INTERIM RECORD OF DECISION AMENDMENT

STRASBURG LANDFILL SUPERFUND SITE

NEWLIN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

REGION 3
PHILADELPHIA, PENNSYLVANIA
September 2025

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LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cis-1,2-DCE	cis-1,2-Dichloroethene
COC	Contaminant of Concern
CSM	Conceptual Site Model
DCA	Dichloroethane
DCE	Dichloroethene
EE/CA	Engineering Evaluation/Cost Analysis
EPA	United States Environmental Protection Agency
ERA	Ecological Risk Assessment
FS	Feasibility Study
FFS	Focused Feasibility Study
FYR	Five-Year Review
gpm	Gallon per Minute
HA	Health Advisory
HHRA	Human Health Risk Assessment
HI	Hazard Index
IC	Institutional control
J	Estimated Concentration
J+	Estimated Biased High
MCL	Maximum Contaminant Level
MSC	Medium Specific Concentration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
ng/l	Nanogram per liter
NPDES	National Pollutant Discharge Elimination System

NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PADEP	Pennsylvania Department of Environmental Protection
PADER	Pennsylvania Department of Environmental Resources
PCE	Tetrachloroethylene
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutanesulfonic acid
PFHxA	Perfluorohexanoic acid
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PPT	Part per trillion
PPM	Part per million
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SARA	Superfund Reauthorization Act
SDWA	Safe Drinking Water Act
SLERA	Screening level ecological risk assessment
TBC	To Be Considered
TCE	Trichloroethene
µg/L	Microgram per Liter
UAO	Unilateral Administrative Order
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compound

I. DECLARATION

STRASBURG LANDFILL SUPERFUND SITE

NEWLIN and WEST BRADFORD TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

INTERIM ACTION RECORD OF DECISION AMENDMENT FOR REMEDIAL ACTION
STRASBURG LANDFILL SUPERFUND SITE

I. DECLARATION

Site Name and Location

The Strasburg Landfill Superfund Site includes a 24-acre inactive landfill located on two parcels totaling approximately 209 acres of currently undeveloped land south and slightly east of Strasburg Road, as well as an access road that provides access from Strasburg Road in Newlin and West Bradford Townships, Chester County, Pennsylvania (Figure 1). The topography of the area is characterized by a combination of steep and gentle hills. In general, the land in the Site area slopes towards, and drains to the Brandywine Creek, and its tributary, Briar Run. These streams form the southern, eastern and western boundaries of the Site area. A small wetland area has been created on the southeastern side of the landfill along Briar Run. The National Superfund Database Identification Number for the Site is PAD000441337.

Statement of Basis and Purpose

This decision document amends the 1989 Record of Decision (ROD) for Operable Unit (OU) 1 of the Site by selecting an amendment to the 1989 remedy to address residential drinking water contaminated with two per- and poly-flouroalkyl substances (PFAS), perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). This Interim ROD Amendment adds PFOA and PFOS as Site-related contaminants of concern (COCs) and solely addresses the human health risks from drinking water impacted by those COCs. Site-wide groundwater will be addressed in a future ROD for OU4 of the Site.

This Interim Selected Remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 42 U.S.C. §§ 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300, as amended.

This decision is based on the Administrative Record for the Site, which has been developed in accordance with Section 113(k) of CERCLA, 42 U.S.C. § 9613(k). This Administrative Record file is available for review online at www.epa.gov/superfund/strasburglandfill, at the EPA Region III Records Center in Philadelphia, Pennsylvania, and at the Bayard Taylor Memorial Library in Kennett Square, Pennsylvania. The Administrative Record Index identifies each of the items comprising the Administrative Record upon which the selection of the Interim Remedial Action is based.

The Pennsylvania Department of Environmental Protection (PADEP) concurs with the Interim Selected Remedy (Appendix A).

Assessment of the Site

Landfill disposal at the Site from approximately 1978 to 1984 has resulted in contamination, mainly volatile organic compounds (VOCs) in soil, groundwater, soil gas, sediment, and surface water. Sampling conducted at the landfill in 2024 has also identified the presence of PFOA and PFOS in groundwater, surface water, and landfill leachate.

The Interim Selected Remedy presented in this Interim ROD Amendment is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

Description of the Interim Selected Remedy

The Interim Selected Remedy will address residential drinking water contaminated with PFOA and PFOS as Site-related contaminants of concern (COC). Other risks to human health and to the environment from Site-related contamination in groundwater, surface water, sediment, soil gas, and leachate will be addressed in future decision documents.

The Interim Selected Remedy consists of the following components:

- Design and installation of a public water line and connection of privately owned properties to the new water line.
- Provision of alternate water via temporary Point of Entry Treatment Systems (POETS) for privately owned properties prior to the connection of new water line.
- Monitoring of residential groundwater wells to determine if additional provision of alternate water is needed prior to water line connection.
- Institutional Controls to maintain the integrity of the Selected Remedy and prevent future potential exposure to Site-related contaminants.

Statutory Determinations

This interim Selected Remedy is protective of human health and the environment in the short term and is intended to provide adequate protection until a future final ROD addresses groundwater at the Site; complies with those federal and state requirements that are applicable or relevant and appropriate for this limited-scope action; and is cost-effective. This Interim Selected Remedy is an interim solution only and is not intended to utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable with respect to the source of contamination. Site-wide PFAS contaminated groundwater will be addressed in OU4. Because this Interim Selected Remedy does not constitute the final remedy for OU1, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed by

the final response action. Subsequent actions may be planned to address fully the threats posed by conditions at the Site.

Because this Interim Selected Remedy will result in hazardous substances remaining onsite above levels that allow for unlimited use and unrestricted exposure, a review will be conducted within five years after commencement of the Interim Selected Remedy to ensure that the remedy continues to provide adequate protection of human health and the environment. Such reviews will be conducted a minimum of every five years thereafter, until the EPA determines that hazardous substances remaining at the Site do not prevent unlimited use and unrestricted exposure at the Site.

Interim ROD Data Certification Checklist

The following information is included in the Decision Summary (Part II) of this Interim ROD Amendment. Additional information can be found in the Administrative Record for the Site:

INTERIM ROD CERTIFICATION CHECKLIST	
Information	**Location/Page Number**
Nature and Extent of Contamination	Section 5.2, pages 17 -18
Summary of Site Risk	Section 7.0, pages 23-24
Remedial Action Objectives	Section 8.0, page 25
How source materials constituting principal threat are addressed	Section 11.0, page 37
Current and reasonably anticipated future land use assumptions and potential future beneficial uses of groundwater used in the baseline risk assessment and Interim ROD	Section 6.0, page 23
Potential land use that will be available at the Site as a result of the Interim Selected Remedy	N/A
Costs	Section 10.7, pages 36-37
Selected Remedy	Section 12.0, page 38-40

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Paul Leonard, Director
Superfund and Emergency Management Division
EPA Region 3

II. DECISION SUMMARY

1.0 Site Name, Location and Description

The Strasburg Landfill Superfund Site includes a 24-acre inactive landfill located on two parcels totaling approximately 209 acres of currently undeveloped land south and slightly east of Strasburg Road, as well as an access road on a privately owned parcel that provides access from Strasburg Road in Newlin and West Bradford Townships, Chester County, Pennsylvania (Figure 1). The topography of the area is characterized by a combination of steep and gentle hills. In general, the land in the Site area slopes towards, and drains to the Brandywine Creek, and its tributary, Briar Run. These streams form the southern, eastern and western boundaries of the Site area.

A small wetland area has been created on the southeastern side of the landfill along Briar Run. The two parcels that comprise the landfill are privately owned, and the land usage is listed as residential vacant. The two parcels were acquired from the Tax Claim Bureau of Chester County in August 2007. The Site access road and gate are located on a privately owned parcel off Strasburg Road and is adjacent to the two parcels where the 24-acre landfill is situated.

Land use in the area surrounding the landfill is primarily suburban residential, with some residual agricultural areas. There are more than 300 single family residences within a one-mile radius of the Site. The drinking water to these residences is primarily supplied from groundwater. Most of the homes are served by private home wells. Most wells yield small supplies ranging from 2 to 25 gallons per minute (gpm); however, yields of up to 100 gpm have been reported. Water wells in the area, including residential, and monitoring wells, are regulated by the Chester County Health Department (CCHD).

Public water supply wells are regulated and permitted by Pennsylvania's Safe Drinking Water Program. There is a privately-owned public water utility, approximately one mile east and slightly north of the landfill, that provides drinking water from deep wells to a number of residences located further away from the Site. Privately owned public water utilities are regulated by PADEP through the Safe Drinking Water Program and the Pennsylvania Public Utility Commission (PUC).

The National Superfund Database Identification Number for the Site is PAD000441337. The "Final Rule" adding the Site to the NPL was published in the Federal Register on March 31, 1989.

The EPA is the lead agency for Site activities and PADEP is the support agency.

2.0 Site History and Enforcement Activities

This section of the Interim ROD Amendment provides the history of the Site and a discussion of the EPA and PADEP investigations and response activities.

2.1 History of Activities that Led to Contamination

The Strasburg Landfill began to accept municipal and industrial waste in 1978. The landfill operators were cited by the Pennsylvania Department of Environmental Resources (PADER, the predecessor to PADEP) for numerous significant violations. The landfill was ordered to be closed in 1982 and was finally closed in 1984. During its period of operation, the landfill accepted approximately three million cubic yards of waste. Following closure, the landfill began discharging leachate into the surrounding area, including Brandywine Creek and Briar Run.

2.2 Previous Environmental Investigations and Response Actions

Initial environmental investigations in 1983 included sampling on and around the landfill and showed elevated levels of vinyl chloride (VC) and trichloroethene (TCE), both in leachate seeps emanating from the landfill and in residential wells adjacent to the landfill. Subsequent inspections and sampling showed that the existing landfill cap had failed in numerous locations and that contaminants were migrating into nearby surface water streams and into the groundwater.

PADEP required the landfill operators to collect the leachate and transport it offsite for treatment at a nearby municipal sewage treatment plant. The leachate was collected until July 1989 when the landfill operators gave notice that they would no longer operate the leachate collection system. PADEP operated the system on an interim basis until the EPA took over operations of the temporary leachate collection system in September 1989. The Site was placed on the NPL on March 31, 1989.

A Remedial Investigation/Feasibility Study (RI/FS) for the Site was conducted between February 1989 and December 1991 to assess the nature and extent of contamination, document the potential for contaminant migration from the landfill, and evaluate cleanup alternatives for addressing contamination at the Site.

Site-related COCs at that time included volatile and base-neutral organics (i.e. semi-volatile organic compounds) and selected inorganics. Volatile organic compounds (VOCs) were detected in ambient air, soil gas, soil, groundwater, surface water, sediment, and seep areas. The distribution of organic contamination is more widespread than the distribution of inorganic contamination. Organic contaminants were detected primarily in the water and sediment of the seep areas, groundwater, air, and soil gas.

Inorganic contamination distribution was limited primarily to the sediment and water in the seep areas and in a sediment pond. The observed contaminant distribution reflects the differing mobilities of the different compounds, with the widest distribution observed with VOCs. Tetrachloroethene (PCE), VC, and 1,2-dichloroethene (1,2-DCE) were the most widespread VOCs identified at the Site during the Remedial Investigation.

Two residences located downgradient of the landfill had VOCs in their water supply wells (up to 80.8 µg/L total VOCs.) The EPA installed whole-house point-of-use carbon filters to provide potable water to these residences in 1989, as described in additional detail in the following section.

2.3 EPA Remedial Actions

The EPA divided the cleanup of the Site into four OUs.

Operable Unit 1

OU1 addresses leachate releases into surface water and contaminated residential wells near the landfill. The EPA issued the OU1 ROD on June 29, 1989. The Remedial Action Objectives (RAOs) in the OU1 ROD are to 1) minimize migration of Site-related contaminants to groundwater and surface waters, and 2) to prevent direct human contact with, or ingestion of, contaminants.

Specific components of OU1 Selected Remedy described in the 1989 ROD included:

- Leachate collection from an identified seepage area in the southeast corner of the landfill via a shallow ditch and interceptor trench;
- Collection and storage in a storage tank system;
- Off-site disposal and treatment of leachate; and,
- Installation of activated point-of-use carbon treatment systems[1] at residences with contaminated water above levels of concern.

[1] The 1989 ROD for the Site stated that point-of-use carbon treatment systems would be installed, however, whole house point-of-entry-treatment systems (POETS) were installed at residences with contaminated water above levels of concern.

The potentially responsible parties (PRPs) ceased all operations at the Site in 1989, including collection and off-site disposal of leachate being performed pursuant to an Order issued by PADER, which impacted the protectiveness and feasibility of the OU1 Selected Remedy.[2][3] As a result, the EPA issued an Explanation of Significant Differences (ESD) on January 3, 1990, to change the method of leachate treatment to on-site treatment via air-stripping and discharge of treated effluent to Briar Run.

Operable Unit 2

OU2 addresses Site access and security due to unauthorized recreational activity and vandalism on the landfill property. Damage to the existing landfill cap and to the leachate collection and treatment system had been observed and led to the EPA issuing the OU2 Selected Remedy on June 28, 1991. The OU2 ROD did not list RAOs; however, the stated intent of the response action was to "Reduce the health risk to people through inhalation and direct contact that utilize the landfill site for recreational activities such as motorcycle or all-terrain vehicle riding, walking, jogging, or hunting."

Specific components of the OU2 Selected Remedy included a "Metal fence, chain link, eight feet high, topped with barbed wire."

Operable Unit 3

OU3 addresses the damaged and degraded landfill cap and additional uncontrolled landfill leachate seeps which posed a threat to human health and the environment. These seeps were identified and located outside the collection area addressed by the OU1 Selected Remedy and were present on all but the northern edge of the landfill waste boundary.

On March 31, 1992, the EPA issued a ROD for OU3 that includes a RAO to "[R]educe the health risk to people through elimination of present routes of exposure." The components of the OU3 Selected Remedy included:

- Source containment by capping;
- Passive gas collection;
- Leachate collection;
- Leachate treatment and discharge; and,
- Operation and maintenance of the above systems.

The EPA issued an ESD on September 4, 2012 to modify the OU3 remedy to include institutional controls (ICs). The ICs include activity and use limitations prohibiting the following:

[2] The Commonwealth of Pennsylvania and EPA continued the leachate off-site disposal until the 1990 ESD was implemented with the on-site treatment system.
[3] PRPs ceased off-site disposal due to running into financial difficulties and no longer had the financial capability to continue hauling and treating of landfill leachate.

1. Any and all activity on the landfill property that could in any manner disturb or interfere with the selected remedies;
2. Any and all contact, handling, or use of landfill leachate;
3. Installation of groundwater wells on the property within the existing fencing; and,
4. Installation and pumping of new groundwater wells on the landfill property within one quarter mile of the identified groundwater contaminant plume.

Operable Unit 4

OU4 addresses groundwater at the Site. On September 27, 1999, the EPA issued an OU4 "No Action" ROD for groundwater associated with the Site. The “No Action” decision was based on groundwater data collected from on-Site monitoring wells after installation of the OU3 landfill cap and off-Site residential wells which indicated that there were no exceedances of Maximum Contaminant Levels (MCLs), or PA Land Recycling and Environmental Remediation Standards Act Medium Specific Concentrations (MSCs) for Site-related contaminants and contamination was not migrating off the landfill property.

3.0 Community Participation

There have been various opportunities for the EPA Site team to meet with community members. In addition to the recent Public Meeting to present the Proposed Plan for the interim Selected Remedy, the EPA has participated in monthly Newlin Township Board of Supervisors meetings. During these meetings, the EPA is given the opportunity to provide Site updates, fact sheets, and answer questions regarding the status of sampling efforts and addressing PFOA and PFOS associated with the landfill. The EPA has also addressed the community concerns via in-person interactions during residential sampling of PFOA and PFOS.

In support of the 2025 Five-Year Review, the EPA provided an interview questionnaire to the Newlin Township Board of Supervisors in order to answer questions about the Site and learn about potential community concerns. More formal Site updates include fact sheets, public notices, public meetings, and updates to the web-based Strasburg Landfill Superfund Site Profile Page.

On March 25, 2025, pursuant to Section 113(k)(2)(B) of CERCLA, 42 U.S.C. § 9613(k)(2)(B), the EPA released the Proposed Plan for a 30-day public comment period. The Proposed Plan was based on documents contained in the Administrative Record File for the Site and set forth EPA’s preferred remedial alternative. The EPA held a public meeting on April 2, 2025, at the Newlin Township Public Works to inform local officials, interested citizens, and other stakeholders about the EPA’s proposed cleanup plan and the Superfund process, and provided for a 30-day public comment period and to receive comments on the Proposed Plan. During the public comment period, the EPA accepted written comments via email and regular postal mail and has responded to the comments in the Responsiveness Summary section, which is included as Part III of this Interim ROD Amendment. These community participation activities meet the public

participation requirements in CERCLA Section 117, 42 U.S.C. § 9617, and 40 C.F.R. § 300.430(f)(3) of the NCP.

The Administrative Record can be found in the Administrative Record File located in the EPA Region III Office, the Bayard Taylor Memorial Library in Kennett Square, Pennsylvania, and online at www.epa.gov/superfund/strasburg.

The notice of the availability of these documents was published in the *Daily Local News* on March 18, 2025. The public comment period was held from March 25, 2025, to April 24, 2025.

A fact sheet detailing the Proposed Plan was mailed to local citizens on March 25, 2025.

4.0 Scope and Role

On April 10, 2024, the EPA announced the final National Primary Drinking Water Regulation (NPDWR) which established Federal MCLs for PFOA and PFOS. Privately owned residential wells at the Site are known to be contaminated with Site-related PFOA and PFOS contamination at levels above the 2024 Federal MCLs. The EPA regards these exceedances of MCLs in drinking water as a potential risk to human health. This Interim ROD Amendment for OU1 selects an Interim Selected Remedy to address both short and long-term health risks to residences with wells impacted by Site-related PFOA and PFOS contamination by providing temporary POETS and connecting the residences to a public water line. A future decision document will address PFOA and PFOS in groundwater at the Site.

5.0 Site Characteristics

This section of the Interim ROD Amendment provides an overview of the Site's geology and hydrogeology, the sampling strategy used during Site investigations, and the nature and extent of contamination. Additional information regarding the nature and extent of contamination can be found in the Administrative Record.

5.1 Geology and Hydrogeology

The Site lies within the Piedmont Lowland section of the Piedmont Physiographic Province, characterized by a mix of metamorphic and igneous rock types including schist, gneiss, quartzite, granite, and pegmatite which have been weathered into a region of low to moderate relief and broad, gently rolling hills and valleys. Unconsolidated surficial deposits in the Site area consist of very thick (more than 10 feet) saprolite on upland surfaces and thin to thick saprolite on the upper parts of hillsides. Thin to thick colluvium on lower hillsides grades into thin to thick alluvium along valley bottoms.

Bedrock in the vicinity of the Site include various schist formations, with the Peters Creek schist underlying the Site itself. The Peters Creek schist is estimated to be about 2,000 feet thick and

is a fine-grained, finely laminated schist with numerous thin layers of quartzite. Bedding is thin and steeply dipping in most places. All wells installed at the Site encounter this Formation.

Groundwater at the Site exists in both the unconsolidated surficial deposits as well as the underlying bedrock, acting as one interconnected unconfined water table aquifer. Most groundwater is stored in a zone of weathered rock near the ground surface. The uppermost part of this weathered zone is unconsolidated and grades from completed decomposed rock and soil near the ground surface to boulder-sized rocks in place within a clayey matrix and finally a saprolite with sand at the bedrock contact. This uppermost zone is porous with a large storage capacity but has only low to moderate permeability. The area of highest permeability occurs in the transition zone between the unconsolidated material and competent bedrock. Here, openings are formed and enlarged through weathering, but the decomposition is incomplete and the openings are not yet filled with clay. The storage capacity in this transition zone is small because of low porosity. Below the transition zone, groundwater storage and transport is limited to fractures in the competent rock.

