

FINAL

Semi-Annual Remediation Status Report February 2026 to August 2026

Former Philadelphia Energy Solutions Refinery
3144 West Passyunk Avenue, Philadelphia, PA

Prepared for

Bellwether District Holdings, LLC
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Acronyms and Abbreviations

Act 2	<i>Land Recycling and Environmental Remediation Standards Act</i>
Act 32	<i>Storage Tank and Spill Prevention Act</i>
AST	aboveground storage tanks
BDH	Bellwether District Holdings, LLC
bgs	below ground surface
CO&A	Consent Order and Agreement
the Facility	Former Philadelphia Energy Solutions Refinery, 3144 West Passyunk Avenue, Philadelphia, Pennsylvania
ft	foot or feet
HHRA	Human Health Risk Assessment
Langan	Langan Engineering and Environmental Services, Inc.
LNAPL	light non-aqueous phase liquid
MSC	Medium Specific Concentrations
NIR	Notice of Intent to Remediate
PADEP	Pennsylvania Department of Environmental Protection
PES	Philadelphia Energy Solutions
ROW-3	Right-of-Way-3
SHS	Statewide Health Standard
SLERA	Screening Level Ecological Risk Assessment
SRTF	Schuylkill River Tank Farm
SSS	Site-Specific Standard
Stantec	Stantec Consulting Services, Inc.
Status Report	<i>Semi-Annual Remediation Status Report</i>
SVE	soil vapor extraction
Terraphase	Terraphase Engineering Inc.



1 Introduction

On behalf of Bellwether District Holdings, LLC (BDH), Terraphase Engineering Inc. (Terraphase) has prepared this *Semi-Annual Remediation Status Report* (Status Report) to document the progress of activities being conducted by BDH to characterize and remediate certain areas of the Former Philadelphia Energy Solutions Refinery (former PES; the Facility). The Facility, which is undergoing redevelopment, is located at 3144 West Passyunk Avenue, Philadelphia, Pennsylvania.

The releases discussed in this *Status Report* do not include those which are associated with “Pre-Existing Contamination” as defined in the 2012 Consent Order and Agreement (CO&A)¹ among the Pennsylvania Department of Environmental Protection (PADEP), Evergreen,² and BDH, which are being addressed by Evergreen. In accordance with the CO&A, BDH has assumed responsibility for releases of hazardous or regulated substances from the Facility which have been identified to have occurred after September 8, 2012.

The releases and related activities addressed in this Status Report are grouped as follows:

1. Releases that occurred during refinery operations between September 2012 and June 2020 and that BDH is addressing under the *Land Recycling and Environmental Remediation Standards Act* (Act 2) Program:
 - A 2019 release of light naphtha from an aboveground line near 136 process unit at the former refinery (136 Naphtha Release);
 - A 2013 release from a process sewer near the No. 3 Separator at the former refinery (No. 3 Separator Release);
 - A 2018 release from the UDEX feed line at the former refinery (UDEX Feed Release);
 - A 2016 release east of former tank PB 253 (Release East of Former Tank PB 253);
 - A Post-2012 release of light non-aqueous phase liquid (LNAPL) near the Former Point Breeze Tank Farm (Post-September 2012 LNAPL near Former Point Breeze Tank Farm);
 - A Post-2012 release of LNAPL South of Former 870 Unit (Post-September 2012 LNAPL South of Former 870 Unit); and
 - A Post-2012 release of LNAPL near Tank 37 in the Schuylkill River Tank Farm (SRTF) (Post-2012 LNAPL Near Tank 37, SRTF).
2. Releases that occurred after refinery operations ceased in June 2020 and during decommissioning and demolition of the former refinery:

¹ August 14, 2012 CO&A as amended June 26, 2020 and referred to as the “Buyer-Seller Agreement”.

² Philadelphia Refinery Operations, a series of Evergreen Resources Group, LLC (“Evergreen”) is managing the legacy remedial work for Sunoco (R&M), LLC. For clarity, Sunoco, Inc. n/k/a ETC Sunoco Holdings LLC, Sunoco, Inc. (R&M) f/k/a Sunoco (R&M), LLC n/k/a Energy Transfer (R&M), LLC effective 4/19/2021 and Evergreen shall be referred to collectively as “Evergreen” in this Report.



