

**FIFTH FIVE-YEAR REVIEW REPORT FOR  
LI TUNGSTEN SUPERFUND SITE  
NASSAU COUNTY, NEW YORK**



**Prepared by**

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

**Pat Evangelista** Digitally signed by Pat Evangelista  
Date: 2025.09.30 15:43:03 -04'00'

---

**Pat Evangelista, Director  
Superfund and Emergency Management Division**

**September 30, 2025**

---

**Date**

## Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS .....	iii
I. INTRODUCTION .....	1
FIFTH FIVE-YEAR REVIEW SUMMARY FORM.....	3
II. RESPONSE ACTION SUMMARY .....	3
Basis for Taking Action .....	3
Response Actions.....	5
Status of Implementation .....	9
IC Summary Table.....	12
Systems Operations/Operation and Maintenance .....	12
III. PROGRESS SINCE THE LAST REVIEW .....	13
IV. FIVE-YEAR REVIEW PROCESS .....	14
Community Notification, Involvement & Site Interviews.....	14
Data Review.....	14
Site Inspection.....	16
V. TECHNICAL ASSESSMENT .....	17
QUESTION A: Is the remedy functioning as intended by the decision documents? .....	17
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? .....	18
QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?.....	20
VI. ISSUES/RECOMMENDATIONS .....	21
VIII. NEXT REVIEW .....	22
APPENDIX A – REFERENCE LIST.....	23
APPENDIX B – CHRONOLOGY OF SITE EVENTS .....	24
APPENDIX C – TABLES .....	25
APPENDIX D – FIGURES .....	27
APPENDIX E – REMEDY RESILIENCE ASSESSMENT .....	26

## LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COCs	Chemicals of Concern
cy	cubic yards
ECs	Engineering Controls
ECL	Environmental Conservation Law
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
GCDC	Glen Cove Development Corporation
ICs	Institutional Controls
IGW	Impact-to-Groundwater
MCLs	Maximum Contaminant Levels
µg/dL	micrograms/deciliter
µg/L	microgram per liter
mg/kg	milligrams/kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operation and Maintenance
OU	Operable Unit
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethylene
PRP	Potentially Responsible Party
RA	Remedial Actions
RAO	Remedial Action Objectives
RA	Remedial Action
RAB	Removal Action Branch
RAR	Remedial Action Report
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
ROPC	Radionuclides of Potential Concern
RPM	Remedial Project Manager
RXRGIP	RXR Glen Isle Partners, LLC
SMP	Site Management Plan
SVI	Soil Vapor Intrusion
TCE	Trichloroethylene
UAO	Unilateral Administrative Order
USACE	United States Army Corps of Engineers
UG	Upper Glacial
VOCs	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 and is functioning as intended by the decision documents. The methods, findings, and conclusions of reviews are documented in the FYR. 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 fifth FYR for the Li Tungsten Superfund Site (Site), located in the City of Glen Cove (Glen Cove), Nassau County, New York. The triggering action for this statutory review is the signature date of the previous FYR, which was July 28, 2020. A FYR is required at this Site because the remedial actions selected for the Site will leave hazardous substances, pollutants, or contaminants on Site above levels that allow for unlimited use and unrestricted exposure.

The Site is being addressed in four operable units (OUs), OU-1, OU-2, OU-3 and OU-4. OU-3 was an EPA removal action and is not covered by this FYR. This FYR covers OU-1, OU-2 and OU-4. OU-1 involves the excavation and off-site disposal of contaminated soils for the former Li Tungsten facility (Facility) and the contaminated groundwater. OU-2 involves the excavation and off-site disposal of contaminated soils for portions of the nearby Captain's Cove property and the associated contaminated groundwater. OU-4 involves the dredging of Glen Cove Creek of radioactive slag contamination.

**Figure 1** shows the areas addressed by OU-1, OU-2, and OU-4. EPA's involvement at the Captain's Cove property or OU-2 was solely related to radionuclide and metals contamination brought there from the Facility. EPA's actions at OU-2 represented a small portion of remedial work performed at the property. New York State (NYS), under its State Superfund Program, addressed the majority of the OU-2 work, *i.e.*, significant non-radionuclide contamination. NYS is also responsible for all operation and maintenance (O&M) activities at the property (**Figure 2**). Further OU-2 details can be found later in this document.

The Site FYR was led by EPA: Lorenzo Thantu, remedial project manager (RPM), Damian Duda (Supervisor), Michael Scorca and Joseph Hayes (hydrogeologists), Marian Olsen (human health risk assessor), Abigail DeBofsky (ecological risk assessor), and Donette Samuel (community involvement coordinator). Glen Cove and the potentially responsible parties (PRPs) were notified of the initiation of the FYR which began on December 2, 2024.

### **Site Background**

The 26-acre Site property is located adjacent to Glen Cove Creek in Glen Cove, Nassau County, New York (**Figure 3**). The Facility is located at 63 Herbhill Road and has had a complex history of name and ownership changes. The Captain's Cove property is located one-half mile farther west on Garvies Point Road. These two properties lie along the northern edge of Glen Cove Creek. Glen Cove Creek is a one-mile federal navigation channel, maintained by the United States Army Corps of Engineers (USACE).



From 1942 until 1985, historic operations at the Facility included the processing of tungsten ore and scrap tungsten by concentrating the materials into metal tungsten powder and tungsten carbide powder; other types of specialty metal products were also produced. Lack of and/or limited waste management practices resulted in the deposition of process waste throughout the Site property. In 1984, the Glen Cove Development Corporation (GCDC) acquired the property and leased it to the Li Tungsten Corporation (the last operator at the Site) which declared bankruptcy in 1985 and left the property unmanaged.

There are two groundwater aquifers in the area - the Upper Glacial Aquifer (UGA) and the Lloyd Aquifer. The Site includes the Facility, the associated groundwater, adjacent areas where radiologically- and/or metals-contaminated ore residuals were disposed, and Glen Cove Creek. The Facility (OU-1) consists of four parcels:

- Parcel A: A seven-acre paved area abutting the mile-long tidal Glen Cove Creek, served as the main operations center when the Facility was active.
- Parcel B: A six-acre tract north of Parcel A, is undeveloped land, historically used for parking, containing a small pond, an intermittent stream and a small wetland.
- Parcel C (Upper and Lower): Approximately 10 acres (north of Parcel A and west of Parcel B), is where the former Dickson Warehouse and the Benbow Building were located.
- Parcel C': An undeveloped four-acre tract adjacent to Parcel C, was not utilized as part of the Facility and was not contaminated by Facility operations.

The 23-acre Captain's Cove Condominiums State Superfund site property is generally bounded by Hempstead Harbor to the west, Garvies Point Preserve to the north, the former Glen Cove Anglers Club to the east, and Glen Cove Creek to the south.

Since the mid-1800s, the area in the vicinity of the Site has been used for industrial purposes. Currently, however, the Site property and adjacent areas along Glen Cove Creek are being developed into new residential and commercial uses. The immediate area now includes restricted residences (where institutional controls or ICs are required for portions of the Site property and the Captain's Cove property), light industry, commercial businesses, and state- and/or federal-designated hazardous waste sites and Brownfields properties (**Figure 4**).

## **FIFTH FIVE-YEAR REVIEW SUMMARY FORM**

<b>SITE IDENTIFICATION</b>		
<b>Site Name:</b> Li Tungsten Superfund Site		
<b>EPA ID:</b> NYD986882660		
<b>Region:</b> 2	<b>State:</b> NY	<b>City/County:</b> Glen Cove/Nassau County
<b>SITE STATUS</b>		
<b>NPL Status:</b> Final		
<b>Multiple OUs?</b> Yes	<b>Has the site achieved construction completion?</b> Yes	
<b>REVIEW STATUS</b>		
<b>Lead agency:</b> EPA		
<b>Author name (Federal or State Project Manager):</b> Lorenzo Thantu		
<b>Author affiliation:</b> EPA		
<b>Review period:</b> 12/2/2024 - 2/28/2025		
<b>Date of site inspection:</b> 12/18/2024		
<b>Type of review:</b> Statutory		
<b>Review number:</b> 5		
<b>Triggering action date:</b> 7/28/2020		
<b>Due date (five years after triggering action date):</b> 7/28/2025		

## **II. RESPONSE ACTION SUMMARY**

### **Basis for Taking Action**

#### Soils

During the mid-1990s, EPA performed a remedial investigation (RI) of the Site and Captain's Cove properties which revealed contamination from Facility practices which posed a risk to human health and the environment. The primary Site contaminants of concern (COCs) are heavy metals and various radionuclides of potential concern (ROPC) that are associated with spent ore residuals and slag.

Specifically, the RI determined that surface and subsurface soils contained elevated levels of many metals, *e.g.*, antimony, arsenic, barium, copper, cobalt, chromium, lead, manganese, mercury, nickel, radium, thorium, uranium, vanadium, and zinc, as well as radionuclides of potential concern (ROPC), including uranium-238, radium-226, radium-228, thorium-230 and thorium-232. Further investigation of the Captain's Cove property confirmed that ROPCs were present but limited to two separate areas of the

property: (Area A (west end) and Area G (east end)), where ore residuals from the Facility operations had been dumped.

The Site's human health risk assessment (HHRA), conducted in the absence of any implemented remedial action and/or IC, concluded that heavy metals (*e.g.*, arsenic, manganese, cobalt, antimony, and nickel) are present in soils at Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C, at concentrations that may pose unacceptable risks under both commercial and residential uses. The HHRA for Captain's Cove Areas A and G concluded that inorganics, *e.g.*, arsenic, manganese, and antimony, and polychlorinated biphenyls (PCBs), are present in soils at concentrations that pose an unacceptable human health risk under both residential and commercial uses. ROPCs in soils on both the Site and Captain's Cove properties presented an unacceptable risk to current and future populations under both residential and commercial uses. An ecological risk assessment was also conducted and concluded that inorganic contaminants in soil at the Li Tungsten and Captain Cove properties posed an unacceptable risk to ecological receptors.

### Groundwater

Groundwater sampling at the Facility showed contamination by volatile organic compounds (VOCs). The most concentrated area of VOCs was detected in four wells along the border of the Mattiace Petrochemical Co., Inc., a separate nearby NPL Superfund site, with western Parcel C. This plume contained high concentrations of a variety of VOCs, including trichloroethene (TCE) and tetrachloroethene (PCE), as well as benzene, toluene, ethylbenzene, and xylenes (collectively known as BTEX) and was attributed to the leaking underground storage tanks. EPA subsequently constructed a groundwater and soil vapor extraction treatment facility at the nearby Mattiace Superfund site to remediate the on-site sources there, as well as to capture and treat the groundwater plume. Additional information on the Mattiace site is available at: <https://www.epa.gov/superfund/mattiace-petrochemical/>.

Another less-concentrated plume of VOCs, primarily TCE and PCE, was also detected in the middle portion of Parcel A/Lower Parcel B, downgradient of the Crown Dykman NYS Superfund (CDSS) site and attributable to previous dry-cleaning operations at that site. The groundwater contamination at the CDSS site is being addressed by the New York State Department of Environmental Conservation (NYSDEC) under its state superfund program.

Inorganic COCs were detected in groundwater above maximum contaminant levels (MCLs) in several locations with no defined groundwater plume. ROPCs generally met or only slightly exceeded drinking water standards.

At Captain's Cove, EPA's efforts focused on investigating ROPC and associated metals contamination disposed there from Li Tungsten. Low levels of ROPCs were found in a few wells. Metals, including arsenic, antimony, selenium, iron, and manganese, were detected at significant levels in several wells.

### Ponds, Wetlands and Sediment

Surface water and sediment samples collected on Parcels A, B, and C showed that a number of inorganics were present at levels exceeding state standards. ROPCs were generally found to be within water quality and sediment guidance values.

On the Captain's Cove property, surface water and sediment samples collected from the two retention ponds and a topographic depression in the southwest portion showed inorganics exceeding surface water and sediment standards while ROPCs did not exceed standards.

The HHRA, conducted for these areas on the Site property, concluded that, under a future adolescent trespasser scenario, inorganics or metals in the pond sediment and surface water posed an unacceptable human health risk. An ecological risk assessment was also conducted and concluded that pond sediment and surface water inorganic contaminants posed an unacceptable risk to ecological receptors.

#### Glen Cove Creek

The former surface water and sediment monitoring program at the Mattiace Superfund site consisted of four locations along the length of the Creek where the water column and the sediments were analyzed for VOCs, SVOCs, inorganic contaminants, pesticides and PCBs (**Figure 5**). The sediment data from this monitoring program showed elevated levels of metals which exceeded ecological values. A follow up screening level ecological risk assessment was conducted for the Creek and concluded that there is potential risk to ecological receptors.

The HHRA, conducted for the Glen Cove Creek, found that ROPCs posed an acceptable risk to current/future recreational and construction workers that were exposed to the creek. For the sediment that had already been dredged and consolidated on the property, the sediment posed an unacceptable risk to future workers and residents of the property.