Groundwater flow is typically local and at the landfill has previously been interpreted to generally flow radially away from the landfill footprint, through the overburden and the interconnected fracture networks, flowing from points of higher to lower topography where springs and streams will be present as discharge points. While there has been very limited data collection and interpretation of groundwater flow north of the landfill, the topography of the land indicates that it is reasonable to assume a component of groundwater flow from the landfill could be to the north prior to diverging to follow topography, flowing to the west where groundwater would discharge or follow the un-named tributary to the West Branch Brandywine Creek that flows on the north side of Strasburg Road or flowing to the east towards Briar Run. Groundwater flow off the landfill to the south and west may experience areas of convergent flow controlled by the local topography off-site, particularly to the immediate west and south-west where there are local valleys. With no local tributary in these valleys, groundwater will generally flow to and discharge directly into the West Branch Brandywine Creek. Groundwater to the east of the landfill flows towards the east and south-east following topography and will discharge into Briar Run. This component of flow generally would not be expected to continue beyond Briar run in the natural hydrogeologic framework of the site. However, the introduction of pumping influences from domestic well use along Wheatland Drive may introduce alternate flow paths that would underflow Briar Run dependent upon the pressure gradients produced during pumping, and the interconnectedness of individual fractures. Deep inter basin flow is thought to be a negligible part of groundwater movement in the area.

5.2 Nature and Extent of Contamination and Conceptual Site Model

Nature and Extent of Contamination

As mentioned in Section 2.2., a Remedial Investigation/Feasibility Study (RI/FS) for the Site was conducted between February 1989 and December 1991 to assess the nature and extent of

contamination, document the potential for contaminant migration from the Site, and evaluate cleanup alternatives for addressing contamination at the Site.

Site-related COCs at that time included volatile and base-neutral organics (i.e. semi-volatile organic compounds) and selected inorganics. VOCs[4] were detected in ambient air, soil gas, soil, groundwater, surface water, sediment, and seep areas.

The full RI/FS is available in the Administrative Record for OU1. The RI/FS did not address PFAS contamination.

PADEP currently samples the Site monitoring well network for VOCs every five years as part of their Operation and Maintenance obligations**.** The data collected are included and evaluated in each Five -Year Review (FYR). During the January 8, 2024, sampling event, VOCs were below MCLs and MSCs. Table 1 compares the maximum detected concentrations (for Site COCs) from these sampling events with the MCLs or MSCs.

Table 1: Maximum Detected VOC Concentrations in Landfill Monitoring Wells, 2024

COC	MCL	Risk Based Standard*	MSC	Maximum Detected Concentration 2024	Monitoring Well Location
Benzene**	5	1.2	-	-	Not Detected
Chloroform**		5.7	80	-	
Chlorobenzene**	100	-	-	1.1	MP-2-Intermediate
1,1-Dichloroethane**	-	0.38	31	-	Not Detected
1,2-Dichloroethane**	5	-	5	-	Not Detected
Cis-1,2-Dichloroethenene**	70	-	70	0.37J	MP-2-Intermediate
1,2-Dichloropropane**	5	0.51	5	-	Not Detected
1,1,2,2-tetrachloroethane**	-	0.18	0.84	-	Not Detected
1,1,1-trichloroethane**	200		200	-	Not Detected
Trichloroethene**	5	3.2	5	-	Not Detected
Vinyl Chloride**	2	0.015	-	-	Not Detected

Notes:

*- Site specific risked based goal from 1989 ROD

[4]https://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs

**- 1989 ROD Drinking Water, Standards & Criteria Residential Wells
ug/L – microgram per liter
J- Indicates an estimated value, reported between Reported Limit (RL) and Minimum Detected Limit (MDL)
B- This flag is used when the analyte is found in the associated blank as well as the sample.
-All results reported in ug/L
- RSL – Regional Screening Level
Notes:
-Wells at this site are constructed as multi-port wells and some monitored zones were observed to be dry during sampling events. Results are reported for zones where sufficient water was present to collect a sample.
-Map in Figure 2 details the monitoring well network at the Site

Supplemental Investigations and Activities for PFAS

On January 14, 2023, Pennsylvania's PFAS MCL Rule was published in the Pennsylvania Bulletin, setting Pennsylvania MCLs (PA MCLs) for two PFAS – PFOA and PFOS – in drinking water in Pennsylvania. PFAS, including PFOA and PFOS, are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s. There are thousands of different PFAS, some of which have been more widely used and studied than others. PFAS are considered "emerging contaminants" because research continues to advance to better understand the potential risks associated with exposure to PFAS.

PADEP first sampled for PFAS in October 2022. In September 2023, PADEP collected a leachate sample approximately 150 feet from the routine wetland sampling location. The sample had elevated PFOA and PFOS levels at concentrations shown below in Table 2.

Table 2: PFAS Sampling Results of Leachate (ng/L)

Date Sampled	PFOA	PFOS	PFHxS	HFPO-DA (GenX)	PFNA
Freshwater Aquatic Life Criteria (Chronic)	**100,000**	**250**	**210,000**	**NA**	**650,000**
10/4/2022	ND	ND	ND	ND	ND
6/13/2023	26	5.6	3.5	ND	25
9/6/2023*	3100	96	430	ND	2700
12/13/2023	18	1.8(J)	2.8	ND	15
3/13/2024	10	2.4 (I)	1.2(J)	ND	6.4
6/12/2024	28	5.3	3.2	ND	28
10/16/2024*	4,420	73.5	399	2.3	4,270
12/17/2024	45.7	1.9(J)	8.6	ND	16

ng/L = nanograms per liter
ND = Not detected

J = Result is less than the reporting limit (RL) but greater than or equal to the method detection limit (MDL), and the concentration is an approximate value
I = Value is EMPC (estimated maximum possible concentration)
PFOA = Perfluorooctanoic Acid
PFOS = Perfluorooctanesulfonic Acid
PFHxS = Perfluorohexanesulfonic Acid
HFPO-DA = Hexafluoropropylene Oxide (HFPO) Dimer Acid
PFNA = Perfluorononnanoic Acid
* = Sep-23 and Oct-24 samples were taken from non-routine location, upgradient from wetland outfall due to lack of discharge at outfall

During subsequent sampling events in January 2024, onsite and perimeter wells, surface water, the leachate tank/discharge location, and the treatment wetland were sampled for both PFAS compounds and VOCs.

In January 2024 surface water and leachate samples were collected at six surface water locations and one leachate sampling location at the Site. Groundwater samples were collected from 13 monitoring wells. See Figure 1- January 2024 Sampling Event, as well as Appendix D, which includes all the PFAS that were analyzed for in the January 2024 sampling event.

On April 10, 2024, the EPA announced the final National Primary Drinking Water Regulation (NPDWR) for six PFAS, which established Federal MCLs for both PFOA and PFOS at 4 ng/L (0.004 µg/L).

Table 3 compares the maximum detected concentrations for PFAS to the 2024 Federal MCLs in landfill groundwater monitoring wells. Several monitoring wells exceeded the federal MCLs for PFOA and PFOS and one monitoring well exceeded the hazard index for the mixture of PFAS compounds.

The EPA conducted another round of sampling at the landfill to determine if there were any seasonal changes in the levels of PFAS and VOC contamination found in the surface water and leachate. Monitoring wells were not sampled during this sampling event. See Figure 2 – June 2024 Sampling Event and Appendix D, which includes all the PFAS that were analyzed for in the June 2024 Sampling Event.

Table 3: Maximum Detected PFAS Concentrations in Landfill Monitoring Wells, 2024

PFAS Compound	EPA MCL (ng/L)	Hazard Index	Maximum Detected Concentration 2024 (ng/L)	Monitoring Well Location
Hexafluoropropylene oxide-dimer acid (HFPO-DA)	10		0.5J	MP-02- Intermediate
Perfluorohexanesulfonic acid (PFHxS)	10		3.9	MP-02-Intermediate
Perfluorononanoic acid (PFNA)	10		22	MP-09
Perfluorooctanesulfonic acid (PFOS)	4		4.8	MP-3A
Perfluorooctanoic acid (PFOA)	4		19	MP-02-Intermediate
PFNA, PFHxS, HFPO-DA, PFBS (Mixture)		1	2.2958	MP-09

Notes:

ng/L – nanogram per liter

U- Indicates the analyte was analyzed for but was not detected above the level of the reported quantitation limit.

J- Indicates an estimated value, reported between Reported Limit (RL) and Minimum Detected Limit (MDL)

-MCL, Maximum Contamination Level

-Wells at this site are constructed as multi-port wells and some monitored zones were observed to be dry during sampling events. Results are reported for zones where sufficient water was present to collect a sample. Figure 2 details the monitoring well network at the Site

Because the Federal MCL established new human health risk criteria, the EPA evaluated the September 2023 sampling results from the treatment wetlands and sampled residential wells surrounding the Site to determine if any of these residential wells may have been impacted by PFAS contamination. Drinking water samples were collected at 37 residences in December 2023/January 2024, June 2024, and October 2024 (single resident sampling event), and analyzed for PFAS.

Sampling results from the residential well sampling December 2023, January 2024, June 2024, and October 2024 indicated there were PFOA and/or PFOS exceedances of the 2024 Federal MCL at 21 locations. Eleven properties exceeded the 2024 Federal MCL for both PFOA and PFOS. An additional 10 residential properties exceeded the 2024 Federal MCL solely for PFOA. PFOA concentrations ranged from non-detect to 15 ng/L. PFOS concentrations ranged from non-detect to 12 ng/l. The EPA regards these exceedances of MCLs in drinking water as a potential risk to human health. Sixteen homes had no detections of PFOA or PFOS above their corresponding Federal MCLs.

No residential samples exceeded the 2024 Federal MCL of 10 ng/L for PFHxS, HFPO-DA, or PFNA. Likewise, no residential samples exceed the Federal MCL of an HI = 1, for a mixture of two or more of PFHxS, HFPO-DA, PFNA, or PFBS.

Appendix D includes all the PFAS that were analyzed for during the residential well sampling events that took place from December 2023 through October 2024 along with their respective MCL, as applicable.

Conceptual Site Model

The CSM is developed to integrate the different types of information collected during the RI and in the case of the Site, during subsequent investigations that took place during the Remedial Action. Data including the physical setting, the nature and extent of contamination, and the contaminant fate and transport are incorporated into the CSM.

Groundwater at the landfill has previously been interpreted to generally flow radially away from the landfill footprint, as the local topographic high (See Figure 4-2 of the 1991 RI Report and Figure 4 of the 1999 Operable Unit 4 Focused Groundwater Investigation Report).

While there has been very limited data collection and interpretation of groundwater flow north of the landfill, the topography of the land, as depicted by the USGS 7.5-minute topographic map of the Coatesville Quadrangle, indicates that it is reasonable to assume a component of groundwater flow from the landfill could be to the north prior to diverging to the east or west to follow topography where groundwater would flow towards the un-named tributary to the West Branch Brandywine Creek that flows on the north side of Strasburg Road or to Briar Run.

This interpretation of groundwater flow would allow for groundwater from the northern side of the landfill to flow in the general direction of Strasburg Road prior to moving back towards the West Branch Brandywine Creek, the main drainage path in the watershed for both surface water and groundwater. This flow path could introduce Site-related contaminants to residential wells along Strasburg Road:

- Groundwater flow off the landfill to the south and west may experience areas of convergent flow controlled by the local topography off-site, particularly to the immediate west and south-west where there are local valleys. With no local tributary in these valleys, groundwater will generally flow to and discharge directly into the West Branch Brandywine Creek. These flow paths could introduce Site-related contamination to residential wells located along Laurel Road.

- Groundwater to the east of the landfill flows towards the east and south-east following topography and will discharge into Briar Run. This component of flow generally would not be expected to continue beyond Briar Run in the natural hydrogeologic framework of the Site. However, the introduction of pumping influences from domestic well use along Wheatland Drive may introduce alternate flow paths that would underflow Briar

Run dependent upon the pressure gradients produced during pumping, and the interconnectedness of individual fractures. Well records accessed from the PA Groundwater Information System and the USGS National Water Information System indicate that residential wells in this neighborhood exist from as shallow as 80 feet below ground surface to as deep as 575 feet below ground surface, putting most if not all wells either close to or well below the elevation of Briar Run.

- Detected PFAS in Groundwater:

    - PFAS has been detected in all Site monitoring wells sampled, as well as in adjacent residential wells at varying concentrations. Review of monitoring well data and residential well data, along with assumed groundwater flow paths discussed above would indicate contamination from the landfill has impacted the surrounding residential wells.

    - Landfill leachate, monitoring wells, and residential wells generally have similar PFAS composition, and concentrations of PFAS decrease with distance from the landfill along the expected flow paths discussed above. Some variation may exist due to the heterogeneity of the landfill waste, unknown release points in the landfill, and potential impacts of long open hole wells and dilution effects in the residential well sampling.

Additional investigations will be conducted during the OU4 RI to determine the nature and extent of PFAS released from the landfill into groundwater.

6.0 Current and Potential Future Site and Resource Uses

Land use in the area surrounding the landfill is primarily suburban residential, with some residual agricultural areas. There are more than 300 single family residences within a one-mile radius of the Site. Future land use is anticipated to be consistent with the current land use.

The groundwater at the Site is designated as a Class IIA groundwater, a current drinking water source, using the Guidelines for Groundwater Classification under the EPA Groundwater Protection Strategy.

The Peters Creek schist, which is the primary aquifer medium at the Site, is a minor aquifer in the area. Most domestic wells supply adequate yields with well depths of less than 150 feet. Although described as a fairly good water-bearing horizon, well failures in the Peters Schist are common.

7.0 Summary of Site Risks

The EPA conducts baseline risk assessments to determine the current and future effects of contaminants on human health and the environment. The EPA also considers land uses near a site, as well as the current and reasonably anticipated future land use for the site itself. Land use in the vicinity of the Site is primarily suburban residential, with some residual agricultural areas.

As mentioned above there are more than 300 single family residences within a one-mile radius of the Site. The drinking water to these residences is primarily supplied from groundwater. Most of the homes are served by private residential wells. The Site itself has undergone remediation and land use controls including new drinking water well requirements that are in-place.

A baseline risk assessment was conducted in 1989 which did reveal a potential risk from exposure to Site-related contamination known at the time. The OU1 Remedial Actions undertaken by the EPA had effectively mitigated those risks. EPA's monitoring of these systems showed that they effectively reduced the previous known exposures to contaminated groundwater. The baseline risk assessments that were conducted as part of the RI did not include PFAS.

EPA guidance provides that Interim Remedial Actions do not require a completed baseline risk assessment, although enough information must be available to demonstrate the potential for risk and the need to take action.[5] In this Interim ROD Amendment, the EPA regards the exceedance of the 2024 Federal MCLs for PFOA and PFOS in drinking water at the 21 residences as evidence of potential risk to human health and the need to take action. A full and complete risk assessment for PFAS will be conducted as a component of the OU4 Remedial Investigation.

7.1 Ecological Risk Assessment

Ecological risks are not being addressed by this Interim ROD Amendment, as the interim Selected Remedy is intended to solely address human health risks from drinking water impacted by PFOA and PFOS. A final remedial action to address Site-related PFAS contamination in leachate and groundwater and the associated ecological risks will be evaluated as part of the OU4 RI/FS and addressed in a future decision document.

7.2 Basis for Remedial Action

[5] "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions" (1991), available at https://www.epa.gov/sites/default/files/2015-11/documents/baseline.pdf

The EPA regards the exceedance of the 2024 Federal MCLs for PFOA and PFOS in drinking water at the 21 residences as evidence of potential risk to human health and the need to take action. Therefore, the EPA has determined that the Interim Selected Remedy identified in this Interim ROD Amendment is necessary to protect the public health or welfare of the environment from actual or threatened releases of hazardous substances into the environment.

8.0 Remedial Action Objectives

Remedial Action Objectives (RAOs) are specific goals developed to address the Site-related COCs and exposure pathways to protect human health and/or the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered (TBC) guidance, and Site-specific risk-based levels.

The 1989 ROD for OU1 addressed leachate releases into surface water and groundwater near the landfill. The RAO established in the 1989 OU1 ROD was to reduce potential human health risks from ingestion, inhalation and dermal absorption of contaminated groundwater.

Because newly identified PFAS contamination has been documented at the Site, the EPA is adding PFOA and PFOS as additional Site-related COCs. Given the addition of PFOA and PFOS as Site-related COCs and their presence in private drinking water, the original RAO from the 1989 Selected Remedy remains in effect:

- Reduce potential human health risks from ingestion, inhalation and dermal absorption of contaminated groundwater.

9.0 Description of Alternatives

CERCLA requires that any remedy selected to address contamination at a site must be protective of human health and the environment, cost-effective, in compliance with promulgated standards or requirements that are determined to be ARARs (or justify a waiver), and not inconsistent with the NCP.

All alternatives aside from Alternative 1 were designed to meet the original RAO from the 1989 Selected Remedy described above. Detailed descriptions of the remedial alternatives for addressing the contamination associated with the Site can be found in the 2025 Remedial Alternatives Analysis (RAA) report prepared for the Site and included in the Administrative Record for the Site.

9.1 Remedial Alternatives

The following Remedial Alternatives were evaluated to determine their effectiveness in addressing residential drinking water contaminated with PFAS. While the EPA ultimately selected a modified version of alternative 3, as discussed further in Section 12.0 below, the alternatives are discussed in this Section 9 as they were presented in the Proposed Remedial Action Plan (PRAP):

- Alternative 1: No Action
- Alternative 2: (POETS), Institutional Controls (ICs), and Long-Term Monitoring (LTM)
- Alternative 3: Public Water Line and ICs

Alternative 1: No Action

Estimated Capital Cost: $0
Estimated Annual Operation and Maintenance (O&M) Cost: $0
Estimated Duration: N/A
Estimated Present Worth: $0
Consideration of this alternative is required by the NCP at 40 C.F.R. § 300.430(e)(6). Alternative 1 requires no additional Remedial Action to be taken at the Site. The "no action" alternative serves as a basis against which each of the other proposed remedial alternatives can be compared. Under this alternative, the Site would remain in its present condition, bottled water and filter pitchers would likely be discontinued, and current and future residents would remain exposed to Site-related groundwater contamination.

Alternative 2: POINT-OF-ENTRY TREATMENT SYSTEMS (POETS), ICs, and LTM

Estimated Capital Cost: $1,264,699
Estimated Annual Operation and Maintenance (O&M) Cost: $395,380 - $475,055 (dependent on POET changeout frequency)
Estimated Duration: 30 years
Estimated Present Worth: $6,051,772

The key components of this alternative would include the following:

- Design and installation of POETS
- Provision of temporary alternate water source to property owners before and during installation of POETs
- Implementation of POET connection
- Performance of pre- and post-sampling analysis of POETS
- O&M of POETS

Under this alternative, groundwater pumped from the affected, or potentially affected, privately owned wells would be treated before it reaches human receptors to meet the 2024 Federal MCLs for PFOA and PFOS through the use of POETS. It is estimated that up to a total of 37 POETS with a contingency for additional POETS based on additional sampling could be installed and/or maintained at affected, or potentially affected, private properties at the Site. In this instance, the EPA defines, private properties "potentially affected" as those private properties due to their proximity to the landfill that, if remedial action is not undertaken, the contamination could potentially reach unacceptable human health risk levels. Thus, the remedial action would prevent substantial threat of a release.

Additional privately owned well sampling will be conducted to determine whether any other privately owned wells are affected, or potentially affected, by PFAS. Prior to installation of the POETS, a temporary alternate source of water will be provided to reduce exposure to property owners whose wells are impacted by the Site.

The POETS would consist of an inline particulate filter for pre-filtering, dual in-series granular activated carbon (GAC) units for removing organic compounds, and an ultraviolet (UV) radiation unit for disinfection. To assess the effectiveness of the POETS, the systems' mid-treatment water would be routinely monitored. All POETS would be monitored quarterly the first year and on a semi-annual basis, thereafter. The sampling frequency after the first year will initially be performed on a semi-annual basis until EPA, in consultation with PADEP, determines that sampling can be performed less frequently.

This action would also include periodic replacement of carbon units, pre-filter cartridge replacement, as needed, and non-routine repairs of treatment units. If monitoring of the POETS indicates that the 2024 Federal MCLs are not able to be achieved by the current POETS, additional cost-effective treatment systems (e.g. Point-of-Use Systems, etc.) capable of addressing Site-related COCs in privately owned wells will be evaluated and selected in coordination with PADEP.

<u>Long-Term Monitoring</u>

- A long-term monitoring (LTM) program for privately owned wells that would receive POETS would be performed to evaluate the effectiveness of the POETS and to determine whether additional response actions are warranted. Additionally, private well water will be sampled prior to POET treatment. If the data indicates there are no exceedances of the 2024 Federal MCLs for PFOA and PFOS, then an evaluation will be conducted to determine if the use of POETS and continued long term monitoring is still warranted.
- Site conditions and associated risks would be reviewed every five years as part of the five-year review process because contaminants would be left in place.

