: MW-3S, MW-15S, MW-17S, MW-18S, and MW-19S. Samples were submitted for VOC analysis via EPA Method 8260 and metals analysis (nickel, chromium, copper and cadmium) via EPA method 6010C and hexavalent chromium via EPA 7196A. Trend plots for Site-related COCs are provided in **Figures 3 to 9**.

Metals

The federal maximum contaminant level (MCL) and New York State Department of Health (NYSDOH) drinking water standard for total chromium in drinking water is 100 µg/L; the NYS ambient water quality standard (AWQS) for hexavalent chromium is 50 µg/L. There is no federal MCL for nickel, but the NYSDOH drinking water standard for nickel is 100 µg/L.

Concentrations of hexavalent chromium, total chromium, and nickel have persisted above state or federal drinking water standards in select on-property wells, particularly in the vicinity of the former source area. In response, EPA initiated a pilot study in 2015 to inject a reducing agent (ABC+) into groundwater in the vicinity of the former source area (MW-3S and MW-15S) to expedite restoration. An additional round of injections was performed in December 2021, which utilized EHC Metals Reagent (EHC-M) to stabilize residual metals concentrations in groundwater. Performance monitoring was conducted approximately three, six, and ten months after the injections. Groundwater sampling was also performed in 2023 and 2024.

During this FYR period, detectable concentrations of hexavalent chromium, total chromium, and/or nickel were recorded at wells MW-3S, MW-15S, MW-17S, MW-18S, and MW-19S. Within this subset of wells, concentrations of hexavalent chromium exceeded the NYS AWQS of 50 µg/L in one well (MW-18S) and concentrations of total chromium exceeded the state and federal standard of 100 µg/L in two wells (MW-15S and MW-18S). Concentrations of nickel exceeded the state standard of 100 µg/L in one well (MW-18S) and were detected at the regulatory standard in one well (MW-15S).

Concentrations of hexavalent chromium, total chromium, and nickel decreased considerably in the wells (MW-3S and MW-15S) in the former source area. In MW-3S, metals concentrations have decreased to below state and federal standards; MW-3S has historically reported high concentrations of these analytes (**Figures 3 to 5**). Although metals concentrations appeared to slightly rebound after injections were conducted in 2015, concentrations of hexavalent chromium, total chromium, and nickel have remained below state and/or federal standards since the March 2022 performance monitoring event, suggesting that the additional rounds of injections in December 2021 were successful in the vicinity of MW-3S.

In MW-15S, concentrations of hexavalent chromium, total chromium, and nickel also appeared to rebound slightly after the 2015 injections. After the additional rounds of injections were conducted in December 2021, metals concentrations initially decreased to below state and federal standards. Hexavalent chromium remained below the NYS AWQS of 50 µg/L during all performance monitoring events; however, in October 2022 and March 2023, concentrations of total chromium and nickel rebounded to 110 µg/L and 100 µg/L, respectively. Although total chromium and nickel were reported below state and federal during the most recent November 2024 sampling event, continued monitoring and evaluation of trends is recommended to ensure concentrations remain below state and federal standards. No exceedances of standards for the metals were detected in MW-17S and MW-19S during this review period.

During this FYR period, MW-18S consistently exceeded state and federal standards for heavy metals. Concentrations of total chromium increased from June 2022 (60 µg/L) to March 2023 (270 µg/L) before decreasing to 129 µg/L in November 2024, which is still above the 100 µg/L state standard. Similarly, concentrations of nickel increased from March 2022 (202 µg/L) to March 2023 (680 µg/L) but decreased to 98.9 µg/L in November 2024, marginally below the 100 µg/L state standard (**Figure 6**). Concentrations of hexavalent chromium continue to fluctuate, consistent with historic trends (**Figure 3**). Although total chromium and nickel concentrations decreased during the most recent sampling event, continued groundwater monitoring is necessary to ensure that the reported increasing trends do not persist.

VOCs

During this FYR period, detectable concentrations of VOCs were recorded in wells MW-3S, MW-15S, MW-18S, and MW-19S. Within this subset of wells, concentrations of TCE exceeded the state and federal standard of 5 µg/L in one well (MW-18S) in the vicinity of the former source area. Although previously recording exceedances, MW-17S did not have detectable concentrations of VOCs during this FYR period.

Historically, concentrations of VOCs were recorded above state and federal standards, most frequently at wells in the vicinity of the former source area. At MW-3S, concentrations of 1,1,1-TCA and TCE had frequently exceeded the state and federal standards but decreased below 5 µg/L during this FYR period (**Figure 7**). MW-15S historically had recorded exceedances of TCE but concentrations remained below state and federal standards for this period (**Figure 8**). At MW-18S, TCE concentrations remained below

5 µg/L before registering exceedances of 14 µg/L (October 2022) and 38 µg/L (March 2023), while 1,1,1-TCA followed the same trend with exceedances of 5.9 µg/L (October 2022) and 9.6 µg/L (March 2023) (**Figure 9**). The concentration of TCE identified in March 2023 was the highest recorded since 2006. Based on groundwater concentrations during this FYR period, VOC concentrations appear to be increasing in MW-18S; therefore, more sampling is needed to determine whether increasing trends will persist.

Emerging Contaminants

In 2020, NYSDEC adopted a 1,4-dioxane drinking water MCL of 1 µg/L and an ambient water quality guidance value (AWQGV) 0.35 µg/L in 2023. In 2020, New York State also established MCLs for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) of 10 nanograms per liter (ng/L). In 2023, New York State released AWQGVs for PFOS and PFOA at 2.7 ng/L and 6.7 ng/L, respectively. In April 2024, EPA finalized federal MCLs for PFOA and PFOS at 4 ng/L for each compound.

During the previous review period, MW-3S and MW-15S (located in the former source area) were sampled for previously uncharacterized contaminants, including 1,4-dioxane and per- and poly-fluoroalkyl substances, as part of a New York State-led sampling program. 1,4-Dioxane was detected in MW-3S at a concentration of 0.38 µg/L and in MW-15S at a concentration of 0.50 µg/L. In MW-3S, PFOA and PFOS were detected at concentrations of 16.90 ng/L and 9.18 ng/L, respectively. In MW-15S, PFOA and PFOS were detected at concentrations of 47.40 ng/L and 24.10 ng/L, respectively.

Revisiting the sampling results in the context of the state standards, federal MCLs and state guidance values, concentrations of 1,4-dioxane in both wells were reported below the 2020 MCL but marginally above the 2023 AWQGV. Concentrations of PFOA in MW-3S and MW-15S exceeded state and federal standards. Concentrations of PFOS in MW-3S and MW-15S exceeded state and federal standards with one exception. In MW-3S, PFOS was detected at 9.18 ng/L, just marginally below the state standard of 10 ng/L.

During this review period, groundwater analysis included 1,4-dioxane for every sampling event. No exceedances were detected. No groundwater samples were analyzed for PFOS or PFOA. EPA will continue to work with NYSDEC to determine whether further sampling at the Site is necessary.

Site Inspection

The Site inspection was conducted on February 6, 2025. In attendance were Emily Wong, Damian Duda and Tara Bhat of EPA, and Steven Scharf of NYSDEC. The purpose of the inspection was to assess the protectiveness of the remedy.

Participants performed a walkthrough inspection of the Site. The GPC Facility continues to be used as an active construction storage yard and is secured by a locked gate. Heavy machinery, vehicles and construction equipment were observed across the property. Some of the on-property monitoring wells and abandoned injection wells were located. The monitoring wells appeared to be in good condition.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

The ROD, as modified by the 2004 ESD, called for SVE, excavation of soils, and extraction and treatment of contaminated groundwater. The removal of the majority of contaminated building materials and soils to a depth of 15 feet has interrupted potential exposures from direct contact with the soils. Currently, the GPC Facility is fenced to prevent potential access. An IC is in place which states that future excavation at the Site must be limited to a depth of less than 15 feet below the existing ground surface and which prevents disturbance of the remaining portions of the GPC Facility foundation.

Since the last FYR, the GWET system and on-property trailer have been decommissioned and removed offsite. In order to expedite groundwater restoration, pilot study injections were conducted in the areas of the former source area (MW-15S and MW-3S), including the reinjection of low pH water to mobilize residual metals in soils and the application of a reducing agent (ABC+) to immobilize residual metals contamination in the former source area. The final round of injections for the pilot were completed in December 2021. Results from the pilot study indicate that metals concentrations have decreased considerably following the injections; however, elevated concentrations persist in MW-18S. Increasing trends of total chromium and nickel were reported during some of the performance monitoring events, but the trends decreased during the most recent sampling event. Additional sampling is recommended to ensure metals trends do not continue to increase.

