FOURTH FIVE-YEAR REVIEW REPORT FOR DUPONT NECCO PARK LANDFILL SUPERFUND SITE NIAGARA COUNTY, NEW YORK

Prepared by

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

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Date

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LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
Cis-1,2-DCE	*Cis*-1,2-Dichloroethene
COCs	Contaminants of Concern
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
FYR	Five-Year Review
GWTF	Groundwater Treatment Facility
HCS	Hydraulic Control System
ICs	Institutional Controls
µg/l	Microgram per Liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ng/l	Nanogram per Liter
NPL	National Priorities List
NYS MCL	New York State Maximum Contaminant Level
O&M	Operation and Maintenance
PCE	Tetrachloroethene
PFAS	Per- and Polyfluoroalkyl Substances
PFOA	Perfluorooctanoic Acid
PFOS	Perfluorooctanesulfonic Acid
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
RI	Remedial Investigation
RPM	Remedial Project Manager
ROD	Record of Decision
RPM	Remedial Project Manager
SAR	Source Area Report
SFR	Subsurface Formation Repair
TCE	Trichloroethene
TVOCs	Total Volatile Organic Compounds
VC	Vinyl Chloride
VISL	Vapor Intrusion Screening Level

I. INTRODUCTION

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

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

This is the fourth FYR for the DuPont Necco Park Superfund site (Site). The triggering action for this statutory review is the completion date of the previous FYR on May 19, 2019. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of one operable unit which will be addressed in this FYR.

This FYR was led by Young S. Chang, EPA Remedial Project Manager (RPM). Participants included Kathryn Flynn (Hydrogeologist), Sabrina Gonzalez (Hydrogeologist), Julie McPherson (Ecological and Human Health Risk Assessor), Michael J. Basile (Community Involvement Coordinator), and Pietro Mannino (Western New York Remediation Section Supervisor). The potentially responsible party (PRP) was notified of the initiation of the FYR. The review began on July 10, 2023.

Site Background

The 24-acre Site is an inactive hazardous and industrial waste landfill located approximately 1.5 miles north of the Niagara River in the City of Niagara Falls and the Town of Niagara, Niagara County, New York. It is not on the National Priorities List (NPL) but is being investigated and remediated as an enforcement-lead remedial action that follows the same investigation and remedy selection requirements as sites on the NPL. On September 28, 1998, an Administrative Order on Consent Index No. II CERCLA 98-0215 was signed by EPA. This Order required DuPont to perform the remedial design of and implement the remedy described in the September 18, 1998, Record of Decision (ROD).

The Site is located in an industrial area and is bounded on all sides by landfill disposal facilities and former manufacturing areas. Immediately north and east of the Site lies the Republic solid waste landfill (formerly Allied Waste), an active Subtitle D facility owned by Republic Services. Immediately south of the site are three inactive hazardous waste landfill cells and a wastewater pre-treatment facility owned by CECOS International, Inc. (see Appendix A *Figure 1*).

The site was used for the disposal of industrial and process wastes generated at the DuPont Niagara Plant from the mid-1930s until 1977. The former DuPont is now operated by Chemours[1]. Wastes from

[1] On February 1, 2015, E.I. du Pont de Nemours and Company (DuPont) transfered ownership and corresponding remediation obligations associated with the DuPont Necco Park site to the Chemours Company FC LLC (Chemours).

the landfill have migrated in the overburden and bedrock underneath the landfill and now extend underneath the CECOS facility and a portion of the Republic Services facility. Groundwater monitoring systems are currently in place at the CECOS and Republic Services facilities, in accordance with state and federal regulations, to assure protection of human health and the environment as a result of operation of those facilities.

Appendix B, attached, summarizes the documents utilized to prepare this FYR. Appendix C, attached, summarizes the Site's history, geology/hydrogeology, and land use. For more details related to background, physical characteristics, geology/hydrogeology, land/resource use, and history related to the Site, please refer to EPA's webpage for the Site, www.epa.gov/superfund/dupont-necco-park.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Dupont Necco Park site		
EPA ID: NYD980532162		
Region: 2	**State:** NY	**City/County:** Niagara County
SITE STATUS		
NPL Status: Non-NPL		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Young S Chang		
Author affiliation: RPM, EPA Region 2, Western New York Remediation Section		
Review period: 7/10/2023 - 2/29/2024		
Date of site inspection: 9/25/2023		
Type of review: Statutory		
Review number: 4		
Triggering action date: 5/19/2019		
Due date *(five years after triggering action date)*: 5/19/2024		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

A remedial investigation (RI) was conducted by DuPont, which included the sampling and analysis of all appropriate media, including air, soil vapor, soils, surface water, sediment and groundwater, in identified areas of potential environmental concern. The results of the RI were documented in the *Investigation Report for Necco Park*, dated 1993 and approved by EPA in 1994. Several years of annual groundwater sampling and analytical testing was conducted at 38 monitoring wells on or near the site prior to the 1998 ROD.

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with the contaminated media under current and potential future site uses. The baseline risk assessment estimates the human health and ecological risk which could result from the contamination at the site if no remedial action were taken. Some of the groundwater contamination from the site has the potential to enter the Niagara River and ultimately Lake Ontario, a source of drinking water.

The human health risk assessment identified contaminants of concern (COCs) for the site. These contaminants included: 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, 1,2-dichloroethane, hexachloroethene, 1,1-dichloroethylene, tetrachloroethylene (PCE), trichloroethylene (TCE), trans-1,2-dichloroethene, *cis*-1,2-dichloroethylene (*cis*-1,2-DCE), 4-methylphenol, carbon tetrachloride, chloroform, vinyl chloride (VC), hexachlorobenzene, hexachlorobutadiene, pentachlorophenol, phenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, barium, and cyanide. Potential exposures to site-related COCs were examined for the following media: groundwater, soils, sediments, surface water, air and biota. Of these media, the exposure to contaminated groundwater was considered for further quantitative analysis of potential health effects.

The baseline risk assessment quantitatively evaluated the health effects which could result from exposure to site contamination as a result of dermal contact, ingestion, and inhalation (e.g., from showering) of groundwater. Since groundwater in the bedrock moves in different directions in the various zones, and the levels of contaminants are different in each of these zones, separate risk estimates were developed for the following zones: A (overburden), B and C zones (upper bedrock); D, E and F zones (middle bedrock); and G zone (lower bedrock).

The results of the baseline risk assessment indicated that the current use of groundwater was not a risk since no one is believed to use the groundwater for domestic purposes. However, future potential carcinogenic and noncarcinogenic risks from ingestion, dermal contact, and inhalation of the groundwater were determined to be significant. Contaminants that contributed to these risks included carbon tetrachloride, chloroform, TCE, *cis*-1,2-DCE, barium and 1,1,2-trichloroethane. As a result, the human-health risk assessment concluded that actual or threatened releases of hazardous substances from the site, if not addressed, may present a potential threat to public health, welfare, or the environment.

The ecological risk assessment was also conducted to evaluate the reasonable maximum environmental exposure. The ecological risk assessment considered all potential exposure media for ecological receptors, but only soil and groundwater media were assessed in detail. Risk characterization-measurement or estimation of both current and future adverse effects risks to ecological receptors was assessed quantitatively by modeling site groundwater contaminant concentrations reaching the area of the Niagara River at two locations: the Forebay Canal adjacent to the Robert Moses Power Plant and the

Falls Street tunnel outlet to the river. The ecological risk assessment determined that the contaminated soils and groundwater attributable to the site alone currently do not pose an unacceptable ecological risk; however, future ecological impacts to the Niagara River may occur if remedial actions are not implemented.

Response Actions

Several response actions were implemented to mitigate the impact and spread of contamination. During 1978 and 1979, a clay cap was constructed over the 24-acre site. The final compacted cover consisted of a minimum of 18 inches of clay. The average cap thickness is approximately 24 inches. The cap is overlain by a 6-inch cover of topsoil and grass.

In 1982, two existing monitoring wells (D-12 and 52) were converted to recovery wells (RW-1 and RW-2) to control off-site migration of contaminated groundwater in the upper bedrock fracture zones (B and C zones). Extracted groundwater was pumped to the CECOS facility adjacent to the site where it was treated and discharged to the Niagara Falls Publicly Owned Treatment Works (POTW). Wells RW-1 and RW-2 have been used as recovery wells from 1982. To reduce the amount of groundwater flow in the bedrock zones from upgradient of and to underneath the site property, a grout curtain, termed Subsurface Formation Repair (SFR), was constructed from July 1988 through September 1989. The SFR extends along the entire western and northern perimeter of the site property and to just over one-half of the eastern perimeter. The southern perimeter and southern portion of the eastern perimeter were left ungrouted due to the possible presence of dense non-aqueous phase liquid (DNAPL) and to allow for recovery of contamination that had migrated beyond the site property boundary. To reduce the potential for an upgradient increase in the water-table elevation in the overburden, the upper 10 feet of bedrock were not grouted on the northern perimeter. In 1992, a third recovery well, RW-3, was installed and began operation at the site. Well RW-3 is set in the D, E and F zones and is located at the center of the southern site property line.