Institutional Controls

- ICs would be implemented to prevent exposure to Site-related contaminants in groundwater by deterring the use of untreated groundwater at properties affected or potentially affected by the groundwater plumes and to restrict any impact on the Site remedy. In addition to the activity and use restrictions identified in the 2012 ESD, an additional activity and use restriction prohibiting potable use of untreated groundwater within the contaminated plume would be implemented. The nature and extent of the PFAS contaminant plume will be further defined as part of a remedial investigation.

- To implement this restriction, the EPA, in consultation with PADEP, could utilize a number of mechanisms, or layered mechanisms. The EPA, in consultation with PADEP, would work with the affected property owners, and, as necessary, with local government, to implement the above activity-and-use limitations, through proprietary controls (e.g., environmental covenants), governmental controls (e.g., local rules/regulations, zoning ordinances or building codes), enforcement instruments (e.g., Federal or State administrative orders), and/or informational devices (e.g., letters/fact sheets to the community or property owners, deed notices, the PA AUL Registry, community outreach, or advisories). For example, Chapter 500 of the Chester County Health Department Rules and Regulations, Section 501, contains certain restrictions on wells. These rules/regulations require persons to obtain a permit to install, maintain, or repair a water supply well; include water quality limits that must be met; restrict permitting of wells within delineated Plume Areas of contaminated sites unless approved by the EPA or PADEP; and require written documentation that the installation of a well will not have any impact on the plume or remediation effort as well as requirements for water source replacement and decommissioning of wells. ICs would be documented in the Institutional Control Implementation and Assurance Plan (ICIAP).

Alternative 3: PUBLIC WATER LINE AND ICs

Estimated Capital Cost: $11,587,588
Estimated Annual Operation and Maintenance (O&M) Cost: $0
Estimated Duration: 3 years
Estimated Present Worth: $10,136,498
The key components of this alternative would include the following:

- Design and construction of the water line
- Temporary provision of alternate water (bottled water and/or pitcher filters) to property owners during design and construction of the water line
- Performance of oversight of water line extension and connections

Under Alternative 3, all homes affected or potentially affected by the Site-related COCs would be offered the opportunity to connect to a newly constructed public water line. As mentioned above in Alternative 2, the EPA defines private properties “potentially affected” as those

private properties due to their proximity to the landfill that, if remedial action is not undertaken, the contamination could potentially reach unacceptable human health risk levels.

Thus, the remedial action would prevent the substantial threat of exposure related health risks. This alternative would prevent exposure to Site-related COCs by providing a permanent alternative water supply to properties currently using drinking water wells within the area of groundwater contamination. Prior to installation of the water line, alternate water (bottled water and/or pitcher filters) would be provided to reduce the risk to private property owners whose wells are affected by the Site.

The total number of private properties to be offered connections to the newly constructed water line would be determined during the design of the water line; however, the EPA assumed for cost estimate purposes, that approximately 40 private properties would be offered connections. It is estimated that approximately five private properties may not be able to be connected to the newly constructed water line due to engineering constraints (e.g., topography, distance from existing infrastructure, water pressure limitations, etc) that would inhibit the installation of a water line to certain residents. In the event that a water line is not possible for these private property owners, these properties would be addressed in a future decision document.

The EPA will pay for the lateral connection to the water line for the above-described properties; however, the monthly water bill, once the private property is connected, will be the responsibility of the homeowner. Lateral connections to the water line will only be offered to the affected or potentially affected private properties at the time of construction of the water line; connections will not be provided after the construction of the water line has been completed.

If a private property owner elects to be connected to the water line, existing drinking water wells would be completely disconnected from the drinking water system. The EPA would pay for disconnecting and decommissioning privately owned wells from the drinking water supply.

The EPA currently estimates that approximately four miles of water distribution lines would be installed to serve as the water main extension. Installation of the distribution lines would require excavation along the roadways. In addition, fire hydrants would be installed consistent with local requirements along the water supply line. Public water distribution lines would be installed at least 36 inches below ground surface to prevent freezing. The actual design of the water distribution system would require a careful engineering evaluation to determine actual water usage, friction losses, fire protection needs, the possible need for a booster station to increase water pressure in the distribution system, and the future growth of the service area.

The Aqua Pennsylvania Spring Run Division provides water service to about 8,150 residents in West Chester, Coatesville, and Downingtown, Chester County, PA. This Division of Aqua Pennsylvania would be providing water for private property owners under Alternative 3. Drinking water in the Aqua Pennsylvania system undergoes treatment at a water treatment

plant before being distributed to residents. The January 14, 2023, Pennsylvania PFAS MCL rule required that compliance monitoring for certain water systems begin on January 1, 2024. These systems included community and non-transient non-community water systems serving populations over 350 people, as well as bottled, vended, retail, and bulk hauling water systems. As required by the 2023 Pennsylvania PFAS Rule, initial monitoring for community and non-transient non-community water systems serving a population of less than or equal to 350 persons began on January 1, 2024. Per the NPDWR for six PFAS constituents, all public water systems, including the Aqua Pennsylvania system, have three years *(i.e.,* until 2027) to complete initial monitoring of the six PFAS for which the 2024 Federal MCLs were established and five years (*i.e.,* until 2029) to implement solutions to reduce the six PFAS to levels below their respective 2024 Federal MCLs in drinking water. Currently, Aqua Pennsylvania issues annual water quality reports on their website that include analytical data collected quarterly from their drinking water system.[6]

The EPA will continue to provide alternate water (bottled water and/or pitcher filters) until the residence is connected to the water line via a curb stop connection. Given public water systems have until 2029 to meet the 2024 Federal MCL for PFOA and PFOS, the EPA will give private property owners the following two options for when they can connect to the water line: 1) as soon as practicable after the water line and curb stop are installed or 2) as soon as practicable once the water authority is in compliance with the 2024 Federal MCLs for PFOA and PFOS. It is noted, however, that the water authority is currently in compliance with the 2024 Federal MCLs for PFOA and PFOS at the entry point EPA anticipates using for the water line connection.

Long-Term Monitoring

This alternative would not require a LTM program because the water line would be maintained by Aqua Pennsylvania in accordance with Pennsylvania's Safe Drinking Water Act and any applicable Public Utility Commission (PUC) regulations. Site conditions and associated risks would be reviewed every five years as part of the five-year review process because contaminants would be left in place. The exception to this is for any private property owners where a water line connection is not possible due to engineering constraints. In the event that a water line is not possible for these private property owners, these properties would be addressed in a future decision document.

Institutional Controls

This component is identical to the ICs described for Alternative 2.

[6] https://prod.aquawater.com/WaterQualityReports/2023/PA/PA1150089.pdf.

10.0 Comparative Analysis of Alternatives

The alternatives discussed above were compared to each other with the nine criteria set forth in 40 C.F.R. § 300.430(e)(9)(iii) of the NCP in order to select a remedy for the Site. These nine criteria are categorized according to three groups: threshold criteria; primary balancing criteria; and modifying criteria. These evaluation criteria relate directly to the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, which determine the overall feasibility and acceptability of the remedy.

Threshold criteria must be satisfied in order for a remedy to be eligible for selection. Primary balancing criteria are used to weigh major trade-offs among remedies. State and community acceptance are modifying criteria formally taken into consideration after public comment is received on the Proposed Plan. A summary of each of the criteria is presented below, followed by a summary of the relative performance of the alternatives with respect to each of the nine criteria. These summaries provide the basis for determining which alternative provides the "best balance" of trade-offs with respect to the nine criteria.

Evaluation Criteria for Superfund Remedial Alternatives
Threshold criteria: Must be satisfied in order for a remedy to be eligible for selection.
1. Overall Protection of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through ICs, engineering controls, or treatment.
2. Compliance with ARARs evaluates whether the alternative will meet all applicable or relevant and appropriate requirements (ARARs) of Federal and State environmental statutes, regulations, and other requirements that pertain to the site, and/or justifies a waiver.
Primary balancing criteria: Used to weigh major tradeoff between remedial alternatives.
3. Long-term Effectiveness and Permanence considers the expected residual risk and the ability of an alternative to maintain protection of human health and the environment over time.
4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates the anticipated performance of 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.
5. Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during the construction and implementation period, until the cleanup goals are achieved.

Evaluation Criteria for Superfund Remedial Alternatives
6. Implementability considers the technical and administrative feasibility of implementing an alternative, including the availability of goods and services needed to implement a particular option.
7. Cost includes estimated capital and annual operations and maintenance costs; compared as present worth cost.
Modifying criteria: Considered by EPA after public comment is received on the Proposed Plan.
8. State/ Support Agency Acceptance addresses whether the State concurs or has comments on the preferred alternative, as described in the Proposed Plan.
9. Community Acceptance considers whether the local community agrees with EPA's analysis of the preferred alternative, as described in the Proposed Plan.

10.1 Overall Protection of Human Health and the Environment

Alternative 1 (No Action) would not provide any protection of human health and the environment because the identified risks in private well water would not be addressed. This alternative would not achieve the RAO for OU1 as Site-related COCs would remain in drinking water. The No Action Alternative does not meet the Threshold Criteria of "Overall Protection of Human Health and the Environment." As a result, it is not an eligible alternative for selection and is eliminated from further consideration under the remaining criteria.

Alternative 2 would protect human health receptors by providing safe drinking water to affected private property owners through POETS and limiting exposure to contaminated groundwater through ICs. However, POETS can fail if not properly maintained and monitored and result in short-term exposure until maintenance is performed. The excess risk that would result from the use of untreated contaminated private well water would be reduced to acceptable levels by the POETS if they are properly maintained. Long-term monitoring would be conducted to assess the performance of the POETS and to monitor the contaminant concentrations in the private well water.

Alternative 3 would protect human health receptors by providing a permanent public water supply (with mandated monitoring requirements) to affected private property owners and limiting exposure to contaminated groundwater through ICs. Although both Alternatives 2 and 3 would provide drinking water that complies with drinking water standards, Alternative 3 would be more protective of human health because extension of the public water supply would permanently eliminate the potential use of Site-related contaminated groundwater as a drinking water source. ICs would be implemented to deter the use of untreated contaminated private well water for potable purposes.

10.2 Compliance with ARARs

Section 121(d) of CERCLA, 42 U.S.C. § 9621(d), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(B), require that Remedial Actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under Federal or State law, which are collectively referred to as "ARARs," unless such ARARs are waived under Section 121(d)(4) of CERCLA, 42 U.S.C. § 9621(d)(4), and the NCP at 40 C.F.R. § 300.430(f)(1)(ii)(C).

"Applicable" requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that specifically address a hazardous substance, pollutant, contaminant, Remedial Action, location, or other circumstance at a CERCLA site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be applicable.

"Relevant and appropriate" requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility-siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, Remedial Action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified by a State in a timely manner and that are more stringent than Federal requirements may be relevant and appropriate.

The EPA also considers to-be-considered materials (TBCs), along with ARARs. TBCs are non-promulgated criteria, advisories, or guidance, issued by Federal or State government that are not legally binding and do not have the status of potential ARARs. However, TBCs may be considered during development of remedial alternatives. The EPA may use TBCs in determining the necessary level of cleanup for protection of human health or the environment when ARARs do not exist for particular contaminants.

ARARs for Remedial Action alternatives can be classified into one of the following three functional groups:

- **Chemical-Specific:** Health-risk-based numerical values or methodologies that establish concentration or discharge limits for particular contaminants. Often, these ARARs are used to determine the extent of site remediation. In general, chemical-specific requirements are set for a single chemical or a closely related group of chemicals. Examples include MCLs, promulgated under the Safe Drinking Water Act (SDWA) and any more stringent PA MSCs.

- **Location-Specific:** Requirements that restrict Remedial Actions based on the characteristics of the Site or its immediate environment. Examples of these areas regulated under various

Federal laws include floodplains, wetlands, and locations where historically significant cultural resources are present.

- **Action-Specific:** Requirements that set controls or restrictions on the design, implementation, and performance levels (including discharge limits) of activities related to the management of hazardous substances, pollutants, or contaminants. These action-specific requirements do not in themselves determine the remedial alternative; rather, they indicate how a selected alternative must be achieved. An example of action-specific ARARs include the substantive requirements of the Resource Conservation and Recovery Act (RCRA) regulations for generation, characterization, and management of hazardous wastes.

A complete list of ARARs and TBCs for OU1 can be found in Appendix C. The major ARARs and TBCs identified therein include, but are not limited to:

- Maximum Contaminant Levels (MCLs), codified at 40 C.F.R. Part 141 and promulgated pursuant to the Safe Drinking Water Act, 42 U.S.C. §§ 300f, et seq. which establish health-based standards for certain organics and inorganics for public drinking water, to be used as performance standards for POETS.

For Alternative 2, chemical-specific ARARs for the drinking water of affected private property owners would be achieved via the POETS. Alternative 2 would also comply with all location-specific and action-specific ARARs specific to this limited action. Chemical-specific ARARs are not directly applicable to Alternative 3 because off-Site treatment of the drinking water supply would be conducted by Aqua Pennsylvania, but they are they are relevant and appropriate for the purpose of determining which residents will be offered connection to the newly constructed water line, and would be met by offering a water line connection to every residence at the Site that has, or may have, well water containing PFOA or PFOS above federal MCLs. Remedial activities for Alternative 3 would comply with location-specific and action-specific ARARs identified for this limited action.

10.3 Long Term Effectiveness and Permanence

Alternative 2 would provide long-term effectiveness via POETS and ICs. ICs would deter property owners from using untreated contaminated residential well water as a potable supply. The provision of POETS would reduce the risks resulting from the potable use of contaminated residential well water supplies. Long-term operation and maintenance required under Alternative 2 would include periodic servicing of the treatment units. LTM would effectively determine the status of residential well water and assess the performance of the POETS.

Alternative 3 would prevent continued exposure to Site-related contaminants in drinking water supplies. As mentioned above, ICs would deter property owners from using untreated

contaminated residential well water as a potable supply. Human exposure to contaminated groundwater in the residential water supply would be reduced through a public water supply.

The EPA will continue to provide alternate water until the connection via the curb stop is complete. Given public water systems have until 2029 to meet the 2024 Federal MCLs for PFOA and PFOS, private property owners will be given the following two options for connecting to the water line: 1) as soon as practicable after the water line and curb stop are installed or 2) as soon as practicable once the water authority is in compliance with the 2024 Federal MCLs for PFOA and PFOS.

Following implementation of the 2024 Federal MCL for PFOA and PFOS, the provision of a public water line would permanently eliminate exposure to Site-related groundwater contamination in residential well water. Additionally, the POETS provided under Alternative 2 are more susceptible to failure and could result in short-term exposure until maintenance is performed, making Alternative 3 more effective in the long-term.

10.4 Reduction of Toxicity, Mobility, or Volume through Treatment

None of the alternatives evaluated reduce toxicity, mobility, or volume through treatment processes. The reduction of toxicity, mobility, and volume of contaminated groundwater at the Site will be addressed in a future decision document.

10.5 Short-term Effectiveness

Implementation of Alternative 2 would not result in significant short-term impacts to the local community or the environment. Bottled water delivery services or water pitcher filter delivery can be used to provide alternative drinking water quickly to residents following scheduling and initial delivery. It may take up to approximately seven weeks to coordinate the installation of POETS in each residence as the service would require residents to be present and a capable and prepared service team to be available. However, the installation effort itself is expected to only take one day, and operation of the POETS should occur immediately following installation. No significant remediation or construction impacts would be realized other than measures taken at individual homes. Exposure of workers to COC concentrations during installations and subsequent O&M of POETS would be minimized by complying with Site-specific health and safety procedures.

Implementation of Alternative 3 would pose some short-term impacts to the local community, the remedial workers, and to the environment. Well abandonment and decommissioning could take a number of months to complete depending on the depth of the wells, site conditions, and the complexity of the work involved, with most of the time spent on properly sealing the wells and restoring the sites of the wells. It may take up to 1 to 3 years to construct a water line due to the complexity related to the design and engineering specifications.

During construction, the delivery of pipes, roadway excavation, and installation of the public water line would likely cause some hindrances to local vehicular traffic and some congestion. Establishment of proper construction traffic controls (e.g., flashing lights, signs, flags), as necessary, would minimize the chance of accidents. The greatest impact to the community, particularly nearby residents, would be noise, dust, and possible road closures. Construction would be restricted to reasonable hours, and dust would be controlled using controls such as dust suppression by wetting. Proper construction and industrial safety practices would be implemented during the construction of the public water line, and connections of the public water supply line to individual homes. Post construction activities would include well abandonment and decommissioning which could take a number of months to complete depending on the depths of the wells, site conditions, and the complexity of the work involved, with most of the time spent on properly sealing the wells and restoring the sites of the wells.

10.6 Implementability

Alternative 2 is readily implementable. The POETS can be readily obtained and installed, and qualified firms are available for this work. Common industrial techniques and equipment could be used for installation and O&M of these systems. Sampling and analysis of private well water would be easy to implement, with appropriate coordination with the property owner. All POETS installed would require regular maintenance residences until a final remedy is selected for OU1 (presumed to be 30 years for cost estimation).

Alternative 3 is also readily implementable. The water line and lateral water service connections could be installed using standard construction techniques and equipment. However, coordination with the water company, municipal/township authorities, other local agencies, and affected property owners would be needed to construct the water line and connect residences. Provision of alternate water (bottled water and/or pitcher filters) will continue until either 1) the curb stop is connected prior to the water authority's compliance with the 2024 Federal MCL for PFOA and PFOS effectively connecting to the public water main, or 2) the resident chooses to delay the curb stop connection until the water authority is in compliance with the 2024 Federal MCLs for PFOA and PFOS. As noted earlier, however, the water authority is currently in compliance with the 2024 Federal MCLs for PFOA and PFOS at the entry point EPA anticipates using for the water line connection. It is estimated that approximately five residences may not be able to be connected the water line due to engineering constraints that would inhibit the installation of a water line to certain residents. In the event that a water line is not possible for these private property owners, these properties would be addressed in a future decision document.

Overall, Alternative 2 would be implemented more quickly when compared to Alternative 3. Given the complexity and construction needed to install a water line, POETS could be in place within a quicker timeframe and the RAO would be achieved more quickly. That said, under Alternative 3, provision of alternate water (bottled water and/or pitcher filters) will be provided

until either 1) the curb stop is connected prior to the water authority's compliance with the 2024 Federal MCL for PFOA and PFOS effectively connecting to the public water main, or 2) the resident chooses to delay the curb stop connection until the water authority is in compliance with the 2024 Federal MCLs for PFOA and PFOS. For both Alternative 2 and Alternative 3, provision of alternate water (bottled water and/or pitcher filters) will be terminated once the connection via the curb stop is complete.

10.7 Cost

The estimated cost information for Alternatives 2 and 3, as summarized below, was developed using a 30-year period for purposes of comparison and assumes that 40 homes would be offered POETS or a connection to a water line. Capital costs were estimated for construction, work plan development, construction management, administration, and contingency. Annual O&M costs were also estimated. The present worth costs of each proposed alternative were determined as expressed in today's dollars. Total estimated costs, including capital and annual O&M costs, are presented below with an accuracy of -30% to +50%. See Appendix A of FFS for detailed Cost Estimates.

Estimated Costs of Alternatives 2 and 3

	Capital Costs	Annual O&M Costs	Present-Worth Cost
Alternative 2	$1,264,699	$395,380 – $475,055	$6,122.141
Alternative 3	$11,587,588	$0	$10,136,498

10.8 State Acceptance

PADEP concurred with Alternative 3 in a letter dated September 23, 2025 (Appendix A).

10.9 Community Acceptance

On March 25, 2025, pursuant to Section 113(k)(2)(B) of CERCLA, 42 U.S.C. § 9613(k)(2)(B), the EPA released the Interim Proposed Plan for a 30-day public comment period. The Interim Proposed Plan was based on documents contained in the Administrative Record File for the Site and set forth the EPA's preferred remedial alternative. The EPA held a public meeting on April 2, 2025, at the Newlin Township Public works to inform local officials, interested citizens, and other stakeholders about the EPA's proposed cleanup plan and the Superfund process, and provided for a 30-day public comment period and to receive comments on the Interim Proposed Plan. During the public comment period, the EPA accepted written comments via email and regular postal mail and responded to the comments in the Responsiveness Summary section, which is included as Part III of this Interim ROD Amendment. These community

participation activities meet the public participation requirements in CERCLA Section 117, 42 U.S.C. § 9617, and 40 C.F.R. § 300.430(f)(3) of the NCP.

