FIFTH FIVE-YEAR REVIEW REPORT FOR CIRCUITRON CORPORATION SUPERFUND SITE EAST FARMINGDALE, SUFFOLK COUNTY, NEW YORK

Prepared by

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

Pat Evangelista Digitally signed by Pat Evangelista Date: 2025.01.24 07:26:37 -05'00'

January 24, 2025

Pat Evangelista, Director
Superfund and Emergency Management Division

Date

746872

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
GCW	Groundwater Circulation Well
HHRA	Human Health Risk Assessment
ICs	Institutional Controls
IVS	In-well Vapor Stripping
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
PCE	Tetrachloroethylene
PRP	Potentially Responsible Party
PSTS	Pilot Source Area Treatment System
RA	Remedial Action
RAO	Remedial Action Objectives
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SCG	Soil Cleanup Goal
SVE	Soil Vapor Extraction
TBC	To Be Considered
TCA	1,1,1-trichloroethane
TCE	Trichloroethylene
VOC	Volatile Organic Compound

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 fifth FYR for the Circuitron Corporation Superfund Site (Site). The triggering action for this policy review is the completion date of the previous FYR. The FYR has been prepared due to the fact that the remedial action will not leave hazardous substances, pollutants or contaminants on site above levels that allow for unlimited use and unrestricted exposure, but requires five or more years to complete.

The Site consists of two operable units (OUs), both of which are addressed in this FYR. OU1 addresses sources of the groundwater contamination and has been completed with the exception of contaminated soils remediation at and below the water table in the southwest corner of the property. OU2 addresses treatment of the Site groundwater.

The Circuitron Corporation Superfund Site FYR was led by EPA: Emily Wong (remedial project manager), Damian Duda (supervisor), Liana Agrios (hydrogeologist), Ula Filipowicz (human health risk assessor), Detbra Rosales (ecological risk assessor), and Shereen Kandil (community involvement coordinator). The review began on June 26, 2024.

Site Background

The Site is located in East Farmingdale, Suffolk County, Long Island, New York (Appendix A **Figure 1**). The Site encompasses approximately one acre in an industrial/commercial area. Within a mile of the Site is a mixture of industrial and commercial areas, including cemeteries, Republic Airport, and Bethpage State Park. The closest residential community is located approximately one mile southwest of the Site.

The Site consisted of an abandoned 23,500 square foot building (Appendix A **Figure 2**) that was used between 1961 and 1986 for the manufacture of electric circuit boards. Wastes were discharged to leaching pits, cesspools and storm drains outside and inside the building. Circuitron vacated the premises between May and June of 1986. No manufacturing operations have taken place at the Site since then and the building has been demolished. The community is serviced by a public water purveyor that meets appropriate federal and state drinking water standards.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Circuitron Corporation Superfund Site		
EPA ID: NYD981184229		
Region: 2	**State:** NY	**City/County:** East Farmingdale/Suffolk
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: 6/26/2024 – 10/15/2024		
Date of site inspection: 10/2/2024		
Type of review: Policy		
Review number: 5		
Triggering action date: 1/24/2020		
Due date *(five years after triggering action date)*: 1/24/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The first remedial investigation and feasibility study (RI/FS) evaluated the contaminated soil and sediment at the site and was initiated in September 1988 and completed in January 1991. A focused FS for OU2 (groundwater) was initiated in January 1992 and completed in July 1994. Through these Site investigations, EPA determined that the contaminants of concern present in soils, sediments, and groundwater included volatile organic compounds (VOCs), primarily 1,1,1-trichloroethane (TCA), 1,1-dichloroethene (DCE), and tetrachloroethene (PCE), as well as some metals including arsenic, copper, chromium, and lead.

Based on the risk assessment conducted as part of the RI/FS, the only potential exposure of concern identified was developing the Upper Glacial aquifer as a public water supply in the future. The residents in the area are connected to public water from supply wells located in the deeper part of the Magothy aquifer; therefore, there are no current exposures to contaminated groundwater. The risk assessment also concluded that direct exposure to the Site soils and sediments did not represent a significant risk to human health and the environment. However, the contaminated soil and sediment did pose a significant indirect potential risk as a continuing source of groundwater contamination to future residents through the ingestion and the non-ingestion uses of groundwater. A detailed ecological risk assessment was determined not to be warranted.

Response Actions

Initial Response

In June 1987, EPA initiated a removal action and a preliminary assessment of the Site. Circuitron Corporation responded by initiating the removal of a substantial number of the containers left onsite in conjunction with EPA action. In 1988, EPA continued the removal action by sampling and removing remaining waste drums and three aboveground tanks, as well as the contents of seven underground storage tanks, two below-surface treatment basins, and several leaching basins. The action involved consolidating the various waste streams, removing the tanks located at the rear of the property, and removing contaminated debris inside the building. In total, 120 cubic yards of contaminated soil/sediments and debris, 56 drums of hazardous liquids, and an additional 1,400 gallons of tanked hazardous liquids were removed and properly disposed of off-site. The onsite removal activities were completed in September 1989. The Site was added to the NPL on March 31, 1989. A chronology of major site events is provided in **Appendix B**.

Remedy Selection

The OU1 ROD selected the remedy to address the contaminated soil and sediment at the Site and was signed on March 29, 1991.

The following remedial action objective (RAO) was selected in the OU1 ROD:

- Remove the site-related sources of contamination into the groundwater to expedite compliance with federal and state groundwater standards.

The following are the major components of the source control remedy selected in the OU1 ROD:

- In-situ vacuum extraction of the contaminated soil in the southwest corner of the property in the area of high VOC contamination;
- Excavation of contaminated sediments from leaching pits, cesspools and storm drains outside and inside the building;
- Off-site treatment and disposal of contaminated sediments; and
- Building decontamination via vacuuming of dust containing elevated concentrations of inorganic elements and replacement of the concrete floor in the building.

The OU2 ROD selected the remedy to address groundwater contamination at the Site and was signed on September 29, 1994.

The following RAOs were selected in the OU2 ROD:

- Prevent potential future ingestion of site-related contaminated groundwater;
- Restore the quality of the groundwater contaminated from the site-related activities to levels consistent with the federal and state drinking water and groundwater quality standards; and
- Mitigate the off-site migration of the site-related contaminated groundwater.

The major components of the selected groundwater remedy include:

- Extraction of the Site-related groundwater contaminant plume present in the upper 40 feet of the saturated Upper Glacial aquifer;
- Treatment, via metal precipitation and air stripping, of contaminated groundwater to drinking water standards;
- Reinjection of the treated groundwater into the Upper Glacial aquifer via an infiltration gallery; and
- Disposal of treatment residuals at a Resource Conservation and Recovery Act (RCRA) Subtitle C facility.

Cleanup levels selected for Site contaminants in soil and groundwater reflect the more stringent of the State and Federal drinking water standards or maximum contaminant levels (MCLs).

Status of Implementation

OU1 Source Control Remediation - Building Demolition

The OU1 ROD required the Circuitron building to be decontaminated via vacuuming of dust containing elevated concentrations of inorganic elements and replacement of the concrete floor in the building. However, as a result of inclement weather during the 1992/1993 winter, the building had deteriorated markedly, and a decision was made to demolish the building. EPA documented this change in the OU2 ROD. From June to July 1996, the building was demolished after the removal of all debris, drums left onsite containing waste derived from previous investigations, asbestos-containing materials from the building, and dust which was vacuumed from the plating room. In August 1996, the final inspection of these activities was conducted. EPA determined that the contractor (Sevenson) completed all material decontamination, asbestos-containing materials abatement, building demolition and waste disposal. On September 30, 1996, EPA approved the *Remedial Action Report*, documenting the completion of the first Remedial Action (RA) for OU1.

OU1 Source Control Remediation - Contaminated Sediment and Soil Removal

In September 1994, ICF Corporation, on behalf of EPA, performed and completed the RD for contaminated sediment and soil removal. In September 1995, the results of a Geoprobe study conducted at the Site determined the spatial extent of metal contamination, which led to the removal of approximately 50 tons of contaminated sediments and 1,200 tons of contaminated soils.

In addition, nine 55-gallon drums and four 750-gallon polyethylene tanks, left onsite containing waste derived from previous investigations, were sampled for full RCRA Toxicity Characteristics Leaching Procedure, PCB and RCRA characteristics, and properly disposed of off-site. The final inspection was conducted in January 1997. EPA determined that the remedial activities were completed and approved a *Remedial Action Report*, documenting the completion of the second OU1 RA on March 31, 1997.

OU2 Groundwater Remediation and OU1 Soil Vapor Extraction System

From February 1995 until September 1996, EBASCO Services, Inc., on behalf of EPA, performed the RD for the OU2 groundwater treatment system. The U.S. Army Corps of Engineers contracted with Radian International (Radian) and URS Corporation (URS) to implement the groundwater treatment RA selected in the OU2 ROD. In November 1998, before beginning the RA, Radian conducted groundwater sampling via test borings and from new and existing groundwater monitoring wells. The results of this sampling program were used to determine the final locations of the groundwater extraction wells. Radian initiated onsite construction activities in September 1999.

The groundwater remedy consisted of pumping contaminated groundwater out of the aquifer from three off-site recovery wells, treating it through filtration, air stripping and carbon adsorption, and then reinjecting the treated groundwater into the aquifer through the onsite reinjection trench. On May 15, 2001, EPA approved a *Remedial Action Report* for OU2 signifying that the system was operational and functional.

In 2004, EPA conducted a remedial system evaluation of the Site to recommend improvements in the remedy effectiveness, achieve reductions in operations and maintenance (O&M) costs, and attain Site closure. The contractor recommended directly addressing the remaining contamination located in the southwest corner of the Site near monitoring well MW-4S, where moderate levels of VOCs have been detected in the groundwater, by installing the soil vapor extraction (SVE) remedy from the OU1 ROD and augmenting it with a limited number of air sparging points. VOC concentrations in most wells had dropped steadily since the installation of the groundwater remedy; however, TCA remained above groundwater drinking water standards in the southwest corner of the property, specifically at monitoring well MW-4S.

Between November 2005 and February 2008, EPA conducted soil and groundwater sampling to fully delineate the horizontal and vertical extent of contamination near monitoring well MW-4S. The results of the sampling showed that elevated levels of VOCs in the groundwater remained under storm drains SD2 and SD3.

In May 2007, the RD for Pilot Source Area Treatment System (PSTS) called for installing a single integrated groundwater circulation well (GCW) with an in-well vapor stripping (IVS) and an SVE system to address the contaminated area in the southwest corner of the Site. The PSTS was installed to address the remaining contamination at the Site, specifically the contaminated subsurface soils and groundwater located in the southwest corner of the Site, by physically separating the contaminants from the soil and the groundwater in vapor form. The PSTS system replaced the original groundwater pump and treat system installed under the OU2 ROD.

In August 2007, the original groundwater pump and treat facility was shut down, concurrent with the installation of the PSTS. At that time, the total VOC influent concentration had been reduced to less than 10 parts per billion (ppb). After August 2007, URS maintained a limited operation of the pump and treat facility in the event the system needed to be restarted to meet the groundwater remediation goals. As of August 2010, EPA determined that the PSTS was effective in treating the contaminated groundwater and soil. Subsequently, in December 2011, EPA dismantled the original onsite groundwater pump and treat facility. Operation and Maintenance of the PSTS and SVE was transferred to New York State Department of Environmental Conservation (NYSDEC) in June 2011. In June 2012, the three off-site extraction wells were formally decommissioned.

The operational and performance data for the PSTS indicated that the system, as configured, was approaching asymptotic conditions and was incapable of achieving the RAOs established for the Site in a reasonable timeframe. As such, NYSDEC and its contractor Dvirka and Bartilucci performed a remedial system optimization study to evaluate and to develop remedial alternatives to attain cleanup objectives in a timely and cost-effective manner. Based on this study, modifications to the PSTS were made in November 2016 and included three new air sparging wells installed in the saturated zone, equipment, instrumentation, piping, fittings, and controls. The GCW and the IVS components of the PSTS were also discontinued as part of the modification. The SVE component continued to remain operational at this time.

In September 2020, NYSDEC and its contractor TRC Engineers, Inc., determined that contaminant recovery had likely reached asymptotic conditions and that further operation of the PSTS would not be effective at achieving RAOs. As such, the PSTS was shut down in October 2020 by Environmental Assessment & Remediations, NYSDEC's O&M and monitoring contractor.

In August 2023, NYSDEC and its current contractor EA Engineering, P.C. (EA) reviewed historical trends of VOC concentrations in conjunction with post-shutdown data to evaluate the usefulness of the PSTS. NYSDEC determined since contaminant recovery has been variable over the historical operation of the PSTS, further operation of the PSTS would not be effective at achieving remedial action objectives for the site. After reviewing available Site data, EPA concurs NYSDEC's findings on the efficacy of the PSTS. As a result of this evaluation indicating continued operation of the PSTS would not likely result in continued declines in the groundwater, the remaining components of the PSTS (air sparging and SVE systems) and the onsite trailer are expected to be decommissioned and removed offsite during the first quarter of 2025.

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)
Groundwater	Yes	No	Site	To prevent installation of potable groundwater production wells and withdrawal of groundwater	Suffolk County Sanitary Code – Article 4 Water Supply (rev. Nov 2011) NYS ECL 15-1527 (2003)

Systems Operations/Operation & Maintenance

During this review period, the O&M activities have been conducted in accordance with the September 2000 Operation and Maintenance Manual and the 2019 Site Management Plan. An updated Site Management Plan was approved by NYSDEC in 2025.