During this FYR, VOCs were detected within Site wells, but only one well (MW-18S) contained concentrations that exceeded the state and federal standard of 5 µg/L. These exceedances were detected during the most recent sampling rounds in 2022 and 2023. Additional data is necessary to conduct a trend analysis and determine whether contaminant levels are rebounding at this location. VOC concentrations in all other Site wells were stable and/or trending downwards compared to historic data from previous FYRs.

Groundwater monitoring will continue at the Site to ensure long-term stability of the injection treatments and determine progress towards restoration of the aquifer to beneficial use. Although the selected remedy did not select ICs preventing groundwater use, all residents obtain potable water from the Franklin Square Water District. Additionally, Article IV of the Nassau County Public Health Ordinance prohibits the use of private wells where public water systems are available.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

The exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy remain valid. The exposure assumptions and toxicity data used to estimate potential cancer risks and non-cancer hazards to human health followed general risk assessment practices at the time the risk assessment was conducted. Although the risk assessment process has been updated, and specific parameters and toxicity values may have changed, the risk assessment process that was used is consistent with current practice and the need to implement the remedial action remains valid. The RAOs identified in the decision documents remain valid for the Site.

Soil. The exposure assessment considered industrial use under the current conditions and residential use under future conditions. Removal of the contaminated soils down to 15 feet has eliminated the potential for direct contact with the contaminants in soils provided that future construction does not occur at the

Site, that may result in disturbance of potentially contaminated soils 15 feet below the existing ground surface. Excavation of soil is limited to a depth of less than 15 feet below ground surface as described in the June 2011 deed notice.

Subsequent to the release of the previous FYR, Integrated Risk Information System (IRIS) completed the reassessment of the toxicity of inorganic arsenic, which resulted in the publication of updated cancer and non-cancer toxicity values. Given that the soil removal remedial action interrupted the direct contact exposure pathway and that the June 2011 deed notice limits future exposure, the change in toxicity values does not change the protectiveness of the remedy since the exposure pathway has been interrupted.

Groundwater. The evaluation of groundwater focused on two primary exposure pathways: direct ingestion of groundwater as a potable (drinking) water source, and potential VI. All residents of the area receive their drinking water from the municipal supply wells, located approximately one mile from the GPC Facility, which have not been impacted by the Site activities. The remedial goals for the COCs remain valid. The following analytes had at least one detection above the federal MCL and/or NYSDOH drinking water standards: chromium (total), TCE, and 1,1,1-trichloroethane.

Since the previous FYR, IRIS completed the reassessment of the toxicity of hexavalent chromium, which resulted in the publication of new cancer and non-cancer toxicity values; however, the remediation goal remains valid.

Vapor Intrusion. In 2003, subslab gas sampling was conducted along with indoor air sampling. Based on the results of this analysis, three homes were temporarily provided with individual indoor air carbon filtration systems to address VI concerns. Once the supplementary SVE remediation was introduced, VI sampling at residential homes showed no indoor air detections site-related contaminants. The supplementary SVE remediation successfully treated the soils and the individual carbon filtration systems were removed. The residential indoor air was monitored until the on-property soils were excavated, and VI samples continued to show no detections.

The USEPA Vapor Intrusion Screening Level (VISL) calculator was used to screen groundwater concentrations and evaluate whether vapor intrusion could be a concern for nearby residential and commercial structures. The highest TCE concentration exceeded the commercial and residential groundwater VISLs based on a target cancer risk of 10^{-6} and hazard index of 1. However, TCE exceedances were limited to just one on-property well (MW-18S) with the highest concentration (38 µg/L) observed during the most recent sampling event. Therefore, the magnitude of VOC impacts is considered low and highly localized. Additional data from this well is needed to further assess trends and inform any potential future sampling needs related to vapor intrusion.

Ecological Risk Assessment. Based on the results of the RI, impacts to ecological receptors from contamination associated with the Site were determined to be unlikely, since the Site includes little to no viable habitat. In addition, excavation of Site soils and backfilling areas with clean fill has eliminated exposure to ecological receptors in the biological zone. The only potential route of exposure to wildlife is through groundwater contaminant transport into surface waters. The nearest surface water bodies to the Site are 3.2 miles southwest and 3 miles southeast, respectively. Groundwater results obtained during this FYR period further indicate that Site groundwater contamination is unlikely to affect any downgradient surface water bodies.

QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that could call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU2

Issues/Recommendations				
Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 1	Issue Category: Remedy Performance			
	Issue: Rebounding of Concentrations of Site-related COCs at the GPC Facility			
	Recommendation: Site wells should be sampled annually and analyzed for VOCs and metals during each event. Groundwater monitoring and evaluation of contaminant trends is necessary since post-injection monitoring shows increasing concentrations of 1,1,1-TCA, TCE, total chromium, and nickel in select wells.			
Affect Current Protectiveness	Affect Future Protectiveness	Party Responsible	Oversight Party	Milestone Date
No	Yes	State	EPA	3/1/2028

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)
<i>Operable Unit:</i> OU1 <i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy protects human health and the environment in the short-term because contaminated soils have been excavated and Nassau County well restrictions prevent exposure to contaminated groundwater. In order to be protective in the long term, groundwater samples should be collected annually to further evaluate recently observed increasing VOC and metal trends at select wells.

Protectiveness Statement(s)
<i>Operable Unit:</i> OU2 <i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU2 is protective of human health and the environment.

Sitewide Protectiveness Statement

Protectiveness Determination: Short-term Protective

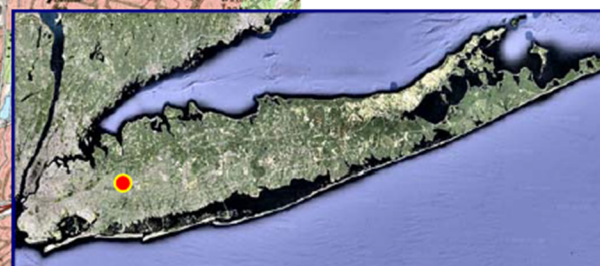
Protectiveness Statement:

The remedy protects human health and the environment in the short-term because contaminated soils have been excavated and Nassau County well restrictions prevent exposure to contaminated groundwater. In order to be protective in the long term, groundwater samples should be collected annually to further evaluate recently observed increasing VOC and metal trends at select wells.

VIII. NEXT REVIEW

The next FYR report for the Genzale Plating Superfund Site is required five years from the completion date of this review.

APPENDIX A – FIGURES



NOT TO SCALE



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www.Enviro-Asmnt.com

Figure 1
SITE LOCATION MAP

Former Genzale Plating Co.
288 New Hyde Park Road
Franklin Square, NY
NYSDEC Site ID No. 130018

