Superfund Proposed Plan U.S. Environmental Protection Agency, Region 2

EPA United States Environmental Protection Agency

Hopewell Precision Superfund Site
Operable Unit 1
Hopewell Junction, Dutchess County, New York

July 2026

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

July 29, 2026 to August 27, 2026
EPA will accept written comments on the Proposed Plan during the public comment period. Written comments must be postmarked no later than August 27, 2026. To request and extension, send a request in writing to Ashley Similo by 5:00 PM on August 27, 2026.

VIRTUAL PUBLIC MEETING:

August 4, 2026 at 6:00 pm
EPA will hold a virtual public meeting to explain the Proposed Plan and the alternatives presented in the Focused Feasibility Study. Oral and written comments will also be accepted at the meeting. To register for the meeting, please visit: http://bit.ly/4aXduHi

In addition, documents from the administrative record are available online at: {(use the friendly URL – https://www.epa.gov/superfund/search-superfund-sites-where-you-live (found under URL alias click+) www.epa.gov/superfund/hopewell-precision

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the remedial alternatives considered to address groundwater contamination at the Hopewell Precision Site (Site), identifies the preferred remedial alternative to amend the 2009 remedy selected for Operable Unit One (OU1), and provides the rationale for this preference. The groundwater is one of two operable units for the Site, the other being related to provision of an alternate water supply to certain impacted households.

The Site is located in Hopewell Junction, Dutchess County, New York. The Site consists of the 5.7 acre Hopewell Precision facility (Facility) and the downgradient area affected by the groundwater plume emanating from the Facility. The surrounding area consists mostly of residential neighborhoods. Commercial development in the area is primarily along New York State (NYS) Route 82, which traverses the area in a northeast–southwest direction (**Figure 1**).

This Proposed Plan was developed by the U.S. Environmental Protection Agency (EPA), the lead agency for the Site, in consultation with the New York State Department of Environmental Conservation (NYSDEC), the support agency. EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA, also known as Superfund) and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The nature and extent of contamination at OU1 of the Site and the remedial alternatives summarized in this Proposed Plan are more fully described in the Focused Feasibility Study (FFS) Report, dated July 2026, as well as other documents in the administrative record file for this decision. EPA encourages the public to review these documents to gain a more comprehensive understanding of the Site, the Superfund activities that have been conducted, and the remedial alternative that is being proposed.

The purpose of this Proposed Plan is to inform the public of EPA's preferred remedial alternative and to solicit public comments pertaining to all of the remedial alternatives evaluated, including the preferred alternative. The preferred alternative includes a long-term program of monitored natural attenuation (MNA) for groundwater within the area of contamination together with institutional controls. Institutional controls are currently in place through local ordinances in the Town of East Fishkill, where Hopewell Junction is a hamlet, that require connection to the public water supply and water from sources other than the municipal public water system be used for non-potable purposes only, as well as mandating well testing for any private water source that is outside the municipal system.

The Proposed Plan describes the preferred remedial alternative for OU1 of the Site. Changes to the preferred alternative, or a change from the preferred remedy to another remedial alternative described in this Proposed Plan, may be made if public comments or additional information indicate that such a change will result in a more appropriate remedial action. EPA will make the final decision regarding the selection of a remedy after EPA has taken into consideration all public comments. It is for this reason that EPA is soliciting public comments on all of the alternatives considered in the Proposed Plan.

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COMMUNITY ROLE IN SELECTION PROCESS

EPA provides an opportunity for the public to provide input to ensure that concerns of the community are considered in the selection of a remedy for each Superfund site. To this end, this Proposed Plan has been made available to the public for a public comment period which begins on July 29, 2026 and concludes on August 27, 2026.

A virtual public meeting will be held on August 4, 2026 to present the conclusions of the FFS, to elaborate further on the reasons for recommending the preferred alternative, and to receive public comments. To register for the public meeting, please visit: http://bit.ly/4aXduHi

Comments received at the public meeting, as well as written comments received during the public comment period, together with EPA's responses, will be documented in the Responsiveness Summary Section of a Record of Decision (ROD), the document that will memorialize any amendment to the prior selected remedy.

Written comments on the Proposed Plan should be addressed to:

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SCOPE AND ROLE OF ACTION

Site remediation activities conducted at Superfund sites are sometimes separated into different phases or OUs, so that the remediation of different, discrete environmental media or geographic areas of a site can proceed separately, whether sequentially or concurrently, resulting in a more efficient and expeditious cleanup of the entire site.

EPA divided the Site into two OUs. OU1 addresses remediation and restoration of the contaminated groundwater to drinking water standards, and OU2 addresses provision of an alternate water supply to the area where private drinking water wells have been impacted or potentially impacted by the Site's contaminant plume. EPA selected remedies for OU2 in 2008 and for OU1 in 2009.

The remedy for OU2 has been fully implemented. In June 2021, EPA completed construction of a new water supply system, including transmission mains, a pump station, a water storage tank, distribution mains, and residential service connections. While long-term solutions were being developed, EPA had installed point-of-entry treatment (POET) systems in affected homes. These systems were removed in 2021 following completion of the public water supply, and contaminated residential drinking water wells were properly decommissioned. The Town of East Fishkill Municipal Code now includes requirements related to non-potable water supplies and private well testing.[1]

Beginning in 2004, EPA conducted vapor intrusion testing in residential properties located above the groundwater plume. Sub-slab depressurization systems (SSDSs) were installed in homes where indoor air samples indicated elevated concentrations. In 2019, EPA issued an Explanation of Significant Differences that addressed on-going operation and maintenance (O&M) of these vapor mitigation systems and selected institutional controls to ensure that future

[1] Part 186-21 and Part 189-5

construction is not impacted by vapor intrusion. NYSDEC has since assumed responsibility for O&M of the existing vapor mitigation systems.

The OU1 remedy included aerobic cometabolic bioremediation (ACB), long-term groundwater monitoring of contaminant decline, and vapor intrusion mitigation and monitoring. Since that time, EPA has learned that the lines of evidence exist for MNA occuring and monitoring for MNA parameters should be a component of long-term monitoring. While EPA focused on implementing the OU2 remedy, the groundwater component of the OU1 remedy, specifically the ACB treatment system, was not implemented. During this time, EPA continued to monitor groundwater approximately every two years from 2008 through 2024. These long-term monitoring data show that contaminant concentrations have generally declined over time and provide important new information about MNA conditions at the Site. This updated understanding supports modifying the 2009 OU1 remedy. The amended remedial action described in this Proposed Plan is expected to be the final action for the Site

SITE BACKGROUND

Site Description

The Hopewell Precision Site is located in Hopewell Junction, Dutchess County, New York. As mentioned above, the Site includes the 5.7 acre Hopewell Precision Facility and the hydraulically downgradient area affected by the groundwater plume and its vapors, which is comprised mostly of residential neighborhoods. From 1977 until 1980, the Facility was located at 15 Ryan Drive before relocating to the adjacent property at 19 Ryan Drive, where it currently is located. The combined size of the two properties is approximately 5.7 acres. Almost 27,000 people live within four miles of the Facility. Commercial development (*e.g.*, strip malls, businesses, gas stations) in the area is primarily along NYS Route 82, which traverses the area in a northeast-southwest direction. An area of farmland borders the eastern side of a section of Route 82. Whortlekill Creek flows in a southerly direction across the residential area and along the western border of the Site. Several ponds are present within the area, including two large former quarries (Redwing Lake and a gravel pit) that are partially fed by groundwater.

Site Geology & Hydrogeology

The Site is located within the Lower Hudson River subbasin, which drains the southeastern portion of New York State. Bedrock is overlain by unconsolidated sediments (sand and gravel, silt and clay and till mound) deposited by glaciers and glacial meltwater. The sand and gravel units serve as preferential flow paths for groundwater contamination.

Surface water drainage at the Site and surrounding areas is generally toward the valley from upland areas to the east and west sides. Several freshwater creeks, including Whortlekill Creek, marshes, and ponds are present in the vicinity of the Site and influence surface water. The nearest pond is located approximately 500 feet southwest of the Facility. An 8-acre lake within Redwing Park lies to the south-southwest of the Facility and is used for recreational purposes. In addition, a former sand and gravel pit located southwest of the Facility has naturally filled with groundwater and is currently used by the Whortlekill Rod and Gun Club.

The topography across the Site is generally flat, with surface elevations about 290 feet (ft) above mean sea level, except for the southern portion that gradually slopes downward to approximately 240 ft.

Groundwater discharges into the valley and Whortlekill Creek, which runs along the valley axis and flows southwest. The depth to ground water across the Site varies but is generally about 15 feet below ground surface (ft bgs). Groundwater at the Site is classified by NYSDEC as Class GA, indicating it is considered a source of drinking water, which is consistent with the federal classification. The groundwater contamination is limited to the glacial (unconsolidated) portion of the aquifer.