11.0 Principal Threat Waste

The NCP, 40 C.F.R. § 300.430(a)(1)(iii)(A), establishes an expectation that the EPA will use treatment to address the principal threats posed by a site wherever practicable. 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, for example, to groundwater. Principal threat wastes are those source materials considered to be highly toxic or highly mobile, which would present a significant risk to human health or the environment should exposure occur.

While the Site-related PFAS contamination in residential drinking water is considered to be a risk to human health, it is not considered a source material nor Principal Threat Waste.

12.0 Selected Remedy

Following review and consideration of the information in the Administrative Record, the requirements of CERCLA and the NCP, and public comments, the EPA has selected ***Alternative 3 – Public Water Line and ICs*** as the Interim Selected Remedy to address Site related PFAS contamination in residential wells. The EPA's Interim Selected Remedy modifies the temporary alternative water supply component of Alternative 3 presented in the Interim Proposed Plan by providing a temporary alternative water supply to affected residences with POETS instead of bottled water or pitcher filters. This temporary provision of POETS while the water line is being constructed is now part of the Selected Remedy. The addition of temporary POETs to Alternative 3 is due to community input received during the public comment period and is a more protective measure to eliminate potential exposure pathways beyond ingestion via drinking water.

12.1 Summary of Rationale for Interim Selected Remedy

EPA's Interim Selected Remedy meets the threshold criteria for overall protection of human health and the environment. Based on the information currently available, the EPA has determined that the Interim Selected Remedy provides the best balance of advantages and disadvantages among the alternatives when evaluating them using the balancing criteria. EPA's Interim Selected Remedy for the Site satisfies the following statutory requirements of Section 121 of CERCLA, 42 U.S.C. § 9621, as applicable to the limited scope of this interim Selected Remedy:

1) be protective of human health and the environment;
2) comply with ARARs;
3) be cost-effective;
4) provide short- and long-term reduction of risk;
5) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and
6) satisfy the preference for treatment as a principal element.

The Interim Selected Remedy (***Alternative 3 – Public Water line and ICs***) will meet the following RAOs:

- Reduce potential human health risks from ingestion, inhalation, and dermal absorption of contaminated groundwater.

The Interim Selected Remedy is readily implementable.

12.2 Description of the Interim Selected Remedy

Remedy Components of the Interim Selected Remedy

- Provision of a temporary alternative water supply via POETS
- Public Water line
    - Planning and Design Phase
    - Installation of physical components
    - Decommissioning and abandoning of residential wells
    - Oversight of water line installation
- Implementation of ICs

Design Considerations of the Interim Selected Remedy

Water line Installation:

During the design phase of installing the public water line, route selection is critical in order to minimize disruption to existing roads, utilities, and residences while avoiding known contamination zones and securing rights-of-way easements. The EPA is taking into consideration that there may be some homes that due to engineering constraints, may not be able to connect to the public water line. In the event that a water line is not possible for these private property owners, these properties would be addressed in a future decision document.

Pipe sizing and material choice will depend on the projected water demand, system pressure requirements, and site-specific conditions like soil corrosivity. Common materials include

ductile iron, PVC, or High Density Poly Ethene (HDPE), each will be evaluated for their durability, compatibility with water quality standards, and resistance to contamination.

Hydraulic considerations will be essential to maintain adequate and consistent water pressure across the system. In areas with significant elevation changes, the need for a booster station will be evaluated. Fire protection needs will be factored into the design which will include hydrant placement and ensuring pipe diameters support emergency water flow rates.

Design and construction activities must comply with relevant environmental regulations, which will require formal reviews and permitting at local, state, or federal levels.

12.3 Cost Estimate for the Interim Selected Remedy

The estimated present worth cost is $10,136,498. Appendix C includes details of the estimated costs to construct and implement the Interim Selected Remedy. The information in this cost estimate is based upon the best available information regarding the anticipated scope of the Interim Remedial Action.

Changes to the cost estimates may occur during implementation as a result of new information and data collected during the engineering design of the Interim Selected Remedy. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost. Major changes to the Interim Selected Remedy including significant changes in cost may be documented in the form of a memorandum to the Administrative Record File, an ESD, or a ROD Amendment, as appropriate.

12.4 Expected Outcomes of the Interim Selected Remedy

Implementation of the Interim Selected Remedy is expected to eliminate exposure to Site-related PFAS in residential drinking water, through the provision of POETS in the short-term and design and installation of a public water line in the long-term. The public water line will provide drinking water to residents that complies with relevant state and federal drinking water standards and would permanently reduce exposure to Site-related contaminated groundwater as a drinking source. The estimated timeframe to reach the RAO for the Interim Selected Remedy is approximately 2 to 3 months in the short-term (POETS) and more permanently in 4 years once the water line is fully constructed and the water authority is in compliance with the Federal MCLs.

13.0 Statutory Determinations

This Interim Selected Remedy protects human health and the environment in the short term, and is intended to provide adequate protection until a future final ROD addresses groundwater at the Site; complies with those federal and state requirements that are applicable or relevant

and appropriate for this limited-scope action (Appendix C); and is cost-effective. This interim Selected Remedy is an interim solution only and is not intended to utilize permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable with respect to the source of contamination. Site-wide PFAS contaminated groundwater will be addressed in OU4. Because this Interim Selected Remedy does not constitute the final remedy for OU1, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element will be addressed by the final response action. Subsequent actions may be planned to address fully the threats posed by conditions at the Site.

13.1 Protection of Human Health and the Environment

Based on the information currently available, the EPA has determined that the Interim Selected Remedy is protective of human health and the environment as it would protect human health receptors by providing safe drinking water to affected residents and limiting exposure to contaminated groundwater through ICs. The Interim Selected Remedy will permanently reduce the potential use of Site-related contaminated groundwater as a drinking water source. ICs will be implemented to deter the use of untreated contaminated residential well water for potable purposes.

13.2 Compliance with Applicable or Relevant and Appropriate Requirements

The NCP, 40 C.F.R. §§ 300.430(f)(5)(ii)(B) and (C), requires that a ROD describe Federal and State ARARs that the remedial action will attain or provide a justification for any waivers. Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental of facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site.

The Interim Selected Remedy will comply with the ARARS listed in Appendix C.

13.3 Cost Effectiveness

The Interim Selected Remedy is cost-effective in providing overall protection of human health and the environment by limiting the risk posed by Site-related contaminants and meets all other requirements of CERCLA and the NCP at a cost that is proportional to the other alternatives that were evaluated. Further, the Interim Selected Remedy is readily implementable and provides a high degree of both short- and long-term effectiveness. The estimated present worth cost of the Interim Selected Remedy is $10,136,498.

13.4 Utilization of Permanent Solutions to the Maximum Extent Practicable

The goal of this Interim Selected Remedy is to permanently eliminate residential exposure to Site-related PFAS contamination. This will be done through shorter-term (POETS) and longer-term (water line) actions. A future ROD will consider actions taken to address the restoration of groundwater.

13.5 Five-Year Review Requirements

When hazardous substances remain on-site above levels that allow for unlimited use and unlimited exposure, a statutory review is conducted no less often than every five years to ensure that the Selected Remedy is, or will be, protective of human health and the environment pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and 40 C.F.R. § 300.430(f)(4)(ii) of the NCP. The first Five-Year Review was completed for the Site in 1994. Subsequent Five-Year Reviews have been conducted every five years thereafter. The most recent FYR was finalized in April 2025 and the next FYR is scheduled for completion by April 13, 2030.

14.0 Documentation of Significant Changes

The Proposed Plan was released for public comment on March 25, 2025. The EPA has reviewed all comments submitted during the public comment period. Interested persons in the community had concerns about the component of the EPA‘s preferred alternative providing temporary alternate drinking water via bottled water and/or pitcher filters until the public water line provides water that meets the 2024 Federal MCLs. Based on community input, the EPA is modifying this component of Alternative 3 to provide temporary alternative drinking water via POETS at impacted or potentially impacted privately owned residences instead of bottled water and/or water pitchers.

Installation of POETS to be used at 40 private properties over a four-year period until completion of installation of the water line is estimated to cost an additional $670,000 beyond what was presented in the Proposed Plan for the Preferred Alternative.

Additionally, the original RAO from the 1989 Selected Remedy is to reduce potential human health risks from ingestion, inhalation and dermal absorption of contaminated groundwater. The potential exposure to PFAS from these pathways is sufficient to warrant temporary POETS during construction of the public water line.

15.0 State Role

PADEP concurred with the Interim Selected Remedy in a letter dated September 23, 2025 (Appendix A).

III. RESPONSIVENESS SUMMARY
STRASBURG LANDFILL SUPERFUND SITE
CHESTER COUNTY, PENNSYLVANIA

Introduction

This Responsiveness Summary provides a summary of significant public comments and concerns regarding the Proposed Plan for the Strasburg Landfill Superfund Site (the Site) and provides the U.S. Environmental Protection Agency's (EPA) responses to those comments. After reviewing and considering all public comments received during the public comment period, the EPA has selected **Alternative 3 – Public Water line and ICs** as the remedy to address the contamination found in privately owned drinking water wells.

The Proposed Plan and supporting documentation were made available to the public in the Administrative Record at www.epa.gov/superfund/strasburg. EPA provided notice to the public that the Administrative Record could be viewed at the following locations:

Kennett Square Library
320 East State Street
Kennett Square, PA 19348

U.S. EPA Region 3
Administrative Records Room
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103

The EPA issued a public notice in the Daily Local News, a local newspaper on March 25, 2025, which contained a list of the components of the EPA's preferred alternative, information relevant to the duration of the public comment period, the date of the public meeting, and the availability of the Proposed Plan and the entire Administrative Record. The 30-day public comment period opened on March 25, 2025, and closed on April 24, 2025.

The EPA conducted a public meeting in Newlin Township, Pennsylvania to inform local officials, interested citizens, and other stakeholders in attendance about EPA's proposed cleanup plan and the Superfund process, to respond to questions and to receive comments on the Proposed Plan. The public meeting was held by the EPA on April 2, 2025, at the Newlin Township Public Works building, located at 1751 Embreeville Road, Coatesville, Pennsylvania. Responses to the comments received at the public meeting and during the public comment period are included in the Responsiveness Summary.

This Responsiveness Summary provides a comprehensive summary of the significant questions, comments, concerns, and responses by summarizing oral and written comments received during the public comment period and EPA's responses. Section 1 contains a summary of the comments received during the public comment period from the general public. Section 2 contains a summary of comments received during the public meeting. Section 3 contains

comments received from the Newlin Township Board of Supervisors. The EPA responses are provided to each comment in Sections 1 through 3. Section 4 contains letters received from Congressional Representative Chrissy Houlahan and State Representative Christina D. Sappey as well as EPA's response letters to the Congressional and State representatives.

Section 1: Comments Received During Public Comment Period

Comment 1: Commenters stated that they were concerned that they would have to rely on bottled water and/or pitcher filters for four to five years while the water line is being designed and installed. They requested that POETS be provided to residents as a short-term measure to address the contamination in their drinking water.

EPA Response: The EPA has modified the temporary alternative drinking water supply component in the Interim Selected Remedy for OU1 from bottled water and/or water pitchers to POETS in response to public feedback.

Comment 2: Commenters stated that they had concerns about the noise, traffic, and disturbances to land and wildlife that could occur during the construction of the water line in addition to concerns about costs that will be incurred by property owners that would be connected to the water line.

EPA Response: The EPA understands the concerns with respect to the temporary disruption (e.g. noise, traffic, road closures, etc...) that the installation of a public water line can cause to property owners. A traffic control plan will be developed and shared with the community; residents will be notified of any road closures in advance of closing and detour routes will be posted; construction will be done during working hours; noise will be kept to a minimum, and equipment will not idle for extended periods. Residents will not be responsible for paying any connection fees to the water line but will be responsible for the monthly water bill if eligible for connection and they choose to connect.

Comment 3: Commenters questioned whether EPA will continue to test residential drinking water up until the water line is installed and, if there is no more testing, would EPA choose the provision of POETS until the water line is completed.

EPA Response: Please see the EPA's response to Section 1, Comment 1. The EPA will be providing these temporary POETS to private property owners that affected or "potentially affected" by PFOA and/or PFOS contaminated drinking water from the landfill. EPA defines "potentially affected" as those private properties proximal to the landfill that, if remedial action is not undertaken, the contamination cold reach potentially unacceptable human health risk levels. Depending on the location of your home, you may qualify as a potentially affected property, and in this case you would be eligible to receive a POET and ultimately connection to the water line. With respect to ongoing sampling, the EPA is beginning a Remedial Investigation that will focus on evaluating the extent of Site-related PFAS in groundwater. This evaluation will

help to determine if it is warranted to sample residential wells that are not in the current sampling network.

Section 2: Comments Received During Public Meeting

Comment 1: Commenters requested confirmation that the proposed remedy would connect residents to the public water supply. In addition, is the groundwater safe to drink at this time.

EPA Response: The Interim Selected Remedy would connect residents to the public water supply. Public water authorities need to continue to comply with all applicable laws, including state and federal drinking water standards. The 2024 Aqua PA Spring Run Consumer Confidence Report (CCR) can be found here: Aqua Pennsylvania, Inc.

Comment 2: A commenter asked if the PFAS in groundwater are in excess of the specifications in the public water supply.

EPA Response: PFOA and PFOS are just exceeding the Maximum Contaminant Level (MCL). The public utilities have until 2029 to come into compliance with the MCLs. For this Interim Selected Remedy, a curb stop is being offered so that if public water is not in compliance with the MCL, the water to the home can be stopped.

Comment 3: A commenter stated that the remedy being proposed is not sufficient, as it will take 1-3 years to get connected, and that the public water utility has another year after that to be compliant. The commenter stated that POETS should be part of the immediate solution. In addition, the commenter expressed concern that they will need to pay a water bill after connecting to the public water line, as well as wastewater charges.

EPA Response: Please see EPA's response to Section 1, Comment 1. Under Superfund, EPA is authorized to install and connect residences to the public water line. Once EPA has completed the installation and connection, each resident will be responsible for paying the bill from public water utility.

Comment 4: A commenter asked whether the State and water companies were getting millions of dollars in funding to remedy the issues with the water, and if that is the case, why that money can't be used for the POETS remedy, which is faster.

EPA Response: On an annual basis, Superfund sites across the country that are ready for Remedial Action are evaluated and prioritized according to risk. While the future budget to fund Remedial Actions is unknown, because a potable water supply is impacted at Strasburg Landfill this Site will be a national priority to fund. POETs will be a short-term component of the Selected Remedy to ensure that residents are not exposed to site-related PFAS contamination in groundwater. And although it is faster to implement a POETS remedy, POETS require monitoring and routine maintenance to ensure effectiveness, so a public water supply is a more permanently effective long-term alternative compared to POETS.

Comment 5: A commenter asked whether the EPA is putting in a water line or a sewage system, and if it was only a water line, would that alleviate any issues or concerns as far as sewage is concerned (which is not a second cost). The commenter also asked EPA to identify the properties where it will not be possible to put in the water line, stating that since the EPA has spoken with property owners regarding easements, they know where they will be running the line. The commenter also inquired about whether it will be possible to install the water line in areas where the elevation is greater. In addition, the commenter expressed concern regarding traffic disruptions during the construction of the water line.

EPA Response: EPA will be installing a water line only and will not be installing a sewage system. EPA assumes that all properties will be able to connect to a public water line but a contingency is included as part of the remedy in case there are engineering constraints preventing certain properties from being able to connect. Elevation and the ability to pump into an area with a higher elevation could be a factor that limits extension of a water line to some homes. Further evaluation will be conducted during the Remedial Design phase of the remedy and EPA will have more information at that time as to whether certain properties may be limited in being able to connect to a water line. Once the Remedial Design is complete, there will be additional communications to inform the public of what to expect next. A traffic control plan will be developed in advance of construction of the water line and that plan will be communicated to the public to ensure transparency and minimize disruption.

Comment 6: A commenter asked what happens to the POETS after 30 years, and who would pay for their upkeep and maintenance. A commenter also noted that this will need to be disclosed when selling their home and that it may make the house very hard to sell.

Additionally, the commenter asked who would be installing the water line, and specifically wanted to know if any member of the Township Board would make money from the installation of the water line.

EPA Response: This temporary provision of POETS while the water line is being constructed is now part of the Selected Remedy. The addition of temporary POETS to Alternative 3 is due to community input received during the public comment period and is a more protective measure to eliminate potential exposure pathways beyond ingestion via drinking water. For affected homes that choose not to connect to the water line, the property owners will be responsible for maintaining the POETS after the construction of the water line has been completed. With respect to the contracting process, the work will be performed by qualified environmental contactors who have been selected through a rigorous procurement process in accordance with the federal acquisition regulations (FAR) and will be based on qualification and technical merit, not local influence.

Comment 7: A commenter asked if wells on Ridings Way have been tested.

EPA Response: Residential wells on Ridings Way have been tested.

Comment 8: A commenter asked if there were assurances that when EPA is ready to take action on the project, that funds will be available to execute the selected remedy.

EPA Response: Please see response to Section 2, Comment 4.

Comment 9: A commenter stated that due to the length of time until the water line can be installed, they ended up installing a full house filtration system. They are concerned that once the water line is installed that they will be required to cap their well and will lose the money that they spent to install the filtration system. The commenter asked if they could continue using their well water and connect to the public water line. The commenter also inquired about whether they could choose to connect to the public water line at a later date. Finally, the commenter asked who determines whether the resident can use a hybrid system?

EPA Response: If a homeowner is offered a connection, it will be their choice as to whether they connect to the public water line or not. In this instance, the homeowner could choose to not connect and maintain their own filtration system, but that will be at their expense. It may not be possible to have two sources of water coming into a house. See Comment 15 below. If the resident chooses to connect to the water line at a later date, it would be at the cost of the resident. However, EPA stated that this will be determined during the design phase, and that they will continue to research whether a resident can connect to the curb stop at a future date. EPA stated that it is likely that the water authority determines whether the resident can use a hybrid system.

Comment 11: A commenter stated during the public meeting that they own a building lot and that they have a business in agriculture. They expressed concern regarding the expense of watering crops. The commenter also inquired about whether any wildlife studies would be completed, as people in the area still hunt and consume the animals.

EPA Response: If this building lot is ultimately connected to public water, the business owner would be responsible for monthly water bills. The Interim Selected Remedy addresses residential drinking water. Ecological risk will be addressed in a future remedy for OU4. At that time, there will be an ecological risk assessment completed to determine the contaminant levels that impact wildlife.

Comment 12: A commenter asked about the design of the POETS. The commenter responded that they wanted to know the actual design of the system and whether the system would be validated. The commenter also asked about the process should a POETS be faulty.

EPA Response: The specific design of the POETS is not available at this time, but for cost-estimating purposes it is assumed that the system will be composed of two activated carbon tanks that will remove PFAS contamination. The Remedial Design will follow the ROD and Site-specific cost estimates will be obtained at that time. Once the POETs are installed, EPA would conduct consistent testing to ensure they are effectively removing PFAS contamination from drinking water. Typically, these systems have multiple ports from which samples can be obtained; generally, there is a port to obtain a water sample before the water has gone through the system and been treated and a port to obtain a water sample after the water has gone through the system and been treated. This allows for determination of the system's effectiveness (ie. how much PFAS contamination is actually being removed by the system) to ensure protectiveness. If the resident identifies any concerns with respect to the POETs they can contact EPA to address potential issues.

Comment 13: A commenter asked if the public water line is installed, then it is up to the public water authority (e.g., the water authority installs the pipe, EPA pays for the pipes, and the water authority handles them). EPA does not have any more involvement. However, if the POETS is selected, EPA will remain active for the next 30 years.

EPA Response: Regardless of the Selected Remedy, EPA will remain involved at the Strasburg Landfill Superfund Site, as EPA is the lead agency and additional work will be conducted at the Site. That said, it is correct that the water line does not include an Operation and Maintenance component since residents will be connected to a public water line

Comment 14: A commenter asked about the safety of giving a child a bath. The local commenter also stated that they believe that the POET system should be installed now, and asked when they could install a POET system as a short-term measure until the public water line is installed.

EPA Response: As stated in response to Section 1, Comment 1, EPA has modified the temporary alternative drinking water supply component in the Interim Selected Remedy for OU1 from bottled water and/or water pitchers to POETS in response to public feedback. While ingestion is the primary concern related to PFAS, the provision of POETS will eliminate any potential risk of other exposure pathways as well. You can learn how to limit your exposure to PFAS to help protect your health by visiting EPA's website: Meaningful and Achievable Steps You Can Take to Reduce Your Risk | US EPA.