Figure 3

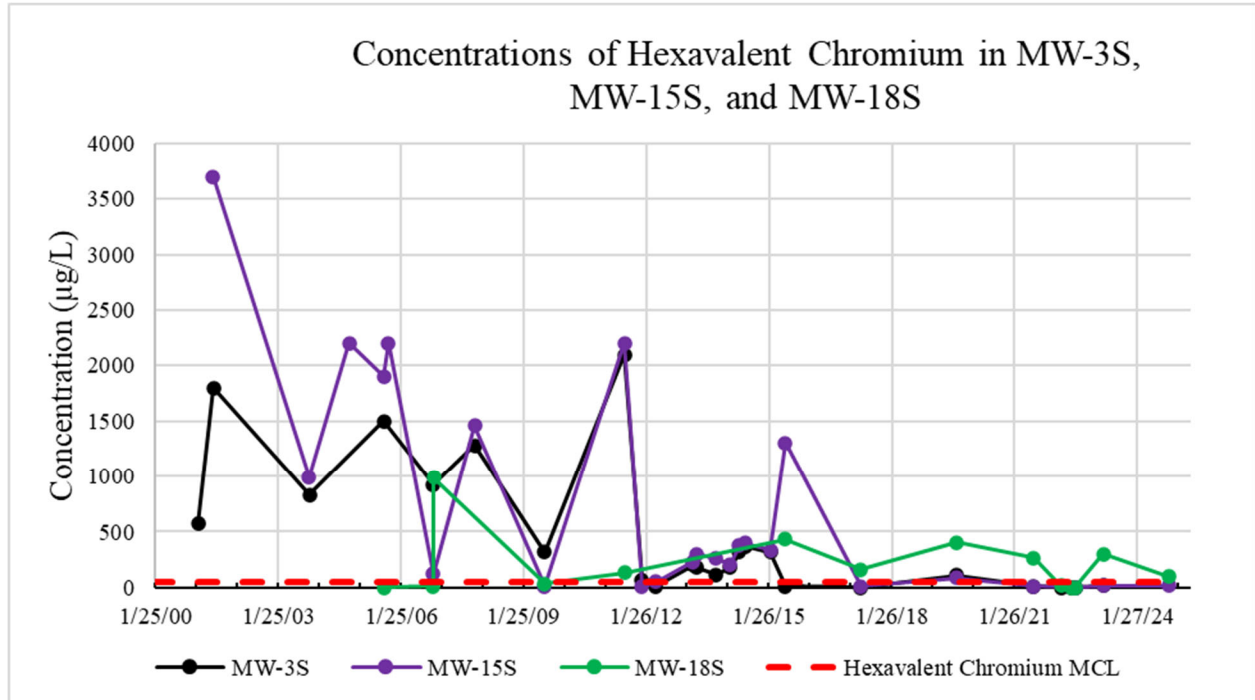


Figure 4

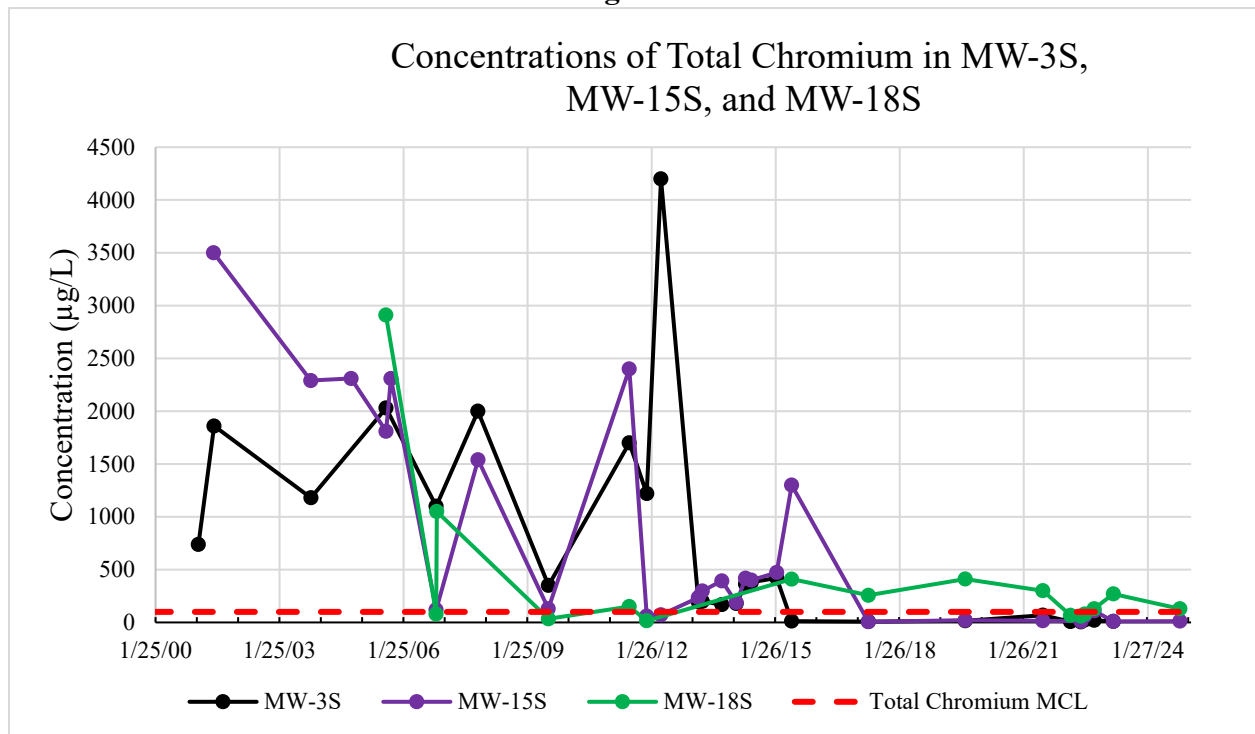


Figure 5

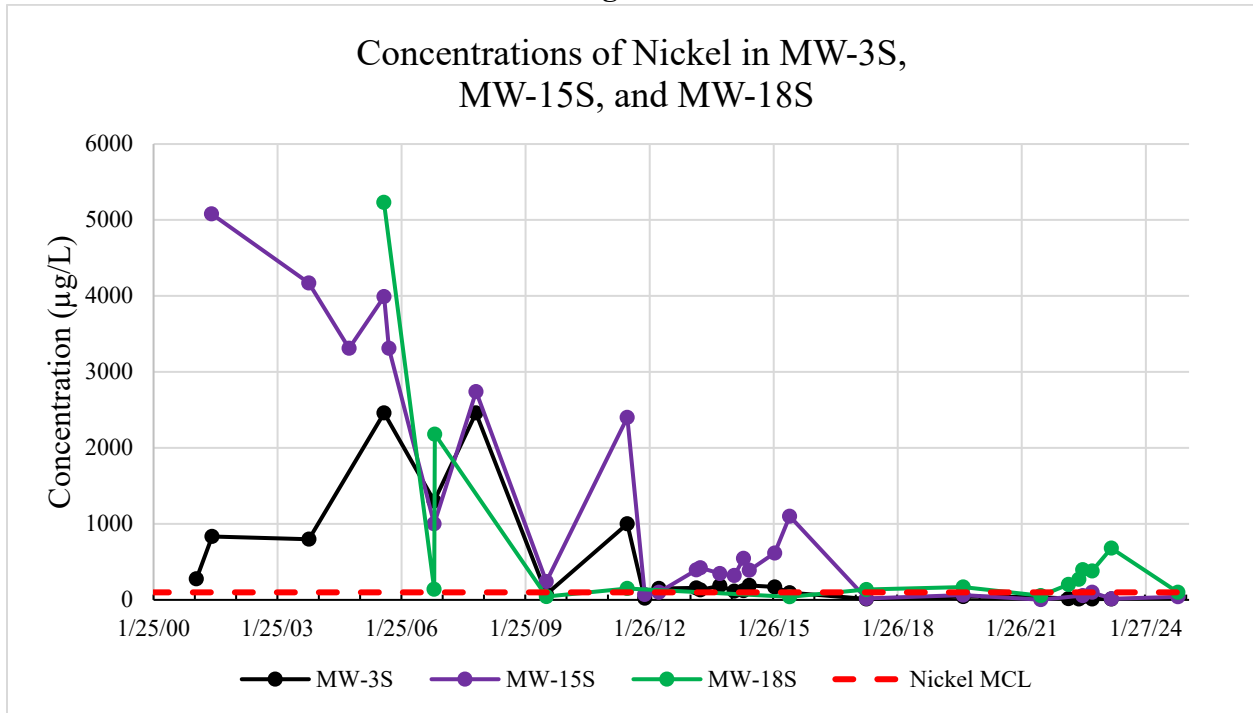


Figure 6

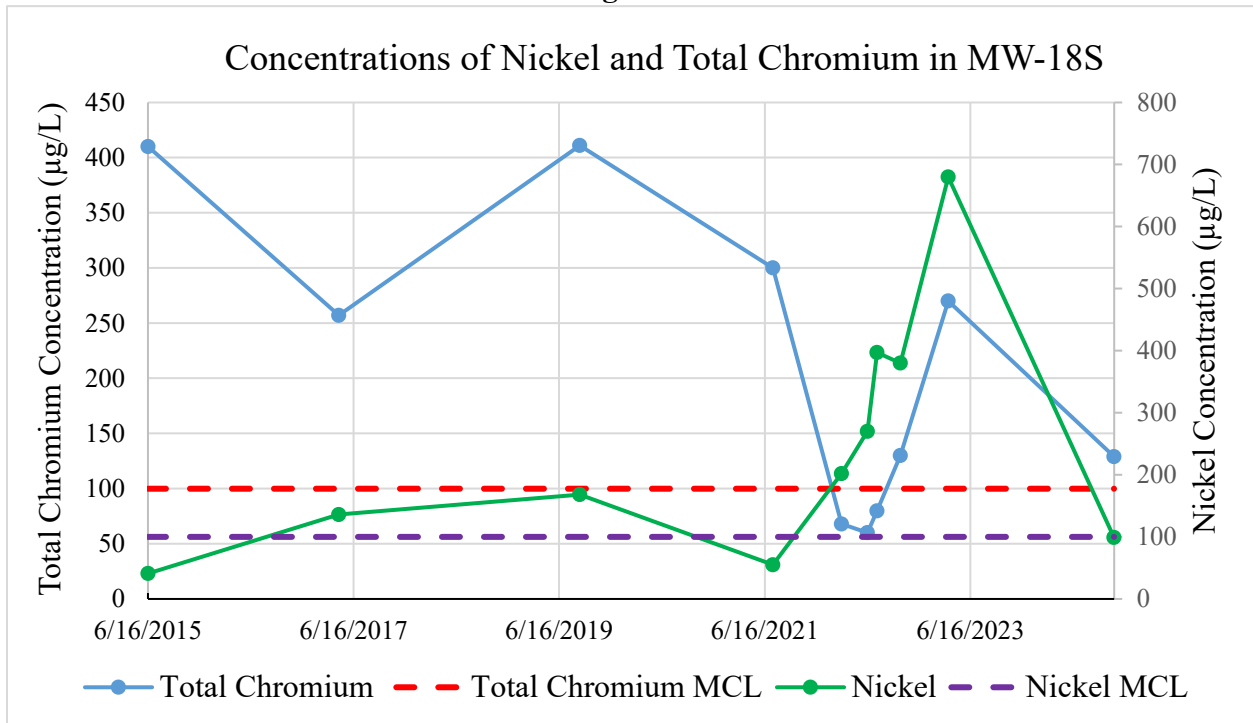


Figure 7

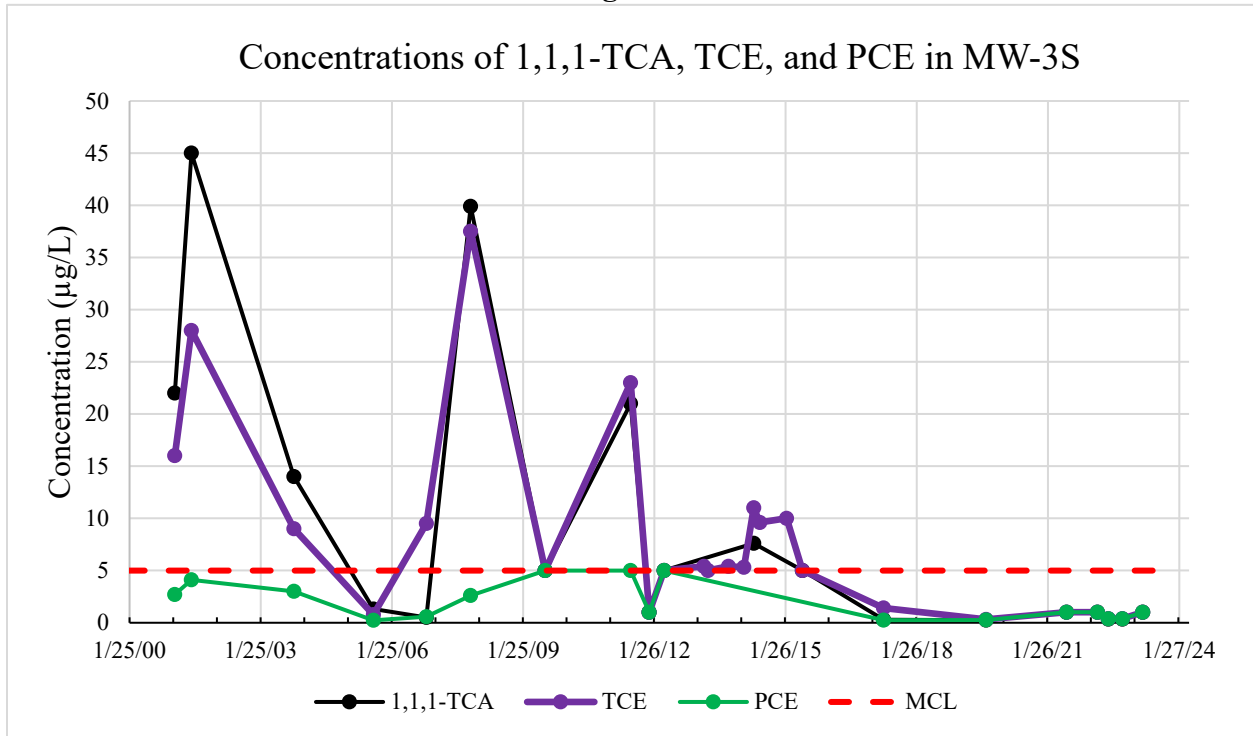


Figure 8

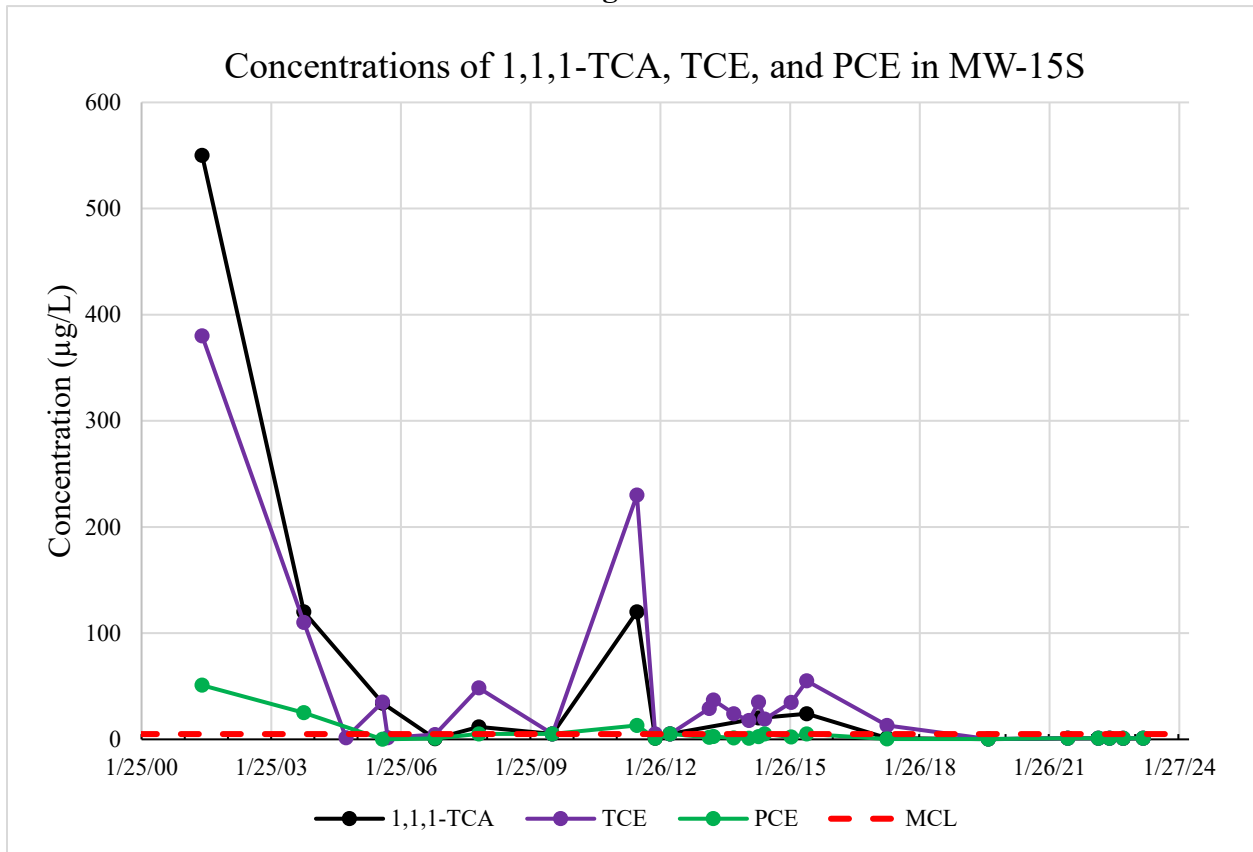
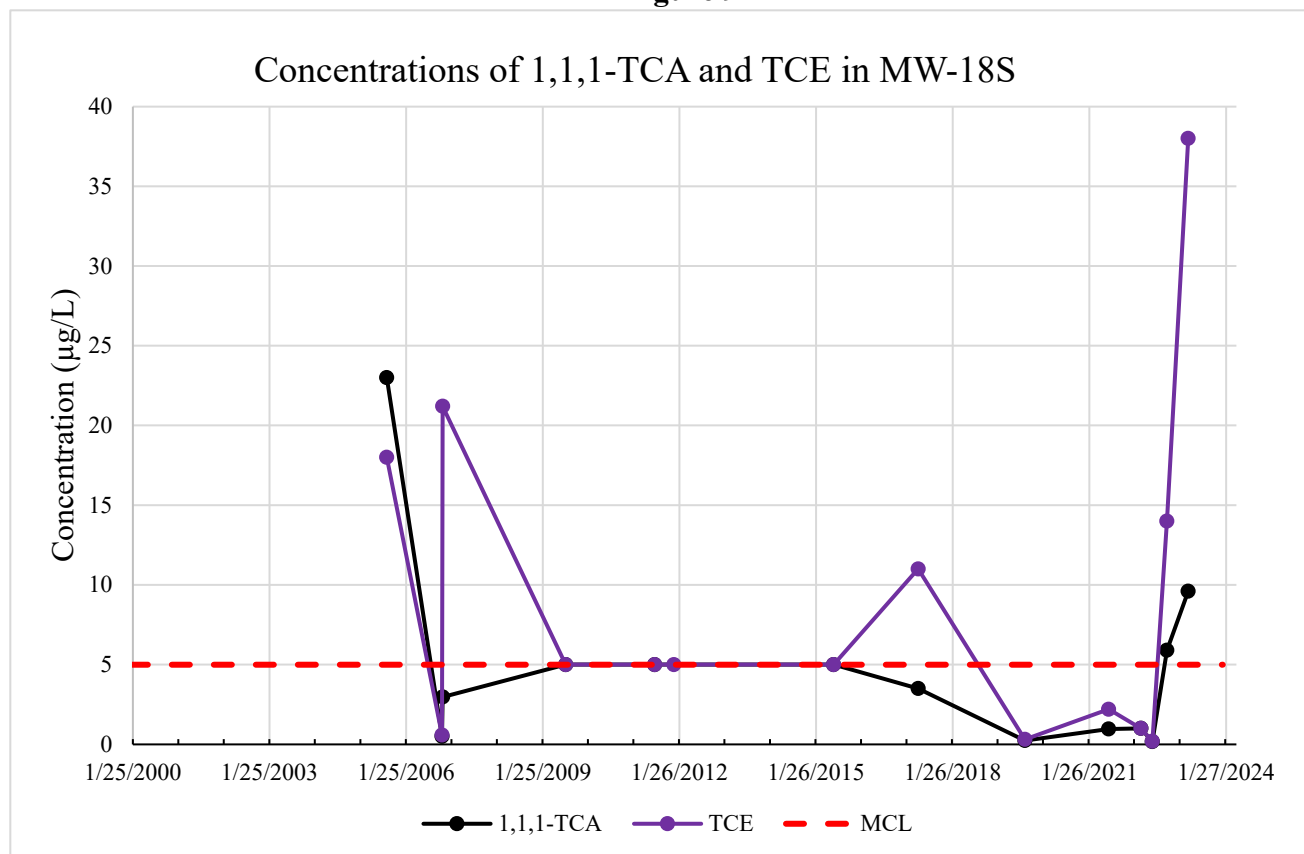


Figure 9



APPENDIX B – REFERENCE LIST

Author	Date	Title/Description
EPA	03/29/1991	OU1 Record of Decision
EPA	09/29/1995	OU2 Record of Decision
EPA	07/23/2004	Explanation of Significant Differences
EPA	2005-2009	Results of Annual Groundwater Sampling DESA; 2005-2014
EPA	09/2011	Technical Memo – Resin Performance Analysis
EPA	10/2012	Technical Memo - Remedial Site Evaluation, Optimization Update
EPA	12/2012	Technical Memo – In-Situ Soil Flushing
EPA	12/2012	Technical Memo - Optimization Pilot – Modified Extraction
EPA	6/2020	Third Five-Year Review Report
NYSDEC	8/2021	August 2019 Groundwater Sampling Event Letter
NYSDEC	3/2023	Project Summary Report
NYSDEC	7/2023	March 2023 Groundwater Sampling Event Letter
NYSDEC	9/2023	August 2023 VOCs Sample Results
NYSDEC	12/2024	November 2024 Metals Sample Results

APPENDIX C – SITE CHRONOLOGY

Chronology of Site Events	
Event	Date
Listing on National Priorities List	July 1987
ROD for OU1 Signed	September 1991
Initial Site Mobilization	April 1995
Completion of Initial SVE and Soils Excavation	September 1997
OU2 Investigation Starts	March 1993
OU2 Record of Decision Signed	September 1995
Building Demolition Begins	May 2003
Installation of Second SVE System	June 2003
Issuance of Explanation of Significant Differences	July 2004
Complete Building Demolition/Soil Excavation	June 2005