Site History

The Hopewell Precision Company is a manufacturer of sheet metal parts that are assembled into furniture. From 1977 to 1980, the Facility was located at 15 Ryan Drive. Soon after, the Facility moved to an adjacent vacant property at 19 Ryan Drive. Since 1981, the former Facility at 15 Ryan Drive has been used by Nicholas Brothers Moving Company for equipment storage and office space.

Processes at Hopewell Precision include shearing, punching, bending, welding, and painting. The painting process includes degreasing prior to application of the wet spray paint. Hopewell Precision currently uses a water-based degreaser, but, until 1998, the company used volatile organic compounds (VOCs), including trichloroethene (TCE) and 1,1,1-trichloroethane (1,1,1-TCA), in a vapor degreasing machine.

In October 1979, EPA was made aware of the Hopewell Precision operations through a letter from a former Hopewell Precision employee. During an on-site inspection at the former Facility (15 Ryan Drive) in November 1979, EPA observed solvent odors coming from an open disposal area and determined that the Hopewell Precision operation was dumping one to five gallons per day of waste solvents, paint pigments, and sodium nitrate directly onto the ground. In August 2003, a former employee stated that, during his employment in 1979-80, dumping waste materials directly onto the ground was a routine practice, *i.e.*, waste paints and thinners were dumped on a daily basis and waste solvents from the degreasers were dumped on a biweekly basis. The results of EPA's November 1979 inspection were sent to NYSDEC, along with a memorandum recommending that the Facility operators be required to drum the solvent going forward and to dispose of it in a proper manner rather than open dumping.

Early Investigations

In May 1985 and March 1986, NYSDEC, after sampling monitoring wells at the former Facility, detected some VOCs, including TCE. In May 1987, NYSDEC performed a Hazardous Waste Compliance Inspection of Hopewell Precision and found at drums containing waste materials, including solvents and paints, at the Facility. In February 2003, EPA sampled 75 residential wells near the Facility and found VOC contaminants, including TCE, above the standards. At that time, EPA installed point-of-entry treatment (POET) systems (carbon filter systems) on the residential wells. From February to November 2003, EPA again found VOCs above cleanup levels in numerous private wells. Subsequently, EPA and NYSDEC installed POET systems to remove VOCs at homes where TCE exceeded cleanup levels in the vicinity of the groundwater plume.

In April 2003, EPA also collected surface water and sediment samples in the area and found VOCs. In July 2003, EPA also detected TCE in some soil samples on the Facility property. TCE was not detected in background samples from the same depth range. In October and December 2003, EPA installed and sampled some temporary shallow monitoring wells and found TCE above the cleanup levels.

EPA has also investigated potential vapor intrusion, including indoor air testing, throughout the residential neighborhoods at the Site. Since February 2004, EPA has collected sub-slab and/or indoor air samples from over 200 homes in the area above the groundwater plume. To address the vapor intrusion contamination, sub-slab depressurization systems (SSDSs) were installed in 53 residential properties. These systems will continue to be maintained by NYSDEC until the vapor intrusion impacted from contaminated groundwater is removed.

The Site was listed on EPA's National Priorities List in April 2005.

2008 Remedial Investigation

In December 2005, EPA initiated a remedial investigation and feasibility study (RI/FS) to evaluate the nature and extent of groundwater, soil, sediment, surface water, and vapor intrusion contamination at the Site. EPA sampled monitoring wells, soils in areas of the Hopewell Precision facility, surface water and sediment locations in the area. EPA finalized the RI report in June 2008. In summary, during the two rounds of sampling, there were no substantial site-related impacts to groundwater from area soils, surface water or sediments. For further details on the investigation, please consult the RI/FS report.

Summary of Vapor Sample Results: The areas of vapor detections generally correlate with areas of groundwater detections. However, there does not appear to be a direct correlation between the magnitude of groundwater contamination and the magnitude of vapor contamination in a given area. During the two rounds of vapor intrusion testing, detections of VOCs were sporadic with many of the detections were found to be below the screening criteria. The migration of sub-slab vapors to indoor air is affected by a number of factors, including the construction and age of the building or residence and the presence of cracks or other migration pathways in the substructure of the building.

Summary of Private Well Results: For the most part, the majority of private well samples did not contain detectable levels of VOCs. In wells with detectable VOCs, concentrations were generally well below the site-specific groundwater screening criteria, and in many cases, they were only detected at trace levels. EPA and/or NYSDEC also sampled those private wells that had been previously outfitted with POET systems. During 2004 to 2009, some private wells with POET systems showed TCE above the cleanup levels.

<u>Monitoring Well Results</u>

During the RI, two rounds of groundwater samples were collected from 38 monitoring wells, installed in the unconsolidated sediments. The analytical results were compared to the federal MCLs and the NYS Drinking Water Standards. Related to activities at the Facility, the Site-related contaminants found include TCE, 1,1,1-TCA, 1,1,-DCE, cis-1,2- dichloroethene (cis-1,2-DCE), chloromethane, MEK, and tetrachloroethene (PCE).

- *Upgradient of the Hopewell Precision Facility*: Monitoring wells showed values of non-detect to below the standard.
- *At the Hopewell Precision Facility*: Monitoring wells showed no VOC detections exceeded the standard.
- *Oak Ridge Road to Hamilton Road*: Some monitoring wells showed TCE detected above the standard during both sampling rounds. Other wells showed VOC detections below the standard.
- *Hamilton Road to the Gravel Pit*: Any detections of Site-related contaminants or VOCs in these wells were all below the standard.
- *Other Site Monitoring Wells:* No Site-related contaminants were detected during either round of sampling

No source of contamination was identified during the RI at the Hopewell Precision Facility property or any other property, and subsequent monitoring data do not indicate that any unknown sources are present. Results of the RI indicated that contaminant levels in the groundwater plume are generally decreasing and would be expected to continue to decrease through natural processes within the aquifer including dilution, dispersion, biodegradation, and discharge to surface water bodies. In limited areas of the Site, contaminant levels may potentially show a slight increase in contaminant levels, but these increases are expected to be low.

Post RI Sampling Results

Between 2006 and 2020, 11 residential well sampling events were conducted at up to 246 residential properties. These samples were collected at pre-POET and post-POET locations. Between 2006 and 2024, 10 monitoring well sampling events were conducted at up to 42 wells. Between 2006 and 2020, five vapor monitoring events were conducted at up to 138 residential properties. During 2024, five monitoring well samples were analyzed using compound-specific isotope analysis (CSIA). **Table 2.1** in the FFS presents a compilation of historical site data from 2006 to 2024 (most recent round of field investigation) for groundwater and vapor investigations.

The 2008 RI mapped the extent of the TCE plume. From 2008 until 2024, multiple monitoring rounds of groundwater sampling have been conducted at the Site. **Figure 2-1** shows three rounds of sampling results, classifying the TCE data as either above or below the 5 µg/L TCE cleanup level identified in the 2009 OU1 remedy. The figure includes samples from both residential wells and dedicated, non-residential monitoring wells. The results shown from residential wells were collected prior to any treatment and thus are considered valid groundwater samples.

When evaluating the overall plume extent, residential well construction details are important, since screen lengths within the residential wells are typically much longer than those for monitoring wells so contamination levels can be found to vary at different depths. In 2007, the residential well data was useful for estimating the plume extent, but limitations in the value of those results caused them not to be sampled with the same regularity as the monitoring wells. **Figure 2-2** and **Figure 2-3** show just results from the monitoring wells for TCE and 1,1,1-TCA, respectively. Overall, concentrations in VOCs did not increase over time to above the cleanup level in the most downgradient or side-gradient wells. This is evidence that the plume has not expanded significantly between 2007 and 2024 in the downgradient or side-gradient directions and that concentrations have generally declined. In 2024, the maximum TCE concentration in the contaminated area was 23 µg /L above the cleanup standard of 5 µg /L.

As stated above, the selected remedy for OU1 is ACB, long-term groundwater monitoring of contaminant decline, and vapor intrusion mitigation and monitoring. As a result of selecting a remedy for OU2, EPA did not implement the OU1 selected remedy but did provide public water to the impacted residents during this time. EPA implemented the remedial construction for the vapor elements of the OU1 ROD at the Site in order to address exposure to contaminant vapors, as documented in the *Removal Action Summary Report* (Weston Solutions Inc. 2024).

MNA Evaluation

MNA refers to naturally occurring processes in the environment that can reduce contamination concentrations over time. The Site was evaluated according to EPA guidance for MNA[2] where EPA recommends a three-tiered line of evidence approach for evaluating the appropriateness of MNA. EPA evaluated several lines of evidence collected at the Site since the remedy of OU1 was selected and concluded that natural attenuation is occurring. These lines of evidence, which are discussed in detail in the FFS, include the following:

> *Biological processes:* Naturally occurring microorganisms can help break down TCE in groundwater. Some of these microorganisms may break down TCE while carrying out their normal metabolic activities, a process known as cometabolism. EPA found evidence that this process is likely occurring at the Site. In addition, CSIA, a method that can reveal whether TCE is naturally breaking down in groundwater, provided further evidence that biological processes are reducing TCE at the Site.
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> *Chemical processes:* Naturally occurring minerals in the aquifer may also help reduce TCE concentrations through chemical reactions that do not involve living organisms. Measurements of a property called magnetic susceptibility indicate that iron-bearing minerals capable of promoting these reactions are present in some areas of the Site. These reactions may contribute to the natural reduction of TCE in groundwater.
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> *Physical processes:* As groundwater moves through the subsurface, contaminants can spread out and become less concentrated (dispersion and dilution). Some contaminants may temporarily attach to the surfaces of soil and rock particles (adsorption), slowing their movement and allowing more time for biological and chemical processes to reduce contamination. TCE can also move from groundwater into air spaces in the subsurface (volatilization). Together, these processes help reduce TCE concentrations over time.