Remedy Selection

The Remedial Action Objectives (RAOs) for groundwater are the reduction of risks to human health associated with potential exposure to site-related compounds by: reducing the quantity of source materials (i.e., DNAPLs) to the extent practicable; controlling the migration of groundwater downgradient from the site and the source area; and attaining the groundwater cleanup criteria.

The RAO of attaining the groundwater cleanup criteria is only being applied to areas outside the source area (i.e., the far-field area). Because of the concentration of DNAPLs and contaminants in the soils and bedrock in the source area, and the complexities associated with remediation of DNAPLs in fractured bedrock, EPA does not anticipate that the RAOs can be achieved within the source area. Since waste materials are being left in place, and it is technically impracticable to achieve the RAOs for groundwater in areas where DNAPL has migrated, the applicable or relevant and appropriate requirements (ARARs) for groundwater are not expected to be met in the source area. EPA issued a technical impracticability waiver of groundwater ARARs in the source area in the 1998 ROD.

The RAOs for soils at the site are the protection of the groundwater quality, and ultimately human health, through reduction of the source materials (i.e., DNAPLs) to the extent practicable, as well as limiting exposure to surficial soil contaminants.

The remedy described in the September 1998 ROD addressed landfill soils and DNAPL in the soils and bedrock which represent continuing sources of contamination to the groundwater. The remedy requires long-term management to maintain the groundwater pump and treat systems and groundwater monitoring to determine the effectiveness of the containment measures in reducing contaminant concentrations in the far-field aquifer.

The major components of the selected remedy as described in the ROD include the following:

- Containment of the source area by:
  - upgrading the existing cap to meet New York State Part 360, or equivalent standards;
  - using hydraulic measures in the overburden (A zone) to maintain an inward gradient within the source area or installing a physical barrier (e.g., slurry wall, sheet pile) on the southern, and portions of the eastern and western site boundaries; and
  - using hydraulic measures in the bedrock (B-F zones) to maintain an inward gradient within the source area and prevent the movement of contaminated groundwater beyond the source area boundary.

- Treatment of the extracted groundwater from the source area, either on-site or off-site, to achieve the appropriate discharge requirements.

- Collection of DNAPL in the Source Area by:
  - the utilization of the existing monitoring wells network;
  - the utilization of any groundwater recovery wells placed in the source area; and
  - the installation of additional dedicated DNAPL recovery well(s).

- Collected DNAPL would be disposed of off-site at an appropriate facility.

- Operation and maintenance (O&M) of the existing systems and the systems constructed under this selected remedy.

- Comprehensive monitoring to verify hydraulic control, identify DNAPL occurrence, demonstrate the effectiveness of the remedial measures, and assess the impact of such measures on far-field groundwater quality.

- Additional characterization of the site to assess whether natural attenuation would be effective in addressing far-field contamination.

- Development and implementation of institutional controls to restrict site access, the use of groundwater at the site, and control land use such that it is consistent with site conditions.

The cleanup levels for the site are identified in Appendix D.

Status of Implementation

Remedy Implementation

Source Remediation

According to the Source Area Report (SAR) of April 2001, source areas are defined by the distribution of monitoring wells in which DNAPL was observed at least once, or where the concentration of a VOC compound is observed at or above the level of its effective solubility (maximum aqueous concentration of a constituent in groundwater in equilibrium with a mixed DNAPL), or where the concentration of a VOC compound is observed at or above the level of one percent of its pure phase solubility. The extent of the source areas varies with the aquifer fracture zones. Source areas in the fracture zones B and C were larger and show more of an extension to the southeast than in zones A, D, E, and F.

Cap

DuPont completed the upgrade to the landfill cap in August 2006, including installation of the following components:

- Forty-mil linear-low density polyethylene geomembrane;
- Geosynthetic drainage composite on slopes greater than 12 percent;
- Cushioned geotextile fabric over the geomembrane;
- One-foot thick layer of barrier protection soil;
- Drainage stone layer; and
- Six-inch thick vegetative layer.

Hydraulic Containment

The Hydraulic Control System (HCS), consisting of a series of extraction wells and associated plumbing, was also upgraded. Groundwater extraction pumps were installed in the B/C zone wells RW-4, RW-5 and RW-10 (replacing RW-1 and RW-2). Pumps were also installed in D/E/F-zone wells RW-8 and RW-9 (replacing RW-3). The HCS system is operated to create an inward hydraulic gradient to ensure that contaminated groundwater is captured in the source area. The remedial design indicated that no additional wells were needed to control the A zone.

Improved hydraulic control in the upper bedrock in the western portion of the site began in fourth quarter 2008 when a combined blast-fractured bedrock trench and a new B/C-Zone recovery well (RW-11) were put into operation. Well RW-11 was installed to replace recovery well RW-10 which exhibited diminished hydraulic efficiency after startup in 2005.

A groundwater treatment facility (GWTF) was built on-site to treat water extracted by the HCS. The effluent from the GWTF is discharged to the Niagara Falls Wastewater Treatment Plant. GWTF effluent samples are collected and analyzed to ensure that discharge parameters are met.

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 and soils	Yes	Yes	Allied Waste facility	Restrict site access, the use of groundwater at the site, and control land use such that it is consistent with site conditions.	Deed Notice, January 1999

Systems Operations/Operation & Maintenance

The HCS is operated in accordance with the EPA approved Operation & Maintenance Plan from 2005. Water levels are collected quarterly at approximately 150 wells. Potentiometric surface (level to which water rises in a well) contour maps are created from the water-level data to demonstrate hydraulic capture. Groundwater is sampled and analyzed annually to monitor the effectiveness of the HCS in reducing chemical concentrations within the source area. In addition, the far-field groundwater chemistry is monitored annually from more than 10 wells to confirm that the HCS is controlling off-property migration of contaminants and that natural attenuation is occurring.

The HCS has been operating successfully at the Site; the system is online between 92.4 to 97 percent of the time each year from 2018 to 2022, excluding scheduled downtime for maintenance. Some of the unscheduled downtime has been due to local power outage, power failures, and process component malfunction. Unscheduled downtime was reduced in 2021 by almost five percent by changing procedures to minimize weekend downtime. The GWTF has also been operating successfully. Chemours has minimized its downtime by continuously monitoring its operating conditions and accordingly making adjustments to process or operating systems. The GWTF is online about 91.6 percent of the time. Chemours extracted approximately 12.8 million gallons (Mgal) of groundwater in 2022 which were treated at the GWTF.

DNAPL is monitored monthly throughout the year. In 2018, no measurable DNAPL was identified and therefore no DNAPL was removed. However, in years 2019 through 2022, measurable amounts of DNAPL were identified and 30.8, 33, 71.3, and 46.2 gallons were removed in 2019, 2020, 2021 and 2022, respectively. A total of about 9,000 gallons of DNAPL have been recovered since the program was put in place.

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 (See Appendix E).

III. PROGRESS SINCE THE LAST REVIEW

Table 2: Protectiveness Determinations/Statements from the 2019 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The implemented remedy is protective of human health and the environment.
Sitewide	Protective	The implemented remedy for the site is protective of human health and the environment.

There were no issues and recommendations identified in the last FYR.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2023, 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, Puerto Rico, and the U.S. Virgin Islands, including the Dupont Necco Park 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 (CIC) for the site, Michael Basile, posted a public notice on the EPA site webpage https://www.epa.gov/superfund/dupont-necco-park and provided the notice to the City of Niagara Falls by email on October 16, 2023 with a request that the notice be posted in municipal offices and on the city/town webpages. This notice indicated that a FYR would be conducted at the Dupont Necco Park Site to ensure that the cleanup at the site continues to be protective of people's health and the environment. The results of the review and the report will be made available at the Site information repository located at the EPA Western New York Public Information Office, 186 Exchange Street, Buffalo, New York. In addition, the final report will be posted on the following website: https://www.epa.gov/superfund/dupont-necco-park. Efforts will be made to reach out to local public officials to inform them of the results.

During the FYR process, no interviews were conducted.