Complete Groundwater Treatment Plant Construction	September 2005
Final Inspection with EPA and NYSDEC of Completed RA	September 28, 2005
Final Inspection of Operational Groundwater Extraction & Treatment System	September 26, 2006
Groundwater Extraction & Treatment System Begins	September 2006
Evaluation Reporting – Resin Performance Analysis	September 2011
Evaluation Reporting - Remedial Site Evaluation, Optimization	October 2012
Evaluation Reporting – In-Situ Soil Flushing	December 2012
Evaluation Reporting - Optimization Pilot – Modified Extraction	December 2012
Transfer of Genzale Plating Superfund Site to NYSDEC	September 2016
Explanation of Significant Differences	March 2017
Decommissioning of onsite trailer and GWET system	July – August 2022
Abandonment of former injection and extraction wells	January 2025

APPENDIX D – REMEDY RESILIENCE ASSESSMENT

Three tools were utilized to assess the Genzale Plating Superfund Site. Screenshots from each of the tools assessed are included below.

The first tool used to assess the site was the CMRA. Five hazards were examined for the county the Site falls within. According to this tool, the National Risk Index Rating for extreme heat is “Relatively Moderate.” There is a projected increase of days per year with maximum temperatures >100°F, as shown in Figure C-1. The next two hazards, drought and wildfire, have National Risk Index Ratings of “very low”. Figures C-2 and C-3 show an increase in average annual total precipitation and an increase in days per year with precipitation. The fourth hazard, flooding, has a National Risk Index Rating of “relatively high”. Figure C-4 shows an overall increase in annual days with precipitation over