2 Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water (1998)

For the Site, the available groundwater data indicate that multiple natural processes are working together to reduce TCE concentrations over time. EPA reviewed groundwater data collected from 2006-2024 to determine whether natural processes are helping to reduce contamination in groundwater at the Site. Groundwater results show that TCE concentrations in monitoring wells where contamination remains above the cleanup level have generally remained the same or decreased over time (**Figure 3**). In addition, the highest concentrations found in groundwater today are lower than those observed historically. Those trends indicate that natural attenuation is likely occurring. Because there is no continuing source of contamination, EPA expects TCE concentrations to continue to decline. Data from EPA-21, a monitoring well located downgradient of the contaminated area (in the direction that groundwater flows), reveal that TCE concentrations remain well below the cleanup levels as established for the 2009 remedy. These results provide additional evidence that the plume is not migrating into new areas. Based on long-term groundwater monitoring trends and groundwater modeling, EPA estimates that TCE concentrations in groundwater at all monitoring wells will decrease to below the cleanup levels by 2071.

Current and Potential Future Land and Resource Uses

Land use is predominantly residential, with nearly 400 homes in the affected area of the Site plume. Stream corridors, forested areas, and open fields are also present. Limited commercial development is present along parts of Route 82. Groundwater at the Site is classified by NYSDEC as Class GA, indicating it is considered a source of drinking water, which is consistent with the federal classification. The groundwater contamination is limited to the glacial (unconsolidated) portion of the aquifer. EPA indicated in the 2009 OU1 ROD that it does not anticipate any changes in the future use at the Site; based on the current understanding at the time of this Proposed Plan, this remains the case.

WHAT IS HUMAN HEALTH RISK AND HOW IS IT CALCULATED?

Human Health Risk Assessment: A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these releases under current- and anticipated future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure (RME) scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at the site in various media (*i.e.*, soil, fish, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants in air, water, soil, etc. that were identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated fish. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" RME scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other noncancer health hazards, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer risks and noncancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one in ten thousand excess cancer risk;" or one additional cancer may be seen in a population of 10,000 people as a result of exposure to Site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk. For noncancer health effects, a "hazard index" (HI) is calculated. The key concept for a noncancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which noncancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at a site and are referred to as chemicals of concern, or COCs, in the final remedial decision document or the Record of Decision.

PRINCIPAL THREAT WASTE

In the NCP, an expectation is established that EPA will use treatment to address the principal threats posed by a Site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund Site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to ground water, surface water or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material; however, non-aqueous phase liquids in ground water may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a Site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

The 2009 ROD stated that "[n]o materials which meet the definition of 'principal threat wastes' were identified during the RI/FS." The monitoring conducted since 2009 has not revealed any indications of principal threat waste. Principal threat waste is not present at the Site.

RISK SUMMARY

A baseline risk assessment was conducted as part of the OU1 RI/FS to estimate the risks associated with current and future site conditions. The baseline risk assessment estimated the human health and ecological risk which could result from the contamination at the site if no remedial actions were taken.

Human Health Risk Assessment

In performing the baseline human health risk assessment, EPA found that estimated cancer risks exceeded EPA's acceptable risk range of $1x10^{-6}$ to $1x10^{-4}$, and noncancer hazards exceeded the target hazard index (HI) of 1 (see highlighted box: *WHAT IS HUMAN HEALTH RISK AND HOW IS IT CALCULATED?*). The primary exposure pathways evaluated were ingestion, dermal contact, and inhalation of groundwater used as tap water. Although groundwater in the area is no longer used for drinking because residents are connected to the public water supply installed under OU2, the baseline assessment evaluated risks that could occur if groundwater were used as a future drinking water source.

The baseline risk assessment evaluated all site-related contaminants; however, the estimated total risks were primarily due to TCE. At that time, the estimated cancer risks for future residents were approximately $1x10^{-3}$, and the noncancer hazards were 4 for a future adult resident and 12 for a future child resident.

As part of this remedy modification, EPA conducted an updated evaluation using the highest TCE concentration detected in groundwater in 2024. This updated analysis confirmed that the conclusions of the baseline risk assessment have not substantially changed. Only TCE continues to exceed drinking water maximum contaminant levels (MCLs) or groundwater quality standards based on recent monitoring data.

Table 1 presents the 2024 maximum TCE concentration, the associated cancer risk and non-cancer hazard calculated using EPA's Regional Screening Levels Calculator, and the associated drinking water or groundwater standard. The updated cancer risk of $5x10^{-5}$ is within the acceptable risk range of $1x10^{-6}$ to $1x10^{-4}$; however, the noncancer hazards, 8 for a future child resident and 7 for a future adult resident, remain above the HI of 1. Accordingly, the remaining groundwater contamination continues to pose an unacceptable noncancer risk to human health.

Table 1: Risks/Hazards for COCs Above Standards

	MCL (µg/L)	2024 Maximum Concentration (µg/L)	Future Residential Cancer Risk	Future Residential Noncancer Hazard
Trichloroethylene	5	23	$5x10^{-5}$	8 (child) / 7 (adult)

Ecological Risk Assessment

The screening level ecological risk assessment conducted during 2009 ROD activities identified no risk to ecological receptors from site-related contaminants and no further ecological investigations or risk assessments were warranted. For further details on the investigation, please consult the RI/FS report.

Summary of Human Health and Ecological Risks

Taken together, the results of the investigations and risk evaluations indicate that groundwater contamination in OU1 continues to present an unacceptable risk to human health for future residents. It is EPA's current judgment that the preferred remedial alternative identified in the Proposed Plan is necessary to protect public health and welfare and the environment from actual or threatened releases of hazardous substances into the environment.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are media-specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs), to-be-considered advisories, criteria and guidance, and Site-specific risk-based levels and background (*i.e.*, reference area) concentrations.

The following RAO has been established for this amendment to the OU1 remedy:

- Restore the groundwater aquifer to drinking water standards for TCE within a reasonable timeframe.

The 2009 ROD did not include an exposure RAO for groundwater. As stated above, groundwater still poses an exposure risk. As such, the following RAO will be added to the remedy:

- Prevent future human exposure (via ingestion, dermal contact, and inhalation) to Site-related contaminants in groundwater at concentrations greater than 5 µg/L for TCE.

The other two RAOs from the 2009 OU1 Selected Remedy are as follows:

- Prevent inhalation of contaminants volatilizing from groundwater; and
- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site,

These RAOs remain in place and were addressed by prior OU1 and OU2 remedies.

The cleanup level selected in the 2009 ROD was 5 µg/L based on the Federal MCL and NYS Drinking Water Standard, both of which are 5 µg/L. The cleanup level for this remedy amendment remains the same.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA Section 121(b)(1) requires that remedial actions must be protective of human health and the environment, be cost-effective, comply with ARARs, and utilize permanent solutions, alternative treatment technologies, and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to reduce permanently and significantly the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. Section 121(d) further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4).

Potential technologies applicable to groundwater remediation were identified and screened in the FFS process using the effectiveness, implementability, and cost criteria, with emphasis on effectiveness. Those technologies that passed the initial screening were assembled into alternatives. Detailed descriptions of the remedial alternatives for addressing the contamination associated with OU1 of the Site can be found in the FFS Report, dated July 2026, which is in the Administrative Record file for this decision.[3] The FFS Report presents three alternatives, including a no action alternative. The NCP requires EPA to consider a “no action or no further action” alternative when evaluating cleanup options for a site to establish a baseline or reference point for comparison with the other cleanup options. Since No Action was evaluated in the 2009 ROD and did not meet the threshold requirement of being protective of human health and the environment, it is not evaluated further in this remedy amendment.

The duration set forth for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to negotiate with any responsible parties, design the remedy, procure contracts and funding for design and construction, or conduct operation and maintenance at the Site.

[3] The 2009 ROD also considered Groundwater Extraction and Ex-Situ Treatment (Pump and Treat) and In-Situ Chemical Oxidation. These alternatives were not further considered in the FFS since the conditions at the Site that made these alternatives less preferable in 2009 have not changed. Additionally, the original 2009 Final Feasibility Study screened out several technologies, such as Enhanced Anaerobic Bioremediation and Permeable Reactive Barriers, which were similarly not considered in the FFS since the conditions that led to them not being retained in 2009 have not changed. Detailed discussions of the other remedial technologies considered for the Site can be found in the Administrative Record for the 2009 OU1 ROD.

