

**SECOND FIVE-YEAR REVIEW REPORT FOR
JOHNSON AND TOWERS SUPERFUND SITE
MOUNT LAUREL, BURLINGTON COUNTY, NEW JERSEY**



Prepared by

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LIST OF ABBREVIATIONS & ACRONYMS

AOC	Administrative Order of Consent
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
ICs	Institutional Controls
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NJGWQS	New Jersey Groundwater Quality Standards
NPL	National Priorities List
O&M	Operation and Maintenance
ppb	Part per Billion
ppm	Part per Million
PRP	Potentially Responsible Party
RAO	Remedial Action Objectives
ROD	Record of Decision
RPM	Remedial Project Manager
TBC	To be considered
UST	Underground Storage Tank
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy 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 second FYR for the Johnson and Towers 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 one operable unit which will be addressed in this FYR. OU1 addresses groundwater.

The Johnson and Towers Superfund Site FYR was led by Grisell V. Díaz-Cotto, Remedial Project Manager from the Environmental Protection Agency (EPA). Participants, also from EPA, included John Mason, Hydrogeologist; Abbey States, Human Health Risk Assessor; Detbra Rosales, Ecological Risk Assessor; and Shereen Kandil, Community Involvement Coordinator.

Site Background

The 7.5-acre Johnson and Towers site is located at 2021 Briggs Road, Mount Laurel Township, Burlington County, New Jersey. The site is bounded to the north by a commercial property currently under development, to the east by Briggs Road, to the west by fields and wooded areas and to the south by a commercial building. The Johnson and Towers Company property contains an engine and transmission servicing facility that includes a 54,000-square foot building for offices, engine repair shop, and parking lots (see Appendix B, Figure 1).

Johnson and Towers is in an area zoned for commercial/industrial use and the nearby properties are primarily commercial. There are residential developments within approximately one mile southeast of the site.

State records indicate that no residents are currently drinking groundwater within one mile downgradient of the site, and a municipal water supply is available throughout the area. There are no potable wells at the site; the facility is connected to public water.

Johnson and Towers began remanufacturing and rebuilding diesel engines at this location in 1976. The facility primarily generated waste containing spent solvents, acids, caustics, and alcohols. Industrial wastewater was directed into a series of eight-foot diameter concrete tanks, one of which was perforated to allow for percolation into the subsurface. The wastewater handling system was expanded in 1978 to include a leach field located north of the building in the northwestern portion of the site. The leach field became overloaded due to the volume of wastewater, the low permeability of the soil, and the shallow water table. The overloading problem was periodically alleviated by removal of wastewater from the distribution pipes by an industrial wastewater hauler.

In 1983, the facility was connected to the Mount Laurel sewer system. After connection to the public sewer system, Johnson and Towers abandoned the leach field and removed a number of concrete tanks. Six-hundred tons of soil were removed from the seepage tank area. After soil removal, a 500-gallon fiberglass underground storage tank (UST) was installed in the excavation and the area was backfilled with clean soil. Waste oils generated by the facility were stored in the 500-gallon UST and were periodically removed to an off-site facility. In 1995, the UST was removed. During the UST removal a 550-gallon steel and a concrete seepage tank and

piping were uncovered and were also removed.

SECOND FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Johnson and Towers		
EPA ID: NJD002300051		
Region: 2	State: NJ	City/County: Mount Laurel, Burlington County
SITE STATUS		
NPL Status: Non-NPL		
Multiple OUs? No	Has the site achieved construction completion? No	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Grisell V. Díaz-Cotto		
Author affiliation: EPA		
Review period: 5/1/2024 – 10/2/2024		
Date of site inspection: 8/12/2024		
Type of review: Policy		
Review number: 2		
Triggering action date: 2/11/2020		
Due date (five years after triggering action date): 2/11/2025		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Soils.

Initial soil sampling in 1986, in the area of the leach field and underground storage tanks, indicated contamination with volatile organic compound (VOCs), including methylene chloride and 2-butanone. Post removal soil sampling conducted in 1999 indicated no VOCs exceeded EPA's industrial soil risk-based screening levels. Arsenic was found above health-based screening levels in soils associated with the areas of VOC contamination and at locations approximately 400 feet downgradient of the former UST area, ranging from non-detect to 34.1 parts per million (ppm).