#### Response Actions

From 1989 to 1990, EPA ordered and supervised emergency actions which were conducted by GCDC. Following these emergency actions to protect human health and the environment, along with additional investigations, EPA placed the Site on the National Priorities List (NPL) in October 1992. From 1996 to 1998, EPA performed an additional removal action to address threats from the contents of approximately 270 chemical storage tanks.

#### *OU-1/OU-2 1999 Remedy Selection*

The 1999 Record of Decision (ROD) for OUs 1 and 2 included the following remedial action objectives (RAOs):

#### Building Materials

- Prevent exposure to building materials contaminated with radionuclides or chemicals of concern (ROPCs or COCs);
- Eliminate hazards to future Site workers posed by unstable structures; and
- Remove any structural impediments that might interfere with pre-design sampling and implementation of soil and groundwater remediation.

### Soil/Sediment

- Prevent or minimize exposure to COCs through inhalation, direct contact or ingestion; and
- Prevent or minimize cross-media impacts from COCs in soil/sediments migrating into underlying groundwater.

### Groundwater/Ponded Water

- Prevent or minimize ingestion, dermal contact and inhalation of inorganic-contaminated groundwater hot spot areas on Lower Parcel C and on Parcel A that are above state and federal MCLs (Note: organic groundwater contamination from the CDSS site is being addressed by the NYSDEC);
- Restore groundwater quality to levels which meet state and federal standards; and
- Remediate contaminated surface water in on-site ponds to reduce risks to public health and the environment.

In order to achieve these RAOs, EPA selected the following remedy components as described in the September 1999 ROD:

- Excavation of soils and sediments contaminated above cleanup levels;
- Separation of radionuclide-contaminated soil from non-radionuclide soil contaminated with heavy metals;
- Off-site disposal of both radionuclide and metals-contaminated soil at appropriately licensed facilities;
- Off-site disposal of radioactive waste located in the Dickson Warehouse at an appropriately licensed facility;
- Building demolition at the Facility;
- Storm sewer and sump cleanouts at the Facility;
- Institutional controls governing the future use of the Site;
- Decommissioning of Industrial Well N1917 on Parcel A;
- Collection and off-site disposal of contaminated surface water from Parcels B and C (EPA's RI determined that Parcel C' was uncontaminated); and
- Long-term groundwater monitoring program to assess the recovery of the UGA after the soil remedy is implemented.

### *October 2002 Explanation of Significant Differences (ESD)*

As a result of an increase in excavated volumes of waste as identified in the 1999 ROD, EPA issued an Explanation of Significant Differences (ESD) for the Site to increase the quantity of excavated materials from 69,350 cubic yards (cy) to 132,100 cy. Actual volumes reported show that approximately 158,000 cy of contaminated soils were excavated and disposed of off-site.

### *May 2005 ESD*

The 1999 ROD stated that the OU-1 and OU-2 remedy would meet commercial cleanup levels, based on the Glen Cove's 1998 Glen Cove Creek Revitalization Plan. However, the City subsequently revised the Plan for the properties along the Creek to allow for a significant residential component. As a result, EPA

prepared and issued an ESD in May 2005 that reevaluated the 1999 ROD remedy and presented the following major determinations:

- EPA determined that access to any remaining radionuclides needed to be further restricted in soil to allow for residential future use of the Site;
- The lead cleanup level remains at 400 milligrams/kilogram (mg/kg) as the residential cleanup level for Superfund sites and is protective of public health under a residential scenario as proposed for this Site<sup>1</sup>;
- The arsenic cleanup level of 24 mg/kg was considered protective of a residential scenario using current toxicity values; and
- Prior to the 2005 ESD, post-excavation data showed that the areas of the Site generally met then-acceptable residential standards for arsenic, lead, and radionuclides. EPA did reserve judgment on the suitability for residential development on Parcel A.

#### *May 2016 ESD*

In 2015, as a result of a change in the future-anticipated-use in the area, Glen Cove made a renewed request to EPA to allow for residential future use, with restrictions, of Parcel A. In November 2016, RXR Glen Isle Partners, LLC (RXRGIP) acquired the 56-acre waterfront property from Glen Cove, consisting of the Facility and the Captain's Cove properties. For Lower Parcel C, Glen Cove plans to construct a municipal asphalt parking lot.

Based on this renewed request, as well as evaluating recent sampling data and taking into consideration RXRGIP's plans for removal of additional soil contamination at Parcels A and B at the Facility property, EPA issued a third ESD, as part of the May 2016 Site Proposed Plan for Remedy Modification, in order to address this additional soil removal. From September to December 2016, RXRGIP completed a response action to remove the targeted contaminated soil.

This third ESD announced the change in land use from commercial/light industrial to residential with IC restrictions for Parcel A. This action reaffirms the conclusions from the 1999 ROD that by reverting the land use of Lower Parcel C to commercial/light industrial from residential with restrictions (specified in the 2005 ESD), the remedy would remain protective of human health.

#### *OU-1 2016 ROD Amendment to 1999 Remedy Selection for Soil Contamination at Lower Parcel C*

Sampling by EPA and RXRGIP identified additional soil contamination above "impact-to-groundwater" cleanup levels for arsenic and lead in subsurface soils at the Facility that needed to be addressed. The 2016 ROD Amendment did not change the RAOs for soil/sediment identified in the 1999 ROD.

In order to achieve these RAOs, EPA selected the following selected remedy, as described in the 2016 ROD Amendment:

- Excavation and off-Site disposal of soil contaminated above "impact-to-groundwater" cleanup levels for arsenic and lead in subsurface soils and above direct contact cleanup levels for arsenic and lead in surface soils.

---

<sup>1</sup> See additional discussion of updates to the lead remediation in response to Question B

- Implementation of additional ICs, such as environmental easements, to ensure the integrity of the cover system that is to be placed over the entire upland area of the Site as part of the development of the Site properties. The cover system at the Site will include two feet of clean soil over an underlying demarcation layer in areas other than where above-ground structures, such as buildings, or pavement or sidewalks, which are also considered part of the cover system, are located.
- Evaluation and implementation of mitigative actions to address soil vapor intrusion in future buildings developed on Site.
- Continuation of the long-term groundwater monitoring program to assess the recovery of the UG Aquifer after the soil remedy set forth in this ROD Amendment is implemented.
- Development of a Site Management Plan (SMP), which will include a soil management plan that addresses excavation and management of remaining contamination during and after Site development and will also include an Institutional Controls Implementation and Assurance Plan (ICIAP) that identifies all ICs and engineering controls (ECs) and details steps and media-specific requirements necessary to ensure that they remain in place and effective.

The 2016 ROD Amendment further asserted that the arsenic and lead cleanup levels for direct-contact exposure have not changed since the 1999 ROD although the expected land use did change. The arsenic and lead cleanup levels for direct-contact exposure apply to accessible soils from 0-2 feet below ground surface (bgs). However, the 2016 ROD Amendment established new Site-specific impact-to-groundwater (IGW) cleanup levels of 175 mg/kg for arsenic and 660 mg/kg for lead for soil below two feet remaining at the Site that may pose an ongoing threat to groundwater.

#### *OU-4 (Glen Cove Creek) 2005 Remedy Selection*

The 2005 ROD included the following RAOs:

- Reduce or eliminate any direct contact, ingestion, or external radiation threat to public health and the environment associated with ROPC-contaminated slag in the Creek project area; and
- Reduce or eliminate any direct contact, ingestion, inhalation or external radiation threat to public health and the environment associated with ROPC-contaminated slag placed in upland disposal areas.

In order to achieve these RAOs, EPA selected the following remedy components, as described in the 2005 ROD:

- Construction of a dewatering facility on the Li Tungsten property;
- Two phases of Creek dredging to remove radioactive slag materials;
- Dewatering of the dredged sediment followed by segregation of slag from the dewatered sediment; and
- Off-site transportation and disposal of the radioactive slag at an appropriately licensed facility.

## **Status of Implementation**

After the 1999 ROD, EPA issued two unilateral administrative orders (UAOs) to the PRPs, the first in May 2000 to perform the remedial design for the northern half of the former facility (EPA implemented the work for the southern half of the Facility), and the second in September 2000 to complete the remedial action for certain portions of the remedy (*i.e.*, excavation and off-site disposal work on the northern half of the Facility and off-site disposal of wastes on the Captain's Cove property). EPA also negotiated with Glen Cove, a PRP for the Captain's Cove property, and reached a Prospective Purchaser Agreement (PPA) in July 1999, which included Glen Cove financing of some of EPA's RA activities at the Captain's Cove property. The PPA covered all 26 acres of the Li Tungsten property and 23 acres of the Captain's Cove property, which were acquired by Glen Cove for sale and transfer to third parties for redevelopment.

### **OU-1 - Facility**

At the southern half of the Facility, 528 cubic yards (cy) of soil, exceeding radiation standards, were excavated and staged in the Dickson Warehouse for future off-site disposal. In Spring 2004, TDY Industries, Inc. (TDY), contractor for the PRPs, emptied the Dickson Warehouse by disposing of 5,180 tons of radioactive waste materials staged inside. TDY also excavated and disposed of 3,530 tons of radioactive soils. All buildings except the Loung building on Parcel A were razed and disposed of off-site.

In June 2006, TDY completed the remaining remedial work for OU-1 which primarily entailed work on the northern half of the Facility. This included excavation and off-site disposal of non-radioactive, heavy-metals contaminated soils, radioactive soils, and PCB-contaminated soils. 2,295 tons of non-radioactive soils, *i.e.*, mostly metals, were excavated and disposed of off-site at a licensed subtitle D facility. All excavation work was completed in July 2007. In November 2007, under a Consent Judgment, TDY performed additional work at the Site, including off-site disposal of the stockpiled radioactive and PCB-contaminated soils and decontaminated the Dickson Warehouse.

On July 14, 2017, the NYSDEC issued and approved a beneficial use determination (BUD) to Glen Cove for the dredge spoils stockpile, free of radionuclide slag, located on Parcel A for reuse as fill beneath ECs on the Li Tungsten Superfund site (a portion of the overall waterfront project site). Pursuant to NYSDEC's approved BUD for reuse, approximately 58,565 cy dredge spoils were placed on Parcel A (57,130 cy), Parcel B (1,210 cy) and Parcel C (225 cy) (**Figure 6**).

### **OU-1 – Lower Parcel C**

The 2016 OU-1 ROD Amendment established cleanup levels of 175 mg/kg for arsenic and 660 mg/kg for lead for soils that may pose an ongoing threat to groundwater. The remedial action was conducted from October 2016 through December 2016 where soils contaminated with arsenic and lead were excavated on Lower Parcel C. 13,060 tons of non-hazardous lead/arsenic-contaminated soil and 804 tons of hazardous arsenic-contaminated soil were excavated and disposed at off-site permitted facilities.

In December 2024, P.W. Grosser, RXRGIP's contractor, submitted a revised excavation plan to their original December 2020 plan. The plan addresses PCB, arsenic and lead contamination in soils in Parcel C. The excavation will remove approximately 40,000 cy of contaminated soils. Excavated soils will be sampled for PCBs, arsenic and lead, in order to determine whether they need to be disposed of off-site or



reused, depending on contaminant concentrations. ECs will be implemented, *i.e.*, a vapor barrier and a composite cover system consisting of either asphalt, concrete, or two feet of imported clean fill. Currently, the excavation began in August 2025 with completion of all work, including restoration, expected by December 2028 and the release of the final SMP. This excavation work will allow Glen Cove's future development plans on Parcel C.

#### OU-1 – Parcels A and B

From September to December 2016, RXRGIP implemented pre-construction/development remedial activities, also in accordance with the soil IGW cleanup requirements of the 2016 OU-1 ROD Amendment, on Parcels A and B, to allow for restricted residential use development of these parcels. During the course of the remedial activities on Parcels A and B, 75.2 tons of PCB-contaminated and 153.93 tons of metals-contaminated soils were excavated and disposed of off-site.

#### OU-2 – Captain's Cove

Between 2001 and 2003, at the Captain's Cove property (OU-2), an estimated 112,000 tons of soils were excavated, segregated, and staged by the EPA's Removal Action Branch (RAB) into stockpiles of radioactive wastes, non-radioactive, metals-contaminated wastes and concrete and wood debris. In February 2005, the USACE removed the stockpiles for off-Site disposal.

#### OU-4 – Glen Cove Creek

EPA designated Glen Cove Creek as OU-4 of the Site. EPA signed a ROD on March 30, 2005, selecting a remedy involving remedial dredging and removal of radioactive "hot spots" in the Creek. The USACE initiated navigational dredging for the inner half of the Creek in September 2000 and used Parcel A of the Li Tungsten property as a temporary dewatering area. A survey performed by EPA determined that the dredged sediments were contaminated with chunks of radioactive slag from earlier facility operations, which resulted in a stoppage of dredging activities at that time. In October 2006, the USACE initiated on-site construction activities, including installing two large sediment dewatering cells on Parcel A. Dredging to a navigational depth of between eight and ten feet below mean low water was accomplished mechanically by means of a crane equipped with a clamshell bucket. Any "hot spots" were subsequently dredged and placed with the rest of the dredged material into the dewatering cells on Parcel A.