Common Elements

All of the alternatives include the following common components:

- A sitewide preliminary design investigation (PDI)
- A groundwater sampling program
- Monitored natural attenuation
- Institutional controls to prevent exposure to contaminated groundwater

Five-year reviews, conducted pursuant to CERCLA Section 121(c), are statutorily required when contamination is left in place as part of a remedy at levels that exceed what would otherwise allow for unlimited use and unrestricted exposure. None of the remedial alternatives for OU1 will ultimately result in hazardous substances remaining on-Site above levels that allow for unlimited use or unrestricted exposure, but it is likely to take longer than five years to attain the RAOs. Consequently, a review of the remedial action pursuant to CERCLA Section 121(c) would be conducted five years after the completion of the remedial action (and every five years thereafter until the RAOs are attained) to ensure that the remedy continues to provide adequate protection to human health and the environment.

Original Remedy: **Aerobic Cometabolic Bioremediation (ACB) and Monitored Natural Attenuation**
Capital Cost: $17,374,000
Annual O&M Costs: $670,000/year average for years 1 through 17; $81,000/year average for year 18 through 40
Present-Worth Cost: $23,883,000
Construction Time: 2-3 years
Estimated time to reach RAOs: 20 to 40 years after startup of the ACB system

Treatment of groundwater under this alternative would be conducted using ACB, which is the technology in the selected remedy from the 2009 OU1 ROD. The original remedy evaluated in the 2009 ROD assumed long-term monitoring would be a component of the selected remedy to evaluate the decline of contamination over time outside the treatment area. Since that time, EPA has learned that the lines of evidence exist for MNA occuring. Therefore, the updated original remedy also includes monitoring for MNA parameters outside the treatment area. The components of this alternative include the following:

- A pilot study of ACB to determine the rate and the parameters for full-scale ACB in the aquifer and RD;
- Full-scale ACB remedy to degrade TCE through treatment; and
- MNA of the area outside the footprint of the ACB remedy.

ACB is the process that would be initiated through active treatment technology (in-situ chemical/biological treatment) for TCE in the highest concentration areas. ACB is an innovative process that, while not as widely applied as anaerobic reductive dechlorination, is recognized as a suitable technology for dilute TCE plumes. Cometabolism refers to a process where microorganisms degrade pollutants incidentally while consuming another substance for growth. Cometabolism occurs in conjunction with the metabolism of a primary substrate, which microorganisms use for carbon and/or energy. The enzyme that transforms the primary substrate also degrades the contaminants. TCE, cis-1,2- DCE, trans-1,2-DCE, 1,1-DCE, and vinyl chloride have been shown to be susceptible to cometabolic oxidation under aerobic conditions. The most studied TCE cometabolizing microbes are methanotrophic bacteria, which are microbes that use methane as their main food source. Methanotrophic bacteria produce an enzyme called methane monooxygenases that catalyzes the oxidation of methane to methanol and is capable of cometabolic TCE oxidation.

For analysis purposes, a PDI and studies of aerobic cometabolism would be conducted. Results from the sampling event would be compiled and evaluated with the groundwater chemistry, contaminant results, the enzyme probe results, the DNA results, and historical data to evaluate the status of naturally occurring ACB. A PDI of TCE in groundwater at the Site would be conducted to refine the locations and depths for the in-situ ACB treatment. A PDI, similar to that described under the Preferred Alternative, below, would also be conducted to refine the Sitewide extent of TCE and enhance the monitoring well network for MNA.

Microcosm studies and a pilot study would also be conducted as part of this alternative to identify design parameters for the ACB system. Data collected through the PDI, microcosms, and pilot study would be used during RD to develop plans and specifications for the full-scale ACB system. The full-scale ACB would be implemented based on the RD. It is assumed for this alternative that three transects of passive gas diffusion devices (approximately 400 wells) would be used to deliver substrate to groundwater in order to create reactive barriers in the section where groundwater contamination has persisted. The reactive barrier sizes and locations are assumed based on currently available data and, for analysis and cost-estimating purposes, are shown in **Figure 4**. The delivery of substrate would lead to the growth and sustenance of microorganisms that cometabolically degrade TCE.

The objective of the reactive barriers would be to degrade TCE as it is transported through the barriers by advection. For analysis purposes, it is assumed that the system would operate for 17 years, which is an estimated timeframe for TCE in permeable layers to travel via advection across the maximum distance between two barriers (1,650 feet, assuming a retardation factor of 2). To balance active with passive treatment and constrain costs to a reasonable level, this alternative assumes that the remedy would transition to MNA after 17 years.

The Sitewide PDI, sampling program, and protocol for MNA would proceed as described in the Preferred Alternative, below. Additional details can be found in the FFS.

Preferred Alternative: Monitored Natural Attenuation

Capital Cost: $631,000
Annual O&M Costs: $520,000/year for years 1 and 2; $81,000/year for years 3 through 45
Present-Worth Cost: $2,563,000
Construction Time: 6 months to 1 year
Estimated time to reach RAOs: 40-45 years

Under this alternative, a long-term program to monitor natural attenuation for contaminated groundwater and an evaluation of the progress of MNA would be performed. The institutional controls that already exist in the form of a municipal ordinance requiring connection to the public water supply and water from sources other than the municipal public water system be used for non-potable purposes only, as well as mandating well testing for any private water source that is outside the municipal system. ICs preventing exposure to contaminated groundwater would be formally added to the remedy for OU1.

The body of monitoring data collected over more than 20 years demonstrates that a plume of dilute concentrations is present at the Site. Six existing wells (EPA-10S, EPA-12S, EPA-15D, EPA-16D, EPA-16S, and EPA-19S) have had TCE concentrations exceeding the cleanup level since 2009, and TCE concentrations in those wells have been declining in a statistically significant way. No source of contamination was identified during the RI at the Hopewell Precision Facility property or any other property, and subsequent monitoring data do not indicate that any unknown sources are present (*e.g.*, concentrations are decreasing, instead of being stable or increasing). Lines of evidence for MNA are presented in detail in the FFS.

For analysis purposes, a PDI would be conducted in order to identify locations and to install new monitoring wells that would supplement the existing monitoring well network. EPA estimates that 10 new monitoring wells (**Figure 5**) would be installed at similar intervals to the shallow and deep monitoring wells already present. Additionally, for cost estimating purposes, it is estimated that 39 wells (10 new and 29 existing wells) would be sampled quarterly for the first 2 years, and then every 2 years thereafter until cleanup levels are met (assume 45 years). The actual sampling program will be developed during the remedial design. Each sample would be analyzed for VOCs and field parameters. A subset of wells (assume 16) would be sampled and analyzed during each round for geochemical parameters. This subset of wells would include the following: the six monitoring wells where TCE concentrations currently or recently exceeded the cleanup level, the new wells shown to exceed the cleanup level, and select upgradient, side gradient, and downgradient wells. **Figure 5** shows the proposed locations for sampling, including existing wells that exceed and those that do not exceed the TCE cleanup level, and the proposed new monitoring well locations. Sampling results would be evaluated in a monitoring report completed after each sampling round and during the five-year review process to evaluate progress toward achieving the RAO, including calculations of apparent attenuation rates and estimated time frames to meet the cleanup level in each well. If applicable, numerical modeling would be conducted to supplement this evaluation.

EVALUATION OF ALTERNATIVES

During this detailed evaluation of remedial alternatives, each alternative is assessed against the nine evaluation criteria that are established in the NCP, namely, overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, cost, and state and community acceptance. Refer to the text box for a description of the evaluation criteria.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

Threshold Criteria

Overall Protectiveness of Human Health and the Environment For this criterion, EPA evaluates whether and how an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) For this criterion, EPA evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the Site, or whether a waiver is justified.

Primary Balancing Criteria

Long-term Effectiveness and Permanence For this criterion, EPA considers the ability of an alternative to maintain protection of human health and the environment over time.

Reduction of Toxicity, Mobility, or Volume (TMV) of Contaminants through Treatment For this criterion, EPA evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.

Short-term Effectiveness For this criterion, EPA considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

Implementability For this criterion, EPA considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

Cost This criterion includes estimating the capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

Modifying Criteria

State/Support Agency Acceptance For this criterion, EPA considers whether the State agrees with EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

Community Acceptance For this criterion, EPA considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how each compares to the other options under consideration. A detailed analysis of alternatives can be found in the FFS Report.

Overall Protection of Human Health and the Environment

Both the Original Remedy and the Preferred Alternative would achieve adequate protection of human health and the environment through groundwater restoration throughout the area of contamination in a reasonable timeframe.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

This comparative evaluation of compliance with ARARs between alternatives is fully discussed in the FFS and is focused on the federal and the State of New York ARARs identified in the FFS.