Data Review

The monitoring program verifies hydraulic control in the source area, identifies DNAPL occurrence, evaluates groundwater quality trends within the source area and in the far-field (area outside of the source area), and demonstrates the effectiveness of recovery. Since 2008, a network of 26 wells is sampled annually for groundwater quality (following the initial start-up period when sampling occurred biannually). The groundwater chemistry data is also used to evaluate the extent of the source areas using the SAR solubility criteria. Source area and far field monitoring well locations can be found in Figure 1. In 2018 and 2023, additional wells were sampled for added coverage and to evaluate natural attenuation parameters. Data from the 2018 through 2022 monitoring periods was available for analysis during this FYR review period.

Hydraulic monitoring data for this past FYR period indicates that the HCS has consistently maintained control of the source areas in the overburden A zone and the bedrock fracture zones B through F. Piezometric surface maps show significant drawdown relative to the five extraction wells for each zone, indicating that most groundwater within the established source area limits is hydraulically contained. The A zone (overburden) appears to show significant dewatering and rapid response as a result of extraction wells RW-5 and RW-11. Hydraulic control is also maintained in the B zone of the shallow bedrock, where extraction wells RW-11, RW-5, and RW-4 exert the greatest influence within this zone. Similarly, hydraulic control is maintained in the C zone, due to the effects of extraction wells RW-11, RW-4 and RW-5 on the east side of the landfill. In 2021, improvements were made to the pumping system at RW-5 that decreased the system downtime. Groundwater elevation data from tests conducted in 2022 showed the influence of RW-5 and RW-11 at C zone wells. Water-level data in wells screened through bedrock facture zones D, E, and F also indicate containment due to the effects of extraction wells RW-8 and RW-9 near the west end of the landfill.

While DNAPL was not recovered in 2018, the years 2019 through 2022 had measurable DNAPL, as noted above. There were 46.2 gallons of DNAPL removed in 2022. This volume is typical of the DNAPL recovered in the last ten years.

Overall, the total VOCs (TVOC) concentrations are decreasing for all groundwater flow zones at the outer portions of the source area and in the downgradient far-field. In the few cases where there were increasing TVOC trends, the concentrations were within historical range, near the source area or a recovery well, or represented increases in degradation products.

A more detailed evaluation of VOC levels and trends derived from analysis of groundwater samples in the 26-well network is included below.

A-zone

Results from the A-Zone wells indicate TVOC concentrations for years 2018 through 2022 are all below 2 micrograms per liter (µg/l), except for wells 137A, 146AR, and D-11. Sampling results for well 137A (194 µg/l in 2020) represents the location of the highest reported A-Zone TVOCs. Other well locations (145A, 146AR and 150A) were substantially lower during this review period, ranging from ND to 10.9 µg/l. Well D-11 was monitored in 2018 and had TVOCs of 93.4 µg/l. Water-quality results from A-zone wells located in the far-field (146AR, 150A, and 145A) indicate that VOC concentrations were low. Wells 145A and 150A have exhibited consistently low (<5 µg/l) TVOC concentrations since 2006. Well 146AR TVOCs results were 10.9, 6.3, and 5.13 µg/l in 2020, 2021 and 2022 respectively. The data from this review period are consistent with historical results, showing no significant off-site horizontal chemical migration in the overburden.

B-zone

Results from the B-Zone wells indicate TVOC concentrations were consistent with previous years or decreasing over time, thereby demonstrating effective groundwater capture by the recovery wells.

The TVOC concentrations in well 171B had decreased three orders of magnitude between 2002 to 2018, decreasing from a high of 100,000 µg/l to 141.47 µg/l. TVOCs concentrations were 9,730 µg/l, 24,363 µg/l, 1,788 µg/l, and 792 µg/l in the years 2019, 2020, 2021 and 2022, respectively. Source area limit well 172B has decreased one order of magnitude to 4,342 µg/l during a similar timeframe. Additionally,

the concentrations suggest that there is an active natural attenuation component to the VOCs, as biogenic degradation compounds including *cis*-1,2-DCE and VC dominate TVOC results at these well locations. Well 145B, just outside the source area in the southeast corner of the site, also provides evidence of hydraulic control as concentrations have decreased significantly. Concentrations were over 30,000 µg/l and have decreased to 3,273 µg/l in 2021, with DCE being the highest concentration constituent.

Far-field wells 146B and 150B also demonstrate the effectiveness of the groundwater control system. Concentrations have decreased by one order of magnitude at both wells since 2000.

C-zone

Results from the four annually monitored C-Zone wells analyzed for long term trends indicate TVOC concentrations are overall consistent with previous long-term monitoring results and the source area is controlled.

Wells 145C and 168C delineate the C-Zone source area limit. At 145C, concentrations were the lowest on record from 2013 to 2018, after a marked decrease in 2013. However, TVOCs at this location subsequently increased from 3.27 µg/l in 2018 to 2,187 µg/l in 2021 and then decreased to 980.4 µg/l in 2022. At well 168C, after the 2005 startup concentration of 21,350 µg/l, the concentrations had been slightly decreasing between 2010 and 2017, from 16,780 µg/l to 10,383 µg/l with an anomalously low concentration in 2018, down to 216.9 µg/l. However, between 2019 and 2022 TVOCs have increased each year from 4,412 µg/l in 2019 to 30,910 µg/l in 2022.

Wells 146C and 150C are downgradient of the source area under ambient groundwater flow conditions. TVOC concentrations at 146C were over 20-40 µg/l prior to 2006; however, the concentrations increased in 2014 and 2017 (75.9 µg/l) and then decreased in years 2018 through 2022, to a concentration of 17.3 µg/l in 2022. This concentration remains much lower than source area levels, and is primarily attributed to DCE and VC, which are degradation products of TCE.

TVOC results at monitoring well 150C increased from 17.25 µg/l in 2019 to 62,860 µg/l in 2020, followed by 53,560 µg/l in 2021. In 2022, the TVOC concentration was 13,110 µg/l. Well 150C will continue to be evaluated in 2023 to see if the increase in concentration seen in 2020-2022 is a trend or a short-term increase. Groundwater elevation data from transducers deployed in C-zone wells will inform future evaluations of containment in the C zone.

D-zone

Results from the four D-Zone wells indicate, with the exception of well 165D, VOC concentrations are generally low and/or declining over time at these monitoring locations.

Well 65D is within the D-Zone source area. From 2016 to 2019, well 165D had TVOC concentrations of <25 µg/l. TVOC concentrations had been declining since the peak of approximately 1,600 µg/l in May 2006. However, concentrations have increased significantly at the beginning of this review period with a result of 5,734 µg/l in 2020, and decreased in subsequent years to 2,731 µg/l in 2021 and 1,766 µg/l in 2022. Future TVOC results will determine if the increase is sustained or continues to trend downward toward lower concentrations previously observed.

2022 TVOC concentrations at far-field wells (136D, 145D, and 148D,) ranged from 3.53 µg/l (148D) to 402.4 µg/l (145D). At wells 136D and 145D, the concentrations have continued to decline from historical highs of approximately 3,000 µg/l at both wells. In 2022, the TVOC concentration in well 136D had decreased to 46.29 µg/l. At far field well 148D, the concentrations remained below 5 µg/l during the review period.

Consistent with previous long-term monitoring results, biogenic degradation compounds including *cis*-1,2-DCE and VC dominate TVOC results for wells 136D, 145D, 148D, and 165D. Concentrations in D-Zone wells demonstrate that the HCS is effectively controlling groundwater flow as designed.

E-zone

Results from the three E-Zone wells (146E, 150E, and 165E) in 2022 indicate TVOC concentrations of the two wells within the E-Zone source area (146E at 737.9 µg/l and 165E at 8,910 µg/l) and side gradient well 150E (1,020.1 µg/l) are consistent with previous results.

From 2011 to 2016 well 165E, a source area well, had shown a year-to-year decrease from 62,630 µg/l in 2011 to 2,083 µg/l in 2016, the lowest TVOC result historically observed at this location, but increased in 2017 to 25,180 µg/l and in 2022 declined to 8,910 µg/l. This well is located just upgradient (less than 100 feet from) of recovery well RW-9.

TVOC results for well 146E located at the edge of the source area limits, had been trending lower, with concentrations typically between 3,500 and 6,300 µg/l between 2009 and 2014. TVOCs increased in 2015 and 2016, but in this review period, TVOCs have decreased and ranged from 190.3 µg/l to 737.9 µg/l. The overall trend for TVOCs continues to be declining at 146E. Well 150E is located outside the source area limits and had concentrations typically between 500 and 1,500 µg/l TVOCs in recent years, however, in 2019 the TVOC concentration increased to 7,835 µg/l (highest observed at this location). TVOCs concentrations then fluctuated in 2020, 2021 and 2022, with results of 1,020 µg/l, 5,250 µg/l and 2,704 µg/l, respectively.