In August 2007, TDY mobilized to the Site to segregate radionuclide slag from the dewatered sediments. The final volume of scanned sediments was 31,374 cy and was disposed of off-site. From October 2007 to July 2008, EPA's RAB completed the dredging of two isolated "hot spots" against the bulkhead on Parcel A, using a long-reach excavator from the land in order to try to minimize the possibility of bulkhead collapse, and also rebuilt part of the damaged bulkhead along Parcel A. The Creek's navigational channel was effectively cleared of ROPCs that could otherwise impacted future navigational dredging operations. However, because there was still the potential that radiologically-contaminated slag could still be present below the navigational dredging depth in the Creek channel, EPA notified the USACE that any permit applications it received for work in the future should consider and address the potential for disturbance of ROPCs that may not have been removed during EPA's remedial activities.

In January 2018, RXRGIP submitted a permit application for the Glen Cove Creek Mixed-Use Waterfront Redevelopment Project to the USACE requesting approval for additional dredging in Glen Cove Creek to accommodate a marina/boat dock adjacent to Parcel A. Because the proposed dredging would impact the remedy EPA-implemented for OU-4, EPA required that the scope of dredging proposed under the permit be expanded to include additional dredging in the Creek in the area near the Parcel A bulkhead which was not dredged as part of the remediation of the two “hot spots.” The permit that was granted includes additional dredging in the Creek near the Parcel A bulkhead, outside of the navigational channel, which could not be dredged as part of the OU-4 “hot spots” dredging. Approximately 90 cy of sediments were expected to be removed adjacent to a 100-foot length of the bulkhead near Parcel A. The dredged “hot spots” area would then be capped with a five-foot cover consisting of 12 inches of clean gravel (bottom) and 48 inches of clean sand (top); all other non-hot-spots dredged areas will be capped with a two-foot cover consisting of 12 inches of gravel (bottom) and 12 inches of sand (top). The dredging and capping work commenced in June 2020 and was completed in February 2020. As a result of the additional work, 5,269 cy of dredged materials were disposed of at permitted off-site facilities.

The Li Tungsten Environmental Easement requires any ongoing restricted-residential construction activities to comply with the Li Tungsten November 2016 Interim SMP, November 2022 Interim SMP Addendum #001, and January 2023 Interim SMP Addendum #002 and implementation of all ICs and ECs required thereunder on the entirety of the Site property. The Li Tungsten November 2016 Interim SMP also includes a soil management plan that addresses excavation and management of remaining contamination during and after Site development and also includes an Institutional and Engineering Control Plan (serving as what was called an ICIAP in the ROD) that identifies all ICs and ECs and details steps and media-specific requirements necessary to ensure that they remain in place and effective. There are also the following individual SMPs: 1) the October 2021 draft Interim SMP for Li Tungsten Superfund Site’s Block H & Roads F & G completed in October 2021; 2) the August 2022 draft Interim SMP for Li Tungsten Superfund Site’s Parcel A and 3) the November 2023 draft Interim SMP for Block G. These individual Interim SMPs and the November 2016 Interim SMP and its Addenda #001 and #002 will manage the remaining contamination response at the Site on an interim basis until the final SMP is approved by EPA and NYSDEC which is expected in 2028.

## **IC Summary Table**

### **Summary of Planned and/or Implemented ICs**

<b>Media, engineered controls, and areas that do not support UU/UE based on current conditions</b>	<b>ICs Needed</b>	<b>ICs Called for in the Decision Documents</b>	<b>Impacted Parcel(s)</b>	<b>IC Objective</b>	<b>Title of IC Instrument Implemented and Date (or planned)</b>
Groundwater	Yes	Yes	Li Tungsten Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C  Captain's Cove Areas A and G	Restrict installation of groundwater wells and groundwater use.	New York Environmental Conservation Law (NYECL) Section 15-527, New York Sanitary Code (Title 10 of the New York Code of Rules and Regulations Section 5-2.4 - Need for permit)  Nassau Public Health Ordinance Article 4 (Effective 8-1-87)
Soil	Yes	Yes	Li Tungsten Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C  Captain's Cove Areas A and G	Ensure the integrity of the cover system that is to be placed over the entire upland area of the Site as part of the development of the Site properties and also compliance with all ICs and ECs placed on the Site.	Li Tungsten Environmental Easement granted to the NYSDEC pursuant to Article 71, Title 36 of the NYECL, and recorded with the Nassau County Clerk on October 24, 2016, requires compliance with all ICs and ECs placed on the Site  Captain's Cove Environmental Easement granted to the NYSDEC pursuant to Article 71, Title 36 of the NYECL, and recorded with the Nassau County Clerk on October 27, 2016, requires compliance with all ICs and ECs placed on the Site  All ICs implemented. ECs, e.g., cover systems, still being placed on the Li Tungsten and Captain's Cove Condominium sites as part of the ongoing restricted residential development.
Sediment	Yes	Yes	Glen Cove Creek	To prevent disturbance of contaminants remaining below the cover.	EPA has notified USACE that any permit applications for work in the future should consider and address the potential for disturbance of radionuclides that may have not been removed during EPA's remedial activities.

## **Systems Operations/Operation and Maintenance**

As discussed above, NYSDEC is responsible for all operation and maintenance (O&M) activities at the Site property. All ICs and ECs for Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C have been incorporated into the Site remedy to control exposure to any remaining contamination to ensure protection of human health and the environment. An Environmental Easement granted to the NYSDEC, pursuant to Article 71, Title 36 of the New York Environmental Conservation Law (NYECL), and

recorded with the Nassau County Clerk on October 24, 2016, requires compliance with all ICs and ECs placed on the Site. The IC boundaries, including Parcel C prime, are shown on **Figure 7**; however, the ICs pertaining to ECs discussed below do not apply to Parcel C prime. The Environmental Easement requires compliance with the Li Tungsten November 2016 Interim SMP and all ICs and ECs placed on the Site.

ICs would also apply to “red flag” areas on Parcel A and Lower Parcel C. During the implementation of the OU-1 remedial activities at the Facility property portion of the Site, EPA determined that excavation of some arsenic-contaminated soil and, to a lesser extent, lead-contaminated soil along the western and eastern edges of Lower Parcel C and on the southern portion of Parcel A was not feasible because of the existing utilities and infrastructure. These areas with remaining soil contamination, referred to as “red flag” areas, are present within the immediate area of the fence line on Parcel C (e.g., along two storm drain systems, as well as underground electric and natural gas services) and on Parcel A, in close proximity to the former bulkhead in place along the Glen Cove Creek.

In addition, the Li Tungsten Environmental Easement and November 2016 Interim SMP require ICs and ECs which include evaluation of and implementation of mitigative actions to address soil vapor intrusion (*i.e.*, soil vapor mitigation system (SVMS) which include the installation of a vapor barrier beneath a building and a subslab depressurization system (SSDS)) and to incorporate their design into the plans and specifications for all buildings developed and constructed on Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C. An active SSDS was installed beneath the vapor barrier system in occupied areas of residential Building H on Parcel B, effectively preventing potential VOCs from moving from the sub-surface into the indoor air of the overlying building.

Similarly, as part of the development construction on Parcel A, a soil vapor mitigation system was also installed beneath the Building I and Marina Support Building foundation on Parcel A. In the future, as the property is further developed, including any new development and construction, further evaluation of vapor intrusion will be conducted, as necessary. **Figure 7(a)** shows newly-constructed Building I and Marina Support Building (Gravies Point Brewery) on Parcel A and Buildings A, B, and H on Parcel B, as well as future residential buildings (Block E and F) and Retail Kiosk (Block D) to be built on Lower and Upper Parcel C.

An Environmental Easement granted to the NYSDEC, pursuant to Article 71, Title 36 of the New York Environmental Conservation Law (NYECL), and recorded with the Nassau County Clerk on October 27, 2016, requires compliance with all ICs and ECs placed on the Captain’s Cove Condominium site.

#### *Remedy Resilience Assessment*

Potential Site impacts from severe weather have been assessed, and the performance of the remedy is currently not at risk as a result of expected weather-related effects in the region and near the Site. Refer to **Appendix E** for additional information.

### **III. PROGRESS SINCE THE LAST REVIEW**

This section includes the protectiveness determinations and statements from the **last** FYR. There were no recommendations made in the last FYR.

## Protectiveness Determinations/Statements from the 2020 FYR

Protectiveness Statement(s)	
<i>Operable Unit:</i> OU-1	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-1 currently protects human health and the environment.	
<i>Operable Unit:</i> OU-2	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-2 currently protects human health and the environment.	
<i>Operable Unit:</i> OU-4	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-4 currently protects human health and the environment.	
Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> Protective	
<i>Protectiveness Statement:</i> The remedy at the Site currently protects human health and the environment.	

## IV. FIVE-YEAR REVIEW PROCESS

### Community Notification, Involvement & Site Interviews

On August 7, 2024, 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 Li Tungsten Superfund site. The announcement can be found at the following web address:  
<https://www.epa.gov/aboutepa/fiscal-year-2020-five-year-reviews>.

In addition to this notification, in February 2025, a public notice was distributed via email to local public officials and other interested parties, and copies of the notice were also mailed to interested parties. The announcement indicated that EPA is conducting a FYR of the remedy for the Site to ensure that the implemented remedy remains protective of human health and the environment and is functioning as designed. The notice also indicated that, once the FYR is completed, the results will be made available in the local Site repository at the Glen Cove Public Library located at 4 Glen Cove Avenue, Glen Cove, New York, as well as the website: [www.epa.gov/superfund/li-tungsten](http://www.epa.gov/superfund/li-tungsten). In addition, the notice included EPA's contact information, including addresses and telephone numbers, for questions related to the FYR process or the Site. The documents will also be available at EPA's offices at 290 Broadway, New York, New York 10007 (18 Floor). No interviews were conducted as part of this FYR.

### Data Review

#### *Groundwater*

As described in the previous FYR and as part of the redevelopment of the property, four Site monitoring wells were properly abandoned in 2017. In 2021, three additional well clusters of two wells each (LTC-MW001-A & B, LTC-MW002-A & B, LTC-MW003-A & B) were installed on and near lower parcel C.

In 2022, four new wells (MW001, MP006, PRA006, and PRA007) were installed as replacement wells at the locations of the abandoned wells. Monitoring Well MW001 is located in a Facility dumping area on the far west area of the Site property in Captain's Cove. Moving farther east, PRA006 is located between the Facility and Captain's Cove, side-gradient to both. Located in mostly Lower Parcel C to the west of PRA006, the newly installed wells (LTC-001-A, LTC-001-B, LTC-002-A, LTC-002\_B, LTC\_003-A, LTC-003-B) are located downgradient of the Facility. Lastly, the replaced wells PRA007 and MP006 are located to the east of the Facility in Parcels B and A, respectively, and are also side-gradient to Parcel C. In 2022, 2023, and 2024, all the monitoring wells were sampled for lead and arsenic. The EPA MCLs for lead and arsenic in groundwater are 15 and 10 micrograms per liter ( $\mu\text{g/L}$ ), respectively. The NYS MCL for arsenic is also 10  $\mu\text{g/L}$  and the Class GA standards for groundwater for arsenic and lead are each 25  $\mu\text{g/L}$ . NYS does not have a drinking water MCL for lead. The new wells are shown on **Figure 9**.

Arsenic concentrations in the replacement wells have generally increased during this FYR period. In replacement well MW001, arsenic levels were below the Federal MCL in 2022 and 2023; however, in 2024, the arsenic level rebounded to 28.1  $\mu\text{g/L}$ . This concentration slightly exceeded the final sample of the "old" well MW001 in 2017 (21.4  $\mu\text{g/L}$ ) before construction at the Site. Although original well PRA006, located on Captain's Cove and to the east of MW001, contained arsenic below state and federal standards during the last FYR, arsenic levels increased in the replacement well from 10.1  $\mu\text{g/L}$  in 2022 to 44.8  $\mu\text{g/L}$  in 2024. Samples from replacement well MP006, located on the upgradient part of Parcel A, were below the state and federal standards from 2022 to 2023 but reached a maximum of 30.5  $\mu\text{g/L}$  in 2024. Monitoring Well PRA007, located on Parcel B, showed arsenic concentrations have remained below the state and federal standards before and after well replacement.