Comment 15: A commenter, also a contractor and member of the Board of Supervisors, stated that the public water authority will not connect water to a house without turning off a resident's well, as the public water authority does not want contaminated water from the well to enter the public water system. There is not a possibility where the resident can switch back

and forth from public water to well water for potable use. Well water could still be used for irrigation. The commenter also stated that the cost of homeowner's insurance could possibly be reduced with the connection to public water due to fire protection.

The commenter stated that for them, and they believe most residents of the township, the most beneficial outcome would be to have POETS installed immediately, and then install the public water line as soon as possible.

EPA Response: EPA thanks the commenter for that comment.

Comment 16: A commenter asked if anyone downgradient from the landfill that is outside the testing area could run their own tests and ultimately become eligible for the proposed solution.

EPA Response: If additional data suggests that the residential well sampling should be expanded, EPA will conduct the investigation. If PFAS are detected in residential wells at concentrations exceeding respective MCLs, EPA would only have the authority to take action if the contamination is connected to the Site.

Comment 17: A commenter asked about who is liable for the contamination. They stated that there could be potential medical conditions in the future, as well as lower property values.

EPA Response: EPA stated that it is difficult to attribute health impacts to a Site. Genetics, health histories, and different exposures make it difficult to associate environmental contamination with particular health outcomes. At this time, the information regarding potentially responsible parties is not available.

Section 3: Comments from the Newlin Township Board of Supervisors

Comment: EPA received written comments from the Newlin Township Board of Supervisors urging EPA to consider a hybrid alternative consisting of the following components:

1. Complete all POETS installation – for temporary operations- at the earliest practicable date.
2. Complete all public water connections no later than the date of Aqua's anticipated compliance with EPA's PFAS standards.
3. Public water supply to commence, and POETS to be deactivated, upon later of (x) the completion of the public water connections or (y) actual PFAS compliance.

Newlin Townships request for EPA's consideration of a hybrid alternative was endorsed in subsequent written comments from United States Representative Chrissy Houlahan and Pennsylvania Representative Christina D. Sappey (Section 4).

EPA Response: As discussed in Section 14.0 above, based on community feedback, the EPA is modifying this component of Alternative 3 to provide temporary alternative drinking water via POETS at impacted or potentially impacted privately owned residences instead of bottled water and/or water pitchers. EPA intends to address the Remedial Design and subsequent Remedial Action of the water line construction and connection as efficiently as practicable. . The present goal is completion of the construction of the water line by 2029.

Section 4: **Letters from Representative Chrissy Houlahan and Representative Christina Sappey, and EPA's responses to Representative letters.**

CHRISSY HOULAHAN
6TH DISTRICT OF PENNSYLVANIA

1727 LONGWORTH BUILDING
WASHINGTON, DC 20515

201 PENN STREET
SUITE 201
READING, PA 19601

709 E. GAY STREET
SUITE 4
WEST CHESTER, PA 19380

Congress of the United States
House of Representatives
Washington, DC 20515

COMMITTEE ON ARMED SERVICES

PERMANENT SELECT COMMITTEE ON INTELLIGENCE

April 24, 2025

Mr. David Greaves
Remedial Project Manager
U.S. EPA Region 3
1600 John F., Kennedy Boulevard
Philadelphia, PA 19103

Re: Strasburg Landfill Superfund Site

Dear Mr. Greaves,

I write to express my concern for the affected residents of the Strasburg Landfill Superfund site in my community and respectfully request full and fair consideration of the Hybrid Alternative proposal submitted by the Newlin Township Board of Supervisors regarding the Environmental Protection Agency's (EPA) Proposed Remedial Action Plan.

The Township's Hybrid Alternative proposal requests promptly installing Point-of-Entry Treatment Systems for temporary operation and near-term access to clean and reliable water while advancing public water connections for long-term safety. The hybrid proposal lays out a plan to lessen the community's dependence on bottled water and provide readily available household access to safe, clean drinking and bathing water in a reasonable timeframe, compared to the 2028-2029 timeframe laid out in the EPA's proposed plan. According to the Township, the total cost of the hybrid plan is estimated to be approximately $2.6 million less than what the EPA was prepared to spend on its public water alternative (Alternative 3). I believe this represents a practical, cost-effective, and safe approach.

I urge EPA to act with urgency, accelerate its implementation timeline, and provide full and fair consideration to the Township's proposal as you issue and finalize the Record of Decision. Thank you for your continued attention to this important matter and your work to ensure safe and clean water for my constituents.

Sincerely,

Chrissy Houlahan
Member of Congress

CHRISTINA D. SAPPEY, MEMBER
158TH LEGISLATIVE DISTRICT
SOUTHEAST DELEGATION, VICE CHAIR

CAPITOL OFFICE:
112 IRVIS OFFICE BUILDING
P.O. BOX 202158
HARRISBURG, PENNSYLVANIA 17120-2158
(717) 772-9973
FAX: (717) 772-3072

DISTRICT OFFICE:
698 UNIONVILLE ROAD
KENNETT SQUARE, PENNSYLVANIA 19348
(484) 200-8264

House of Representatives
COMMONWEALTH OF PENNSYLVANIA
HARRISBURG

COMMITTEES
AGRICULTURE & RURAL AFFAIRS
INSURANCE
LOCAL GOVERNMENT
TRANSPORTATION
VETERAN AFFAIRS & EMERGENCY PREPAREDNESS

COMMISSION
LOCAL GOVERNMENT

April 22, 2025

David Greaves
Remedial Project Manager
Four Penn Center
1600 John F. Kennedy Boulevard
Philadelphia, PA 19103

RE: Strasburg Landfill Superfund Site | PFAS contamination – Hybrid Alternative

Dear Mr. Greaves,

I am writing in support of Newlin Township's Alternative Proposal regarding the EPA's Proposed Remedial Action Plan for the Strasburg Landfill Superfund Site. This proposal would ensure that dozens of families and residents in Newlin Township would have access to reliable, clean drinking and bathing water in a reasonable time frame and lessen their dependence on bottled water.

During the Public Meeting on April 2, 2025, your team reviewed possible solutions to address public exposure to per- and polyfluoroalkyl substances in approximately 40 impacted drinking water wells. At that meeting, you identified Alternative 3 – "Public Waterline and Institutional Controls" – as the Preferred Alternative, and estimated that the connections to a public water supply could be completed in the summer of 2028. You identified the waterline would likely be serviced by Aqua Pennsylvania, which is not currently in compliance with the EPA's PFAS standards and has until April 2029 to come into compliance. This proposed plan conceives that affected residences would continue to receive filter pitchers/ bottled water until completion of public water connections or Aqua's PFAS compliance.

I am urging the EPA to issue a new Record of Decision that selects Newlin Township's Hybrid Alternative. This alternative consists of the EPA installing POET Systems for temporary operation, completing all public water connections no later than Aqua's anticipated EPA PFAS compliance date, and deactivating POETS upon the earlier of public water connection completion or Aqua's PFAS compliance. The alternative also requests an accelerated implementation timetable, as waiting one to four more years to access uncontaminated water is not a feasible way of life for these residents. Ensuring safe and clean household water is a fundamental right for these impacted residents.

Thank you for this opportunity for the public to express concern. If you need additional information, please do not hesitate to contact me.

Sincerely,

Christina D. Sappey

Christina D. Sappey
PA State Representative
158th Legislative District

REGION 3 ADMINISTRATOR
PHILADELPHIA, PA 19103

June 4, 2025

The Honorable Chrissy Houlahan
Member, U.S. House of Representatives
Washington, D.C. 20515

Dear Representative Houlahan:

Thank you for your April 22, 2025 letter to the U.S. Environmental Protection Agency (EPA) in support of the residents of Newlin Township with respect to the Strasburg Landfill Superfund Site and the Alternatives under consideration. The EPA is currently drafting the Interim Record of Decision, which will select a remedy to eliminate the exposure of site-related PFAS in residential drinking water. The EPA agrees that it would be best to select an alternative that will both eliminate exposure to PFAS as quickly as possible and also serve as a long-term solution to protect human health. The EPA is evaluating a combination of the alternatives presented in the Proposed Plan to ensure elimination of current exposures in drinking water until the water line is in place.

Additionally, Strasburg Landfill Superfund Site has been identified as a high priority site due to impacts to residential drinking water. Following issuance of the Interim Record of Decision, the EPA will complete the remedial design and make preparations for construction. While construction of the remedy is contingent upon funding amounts to be determined by the next fiscal year budget, the EPA will do everything we can to promote the importance of this work to achieve long-term protection of human health.

If you have any questions, please do not hesitate to contact me, or have your staff contact Paul Leonard, Director, Superfund and Emergency Management Division, Four Penn Center, 1600 John F. Kennedy Boulevard, Philadelphia, Pennsylvania 19103 at 215-814-3350 or leonard.paul@epa.gov.

Sincerely,

AMY VAN BLARCOM-LACKEY
Digitally signed by AMY VAN BLARCOM-LACKEY
Date: 2025.06.04 17:01:34 -04'00'

Amy Van Blarcom-Lackey
Regional Administrator

REGION 3 ADMINISTRATOR
PHILADELPHIA, PA 19103

June 4, 2025

The Honorable Christina D. Sappey
Pennsylvania State Representative
112 Irvis Office Building
P.O. Box 202158
Harrisburg, Pennsylvania 17120-2158

Dear Representative Sappey:

Thank you for your April 22, 2025 letter to the U.S. Environmental Protection Agency (EPA) in support of the residents of Newlin Township with respect to the Strasburg Landfill Superfund Site and the Alternatives under consideration. The EPA is currently drafting the Interim Record of Decision, which will select a remedy to eliminate the exposure of site-related PFAS in residential drinking water. The EPA agrees that it would be best to select an alternative that will both eliminate exposure to PFAS as quickly as possible and also serve as a long-term solution to protect human health. The EPA is evaluating a combination of the alternatives presented in the Proposed Plan to ensure elimination of current exposures in drinking water until the water line is in place.

Additionally, Strasburg Landfill Superfund Site has been identified as a high priority site due to impacts to residential drinking water. Following issuance of the Interim Record of Decision, the EPA will complete the remedial design and make preparations for construction. While construction of the remedy is contingent upon funding amounts to be determined by the next fiscal year budget, the EPA will do everything we can to promote the importance of this work to achieve long-term protection of human health.

If you have any questions, please do not hesitate to contact me, or have your staff contact Paul Leonard, Director, Superfund and Emergency Management Division, Four Penn Center, 1600 John F. Kennedy Boulevard, Philadelphia, Pennsylvania 19103 at 215-814-3350 or leonard.paul@epa.gov.

Sincerely,

AMY VAN BLARCOM-LACKEY
Digitally signed by AMY VAN BLARCOM-LACKEY
Date: 2025.06.04 17:00:46 -04'00'

Amy Van Blarcom-Lackey
Regional Administrator

FIGURES

FIGURE 1

SITE MAP

FIGURE 2

JANUARY 2024 SAMPLING EVENT

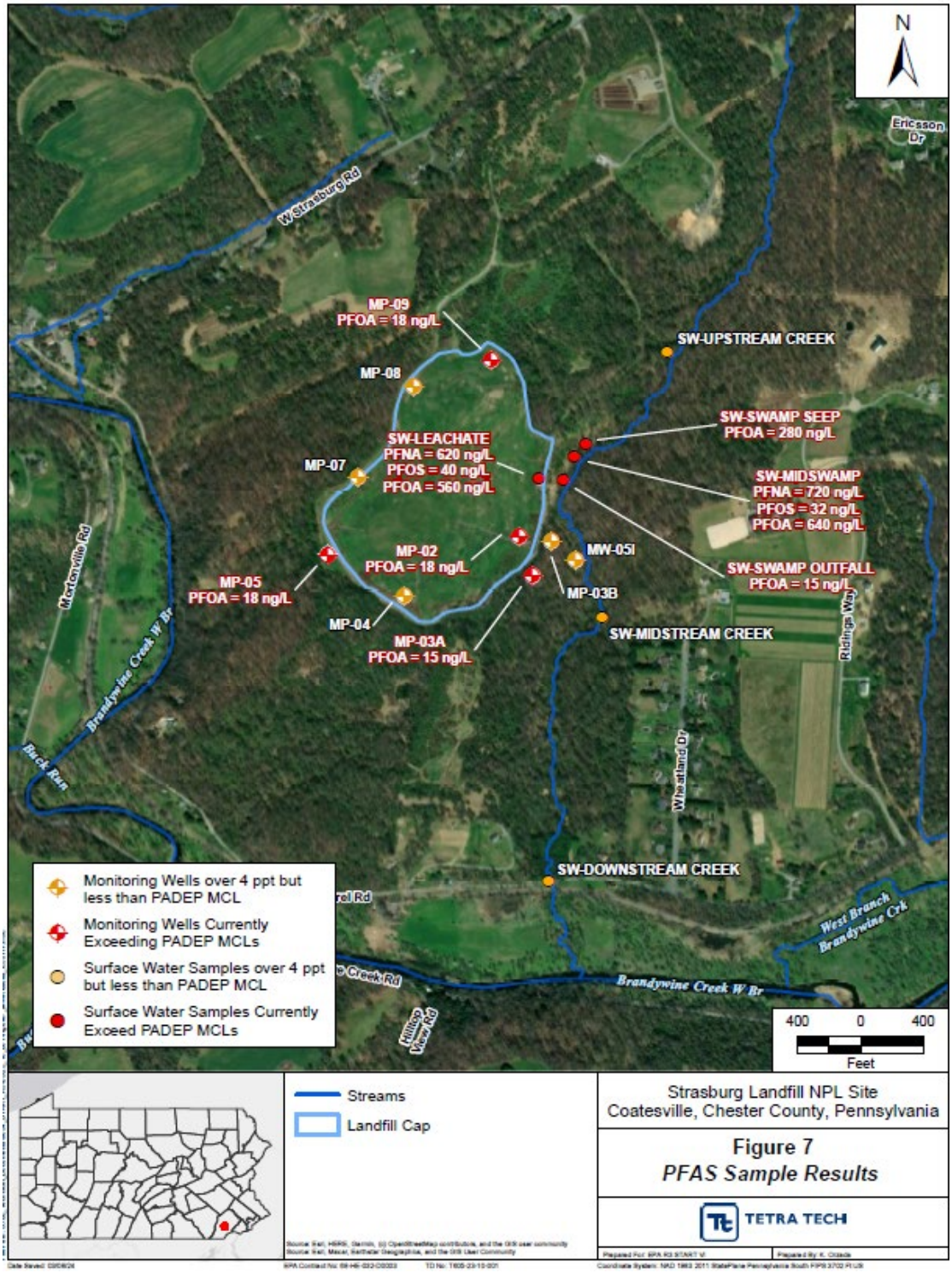
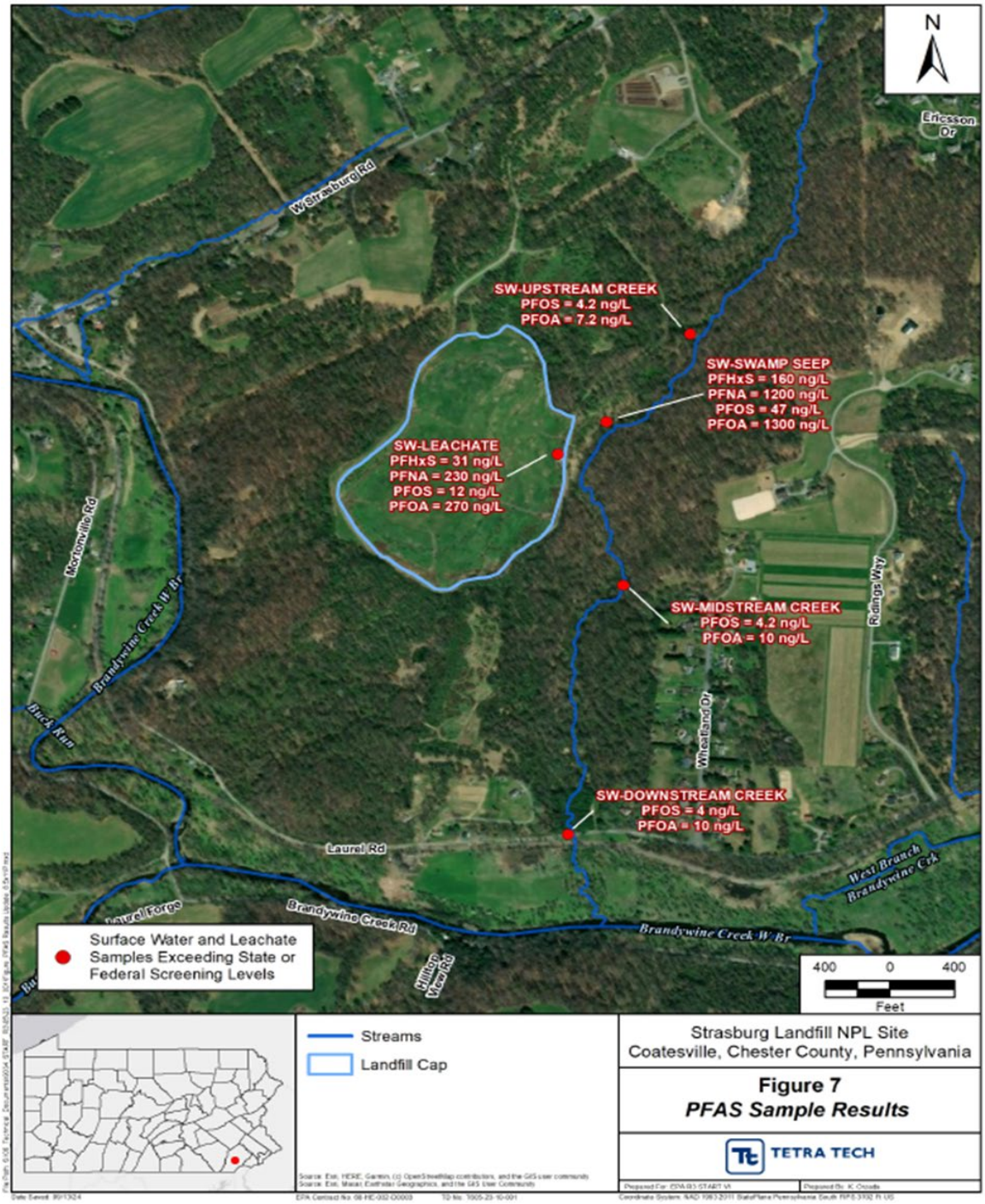


FIGURE 3

JUNE 2024 SAMPLING EVENT



APPENDIX A

PADEP CORRESPONDENCE

Pennsylvania
Department of Environmental Protection

September 23, 2025

via electronic mail

Mr. Paul Leonard, Director
Superfund and Emergency Management Division
U.S. Environmental Protection Agency, Region III
4 Penn Center
1600 John F. Kennedy Blvd.
Mail Code: 3SD21
Philadelphia, PA 19103

Re: Interim Record of Decision (ROD)
Strasburg Landfill Superfund Site
Newlin and West Bradford Townships, Chester County

Dear Mr. Leonard:

The Department of Environmental Protection (DEP) has reviewed the final draft of the Interim Record of Decision (ROD) received on August 21, 2025, for the Strasburg Landfill Superfund Site in Newlin and West Bradford Townships, Chester County. This Interim ROD presents the selected remedial action for Operable Unit 1, which addresses the following area of contamination:

Residential drinking water is contaminated with per- and poly-fluoroalkyl substances (PFAS); specifically, perfluorooctanoic acid (PFOA), and perfluorooctane sulfonate (PFOS). This Interim ROD adds PFOA and PFOS as Site-related contaminants of concern (COCs) and solely addresses the human health risks from drinking water impacted by those COCs.

The Selected Remedy for Operable Unit 1 includes the following major components:

- Design and installation of a public water line and connection of residential properties to the new water line.
- Provision of alternate water via temporary point-of-entry treatment systems (POETs) for privately owned properties prior to the connection of the new water line.
- Monitoring of residential groundwater wells to determine if additional provision of alternate water is needed prior to water line connection.
- Institutional Controls (ICs) to maintain the integrity of the Selected Remedy and prevent future potential exposure to Site-related contaminants.