Degradation products including *cis*-1,2-DCE and VC dominate TVOC results for all the E-Zone wells. The presence of these degradation compounds is indicative of the occurrence of active natural attenuation processes.

F zone

TVOC concentrations at the three F-Zone wells ranged from 7.21 µg/L to 9,430 µg/l in 2022, and all three locations showed decreasing trends. VOC concentrations at near source well 136F have also steadily declined since HCS startup from 8,348 µg/l (2005) to 7.21 µg/l (2022). At well 146F, at the edge of the F-zone source area, the 2022 TVOC concentrations were consistent with most results from the previous review period at 9,430 µg/l. TVOC concentrations at location 150F have shown a steady trend lower since 1998, with concentrations decreasing from initially over 4,500 µg/l to 725 µg/l in 2022.

TVOC concentrations have apparently decreased at these F-Zone locations in response to the startup of the HCS. Similar to the results from the E-Zone wells, TVOC results for all the F-Zone wells are dominated by biogenic degradation compounds *cis*-1,2-DCE and VC.

Natural Attenuation

At the Dupont Necco Park site, the source area control is preventing contaminants from migrating into the far-field which allows natural attenuation to decrease concentrations and retract the plume. In the first eight years of source area control the downgradient and side gradient VOCs have decreased an average of 65 percent. Investigation from 2005-2008 confirmed the presence of bacteria with the ability to complete dechlorination of chlorinated ethenes to ethane. Additional evidence for attenuation was supported by the scoring method in EPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (1998), which showed strong evidence for anerobic biodegradation at wells in the B, C, D, E, and F zones. An evaluation of monitored natural attenuation conditions is conducted every five years at the site. The 2018 natural attenuation evaluation showed source area groundwater geochemistry has remained anaerobic and likely methanogenic. The VOCs found at downgradient wells and some source area wells are predominantly degradation products including cis-DCE, vinyl chloride, ethene, and ethane.

The last natural attenuation sampling event was conducted in 2023; the results will be available in the 2023 annual report, anticipated in spring of 2024. However, VOC and field parameter results from 2022 show that natural attenuation continues to occur in the source area and the far-field plume.

Emerging Contaminants

Emerging contaminant sampling was conducted at the site in October 2020 at the request of New York State Department of Environmental Conservation (NYSDEC) to evaluate the presence/absence of 1,4-dioxane and per- and polyfluoroalkyl (PFAS) substances. A total of six monitoring wells were sampled. 1,4-Dioxane and PFAS substances were detected in all the samples. 1,4-Dioxane was detected at concentrations ranging from 0.12 µg/l (156D) to 140 µg/l (141D). Perfluorooctanoic acid (PFOA)was detected at concentrations ranging from 28 nanograms per liter (ng/l) (150B) to 420 ng/l (141D). PFOA concentrations from four wells (141B, 141D, 148D, and 150B) exceed the New York State Maximum Contaminant Level (NYS MCL) of 10 ng/l for PFOA. Perfluorooctanesulfonic acid (PFOS) was detected at concentrations ranging from 2.4 ng/l (141B) to 400 ng/l (148B). PFOS concentrations from three wells (141D, 148D, and 150B) exceed the NYS MCL of 10 ng/l for PFOS.

Upgradient and downgradient wells both exhibited emerging contaminant impacts. The upgradient wells 141B and 141D showed 1,4-dioxane concentrations of 5.5 µg/l and 140 µg/l, respectively. Well 141D had the highest concentration of 1,4-dioxane during this sampling event. 1,4-Dioxane concentrations in the downgradient wells (150B, 148B, and 156B) were relatively low with the maximum concentration being 1.2 µg/l. PFOA was detected in 141B and 141D at concentrations of 37 ng/l and 420 ng/l, respectively. Well 141D had the highest concentration of PFOA during this sampling event. PFOA in downgradient wells 150B, 148B, and 156B, was detected at 28 ng/l, 59 ng/l, and non-detect, respectively. PFOS was detected in upgradient wells 141B and 141D at concentrations of 2.4 ng/L and 71 ng/l, respectively. PFOS was detected in downgradient wells (150B, 148B, and 156B) at concentrations of 20 ng/l, 400 ng/l, and non-detect, respectively. Well 148B exhibited the highest concentration of PFOS during this sampling event. The side gradient well 153B did not have any exceedances with the exception of 1,4-dioxane (18 µg/l).

Given the variability of the results described above, additional sampling from a wider network of wells is warranted for these contaminants to better evaluate their potential sources, as the PFAS compounds and 1,4-dioxane are unlikely to naturally attenuate, and whether further delineation is necessary. The

data collected to date is insufficient to make this determination. Samples collected from the influent and effluent of the GWTF are recommended as well, since this water is discharged to the Niagara Falls Wastewater Treatment Plant.

Site Inspection

The inspection of the Site was conducted on September 25, 2023. In attendance were Young S. Chang, EPA RPM, Kathryn Flynn, EPA Hydrogeologist, Julie McPherson, EPA Risk Assessor, Steven Moeller, NYSDEC Project Manager, Paul F. Mazierski of Chemours, Tim J. Pezzino of AECOM, and James Schuetz of Parsons. The purpose of the inspection was to assess the protectiveness of the remedy. The site conditions have not changed since the last FYR. Landfill cap maintenance activities are conducted in accordance with the Cap Maintenance and Monitoring Plan. During the most recent inspection, no leachate seeps or settlement were identified, and all aspects of the landfill that were inspected were found acceptable. No activities are occurring which may impact the integrity of the cap. The GWTF is being well maintained. The EPA RPM did not observe any problems or deviations from the ongoing O&M activities being implemented at the site.

V. TECHNICAL ASSESSMENT

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

The remedy at the DuPont Necco Park site is functioning as intended by the decision documents.

The September 1998 ROD calls for the following: implementation of a HCS in overburden and bedrock flow zones, a GWTF, DNAPL collection in the source area, an upgrade to the landfill cap, and a monitoring program for wells in the source area and far-field areas. The remedial action is necessary to address the RAOs for the site, which are to establish hydraulic control of contaminated groundwater within the source area and to prevent off-site migration, as well as eliminate exposure. Remediation of DNAPL, contaminated soils, bedrock, and groundwater within the source area of the site was considered technically impracticable. Consequently, the ROD waived federal and state drinking water standards for groundwater in the source area.

The landfill cap was upgraded to comply with the New York State 6 NYCRR Part 360 design standard. All cap landfill construction activities were completed in August 2006. The cap is maintained and is in good repair. The cap area has been seeded over and permanent vegetation has been established over the entire site. Institutional controls have been imposed to restrict site access and use of groundwater, and to control land use.

The monitoring program was established to verify hydraulic control, identify DNAPL occurrence, demonstrate effectiveness of recovery, and evaluate trends in groundwater concentrations. Groundwater elevation data shows that the HCS has been effectively controlling groundwater flow in the overburden and in the bedrock. The system consists of five groundwater recovery wells and a treatment facility that operates in accord with the established Operation & Maintenance Plan. The SFR was also put in place in the north, east, and west sections of the landfill and is designed to prevent movement of contaminated groundwater beyond source area boundaries. The treated extracted water is regulated by a Significant Industrial User permit with the Niagara Falls POTW. The GWTF discharge at the site is sampled quarterly to verify compliance with the permit.

No significant off-site migration of site contaminants in groundwater occurred in the overburden. Flow in the overburden aquifer is predominantly downward to the B-Zone, and the groundwater in the B, C, D, E, and F zone is contained by pumping at the recovery wells. An assessment of groundwater monitoring from the past five years indicates an overall decrease in VOCs for groundwater in the far-field area and the source areas. Rises of TVOCs observed in select wells are attributed to increases in TCE degradation products, indicative of natural attenuation processes occurring. DNAPL is collected in select wells in the Source Area.

Emerging contaminant sampling performed at select wells in 2020 indicated the presence of PFAS compounds and 1,4-dioxane within the site vicinity. Specifically, elevated concentrations of 1,4-dioxane and PFOA were found in both upgradient and downgradient wells, although the upgradient wells contained higher concentrations. However, the downgradient wells contained higher levels of PFOS compared to the upgradient wells sampled. Given this variability, additional sampling for PFAS and 1,4-dioxane from a wider network of wells is warranted to better evaluate their nature and extent, as well as if the Site is a potential source. Samples collected from the influent and effluent of the GWTF are recommended as well since this water is discharged to the Niagara Falls Wastewater Treatment Plant.