The Original Remedy and Preferred Alternative would each eventually comply with federal and state chemical-specific ARARs for restoration of groundwater contaminated by TCE within the area of contamination. Compliance with chemical-specific ARARs for groundwater restoration—including Safe Drinking Water Act MCLs/MCLGs, NYS Drinking Water MCLs, and NYS Groundwater Protection Criteria—would be achieved for TCE within the area of contamination over a reasonable timeframe through monitored natural attenuation (Preferred Alternative) and/or in-situ groundwater treatment with ACB (Original Remedy).

There are no location-specific ARARS at OU1. Compliance with action-specific ARARs would vary slightly because the Original Remedy involves active treatment. The remedial alternatives use differing approaches to remediate the OU1-contaminated groundwater; therefore, compliance with specific ARARs between alternatives vary.

Long-Term Effectiveness and Permanence

The Preferred Alternative provides long-term effectiveness through reliance on established attenuation trends documented over more than 15 years and continued monitoring to evaluate plume stability and progress toward achieving the cleanup level and RAOs. The Original Remedy provides long-term effectiveness through in-situ treatment with ACB and MNA. The generation of toxic chlorinated breakdown products associated with anaerobic degradation pathways is not expected for either alternative because of the aerobic conditions in the groundwater (both naturally occurring and in the ACB treatment zones). Both the Preferred Alternative and Original Remedy would achieve RAOs in a similar timeframe. No untreated waste or treatment residuals are expected for either alternative after the PRG and RAOs are achieved.

Reduction of Toxicity, Mobility, or Volume through Treatment

The toxicity, mobility, and volume of TCE in groundwater would not be reduced with the Preferred Alternative because there is no treatment proposed. The Preferred Alternative employs passive natural attenuation processes to reduce TCE concentrations. The Original Remedy would satisfy the statutory preference for treatment as a principal element of the remedial action through the implementation of in-situ ACB.

The Original Remedy would be the only alternative to provide reduction of toxicity, mobility, or volume through treatment because its in-situ ACB would be the only treatment among the alternatives should it be implemented to treat the TCE in groundwater. Simultaneously, and after the engineered treatment concludes, destructive natural attenuation processes would continue to reduce toxicity, mobility, and volume of TCE. The combination of bioremediation and natural processes would reduce TCE concentrations below the PRG and address the known extent of the plume. For both alternatives, the reduction of TCE concentrations would be irreversible and proceed to non-toxic end products.

Short-Term Effectiveness

Compared to the Preferred Alternative (which only involves monitoring well installation and groundwater sampling), the Original Remedy is more intrusive and involves drilling and installation of more monitoring wells compared to the Preferred Alternative as well as a large number (over 400) of injection wells, performing pressurized injections of substrate, construction of treatment buildings, and trenching to connect the injection wells to the treatment buildings, all that could result in short-term risks to the community. Any roads or other surfaces modified by infrastructure installations may impact the safety of the surrounding community by increasing congestion on local roads. Drilling along rights-of-way may require temporary road closure and increased risks or other impacts to the community. Explosion risk from methane (a substrate typically used for ACB) would need to be managed through careful design and implementation as well as potential gas volatilization from the subsurface into the community. Significantly more construction activities will be required for the Original Remedy, which could result in more short-term risks to workers. Short-term risks to workers for both the Original Remedy and the Preferred alternatives could be minimized through adherence to safety requirements, establishment of work zones, and use of personal protective equipment. Potential adverse impacts to habitats and vegetation are more likely for the Original Remedy than the Preferred Alternative because implementation of the Original Remedy likely requires injection transects for the ACB cut through forested areas. The Original Remedy has more possibility to release TCE and generate dust as a result of drilling and other ground disturbing activities compared to the Preferred Alternative. Air monitoring can be conducted, and dust suppression and emissions controls can be implemented, as needed.

Even though the Original Remedy involves active treatment with ACB, the time until the RAOs and PRG are achieved throughout the area of contamination may not be significantly shortened compared to the Preferred Alternative. This is due to implementability challenges for the Original Remedy. There is limited space available to implement ACB transects for such a large area of diffuse contamination. Substrate delivered to the groundwater during the ACB would preferentially enter high permeability zones, not into the low-permeability matrices. Inability to deliver substrate to the low-permeability zones can extend the period until protection is achieved because these secondary sources of contamination (mass in low-permeability matrices) may not be directly addressed by ACB. Concentrations emanating from these secondary sources would thus be reduced through natural processes—and consequently could be in the same timeframe as the Preferred Alternative (which relies on natural processes alone).

When viewed through the lens of “reasonable timeframe period” in the RAO, both the Preferred Alternative and the Original Remedy would reduce concentrations to the PRG in a similar timeframe. This is due to the environmental setting, as well as the implementability challenges of the Original Remedy.

Implementability

The Preferred Alternative is expected to be implementable because monitoring well installation and sampling are both typically straightforward with appropriate access agreements and utility markouts prior to drilling. MNA has been proven and demonstrated as an implementable remedial technology for remediation of TCE in groundwater. The short- and long-term monitoring requirements for MNA can be performed using standard practices and technologies. Long-term monitoring can be readily implemented and enforced using standard practices and technologies. However, there may be an administrative feasibility challenge requiring coordination with the property owners, municipal entities, and State agencies. Contaminated media such as drill cuttings and purge water may be generated following groundwater sampling events that will need to be transported and disposed of off-site. Off-site licensed disposal facilities and services are readily available near the Site. The equipment, subcontractors, and personnel required to implement the Preferred Alternative successfully are available in the environmental consultant marketplace. Technical specialists required for creating an adequate monitoring plan for MNA are also available.

The Original Remedy is expected to implementable, however it would provide more challenges than the Preferred Alternative. ACB is an innovative technology that is not widely utilized. A pilot study would need to be performed to obtain design and performance parameters. Low-permeability matrices within the area of contamination are likely act as secondary contaminant sources that sustain low TCE concentrations. Because substrate delivered during ACB preferentially enters high-permeability zones, limited delivery to these low-permeability zones presents an implementability challenge. Additionally, implementation of the reactive barriers may be an operational challenge because most of the contamination is located beneath private property, and over 400 injection wells would be needed. A limited number of public roads transect the contaminated area. Securing land for any buildings to accommodate the operation of the ACB system controls may be a potential administrative feasibility challenge. Regulatory approval for the injection of ACB substrate would require municipal and State agency coordination.

MNA is proven and demonstrated as an implementable remedial technology for remediation of TCE in groundwater. The short- and long-term monitoring requirements for MNA for both alternatives can be readily implemented. Contaminated media that may be generated following groundwater sampling events can be transported and disposed of at offsite licensed disposal facilities near the Site. Because specialized construction services and equipment (such as substrate) are required to implement this alternative, they are all available in the environmental marketplace.

Cost

The present value cost for the Preferred Alternative (Monitored Natural Attenuation) is $2,563,000. This includes $631,000 of capital costs. The present value cost for the Original Remedy (In-Situ Treatment with Aerobic Cometabolic Bioremediation and Monitored Natural Attenuation) is $23,883,000. This includes $17,374,000 of capital costs. A discount rate of 7% was used in calculations to determine cost estimates.

State/Support Agency Acceptance

NYSDEC concurs with the preferred alternative.

Community Acceptance

Community acceptance will be evaluated after the public comment period ends, and it will be described in the Responsiveness Summary section of the ROD for OU1 at the Site. Based on public comment, the preferred alternative could be modified from the version presented in this Proposed Plan, or another alternative could be selected.

PREFERRED REMEDY

As presented above, the alternatives described in this Proposed Plan were evaluated against the NCP nine criteria and that evaluation indicated varying degrees of satisfying those criteria. Both active alternatives would comply with ARARs, have long-term and short-term protectiveness, and are implementable. While the Preferred Alternative does not meet the preference for the use of treatment, the estimated timeframes to achieve the MCL for TCE is similar in both of the alternatives. Additionally, the cost for the alternatives varies greatly, with the Original Remedy being considerably more expensive than the Preferred Alternative.

Based upon this evaluation of the remedial alternatives, EPA, in consultation with NYSDEC, proposes Monitored Natural Attenuation, as the preferred remedial alternative for OU1.

The Preferred Alternative has the following key components:

- A PDI;
- A long-term program to monitor natural attenuation of contaminated groundwater within the area of contamination;
- An evaluation of the progress of MNA; and

- Institutional controls

Under this alternative, a long-term program to monitor natural attenuation of contaminated groundwater within the area of contamination, and an evaluation of the progress of MNA would be performed. Under the Preferred Alternative, EPA would be formally adding to the remedy for OU1 the institutional controls that already exist in the form of a municipal ordinance requiring connection to the public water supply and water from sources other than the municipal public water system be used for non-potable purposes only, as well as mandating well testing for any private water source that is outside the municipal system.