Southeast Regional Office
2 East Main Street | Norristown, PA 19401-4915 | 484.250.5960 | Fax 484.250.5961 | www.dep.pa.gov

DEP hereby concurs with EPA's proposed remedy with the following conditions:

- DEP will be given the opportunity to review and comment on documents and provide meaningful input regarding decisions related to the design and implementation of the remedial action, to assure compliance with Pennsylvania's applicable or relevant and appropriate requirements (ARARs) and to be considered (TBC) requirements.

- DEP will be given the opportunity to review and comment on documents and provide meaningful input regarding decisions regarding the ICs identified in the ROD, including on which parcels institutional controls are required. ICs that implement the Activity and Use Limitations (AULs) may include Environmental Covenants (ECs), pursuant to the Pennsylvania Uniform Environmental Covenants Act (UECA), 27 Pa.C.S. § 6501 *et seq.*, or Administrative Orders issued under Section 512(a) of HSCA. When ECs are implemented, they will need to follow the requirements promulgated under UECA at 25 Pa. Code Chapter 253. In cases where property owners refuse to execute an EC, at EPA's request, DEP may issue an Administrative Order under Section 512(a) of HSCA, to implement such restrictions directly. Section 512(a) states that "[a] site at which hazardous substances remain after completion of a response action shall not be put to a use which would disturb or be inconsistent with the response action implemented."

- DEP will have the opportunity to review and comment before any modification to the ROD in the form of an Amendment or an Explanation of Significant Differences (ESD).

- State cost share and O&M obligations will be further clarified during design of the remedy and the completion of the Superfund State Contract.

- EPA will assure that DEP is provided an opportunity to fully participate in any negotiations with responsible parties.

- DEP reserves the right and responsibility to take independent enforcement actions pursuant to state law.

Thank you for the opportunity to comment and concur on this EPA Interim ROD. If you have any questions regarding this matter, please do not hesitate to contact me.

Sincerely,

Patrick L. Patterson

Patrick L. Patterson
Regional Director
Southeast Regional Office

cc: D. Greaves, EPA Region III
I. Shandruk, EPA Region III
Gail Abel, Newlin Township
Justin Yaich, West Bradford Township
Matt Skiljo, Chester County Health Department
C. D. Brown, P.G., DEP-SERO
B. McClennen, DEP-SERO
A. Eckman, DEP-CO
T. Cherry, DEP-SERO
D. Semmens, DEP-SERO
Re

APPENDIX B: DETAILED COST ESTIMATE

Estimated Costs for Alternative 3 – Water line Extension

Phase Name	Years 1 - 3	Years 4 - 30	Total
Remedial Action (Capital)			
Alternate Drinking Water Source Provisions	$ 190,718	$ -	$ 190,718
Main Water Line Installation and Oversight	$ 8,931,584	$ -	$ 8,931,584
House Water Line Installation and Oversight	$ 703,016	$ -	$ 703,016
Well Decommissioning	$ 250,846	$ -	$ 250,846
Subtotal	**$ 10,076,163**	**$ -**	**$ 10,076,163**
Contingency (Capital - 15%)	$ 1,511,424	$ -	$ 1,511,424
TOTAL	**$ 11,587,588**	**$ -**	**$ 11,587,588**
Present Worth Cost	$ 10,136,498	$ -	$ 10,136,498

Notes:

- An alternate drinking water source will be provided for 3 years at each of the 21 initial residences with exceedances above the MCL, with 5 houses as contingency
- Extend a water line for Strasburg Road and Persimmon Drive to Wheatland Drive following existing roads (4.12 miles)
- Assume 1 booster will be required along the water line
- Assume 3 years to construct water line (permitting and construction)
- Assume water line construction and associated costs are incurred up front (Year 1)
- Assume 100% oversight of water line construction by Mid - Scientist for 145 days
- Assume 40 houses for water line connections
- Assume 4 days for installation of water line from main to house (install meter and trenching)
- Assume 100% oversight of the water line connection to the house - 4 days of Mid - Scientist oversite for each connection
- Assume 40 drinking water wells will be decommissioned after water line connection
- Assume 2 wells can be decommissioned per day with 100% oversight by Mid-Scientist
- Thirty-year present worth was calculated based on a 7% discount rate with 2025 as a base year (EPA, 2000)

Alternative 3 - Water Line Extension - Alternate Water Source Provisions (Years 1 - 3)

(A) LABOR COSTS

Contract Year 1

Personnel Category		Rate	Hours		Cost
Program Manager	$	182.15	0	$	-
Mid Project Manager	$	162.26	24	$	3,894.24
Mid Quality Assurance Officer	$	108.70	0	$	-
Mid Health and Safety Officer	$	108.70	0	$	-
Sr. Hydrogeologist	$	170.77	0	$	-
Mid. Hydrogeologist	$	108.70	0	$	-
Jr. Hydrogeologist	$	65.22	0	$	-
Engineer	$	152.27	0	$	-
Chemist	$	162.26	0	$	-
Sr. Scientist	$	162.26	0	$	-
Mid. Scientist	$	108.70	0	$	-
Jr. Scientist	$	65.22	78	$	5,087.16
Sr. Field Tech	$	116.83	0	$	-
Mid. Field Tech	$	97.36	0	$	-
Jr. Field Tech	$	65.22	0	$	-
GIS/CADD	$	115.95	0	$	-
Administrative Assistant	$	70.46	288	$	20,292.48
TOTAL LABOR COST			**390**	**$**	**29,273.88**

(B) OTHER DIRECT COSTS

(B.1) Travel

Item		Unit Cost	Unit	Quantity		Cost
Air Fare	$	-	Trip		$	-
Lodging	$	118.00	Day		$	-
M&IE	$	80.00	Day		$	-
Rental Car & Fuel	$	150.00	Day		$	-
Parking or Cab Service	$	-	Trip		$	-
Baggage Fee	$	-	Bag		$	-
Subtotal Travel					**$**	-
G&A Markup				**8.00%**		**0.00**
Total Travel					**$**	-

(B.2) Supplies, Materials, and Equipment

Item		Unit Cost	Unit	Quantity		Cost
Bottled Water Cooler Rental (per month)	$	6.99	Per Month	936	$	6,542.64
Bottle Deposit	$	7.00	Each	5616	$	39,312.00
Bottle of Water	$	7.99	Each	5616	$	44,871.84
Delivery of Water	$	25.00	Each	1872	$	46,800.00
Taxes (6%)	$	5.52	Per Month	936	$	5,166.72
Subtotal Supplies, Materials, and Equipment					**$**	**142,693.20**
G&A Markup				**8.00%**		**11,415.46**
Total Supplies, Materials, Equip.					**$**	**154,108.66**
(B) TOTAL OTHER DIRECT COSTS					**$**	**154,108.66**

(C) SUBCONTRACTORS

Subcontractor	Unit Cost	Unit	Quantity		Cost
Subtotal Subcontractors				**$**	-
G&A Markup			**8.00%**	**$**	-
TOTAL SUBCONTRACTORS				**$**	-

(D) SUMMARY

(A) Labor	$	29,273.88
(B) Other Direct Costs	$	154,108.66
(C) Subcontractors	$	-
SUBTOTAL TASK (WITHOUT FEE)	**$**	**183,382.54**
Fee 4.00%	$	7,335.30
Total Activity Price w/Fee	**$**	**190,717.84**

Alternative 3 - Water Line Extension (Years 1 - 3)

(A) LABOR COSTS

Contract Year 1

Personnel Category	Rate	Hours	Cost
Program Manager	$ 182.15	0	$ -
Mid Project Manager	$ 162.26	100	$ 16,226.00
Mid Quality Assurance Officer	$ 108.70	0	$ -
Mid Health and Safety Officer	$ 108.70	0	$ -
Sr. Hydrogeologist	$ 170.77	0	$ -
Mid. Hydrogeologist	$ 108.70	0	$ -
Jr. Hydrogeologist	$ 65.22	0	$ -
Engineer	$ 152.27	0	$ -
Chemist	$ 162.26	0	$ -
Sr. Scientist	$ 162.26	0	$ -
Mid. Scientist	$ 108.70	1506	$ 163,702.20
Jr. Scientist	$ 65.22	0	$ -
Sr. Field Tech	$ 116.83	0	$ -
Mid. Field Tech	$ 97.36	0	$ -
Jr. Field Tech	$ 65.22	0	$ -
GIS/CADD	$ 115.95	0	$ -
Administrative Assistant	$ 70.46	60	$ 4,227.60
TOTAL LABOR COST		**1,666**	**$ 184,155.80**

(B) OTHER DIRECT COSTS

(B.1) Travel

Item	Unit Cost	Unit	Quantity	Cost
Air Fare	$ -	Trip		$ -
Lodging	$ 118.00	Day	203	$ 23,954.00
M&IE	$ 80.00	Day	203	$ 16,240.00
Rental Car & Fuel	$ 150.00	Day	203	$ 30,450.00
Parking or Cab Service	$ -	Trip		$ -
Baggage Fee	$ -	Bag		$ -
Subtotal Travel				**$ 70,644.00**
G&A Markup			**8.00%**	**5,651.52**
Total Travel				**$ 76,295.52**

(B.2) Supplies, Materials, and Equipment

Item	Unit Cost	Unit	Quantity	Cost
Bottled Water Cooler Rental (per n	$ 6.99	Per Month	0	$ -
Bottle Deposit	$ 7.00	Each	0	$ -
Bottle of Water	$ 7.99	Each	0	$ -
Delivery of Water	$ 25.00	Each	0	$ -
Taxes (6%)	$ 5.52	Per Month	0	$ -
Subtotal Supplies, Materials, and Equipment				**$ -**
G&A Markup			**8.00%**	**0.00**
Total Supplies, Materials, Equip.				**$ -**
(B) TOTAL OTHER DIRECT COSTS				**$ 76,295.52**

(C) SUBCONTRACTORS

Subcontractor	Unit Cost	Unit	Quantity	Cost
Aqua Pennsylvania	$ 7,710,750.00	Each	1.0	$ 7,710,750.00
Subtotal Subcontractors				**$ 7,710,750.00**
G&A Markup			**8.00%**	**$ 616,860.00**
TOTAL SUBCONTRACTORS				**$ 8,327,610.00**

(D) SUMMARY

(A) Labor	$ 184,155.80
(B) Other Direct Costs	$ 76,295.52
(C) Subcontractors	$ 8,327,610.00
SUBTOTAL TASK (WITHOUT FEE)	**$ 8,588,061.32**
Fee 4.00%	$ 343,522.45
Total Activity Price w/Fee	**$ 8,931,583.77**

Alternative 3 - Water Line Extension (Years 1 - 3)

(A) LABOR COSTS

Contract Year 1

Personnel Category		Rate	Hours		Cost
Program Manager	$	182.15	0	$	-
Mid Project Manager	$	162.26	84	$	13,629.84
Mid Quality Assurance Officer	$	108.70	0	$	-
Mid Health and Safety Officer	$	108.70	0	$	-
Sr. Hydrogeologist	$	170.77	0	$	-
Mid. Hydrogeologist	$	108.70	0	$	-
Jr. Hydrogeologist	$	65.22	0	$	-
Engineer	$	152.27	0	$	-
Chemist	$	162.26	0	$	-
Sr. Scientist	$	162.26	0	$	-
Mid. Scientist	$	108.70	1752	$	190,442.40
Jr. Scientist	$	65.22	0	$	-
Sr. Field Tech	$	116.83	0	$	-
Mid. Field Tech	$	97.36	0	$	-
Jr. Field Tech	$	65.22	0	$	-
GIS/CADD	$	115.95	0	$	-
Administrative Assistant	$	70.46	94	$	6,623.24

TOTAL LABOR COST	**1,930**	**$ 210,695.48**

(B) OTHER DIRECT COSTS

(B.1) Travel

Item	Unit Cost	Unit	Quantity	Cost
Air Fare	$ -	Trip		$ -
Lodging	$ 118.00	Day	192	$ 22,656.00
M&IE	$ 80.00	Day	192	$ 15,360.00
Rental Car & Fuel	$ 150.00	Day	192	$ 28,800.00
Parking or Cab Service	$ -	Trip		$ -
Baggage Fee	$ -	Bag		$ -
Subtotal Travel				**$ 66,816.00**
G&A Markup			**8.00%**	**5,345.28**
Total Travel				**$ 72,161.28**

(B.2) Supplies, Materials, and Equipment

Item	Unit Cost	Unit	Quantity	Cost
Plumbing Permit (per inspection)	$ 100.00	Each	40	$ 4,000.00

Subtotal Supplies, Materials, and Equipment		**$ 4,000.00**
G&A Markup	**8.00%**	**320.00**
Total Supplies, Materials, Equip.		**$ 4,320.00**
(B) TOTAL OTHER DIRECT COSTS		**$ 76,481.28**

(C) SUBCONTRACTORS

Subcontractor	Unit Cost	Unit	Quantity	Cost
Plumber (includes meter cost)	$ 9,000.00	Each	40.0	$ 360,000.00

Subtotal Subcontractors		**$ 360,000.00**
G&A Markup	**8.00%**	**$ 28,800.00**
TOTAL SUBCONTRACTORS		**$ 388,800.00**

(D) SUMMARY

(A) Labor		$ 210,695.48
(B) Other Direct Costs		$ 76,481.28
(C) Subcontractors		$ 388,800.00
SUBTOTAL TASK (WITHOUT FEE)		**$ 675,976.76**
Fee	4.00%	$ 27,039.07
Total Activity Price w/Fee		**$ 703,015.83**

Alternative 3 - Water Line Extension (Years 1 - 3)

(A) LABOR COSTS

Contract Year 1

Personnel Category		Rate	Hours		Cost
Program Manager	$	182.15	0	$	-
Mid Project Manager	$	162.26	16	$	2,596.16
Mid Quality Assurance Officer	$	108.70	0	$	-
Mid Health and Safety Officer	$	108.70	0	$	-
Sr. Hydrogeologist	$	170.77	0	$	-
Mid. Hydrogeologist	$	108.70	0	$	-
Jr. Hydrogeologist	$	65.22	0	$	-
Engineer	$	152.27	0	$	-
Chemist	$	162.26	0	$	-
Sr. Scientist	$	162.26	0	$	-
Mid. Scientist	$	108.70	256	$	27,827.20
Jr. Scientist	$	65.22	0	$	-
Sr. Field Tech	$	116.83	0	$	-
Mid. Field Tech	$	97.36	0	$	-
Jr. Field Tech	$	65.22	0	$	-
GIS/CADD	$	115.95	0	$	-
Administrative Assistant	$	70.46	40	$	2,818.40

TOTAL LABOR COST			**312**	**$ 33,241.76**

(B) OTHER DIRECT COSTS

(B.1) Travel

Item	Unit Cost	Unit	Quantity	Cost
Air Fare	$ -	Trip		$ -
Lodging	$ 118.00	Day	24	$ 2,832.00
M&IE	$ 80.00	Day	24	$ 1,920.00
Rental Car & Fuel	$ 150.00	Day	24	$ 3,600.00
Parking or Cab Service	$ -	Trip		$ -
Baggage Fee	$ -	Bag		$ -
Subtotal Travel				**$ 8,352.00**
G&A Markup			**8.00%**	**668.16**
Total Travel				**$ 9,020.16**

(B.2) Supplies, Materials, and Equipment

Item	Unit Cost	Unit	Quantity	Cost
Subtotal Supplies, Materials, and Equipment				**$ -**
G&A Markup		**8.00%**		**0.00**
Total Supplies, Materials, Equip.				**$ -**
(B) TOTAL OTHER DIRECT COSTS				**$ 9,020.16**

(C) SUBCONTRACTORS

Subcontractor	Unit Cost	Unit	Quantity	Cost
Drillier	$ 4,605.00	each	40.0	$ 184,200.00
Subtotal Subcontractors				**$ 184,200.00**
G&A Markup		**8.00%**		**$ 14,736.00**
TOTAL SUBCONTRACTORS				**$ 198,936.00**

(D) SUMMARY

(A) Labor		$ 33,241.76
(B) Other Direct Costs		$ 9,020.16
(C) Subcontractors		$ 198,936.00
SUBTOTAL TASK (WITHOUT FEE)		**$ 241,197.92**
Fee	4.00%	$ 9,647.92
Total Activity Price w/Fee		**$ 250,845.84**

APPENDIX C: APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

CHEMICAL-SPECIFIC ARARS AND TBCs

Requirement	Citation	Status	Description	Relation to Remedy
Maximum Contaminant Levels (MCLs) promulgated under the Safe Drinking Water Act of 1974, as amended, 42 U.S.C. §§ 300f et seq. (SDWA)	40 C.F.R. §§141.61 and 141.62	Relevant and appropriate	Establishes MCLs for certain organic and inorganic contaminants, which are enforceable standards for public water supply systems having at least 15 service connections or being used by at least 25 persons.	Groundwater at the Site is an underground source of drinking water. MCLs are relevant and appropriate as in situ cleanup standards for groundwater that is or may be used for drinking water. EPA is not selecting a remedy to clean-up groundwater at the Site with this action, however, Aqua Pennsylvania, an off-site public water system, is still required to meet all applicable Safe Drinking Water Act requirements, including treatment of drinking water to MCL standards. Additionally, while MCLs are not ARARs for such off-Site treatment, they are chemical-specific ARARs for the purpose of determining which residents will be offered connection to the newly constructed water line and are relevant and appropriate performance standards for the POETS that will be offered by EPA until the water line has been constructed and is operational.
Pennsylvania Statewide Health Standards promulgated under the Land Recycling and Environmental Remediation Standards Act of May	25 Pa. Code § 250.304, and Appendix B, Tables 1	Relevant and Appropriate	Statewide Health Standards are Medium-Specific Concentrations (MSCs) of regulated substances associated with	Groundwater at the Site is an underground source of drinking water. MSCs are relevant and appropriate as in situ cleanup standards for groundwater that is or may be

19, 1995, P.L. 4, No. 2, 35 P.S. §§ 6026.101 et seq. (Act 2)			groundwater, used for cleanups under PA law.	used for drinking water. EPA is not selecting a remedy to clean-up groundwater at the Site with this action, however, Aqua Pennsylvania, an off-site public water system, is still required to meet all applicable Safe Drinking Water Act requirements, including treatment of drinking water to MCL standards. Additionally, while MSCs are not ARARs for such off-Site treatment, they are chemical-specific ARARs for the purpose of determining which residents will be offered connection to the newly constructed water line and are relevant and appropriate performance standards for the POETS that will be offered by EPA until the water line has been constructed and is operational.

ACTION-SPECIFIC ARARs

Requirement	Citation	Status	Description	Relation to Remedy
Chester County Health Department Rules and Regulations – Chapter 500 (Water Wells, Nuisances, Sewage and Liquid Waste), §501 (Water Well Construction, Monitoring Wells, And Individual, Semi-Public and Public Water Supplies and Geothermal Boreholes).	Available at https://www.chesco.org/DocumentCenter/View/429/501?bidId= §§ 501.16.1; 501.16.2; 501.16.4; 501.16.5; 501.17	TBC	Sets forth requirements for well permit applications, decommissioning of wells, and water source replacement in Chester County, PA.	The substantive, non-administrative provisions of Chapter 500, Section 501, of the CCHD Rules and Regulations will be considered for replacing residential wells with a public water line, the decommissioning of residential wells and the retention of residential wells upon connection to public water for the on-Site part of the Remedial Action. No permits, licenses or

Requirement	Citation	Status	Description	Relation to Remedy
				similar administrative requirements will be obtained.
Pennsylvania requirements for erosion and sediment control promulgated under the Clean Streams Law	25 Pa. Code §§ 102.2; 102.4(b)(1)-(5); 102.8(b)-(f) and (n); 102.11(a) and (b); 102.22	Applicable	These regulations require persons conducting earth-disturbance activities to develop, implement, and maintain best management plans ("BMPs") to minimize the potential for accelerated erosion and sedimentation and to manage post-construction stormwater.	An erosion and sediment-control plan will be developed and implemented to minimize erosion and sedimentation to Briar Run or other streams during the construction of the water line. No permit or administrative approval will be obtained.
Pennsylvania Standards for Contaminants, Chapter 123 promulgated under the Air Pollution Control Act, Act of Jan 8, (1960) 1959, PL. 2119, No. 787, as amended, 35 P.S. §§ 4001 et seq. (ACPA)	25 Pa. Code §123.1(c); 123.2	Applicable	Sets forth requirements for fugitive emissions; establishes specific limitations for particulate matter, odor, and visible emissions.	Fugitive dust emissions generated during the construction of the water line that involves excavation will be controlled. No permit will be obtained.
Safe Drinking Water Regulations, Chapter 109	25 PA Code Chapter 109, Subchapter F. (Design and Construction Standards), §§ 109.601, 109.602 (a)(1) and (2), 109.607, 109. 608, and 109.609(a)	Applicable		Only those substantive portions relevant to design and construction of proposed water line and/or laterals will be used, as appropriate.