From May 2001 through May 2011, EPA conducted the groundwater remedy which included O&M of the groundwater pump and treat system until it was replaced by the PSTS, as described above. Beginning in June 2011, NYSDEC assumed responsibility for all O&M activities. Following the shutdown of the PSTS in October 2020, O&M activities at the Site have been limited to groundwater sampling events and annual Site inspections. These activities are performed by EA Engineering, NYSDEC's current contractor.

Since the last review, the groundwater monitoring program has been updated in accordance with the 2025 Site Management Plan. Modifications to the program include a reduction from 35 wells sampled annually (including a subset of wells sampled on a semi-annual and quarterly basis) to 19 wells sampled every 15 months to account for seasonality changes (Appendix A **Figure 3**). The most recent groundwater sampling event was completed in October 2023, and the next event is scheduled for the first quarter of 2025. The remaining 16 wells were removed from the monitoring program, as a result of consistently undetected contaminant concentrations below Class GA standards since 2014 and were decommissioned in December 2024.

Indoor and outdoor air sampling, as well as sub-slab vapor sampling, was also conducted during this review period as a result of VOC concentrations in excess of NYSDEC Class GA groundwater quality standards detected in MW-13. In April 2024, samples were collected at 77 Schmitt Blvd, a manufacturing facility located adjacent to MW-13 and southwest of the Site. Details from this sampling event are further described below. Vapor intrusion from contaminated groundwater related to the Site was not evaluated at 77 Schmitt Blvd prior to this sampling event. At the request of the New York State Department of Health (NYSDOH) in November 2024, another round of sampling will be completed during the first quarter of 2025.

Climate Change

Potential site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the site. Refer to **Appendix C** for additional information.

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	Protective	The remedy for the first operable unit (OU1) is protective of human health and the environment.
2	Protective	The remedy for the second operable unit (OU2) is protective of human health and the environment.
Sitewide	Protective	The remedies for the Circuitron Site are protective of human health and the environment.

Although no issues or recommendations were identified in the previous FYR, a suggestion was identified as follows:

- Since contaminated soil located below the water table in the southwest corner of the property is the only remaining source area at the Site, ensure that the remediation of the source area will continue through ongoing operation, maintenance, and monitoring activities, until remedial objectives for groundwater are achieved.

Since the last FYR, the onsite PSTS has been shut down after NYSDEC determined that contaminant recovery had likely reached asymptotic conditions, and that further operation of the PSTS would not be effective at achieving RAOs. Active remediation for the remaining contamination is not currently planned since only five Site wells have exceedances slightly above Class GA Standards (discussed below). Groundwater sampling will continue to be conducted at 19 sitewide wells, in accordance with the 2025 Site Management Plan to ensure protectiveness of human health and the environment. EPA and NYSDEC will continue to monitor sample results until remedial objectives have been reached.

As described in further detail below, soil vapor and air sampling have also been conducted at a nearby property southwest of the Site, based on VOC concentrations detected in monitoring well MW-13. Any additional monitoring or maintenance activities will be performed as the need arises until remedial objectives are achieved.

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 Circuitron Corporation 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 site webpage https://www.epa.gov/superfund/circuitron and provided the notice to the Town of Babylon by email on December 19, 2024 with a request that the notice be posted in municipal offices and on the town webpages. This notice indicated that a FYR would be conducted at Circuitron 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: EPA Region 2 Superfund Records Center, 290 Broadway, 18th floor, New York, NY 10007, and Farmingdale Public Library, 116 Merritts Road, Farmingdale, New York.

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

Data Review

Groundwater

Long-term groundwater monitoring is conducted to determine the progress of groundwater restoration and compliance with the groundwater quality criteria. Sampling was conducted on a quarterly basis, with a total of 33 monitoring wells sampled during the summer sitewide event. A smaller subset of wells were sampled during the minor spring, fall and winter events. A reduction of the groundwater monitoring program to 19 sitewide wells, sampled every 5 quarters, began in 2023, in accordance with the updated Site Management Plan. All samples were analyzed for VOCs using EPA method 8260. The Class GA standard for 1,1,1-TCA, 1,1-DCA, PCE, TCE and chlorobenzene is 5 µg/L. The Class GA standard for vinyl chloride is 2 µg/L.

In 2019, four groundwater sampling events were conducted in March, June, September, and December. 1,1,1-TCA was detected above the NYSDEC Class GA groundwater standard of 5 µg/L in four on-property monitoring wells (MW-4S, GCW-SPY-S, GW-SE07S, GW-SE-15S) and one off-property monitoring well (MW-13) at a maximum concentration of 120 µg/L (MW-4S). 1,1-DCA was also detected above the criteria of 5 µg/L in GCW-SPY-S at a maximum concentration of 8.5 µg/L. Cis-1,2-DCE exceeded the criteria of 5 µg/L in GCW-SPY-S, GW-N15M, and GW-SE30M at concentrations of 13 µg/L, 20 µg/L, and 5.1 µg/L, respectively. TCE, chlorobenzene, and vinyl chloride were reported in select onsite monitoring wells slightly above criteria at maximum concentrations of 12 µg/L, 7.1 µg/L, and 7.8 µg/L, respectively.

Sampling events were conducted in March and July of 2020. Exceedances for 1,1,1-TCA were detected in three on-property shallow monitoring wells (MW-4S, GCW-SPY-S and GW-SE07S). The highest concentrations at all three locations were detected during the March event, with detections of 89 µg/L, 28 µg/L and 53 µg/L, respectively. 1,1,1-TCA was also detected in off-property well MW-13 in both rounds of sampling, with the highest concentration of 170 µg/L detected during the March event.

Three minor groundwater sampling events were conducted in 2021. Five onsite groundwater monitoring wells near the PSTS were sampled in March and September 2021. During the March 2021 event, 1,1,1-TCA was detected in monitoring wells MW-4S and GW-SE07S at 70 µg/L and 39 µg/L, respectively. During the September event 1,1,1-TCA was detected in monitoring wells MW-4S, GW-SE07S, and GCW-SPY-S at 60 µg/L, 44 µg/L, and 5.2 µg/L, respectively. In addition to the five onsite wells, off-property well MW-13 was also sampled during this September event. 1,1,1-TCA was detected at concentrations of 250 and 54 µg/L, in March and September 2021, respectively. PCE was detected at 5.1 µg/L in March 2021. During the December 2021 event, 1,1,1-TCA was detected in four out of 17 on-property shallow monitoring wells (MW-4S, GW-SE07S, GW-N15S, and GCW-SPY-S) at 89.1 µg/L, 44.7 µg/L, 5.2 µg/L, and 28.8 µg/L, respectively. Chlorobenzene was detected in one shallow monitoring well (GW-N15M) at 8.0 µg/L. Of the two off-property wells sampled during this event, 1,1,1-TCA was detected at a concentration of 173 µg/L in monitoring well MW-13.

During the summer sitewide sampling completed in July 2021, 1,1,1-TCA was detected in three out of 17 shallow monitoring wells (MW-4S, GCW-SPY-S and GW-SE07S) at 56 µg/L, 6.2 µg/L, and 34 µg/L, respectively. 1,1,1-TCA was detected at in two out of 16 off-property monitoring wells (MW-13 and MW-17) at 93 µg/L and 12 µg/L, respectively. Additionally, 1,1-DCA was detected in monitoring well MW-13 at a concentration of 6.4 µg/L. VOCs were not detected at concentrations greater than Class GA Values in any other groundwater samples collected from off-property monitoring wells.

Three minor groundwater sampling events were conducted in 2022. One on-property and five off-property groundwater monitoring wells were sampled in May, September, and December 2022. During the May 2022 sampling event, 1,1,1-TCA was detected above the NYSDEC Class GA groundwater standard of 5 µg/L in monitoring well MW-4S at a concentration of 62 µg/L. In addition, concentrations of 1,1,1-TCA also exceeded criteria in off-property monitoring wells MW-13 and MW-17 at 120 µg/L and 9.9 µg/L, respectively. Vinyl chloride was also reported above the NYSDEC Class GA groundwater standard of 2 µg/L in MW-13 at a concentration of 3.6 µg/L. During the September 2022 sampling event, 1,1,1-TCA was detected above criteria in

monitoring wells MW-4S and MW-13 at concentrations of 52 µg/L and 57 µg/L, respectively. In December 2022, concentrations of 1,1,1-TCA remained above criteria with detections of 42 µg/L in MW-4S and 70 µg/L in MW-13.

One sitewide sampling event was also conducted in June 2022 where 1,1,1-TCA was detected above criteria in three of 17 on-property shallow monitoring wells (MW-4S, GW-SPY-S, and GW-SE07S) at 48 µg/L, 15 µg/L, and 38 µg/L, respectively. Concentrations of 1,1,1-TCA exceeded criteria in one of 14 off-property monitoring wells (MW-13) at 110 µg/L. Vinyl chloride was also detected above criteria in MW-13 at a concentration of 3.6 µg/L. Between May and September 2022, acetone was detected at concentrations above the Class GA standard of 50 µg/L in wells MW-4S/MW-4D, located in the southwest corner of the property, and 7 off-property wells. These exceedances may be attributed to a source unrelated to the Site given the highest acetone concentrations were detected in off-property wells, with a maximum concentration of 190 µg/L. Acetone is also a common laboratory contaminant, which may have influenced the high concentrations found during these sampling events.

Two groundwater sampling events were conducted in June and October 2023, respectively. Four wells were sampled during the June sitewide event. 1,1,1-TCA was the only VOC detected at concentrations in exceedance of NYSDEC Class GA groundwater standards at on-property well MW-4S (16 µg/L) and off-property well MW-13 (65 µg/L). 1,1,1-TCA was not detected at the other two wells sampled (onsite wells GW-SE07S and GW-SE15S). During the October event, analytical results from 18 groundwater samples indicate that VOC concentrations remain elevated in on-property and downgradient monitoring wells (Appendix A **Figures 4** and **5**). 1,1,1-TCA concentrations continue to remain above the Class GA groundwater standard in four on-property monitoring wells GCW-SPY-S (73.4 µg/L), GW-N15S (6.2 µg/L), GW-SE07S (32.1 µg/L), MW-4S (43.8 µg/L) and one off-property/downgradient monitoring well MW-13 (45 µg/L).

1,1,1-TCA exceedances reported during the 2023 events align with historical exceedances, documented in prior monitoring events. While concentrations of 1,1,1-TCA in on-property well MW-4S have consistently been detected above the Class GA groundwater standard of 5 µg/L, concentrations have been slowly trending downward since the PSTS system was shut down in October 2020. Concentrations of 1,1,1-TCA at off-property well MW-13 were above the Class GA groundwater standard, with an overall decreasing trend during PSTS operation from 2011 to 2019. Following the system shutdown, concentrations fluctuated but demonstrated an overall decreasing trend. Concentrations at wells further downgradient have been nondetect or below the Class GA groundwater standard as well. Concentrations of 1,1,1-TCA remain elevated or have increased in concentration since the 2019 sampling event at monitoring wells GCW-SPY-S and GW-N15S. However, 1,1,1-TCA at GW-N15S is just marginally above 5 µg/L and the concentrations in GCW-SPY-S were declining prior to a spike in 2023 which will be further monitored. 1,1,1-TCA concentrations at monitoring wells MW- 4S, GCW-SPY-D, GW-SE07S, GW-N15D, and GW-SE30D decreased in comparison to the 2019 sampling event. Trend graphs for select wells are shown in Appendix A **Figures 6a-6e**.

Based on current contaminant trends in Site wells, there are currently no plans to implement any action to address the remaining groundwater contamination. Contaminant concentrations remain low but above the groundwater standard at five out of 35 locations. Although the concentrations in these wells have been variable during this FYR period, they are significantly lower than they were at the start of the remedial action and have generally followed declining trends since the PSTS was shut down in 2020 (with the exceptions of GCW-SPY-S and GW-N15S discussed above), thus suggesting that the plume is stable. Site wells will continue to be monitored by EPA and NYSDEC via regular groundwater sampling events.

Emerging Contaminants

Groundwater samples were analyzed for perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and 1,4-dioxane during the June and October 2023 sampling events. In 2020, New York State established MCLs for PFOA and PFOS of 10 nanograms per liter (ng/L). In 2023, New York State released ambient water quality guidance values for PFOS and PFOA which are 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. The New York State ambient water quality guidance value for 1,4-dioxane is 0.35 µg/L.

Concentrations exceeding the state ambient water quality guidance values and federal MCLs were found in all four wells sampled during the June 2023 sampling event. Results from the October 2023 event indicate PFOS exceedances in all 18 wells sampled. Exceedances of PFOA were also detected in 3 off-property and 9 on-property wells sampled during this event. Overall, PFOS and PFOA concentrations are distributed evenly sitewide. Downgradient well MW-6S showed the highest PFOS concentration at 33.3 ng/L, while upgradient well MW-1D showed the highest PFOA concentration at 17.2 ng/L. PFOS and PFOA exceedances observed during the October 2023 event slightly decreased in GW-SE07S, MW-4S, and MW-13 when compared to the June 2023 event. The presence of PFOS and PFOA in upgradient wells MW-1S and MW-1D indicate contamination may not be site-related.

1,4-Dioxane was not detected in groundwater samples collected during the June 2023 sampling event. A concentration of 0.68 µg/L was detected in MW-17 during the October 2023 event, marginally exceeding the state ambient water quality guidance value. Five monitoring wells were previously sampled and analyzed for 1,4-dioxane during the 2009-2014 review period, but it was not detected in any of the samples. EPA will continue to work with the NYSDEC to determine future sampling needs.