A PDI would be conducted to identify locations and to install new monitoring wells that would supplement the existing monitoring well network. EPA expects that 10 new monitoring wells (**Figure 5**) would be installed at similar intervals as per the existing shallow and deep monitoring wells. Additionally, for cost estimating purposes, it is estimated that 39 wells (10 new and 29 existing wells) would be sampled quarterly for the first two years, and then every two years thereafter until RAO is met (an estimated 45 years). The actual sampling program will be developed during the remedial design. Each sample would be analyzed for VOCs and field parameters. A subset of wells would be sampled and analyzed during each round for geochemical parameters.-This subset of wells would include the following: the six monitoring wells where TCE concentrations currently or recently exceeded the cleanup level, the new wells where sampling reveals exceedances of the cleanup level, and the select upgradient, side gradient, and downgradient wells. Sampling results would be evaluated in a comprehensive groundwater monitoring report completed after each sampling round and during the five-year review process in order to evaluate progress toward achieving the RAO, including calculations of attenuation rates and estimated time frames to meet the cleanup level in each well. If applicable, numerical modeling would be conducted to supplement this evaluation.

The total estimated present-worth cost for the Preferred Alternative is $2,563,000. This is an engineering cost estimate that is expected to be within the range of plus 50 percent to minus 30 percent of the actual project cost. Further detail on the cost is presented in the FS Report.

Green remediation techniques, as detailed in NYSDEC's Green Remediation Program Policy DER-31, will be considered during the implementation of the selected remedy to reduce short-term environmental impacts.[4]

Basis for the Remedy Preference

This proposed plan reevaluates the 2009 OU1 selected remedy, taking into account the work performed during the prior OU2 response action, the vapor mitigation conducted as part of the OU1 response action conducted to date, and the decreasing trends in groundwater contamination that have been observed at the Site since the OU1 ROD was issued.

Based upon the information currently available, EPA, in conjunction with NYSDEC, believes that the Monitored Natural Attenuation alternative would meet the threshold criteria and would provide the best balance of tradeoffs with the other alternative with respect to the balancing and modifying criteria. The Preferred Alternative would satisfy the following statutory requirements of CERCLA Section 121, namely (1) to be protective of human health and the environment; (2) to comply with ARARs; (3) to be cost-effective; and (4) to utilize permanent solutions, alternative treatment technologies, or resource recovery technologies to the maximum extent practicable. The Preferred Alternative would not meet the statutory preference for the use of treatment as a principal element; however, as described above, treatment would provide little additional benefit in this setting. With respect to the two modifying criteria, state acceptance and community acceptance, NYSDEC concurs with the preferred alternative, and community acceptance will be evaluated upon the close of the public comment period.

[4] https://extapps.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf

For further information on the {Site}, please contact:

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The administrative record file, which contains copies of the Proposed Plan and support documentation, is available online at www.epa.gov/superfund/hopewell-precision and at the following location:

USEPA – Region 2
Superfund Records Center
290 Broadway, 18th Floor
New York, New York 10007
(212) 637-4308
Hours: Monday – Friday: 9AM – 5PM (by appointment)

Written comments on this Proposed Plan should be mailed to Ashley Similo by {date} at the address below or sent via email.

Ashley Similo
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Edison, New Jersey 08837
Email: Similo.Ashley@epa.gov