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?*

There have been no changes in the physical conditions of the site over the past five years that would affect the protectiveness of the selected remedy. The landfill cap is intact and contaminated material is not available for contact. Groundwater is not available for drinking since the area is served by a public supply. Because of on-site containment, significant contributions of site-related contaminants to the off-site groundwater and the Niagara River are not expected.

The exposure assumptions and the toxicity values that were used to estimate the potential risk and hazards to human health followed the general risk assessment practice at the time the risk assessment was performed in 1993. Although the risk assessment process has been updated since this time and specific parameters and toxicity values may have changed, the risk assessment process that was used is still consistent with current practice and the need to implement a remedial action remains valid.

The RAO for the source area groundwater was to reduce risks associated with potential exposure. This has been accomplished by preventing off-site migration. The RAO for the far-field area was to comply with groundwater ARARs established in the September 1998 ROD, which include NYS Groundwater Quality Standards and Federal MCLs. These cleanup goals remain valid. There have been changes to New York State's Groundwater Quality Standards which were used as a to-be-considered goal in cleaning up soils at the Site. Specifically, for the protection of groundwater, the soil cleanup standards for *cis*-1,2-DCE and vinyl chloride have been lowered to 250 µg/kg and 20 ug/kg, respectively, each from 500 µg/kg. In addition, the NYS MCL for cis-1,2-DCE has been lowered to 5 µg/l from 70 µg/l. Nevertheless, the RAOs from the 1998 ROD are still protective as the well-maintained landfill cap continues to impede migration to groundwater and minimizes the exposure pathway to the contaminated soil. For the groundwater, there was a technical impracticability waiver of groundwater ARARs in the source area. For the far field plume, the remedy requires long-term management to maintain the groundwater pump and treat systems and the groundwater monitoring to determine the effectiveness of the containment measures in reducing contaminant concentrations in the far-field aquifer. Natural attenuation data has been showing a decrease in concentrations and long-term monitoring is still ongoing. Although analysis of the data from far-field wells show that concentrations in some wells

currently exceed these cleanup goals, continued operation of the groundwater containment system, along with natural attenuation, will likely result in continued decreases in concentrations into the next five-year period.

Vapor Intrusion

Vapor intrusion was qualitatively evaluated in the 1993 risk assessment: "Available data indicate that given the shallow water table and the levels of volatiles detected in downgradient wells, volatilization of contaminants and infiltration to in [sic] building spaces cannot be ruled out. The magnitude of risk cannot be determined at present. However, risks may be increased in the future in the event that current remediation efforts at the site are discontinued (TRC, *Final Risk Assessment* (1993), p. 4-42)." The 2009 FYR identified a recommendation to perform a more thorough vapor intrusion investigation. In 2013, DuPont conducted a vapor intrusion screening evaluation of the far-field area. The conclusion of that effort was that vapor intrusion would not be a concern for any downgradient buildings because the wells in zone A (the shallowest groundwater zone) are largely clean, both because of continued treatment and containment of the source area and because of a predominantly downward gradient in this zone.

To evaluate whether these conditions have changed, results from the Zone A monitoring wells sampled during this FYR period were compared to EPA Vapor Intrusion Screening Levels (VISLs) within groundwater. The VISLs evaluated were based on commercial exposures given the industrial use of the area surrounding the Site as well as a target cancer risk of 1 $x10^{-6}$ and hazard index of 1. The results indicate that several wells exceeded their respective VISLs (137A, D11 and 146AR) from 2018-2022. Well 137A is located near the CECOS treatment facility where groundwater is treated. However, this treatment building has a vapor barrier and, therefore, the exposure pathway is not complete. There are no habitable buildings near wells D11 and 146AR. Concentrations within the other A zone (shallow) wells sampled do not exceed commercial groundwater VISLs. Therefore, vapor intrusion continues to not be a concern.

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

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

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
None

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): 1	**Issue Category: Monitoring**			
	Issue: Monitoring wells in the vicinity of the DuPont Necco Park site are showing emerging contaminants impacts and it is unclear whether these impacts are from the Site.			
	Recommendation: Collect data needed to delineate the nature and extent of emerging contaminants at the Site and determine whether the Site is a source. Samples from the influent and effluent of the GWTF should be collected as well.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2026

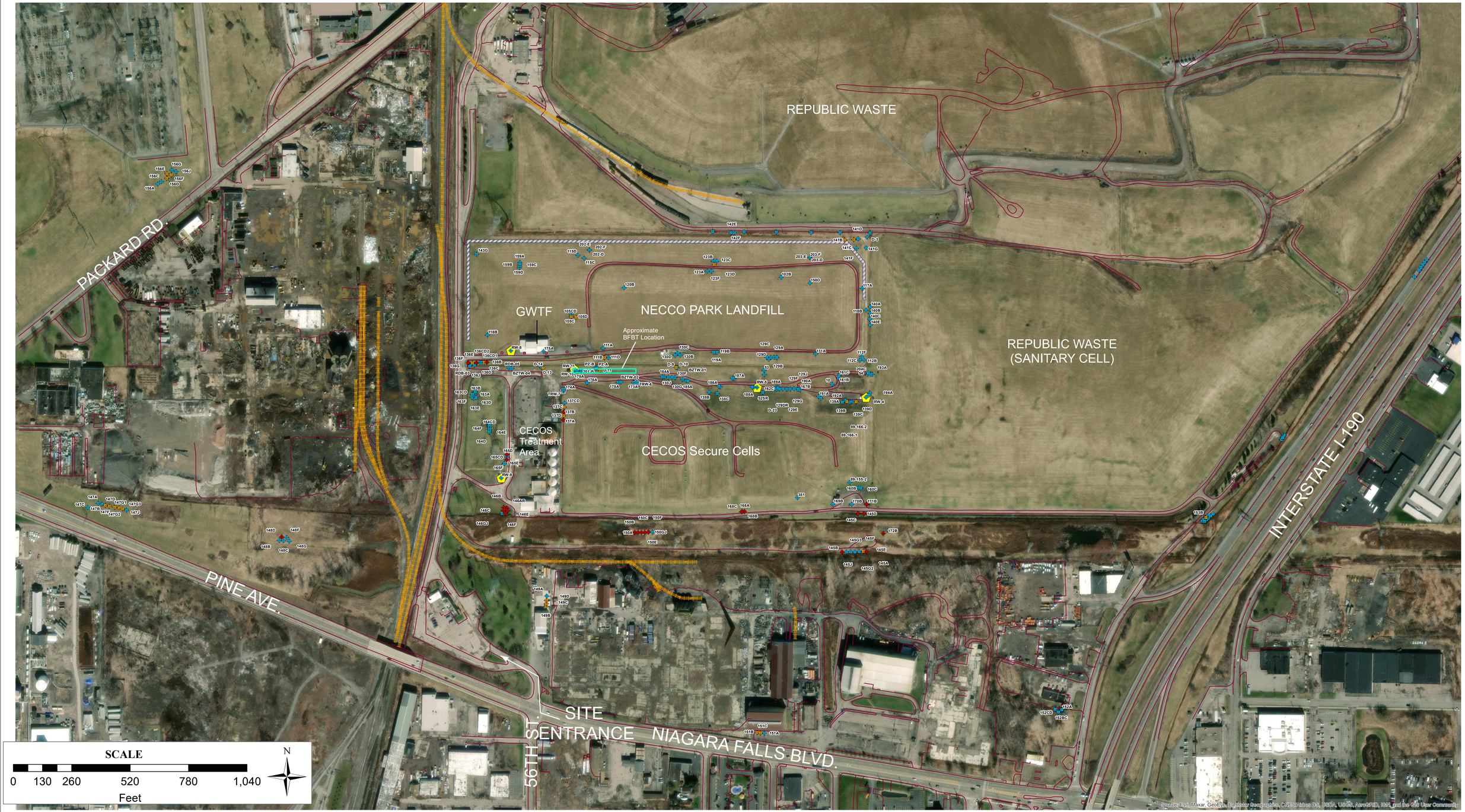
VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
Operable Unit: 01	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The implemented remedy is protective of human health and the environment in the short term because there are currently no exposures. To be protective in the long term, additional data needs to be collected and evaluated to delineate the nature and extent of emerging contaminants at the Site, the potential presence of these contaminants within the influent and effluent of the GWTF and whether the site is a source.	

Sitewide Protectiveness Statement
Protectiveness Determination: Short-term Protective
Protectiveness Statement: The implemented remedy for the site is protective of human health and the environment in the short term because there are currently no exposures. To be protective in the long term, additional data needs to be collected and evaluated to delineate the nature and extent of emerging contaminants at the Site, the potential presence of these contaminants within the influent and effluent of the GWTF and whether the site is a source.