Vapor Intrusion

In April 2024, air and vapor samples were collected at an adjacent building located on 77 Schmitt Blvd as a result of VOC exceedances detected in MW-13, a monitoring well located adjacent to the facility. Three sub-slab soil vapor points were installed, and sub-slab vapor was collected with a Summa Canister over an 8-hour period (Appendix A **Figure 7**). Each sub-slab point was co-located with an indoor air sample that collected air over an 8-hour period. Two outdoor air samples were also collected upwind and downwind of the building over an 8-hour period. Samples were analyzed for VOCs via EPA Method TO-15 and evaluated using the NYSDOH Soil Vapor Intrusion Decision Matrices and using EPA's vapor intrusion screening levels (VISLs).

At Location 1, the concentration of 1,1,1-TCA was non-detect in the indoor air sample and 470 µg/m^3 in the sub-slab soil vapor sample. For Location 2, the concentration of 1,1,1-TCA was 1.4 µg/m^3 in the indoor air sample and 2,250 µg/m^3 in the sub-slab vapor sample. Location 3 showed a non-detect concentration of 1,1,1-TCA in indoor air and a concentration of 2,650 µg/m^3 in sub-slab. Comparing these results to EPA's VISLs indicates that no detected indoor air or sub-slab vapor sample concentrations exceeded the associated chemical-specific VISLs. At NYSDOH's request, another round of sampling will be performed during the first quarter of 2025.

Site Inspection

The inspection of the Site was conducted on October 2, 2024. In attendance were Emily Wong, Liana Agrios, Detbra Rosales, Emma Mendelsohn, Tara Bhat and Ula Filipowicz of EPA, Jasmine Stefansky and Jeffery Dyber of NYSDEC, and Joshua Oliver and Grant Reed of EA. The purpose of the inspection was to assess the protectiveness of the remedy.

Participants performed a walk-through inspection of the Site area. The property is currently used for storage of portable restrooms. Some of the monitoring wells were located and inspected. The observed monitoring wells appear to be in good condition. However, EPA recommended that all wells be labeled. Additionally, monitoring wells located offsite or in unsecured areas should be marked out and locked to prevent accidental damage or tampering.

V. TECHNICAL ASSESSMENT

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

Based on the information reviewed, the remedy is functioning as intended by the decision documents and the potential exposure pathways for soil and groundwater have been interrupted or eliminated. Therefore, there are no completed pathways for human and ecological receptors.

The primary cleanup objectives of the RODs are to remove the continuing sources of contamination into the groundwater, prevent potential future ingestion of Site-related contaminated groundwater, restore the quality of the groundwater, and mitigate the off-Site migration of the Site-related contaminated groundwater. By removing contaminated sediment, soil and the onsite building, major sources of contamination into the groundwater have been eliminated. Based on the subsequent soil sampling, the only remaining source of groundwater contamination is located in the southwest corner of the Site. The selected remedy to address groundwater, as documented in the OU2 ROD, consisted of pumping and treating the contaminant plume present in the upper 40 feet of the saturated Upper Glacial aquifer followed by re-injection of the treated water back into the aquifer. The treatment was effective in reducing contamination levels, and concentrations continued to decline. The groundwater treatment plant was shut down in August 2007 when the influent VOC concentrations dropped below 10 µg/L and was replaced with the PSTS. The PSTS has been inactive since October 2020, after a system evaluation performed by NYSDEC showed that asymptotic conditions had been reached at the Site and the PSTS would no longer help achieve Site RAOs.

Following the shutdown of the PSTS during this review period, long-term monitoring will continue at the Site to evaluate the impact of remaining contamination on human health and the environment. In accordance with the 2025 Site Management Plan, while the federal MCL for 1,1,1-TCA of 200 µg/L has been achieved, sampling of groundwater will continue until concentrations of VOCs are less than the state's Ambient Water Quality Standard of 5 µg/L for two consecutive sampling events. Contaminant concentrations were variable during this FYR period and relatively low, but remain above the state groundwater standard in five locations. Nevertheless, the levels of contamination in these wells have generally indicated declining or stable trends since the PSTS was shut down in 2020 and remain significantly lower than they were at the start of remedial action. Site wells will continue to be monitored by EPA and NYSDEC via regular groundwater sampling events.

Access restrictions to the Site are adequate and maintained through fencing around the Site. No ICs were included in the remedies, and none are anticipated over the next FYR period. The local ICs are already in place, including the statutory restrictions on the future use of groundwater, the existence of the prospective purchaser agreement, and the commercial/light industrial zoning.

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

There have been no physical changes to the Site that would adversely affect the protectiveness of the remedy. Land use assumptions, exposure assumptions and pathways, and cleanup levels considered in the decision documents followed the Risk Assessment Guidance for Superfund used by the Agency at the time and remain valid. Although specific parameters may have changed since the time the risk assessment was completed, the process that was used remains valid. The RAOs for the Site, as detailed in the "Remedy Selection" section were evaluated as part of this FYR and were also found to remain valid.

As summarized in the decision documents, a baseline Human Health Risk Assessment (HHRA) for the Site found that potable uses of contaminated shallow groundwater beneath the Site were associated with elevated risk to human health. Further, although the HHRA found that direct exposure with Site soils and sediments did not

represent a significant risk to human health, if not treated, the contamination present would serve as an ongoing source of contamination to the underlying groundwater beneath the Site.

Excavation and off-Site disposal of contaminated soils and sediments, the demolition and removal of the former onsite building, along with treatment of the residual soil and groundwater contamination in the southwest corner of the Site, have greatly reduced the major sources of contamination impacting the groundwater. Perimeter fencing surrounding the Site further serves to preclude direct exposure to any residual contamination present in onsite soils. Exposure to groundwater beneath the Site continues to remain an incomplete exposure pathway, as all nearby receptors are connected to the public water supply. Further, as indicated in Table 1, local ICs have been in place since 2003 to prevent the installation of potable groundwater production wells and withdrawal of groundwater from beneath the site. The ICs ensure future exposure to groundwater contamination will remain an incomplete exposure pathway.

The soil remedial goals for the Site selected at the time of the decision documents were based on a technical evaluation of contaminant leaching which indicated that reduction of soil contaminant levels of 1,1,1-TCA and PCE to 1 mg/kg and 1.5 mg/kg, respectively, would ensure protection of groundwater from cross media impacts. Although the current state protection of groundwater soil cleanup objectives have decreased since the RODs were signed, they remain protective of human health. The groundwater remedial goals were the lower of the state and federal drinking water standards and groundwater quality standards available at the time of the decision documents. These standards remain unchanged and are protective of human health.

The potential for subsurface vapor intrusion is generally evaluated when Site soils and/or groundwater are known or suspected to contain VOCs. The previous FYRs evaluated the vapor intrusion pathway by comparing the maximum detections of VOCs found in Site monitoring wells to their respective risk-based groundwater VISLs. This comparison was done again using current groundwater data collected from 2019 to 2023. Results of the analysis were consistent with prior years and confirm that the VOC detections in shallow groundwater beneath the Site continue to fall below or within an acceptable risk range and noncancer hazard indicating the potential for subsurface vapor intrusion is unlikely. Furthermore, as discussed in the Data Review section, indoor air and sub-slab vapor samples were collected in April 2024 in an adjacent commercial property; results of this sampling were compared to EPA's chemical-specific commercial VISLs for indoor air and sub-slab. Results of the analysis found that the VOC detections in both the indoor air and sub-slab vapor fall below or within an acceptable risk range and noncancer hazard; hence, VI is not currently considered an issue at this building. Nonetheless, at NYSDOH's request, another round of sampling will be performed during the first quarter of 2025 to confirm these findings.

Ecological

The potential exposure of Site contaminants to terrestrial wildlife were considered in the Site evaluation. About 95% of the original Circuitron Corporation operations is paved or an open field where buildings use to reside. The Site is situated in a densely populated industrial/commercial area, and the likelihood for wildlife to be present within the general vicinity of the site is low. Therefore, there is little to no potential exposure to contaminated soils and groundwater to wildlife. As a result, it was concluded that an ecological risk assessment was not warranted. Additionally, contaminants in the groundwater do not discharge to any surface water body, and the residual contamination in the subsurface soil are covered by pavement and building. Therefore, there are no current impacts to ecological receptors and wildlife exposure assumptions are still valid.

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

There is no other information that calls into question the protectiveness of the remedies.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
1 and 2

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: OU1	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy for OU1 is protective of human health and the environment.	

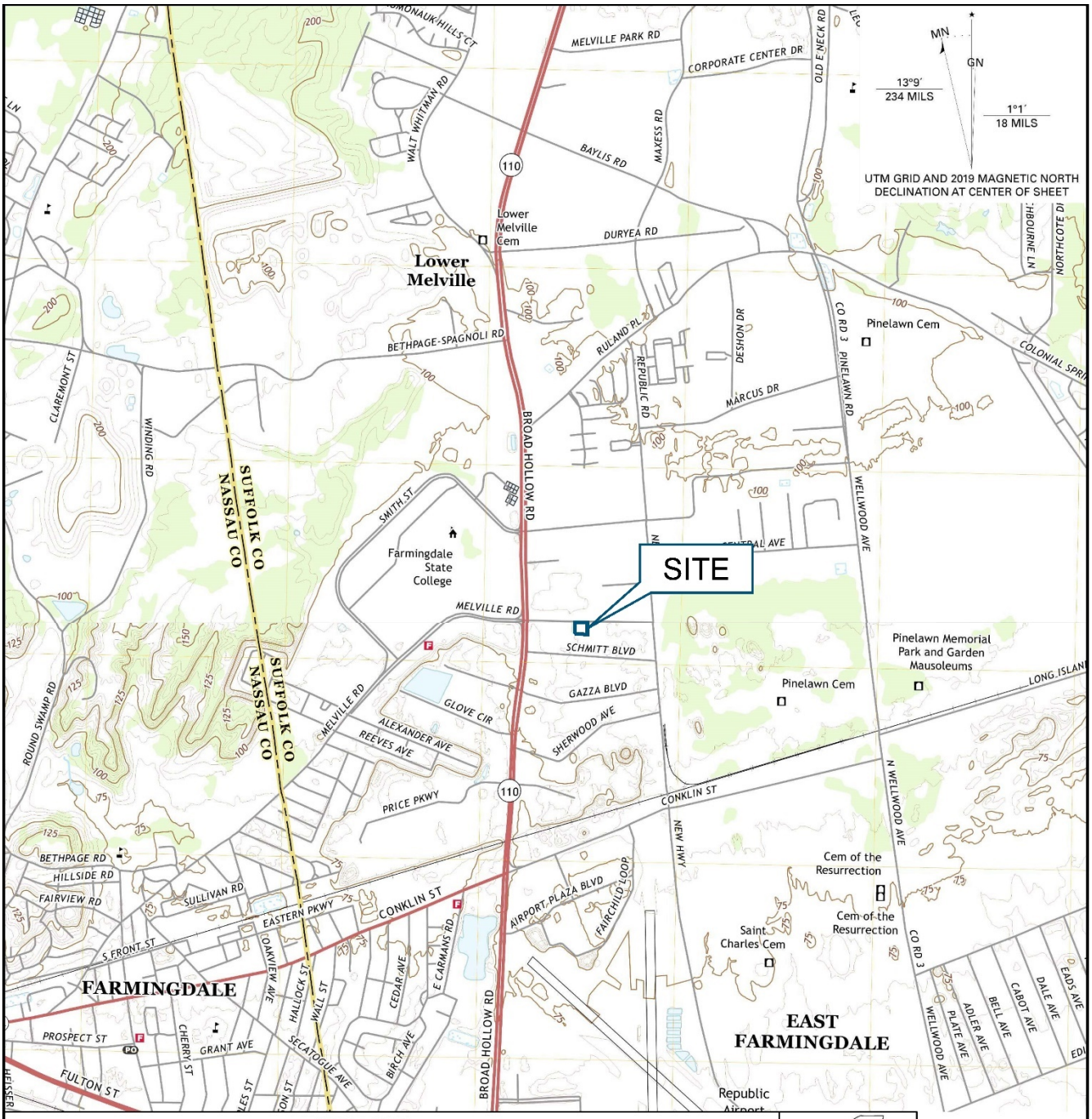
Protectiveness Statement(s)	
Operable Unit: OU2	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy for OU2 is protective of human health and the environment.	

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The remedies for the Circuitron Site are protective of human health and the environment.