Figure 1: Site Location Map

C:\IMS\GIS\Hopewell\GIS_projects\Site_location_RI.mxd

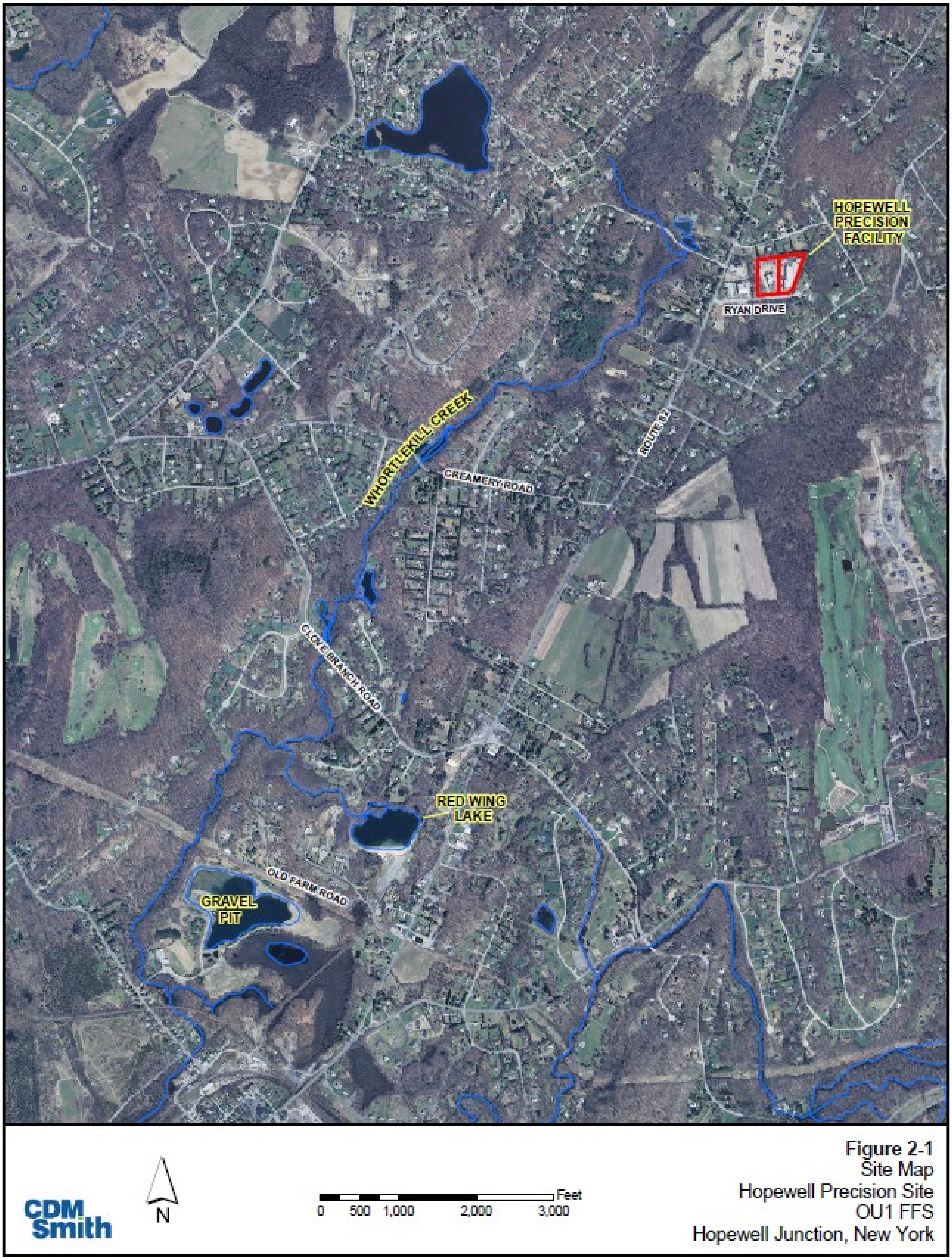


Figure 2-1
Site Map
Hopewell Precision Site
OU1 FFS
Hopewell Junction, New York

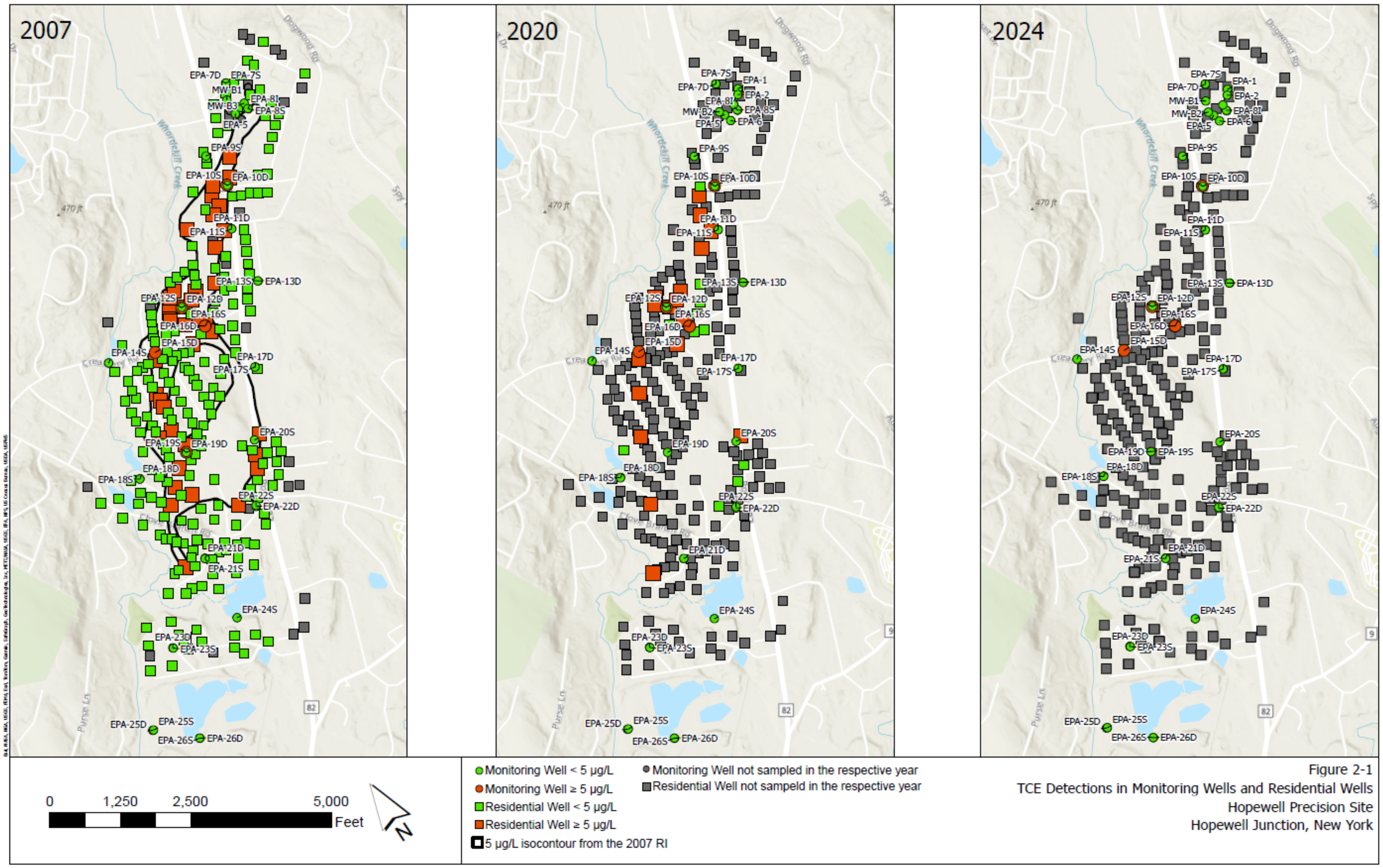
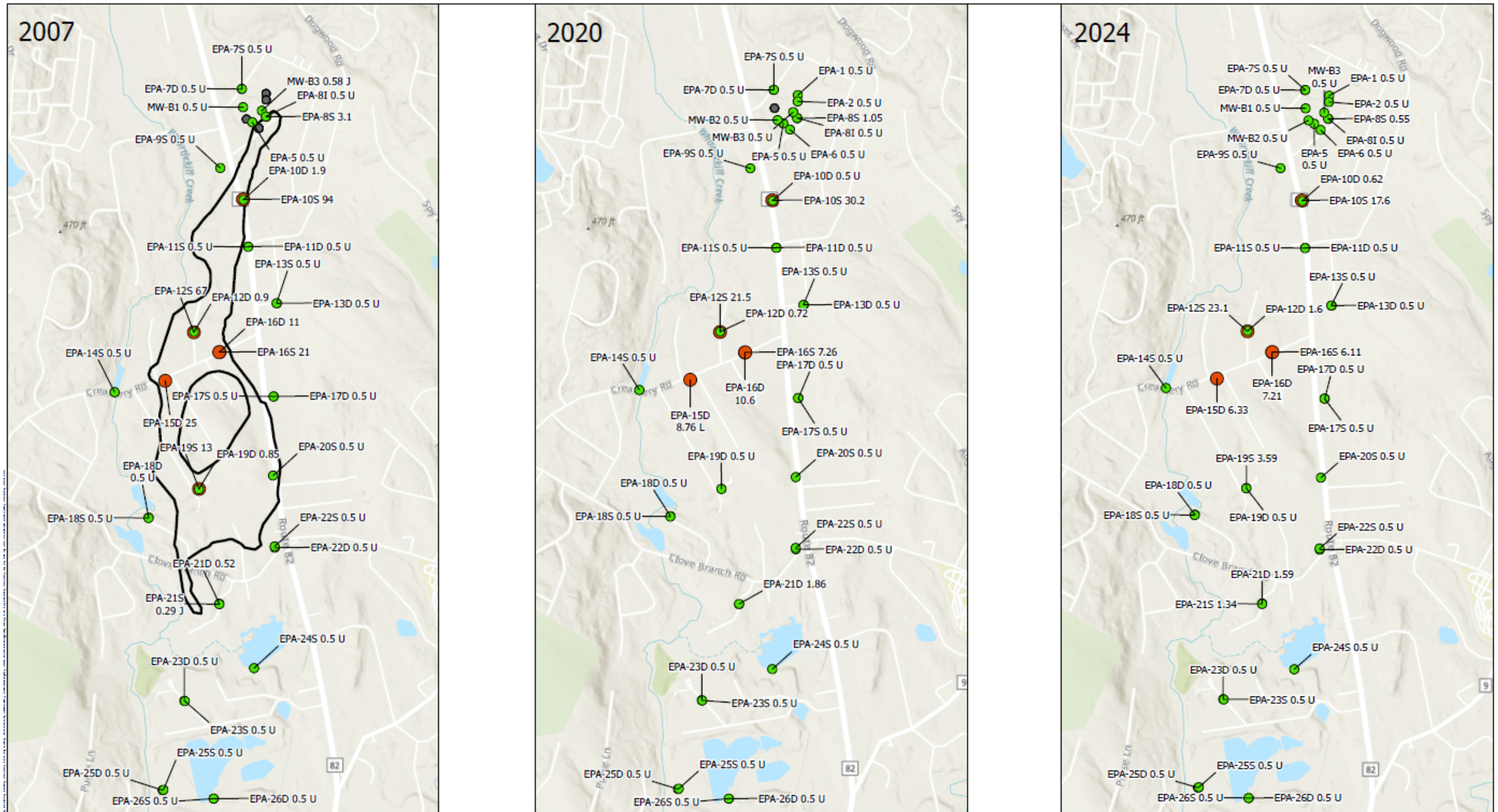


Figure 2-1: TCE Detections in Monitoring Wells and Residential Wells

Figure 2-2: TCE Concentrations in Monitoring Wells



0 1,250 2,500 5,000 Feet

N

Monitoring Well < 5 µg/L
Monitoring Well ≥ 5 µg/L
Residential Well < 5 µg/L
Residential Well ≥ 5 µg/L
5 µg/L isocontour from the 2007 RI
Monitoring Well not sampled in the respective year
Residential Well not sampeld in the respective year

TCE Concentrations in µg/L

Figure 2-2
TCE Concentrations in Monitoring Wells
Hopewell Precision Site
Hopewell Junction, New York

Figure 2-3: 1,1,1-TCA Concentrations in Monitoring Wells

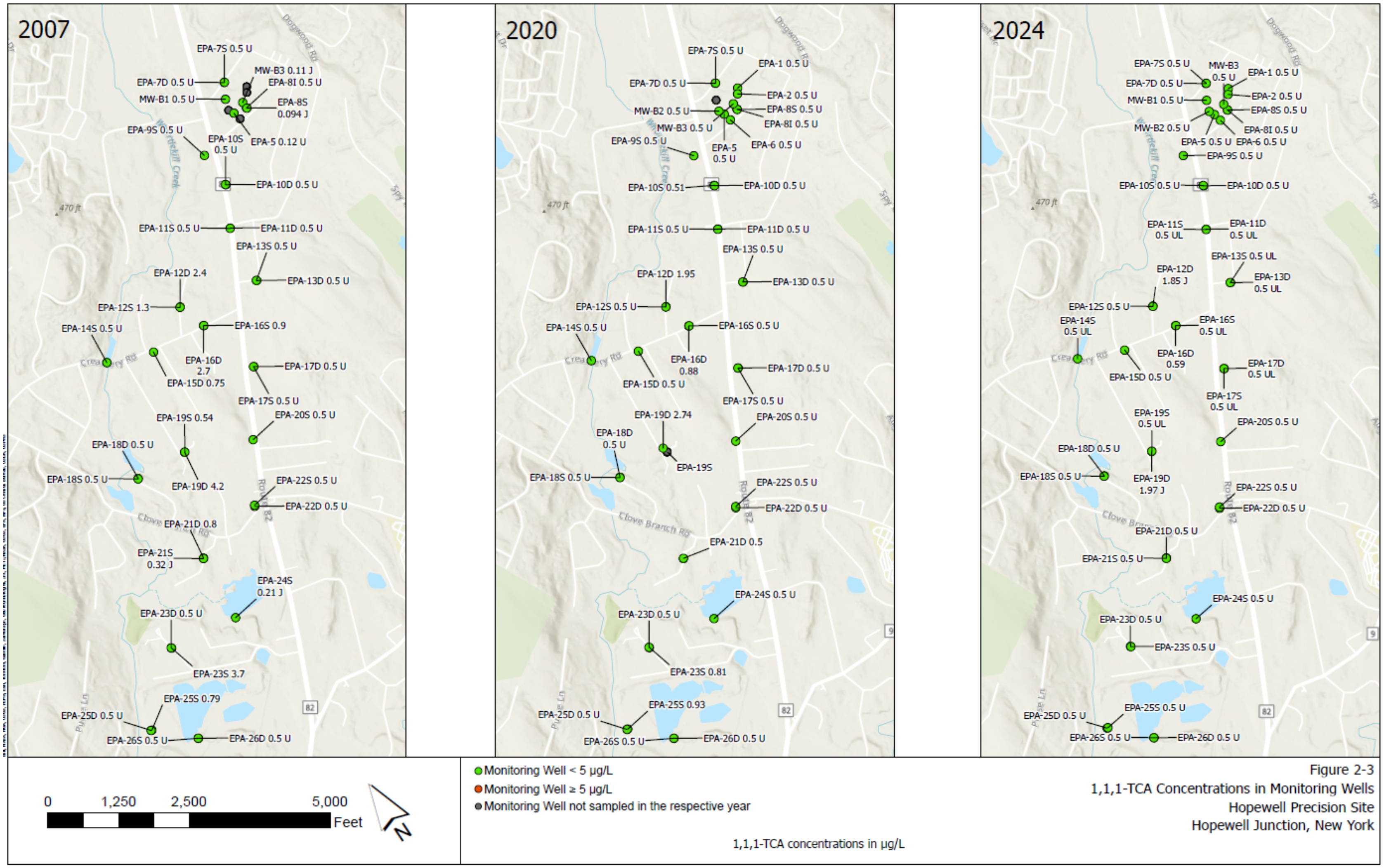


Figure 3: TCE Concentrations in Monitoring Wells Where Concentrations are above the MCL