VIII. NEXT REVIEW

The next FYR report for the Dupont Necco Park Superfund site is required five years from the completion date of this review.



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Project Manager: Eric Felter	Date: 10-04-2023
Project Number: 453196.02023	

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LEGEND

- ANNUAL SAMPLING WELLS
- 5 YEAR SAMPLING WELLS
- MONITORING WELL
- ACTIVE RECOVERY WELLS
- RECOVERY WELLS
- RAIL ROADS
- GROUT CURTAIN
- BLAST FRACTURED BEDROCK TRENCH

FIGURE 1
WELL AND PIEZOMETER LOCATIONS
CHEMOURS NECCO PARK SITE
NIAGARA FALLS, NY

APPENDIX B – REFERENCE LIST

Documents, Data and Information Reviewed in Completing the Five-Year Review	
Document Title, Author	**Submittal Date**
Record of Decision, EPA	09/1998
2018 Annual Report, Parsons for the Chemours Company Corporate Remediation Group	03/2019
2019 Annual Report, Parsons for the Chemours Company Corporate Remediation Group	03/2020
2020 Annual Report, Parsons for the Chemours Company Corporate Remediation Group	03/2021
2021 Annual Report, Parsons for the Chemours Company Corporate Remediation Group	03/2022 Revised 07/2022
2022 Annual Report, Parsons for the Chemours Company Corporate Remediation Group	03/2023

APPENDIX C – SITE GEOLOGY/HYDROLOGY

The Lockport Dolomite is characterized by horizontal and vertical fractures through which groundwater flows generally toward the Niagara Gorge and the lower Niagara River. The aquifers underlying the site have been classified as class GA groundwaters, a source of potable water supply. The site hydrogeology can be generalized by seven units relevant to site remediation. The A zone refers to saturated overburden and the B, C, D, E, F and G zones refer to identified Lockport Formation bedding-plane fracture zones which act as separate water-bearing units.

The Niagara River downstream of Niagara Falls receives discharge from the bedrock groundwater flow system. The Niagara River upstream of Niagara Falls acts as a groundwater recharge area. However, studies demonstrate that the New York Power Authority (NYPA) conduits and several sewers/tunnels act as regional groundwater sinks. Groundwater entering the conduit drainage system near the site may flow either to the south where a portion infiltrates the Falls Street tunnel where these structures intersect, or to the north where the water may eventually discharge to the Forebay Canal through bedrock fractures. The dry weather flow of the Falls Street tunnel discharges to the Niagara Falls Publicly Owned Treatment Works (POTW), where the effluent is treated.

Groundwater in the overburden, defined as the A zone, tends to flow vertically downward to the more transmissive bedrock units.

Groundwater in the B and C zones generally flows to the south in areas beyond the radius of influence of the operational recovery well system. Although the Falls Street tunnel is located southwest of the site and flow in the study area is to the south, the hydraulic influence of the Falls Street tunnel may extend some distance east of the Falls Street tunnel/John Street sewer intersection. Therefore, although insufficient information is available to determine the exact flow path, a portion of B and C zone groundwater ultimately discharges to the Falls Street tunnel.

Groundwater in the D, E and F zones generally flows in a westerly direction toward the NYPA power conduits. This groundwater is intercepted by the conduit drain system.

The piezometric map for the G zone generally indicates that hydraulic gradients are low. The primary flow direction appears to be west/northwest toward the groundwater discharge boundary at the NYPA conduits.

APPENDIX D – REMEDIATION GOALS

Remediation Goals			
SOIL (all concentrations in µg/kg)			
Contaminants of Concern	**Soil - Protection of Groundwater**	**Human Health Risk**	**Remediation Goals**
cis-1,2-Dichloroethylene	500	-	500
Tetrachloroethylene	1,000	100,000	1,000
Trichloroethylene	500	-	500
Vinyl chloride	500	-	500
GROUNDWATER (all concentrations in µg/L)			
	National Primary Drinking Water Standards (Federal MCLs)		**Remediation Goals**
cis-1,2-Dichloroethylene	70		70
Tetrachloroethene	5		5
Trichloroethene	5		5
Vinyl chloride	2		2

APPENDIX E – CLIMATE CHANGE EVALUATION

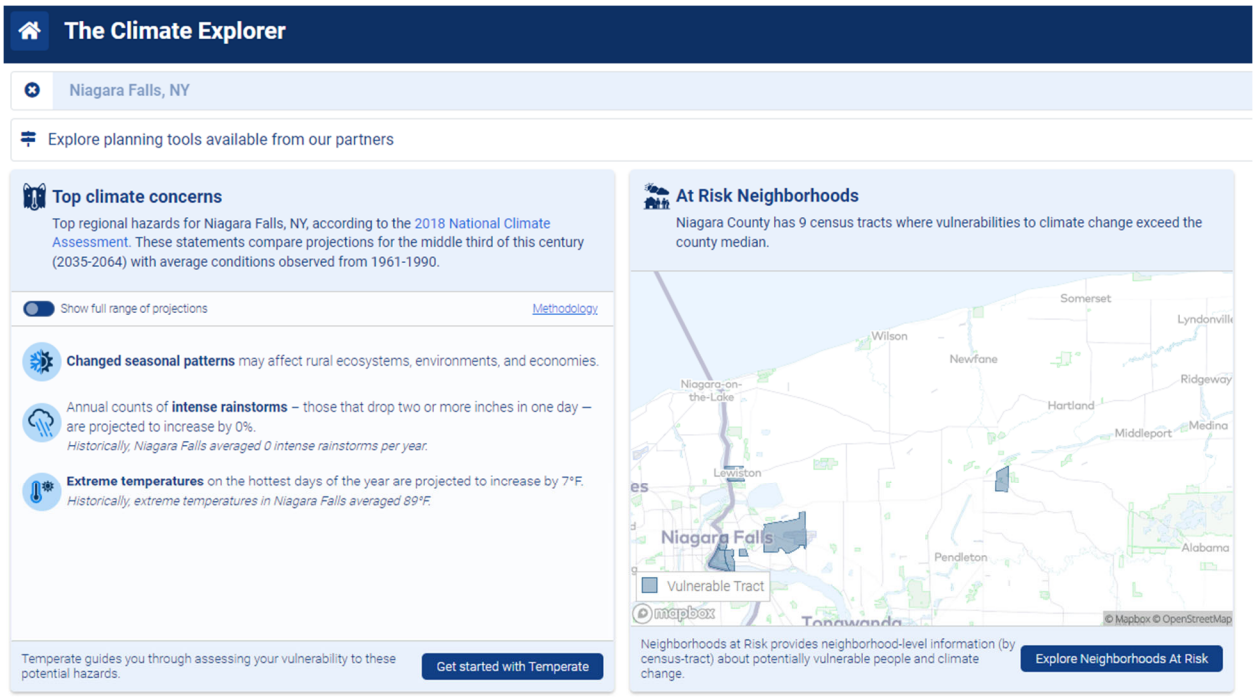
In accordance with the *Region 2 Guidance for Incorporating Climate Change Considerations in the Five Year Reviews*, three climate change tools were utilized to assess the DuPont Necco Park Landfill Superfund Site in City of Niagara Falls and Town of Niagara, Niagara County, New York (NY). Screenshots from each of the tools assessed are included below.

The first tool used to assess Niagara Falls, NY was *The Climate Explorer*. According to this tool,
average daily temperatures are projected to increase. Appendix E, Figure 1 shows that the projected increases in seasonal patterns, and increases of maximum temperature are noted as top climate concerns. There is a projected increase in the average temperature and number of days per year with maximum temperatures > 100 ° F (Appendix E, Figures 2 and 3). Variations in the annual number of dry days is shown in Appendix E, Figures 4.