VIII. NEXT REVIEW

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

APPENDIX A – FIGURES



TRC
1430 Broadway, 10th Floor
New York, NY 10018
Phone: 212.221.7822
www.TRCcompanies.com

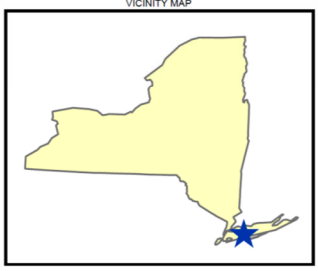
PROJECT:
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PERIODIC REVIEW REPORT
CIRCUITRON CORPORATION SITE - SITE NO. 152082
EAST FARMINGDALE, NEW YORK 11735

TITLE:
SITE LOCATION MAP

DRAWN BY:	H. DELGADO
CHECKED BY:	D. WARREN
APPROVED BY:	C. GUDER
DATE:	JANUARY 2023
PROJ. NO.:	408061.0000.0000
FILE:	Fig 1 - Site Location Map (Circuitron).dwg

FIGURE 1

VICINITY MAP



0 30 60
Feet

N

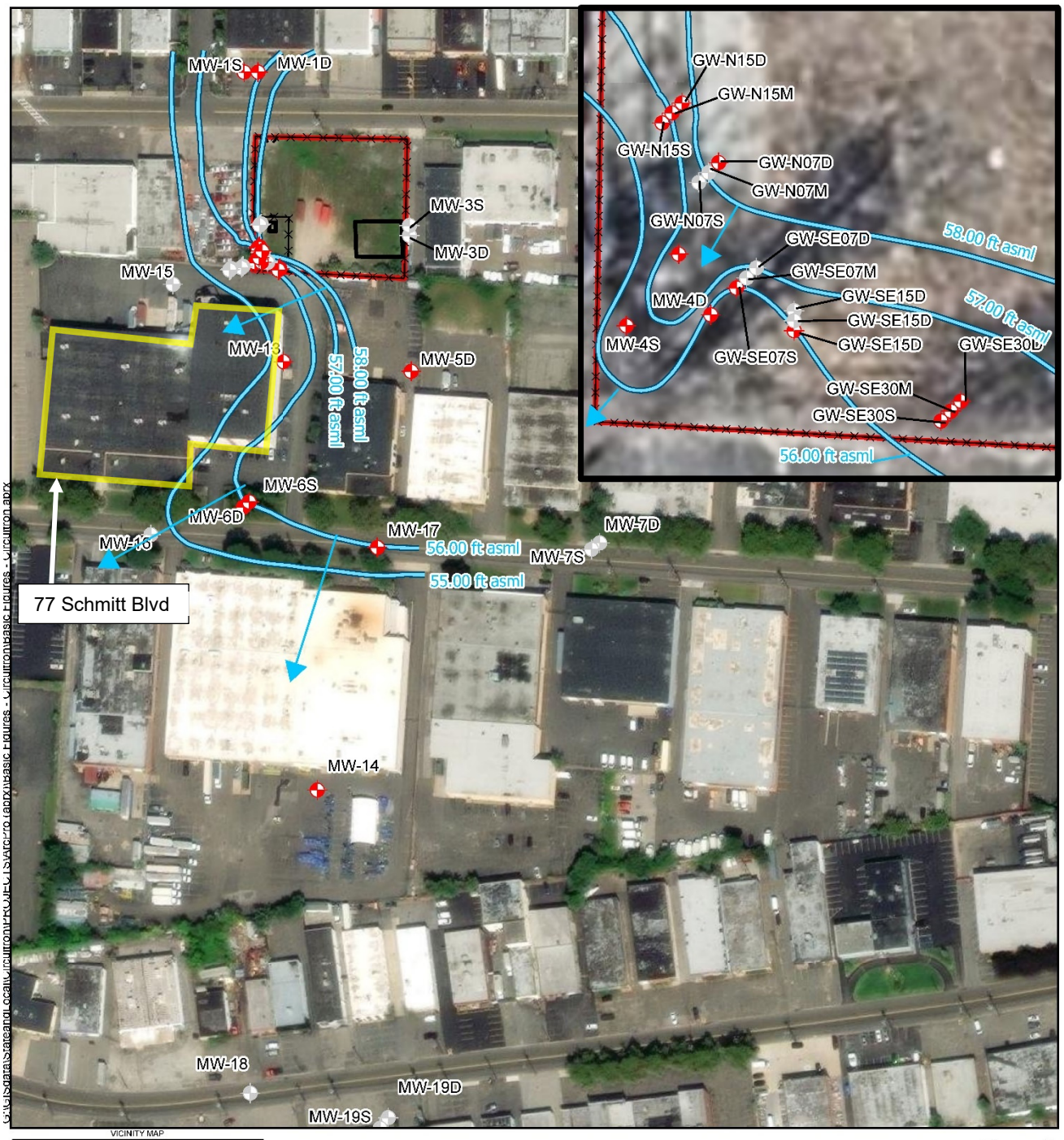
Legend

- Property Boundary
- Approximate Former Building Location
- Fence
- Monitoring Wells
- Air Sparge Wells
- Catch Basins
- GCW-SPY

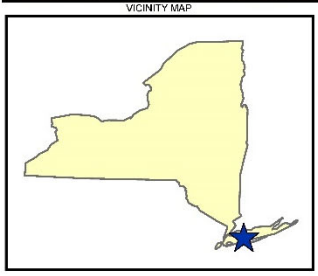
Figure 2
Site Layout
Circuitron Corporation Superfund Site
East Farmingdale, New York

Map Date: 7/3/2023
Projection: NAD 1983 (2011) StatePlane
New York Long Isl FIPS 3104 (us feet)

NEW YORK STATE Department of Environmental Conservation



VICINITY MAP



0 90 180
Feet

N

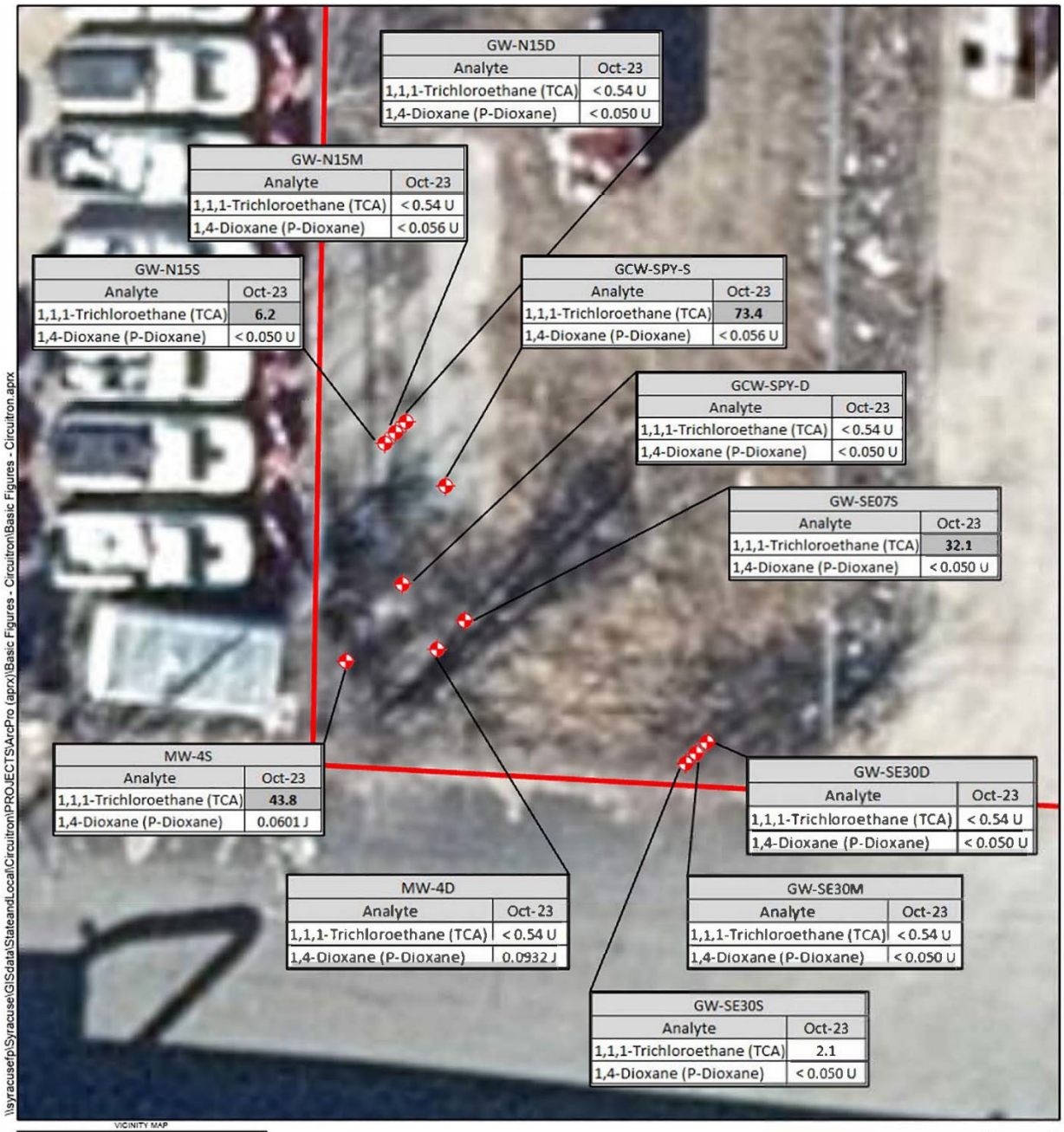
Legend

- Property Boundary
- Monitoring Wells
- Site Management Program Monitoring Wells
- Wells Removed from Monitoring Program
- Gate
- Fence
- Approximate Former Building Location
- Groundwater Elevation
- Groundwater Flow Direction

Figure 3
Shallow Groundwater Elevation
October 2023
Circuitron Corporation Superfund Site
East Farmingdale, New York

Map Date: 7/22/2024
Projection: NAD 1983 (2011) StatePlane
New York Long Isl FIPS 3104 (us feet)

NEW YORK STATE | Department of Environmental Conservation


GW-N15D
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | < 0.050 U
GW-N15M
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | < 0.056 U
GW-N15S
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | 6.2
1,4-Dioxane (P-Dioxane) | < 0.050 U
GCW-SPY-S
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | 73.4
1,4-Dioxane (P-Dioxane) | < 0.056 U
GCW-SPY-D
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | < 0.050 U
GW-SE07S
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | 32.1
1,4-Dioxane (P-Dioxane) | < 0.050 U
MW-4S
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | 43.8
1,4-Dioxane (P-Dioxane) | 0.0601 J
GW-SE30D
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | < 0.050 U
MW-4D
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | 0.0932 J
GW-SE30M
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | < 0.54 U
1,4-Dioxane (P-Dioxane) | < 0.050 U
GW-SE30S
Analyte | Oct-23
1,1,1-Trichloroethane (TCA) | 2.1
1,4-Dioxane (P-Dioxane) | < 0.050 U
\\syracusefp\Syracuse\GIS\data\StateandLocal\Circuitron\PROJECTS\ArcPro (aprx)\Basic Figures - Circuitron\Basic Figures - Circuitron.aprx
VICINITY MAP
Legend
Property Boundary
Monitoring Wells
Active
Site Location
0 50 100
Feet
N
New York State AWQS (October 2023)
Analyte | Standard (µg/L)
1,1,1-Trichloroethane (TCA) | 5
1,4-Dioxane (P-Dioxane) | 0.35
Figure 4
CVOC Exceedances Onsite - October 2023
Circuitron Corporation Superfund Site
East Farmingdale, New York
Map Date: 12/21/2023
Projection: NAD 1983 (2011) StatePlane New York Long Isl FIPS 3104 (us feet)
NEW YORK STATE
Department of Environmental Conservation

VICINITY MAP

0 50 100 Feet

N

Legend

Property Boundary

Monitoring Wells

Active

Site Location

New York State AWQS (October 2023)	
Analyte	Standard (µg/L)
1,1,1-Trichloroethane (TCA)	5
1,4-Dioxane (P-Dioxane)	0.35

Figure 5
CVOC Exceedances Offsite - October 2023
Circuitron Corporation Superfund Site
East Farmingdale, New York

Map Date: 12/21/2023
Projection: NAD 1983 (2011) StatePlane New York Long Isl FIPS 3104 (us feet)