Groundwater

Methylene chloride was chosen as an indicator chemical for the presence of groundwater contamination since it was most frequently detected in groundwater samples with a maximum concentration of 127 parts per billion (127 ppb) prior to the completion of the leach field and UST removal in the mid-1980s. Trichloroethylene (TCE) was also found in groundwater at a maximum concentration of 82.7 ppb. The New Jersey Groundwater Quality Standard (NJGWQS) for these contaminants are 3 ppb and 1 ppb, respectively.

Groundwater sampling conducted in 1999, after completion of the removal action, detected arsenic exceeding the NJGWQS of 3 ppb in three wells, MW-1 (318 ppb) and MW-6 (258 ppb) and MW-9 (15 ppb). In 2006, groundwater samples indicated the highest arsenic concentration at MW-1 (270 ppb). MW-6 could not be sampled because it was temporarily inaccessible. Well (MW-9) had an arsenic concentration of 7 ppb.

As part of the remedial investigation and feasibility study, EPA conducted a human health risk assessment (HHRA) to estimate the current and future effects of contaminants on human health and the environment. The risk assessment evaluated health effects that could result from exposure to contaminated groundwater and soil by current and future site workers and trespassers, as well as hypothetical future construction workers. Hypothetical ingestion of groundwater by offsite residents (adult and child) was also evaluated.

The 2004 HHRA did not evaluate residential exposure to surface soils because land use was expected to remain commercial. A supplemental risk evaluation was performed to confirm that, should the site be developed residentially, exposure to surface soil would not be of concern. The site soils met the unrestricted use threshold.

In the evaluation of groundwater, cancer risks and noncancer health hazards from exposure to some metals exceeded EPA's thresholds from hypothetical future use of groundwater as a drinking water source. The evaluation identified arsenic as the primary contaminant of concern, and concluded that arsenic in groundwater contributes to unacceptable hazards to receptor populations that may use the contaminated groundwater in the future.

Due to the lack of usable terrestrial habitat for ecological receptors at the site, risks to ecological receptors would be low. Therefore, a Screening Level Ecological Risk Assessment was not performed and ecologically based screening criteria were not presented and were not utilized to assist in the interpretation of the nature and extent of soil and groundwater contamination at the site.

Response Actions

In 1983, EPA issued an Administrative Order of Consent (AOC) to investigate the nature and extent of the contamination caused by the wastewater discharge (from the servicing and manufacturing operations) to the subsurface seepage pit system and leach field.

In 1985, Johnson and Towers submitted a report that indicated the presence of contamination in the leach field, and in groundwater monitoring wells downgradient from the leach field. A second AOC was issued that same year to develop and implement a plan to determine the full extent of contamination, and to formulate remedial steps to prevent further migration of hazardous wastes from the facility.

After issuance of the second AOC for the site in 1985, Johnson and Towers undertook a series of soil and groundwater investigations to characterize the full extent of the site contamination. During the course of these investigations, additional underground tanks and piping were discovered and removed. The last of these removal actions was completed in 1995. Field investigations that included installation of groundwater monitoring wells and collection of soil samples were completed in 1999.

In 2000, Johnson and Towers prepared a Remedial Investigation report, which summarized the nature and extent of the remaining contamination at the site, and EPA prepared a preliminary Human Health Risk Assessment. Additional data were collected to complete the HHRA, focusing on residual arsenic contamination in groundwater. With the collection of additional data, EPA completed the HHRA in 2004. In 2006, a subsequent groundwater sampling event was conducted to support a remedial decision for the site. The remedy, selected in the 2008 Record of Decision (ROD), is long-term groundwater monitoring to assess the migration and attenuation of contaminants in groundwater. Remedial Action Objectives were not developed for this remedy; however, the goal of the remedy, as stated in the ROD, is to restore the groundwater to a beneficial use as a drinking water source.