- A 2021 release from overhead piping near the 860 Unit Cooling Tower and Hartranft Street (860 Unit and Hartranft Street Release);
 - A 2021 release from piping along the Dike Roadway near PB 881 (PB 881 Dike Roadway Release);
 - A 2022 release from an underground containment structure caused by a water main break along River Road (August 2022 River Road Release Area);
 - A 2022 overflow release from the No. 4 Separator due to a check valve failure and backflow from Tank 1136 to the No. 4A Separator (No. 4 Separator Release); and
 - A 2023 release from subsurface pipe within Right-of-Way-3 (ROW-3) approximately 0.45 miles south of Frontage Road (ROW-3 Release on June 22, 2023 Area).
3. Potential releases identified and investigated during the decommissioning and closure of aboveground storage tanks (ASTs) which are being completed in accordance with the *Storage Tank and Spill Prevention Act* (Act 32) and 25 PA Code §245 (Subchapter D).

BDH has remediated or is continuing to characterize and remediate the releases identified above in accordance with applicable portions of Act 2, 25 PA Code §250, Act 32, and Subchapter D. The locations of the release areas being addressed under the Act 2 program are shown on **Figure 1** and the AST tank groups are shown on **Figure 2**. The status of the characterization, remediation, and regulatory closure of these areas is summarized in the following sections.

This is the tenth *Status Report* and summarizes remedial activities completed during the period from February 1, 2026 through August 1, 2026. The next semi-annual *Status Report* will cover activities completed from August 1, 2026 through February 1, 2027. Although semiannual reporting for the broader remediation program will continue, the AST closure program was completed during this reporting period, as discussed in Section 4.

2 Releases During Refinery Operation

This section summarizes the status of releases that occurred during refinery operations and that BDH is addressing under the Act 2 Program.

2.1 136 Naphtha Release

On February 22, 2019, approximately 53,000 gallons of petroleum-product identified as light naphtha were released to the ground surface from defects in aboveground piping associated with former Process Unit 137, near the location of the former Unit 136. On June 2, 2021, Langan Engineering and Environmental Services, Inc. (Langan) submitted a Notice of Intent to Remediate (NIR) to PADEP (eFacts PF No. 850105) to address the soil impacts associated with the release under the non-residential Statewide Health Standards (SHS). A copy of the NIR was also submitted to the City of Philadelphia and a legal notification was published in the *Philadelphia Inquirer*.

Stantec Consulting Services, Inc. (Stantec) observed the release while conducting routine monitoring at the Facility. Initial response actions included using a vacuum truck to remove water and product from the nearby storm sewer, culvert, and test pits installed along the compromised product line. Between November 25 and December 12, 2019, BDH excavated soil affected by the release. The limits of the excavation were guided by visual observations of impacts, and excavation depths ranged from approximately 2 to 6 feet below ground surface (bgs). Approximately 377 tons of soil were excavated and transported off-site for disposal. Post-excavation soil sample results did not identify chemicals at concentrations exceeding the applicable PADEP SHS Medium Specific Concentrations (MSCs).

Langan subsequently submitted a *Combined Remedial Investigation Report/Final Report* to PADEP on June 29, 2021, to document the remediation of the release area. PADEP identified technical deficiencies in the report in a letter dated August 26, 2021.

On April 17, 2025, BDH submitted a *Remedial Investigation and Final Report* to PADEP documenting the additional activities completed to address PADEP's comments. PADEP identified technical deficiencies in the report in a letter dated June 9, 2025. BDH responded within the applicable 60-day review period and submitted a *Revised Remedial Investigation and Final Report* to PADEP on August 7, 2025. PADEP issued a *Disapproval of Final Report* Letter on October 3, 2025. BDH is preparing a revised NIR and Remedial Investigation and Cleanup Plan to pursue closure of the 136 Naphtha Release area under the Site-Specific Standard (SSS).

2.2 No. 3 Separator Release

The No. 3 Separator Remediation System was a 10-well total-fluids recovery system installed in 2012 to address LNAPL from a prior release near the No. 3 oil-water separator along the Schuylkill River. BDH assumed operation of the recovery system from Evergreen in 2013 after additional LNAPL was identified in the area.

A NIR was submitted to PADEP on March 1, 2022 (eFacts PF No. 856439) to address the soil and groundwater impacts associated with the release under the non-residential SHS. An updated NIR was submitted to PADEP on April 17, 2025. The updated NIR stated that BDH intended to address groundwater and LNAPL under the SSS through pathway elimination.