The new well clusters have also exhibited some elevated arsenic results. The LTC-MW001 cluster is located in the same area as former well EMW-4. The LTC-MW002 and LTC-MW003 clusters are approximately within 100 to 300 feet of the LTC-MW001 cluster, extending south closer to the Creek. In the last FYR, arsenic concentrations were declining at EMW-4 with levels ranging between 85 and 100  $\mu\text{g/L}$ . During this FYR period, the arsenic results from LTC-MW001-A and B were generally below state and federal standards, except for those sampled in 2023, where arsenic was detected at 21.1 and 23.8  $\mu\text{g/L}$ , respectively. The arsenic concentrations at wells LTC-W002- and B were above MCLs for the entirety of the current reporting period but had differing magnitudes of concentration depending on depth and screened interval. The B wells are approximately 10 feet deeper than their paired counterparts (*i.e.*, the A wells), but both sets of wells have screen lengths of 10 feet. The A level zone wells all have well screens from two feet to 12 feet bgs. The B level zone wells screened interval range from 11-12 feet bgs to 21-22 feet bgs.

After being at or near the EPA MCL for arsenic in 2021-2023, samples from LTC-MW002-A had a maximum of 83  $\mu\text{g/L}$  in 2024. Samples from LTC-MW002-B have always been much higher than its paired well. The maximum arsenic concentration was 12,200  $\mu\text{g/L}$  in LTC-MW002-B during this reporting period in 2023, showing an increase from 7,610  $\mu\text{g/L}$  in 2021. In 2024, arsenic at this well slightly declined to 11,200  $\mu\text{g/L}$ . These concentrations are similar to those identified in the RI, where the maximum arsenic in groundwater was found in the southern portion of Parcel C at 14,500  $\mu\text{g/L}$  in GM-14B. This location was north of former well EMW-4 (near newly installed LTC\_MW001). Similar to trends observed in this FYR, the arsenic levels in this area during the RI rapidly declined in nearby wells (including EMW-4). Arsenic levels in wells LTC-MW003-A and LTC-MW003-B (maximums of 19.6  $\mu\text{g/L}$  and 20  $\mu\text{g/L}$ , respectively) were both slightly above Federal MCLs in 2022 and 2023 but below Federal MCLs in 2024.

With respect to lead concentrations, no samples from the groundwater network were found to be above the Federal MCL (15 µg/L) or State standard (25 µg/L) for lead, except for LTC-MW001-B in 2024 (26 µg/L) and at wells LTC-MW003-A and LTC-MW003-B in 2022 (162 and 200 µg/L, respectively). As a result of higher-than-average lead in monitoring wells LTC-MW003-A and B, these wells were resampled later in 2022. Results from both wells were 14.5 and 10.7 µg/L, respectively, *i.e.*, both below Federal MCLs.

During the reporting period, five monitoring wells (MW001, MP006, PRA006, PRA007, and LTC\_MW002) and the effluent from the French drain were sampled and analyzed for radioactive elements, Radium 226 and Thorium 232. In 2022 and 2024, radiological results in monitoring wells and the French drain were found to be within the background range.

### *Emerging Contaminants*

In April 2024, EPA finalized federal drinking water MCLs for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) at 4 nanograms per liter (ng/L). In 2020, NYSDEC established drinking water MCLs for PFOA and PFOS of 10 ng/L. In 2023, NYSDEC released ambient water quality guidance values of 6.7 ng/L for PFOA and 2.7 ng/L for PFOS. PFAS chemicals were tested at the Site in 2022 and 2024; the concentrations in each of the wells tested (MW001, MP006, PRA006, PRA007, and LTC\_MW002\_B) exceeded both state and federal MCLs. The highest concentrations were found in well PRA006, which had values of PFOA and PFOS at a maximum of 172 ng/L and 396 ng/L, respectively, in 2022. Both these chemicals decreased in 2024 (143 and 288 ng/L, respectively, for PFOA and PFOS). In fact, the concentrations decreased in all monitoring wells from 2022 to 2024, except for MW001, which had increasing PFOS concentrations from 20.7 ng/L to 43.4 ng/L. PRA006 and MW001 are located side-gradient to the Facility. Since wells sampled near the Facility area generally had lower PFAS concentrations than those in the western direction, there may be other sources contributing to the elevated PFAS found in the side-gradient wells. However, the areas in which these wells are situated served as a historical dumping area for the former Facility. Even though the area is serviced by a public water supply, the source of the PFAS contamination should be further evaluated.

### *Sediment and Surface Water*

Sediment and surface water sampling was conducted at six sampling locations in Glen Cove Creek from July 2017 through March 2021. There were no detections of arsenic and lead in surface water; however, there were some detections of radiological isotopes. Isotopes that were found in two or more surface water samples in 2021 included Potassium-40, Bismuth-214, and Radium-226. The arsenic and lead concentrations detected in sediments exceeded ecological values on a sporadic basis but were below Impact-to-Groundwater levels. The radiological sampling data indicated that the concentrations of radium, thorium, and uranium were at background or slightly above background in sediment and surface waters. The monitoring program for sediments and surface water was suspended in 2021 after the cover materials were installed in 2020.

### **Site Inspection**

The Site inspection was conducted on December 18, 2024. The purpose of the inspection was to assess the protectiveness of the remedy. The following parties were in attendance: Lorenzo Thantu, EPA RPM, Abigail DeBofsky, EPA Ecological Risk Assessor, Chris Engelhardt, NYSDEC Project Manager and Derek Ersbak, PW Grosser Consulting.

During the previous FYR Site inspection on October 29, 2019, water was observed infiltrating into the lower-level parking lot of Building H on Parcel B, specifically, at the seam between the floor and wall on the north side of the lower-level parking lot. This was a result of local hydrogeologic conditions that have the potential to create a positive hydraulic head at portions of the Site. The seam was immediately sealed by RXRGIP to prevent continued water infiltration. To document the effectiveness of the foundation repair, inspections of the seam have been performed monthly. No issues were observed during the Site inspection for this FYR.

A composite cover system is being utilized over the excavated areas of Parcels A, B and C. The cover can be comprised of a minimum of 24 inches of clean soil or some sort of impermeable surface, which could include 1) a minimum of five inches of asphalt pavement, 2) a minimum of four inches of concrete-covered sidewalks, or 3) a minimum of eight inches of concrete building slabs. This cover has been installed on Parcels A and B and was observed to be in good condition during the Site inspection.

No other deficiencies were noted during the site inspection.

## **V. TECHNICAL ASSESSMENT**

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

The remedy is overall functioning as intended in that contaminated soils, structures, and groundwater have generally been addressed and exposure pathways have been interrupted, although further monitoring is needed at the site.

The 1999 ROD considered remedial alternatives for groundwater beneath a portion of the Site (Lower Parcel C into the western portion of Parcel A) that was contaminated with arsenic and lead. A “No Action” remedy was selected citing the expectation that the soils remedy, once implemented (including excavation of arsenic and lead contaminated soils), would improve the groundwater quality beneath the Site. Additional remedial actions were implemented on Lower Parcel C and Parcels A and B per the requirements of the 2016 OU-1 ROD Amendment which also included a continuation of the long-term groundwater monitoring. In 2017, as part of the redevelopment of the property, the five monitoring wells included in the long-term monitoring were properly abandoned. Prior to their removal, arsenic and lead levels in groundwater monitoring wells had declined. Four of the five wells were subsequently replaced as close to their original locations as feasible when the redevelopment activities were completed in 2022. Three additional well clusters were installed near lower parcel C in 2021.

Although arsenic concentrations in wells MW001 and MP006 remain below historic maximums, results obtained since construction was completed have indicated increasing trends; Well PRA006 has also been increasing in arsenic concentration after construction. Furthermore, newly installed monitoring well LTC-MW002-B in lower Parcel C has elevated levels of total arsenic (maximum of 12,200 µg/L in 2023), similar in magnitude to those identified during the RI at nearby locations. Despite the elevated concentrations at this well, nearby wells of the same depth (LTC-MW001-B and LTC-MW003-B) do not show the same level contamination, with maximums at 23.8 µg/L and 20 µg/L during this reporting period. With LTC-MW001-B being downgradient of LTC-MW002-B and not showing the same magnitude of concentration, dissolved metals diffusing into Glen Cove Creek is unlikely. Lead or arsenic have not been detected in surface water samples during this reporting period. Considering the construction completed at this Site, it is possible that differing rainfall pathways to the subsurface may



have led to alternate water transport conduits contributing to concentration fluctuations prior to settling. Additional excavation work focused on PCBs, arsenic and lead is planned within this area between 2025 and 2028 and monitoring should continue to evaluate ongoing concentration trends. Lead concentrations have largely been stable and below state and federal standards.

Additional sampling in 2022 and 2024 did identify the presence of PFAS in several wells at the Site. The highest concentrations, however, were observed in side-gradient wells MW001 and PRA006 to the west. Therefore, there may be other sources contributing to the elevated PFAS detections at the Site. Nevertheless, the areas in which these wells are situated served as a historical dumping area for the former Facility. The source of the PFAS should be further assessed.

Despite the elevated levels of arsenic and PFAS identified at the Site, no one is currently exposed to the groundwater, since drinking water is provided by a municipal source, and ICs have been implemented to prohibit drinking water well installation in the future. ICs have also been implemented to ensure the integrity of the cover system, which consists of either two feet of clean soil with an underlying demarcation layer or above-ground structures, such as buildings, or pavement or sidewalks, being placed over Parcel A, Parcel B, and Upper Parcel C. A similar cover system was also placed over the Lower Parcel C during the construction of the municipal parking lot to support the ferry service and other public amenities. The Li Tungsten Environmental Easement requires compliance with the Li Tungsten November 2016 Interim SMP, and all ICs and ECs placed on the Site. As stated under status of implementation, several interim SMPs have been completed during this FYR period, which manage the remaining contamination onsite while the Final SMP is being developed, which is expected in 2028.

The remedies selected in the 1999 OU-1/OU-2 ROD, 2006 OU-1 ROD Amendment, and 2005 OU-4 ROD addressed contaminated on-site soil and sediment in Glen Cove Creek, calling for excavation and off-site disposal. The dredging of the creek implemented per the 2005 OU-4 ROD involved two phases. One phase was dewatering of the sediment and the second was segregation of the slag. Additional dredging by RXRGIP primarily intended to allow for the construction of Parcel A Dock/marina/slips was completed in February 2020 as part of the USACE permitting process. Surface water and sediment monitoring ceased in 2021, as the cover materials associated with the remedy had been installed in the previous year and since the sampling did not indicate residual impacts to the creek. Furthermore, because there was the potential that radiologically-contaminated slag could still be present below the navigational dredging depth in the Creek channel, EPA notified the USACE that any permit applications it received for work in the future should consider and address the potential for disturbance of ROPCs that may not have been removed during EPA's remedial activities.

**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?

### **Human Health Risk Assessment**

The expected land use changed several times including in the redevelopment of the property discussed above and memorialized in the ROD Amendment issued in September 2016. The 1999 ROD identified an arsenic cleanup level of 24 mg/kg, a lead cleanup level of 400 mg/kg, a cleanup level for PCBs of 1 mg/kg in surface soils, and 10 mg/kg for PCBs in subsurface soils. The ROD also identified cleanup levels for Thorium-232 and Radium-226 of 5 picocuries per gram (pCi/g). The May 2005 ESD revised radiation cleanup levels for radium and thorium in order for the 1999 remedy to be protective of restricted residential use. For thorium, the cleanup level was lowered from 5 pCi/g for the thorium-232

isotope to 5 pCi/g for the sum of two isotopes, thorium-230 and thorium-232. Similarly, the radium cleanup goal was changed from 5 pCi/g for radium-226 to 5 pCi/g for the sum of radium-226 and radium-228. EPA finalized its toxicological review of inorganic arsenic in January 2025. Based on this review, the oral cancer slope factor was increased (i.e., from 1.5 to 32 mg/kg-day<sup>-1</sup>) to reflect stronger evidence of cancer risk from chronic exposures. This change in toxicity would result in a lower risk-based cleanup goal for surface soil compared to the 1999 ROD. Despite this change, however, the decision to pursue a remedial action remains valid and the exposure pathway to soils, including Parcel A which is designated for mixed commercial-residential use, remains interrupted since a two-foot soil cover is required across the entire upland area of the site other than where above-ground structures or pavement are located. Therefore, the remedial action implemented remains protective for human exposure to soils.

### *Updated Residential Soil Lead Guidance*

On January 17, 2024, EPA OLEM released the “Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities” (2024 Updated Soil Lead Guidance), which updates the residential soil lead screening level (RSL) and removal management level (RML) for the CERCLA and RCRA programs and provides additional guidance for setting residential lead preliminary remediation goals (PRGs) and cleanup levels. The 2024 Updated Soil Lead Guidance recommends that regions use the most current version of the Integrated Exposure Uptake Biokinetic (IEUBK) model, with 5 µg/dL as the 95<sup>th</sup> percentile target blood lead level and site-specific environmental data (e.g., lead concentrations in various media and bioavailability) to develop PRGs and cleanup levels for residential land use. If an additional source of lead (e.g., lead water service lines, lead-based paint, non-attainment areas where the lead concentrations exceed NAAQS) is identified, 2024 Updated Soil Lead Guidance recommends 3.5 µg/dL as the 95<sup>th</sup> percentile target blood lead level. The 2024 Updated Soil Lead Guidance also recommends that the EPA region adjust PRGs and cleanup levels to account for uncertainty, technical limitations (i.e., detection/quantification limits), and site-specific soil lead background.