the next 75 years, even when considering both lower and higher emission projections. The fifth hazard, coastal inundation, has a National Risk Index Rating of “relatively moderate”. Figure C-5 shows an increase of coastal flooding by up to 3% by the end of the century.

The second tool utilized is called the USGS U.S. Landslide Inventory & Susceptibility Map. As shown in Figure C-6 and C-7, there have been no landslides recorded in the vicinity of the site, and the site is likely not susceptible to landslide activity in the future.

The third tool used to assess the site was the NOAA Sea Level Rise Viewer Tool. Figure D-8 shows that the site area is currently unimpacted by coastal flooding. In a potential scenario where the mean sea level rises 10 feet as shown in Figure D-9, the site area remains unimpacted because it is located away from both the northern and southern shores of Long Island.

Potential site impacts from severe weather events have been assessed, and the performance of the remedy will not be impacted due to the expected effects in the region and near the Site. Based on the tools, the greatest potential concerns to the county the Site is located in appear to be impacts from flooding, extreme heat, and coastal inundation. However, there is no longer an active treatment system onsite. O&M activities at the site are limited to groundwater sampling and annual site inspections. Therefore, the site should not be affected by impacts of flooding or extreme heat at the Site. Additionally, the Site is not considered to be coastal since it is at an inland location within the county. Therefore, it should not be affected by any potential impacts from coastal inundation.