The recovery system operated until November 2021, when it was decommissioned due to the absence of recoverable LNAPL. Following shutdown of the plant-air system, skimmer pumps were used to remove measurable LNAPL from the monitoring and recovery wells associated with the No. 3 Separator Remediation System. Terraphase conducted additional site characterization activities in the No. 3 Separator area in March and April 2025.

The investigation demonstrated that the remaining LNAPL is residual and is no longer mobile or recoverable. Accordingly, the LNAPL has been remediated to the maximum extent possible (MEP). BDH submitted a *Remedial Investigation Report and Cleanup Plan* to PADEP on August 8, 2025 and PADEP approved the report on November 5, 2025. BDH submitted a *Final Report* on March 26, 2026, which PADEP approved by PADEP on June 23, 2026. BDH subsequently prepared an environmental covenant for the No. 3 Separator area and submitted it to PADEP on July 29, 2026, within 30 days of PADEP's

approval of the *Final Report*. BDH is awaiting feedback from PADEP regarding the environmental covenant.

2.3 UDEX Release

During a routine Facility-wide well-gauging event in summer of 2018, Stantec (on behalf of Evergreen), identified LNAPL in two monitoring wells where it had not previously been observed (i.e., S-414 and S-283) and an increase in apparent LNAPL thickness in a third well (i.e., S-382). LNAPL analyses and forensic comparisons indicated that the LNAPL from S-382 was chemically similar to the other samples but also contained a smaller amount of extremely weathered middle petroleum distillate. The results indicated that commingled LNAPL plumes appeared to be present in this area.

In late July 2018, BDH identified a leak from an underground portion of a product line that conveyed reformat to the UDEX unit. A NIR was submitted to PADEP on March 1, 2022 (eFACTS No. 856431) to address soil and groundwater impacts associated with the release under the SHS. BDH has retained Stantec to characterize and remediate the release area.

Between September 2018 and November 2021, skimmer pumps operated at three recovery wells and recovered more than 96,000 gallons of free product from the subsurface. Between April 2021 and January 2022, a pilot test of soil vapor extraction (SVE) technology converted to vapor, extracted, and combusted more than 24,000 gallons of free product. A full-scale SVE system consisting of six internal-combustion engines (two double-engine units and two single-engine units) began operating in May 2022. Targeted air-sparge treatment has been used to augment the SVE system since September 2024. The combined air-sparge and SVE remedy continued to operate during the first six months of 2025, with one unit remaining in operation through July 31, 2025. In total, approximately 294,027 gallons of LNAPL were recovered or destroyed through remediation activities conducted between 2018 and 2025.

BDH submitted a *Remedial Investigation Report* to PADEP on October 2, 2025, which PADEP approved on December 26, 2025. BDH subsequently submitted a *Human Health Risk Assessment (HHRA) Report* and *Screening Level Ecological Risk Assessment (SLERA) Report* on February 11, 2026. PADEP approved the HHRA and SLERA reports on May 8, 2026. BDH anticipates the *Cleanup Plan* for this release will be submitted in 2026.

2.4 Release East of Former Tank PB 253

In July 2016, PES personnel discovered product-affected soil at the ground surface immediately outside of the emergency containment berm for AST PB 253. As part of the initial response, the affected soil was excavated and removed. PES personnel also suspected that an underground product line extending north to south along the adjacent access road had leaked. The product line was exposed and repaired. The volume and duration of the suspected pipeline release are unknown.

A NIR was submitted to PADEP on March 5, 2024 (eFacts PF No. 874428) associated with the release under the SSS. BDH anticipates that a *Remedial Investigation Report and Cleanup Plan* for this release will be submitted in 2026.



2.5 Post-September 2012 LNAPL near Former Point Breeze Tank Farm

In April and July 2019, Evergreen identified changes in apparent LNAPL thickness in two monitoring wells near the Former Point Breeze Tank Farm. The LNAPL consists of petroleum products of varying compositions, and the specific release mechanism is unknown. Available information indicates that at least a portion of the LNAPL may have been released after September 8, 2012. LNAPL released before September 8, 2012 is also present in the area and is being addressed by Evergreen as Pre-Existing Contamination.

A NIR was submitted to PADEP on November 27, 2024 (eFacts PF No. 880321) to address the release under the non-residential SHS.