[1] S*ee* 42 U.S.C. § 9621(e) and 40 C.F.R. § 300.400(e) (No Federal, state, or local permit is required for the on-site portion of a response action conducted under Section 104 of CERCLA. The term *on-site* means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.)

[2] 25 Pa. Code § 262a.10 incorporates by reference 40 C.F.R. Part 262, except as expressly provided in 25 Pa. Code Chapter 262a.

LOCATION-SPECIFIC ARARs

Requirement	Citation	Status	Description	Relation to Remedy
Regulations under the Migratory Bird Treaty Act of 1918, as amended ("MBTA"), 16 U.S.C. §§ 703 *et seq.*	16 U.S.C. § 703 and 50 C.F.R. § 10.13	Applicable	Section 703 of the MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species that are native to the United States without prior authorization by the U.S. Fish and Wildlife Service ("FWS"). The species protected as migratory birds under the MBTA are listed at 50 C.F.R. § 10.13.	Appropriate actions will be taken during the water line construction to ensure that no on-Site migratory birds, listed at 50 C.F.R. § 10.13, or their nests are adversely affected.
Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites	OSWER Guidance 9355.0-89, EPA-540-R-09-001 (Dec. 2012)	TBC	This guidance provides information and recommendations for planning, implementing, maintaining, and enforcing ICs at Superfund sites.	This guidance will be used for the planning and implementation of any ICs required as part of the remedial action.
PA requirements for dam safety and waterway management promulgated under the Clean Streams Law and the Dam Safety and Encroachments Act, Act of Nov. 26, 1978, P.L. 1375, No. 325, 32 P.S. §§ 693.1 et seq., as amended	25 Pa. Code Chapter 105, including 25 Pa. Code §§ 105.15, .17, .18a, and 105.311-.314	Applicable	These requirements apply to encroachments, other than dams, located in, along, or across, or projecting into, a stream or other body of water, including wetlands.	Comply with the substantive requirements of these regulations, although no permit will be obtained. The remedial action will meet the substantive requirements of an environmental assessment under 25 Pa. Code § 105.15 during the remedial design, if it is determined that any on-Site wetlands will be impacted by the remedial action.

APPENDIX D: SAMPLING RESULTS

JANUARY 2024 SURFACE WATER RESULTS (PFAS)

Result Exceeds EPA RSL
Result Exceeds PADEP MSC
Result Exceeds EPA RSL & PADEP MCL
Result Exceeds EPA RSL & EPA RML
Result Exceeds All Standards

				CLP ID:	C0AR7		C0AP2		C0AR4		C0AS1	
				Sample Number:	SL-SW05-20240108		SL-SW01-20240108		SL-DUP-04-20240108		SL-SW06-20240108	
				Sampling Location:	SW-UPSTREAM CREEK		SW-MIDSTREAMCREEK		Duplicate of SW-MIDSTREAMCREEK		SW-DOWNSTREAM CREEK	
				Matrix:	Surface Water		Surface Water		Surface Water		Surface Water	
				Units:	ng/L		ng/L		ng/L		ng/L	
				Date Sampled:	1/8/2024		1/8/2024		1/8/2024		1/8/2024	
Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (ng/L)	EPA RML Tap Water HQ=3.0 (ng/L)	PADEP MSC (ng/L)	Result	Q	Result	Q	Result	Q	Result	Q
11Cl-PF3OUdS	763051-92-9	NS	NS	NS	2	U	2	U	2	U	1.9	U
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	NS	NS	NS	2	U	2	U	2	U	1.9	U
4:2 Fluorotelomer sulfonic acid	757124-72-4	NS	NS	NS	2	U	2	U	2	U	1.9	U
6:2 Fluorotelomer sulfonic acid	27619-97-2	NS	NS	NS	2	U	2	U	2	U	1.9	U
8:2 Fluorotelomer sulfonic acid	39108-34-4	NS	NS	NS	2	U	2	U	2	U	1.9	U
9Cl-PF3ONS	756426-58-1	NS	NS	NS	2	U	2	U	2	U	1.9	U
Hexafluoropropylene oxide dimer acid (HFPODA)	13252-13-6	15	440	10	2	U	2	U	2	U	1.9	U
NEtFOSAA	2991-50-6	NS	NS	NS	2	U	2	U	2	U	1.9	U
NMeFOSAA	2355-31-9	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoro(4-methoxybutanoic acid)	863090-89-5	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoro-3,6-dioxaheptanoic acid	151772-58-6	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoro-3-methoxypropanoic acid	377-73-1	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	600	18,000	2,000	**4.6**		**3.3**		**3.9**		**3.7**	
Perfluorobutanoic acid	375-22-4	1,800	55,000	NS	**4.2**		**5.8**		**6.8**		**6.4**	
Perfluorodecanoic acid	335-76-2	0.004	0.12	NS	2	U	2	U	2	U	1.9	U
Perfluorododecanoic acid	307-55-1	100	3,000	NS	2	U	2	U	2	U	1.9	U
Perfluoroheptanesulfonic acid	375-92-8	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoroheptanoic acid	375-85-9	NS	NS	NS	**2.7**		**2.6**		**2.9**		**2.6**	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	390	1,200	10	**1.6**	J	**1.3**	J	**1.5**	J	**1.4**	J
Perfluorohexanoic acid	307-24-4	9,900	30,000	NS	**4.5**		**4.6**		**5.5**		**4.9**	
Perfluorononanoic acid	375-95-1	59	1,800	NS	**0.87**	J	**2**		**2.3**		**2**	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.2	6	4	**4.3**		**3.3**		**3.6**		**3.6**	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0027	0.27	4	**5.7**		**6**		**6.7**		**6.2**	
Perfluoropentanesulfonic acid	2706-91-4	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoropentanoic acid	2706-90-3	NS	NS	NS	**4**		**3.2**		**4**		**3.6**	
Perfluorotetradecanoic acid	376-06-7	2,000	60,000	NS	2	U	2	U	2	U	1.9	U
Perfluorotridecanoic acid	72629-94-8	NS	NS	NS	2	U	2	U	2	U	1.9	U
Perfluoroundecanoic acid	2058-94-8	600	18,000	NS	2	U	2	U	2	U	1.9	U
PES	113507-82-7	NS	NS	NS	2	U	2	U	2	U	1.9	U
Hazard Index Level (unitless)												
Mixture of two or more: PFNA, PFHxS, HFPO-DA, PFBS	N/A	NS	NS	1	**0.1623**		**0.13165**		**0.15195**		**0.14185**	

NOTES:
ng/L = nanograms per liter
EPA = U.S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
PADEP = Pennsylvania Department of Environmental Protection
RML = Removal Management Levels, Published November 2024
RSL = Regional Screening Levels, Published November 2024

Qualifiers
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample
J+ = The result is an estimated quantity, but the result may be biased high.
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Result Exceeds EPA RSL
Result Exceeds PADEP MSC
Result Exceeds EPA RSL & PADEP MCL
Result Exceeds EPA RSL & EPA RML
Result Exceeds All Standards

				CLP ID:	C0AP3		C0AP4		C0AT1		C0AP8		C0AR3	
				Sample Number:	SL-SW-02-20240108		SL-SW-03-20240108		SL-SW04-20240131		SL-LS-01-20240108		SL-DUP-03-20240108	
				Sampling Location:	SW-SWAMP OUTFALL		SW-MIDSWAMP		SW-SWAMP SEEP		LEACHATE TANK		Duplicate of LEACHATE TANK	
				Matrix:	Surface Water		Surface Water		Surface Water		Leachate		Leachate	
				Units:	ng/L		ng/L		ng/L		ng/L		ng/L	
				Date Sampled:	1/8/2024		1/8/2024		1/31/2024		1/8/2024		1/8/2024	
Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (ng/L)	EPA RML Tap Water HQ=3.0 (ng/L)	PADEP MSC (ng/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
11Cl-PF3OUdS	763051-92-9	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
4:2 Fluorotelomer sulfonic acid	757124-72-4	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
6:2 Fluorotelomer sulfonic acid	27619-97-2	NS	NS	NS	1.8	U	10	J	2.7		9.9	J	11	J
8:2 Fluorotelomer sulfonic acid	39108-34-4	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
9Cl-PF3ONS	756426-58-1	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
Hexafluoropropylene oxide dimer acid (HFPODA)	13252-13-6	15	440	10	1.8	U	20	U	5		20	U	20	U
NEtFOSAA	2991-50-6	NS	NS	NS	1.8	U	29	J+	9.3		33	J+	31	J+
NMeFOSAA	2355-31-9	NS	NS	NS	1.8	U	20	U	1.4	J	20	U	20	U
Perfluoro(4-methoxybutanoic acid)	863090-89-5	NS	NS	NS	1.8	U	20	U	0.54	J	20	U	20	U
Perfluoro-3,6-dioxaheptanoic acid	151772-58-6	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
Perfluoro-3-methoxypropanoic acid	377-73-1	NS	NS	NS	1.8	U	20	U	1	J	20	U	20	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	600	18,000	2,000	2.3		71		20	J	51		53	
Perfluorobutanoic acid	375-22-4	1,800	55,000	NS	14		1400		440		1100		1100	
Perfluorodecanoic acid	335-76-2	0.004	0.12	NS	1.8	U	4.4	J	1.9	J	13	J	13	J
Perfluorododecanoic acid	307-55-1	100	3,000	NS	1.8	U	20	U	2.1	U	20	U	20	U
Perfluoroheptanesulfonic acid	375-92-8	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
Perfluoroheptanoic acid	375-85-9	NS	NS	NS	5.7		290		92	J	240		240	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	390	1,200	10	1.7	J	80		24	J	73		67	
Perfluorohexanoic acid	307-24-4	9,900	30,000	NS	11		690		390	J	620		600	
Perfluorononanoic acid	375-95-1	59	1,800	NS	13		720		170		620		590	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.2	6	4	2.1		32		6.5		40		40	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0027	0.27	4	15		640		280	J	560	J	550	
Perfluoropentanesulfonic acid	2706-91-4	NS	NS	NS	0.35	J	9.6	J	2.1	J	6.1	J	6.6	J
Perfluoropentanoic acid	2706-90-3	NS	NS	NS	5.1		240		65	J	190		190	
Perfluorotetradecanoic acid	376-06-7	2,000	60,000	NS	1.8	U	20	U	2.1	U	20	U	20	U
Perfluorotridecanoic acid	72629-94-8	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
Perfluoroundecanoic acid	2058-94-8	600	18,000	NS	1.8	U	20	U	1	J	3.4	J	3.6	J
PES	113507-82-7	NS	NS	NS	1.8	U	20	U	2.1	U	20	U	20	U
Hazard Index Level (unitless)														
Mixture of two or more: PFNA, PFHxS, HFPO-DA, PFBS	N/A	NS	NS	1	0.17115		8.0355		2.91		7.3255		6.7265	

NOTES:
ng/L = nanograms per liter
EPA = U.S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
PADEP = Pennsylvania Department of Environmental Protection
RML = Removal Management Levels, Published November 2024
RSL = Regional Screening Levels, Published November 2024

Qualifiers
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample
J+ = The result is an estimated quantity, but the result may be biased high.
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

JANUARY 2024 GROUNDWATER RESULTS (PFAS)

Result Exceeds EPA RSL
Result Exceeds EPA RSL & PADEP MCL
Result Exceeds EPA RSL & EPA RML
Result Exceeds All Standards

				CLP ID:	C0AH8		C0AJ6		C0AN2		C0AR2		C0AN3		C0AK9		C0AL1	
				Sample Number:	SL-MP-01-I-20240108		SL-MP-02-I-20240131		SL-MP-3A-20240108		SL-DUP-02-20240108		SL-MP-3B-20240108		SL-MP-04-S-20240131		SL-MP-04-I-20240131	
				Sampling Location:	MP-01-I		MP-02-I		MP-3A		Duplicate of MP-3A		MP-3B		MP-04-S		MP-04-I	
				Matrix:	Ground Water		Ground Water		Ground Water		WG		Ground Water		Ground Water		Ground Water	
				Units:	ng/L		ng/L		ng/L		ng/l		ng/L		ng/L		ng/L	
				Date Sampled:	1/8/2024		1/31/2024		1/8/2024		1/8/2024		1/8/2024		1/31/2024		1/31/2024	
Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (ng/L)	EPA RML Tap Water HQ=3.0 (ng/L)	PADEP MSC (ng/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
11Cl-PF3OUdS	763051-92-9	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
4:2 Fluorotelomer sulfonic acid	757124-72-4	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
6:2 Fluorotelomer sulfonic acid	27619-97-2	NS	NS	NS	20	U	1.3	J	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
8:2 Fluorotelomer sulfonic acid	39108-34-4	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
9Cl-PF3ONS	756426-58-1	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Hexafluoropropylene oxide dimer acid (HFPODA)	13252-13-6	15	440	10	20	U	0.5	J	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
NEtFOSAA	2991-50-6	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
NMeFOSAA	2355-31-9	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoro(4-methoxybutanoic acid)	863090-89-5	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoro-3,6-dioxaheptanoic acid	151772-58-6	NS	NS	NS	20	UJ	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoro-3-methoxypropanoic acid	377-73-1	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	600	18,000	2,000	20	U	4.2		1.3	J	1.1	J	0.79	J	1.3	J	1.2	J
Perfluorobutanoic acid	375-22-4	1,800	55,000	NS	24	J	53		7.6		6.4		4		7.8		9.8	
Perfluorodecanoic acid	335-76-2	0.004	0.12	NS	20	U	2	U	0.45	J	0.4	J	0.39	J	0.3	J	1.9	U
Perfluorododecanoic acid	307-55-1	100	3,000	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoroheptanesulfonic acid	375-92-8	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoroheptanoic acid	375-85-9	NS	NS	NS	20	U	15		3.8		3.3		1.9		3.4		4.6	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	390	1,200	10	3.3	J	3.9		0.83	J	0.67	J	1.8	U	0.48	J	0.61	J
Perfluorohexanoic acid	307-24-4	9,900	30,000	NS	27		100		6.2		5		2.1		4.8		6.1	
Perfluorononanoic acid	375-95-1	59	1,800	NS	20	U	1.8	J	4.4		3.5		1.7	J	2.3		3.1	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.2	6	4	20	U	1.8	J	4.8		4.1		1.2	J	3		1.8	J
Perfluorooctanoic acid (PFOA)	335-67-1	0.0027	0.27	4	20	U	19		15		13		4.2		8.5		9.1	
Perfluoropentanesulfonic acid	2706-91-4	NS	NS	NS	20	U	1	J	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoropentanoic acid	2706-90-3	NS	NS	NS	11	J	42		5		4.1		1.8		4		5.5	
Perfluorotetradecanoic acid	376-06-7	2,000	60,000	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluorotridecanoic acid	72629-94-8	NS	NS	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Perfluoroundecanoic acid	2058-94-8	600	18,000	NS	20	U	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
PES	113507-82-7	NS	NS	NS	20	UJ	2	U	1.7	U	1.7	U	1.8	U	1.7	U	1.9	U
Hazard Index Level (unitless)																		
Mixture of two or more: PFNA, PFHxS, HFPO-DA, PFBS	N/A	NS	NS	1	0.33		0.4421		0.08365		0.06755		0.180395		0.04865		0.0616	

NOTES:
ng/L = nanograms per liter
EPA = U.S. Environmental Protection Agency
HQ= Hazard Quotient
MCL = Maximum Contaminant Level
PADEP = Pennsylvania Department of Environmental Protection
RML = Removal Management Levels
RSL = Regional Screening Levels

Qualifiers
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample
J+ = The result is an estimated quantity, but the result may be biased high.
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

Result Exceeds EPA RSL

Result Exceeds EPA RSL & PADEP MCL

Result Exceeds EPA RSL & EPA RML

Result Exceeds All Standards

				CLP ID:	C0AL2		C0AP1		C0AR1		C0AL8		C0AM0		C0AM4		C0AM8		C0AM9	
				Sample Number:	SL-MP-04-D-20240131		SL-MW-05-I-20240108		SL-DUP-01-20240108		SL-MP-05-I-20240131		SL-MP-07-S-20240108		SL-MP-07-D-20240108		SL-MP-08-20240108		SL-MP-09-20240108	
				Sampling Location:	MP-04-D		MW-05-I		Duplicate of MW-05-I		MP-05-I		MP-07-S		MP-07-D		MP-08		MP-09	
				Matrix:	Ground Water		Ground Water		WG		Ground Water		Ground Water		Ground Water		Ground Water		Ground Water	
				Units:	ng/L		ng/L		ng/l		ng/L		ng/L		ng/L		ng/L		ng/L	
				Date Sampled:	1/31/2024		1/8/2024		1/8/2024		1/31/2024		1/8/2024		1/8/2024		1/8/2024		1/8/2024	
Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (ng/L)	EPA RML Tap Water HQ=3.0 (ng/L)	PADEP MSC (ng/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
11Cl-PF3OUdS	763051-92-9	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
4:2 Fluorotelomer sulfonic acid	757124-72-4	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
6:2 Fluorotelomer sulfonic acid	27619-97-2	NS	NS	NS	1.7	U	1.9	U	2	U	0.47	J	1.8	U	1.7	U	1.7	U	1.8	U
8:2 Fluorotelomer sulfonic acid	39108-34-4	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
9Cl-PF3ONS	756426-58-1	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Hexafluoropropylene oxide dimer acid (HFPODA)	13252-13-6	15	440	10	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
NEtFOSAA	2991-50-6	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
NMeFOSAA	2355-31-9	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoro(4-methoxybutanoic acid)	863090-89-5	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoro-3,6-dioxaheptanoic acid	151772-58-6	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoro-3-methoxypropanoic acid	377-73-1	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluorobutanesulfonic acid (PFBS)	375-73-5	600	18,000	2,000	1.2	J	0.9	J	0.84	J	1	J	1.4	J	0.96	J	0.93	J	1.8	
Perfluorobutanoic acid	375-22-4	1,800	55,000	NS	9.2		5.7		6		7		5.7		3.8		4.3		16	
Perfluorodecanoic acid	335-76-2	0.004	0.12	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluorododecanoic acid	307-55-1	100	3,000	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoroheptanesulfonic acid	375-92-8	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoroheptanoic acid	375-85-9	NS	NS	NS	4.3		2.6		2.8		5		3.3		1.6	J	1.8		9.4	
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	390	1,200	10	0.31	J	0.77	J	0.84	J	0.66	J	0.71	J	0.45	J	0.17	J	0.95	J
Perfluorohexanoic acid	307-24-4	9,900	30,000	NS	8.1		5.6		5.6		6.5		3.6		2.7		2		11	
Perfluorononanoic acid	375-95-1	59	1,800	NS	3		1.5	J	1.5	J	5		0.76	J	0.58	J	1.6	J	22	
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.2	6	4	1.8		2		1.9	J	2.1		1.8	U	0.43	J	3.3		3.9	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0027	0.27	4	8.3		9.2		9.4		18		9.7		4.7		7.2		18	
Perfluoropentanesulfonic acid	2706-91-4	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoropentanoic acid	2706-90-3	NS	NS	NS	5.1		4.6		4.3		4.7		3.4		2		1.9		8.2	
Perfluorotetradecanoic acid	376-06-7	2,000	60,000	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluorotridecanoic acid	72629-94-8	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
Perfluoroundecanoic acid	2058-94-8	600	18,000	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
PES	113507-82-7	NS	NS	NS	1.7	U	1.9	U	2	U	1.8	U	1.8	U	1.7	U	1.7	U	1.8	U
	Hazard Index Level (unitless)																			
Mixture of two or more: PFNA, PFHxS, HFPO-DA, PFBS	N/A	NS	NS	1	0.0316		0.07745		0.08442		0.0665		0.0717		0.04548		0.017465		0.0959	

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Qualifiers

JANUARY 2024 SURFACE WATER (VOCs)