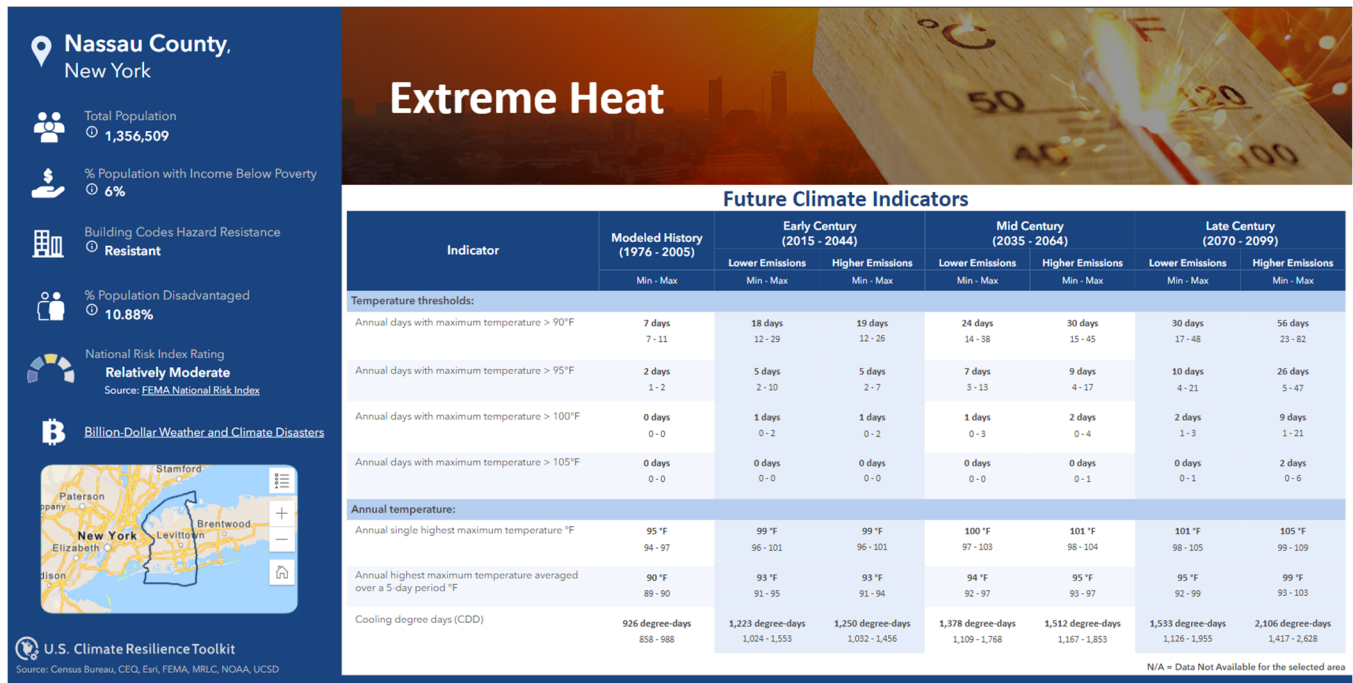


Figure D-1

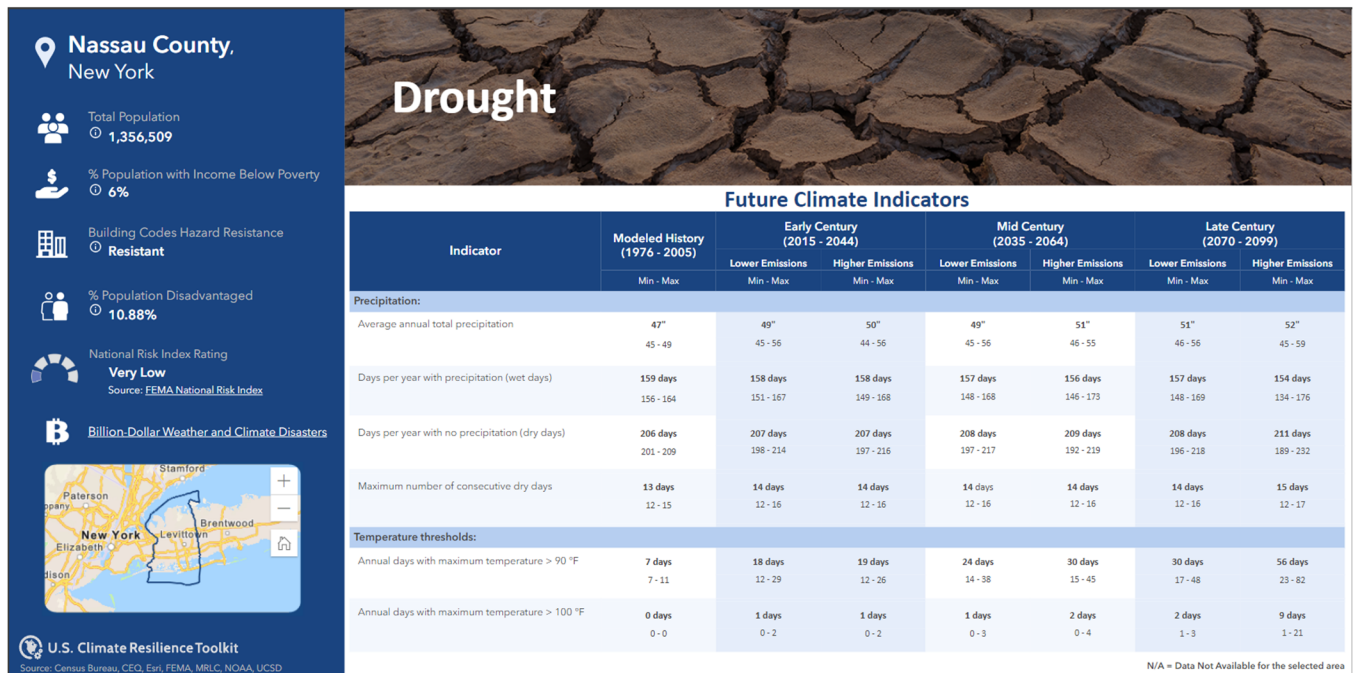
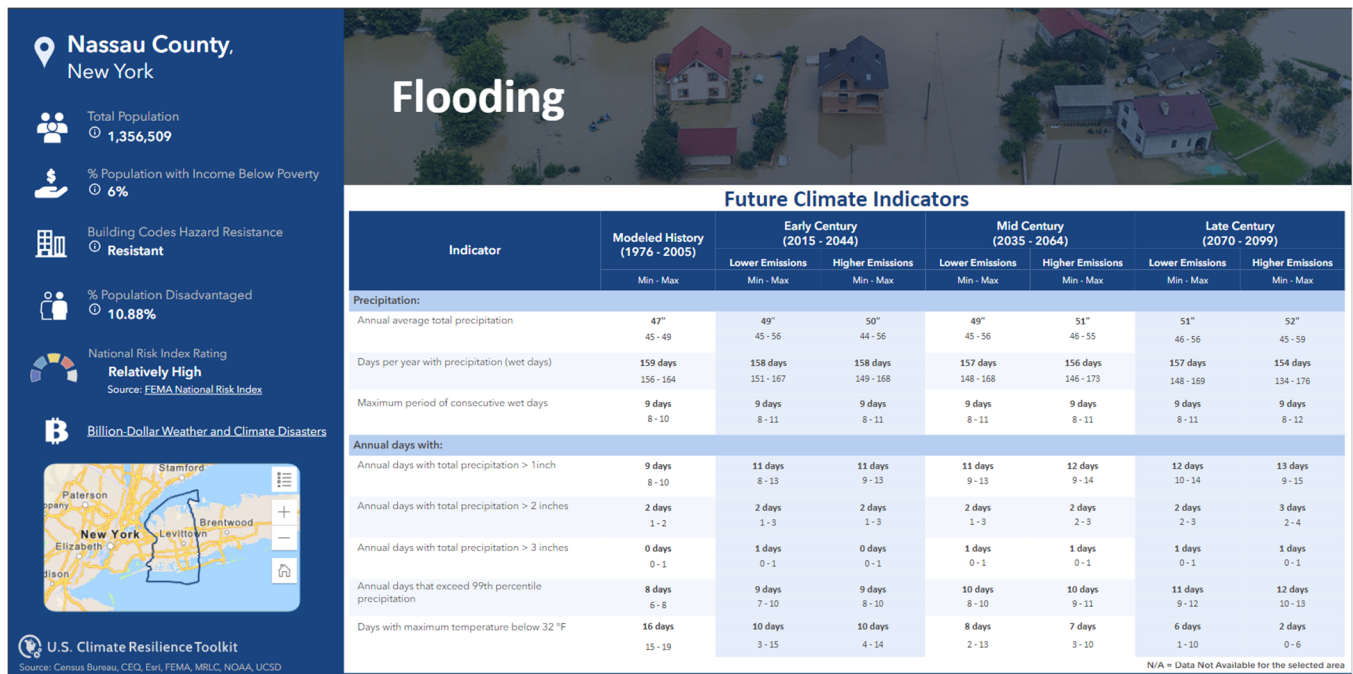