BDH conducted initial LNAPL and soil investigations in April and August 2023. Based on the results of those investigations, BDH installed a monitoring well and completed additional LNAPL characterization in May 2025. The characterization results indicate that LNAPL remains in the area and appears to be associated with multiple historical sources. LNAPL identified in the unsaturated zone and perched on a clay layer approximately 4 to 10 feet bgs is associated with post-September 2012 contamination, whereas LNAPL present at groundwater table is considered Pre-Existing Contamination.

A collection trench was installed as an engineering control to prevent migration of post-September 2012 contamination to adjacent stormwater features. BDH is conducting additional investigations to confirm the extent of LNAPL associated with post-September 2012 contamination and evaluate whether additional recovery is warranted to remediate the LNAPL to MEP.

As part of this evaluation, BDH installed a separate basin sump in August 2025 and five recovery wells between September and November 2025. Between February and May 2026, BDH conducted periodic monitoring, gauging, LNAPL recovery, and dewatering at the LNAPL collection infrastructure, including the collection trench, basin sump, recovery wells, and nearby Evergreen wells.

In June 2026, BDH conducted additional field activities, including:

- Collection of an LNAPL sample for viscosity and density analysis;
- A pilot pumping test and rising-head/falling-head test at Evergreen well S-1034; and
- Vacuum removal of fluids from the LNAPL collection trench, basin sump, and recovery wells.

BDH is finalizing a conceptual design for modifications to the collection trench and basin sump infrastructure. The modifications are intended to improve the infrastructure's long-term performance and effectiveness as an engineering control and reduce ongoing operation and maintenance requirements. These activities will support the preparation of the *Remedial Investigation Report/Cleanup Plan*, which BDH anticipates submitting in 2026.

2.6 Post-September 2012 LNAPL South of Former 870 Unit

In June 2019, Evergreen identified a change in apparent LNAPL thickness in one monitoring well south of the Former 870 Unit. The specific release mechanism is unknown, and the LNAPL has a potential release date after September 8, 2012. LNAPL released before September 8, 2012, is also present in the area and is being addressed by Evergreen as Pre-Existing Contamination.

A NIR was submitted to PADEP on April 28, 2025 (eFacts PF No. 883479) to address the release under the non-residential SHS. BDH submitted a revised NIR to PADEP on January 23, 2026. The revised NIR stated that BDH intended to address soil and groundwater under the SSS through pathway elimination.

BDH conducted initial LNAPL and soil investigations in April and August 2023. Based on results of those investigations, BDH installed a monitoring well and completed additional LNAPL characterization in May 2025. BDH anticipates that a *Remedial Investigation Report/Final Report* for this release will be submitted in 2026.

2.7 Post-2012 LNAPL near Tank 37, SRTF

In February 2019, Evergreen identified a change in apparent LNAPL thickness in well S-122SRTF, located east of Tank 37. The specific release mechanism is unknown, and the LNAPL has a potential release date after September 8, 2012. LNAPL that was released prior to September 8, 2012 is also present in the area and is being addressed by Evergreen as Pre-Existing Contamination.

A NIR was submitted to PADEP on July 1, 2025 (eFacts PF No. 885457) to address the release under the non-residential SHS.

In June 2024, BDH collected an LNAPL sample from well S-122SRTF for forensic evaluation. The results indicated that the LNAPL remaining in the area appears to be associated with multiple historical sources. In October 2025, four soil samples were collected for forensic evaluation. Dakota Technologies, on behalf of BDH, also conducted an investigation using Ultra-Violet Optical Screening Tool (UVOST®) combined with a Hydraulic Profiling (HP) sensor to characterize and differentiate LNAPL within and near well S-122SRTF.

Based on the results of the UVOST investigation, BDH plans to conduct supplemental field investigation consisting of monitoring well installation, soil and groundwater sampling, and periodic well monitoring. The results will support preparation of the *Remedial Investigation Report* for the Post-2012 LNAPL Near Tank 37 release area.

3 Releases During Decommissioning and Demolition

This section summarizes the regulatory closure status of releases that occurred during the decommissioning and demolition of the former refinery. All releases discussed in this section have achieved regulatory closure.

3.1 860 Unit Cooling Tower and Hartranft Street Release

As documented in the August 2024 *Status Report*, the 2021 release from overhead piping near the 860 Unit Cooling Tower and Hartranft Street achieved regulatory closure in April 2024.

3.2 PB 881 Dike Roadway Release

As documented in the August 2024 *Status Report*, the 2021 release from piping along Dike Roadway near PB 881 achieved regulatory closure in April 2024.