Status of Implementation

Annual groundwater monitoring started in February 2015 with the sampling of six wells and a temporary piezometer. Three additional wells were installed in 2016. An additional well (MW-10) was installed in September 2020. A total of ten wells are sampled annually (See Appendix B, Figure 2.)

The data used for this Five-Year Review was collected during groundwater sampling events that occurred in 2019, 2020, and 2021. 2022 and 2023 groundwater sampling was not conducted, however, annual sampling has resumed.

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	Yes	Encompasses and is bordered by the site property boundary and extends to a vertical depth of 25 feet below grade	Provide notice until contaminant concentrations are below groundwater quality standards.	Johnson and Towers, Inc. CEA, April 5, 2017

Systems Operations/Operation & Maintenance

Groundwater samples are collected annually from ten monitoring wells and analyzed for VOCs, metals (filtered and unfiltered), nitrates, sulfates and biological oxygen demand. Long-term monitoring is to continue until three years after the NJGWQS for arsenic has been met.

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 C).

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 OU1 remedy is protective of human health and the environment.
Sitewide	Protective	The sitewide remedy is protective of human health and the environment.

There were no recommendations identified in the last Five-Year Review. However, the following actions were identified as Other Findings to be performed as part of ongoing O&M activities:

- 1) Detection limits for analytes that currently exceed the NJGWQS will be modified to assure that they are below all established standards for site contaminants.
 - a) Status Update: During this FYR period, there are still some cases in which the detection limits exceeded the state groundwater standard for arsenic.
- 2) Based on turbidity levels, well MW-1 should be redeveloped to assure accurate future sampling results.
 - a) Status Update: MW-1 was not redeveloped during this FYR period, but turbidity was less of an issue at this well for the two most recent sampling events. Turbidity in this well will continue to be monitored.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On August 7, 2024, the EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, and Puerto Rico, including the Johnson and Towers 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/johnson-towers>) and provided the notice to the Mount Laurel Township by email on October 7, 2024 with a request that the notice be posted in municipal offices and on the village/town webpages. This notice indicated that a FYR would be conducted at the Johnson and Towers Superfund site to ensure that the cleanup at the site continues to be protective of human 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 10007-1866
Phone (212) 637-4308

and

Mount Laurel Library
100 Walt Whitman Avenue
Mount Laurel, NJ 08054
Phone (856) 234-7319

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

Data Review

Data from three groundwater sampling events were evaluated as part of this five-year review. Currently, groundwater is monitored at ten locations throughout the site property. Nine monitoring wells were sampled in 2019, 2020, and 2021 for VOCs, metals (filtered and unfiltered), nitrates, sulfates, and BOD. One well (MW-1) was analyzed for arsenic speciation (As III and As V).

For a second consecutive review period, no VOCs were detected at levels above NJGWQS. Concentrations of arsenic, the primary contaminant of concern identified in the ROD, exceeded the NJGWQS of 3 µg/L (or ppb) in MW-1 for each event, in MW-5 and MW-6R for two events, and in MW-7R, MW-8, MW-9R and MW-10 for one event. When compared to the previous review period, these data report more wells with elevated concentrations of arsenic. However, with the exception of MW-1, concentrations were only slightly above the 3 µg/L NJGWQS. Additionally, lower analytical detection limits for arsenic were generally achieved during the 2019-2021 sampling events, which may have augmented the ability to record single-digit concentrations which were previously not identified.

The highest arsenic concentrations onsite have historically been observed in MW-1, and the maximum concentration observed at this location (203 ppb; 07/2019) was lower than the maximum concentration from the previous review period (368 ppb; 03/2016). In 2021, 102 ppb arsenic was detected at this location (see Appendix B, Figure 3).

Well MW-5 recorded concentrations of 5.2 ppb and 6.7 ppb in 2019 and 2020, respectively. Most recently, no detectable concentrations of arsenic were observed. In MW-6R, arsenic was not detected in 2019, while 3.9 ppb was reported in 2020. In 2021, 4.6 ppb of arsenic was present at this location. This represents a significant decline when compared with concentrations observed at this location prior to the issuance of the ROD.