The current landscape and/or redevelopment plans for Parcel A, Parcel B, and Captain’s Cove include restricted residential uses. At the time of the 1999 ROD, a cleanup goal of 400 mg/kg for lead in soil was selected. The remedial actions completed for these areas (excavation and off-site disposal) were designed based on this cleanup goal. However, although the approach for addressing lead has changed since the remedy was selected, a cover system, consisting of either two feet of clean soil with an underlying demarcation layer or above-ground structures, such as buildings, pavements or sidewalks, is required over the entire footprint of all developed Li Tungsten parcels. Such a system interrupts potential exposures to lead in soils below two feet, which is commonly assumed for residential contact. Analytical results for lead from the two-foot clean soil cover that has been placed on Parcel B range in concentrations from 14.6 mg/kg to 24.7 mg/kg, expected to be well below what a revised lead cleanup goal that would be identified under the new policy.

### *Vapor Intrusion*

The Li Tungsten Environmental Easement and November 2016 Interim SMP require ICs and ECs which include evaluation of and implementation of mitigative actions to address soil vapor intrusion and incorporate their design into the plans and specifications for all buildings developed and constructed on Parcel A, Parcel B, Lower Parcel C, and Upper Parcel C. An active SSDS has already been installed beneath the vapor barrier system in potentially occupied areas of residential Building H on Parcel B, effectively preventing potential VOCs from moving from the sub-surface into the indoor air of the

overlying building. Similarly, as part of ongoing development on Parcel A, an SSDS was also installed beneath the Building I and Marina Support Building foundation on Parcel A. In the future, as the property is further developed, including any new development and construction, further evaluation of potential vapor intrusion will be conducted, as necessary.

The RAOs are still valid.

### **Ecological Risk Assessment**

The remedy selected in the 1999 and 2005 RODs addressed contaminated on-Site soil and sediment in Glen Cove Creek, calling for the excavation and offsite disposal. The dredging of the creek involved two phases. One phase was dewatering of the sediment and the second was segregation of the slag. A surface water and sediment monitoring program was implemented, pursuant to the 1991 ROD for the Mattiace Petrochemical Co., Inc. site. Furthermore, EPA has notified the USACE that any permit applications it receives for work in the future should consider and address the potential for disturbance of radionuclides that may have not been removed during EPA's remedial activities.

Additional dredging was implemented by RXRGIP adjacent to Parcel A and subsequent placement of a five-foot cap over the dredged area further reduced any potential ecological risks associated with slag that may be present in the non-dredged setback area adjacent to portions of the Parcel A bulkhead. Prior to this dredging, the monitoring data indicated that concentrations of uranium, thorium and radium were detected at and just above background levels, and there were some sporadic occurrences of concentrations of arsenic and lead in sediment which exceeded ecological screening values. The dredging and capping work completed effectively interrupts exposure pathways to ecological receptors.

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

There is no new information that calls into question the protectiveness of the remedy.

## VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations	
<b>OU(s) without Issues/Recommendations Identified in the Five-Year Review:</b>	
OU-4	

Issues and Recommendations Identified in the Five-Year Review:				
<b>OU(s): 1</b>	<b>Issue Category: Monitoring</b>			
	<b>Issue:</b> Arsenic concentrations in lower Parcel C groundwater (well LTC-MW002-B) increased during this review period post-excavation to levels similar in magnitude to those identified during the RI.			
	<b>Recommendation:</b> Additional excavation work is planned within this area. Once this work is completed, monitoring should be completed to evaluate ongoing concentration trends.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	PRP	State	8/30/2030

<b>OU(s): 2</b>	<b>Issue Category: Monitoring</b>			
	<b>Issue:</b> PFAS was identified at elevated concentrations in groundwater wells MW001 and PRA006 within the Captain's Cove property and it is unclear whether these impacts are from the site.			
	<b>Recommendation:</b> Collect data needed to determine whether the site is the source and, if necessary, to delineate the extent of that contamination.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	PRP	State	1/1/2027

## OTHER FINDINGS

The residential human health cleanup goals for lead and arsenic in the ROD were 400 and 24 mg/kg, respectively. Nevertheless, since the ROD was signed EPA has updated its residential soil lead policy to be more stringent. EPA also finalized its toxicological review of inorganic arsenic in January 2025, which would result in a lower risk-based cleanup goal for surface soil compared to the 1999 ROD. Because two feet of clean fill is required by the SMP across the entire site, as implemented, the remedy is protective and no changes to the remedy are needed; however, an evaluation as to whether additional administrative documentation would be needed for supporting site completion is suggested.

## VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
<i>Operable Unit:</i> OU-1	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at OU-1 currently protects human health and the environment as exposure pathways have been interrupted and ICs have been established. To be protective in the long-term, the increasing trends of arsenic in groundwater need to be further evaluated once additional excavation work is completed.	
<i>Operable Unit:</i> OU-2	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at OU-2 currently protects human health and the environment as exposure pathways have been interrupted and ICs have been established. To be protective in the long-term, the source of PFAS within the Captain's Cove property needs to be further evaluated and delineated, if Site-related.	
<i>Operable Unit:</i> OU-4	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-4 is protective of human health and the environment.	
Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i> Short-term Protective	
<i>Protectiveness Statement:</i> The remedy at the Site currently protects human health and the environment as the remedial actions have interrupted all exposure pathways and ICs have been established to further prohibit exposure to Site media. To be protective in the long-term, the increasing trends of arsenic in OU-1 groundwater need to be further evaluated once additional excavation work is completed and the source of PFAS within the OU-2 Captain's Cove property needs to be further evaluated and delineated, if Site-related.	

## VIII. NEXT REVIEW

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

## APPENDIX A – REFERENCE LIST

<b>Document</b>	<b>Date</b>
Record of Decision for the Li Tungsten Superfund Site, Operable Units 1 and 2	September 30, 1999
Record of Decision for the Li Tungsten Superfund Site, Operable Unit 4	March 30, 2005
Explanation of Significant Differences for the Li Tungsten Superfund Site	May 2005
Remedial Action Report for OU 1 of the Li Tungsten Superfund Site	October 22, 2008
Remedial Action Report for OU 2 of the Li Tungsten Superfund Site	September 29, 2006
Remedial Action Report for OU 4 of the Li Tungsten Superfund Site	September 30, 2008
Preliminary Close-out Report for the Li Tungsten Superfund Site	September 25, 2008
Second five-year review	June 2010
Annual Li Tungsten Groundwater Monitoring Reports	2010-2013
Glen Cove Creek Data Summary (Excel Spreadsheet)	
PWGC Pre-Construction Confirmatory/Insurance Data Gap Subsurface Investigation Report	May 2014
SEC Final Status Survey Report (RSSR) Parcel A, Parcel Lower C and Parcel Upper C	April 2015
Third five-year review	September 2015
Li Tungsten Pre-Construction Investigation Summary Report	March 2016
Li Tungsten Interim Site Management Plan	November 2016
Li Tungsten Construction Completion Report	January 2017
Li Tungsten Annual Groundwater Monitoring Report	August 2017
Li Tungsten Periodic Review Report (Parcel A & Parcel B) (January 1, 2022 - December 31, 2022)	March 2023
Li Tungsten Periodic Review Report (January 1, 2023 - December 31, 2023)	January 2024
Li Tungsten Periodic Review Report (January 1, 2024 - December 31, 2024)	January 2025

## APPENDIX B – CHRONOLOGY OF SITE EVENTS

October 1992	Listing of Li Tungsten Site on NPL
September 1999	ROD for OU-1 and OU-2
July 2000	RAB completion of Parcel A RA
August 2001	RAB completion of Lower Parcel C RA
August 2002	PRP completion of dredged dewatered sediment remediation
October 2003	RAB completion of all Captain's Cove excavation work
April 2004	PRP completion of off-site disposal of wastes staged in Dickson Warehouse
March 2005	ROD for OU-4
May 2005	ESD regarding effect of City's zoning changes on the 1999 ROD
August 2005	First Five-Year Review for OU-1 and OU-2
July 2006	EPA/USACE completion of transportation and disposal of all wastes staged at Captain's Cove
February 2007	EPA/USACE completion of remedial dredging of the Creek and the navigational dredging of Acceptance Area 4
November 2007	PRP completion of segregation of radionuclide slag from dewatered Creek sediments on Parcel A
August 2008	PRP completion of excavation and off-site disposal activities for Parcel B and upper Parcel C, including off-site disposal of all "specialty" wastes staged in the Dickson Warehouse
September 2008	Issuance of PCOR
June 2010	Second Five-Year Review
May 2014	Potential Developer's Subsurface Investigation completed
January 2015	Potential Developer's MARSSIM study completed
September 2015	Third Five-Year Review
September 2016	Amended ROD for OU-1 and OU-2
July 2017	NYSDEC's July 14, 2017 Approval of Soil Mechanics' Revised July 13, 2017 Li Tungsten Parcel A BUD Dredge Spoil Augmentation Plan
July 2020	Fourth Five-Year Review

## APPENDIX C – TABLES

**Table 1- Summary of Li Tungsten Site Inspections, Monitoring, Maintenance And Reporting Activities Requirements**

<b>Institutional Controls:</b>	1. The Residential Controlled and Prime Controlled property (Parcel A, Parcel B, Parcel Upper C and Parcel C Prime) may be used for restricted residential, commercial, and industrial use
	2. The Commercial Controlled property (Parcel Lower C) may be used for commercial and industrial use
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP
	4. All ECs must be inspected at a frequency and in a manner defined in the SMP.
	5. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Nassau County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
	6. Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
	7. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
	8. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
	9. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
	10. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
	11. Access to the site must be provided to agents, employees or other representatives of EPA and the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
	12. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on <b>Figure 7</b> , and any potential impacts that are identified must be monitored or mitigated; and
	13. Vegetable gardens and farming on the site are prohibited;
<b>Engineering Controls (EC):</b>	1. Cover system (once installed)
	2. Soil Vapor Mitigation Systems (once installed).



<b>Inspections:</b>	Frequency
1. Cover inspection	TBD
2. Soil Vapor Mitigation System(s) inspection	TBD
<b>Monitoring:</b>	
1. Groundwater Monitoring Wells MW-1, EMW-4, MP-6, PRA-6 and PRA-7	Annually
<b>Maintenance:</b>	As necessary
<b>Reporting:</b>	
1. EC Inspection Report	TBD
2. Groundwater Monitoring Report	Annually
3. Periodic Review Report	Annually

# **APPENDIX D**

## **FIGURES**

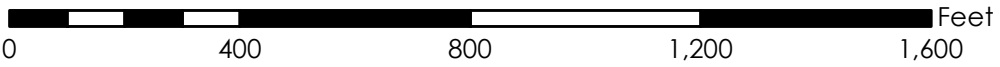
## **APPENDIX D – FIGURES**

<b>Figure 1</b>	OU 1, OU 2, and OU 4 Locations Map
<b>Figure 2</b>	NYSDEC-Redesignated Captain's Cove Condominiums Site Map
<b>Figure 3</b>	Site Location Map
<b>Figure 4</b>	Garvies Point Mixed-Use Waterfront Development & Vicinity Map
<b>Figure 5</b>	Former Mattiace Groundwater and Creek Sampling Monitoring Program Locations (GC1, GC2, GC3, and GC4)
<b>Figure 6</b>	BUD-Approved Parcel A Dredge Spoils Distribution Placement on Parcel A (57,130 cy), Parcel B (1,210 cy) and Parcel C (225 cy)
<b>Figure 7</b>	Li Tungsten Environmental Easement
<b>Figure 7(a)</b>	Garvies Point Overall Master Plan (Glen Isle Partners, LLC – January 2025)
<b>Figure 8</b>	Li Tungsten Groundwater Monitoring Well Network and Locations
<b>Figure 9</b>	2008 – 2015 Arsenic Concentration Trend (Wells EMW-4 and MW-1) and Lead Concentration Trend (Well EMW-4)









Document Path: G:\Projects\M-R\RG\1701\mapfiles\Task4AC\FIG2\_SitePlan.mxd

Parcel Boundaries



**PWGC**

Strategic Environmental and Engineering Solutions

P.W. GROSSER CONSULTING ENGINEER  
AND HYDROGEOLOGIST, P.C.