3.3 August 2022 River Road Release Area

As documented in the August 2025 *Status Report*, the 2022 subsurface water line leaks along River Road achieved regulatory closure in June 2025.

3.4 No. 4 Separator Release

As documented in the February 2025 *Status Report*, the 2022 release from the No. 4 Separator achieved regulatory closure in September 2024.

3.5 ROW-3 Release on June 22, 2023 Area

As documented in the February 2025 *Status Report*, the 2023 release that occurred during demolition activities and removal of a subsurface pipe within ROW-3 achieved regulatory closure in January 2025.

4 Releases Identified during AST Closure

Removal of the ASTs and associated infrastructure began in December 2020. Site Assessment sampling commenced in May 2021 in accordance with Terraphase's *Aboveground Storage Tank Closure Work Plan*, dated March 22, 2021, and approved by the PADEP on April 23, 2021. The AST closure program addressed 153 regulated ASTs, representing approximately 330 million gallons of storage capacity, across the more than 1,300-acre Facility.

The AST closure activities were implemented using a phased, tank-group approach. Rather than submitting separate Site Assessment results, closure reports, and closure forms for each AST, the results were evaluated and reported by tank group. The Facility was divided into nine Tank Groups³ (**Figure 2**). Decommissioning, demolition, and required Site Assessment activities have been completed for all nine tank groups.

Site Characterization Reports (SCRs) were initially submitted for Tank Groups 01, 02, 03, 04, 06, and 07/07A. Based on discussions with PADEP and additional Site Assessment and Site Characterization activities, BDH subsequently submitted Release Investigation Reports to demonstrate that concentrations exceeding the applicable MSCs were attributable to Pre-Existing Contamination, as defined in the CO&A, rather than releases from the ASTs subject to closure.

During this reporting period, PADEP approved the Release Investigation Reports for Tank Group 01 and the combined Tank Group 06 and Tank Group 07/07A. PADEP approved the Tank Group 01 Release Investigation Report on April 7, 2026. PADEP approved the combined Tank Group 06 and Tank Group 07/07A Release Investigation Report on July 7, 2026. This approval completed the regulatory review and closure process for the final two tank groups. Accordingly, all nine tank groups have received PADEP closure approval.

Throughout the AST closure program, Terraphase prepared periodic status summary reports and participated in coordination calls with BDH and PADEP to document the status of demolition, Site Assessment, release investigation, corrective action, and regulatory reporting activities. Status Summary Report No. 114 documents completion of the AST closure program and is the final monthly AST status summary report. Although no additional monthly AST status reports are anticipated, the status of BDH's other ongoing remediation activities will continue to be documented in the Semi-Annual Remediation Status Reports.

The final closure status of each Tank Group is summarized below.

Tank Group Closure Status

Tank Group	Incident Number	Report Type	Submittal Date	Notes
01	56446	Release Investigation Report	1/22/26	Closure approval received on 4/7/2026.
02	56377	Release Investigation Report	7/22/2024	Closure approval received on 2/21/2025.
03	56663	Release Investigation Report	6/10/2025	Closure approval received on 8/11/2025.
04	57976	Release Investigation Report	6/26/2025	Closure approval received on 8/26/2025.
05	57203	Site Characterization Report; Closure Report Addendum; Subsurface Investigation Report	12/23/2022; 8/14/2023; 3/26/2024	Closure approval received on 5/23/2024.

³ In December 2022, aboveground storage tanks GP R 250 and GP R 251 were re-assigned to Tank Group 07A due to inaccessibility for Site Assessment sampling and were evaluated separately from Tank Group 07. However, as requested by PADEP, Tank Group 07A was included in the Tank Group 07 report. In March 2023, Tank Group 09, located in the southern portion of the Girard Point Refinery, was added to the AST Closure scope of work.

Tank Group Closure Status

06	58434	Release Investigation Report	11/14/2025	Closure approval received on 7/7/2026.
07/07A	57973			
08	60059	Release Investigation Report	10/8/2024	Closure approval received on 4/28/2025.
09	60221	Release Investigation Report	12/16/2024	Closure approval received on 5/7/2025.

5 Closing

During this reporting period, PADEP approved the final reports associated with the AST closure program. As a result, all nine tank groups have received regulatory closure, and no additional monthly AST status summary reports are anticipated. BDH will continue to characterize, remediate, and pursue regulatory closure of the remaining release areas described in Section 2, and the status of those activities will be documented in subsequent Semi-Annual Remediation Status Reports.