NEW YORK STATE Department of Environmental Conservation

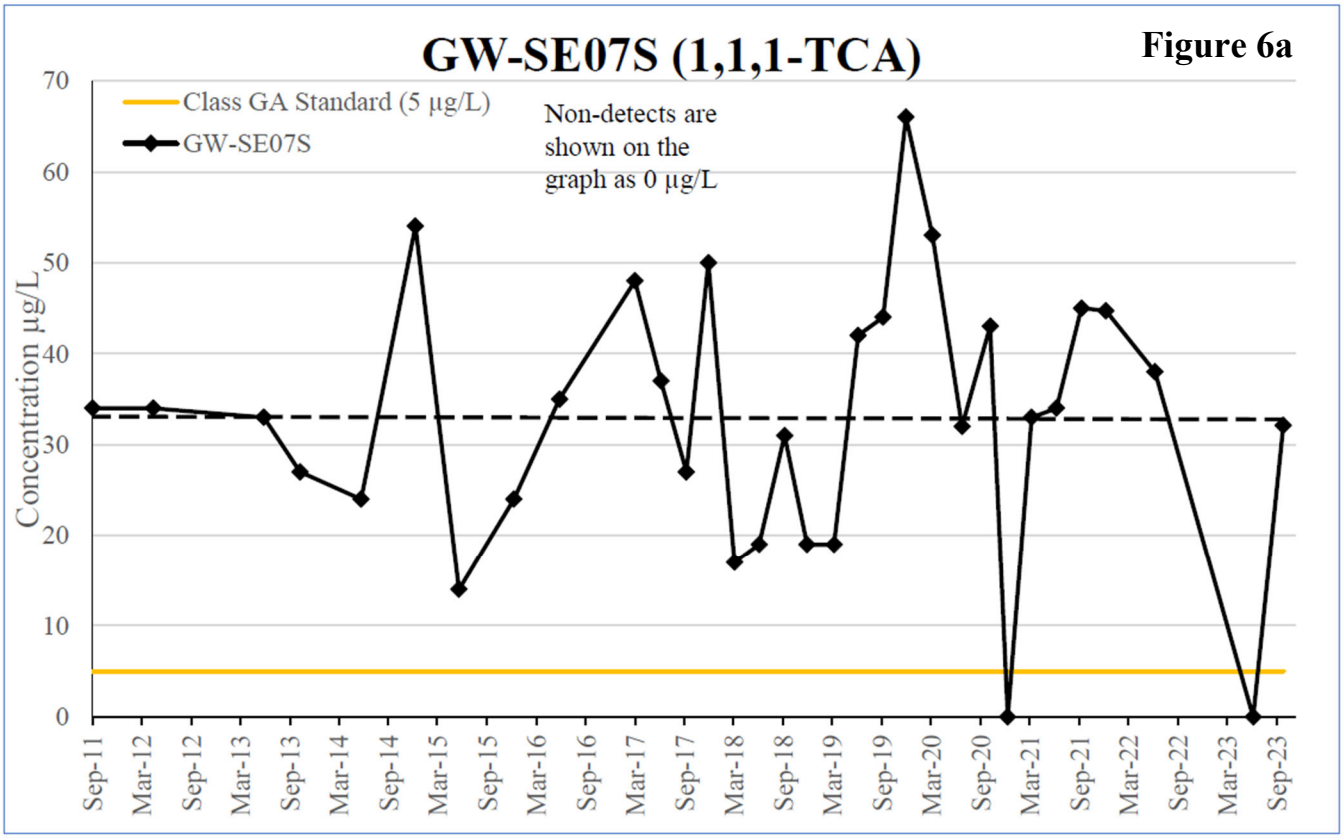


Figure 6a

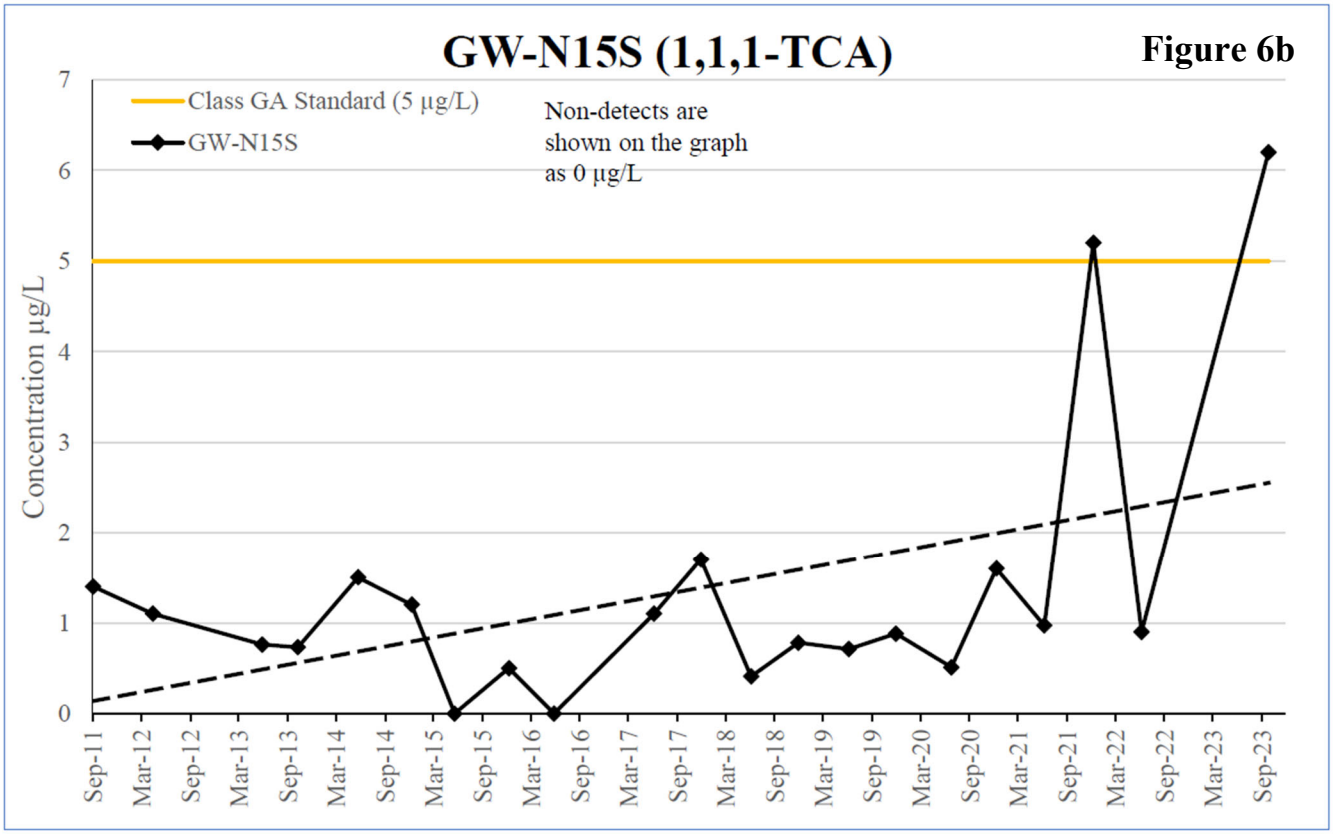
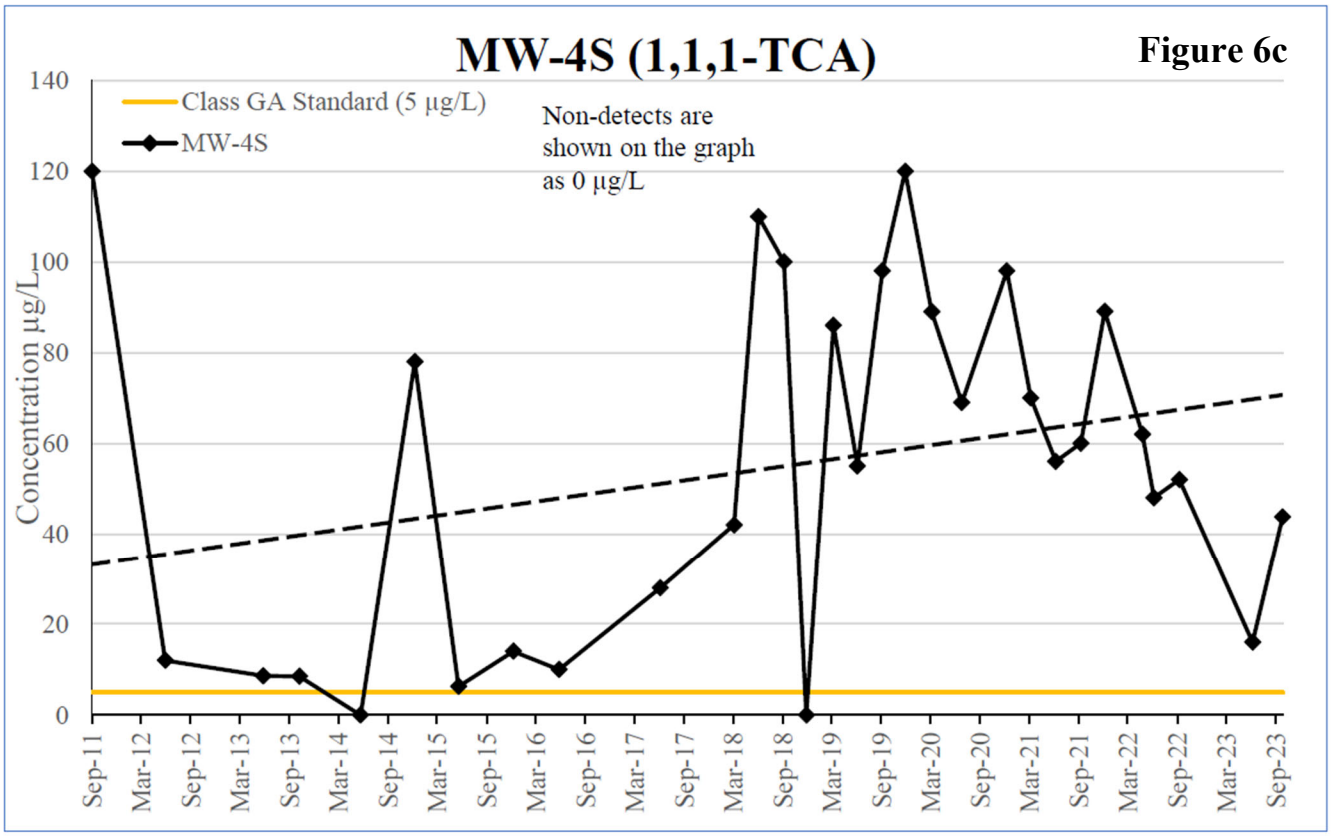
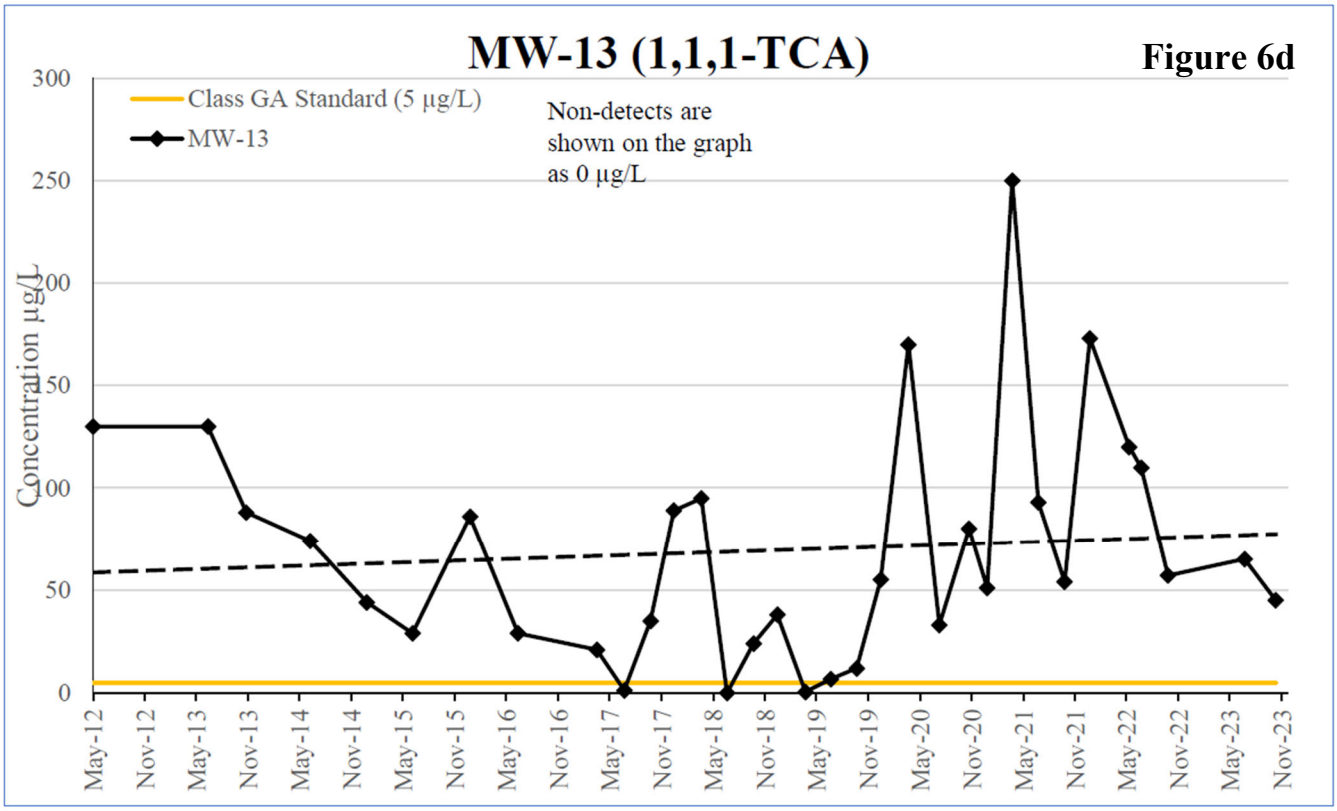


Figure 6b


MW-4S (1,1,1-TCA)
Figure 6c
Class GA Standard (5 µg/L)
MW-4S
Non-detects are shown on the graph as 0 µg/L
Concentration µg/L
140
120
100
80
60
40
20
0
Sep-11
Mar-12
Sep-12
Mar-13
Sep-13
Mar-14
Sep-14
Mar-15
Sep-15
Mar-16
Sep-16
Mar-17
Sep-17
Mar-18
Sep-18
Mar-19
Sep-19
Mar-20
Sep-20
Mar-21
Sep-21
Mar-22
Sep-22
Mar-23
Sep-23


MW-13 (1,1,1-TCA)
Figure 6d
Class GA Standard (5 µg/L)
MW-13
Non-detects are shown on the graph as 0 µg/L
Concentration µg/L
300
250
200
150
100
50
0
May-12
Nov-12
May-13
Nov-13
May-14
Nov-14
May-15
Nov-15
May-16
Nov-16
May-17
Nov-17
May-18
Nov-18
May-19
Nov-19
May-20
Nov-20
May-21
Nov-21
May-22
Nov-22
May-23
Nov-23