MW-10 was initially sampled in 10/2020. Arsenic was detected at a concentration of 4.5 ppb, above the 3 ppb NJGWQS. Volumetric purging was utilized as a part of this initial sampling event, which can potentially lead to elevated sample turbidity. In 2021, the well was sampled following the low-flow purging and sampling procedure, and 3.9 ppb arsenic was detected. No detectable concentrations of VOCs were present at this location.

The concentrations of these metals were generally consistent with those observed with the previous review period. Metals and VOCs will be monitored annually moving forward.

Site Inspection

The inspection of the site was conducted on 8/12/2024. In attendance were Grisell V. Díaz-Cotto from EPA, David Johnson, President J&T, Alyssa Petitdemange and Christine Salvatore from Brockerhoff Environmental Services, LLC. The purpose of the inspection was to assess the protectiveness of the remedy.

At the inspection, a walk-through was performed to assess the condition of the wells in the monitoring program as well as the surrounding areas. No physical disturbances were noted. Wells were found to be generally in good condition. The safety bollards of well MW-3, located on a truck parking area, were somewhat damaged, but the above-ground well casing was in good condition. Repair of the bollard was discussed with Mr. Johnson.

V. TECHNICAL ASSESSMENT

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

The analytical results for groundwater indicate that no VOCs exceeded the NJGWQS for the period from 2019 to 2021. In general, the groundwater sampling data from the three sampling events in the review period indicate that arsenic concentrations remain stable above the 3 ppb NJGWQS at the most significantly impacted well, MW-1. Arsenic concentrations oscillate about the NJGWQS at MW-6R, and were elevated in several other wells, although the concentrations of arsenic and other metals continue to gradually decrease from pre-ROD conditions. A new sentinel well (MW-10) was installed in 2020 to ensure delineation of the groundwater plume. The sampling of MW-10 in 2021 indicated that concentrations were just marginally above NJGWQS at the downgradient edge of the site property. An annual sampling frequency should be maintained to monitor contaminant concentrations in this area and analytical limits should be maintained consistently below NJGWQS for each sampling event.

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

The exposure assumptions and toxicity values that were used to estimate the potential cancer risks and noncancer hazards in the risk assessment summarized in the 2008 ROD followed the general risk assessment practice at the time. Although 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. Since No Further Action was selected for soils and No Action with monitoring was selected for groundwater in the 2008 ROD, there are no remedial action objectives for the site. However, the goal of the remedy, as stated in the ROD, to restore the groundwater to a beneficial use a drinking water source, remains valid. Groundwater monitoring will continue until NJGWQS are achieved. There are no changes in the physical conditions of the site or site uses that would affect the protectiveness of the selected remedy.

There are no residents currently using groundwater as a potable water supply within one mile of the site and a municipal water supply is available throughout the area. A CEA is in place to prevent the installation of new wells within the contaminated area and groundwater use is not expected to change during the next review period. Therefore, the ingestion of groundwater pathway is incomplete and there is no exposure to remaining groundwater contamination.

The soil excavation and backfill eliminated any potential risk from surface soil contaminants to terrestrial receptors. Therefore, the exposure assumptions for ecological receptors are still valid.

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:
OU1

OTHER FINDINGS

There are no issues and recommendations that would impact the protectiveness of the remedy. The following suggestions will improve O&M, but do not affect current and/or future protectiveness:

- All detection limits for analytes that currently exceed the NJGWQS still need to be modified to assure that they are below all established standards for site contaminants.
- An annual groundwater sampling frequency should be maintained to ensure adequate monitoring into the next FYR period.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
<i>Operable Unit:</i> 1	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The OU1 remedy is protective of human health and the environment.	

Sitewide Protectiveness Statement
<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The sitewide remedy is protective of human health and the environment.