Terraphase and BDH appreciate PADEP's coordination and review throughout implementation of the AST closure program.

Should you have any questions, please contact Amy Piccone (apiccone@hrpgroup.com) and Julianna Connolly (jconnolly@hrpgroup.com) at HRP Group.

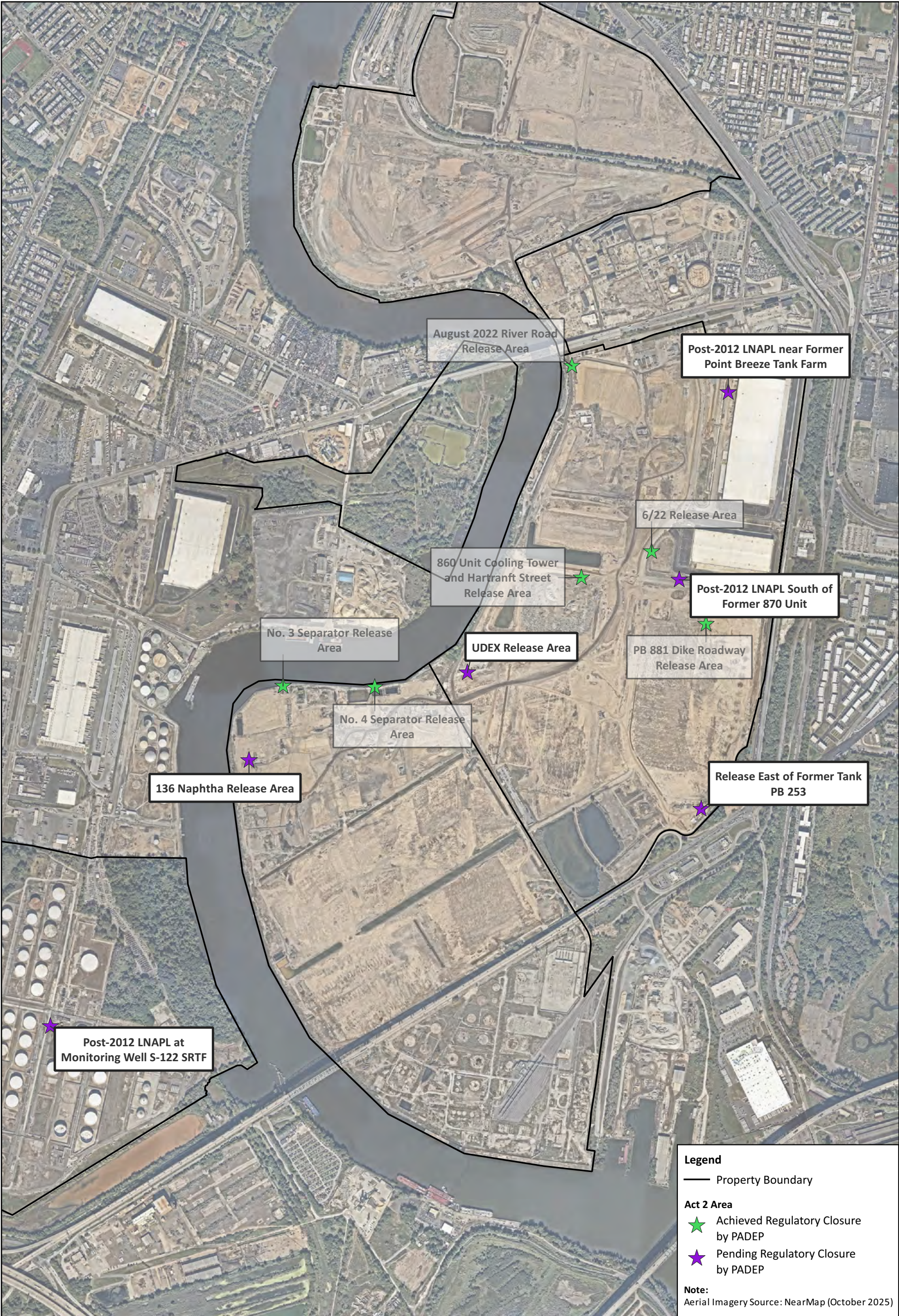


Figures

- 1 Post-2012 Release Areas Pursuing Act 2 Closure
- 2 Tank Groups



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Legend

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Property Boundary

Act 2 Area

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Achieved Regulatory Closure by PADEP