630 Johnson Avenue, • Suite 7  
Bohemia • NY • 11716-2618  
Phone: (631) 589-6353 • Fax: (631) 589-8705  
E-mail: INFO@PWGROSSER.COM

UNAUTHORIZED ALTERATION OR ADDITION TO THIS  
DRAWING AND RELATED DOCUMENTS IS A VIOLATION  
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

RXR Glen Isle Partners, LLC  
625 RXR Plaza  
Uniondale, NY


REVISION	DATE	INITIAL	COMMENTS
----------	------	---------	----------

DRAWING INFORMATION:

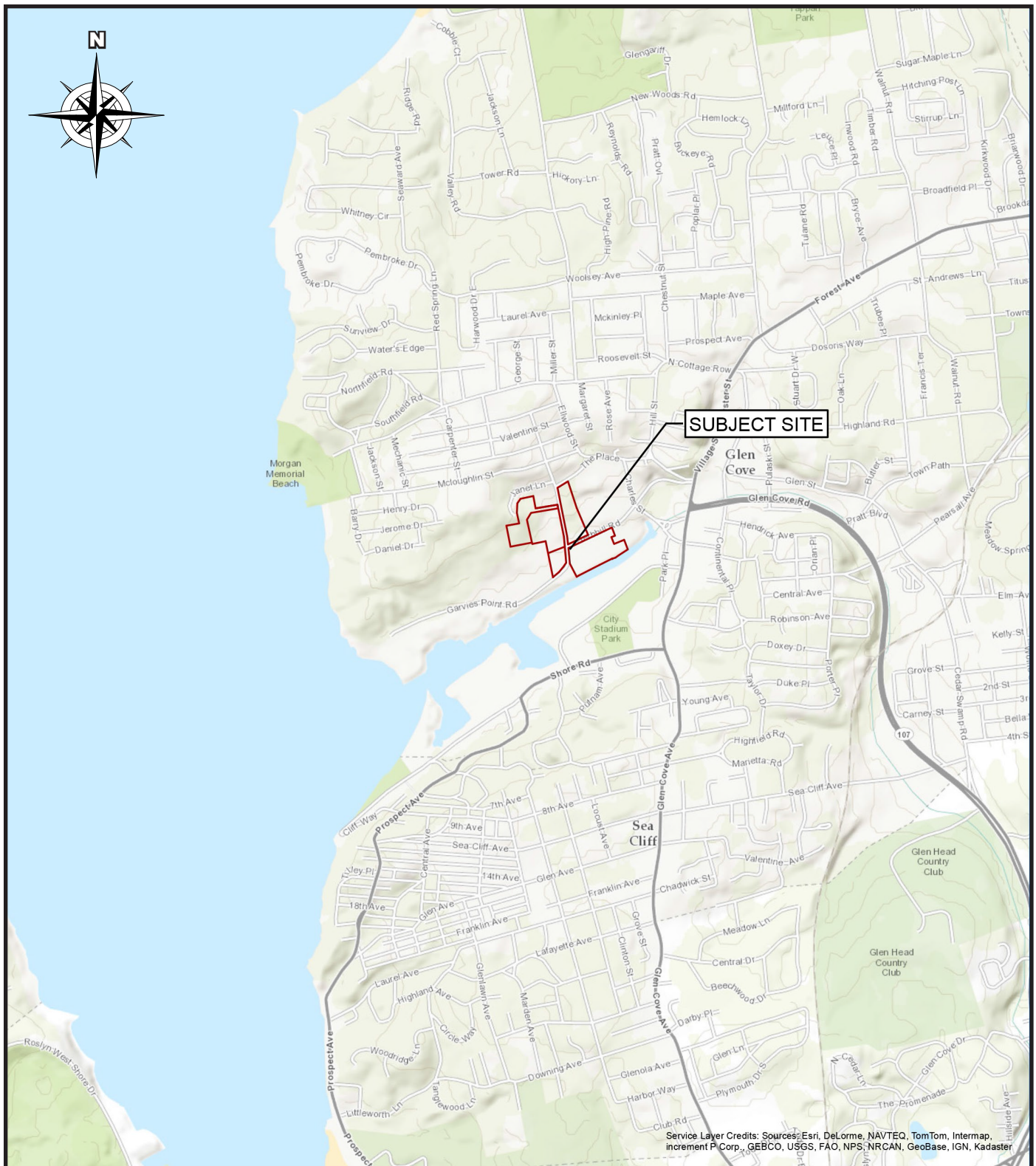
Project:	RG11701	Designed by:	DE
Date:	6/16/2017	Drawn by:	TS
Scale:	AS SHOWN	Approved by:	DE

Li Tungsten - OU 1 & 4

Garvies Point  
Glen Cove, NY

FIGURE NO:  
  
2





0 1/4 1/2 3/4 1 Miles

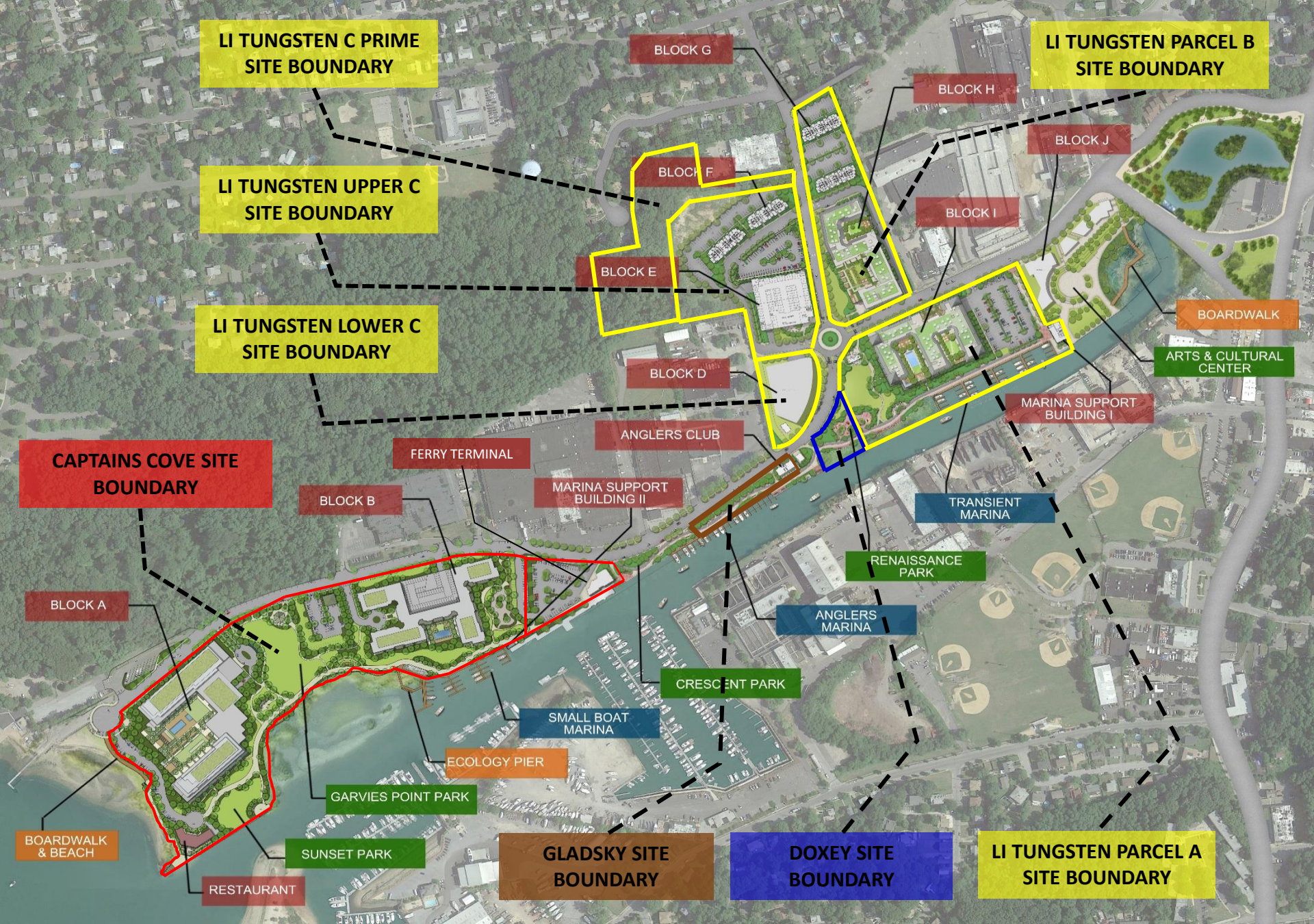


**LI TUNGSTEN SITE GLEN  
COVE, NEW YORK**

**SITE LOCATION MAP**

**FIGURE 3**





**Figure 4 - Garvie's Point Mixed-Use Waterfront Development & Vicinity Map  
(Including Superfund & Brownfield Sites) (Approximate - Not to scale)**



# LI TUNGSTEN CORP.

EST. POP. WITHIN A 1 MILE SITE BUFFER: 20779  
(based on Census 2000 Block-level data)

SITE AREA IN ACRES

51.17



SITE ID: NYD986882660

SITE NAME: LI TUNGSTEN CORP.

DATE OF MAP: Feb 26, 2007

RPM: ALS, ED

Contamination Polygon Source Document:

ROD 09-1999, Capt's Cove ROD 09-1999, Glen Cove Creek ROD 03-2005

CITY: GLEN COVE

STATE: NY ZIP: 12801

CONG. DIST.: NY03

0.05  
Miles





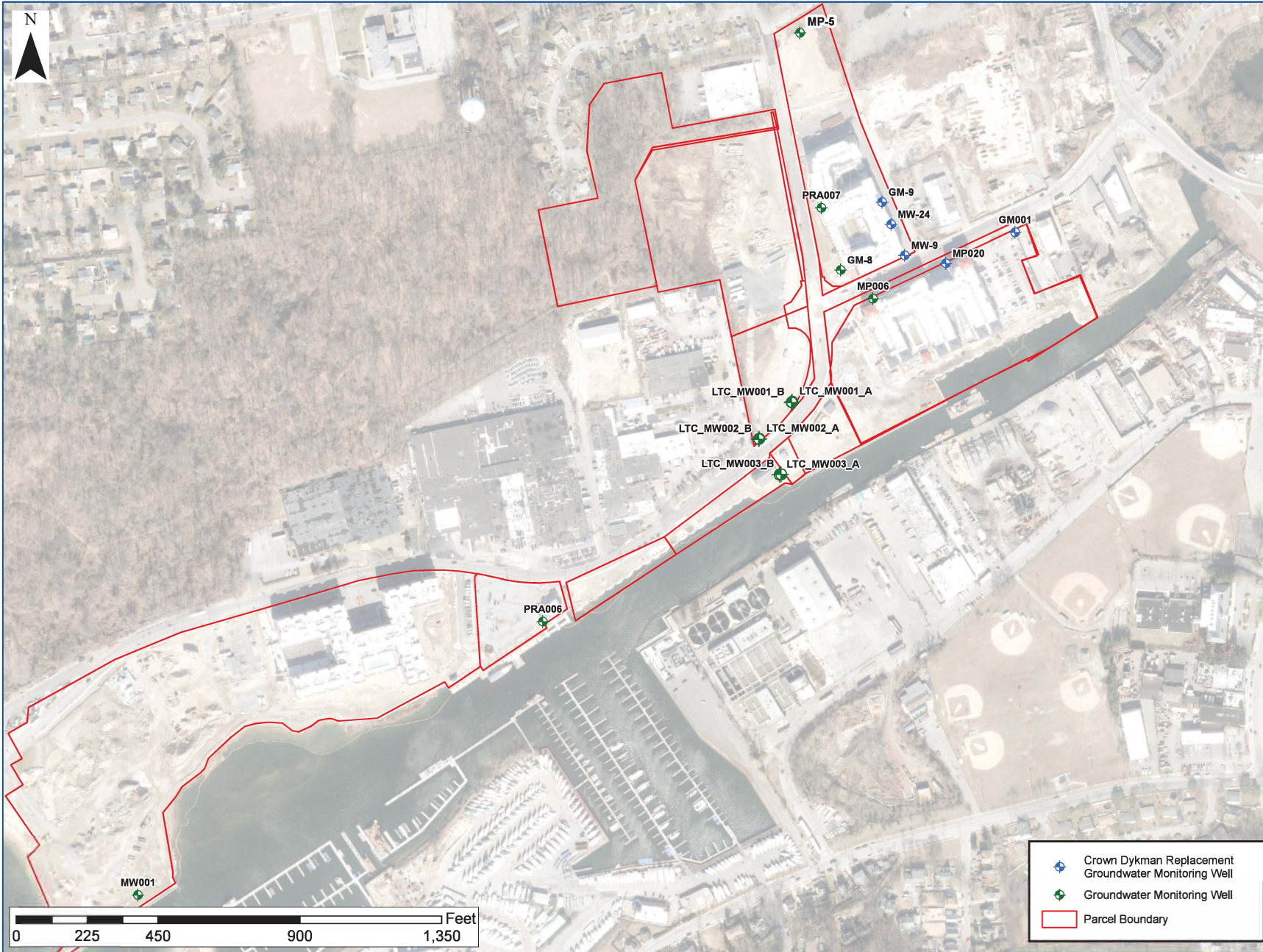












P.W. Grosser Consulting Engineer & Hydrogeologist, PC

630 Johnson Ave., Suite 7  
Bohemia, NY 11716  
Ph: 631-589-6353 • Fax: 631-589-8705  
pwgc.info@pwgros.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS  
DRAWING AND RELATED DOCUMENTS IS A VIOLATION  
OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