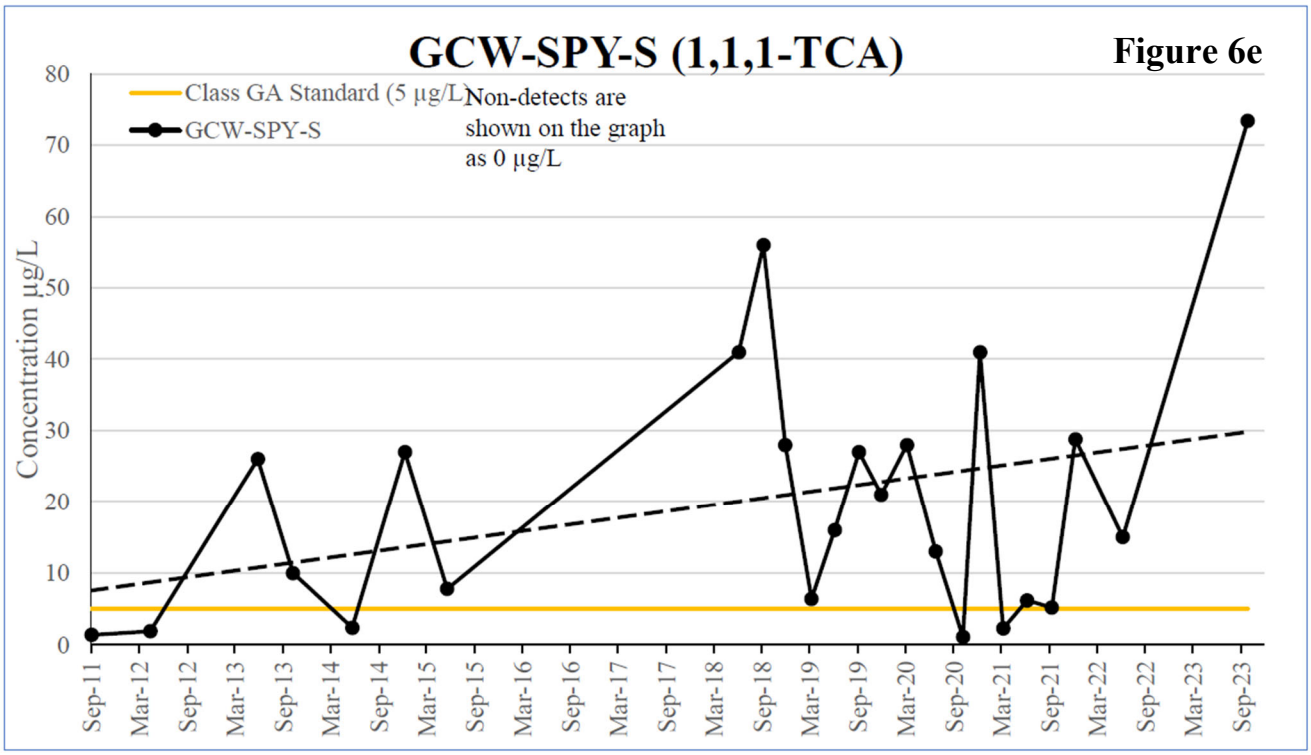


Figure 6e

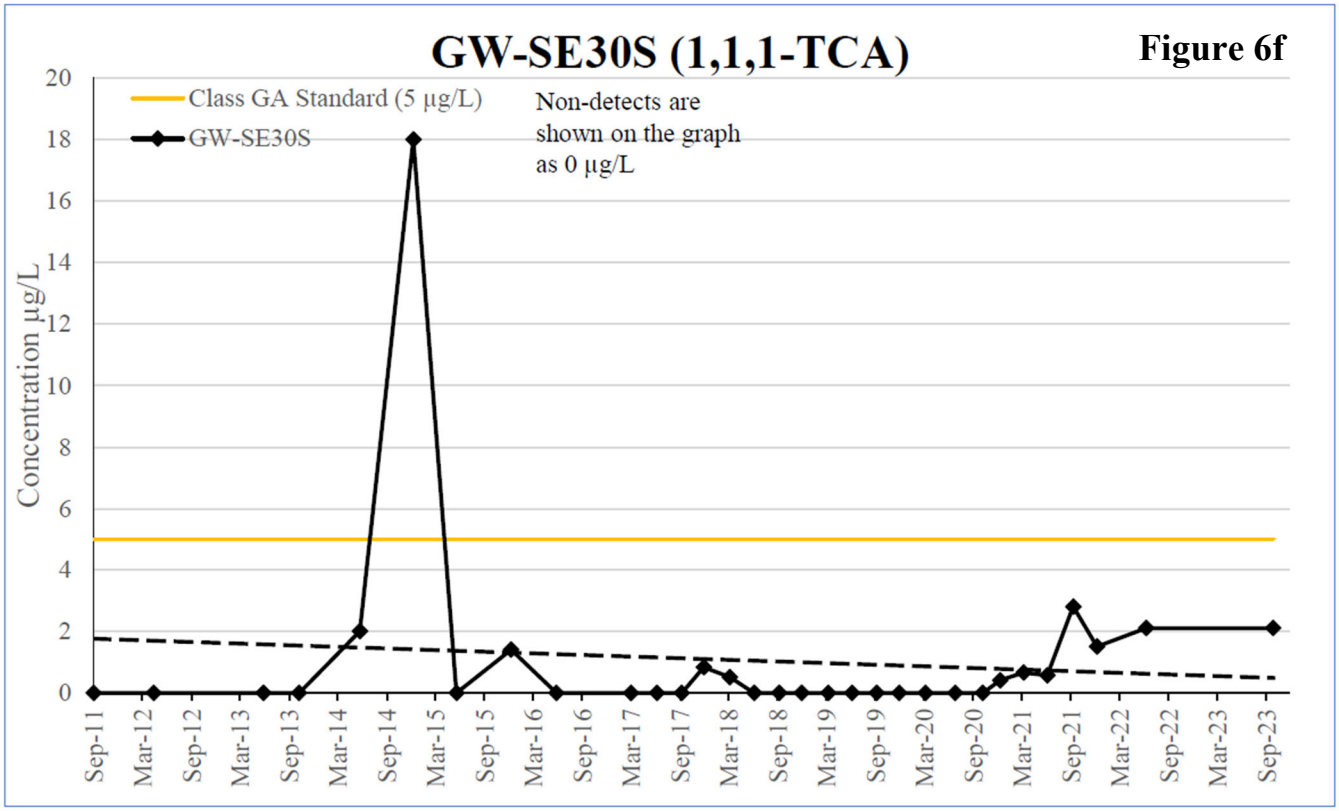


Figure 6f

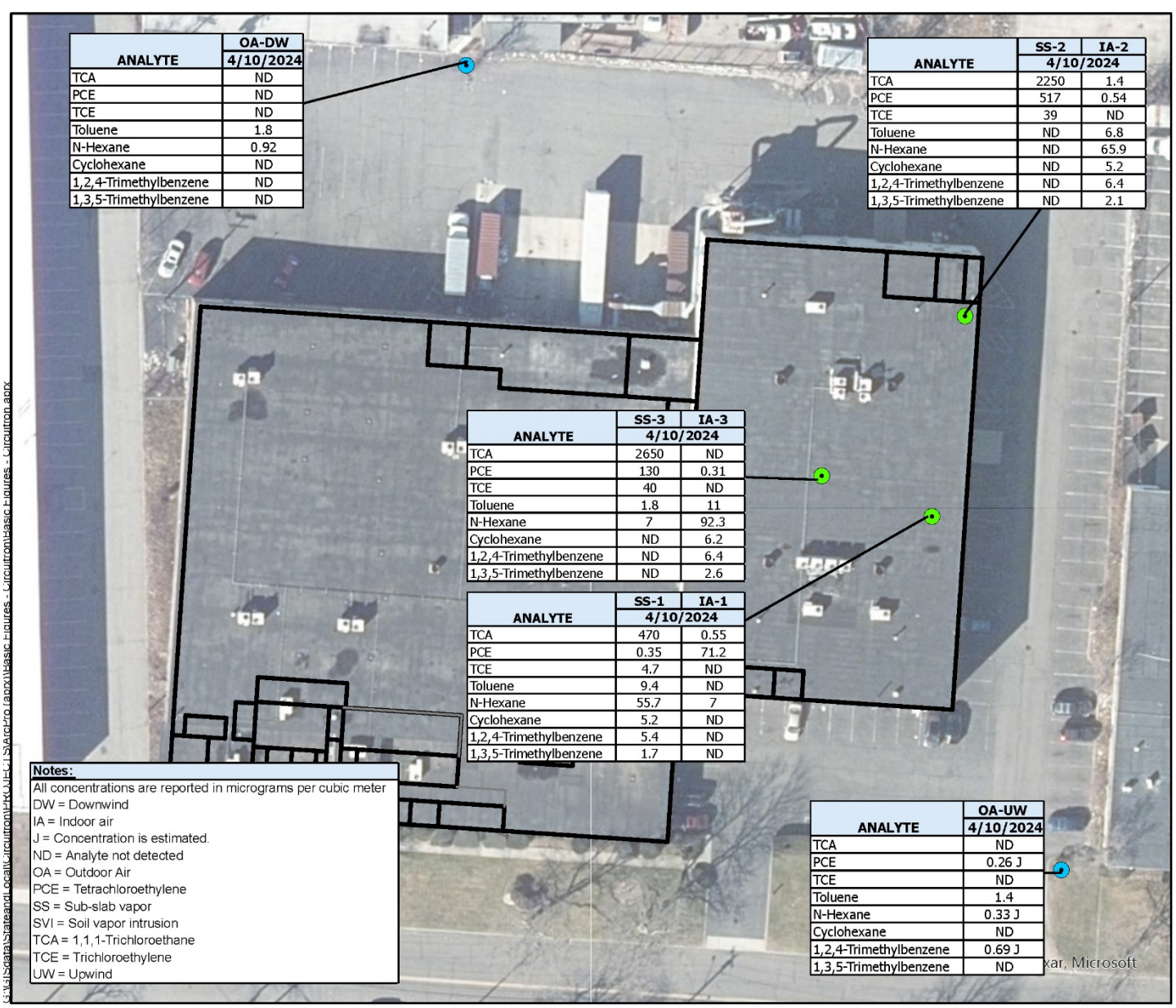


Figure 7
Soil Vapor Intrusion Analytical Results

Circuitron Corporation Superfund Site
East Farmingdale, New York

APPENDIX B – SITE CHRONOLOGY

Event	Date
Circuitron Corporation Listed on EPA National Priorities List	03/31/1989
RI/FS completed (OU1)	01/1991
OU1 ROD signed	03/29/1991
RI/FS completed (OU2)	05/25/1994
OU2 ROD signed	09/30/1994
Onsite building demolition	05/1995 - 08/1996
Remediation of onsite contaminated soil and sediment	11/1996 – 01/1997
Construction of groundwater pump and treat facility	09/1999 – 6/2000
Final inspection of groundwater pump and treat facility	09/19/2000
First Five-Year Review Report	08/05/2005
Start of construction of the GCW/IVS/SVE system	07/31/2007
Shutdown of the groundwater pump and treat facility	08/22/2007
Start of operation of the GCW/IVS/SVE system	03/05/2008
Shut down of the GCW/IVS/SVE system to collect groundwater and soil gas samples, and to install additional groundwater monitoring wells and soil vapor probes	04/28/2008
Installation of three nitrogen sparging points	05/2008 – 07/2008
Startup of the GCW/IVS/SVE system	08/11/2008
Second Five-Year Review Report	04/05/2010
Installation of 8 passive SVE soil vents and a geomembrane cover over the ground surface	11/08-10/2010
Transfer of the O&M of the site to NYSDEC	06/01/2011
Dismantling of the groundwater treatment facility, closure of onsite reinjection trench, moving the GCW/IVS/SVE trailer system to the southwest corner of property, and regrading and restoring the site	03/2011 – 12/2011
Closure of off-site extraction wells	06/2012
Shutdown of the three nitrogen sparging points	11/2012
Third FYR Report	01/2015
Installation of air sparging system and shutdown of GCW and IVS systems	11/2016
Fourth FYR Report	01/2020
Shutdown of air sparging and SVE systems	10/2020
Abandonment of 16 wells removed from monitoring program	12/2024

APPENDIX C – CLIMATE CHANGE EVALULATION

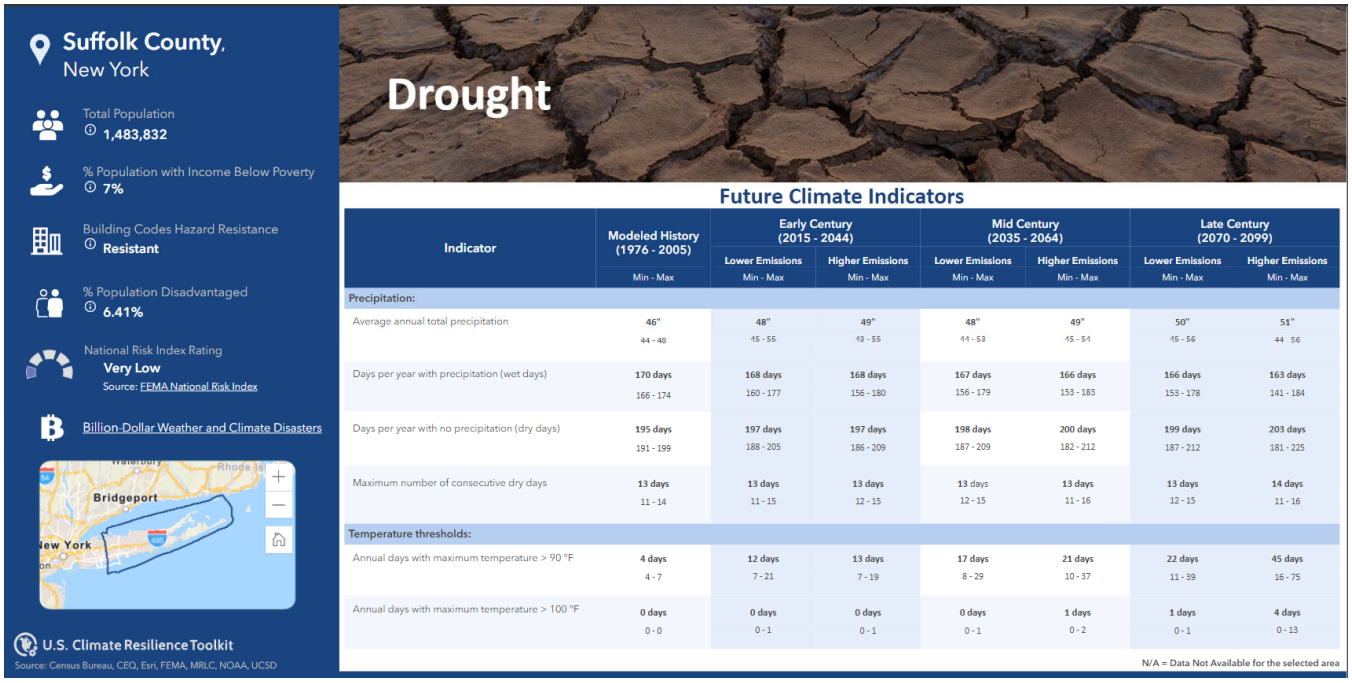
Three climate change tools were utilized to assess the Circuitron Corporation Superfund Site. The first tool used to assess the site was the *Climate Mapping for Resilience and Adaptation Assessment Tool*. The tool examined five climate hazards for the county the Site falls within. The drought (Figure C-1) and wildfires (Figure C-2) climate hazards received risk index ratings of "Very Low" and "Relatively Low". The extreme heat climate hazard was assessed to be "Relatively Moderate", projecting an increase of days per year with maximum temperatures over 100 degrees (Figure C-3). The remaining climate hazards, flooding, and coastal inundation, both received risk index ratings of "Relatively High". The annual average of total precipitation is projected to increase, notably by an increase of days that exceed the 99th percentile in precipitation per year (Figure C-4). The county is also expected to face an increased impact from coastal flooding by up to 2 percent (Figure C-5).