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Pending Regulatory Closure by PADEP

Note:
Aerial Imagery Source: NearMap (October 2025)

N

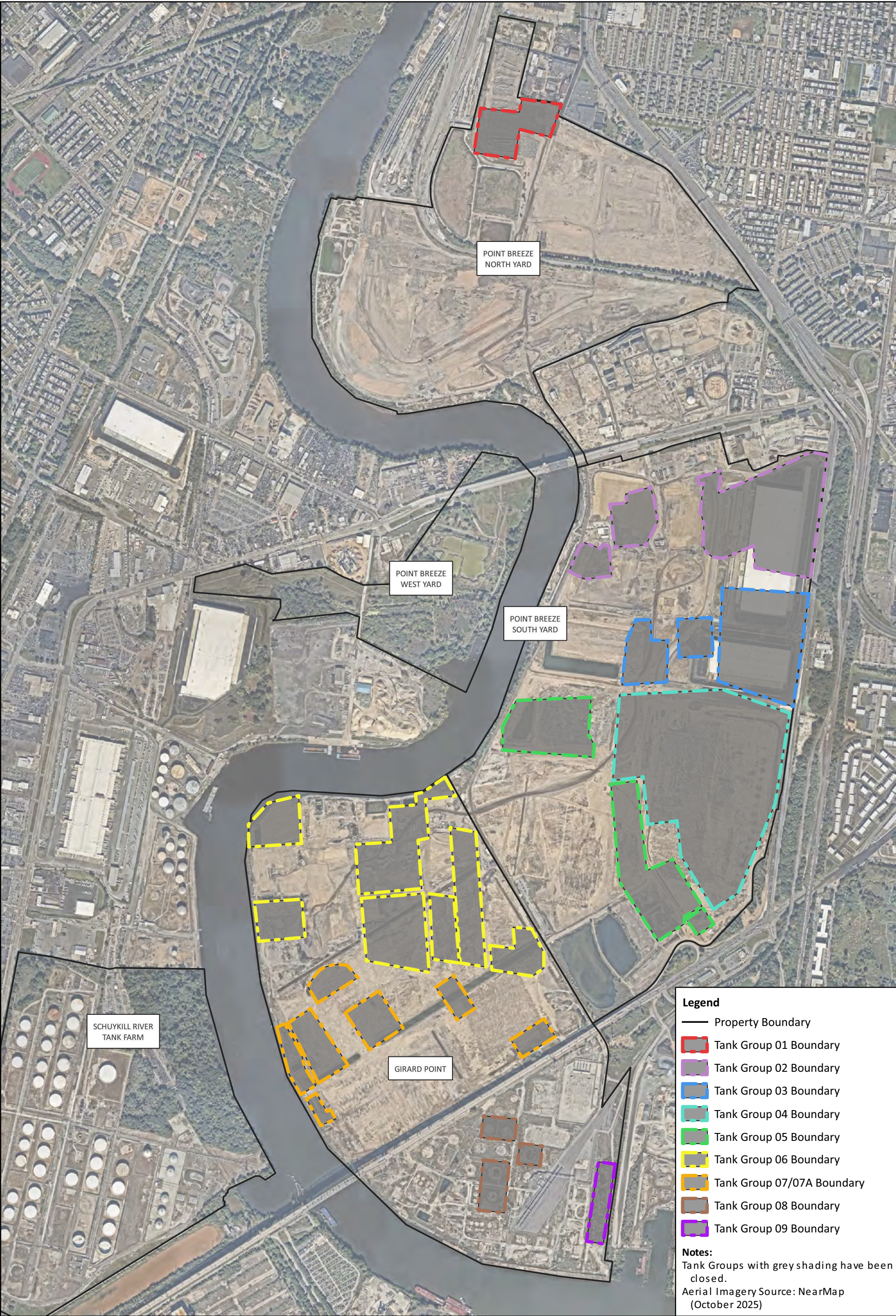
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1 Inch = 1000 Feet

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	PROJECT: August 2026 Semi-Annual Status Summary
	PROJECT NUMBER: P044.001.008

Post-2012 Release Areas Pursuing Act 2 Closure
FIGURE 1

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1 Inch = 1000 Feet

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Tank Groups
FIGURE 2