Figure D-2



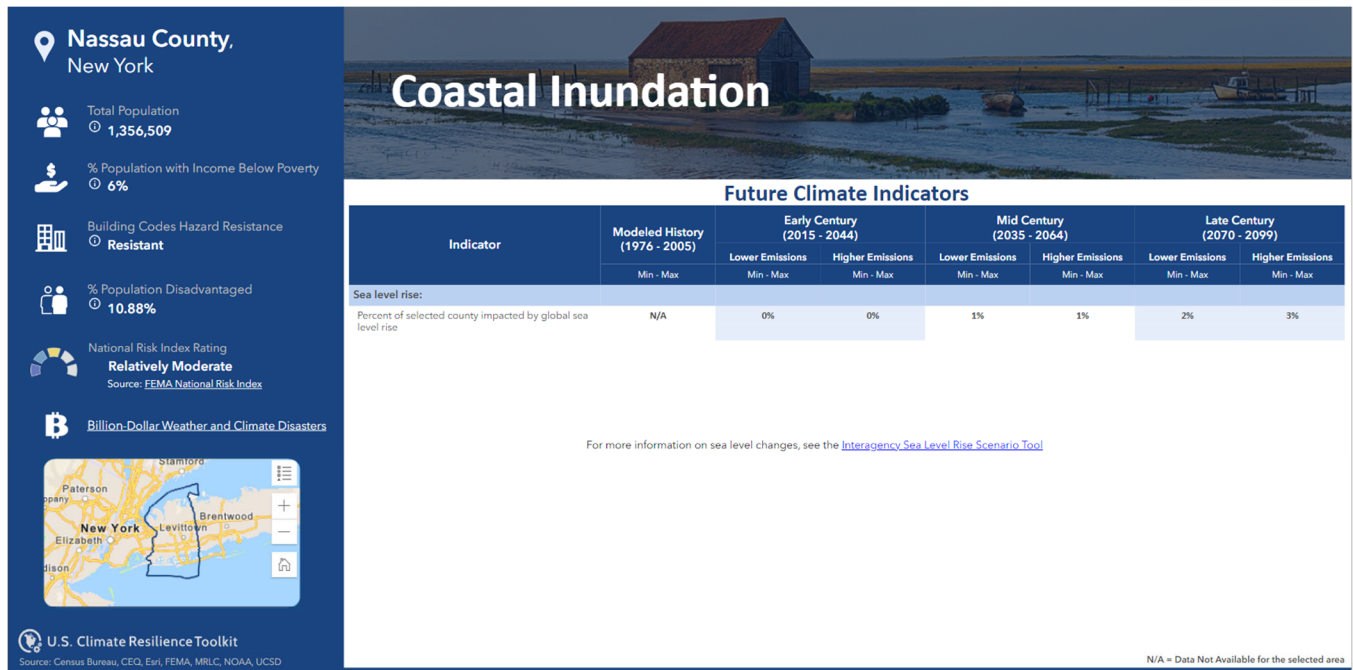


Figure D-5

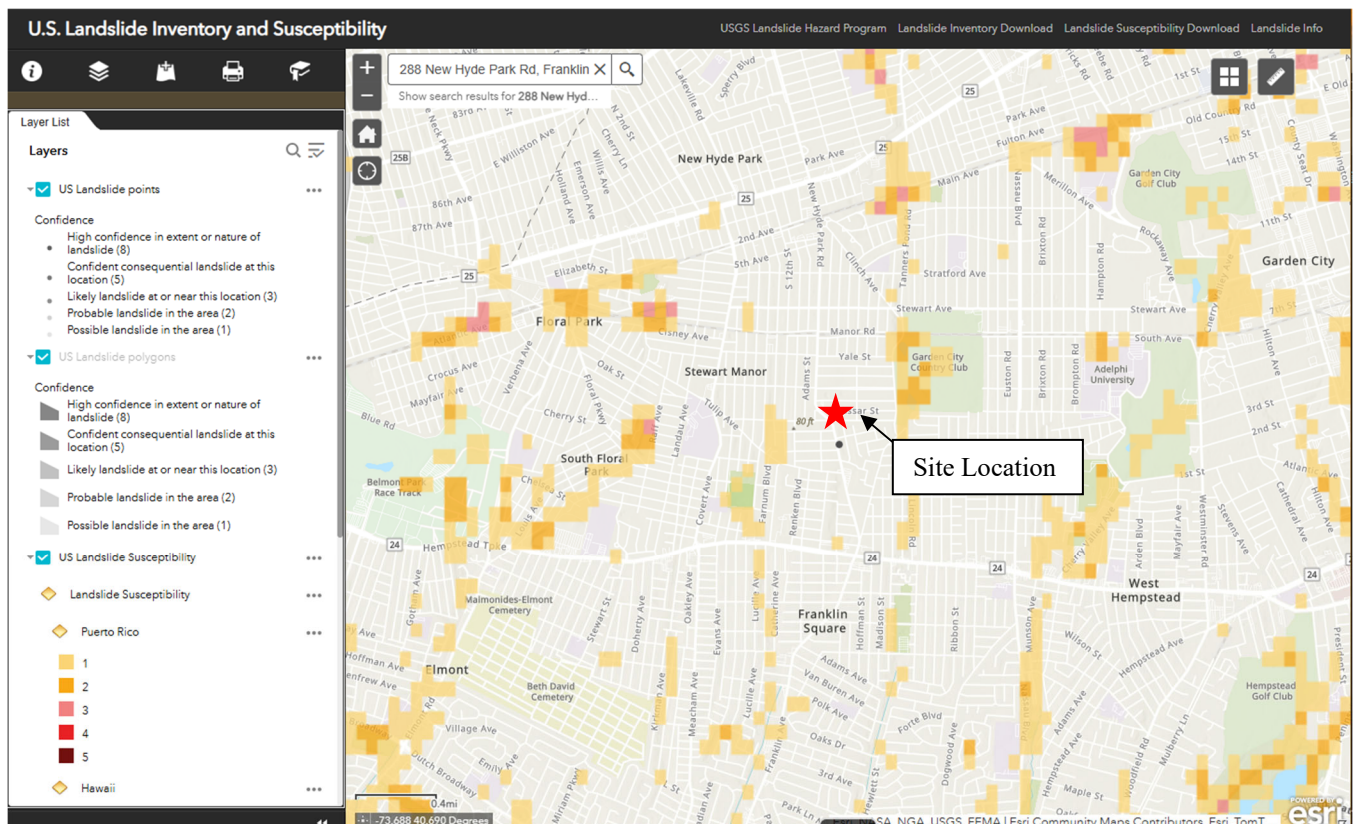


Figure D-6