The second tool utilized is called *NOAA Sea Level Rise Viewer*. As the Site is located inland and away from both the northern and southern shores of Long Island, sea level rise (Figure C-6) and high tide flooding (Figure C-7) is not expected to impact the Site or its surrounding areas.

The third tool utilized is called the *USGS U.S. Landslide Inventory*. According to this tool, there have been no landslides recorded in the vicinity of the site (Figure C-8).

Potential site impacts from climate change have been assessed, and the performance of the remedy will not be impacted due to the expected effects of climate change in the region and near the Site. Based on the climate change tools, the greatest concerns appear to be impacts from flooding and sea level rise. However, the Site's inland location away from the shores of the county are expected to curtail any potential impacts. Additionally, there is no longer an active treatment system onsite. O&M activities at the site are limited to groundwater sampling and annual site inspections, and therefore should not be affected by impacts of climate change.

Figure C-1



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Average annual total precipitation	46" 44 - 48	48" 45 - 55	49" 43 - 55	48" 44 - 53	49" 45 - 54	50" 45 - 56	51" 44 - 56
Days per year with precipitation (wet days)	170 days 166 - 174	168 days 160 - 177	168 days 156 - 180	167 days 156 - 179	166 days 153 - 183	166 days 153 - 178	163 days 141 - 184
Days per year with no precipitation (dry days)	195 days 191 - 199	197 days 188 - 205	197 days 186 - 209	198 days 187 - 209	200 days 182 - 212	199 days 187 - 212	203 days 181 - 225
Maximum number of consecutive dry days	13 days 11 - 14	13 days 11 - 15	13 days 12 - 15	13 days 12 - 15	13 days 11 - 16	13 days 12 - 15	14 days 11 - 16
Temperature thresholds:							
Annual days with maximum temperature > 90 °F	4 days 4 - 7	12 days 7 - 21	13 days 7 - 19	17 days 8 - 29	21 days 10 - 37	22 days 11 - 39	45 days 16 - 75
Annual days with maximum temperature > 100 °F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	1 days 0 - 2	1 days 0 - 1	4 days 0 - 13

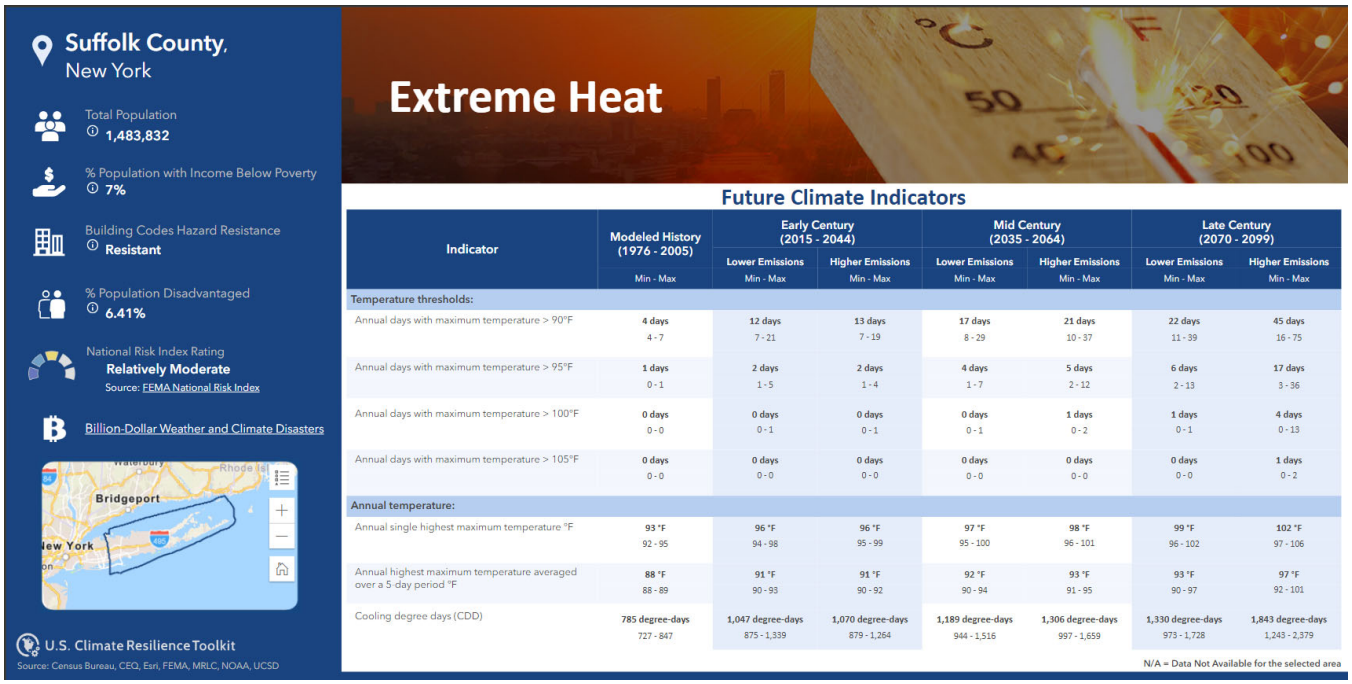
N/A = Data Not Available for the selected area

Figure C-2

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Days per year with no precipitation (dry days)	195 days 191 - 199	197 days 188 - 205	197 days 186 - 209	198 days 187 - 209	200 days 182 - 212	199 days 187 - 212	203 days 181 - 225
Maximum number of consecutive dry days	13 days 11 - 14	13 days 11 - 15	13 days 12 - 15	13 days 12 - 15	13 days 11 - 16	13 days 12 - 15	14 days 11 - 16
Days per year with precipitation (wet days)	170 days 166 - 174	168 days 160 - 177	168 days 156 - 180	167 days 156 - 179	166 days 153 - 183	166 days 153 - 178	163 days 141 - 184
Temperature thresholds:							
Annual days with maximum temperature > 90°F	4 days 4 - 7	12 days 7 - 21	13 days 7 - 19	17 days 8 - 29	21 days 10 - 37	22 days 11 - 39	45 days 16 - 75
Annual days with maximum temperature > 100°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	1 days 0 - 2	1 days 0 - 1	4 days 0 - 13

N/A = Data Not Available for the selected area

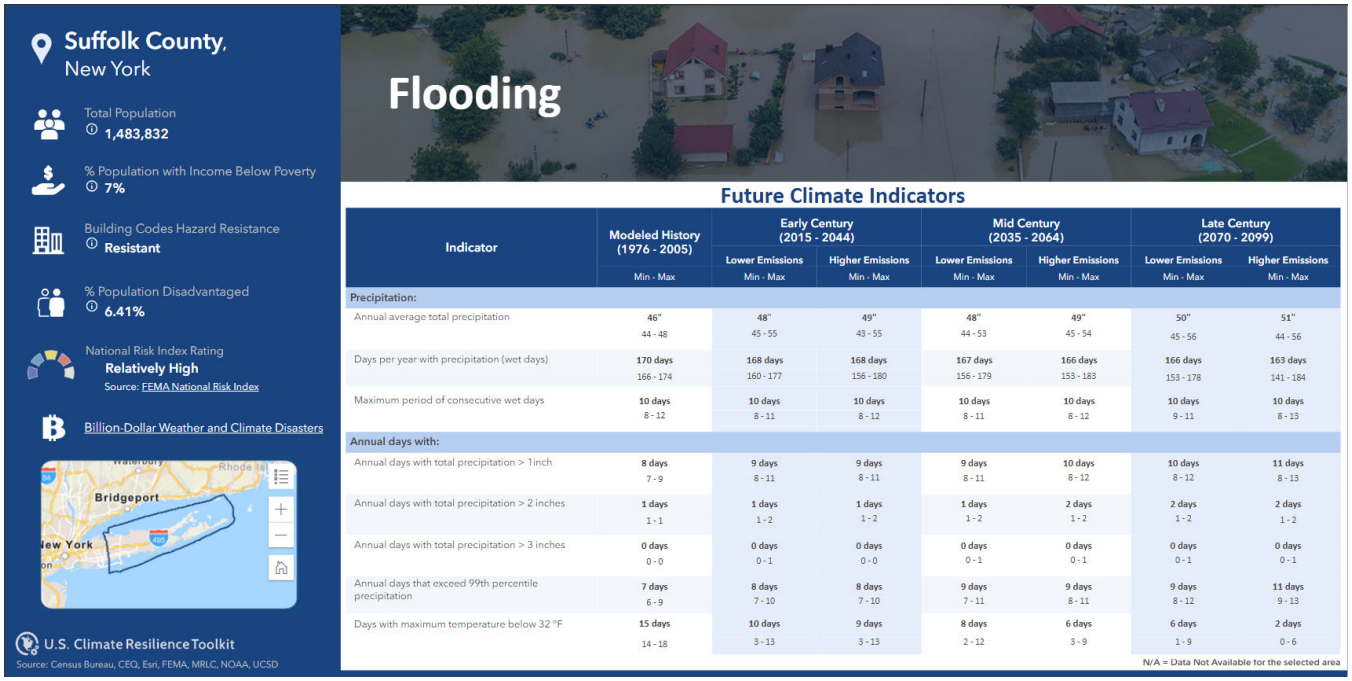
Figure C-3



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Temperature thresholds:							
Annual days with maximum temperature > 90°F	4 days 4 - 7	12 days 7 - 21	13 days 7 - 19	17 days 8 - 29	21 days 10 - 37	22 days 11 - 39	45 days 16 - 75
Annual days with maximum temperature > 95°F	1 days 0 - 1	2 days 1 - 5	2 days 1 - 4	4 days 1 - 7	5 days 2 - 12	6 days 2 - 13	17 days 3 - 36
Annual days with maximum temperature > 100°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	1 days 0 - 2	1 days 0 - 1	4 days 0 - 13
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	1 days 0 - 2
Annual temperature:							
Annual single highest maximum temperature °F	93 °F 92 - 95	96 °F 94 - 98	96 °F 95 - 99	97 °F 95 - 100	98 °F 96 - 101	99 °F 96 - 102	102 °F 97 - 106
Annual highest maximum temperature averaged over a 5 day period °F	88 °F 88 - 89	91 °F 90 - 93	91 °F 90 - 92	92 °F 90 - 94	93 °F 91 - 95	93 °F 90 - 97	97 °F 92 - 101
Cooling degree days (CDD)	785 degree-days 727 - 847	1,047 degree-days 875 - 1,339	1,070 degree-days 879 - 1,264	1,189 degree-days 944 - 1,516	1,306 degree-days 997 - 1,659	1,330 degree-days 973 - 1,728	1,843 degree-days 1,243 - 2,379