Georgica Green Ventures, LLC  
&  
Garvies Point Workforce LLC  
50 Jericho Quadrangle, Suite 118  
Jericho, New York 11753


REVISION	DATE	INITIAL	COMMENTS
DRAWING INFORMATION:			
Project:	GGV2101	Designed by:	DE
Date:	2/7/2023	Drawn by:	FT
Scale:	AS SHOWN	Approved by:	DE

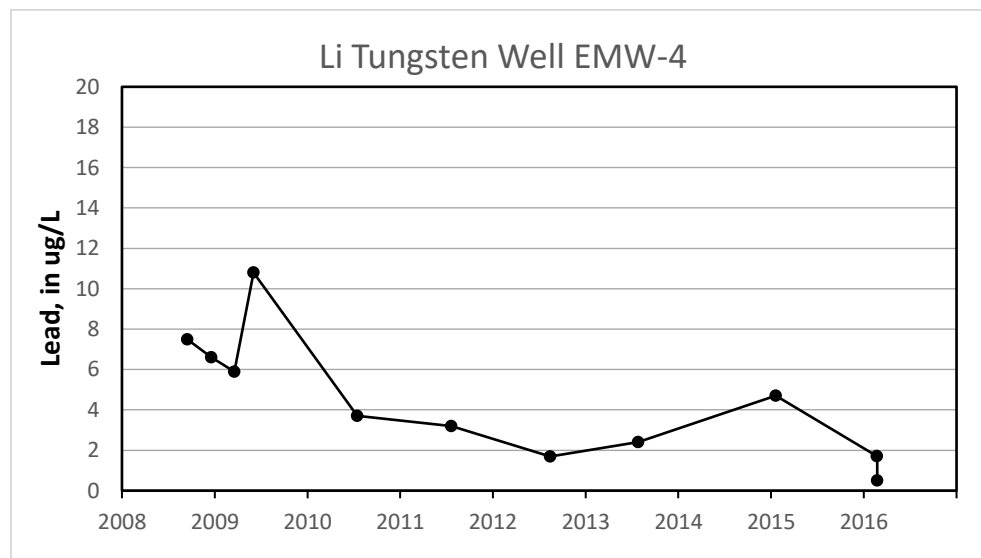
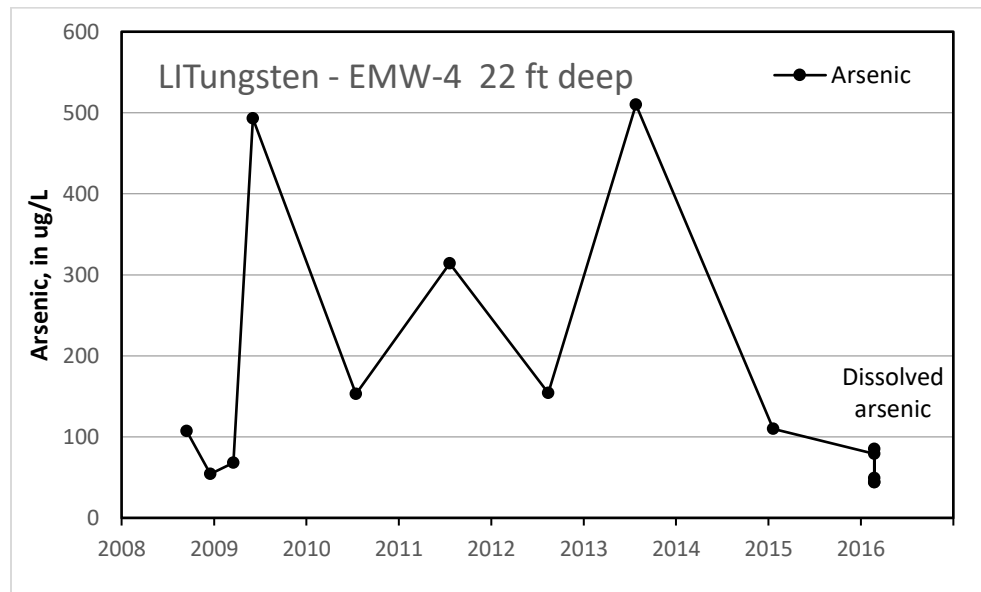
**GROUNDWATER  
MONITORING WELL  
LOCATION PLAN.**  
Construction Completion  
Report for Block G  
Glen Cove, NY

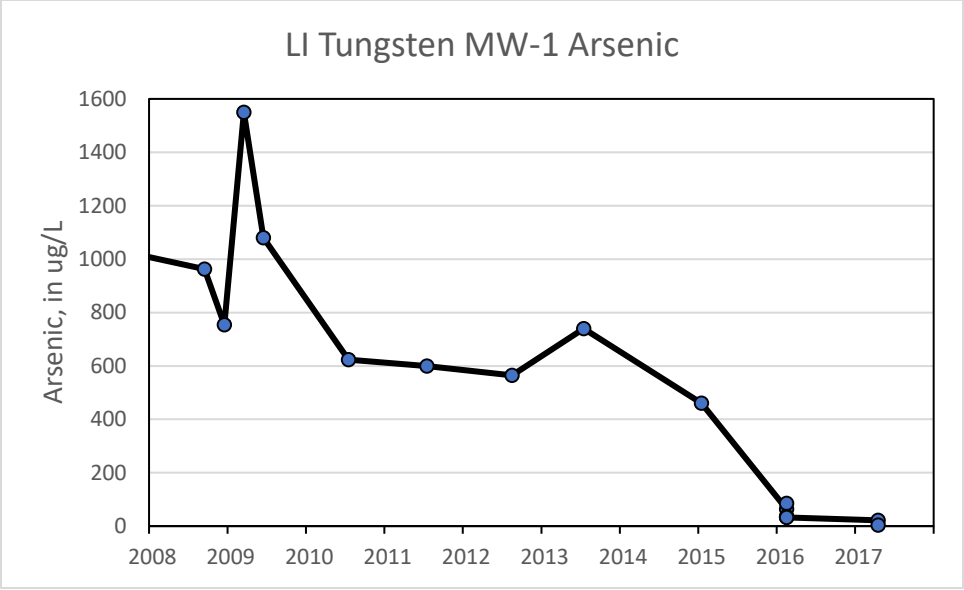
FIGURE NO:

8

- Crown Dykman Replacement Groundwater Monitoring Well
- Groundwater Monitoring Well
- Parcel Boundary

**Figure 9 - 2015 – 2017 Arsenic Concentration Trend (Wells EMW-4 and MW-1) and Lead Concentration Trend (Well EMW-4)**





## **APPENDIX E – REMEDY RESILIENCE ASSESSMENT**

## APPENDIX E

### Remedy Resilience Assessment

Three tools were utilized to assess the Li Tungsten Site in Glen Cove, New York. Screenshots from each of the tools assessed are shown below.

The first tool used to assess the site was the CMRA Assessment Tool. The tool examined five hazards 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 slight projected increase of days per year with maximum temperatures >100°F, as shown in Figure E-1. However, increases in heat are not anticipated to impact the Site remedial activities in the near future. Two other hazards evaluated by this tool, drought and wildfire, have a National Risk Index Rating of “Relatively Low.” Figures E-2 and E-3 show a slight increase in average annual total precipitation and a decrease in days per year with precipitation. Figure E-4 shows a “Relatively High” National Risk Index rating for flooding potential with an increase in annual days with precipitation over one inch. Flooding has not historically impacted the site or components of the remedy. As shown in Figure E-5, the percent of the county impacted by global sea level rise is 3% through the late century.

The second tool utilized is called Sea Level Rise. Glen Cove New York is at a slight risk of flooding due to sea level rise or high tide flooding and is considered medium vulnerability (Figure E-6). However, the location of the Site does not appear to be at risk.

The final tool utilized is called the USGS U.S. Landslide Inventory. As shown by Figure E-7, the area of the site is slightly vulnerable to landslides. However, there are no known incidents of landslides to date. Site conditions will continue to be monitored.

Based on this information, remedy resilience has been assessed, and the performance of the remedy is currently not at risk due to the expected effects of severe weather events in the region and near the Site.