VIII. NEXT REVIEW

The next FYR report for the Johnson and Towers Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

- Johnson and Towers 2008 ROD, <https://semspub.epa.gov/work/02/103688.pdf>
- Johnson and Towers Feb 2020 Annual Ground Water Monitoring Well Sampling Report – 2019
- Johnson and Towers First FYR 2020, <https://semspub.epa.gov/work/02/598747.pdf>
- Johnson and Towers Jun 2020 Monitoring Well Fields Sampling Procedures (plus QAPP)
- Johnson and Towers Jan 2021 Annual Ground water Monitoring Report and Remedial Action Report and Remedial Action WP (2020 Sampling Event)
- Johnson and Towers Aug 2022 Annual Ground Water Monitoring Report (2021 Sampling Event)
- Johnson and Towers Aug 2022 Annual Ground Water Monitoring Report (2021 Sampling Event) - Revised text 12-12-2023

APPENDIX B - FIGURES

FIGURE 1



FIGURE 2

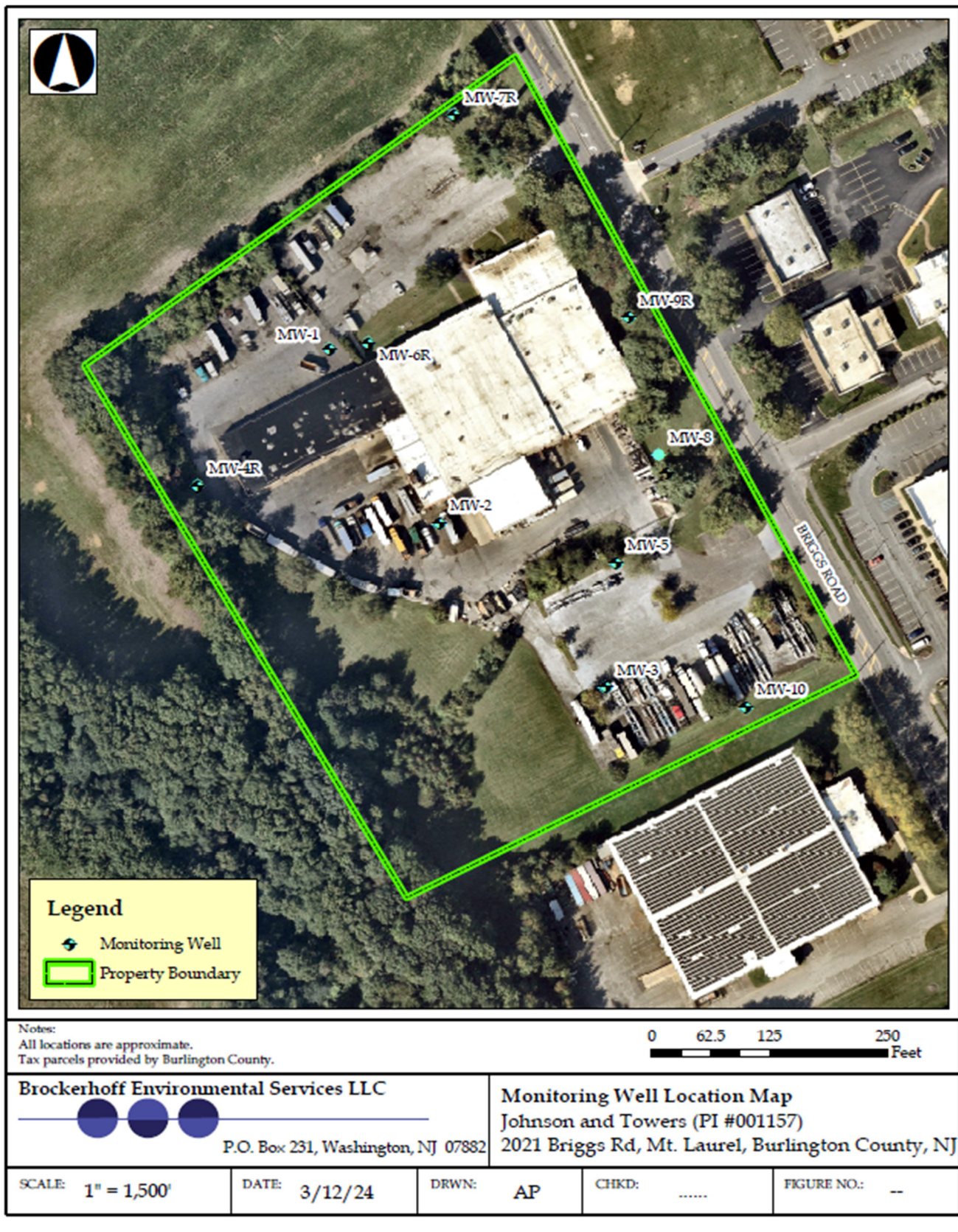
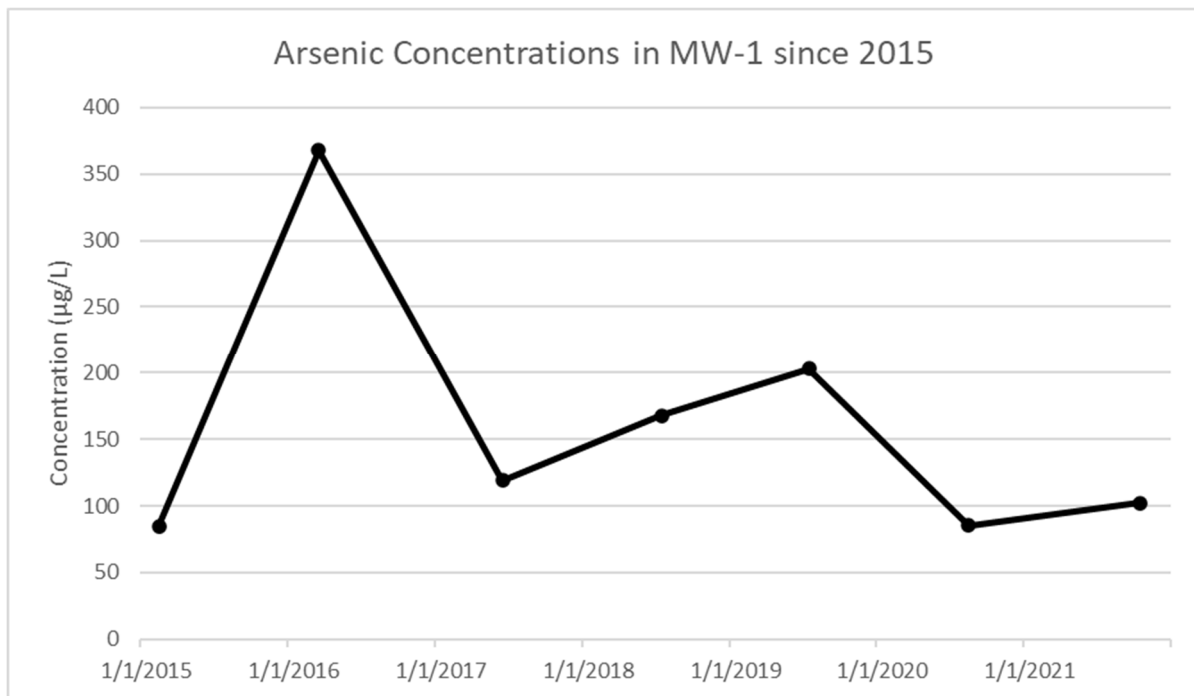


FIGURE 3



APPENDIX C

CLIMATE CHANGE ASSESSMENT

In accordance with regional practice, three climate change tools were utilized to assess the Chemical Control Superfund site. Screenshots from each of the tools assessed are included here.

The first tool used to assess the County of Burlington was The Climate Explorer. According to this tool, average daily temperatures are projected to increase in the future. Figure C-1 shows the projected increase in the average daily maximum temperature. However, Figures C-2 and C-3 show that days with >3" precipitation and the number of dry days is expected to remain fairly constant. Therefore, the site is not likely to be significantly impacted by drought. Figure C-4 shows a summary of the top climate concerns for Mount Laurel Township.