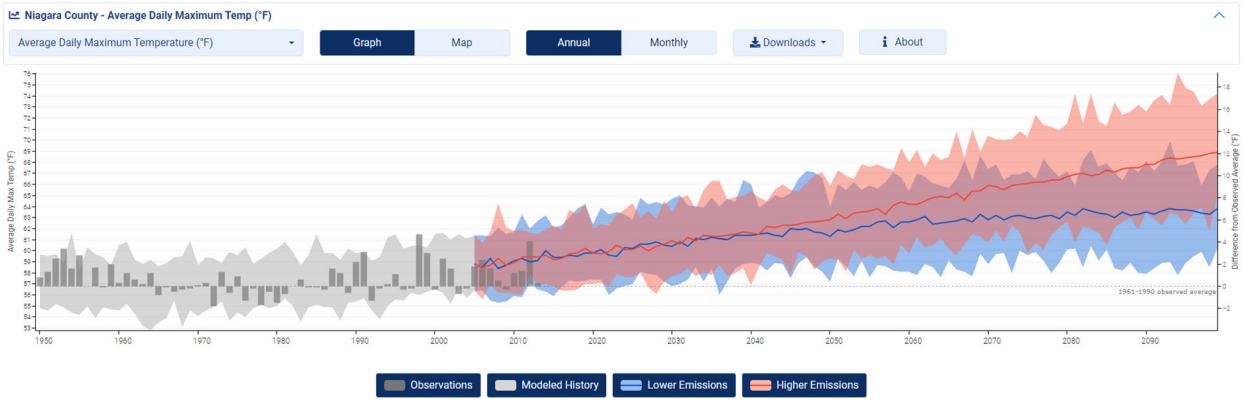
The second tool utilized is called the *Flood Factor*. The closest neighborhood to the site location is Hyde Park. According to this assessment tool, there are 15 properties in Hyde Park, NY that have greater than a 26% chance of being severely affected by flooding over the next 30 years which gives Hyde Park a flood risk rating of “Minor” (Appendix E, Figure 5). The current and 30-year flood risks for Hyde Park, NY are shown in Appendix E, Figures 6 and 7, respectively.

The final tool utilized is called *Sea Level Rise*. Appendix E, Figure 8 shows the current mean higher high water elevation while Appendix E, Figure 9 shows the impacts of sea level rise of 10 feet. This tool shows the site location will not be impacted by sea level rise.

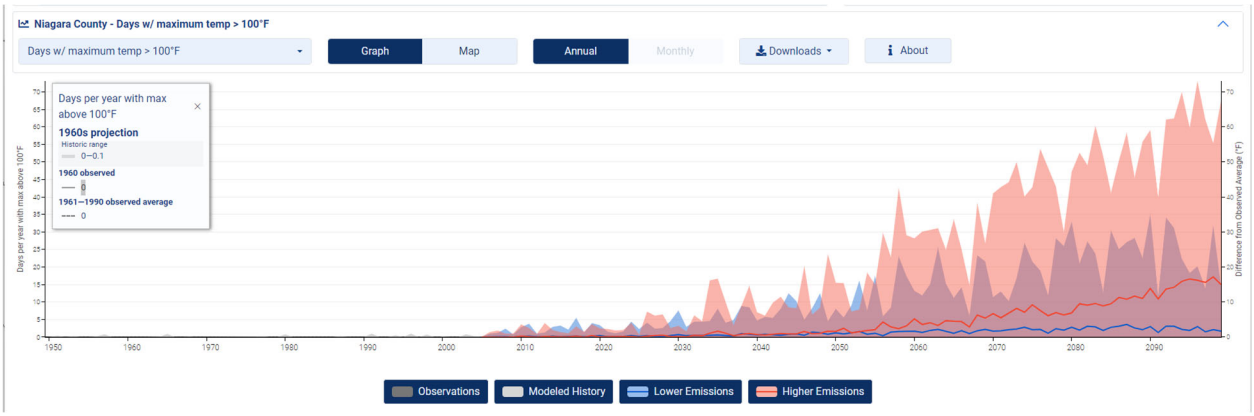
Despite changing climate trends, minor risks of flooding and no sea level rise potential is indicated above. O&M consists of periodic site inspections, landfill maintenance and monitoring and groundwater monitoring and treatment. Additional inspections of the site are performed after severe weather events as well and this will continue into the future. Therefore, 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.



Appendix E Figure 1: Climate Explorer – Top Climate Concerns for Niagara Falls, NY

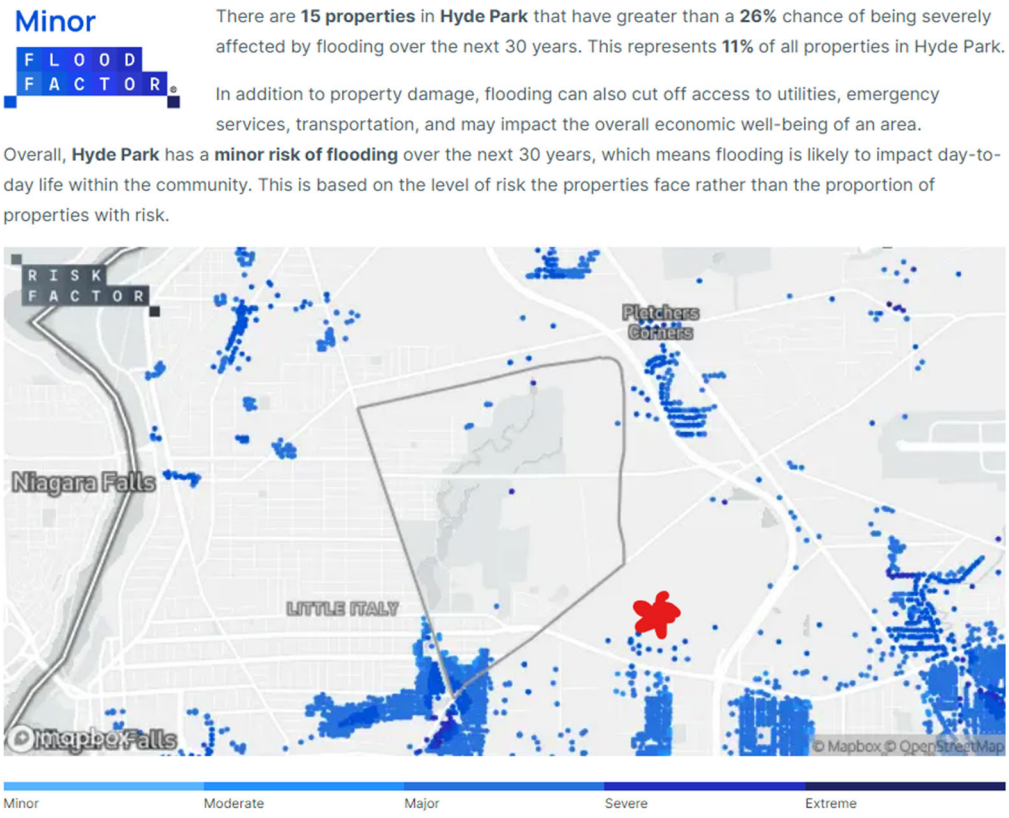


Appendix E Figure 2: Climate Explorer – Average Daily Maximum Temperature for Niagara County, NY



Appendix E Figure 3: Climate Explorer – Days w/ Maximum Temperature > 100˚F for Niagara County, NY

Appendix E Figure 4: Climate Explorer – Dry Days for Niagara County, NY



Appendix E Figure 5 Flood Factor – Flood Risk Factor for Hyde Park Neighborhood of Niagara Falls, NY
(red star marks the approximate location of the site)

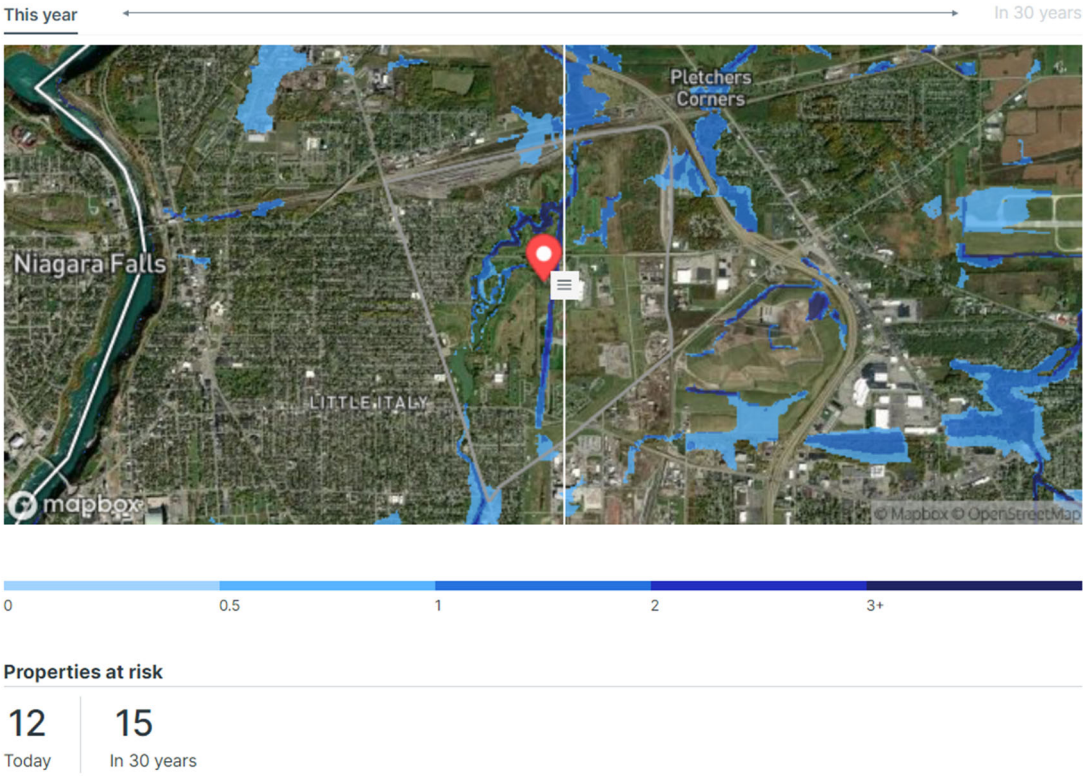
Residential: **Minor Risk**
129 out of **1,315** homes at risk