Result Exceeds EPA RSL

Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (µg/L)	EPA RML Tap Water HQ=3.0 (µg/L)	PADEP MSC (µg/L)	CLP ID:	C0AP2		C0AP3		C0AP4		C0AP8		C0AR3	
					Sample Number:	SL-SW01-20240108		SL-SW-02-20240108		SL-SW-03-20240108		SL-LS-01-20240108		SL-DUP-03-20240108	
					Sampling Location:	SW-MIDSTREAMCREEK		SW-SWAMP OUTFALL		SW-MIDSWAMP		LEACHATE TANK		DUP-03	
					Matrix:	Surface Water		Surface Water		Surface Water		Leachate		Leachate	
					Units:	µg/L		µg/L		µg/L		µg/L		µg/L	
					Date Sampled:	1/8/2024		1/8/2024		1/8/2024		1/8/2024		1/8/2024	
						Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	800	24,000	200		0.5	U	0.5	U	10	U	10	U	10	U
1,1,2,2-Tetrachloroethane	79-34-5	0.076	7.6	0.84		0.5	U	0.5	U	10	U	10	U	10	U
1,1,2-Trichloroethane	79-00-5	0.041	1.2	5		0.5	U	0.5	U	10	U	10	U	10	U
1,1-Dichloroethane	75-34-3	2.8	280	31		0.5	U	0.5	U	10	U	10	U	10	U
1,1-Dichloroethene	75-35-4	0.82	25	7		0.5	U	0.5	U	10	U	10	U	10	U
1,2,3-Trichlorobenzene	87-61-6	0.7	21	NS		0.5	U	0.5	U	10	U	10	U	10	U
1,2,4-Trichlorobenzene	120-82-1	0.4	12	70		0.5	U	0.5	U	10	U	10	U	10	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.00033	0.033	0.2		0.5	U	0.5	U	10	U	10	U	10	U
1,2-Dibromoethane	106-93-4	0.0075	0.75	0.05		0.5	U	0.5	U	10	U	10	U	10	U
1,2-Dichlorobenzene	95-50-1	30	910	600		0.5	U	0.5	U	10	U	10	U	10	U
1,2-Dichloroethane	107-06-2	0.17	17	5		0.5	U	0.5	U	10	U	10	U	10	U
1,2-Dichloropropane	78-87-5	0.82	25	5		0.5	U	0.5	U	10	U	10	U	10	U
1,3-Dichlorobenzene	541-73-1	NS	NS	600		0.5	U	0.5	U	10	U	10	U	10	U
1,4-Dichlorobenzene	106-46-7	0.48	48	75		0.5	U	0.5	U	10	U	4.6	J	4.4	J
2-Butanone	78-93-3	560	17,000	4,000		5	U	5	U	100	U	100	U	100	U
2-Hexanone	591-78-6	3.8	110	63		5	U	5	U	100	U	100	U	100	U
4-Methyl-2-pentanone	108-10-1	630	19,000	2,800		5	U	5	U	100	U	100	U	100	U
Acetone	67-64-1	1,800	54,000	31,000		5	U	5	U	100	U	100	U	100	U
Benzene	71-43-2	0.46	46	5		0.5	U	0.5	U	10	U	10	U	10	U
Bromochloromethane	74-97-5	8.3	250	90		0.5	U	0.5	U	10	U	10	U	10	U
Bromodichloromethane	75-27-4	0.13	13	80		0.5	U	0.5	U	10	U	10	U	10	U
Bromoform	75-25-2	3.3	330	80		1	U	1	U	20	U	20	U	20	U
Bromomethane	74-83-9	0.75	23	10		0.5	U	0.5	U	10	U	10	U	10	U
Carbon disulfide	75-15-0	81	2,400	1,500		1	U	1	U	20	U	20	U	20	U
Carbon tetrachloride	56-23-5	0.46	46	5		0.5	U	0.5	U	10	U	10	U	10	U
Chlorobenzene	108-90-7	7.8	230	100		0.5	U	0.5	U	10	U	4	J	3.8	J
Chloroethane	75-00-3	830	25,000	21,000		0.5	U	0.5	U	10	U	10	U	10	U
Chloroform	67-66-3	0.22	12	80		0.5	U	0.5	U	10	U	10	U	10	U
Chloromethane	74-87-3	19	560	30		0.5	U	0.5	U	10	U	10	U	10	U
cis-1,2-Dichloroethene	156-59-2	2.5	76	70		0.5	U	0.5	U	10	U	10	U	10	U
cis-1,3-Dichloropropene	542-75-6	0.47	47	6.5		0.5	U	0.5	U	10	U	10	U	10	U
Cyclohexane	110-82-7	1,300	38,000	13,000		0.5	U	0.5	U	10	U	10	U	10	U
Dibromochloromethane	124-48-1	0.87	87	80		0.5	U	0.5	U	10	U	10	U	10	U
Dichlorodifluoromethane	75-71-8	20	590	1,000		0.5	U	0.5	U	10	U	10	U	10	U
Ethylbenzene	100-41-4	1.5	150	700		0.5	U	0.5	U	10	U	10	U	10	U
Freon 113	354-58-5	NS	NS	NS		0.5	U	0.5	U	10	U	10	U	10	U
Isopropylbenzene	98-82-8	45	1,400	840		0.5	U	0.5	U	10	U	10	U	10	U
m&p-Xylene*	179601-23-1	19	580	10,000		0.5	U	0.5	U	10	U	10	U	10	U
Methyl acetate	79-20-9	2,000	60,000	35,000		1	U	1	U	20	U	20	U	20	U
Methyl tertiary butyl ether	1634-04-4	14	1400	20		0.5	U	0.5	U	10	U	10	U	10	U
Methylcyclohexane	108-87-2	20	590	NS		0.5	U	0.5	U	10	U	10	U	10	U
Methylene Chloride	75-09-2	11	320	5		0.5	U	0.5	U	10	U	10	U	10	U
o-Xylene	95-47-6	19	580	10,000		0.5	U	0.5	U	10	U	10	U	10	U
Styrene	100-42-5	120	3,600	100		0.5	U	0.5	U	10	U	10	U	10	U
Tetrachloroethene	127-18-4	4.1	120	5		0.5	U	0.5	U	10	U	10	U	10	U
Toluene	108-88-3	110	3,300	1,000		0.5	U	0.5	U	10	U	10	U	10	U
trans-1,2-Dichloroethene	156-60-5	6.8	200	100		0.5	U	0.5	U	10	U	10	U	10	U
trans-1,3-Dichloropropene	542-75-6	0.47	47	6.5		0.5	U	0.5	U	10	U	10	U	10	U
Trichloroethene	79-01-6	0.28	8.5	5		0.5	U	0.5	U	10	U	10	U	10	U
Trichlorofluoromethane	75-69-4	520	15,000	2,000		0.5	U	0.5	U	10	U	10	U	10	U
Vinyl chloride	75-01-4	0.019	1.9	2		0.5	U	0.5	U	10	U	10	U	10	U
Xylene (total)	1330-20-7	19	580	10,000		1	U	1	U	20	U	20	U	20	U

NOTES:
* - Xylenes RML and RSL used in lie of no RML or RSL specific to individual m&P-Xylenes
µg/L = micrograms per liter
EPA = U.S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
PADEP = Pennsylvania Department of Environmental Protection

Result Exceeds EPA RSL

				CLP ID:	C0AR4		C0AR7		C0AS0		C0AS1		C0AT1	
				Sample Number:	SL-DUP-04-20240108		SL-SW05-20240108		SL-FB-01-20240108		SL-SW06-20240108		SL-SW04-20240131	
				Sampling Location:	DUP-04		SW-UPSTREAM CREEK		FB-01		SW-DOWNSTREAM CREEK		SW-SWAMP SEEP	
				Matrix:	Surface Water		Surface Water		Blank		Surface Water		Surface Water	
				Units:	µg/L		µg/L		µg/L		µg/L		µg/L	
				Date Sampled:	1/8/2024		1/8/2024		1/8/2024		1/8/2024		1/31/2024	
Parameter	Cas No.	EPA RSL Tap Water HQ=0.1 (µg/L)	EPA RML Tap Water HQ=3.0 (µg/L)	PADEP MSC (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	800	24,000	200	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	0.076	7.6	0.84	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	0.041	1.2	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	2.8	280	31	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	0.82	25	7	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	0.7	21	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	120-82-1	0.4	12	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	96-12-8	0.00033	0.033	0.2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	106-93-4	0.0075	0.75	0.05	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	30	910	600	0.5	U	0.5	U	0.5	U	0.5	U	0.48	J
1,2-Dichloroethane	107-06-2	0.17	17	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	0.82	25	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	NS	NS	600	0.5	U	0.5	U	0.5	U	0.5	U	0.13	J
1,4-Dichlorobenzene	106-46-7	0.48	48	75	0.5	U	0.5	U	0.5	U	0.5	U	3	
2-Butanone	78-93-3	560	17,000	4,000	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	3.8	110	63	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	108-10-1	630	19,000	2,800	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	1,800	54,000	31,000	5	U	5	U	1.2	J	5	U	3.4	J
Benzene	71-43-2	0.46	46	5	0.5	U	0.5	U	0.5	U	0.5	U	0.69	
Bromochloromethane	74-97-5	8.3	250	90	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	75-27-4	0.13	13	80	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	3.3	330	80	1	U	1	U	1	U	1	U	1	U
Bromomethane	74-83-9	0.75	23	10	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	81	2,400	1,500	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	56-23-5	0.46	46	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	7.8	230	100	0.5	U	0.5	U	0.5	U	0.5	U	2	
Chloroethane	75-00-3	830	25,000	21,000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	67-66-3	0.22	12	80	0.5	U	0.5	U	1.2		0.5	U	0.5	U
Chloromethane	74-87-3	19	560	30	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	2.5	76	70	0.5	U	0.5	U	0.5	U	0.5	U	0.33	J
cis-1,3-Dichloropropene	542-75-6	0.47	47	6.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	1,300	38,000	13,000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	124-48-1	0.87	87	80	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	20	590	1,000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	1.5	150	700	0.5	U	0.5	U	0.5	U	0.5	U	0.7	
Freon 113	354-58-5	NS	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Isopropylbenzene	98-82-8	45	1,400	840	0.5	U	0.5	U	0.5	U	0.5	U	0.3	J
m&p-Xylene*	179601-23-1	19	580	10,000	0.5	U	0.5	U	0.5	U	0.5	U	0.49	J
Methyl acetate	79-20-9	2,000	60,000	35,000	1	U	1	U	1	U	1	U	1	U
Methyl tertiary butyl ether	1634-04-4	14	1400	20	0.5	U	0.5	U	0.5	U	0.5	U	0.19	J
Methylcyclohexane	108-87-2	20	590	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	75-09-2	11	320	5	0.5	U	0.5	U	1.3		0.5	U	0.5	U
o-Xylene	95-47-6	19	580	10,000	0.5	U	0.5	U	0.5	U	0.5	U	0.29	J
Styrene	100-42-5	120	3,600	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	4.1	120	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	110	3,300	1,000	0.5	U	0.5	U	0.19	J	0.5	U	0.1	J
trans-1,2-Dichloroethene	156-60-5	6.8	200	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	542-75-6	0.47	47	6.5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	0.28	8.5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	520	15,000	2,000	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	0.019	1.9	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylene (total)	1330-20-7	19	580	10,000	1	U	1	U	1	U	1	U	0.78	J

NOTES:
* - Xylenes RML and RSL used in lie of no RML or RSL specific to individual m&P-Xylenes
µg/L = micrograms per liter
EPA = U.S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
PADEP = Pennsylvania Department of Environmental Protection
RML = Removal Management Levels

JUNE 2024 SURFACE WATER SAMPLING (PFAS)

				CLP ID:	C0B41		C0B44		C0B48		C0B50		C0B62		C0B47		C0B63	
				Sample Number:	SL-SW-01-20240624		SL-SW-02-20240624		SL-SW-06-20240624		SL-LS-01-20240624		SL-LS-DUP01-20240624		SL-SW-05-20240624		SL-SW-DUP01-20240624	
				Sampling Location:	SW-MIDSTREAMCREEK		SW-UPSTREAM CREEK		DOWNSTREAM CREEK		LEACHATE TANK		LEACHATE TANK		SW-SWAMP SEEP		SW-SWAMP SEEP	
				Matrix:	Surface Water		Surface Water		Surface Water		Leachate		LEACHATE TANK		Surface Water		Surface Water	
				Units:	ng/l		ng/l		ng/l		ng/l		ng/l		ng/l		ng/l	
				Date Sampled:	6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024	
Parameter	Cas No.	EPA MCL (ng/L)	PADEP MCL (ng/L)		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
11Cl-PF3OUdS	763051-92-9	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.9	U	1.8	U
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.9	U	1.8	U
4:2 Fluorotelomer sulfonic acid	757124-72-4	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.2	J	0.94	J
6:2 Fluorotelomer sulfonic acid	27619-97-2	NS	NS		1.8	U	1.8	U	1.7	U	3.5	cn	3.5		16		14	
8:2 Fluorotelomer sulfonic acid	39108-34-4	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.2	J	1.1	J
9Cl-PF3ONS	756426-58-1	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.9	U	1.8	U
HFPODA	13252-13-6	10	NS		1.8	U	1.8	U	1.7	U	1.8	UF1cn	2.1		4		2.2	I
NEtFOSAA	2991-50-6	NS	NS		1.8	U	1.8	U	1.7	U	8.8	cn	9.4		51		36	
NMeFOSAA	2355-31-9	NS	NS		1.8	U	1.8	U	1.7	U	1.3	Jcn	1.7	U	6.3		4.9	
Perfluoro(4-methoxybutanoic acid)	863090-89-5	NS	NS		1.8	U	1.8	U	1.7	U	0.37	JF1cn	0.26	J	0.54	J	0.57	J
Perfluoro-3,6-dioxaheptanoic acid	151772-58-6	NS	NS		1.8	U	1.8	U	1.7	U	0.31	Jlcn	1.7	U	1.9	U	1.8	U
Perfluoro-3-methoxypropanoic acid	377-73-1	NS	NS		1.8	U	1.8	U	1.7	U	1.8	UF1cn	1.7	U	1.4	J	0.85	J
Perfluorobutanesulfonic acid	375-73-5	NS	NS		4		4.2		3.7		22	cn	26		130		110	
Perfluorobutanoic acid	375-22-4	NS	NS		9.9		5.3		9.4		430	cn	490		1900		1800	
Perfluorodecanoic acid	335-76-2	NS	NS		1.8	U	0.27	J	0.27	J	1.8	cn	1.9		4.7		3.8	
Perfluorododecanoic acid	307-55-1	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	0.41	J	0.36	J
Perfluoroheptanesulfonic acid	375-92-8	NS	NS		1.8	U	1.8	U	1.7	U	0.28	Jcn	0.42	J	1.9		1.9	
Perfluoroheptanoic acid	375-85-9	NS	NS		3.8		2.9		3.5		110	cn	120		560		550	
Perfluorohexanesulfonic acid	355-46-4	10	NS		2.2		2.1		2		26	cn	31		150		160	
Perfluorohexanoic acid	307-24-4	NS	NS		6.8		4.4		7.4		320	cn	330		1500		1400	
Perfluorononanoic acid	375-95-1	10	NS		3.1		0.87	J	3.1		230	cn	230		1200		1100	
Perfluorooctanesulfonic acid	1763-23-1	4	18		4.2		4.2		4		9.9	cn	12		47		41	
Perfluorooctanoic acid	335-67-1	4	14		10		7.2		10		260	cn	270		1300		1200	
Perfluoropentanesulfonic acid	2706-91-4	NS	NS		0.3	J	1.8	U	0.3	J	4.4	F1cn	2.7		11		12	
Perfluoropentanoic acid	2706-90-3	NS	NS		5.2		4.8		5		86	cn	100		430		420	
Perfluorotetradecanoic acid	376-06-7	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.9	U	1.8	U
Perfluorotridecanoic acid	72629-94-8	NS	NS		1.8	U	1.8	U	1.7	U	0.98	Jlcn	1.7	U	1.9	U	1.8	U
Perfluoroundecanoic acid	2058-94-8	NS	NS		1.8	U	1.8	U	1.7	U	0.74	Jlcn	0.8	JI	4.9		3.2	
PES	113507-82-7	NS	NS		1.8	U	1.8	U	1.7	U	1.8	Ucn	1.7	U	1.9	U	1.8	U
Hazard Index Level (unitless)																		
Mixture of two or more: PFNA, PFHxS, HFPO-DA, PFBS	N/A	1	NS		0.45		0.6		0.43		1.43		1.68085		6.200205		5.52018	

NOTES:
ng/L = nanograms per liter
EPA = U.S. Environmental Protection Agency
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
NS = No Standard
PADEP = Pennsylvania Department of Environmental Protection

Qualifiers
cn = Refer to case narrative for further detail.
F1 = MS and/or MSD recovery exceeds control limits.
I = Value is EMPC (estimated maximum possible concentration)
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample
U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

JUNE 2024 SURFACE WATER SAMPLING (VOCs)

			CLP ID:	C0B41		C0B44		C0B48		C0B50		C0B62		C0B47		C0B63	
			Sample Number:	SL-SW-01-20240624		SL-SW-02-20240624		SL-SW-06-20240624		SL-LS-01-20240624		SL-LS-DUP01-20240624		SL-SW-05-20240624		SL-SW-DUP01-20240624	
			Sampling Location:	SW-MIDSTREAMCREEK		SW-UPSTREAM CREEK		DOWNSTREAM CREEK		LEACHATE TANK		LEACHATE TANK		SW-SWAMP SEEP		SW-SWAMP SEEP	
			Matrix:	Surface Water		Surface Water		Surface Water		Leachate		Leachate		Surface Water		Surface Water	
			Units:	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
			Date Sampled:	6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024		6/24/2024	
Parameter	Cas No.	EPA MCL (µg/L)	PADEP MCL (µg/L)	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,1,1-Trichloroethane	71-55-6	200	200	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	75-34-3	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	75-35-4	7	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	87-61-6	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	96-18-4	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-trichlorobenzene	120-82-1	70	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	95-63-6	NS	NS	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	**0.28**	J	**0.3**	J
1,2-Dibromo-3-chloropropane	96-12-8	0.2	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	106-93-4	0.05	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	600	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.3	J	**0.48**	J	**0.53**	
1,2-Dichloroethane	107-06-2	5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	78-87-5	5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	108-67-8	NS	NS	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	541-73-1	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.21**	J	**0.2**	J
1,4-Dichlorobenzene	106-46-7	75	NS	0.5	U	0.5	U	0.5	U	0.5	U	1.8		**3**		**3.2**	
2-Butanone	78-93-3	NS	NS	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	591-78-6	NS	NS	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	108-10-1	NS	NS	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	67-64-1	NS	NS	5	U	5	U	5	U	5	U	8.8		**19**		**20**	
Benzene	71-43-2	5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.54		**0.65**		**0.72**	
Bromochloromethane	74-97-5	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	75-27-4	80 (G)	80	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	75-25-2	80 (G)	80	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	74-83-9	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon disulfide	75-15-0	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon tetrachloride	56-23-5	5	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	108-90-7	100	NS	0.5	U	0.5	U	0.5	U	0.5	U	1.5		**2.9**		**3.1**	
Chloroethane	75-00-3	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	67-66-3	80 (G)	80	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	74-87-3	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	70	70	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cyclohexane	110-82-7	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	124-48-1	80 (G)	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	75-71-8	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	100-41-4	700	700	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	**0.13**	J	**0.13**	J
Isopropylbenzene	98-82-8	NS	NS	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.21	J	**0.34**	J	**0.35**	J
m,p-Xylene[1]	179601-23-1	10000	NS	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.36	J	**0.57**		**0.64**	
Methyl Acetate	79-20-9	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl tert-butyl Ether	1634-04-4	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**0.51**		**0.55**	
Methylcyclohexane	108-87-2	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene chloride	75-09-2	5	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
o-Xylene[1]	95-47-6	10000	NS	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.3	J	**0.44**	J	**0.47**	J
Styrene	100-42-5	100	100	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	127-18-4	5	5	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	108-88-3	1000	1000	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,2-Dichloroethene	156-60-5	100	100	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	10061-02-6	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	79-01-6	5	5	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	75-69-4	NS	NS	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl chloride	75-01-4	2	2	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

NOTES:
1. EPA MCL for "total xylenes" used in lieu of no standard for o-xylene and m&p-xylene
µg/L = micrograms per liter
EPA = U.S. Environmental Protection Agency
G = MCL of 80 µg/L for Total Trihalomethanes
HQ = Hazard Quotient
MCL = Maximum Contaminant Level
NS = No Standard
PADEP = Pennsylvania Department of Environmental Protection