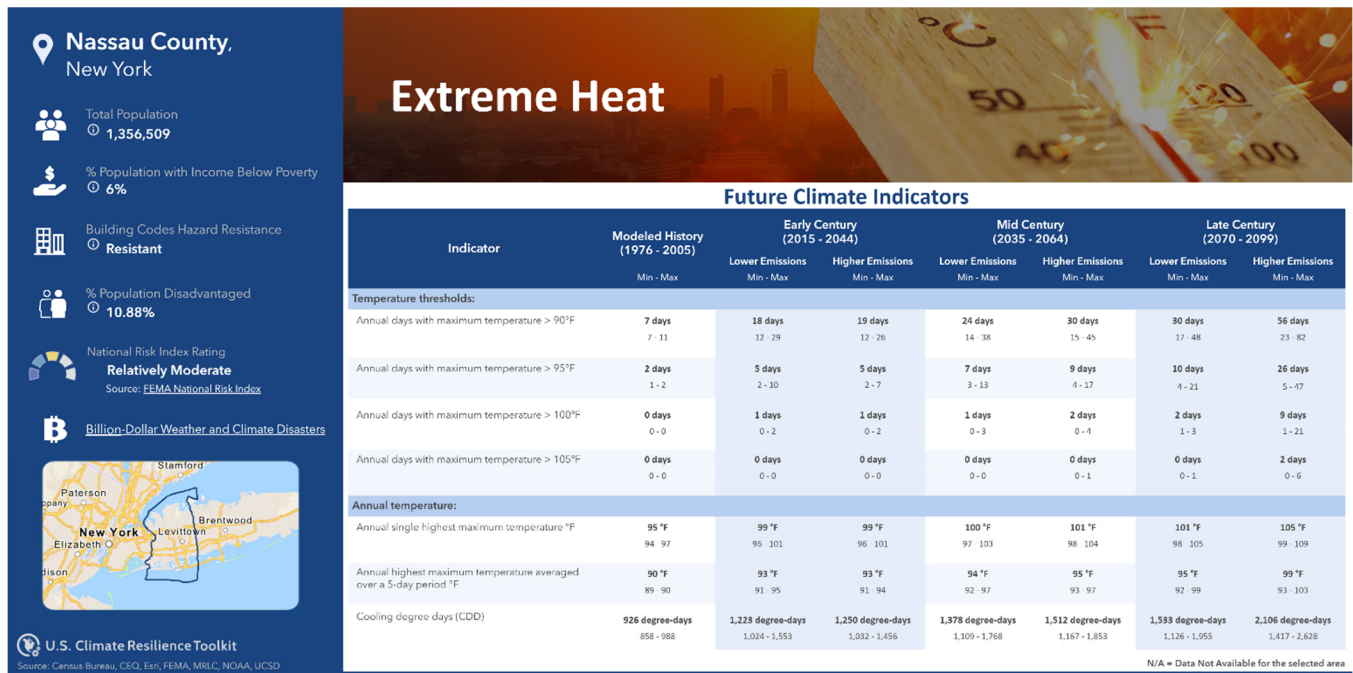


Figure E-1



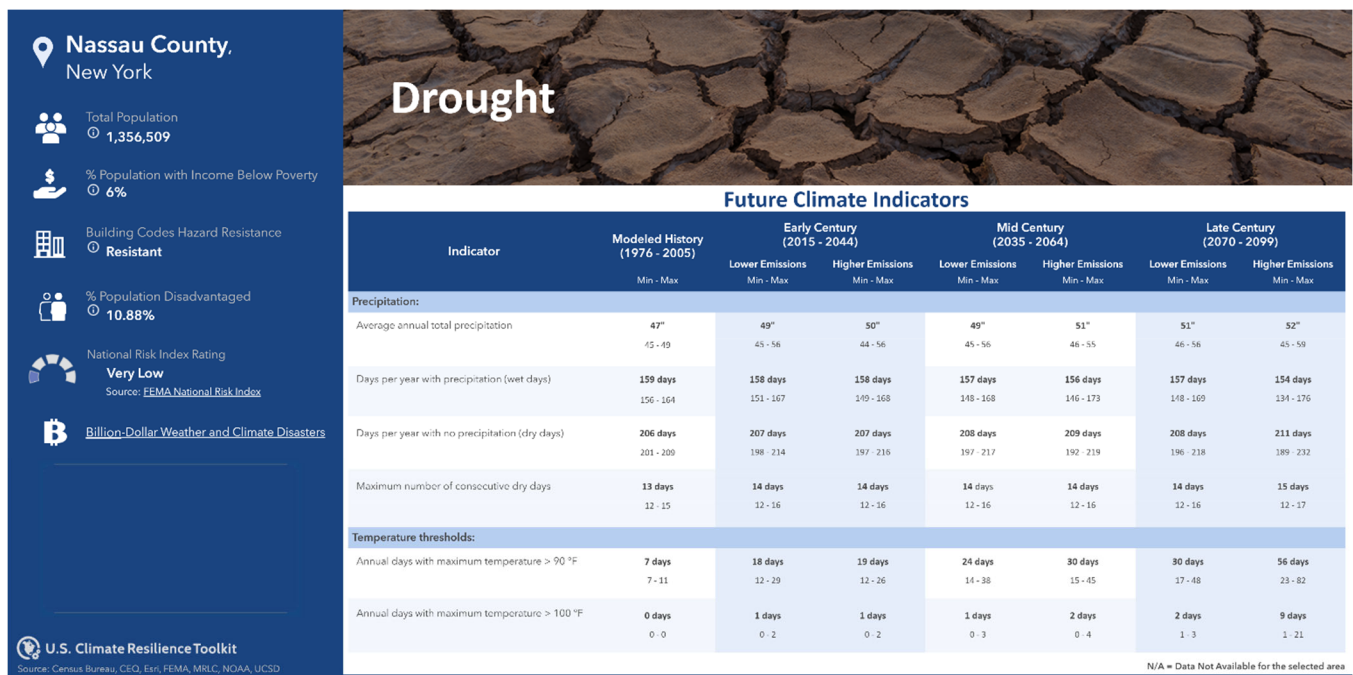


Figure E-2

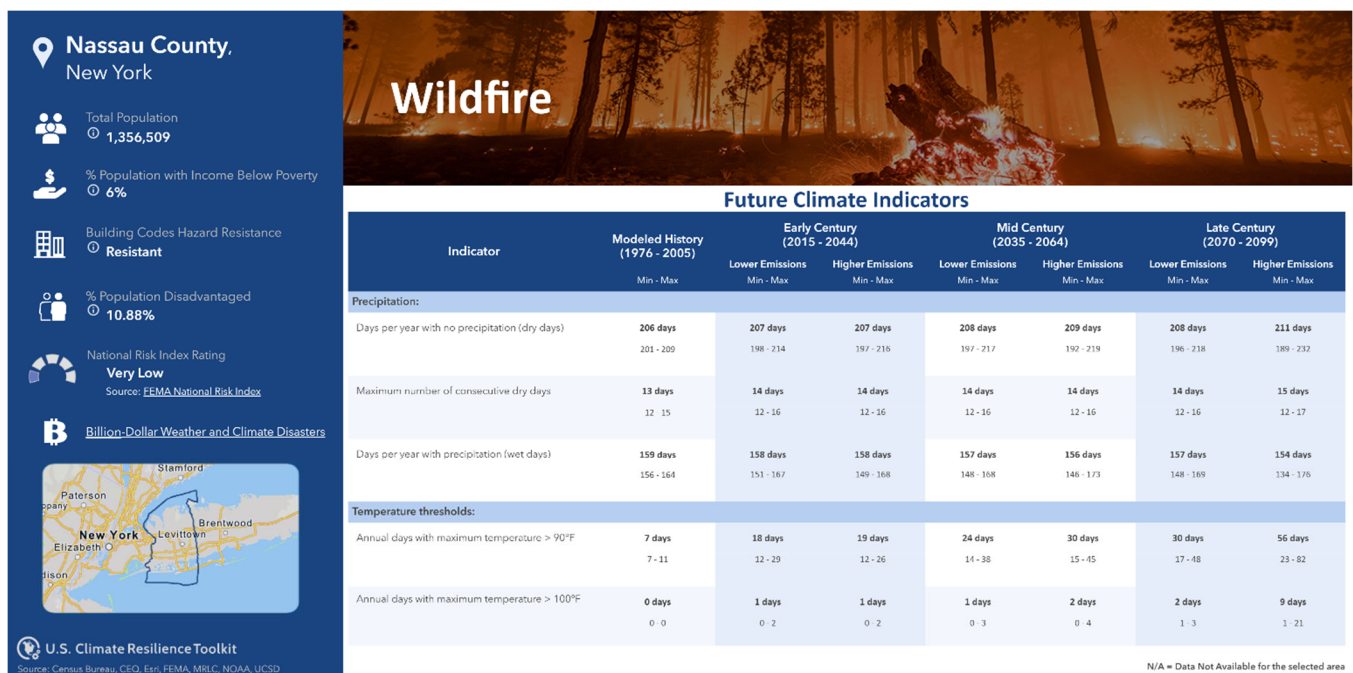


Figure E-3

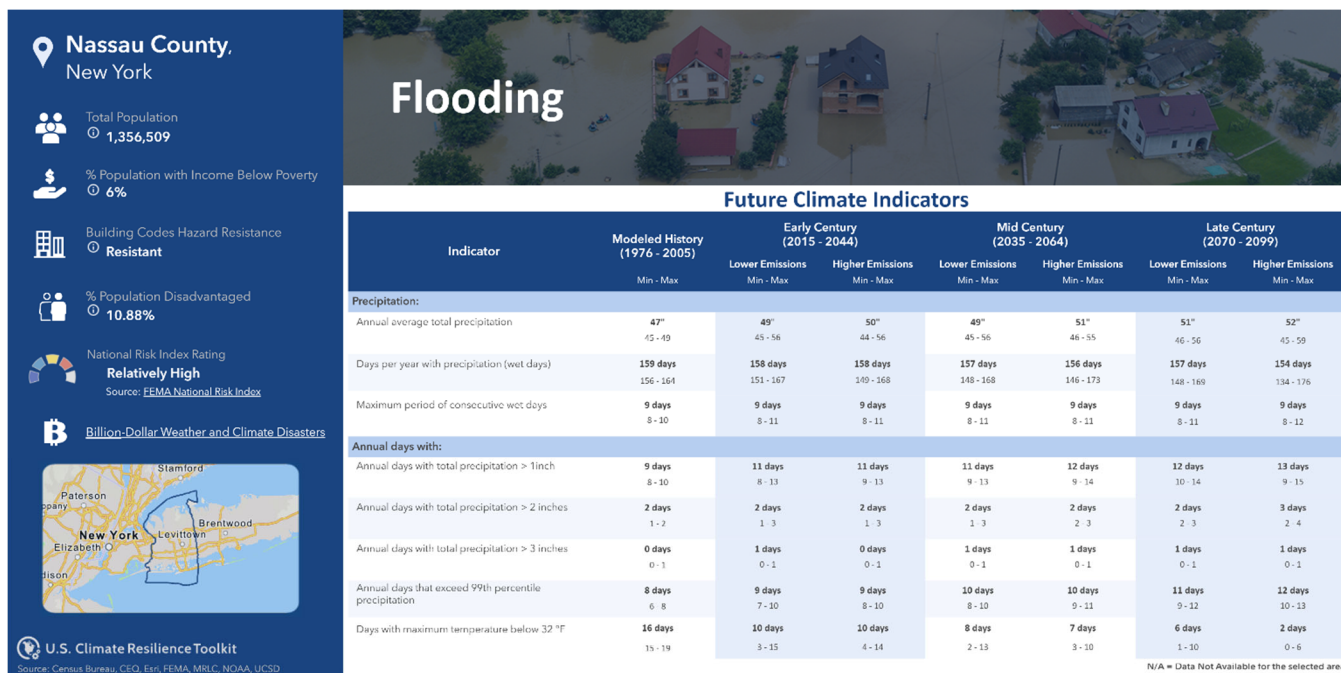


Figure E-4

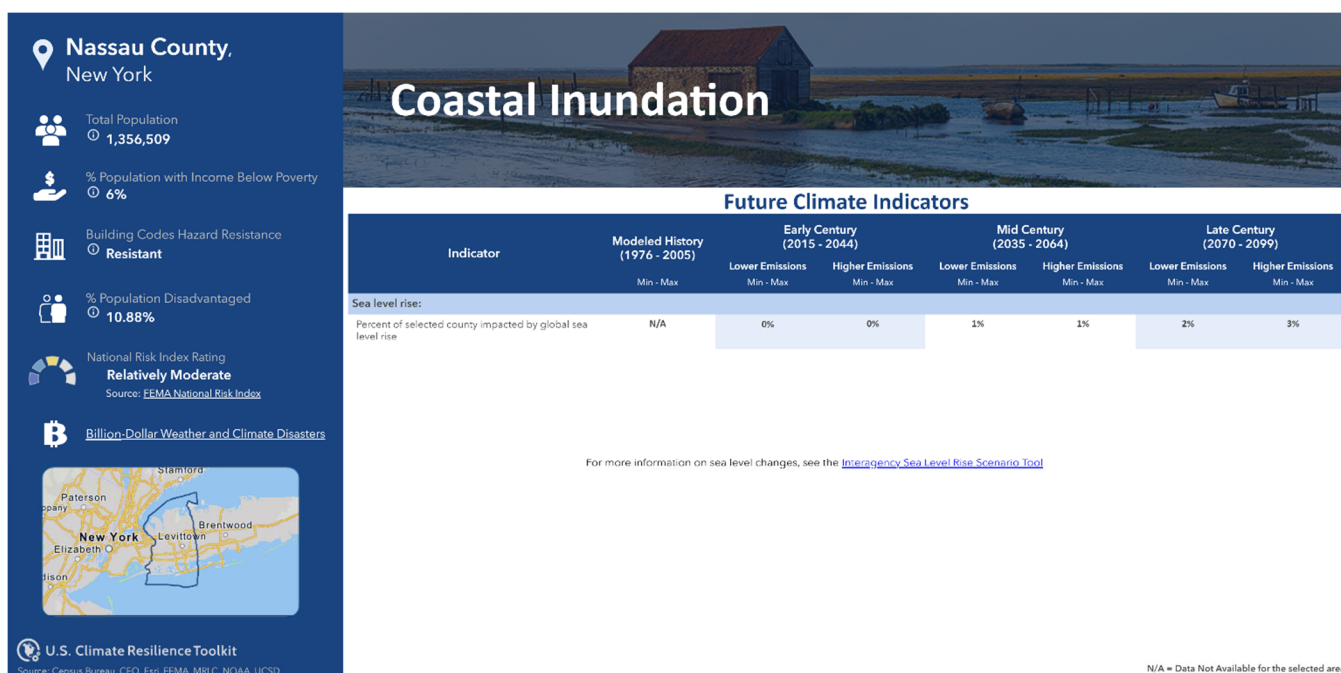


Figure E-5

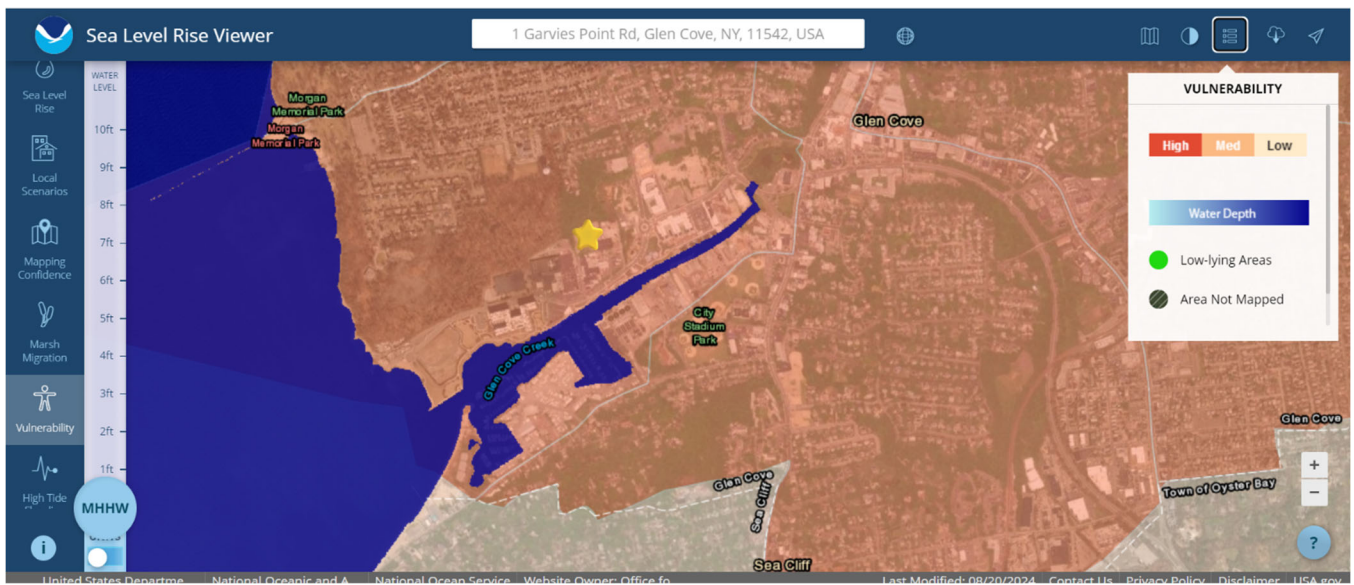


Figure E-6



Figure E-7