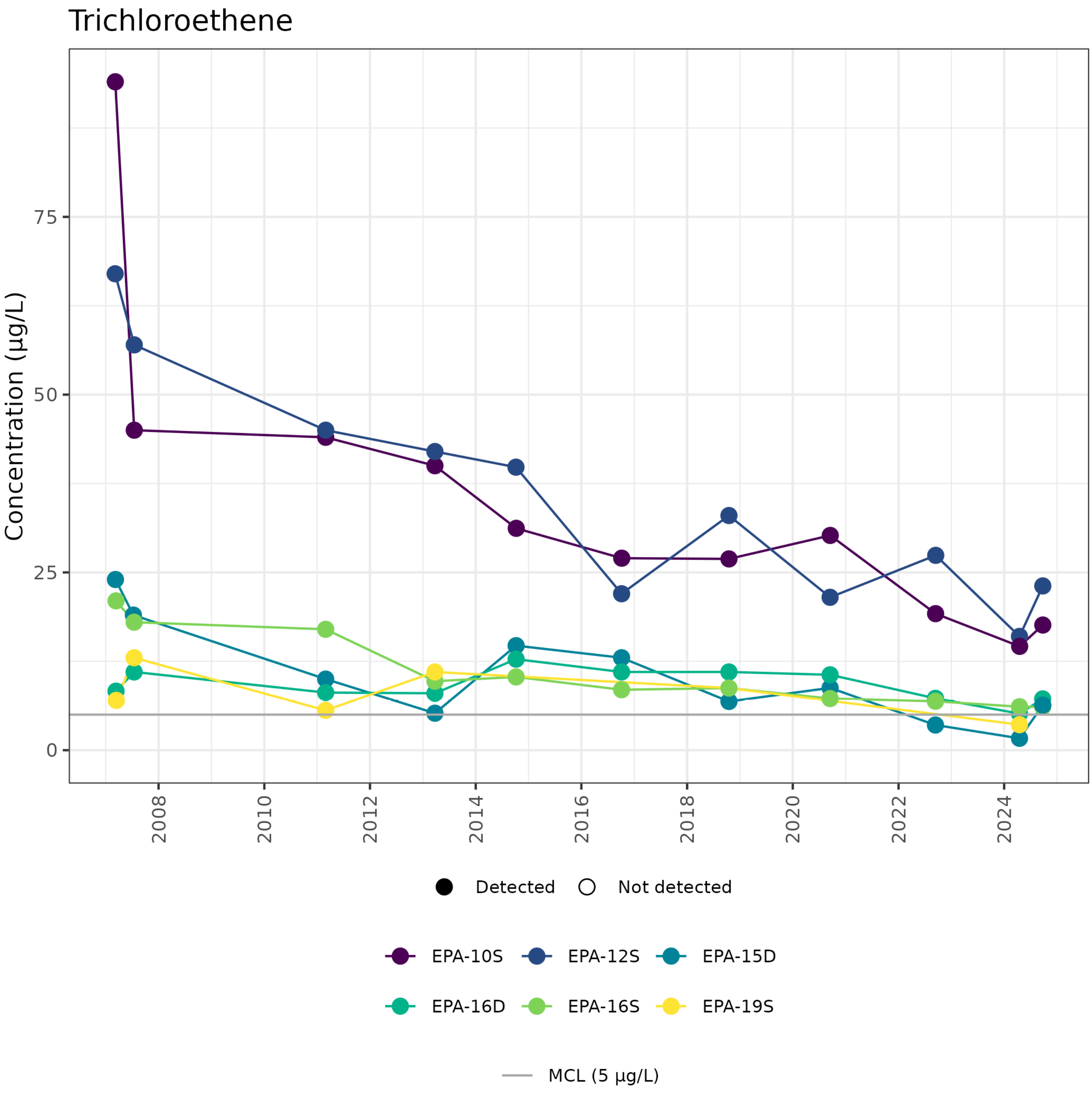


Figure 4: Original Remedy Remedial Components

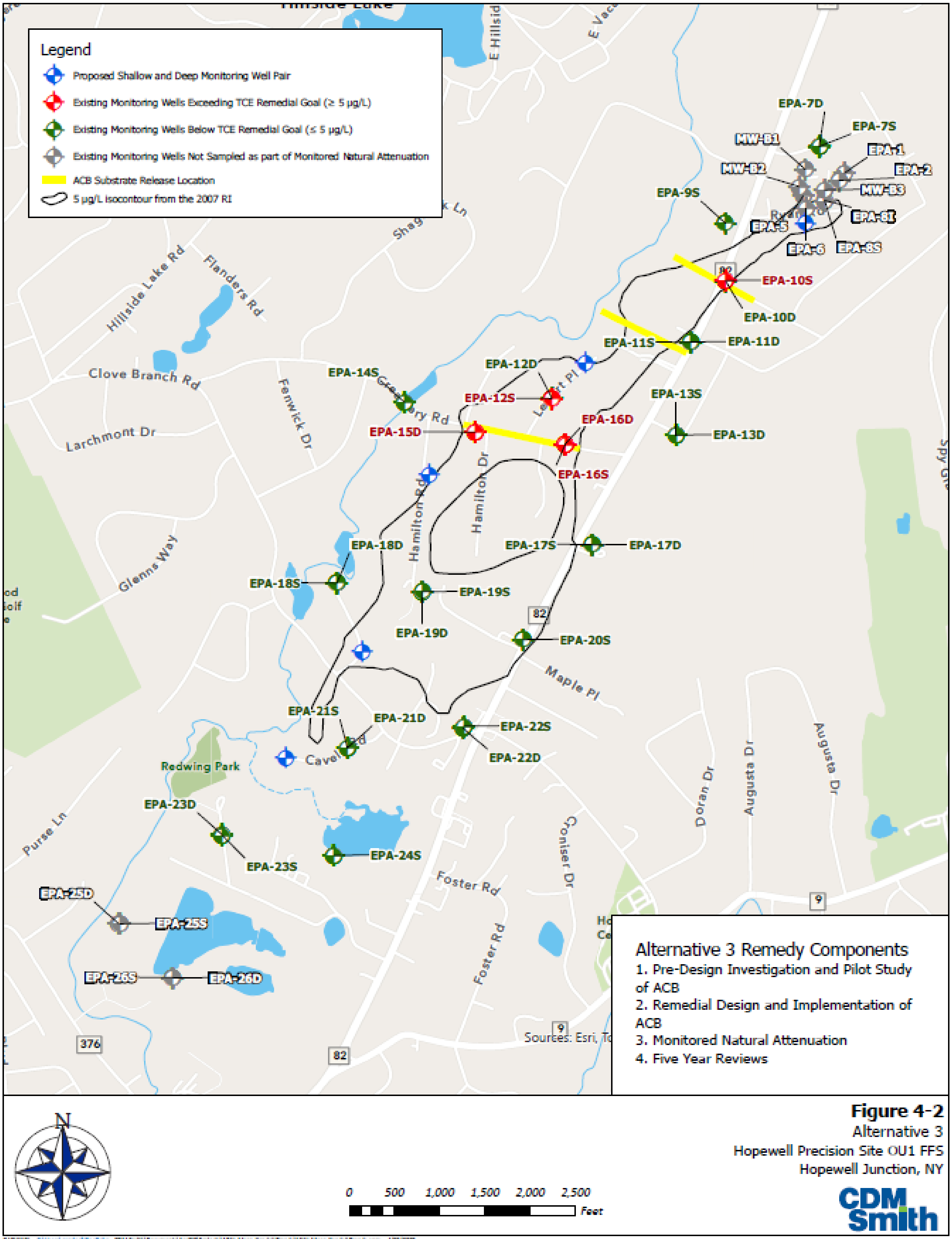


Figure 5: Preferred Alternative Remedial Components