Roads: **Minor Risk**
4 out of **24** miles at risk

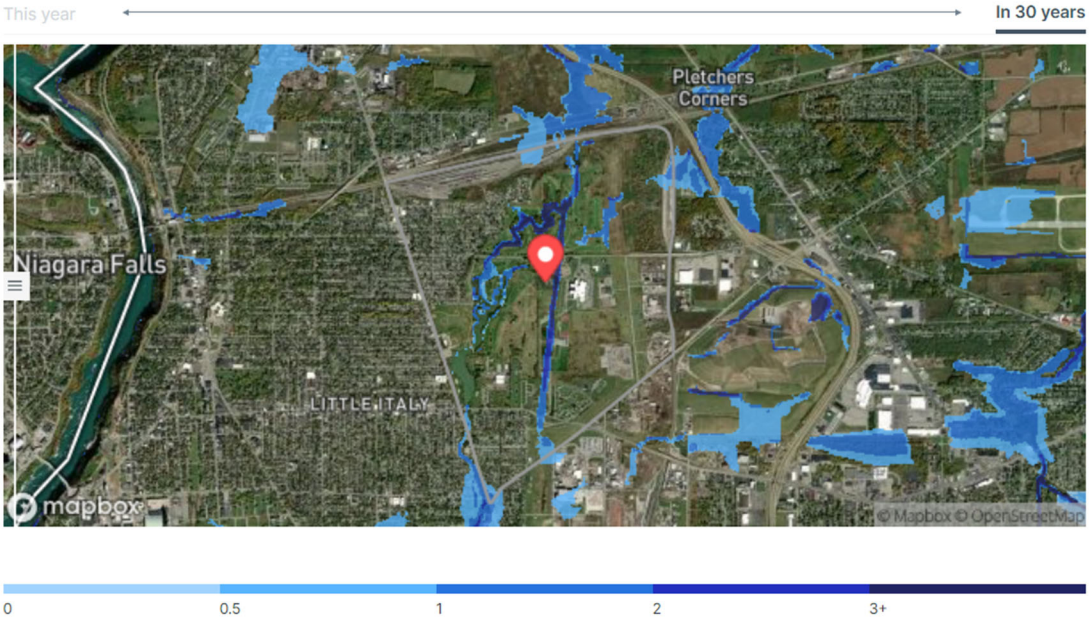
Social Facilities: **Minimal**
0 out of **5** facilities at risk

Critical Infrastructure: **Minimal**
0 out of **8** facilities at risk

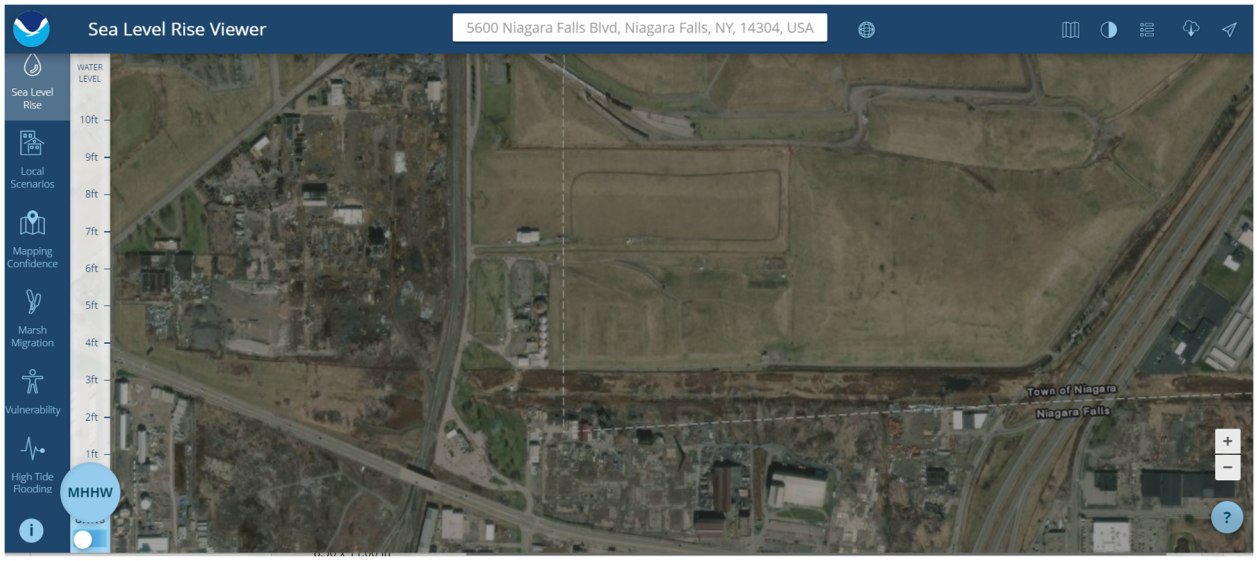
Commercial: **Moderate Risk**
5 out of **51** properties at risk



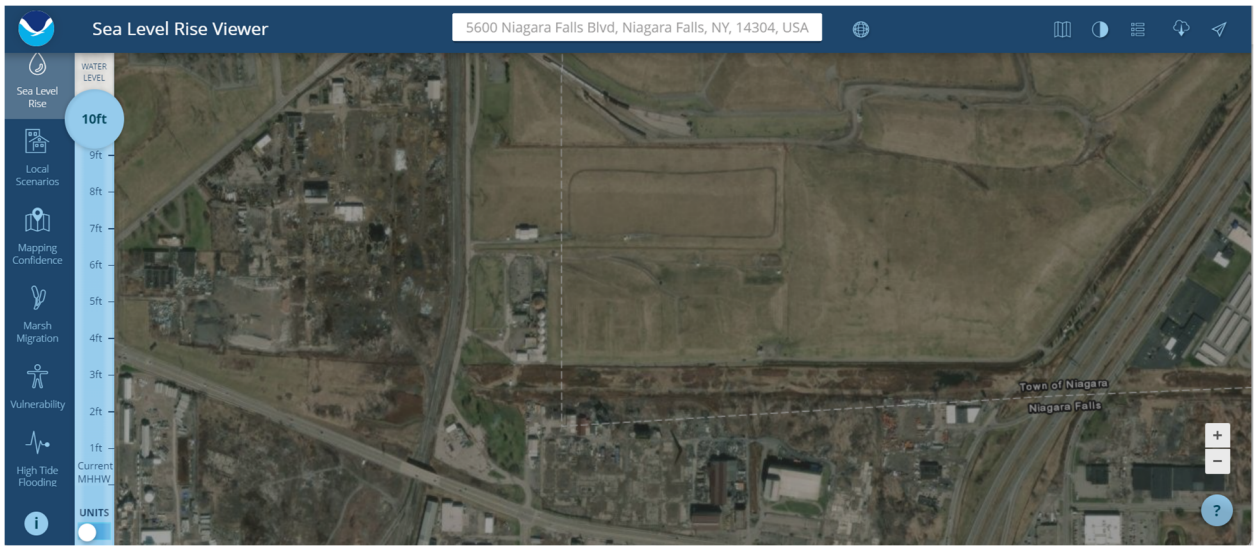
Appendix E Figure 6 Flood Factor – Flood Risk Current for Hyde Park Neighborhood of Niagara Falls, NY



Appendix E Figure 7 Flood Factor – Flood Risk in 30 Years for Hyde Park Neighborhood of Niagara Falls, NY



Appendix E Figure 8 – NOAA Sea Level Rise Viewer – Current Sea Levels



Appendix E Figure 9 – NOAA Sea Level Rise Viewer – 10 ft Sea Level Rise