N/A = Data Not Available for the selected area

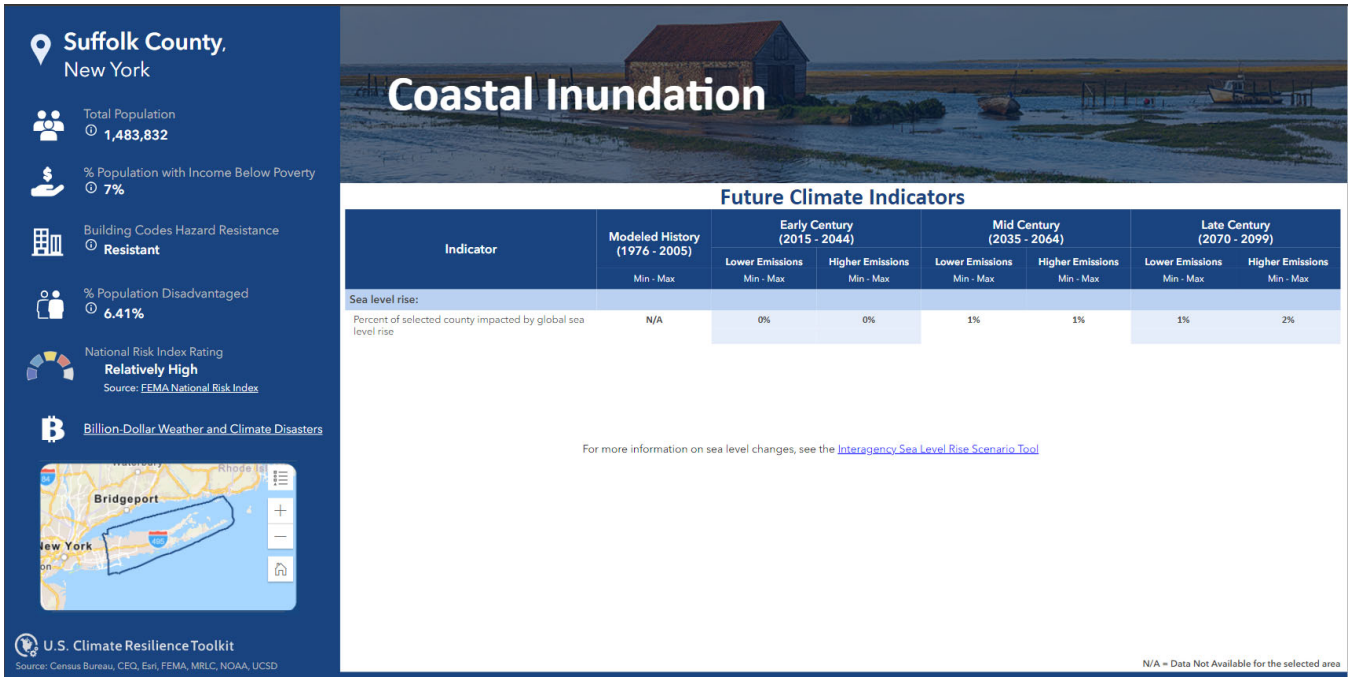
Figure C-4



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Precipitation:							
Annual average total precipitation	46" 44 - 48	48" 45 - 55	49" 43 - 55	48" 44 - 53	49" 45 - 54	50" 45 - 56	51" 44 - 56
Days per year with precipitation (wet days)	170 days 166 - 174	168 days 160 - 177	168 days 156 - 180	167 days 156 - 179	166 days 153 - 183	166 days 153 - 178	163 days 141 - 184
Maximum period of consecutive wet days	10 days 8 - 12	10 days 8 - 11	10 days 8 - 12	10 days 8 - 11	10 days 8 - 12	10 days 9 - 11	10 days 8 - 13
Annual days with:							
Annual days with total precipitation > 1inch	8 days 7 - 9	9 days 8 - 11	9 days 8 - 11	9 days 8 - 11	10 days 8 - 12	10 days 8 - 12	11 days 8 - 13
Annual days with total precipitation > 2 inches	1 days 1 - 1	1 days 1 - 2	1 days 1 - 2	1 days 1 - 2	2 days 1 - 2	2 days 1 - 2	2 days 1 - 2
Annual days with total precipitation > 3 inches	0 days 0 - 0	0 days 0 - 1	0 days 0 - 0	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1	0 days 0 - 1
Annual days that exceed 99th percentile precipitation	7 days 6 - 9	8 days 7 - 10	8 days 7 - 10	9 days 7 - 11	9 days 8 - 11	9 days 8 - 12	11 days 9 - 13
Days with maximum temperature below 32 °F	15 days 14 - 18	10 days 3 - 13	9 days 3 - 13	8 days 2 - 12	6 days 3 - 9	6 days 1 - 9	2 days 0 - 6

N/A = Data Not Available for the selected area

Figure C-5



Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2099)	
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions
	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
Sea level rise:							
Percent of selected county impacted by global sea level rise	N/A	0%	0%	1%	1%	1%	2%

For more information on sea level changes, see the Interagency Sea Level Rise Scenario Tool

N/A = Data Not Available for the selected area

Figure C-6

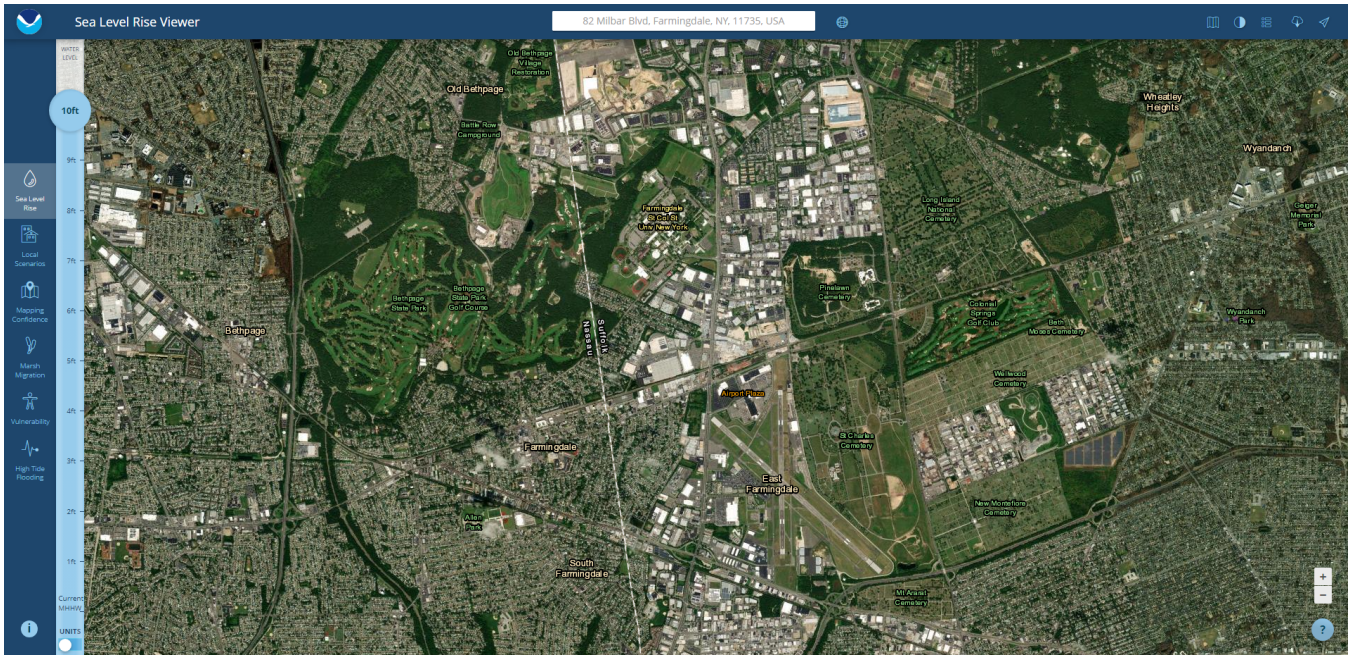


Figure C-7

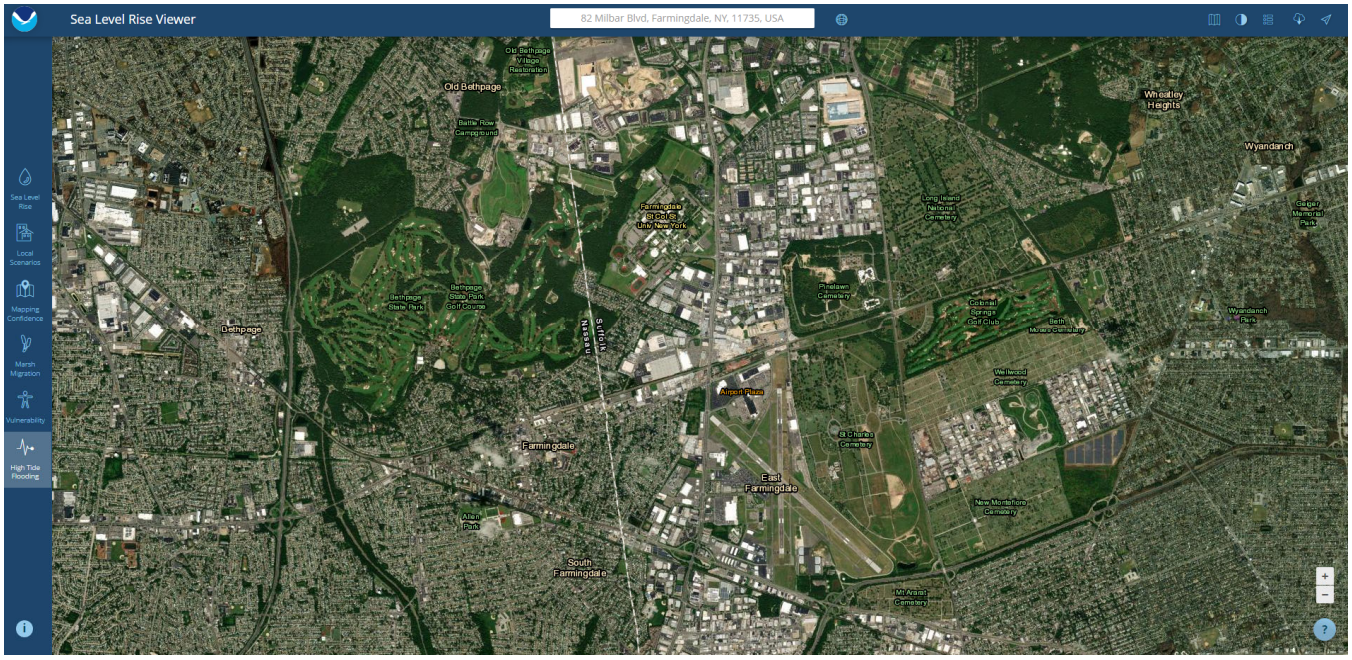
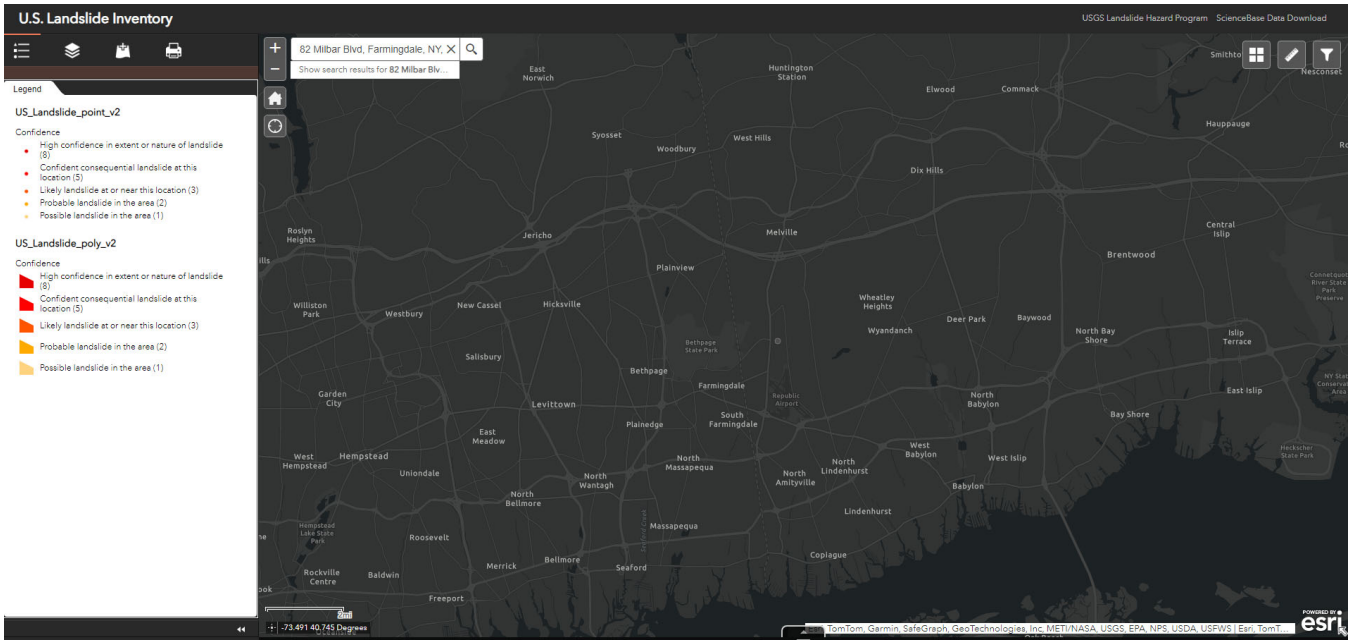


Figure C-8


U.S. Landslide Inventory
USGS Landslide Hazard Program
ScienceBase Data Download
Legend
US_Landslide_point_v2
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Probable landslide in the area (2)
Possible landslide in the area (1)
US_Landslide_poly_v2
Confidence
High confidence in extent or nature of landslide (8)
Confident consequential landslide at this location (5)
Likely landslide at or near this location (3)
Probable landslide in the area (2)
Possible landslide in the area (1)
82 Milbar Blvd, Farmingdale, NY,
Show search results for 82 Milbar Blv...
East Norwich
Huntington Station
Elwood
Commack
Hauppauge
Syosset
Woodbury
West Hills
Dix Hills
Roslyn Heights
Jericho
Melville
Central Islip
Brentwood
Plainview
Williston Park
Westbury
New Cassel
Hicksville
Wheatley Heights
Deer Park
Baywood
Wyandanch
North Bay Shore
Islip Terrace
Salisbury
Bethpage
Farmingdale
Garden City
Levittown
Plainedge
South Farmingdale
North Babylon
East Islip
Bay Shore
East Meadow
West Hempstead
Hempstead
Uniondale
North Massapequa
North Wantagh
North Amityville
North Lindenhurst
West Babylon
West Islip
Babylon
North Bellmore
Lindenhurst
Massapequa
Roosevelt
Copiague
Rockville Centre
Baldwin
Merrick
Bellmore
Seaford
Freeport
-73.491 40.745 Degrees
TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS | Esri, TomT...
esri