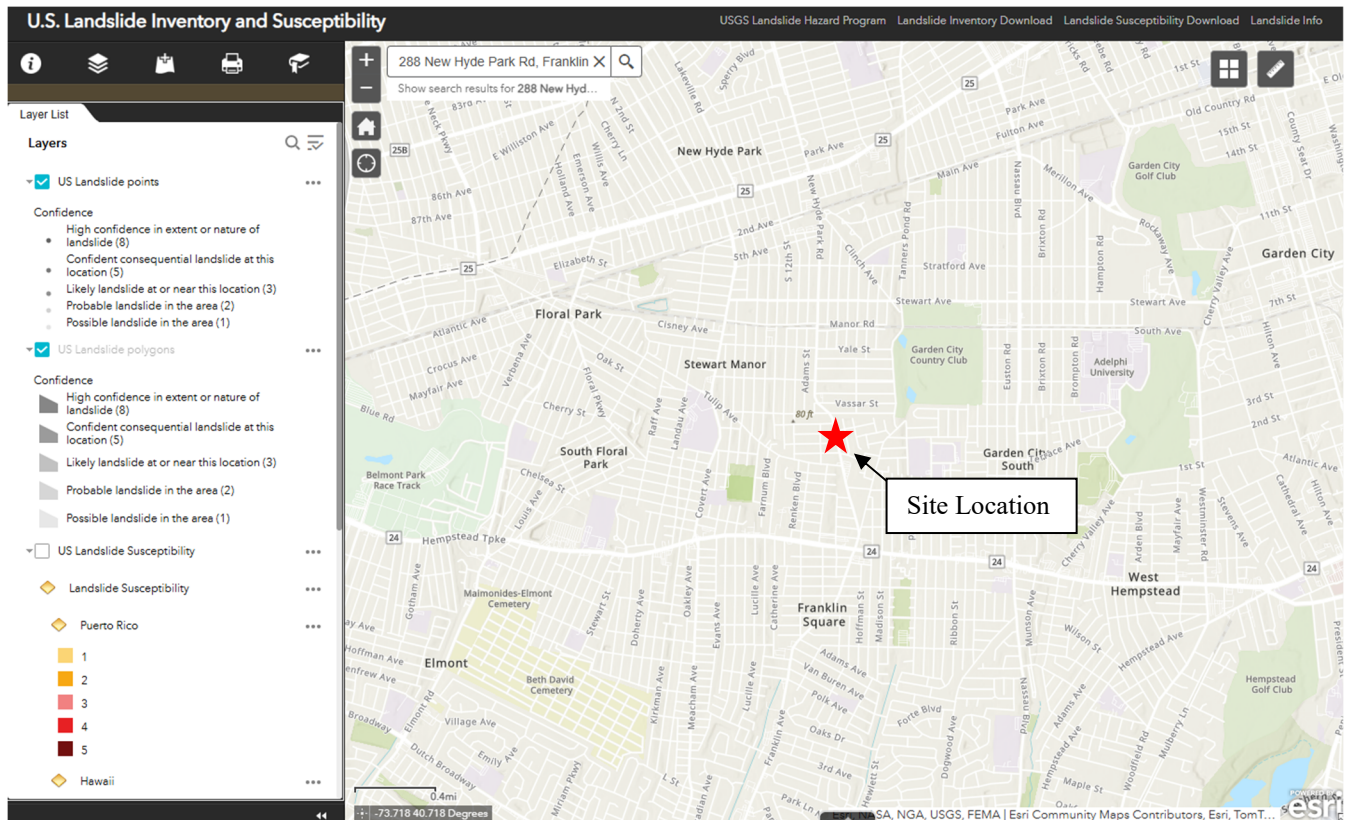


Figure D-7

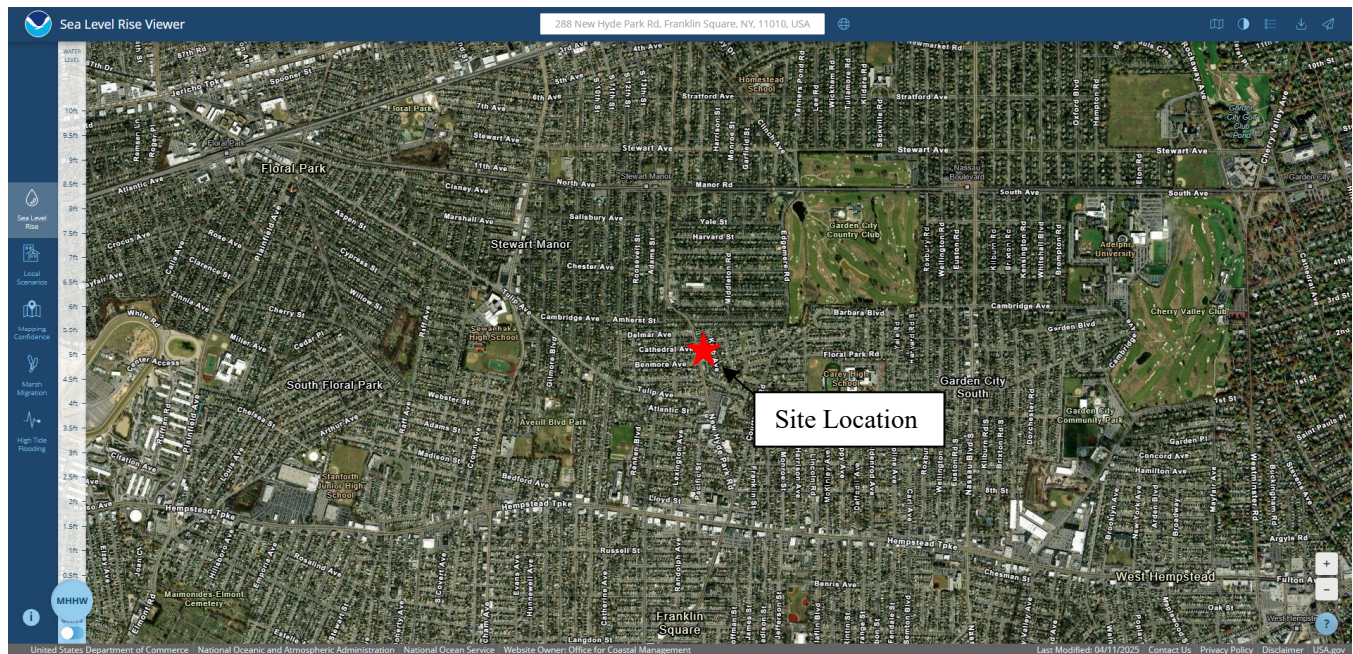


Figure D-8

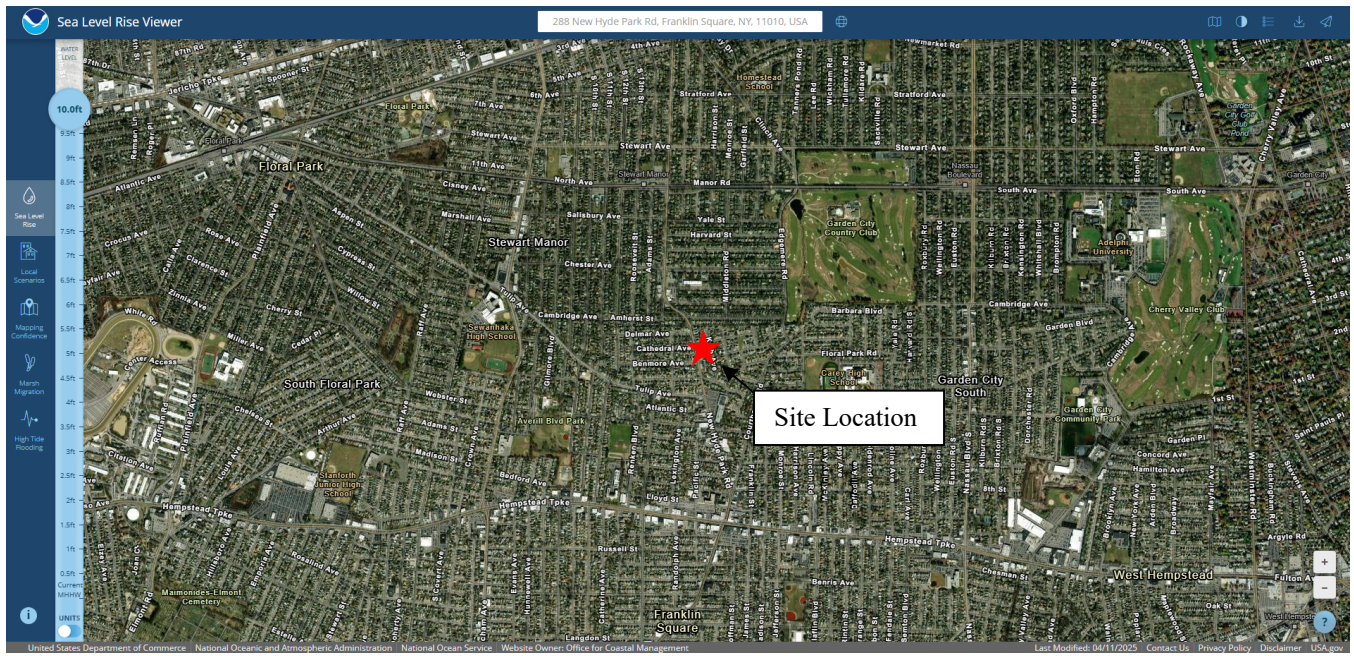


Figure D-9