The second tool utilized was Risk Factor. This tool states that both flooding and wildfire are moderate risks in Mount Laurel Township over the next 30 years. These risk levels are based on the number of properties that are predicted to be affected (Figures C-5 and C-6). However, the Johnson and Towers Superfund site is not expected to be impacted given that the remedy consist of groundwater monitoring. In addition, there have not been any documented instances of flooding, wildfires, or drought at the site.

The third tool used was Sea Level Rise. This tool shows the impacts of the sea level rise to assess whether the site could be at risk. According to the analysis (see Figure C-7), even a ten-foot increase in sea level may not have an impact by flooding waterbodies at the site in the foreseeable future, given its inland location. A ten-foot sea-level rise is considered an intermediate scenario and the extent of that impact appears to be relatively small based on current climate data.

Based on this information, 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.

Figure C-1

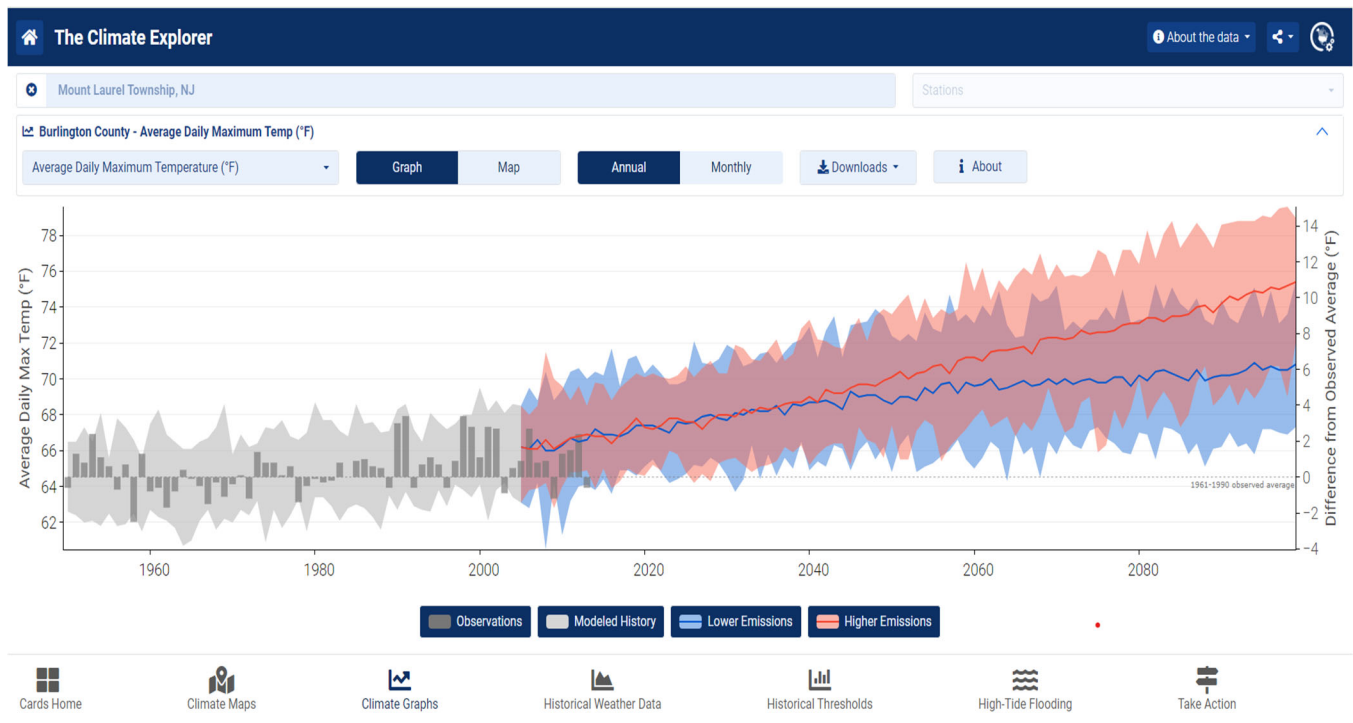


Figure C-2



Figure C-3



Figure C-4

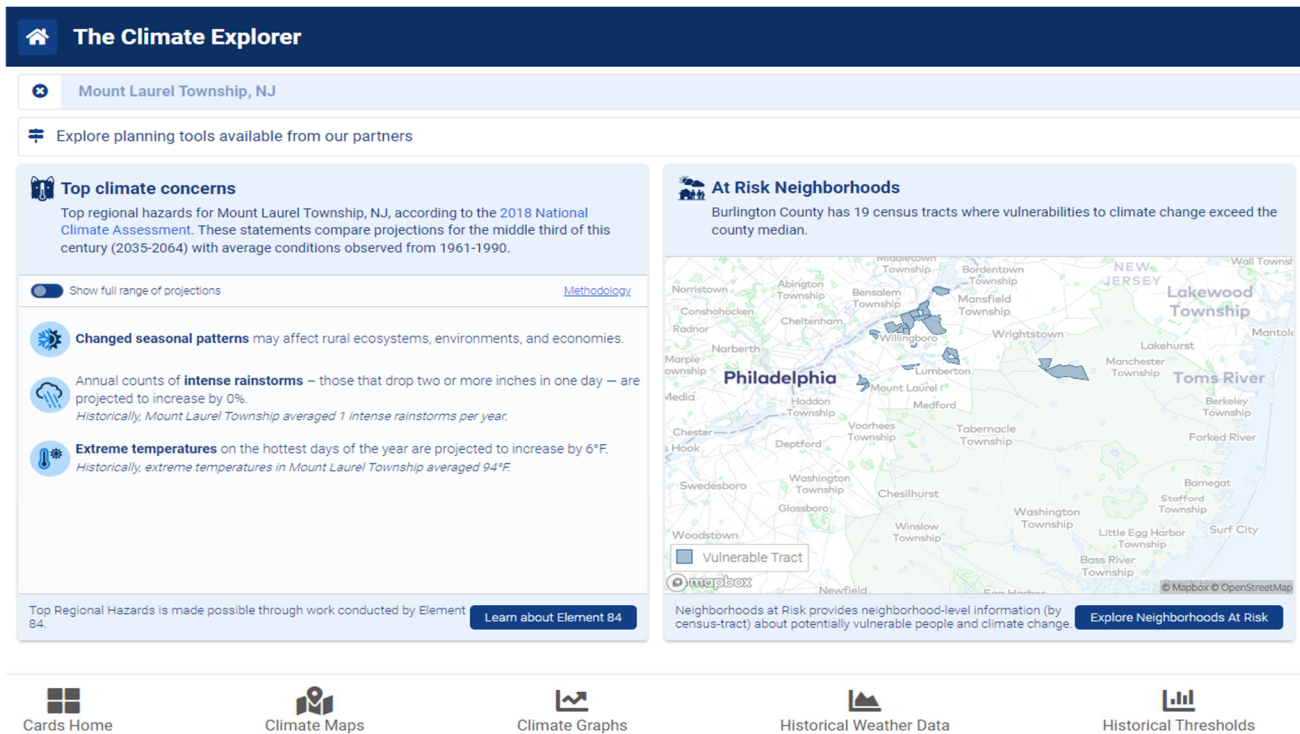


Figure C-5

Does 08054 have Flood Risk?

Moderate



[How is Flood Factor Calculated?](#)

The zip code of **08054** has a moderate risk of flooding over the next 30 years. There are **2,487 properties** in **08054** that have risk of flooding over the next 30 years. This represents **13.2% of all properties** in **08054**.
[Find the flood risk for a specific property.](#)

Figure C-6

Does 08054 have Wildfire Risk?

Moderate



There are **7,795 properties** in **08054** that have some risk of being affected by wildfire over the next 30 years. This represents **41%** of all properties in **08054**.

In addition to damaging properties, wildfire can also cut off access to utilities, emergency services, impact evacuation routes, and may impact the overall economic well-being of an area. Overall, **08054** has a moderate risk of wildfire over the next 30 years. This is based on the level of risk the properties face rather than the proportion of properties with risk.

Figure C-7

