Appendix M.4

Visual Assessment Plan

Version 1.2

May 1, 2025

UPPER MAKEFIELD RESPONSE
WASHINGTON CROSSING, PENNSYLVANIA

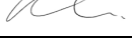
VISUAL ASSESSMENT PLAN

Version 1.2

Prepared on Behalf of:
Sunoco Pipeline LP

Prepared By:
CTEH, LLC
5120 Northshore Drive
Little Rock, AR 72118

May 1, 2025

	NAME/ORGANIZATION	SIGNATURE	DATE SIGNED
v1.0 Prepared by:	Autumn Adams, CTEH		02/20/2025
v1.0 Reviewed by:	Helen Dubach, CTEH		02/20/2025
v1.1 Prepared by:	Helen Dubach, CTEH		03/06/2025
v1.2 Prepared by:	Sarah Burnett, PhD, CTEH		05/01/2025
Approved by:			
Approved by:			

1.0 Introduction and Purpose

This Visual Assessment Plan (VAP) was prepared by CTEH, LLC (CTEH) on behalf of Sunoco Pipeline LP (Sunoco Pipeline) to provide technical guidance for surface water and shoreline observation and documentation in support of initial assessment activities following the Upper Makefield Response in Washington Crossing, Pennsylvania. A release from a pipeline that transports refined petroleum products, including jet fuel, was identified in January 2025. The GPS coordinates for the approximate location of the release site (hereinafter referred to as Site) are: 40.271184, -74.875953. A map of the incident location is provided in **Attachment A**.

This VAP describes the methods and procedures that will be followed during surface water and shoreline observation and assessment related to the Upper Makefield Response and associated response activities.

2.0 Health and Safety

Field personnel will review and adhere to the site-specific Health and Safety Plan (HASP). Assessment and documentation activities will only be conducted under weather and other environmental conditions that do not create an unsafe working environment. Daily tailgate safety briefings will be conducted prior to the initiation of work. Appropriate personal protective equipment (PPE) will be utilized for each task.

3.0 Visual Assessment Methodology

This VAP utilizes a rapid methodology for visual observation and documentation of oil or product on water and on land, derived from the Shoreline Cleanup Assessment Technique (SCAT)[1]. CTEH visual assessment personnel will conduct assessments on foot and utilize a mobile application to input observational data using pre-defined categories. This categorization allows for color-coded mapping and presentation of visual assessment data, which enables communication and comparison of data over time. Personnel from other organizations (e.g., Pennsylvania Department of Environmental Protection [PA DEP]) may join CTEH personnel during visual assessment surveys at their discretion.

[1] https://response.restoration.noaa.gov/sites/default/files/manual_shore_assess_aug2013.pdf

3.1 Location and Frequency

Locations selected for visual assessment will be determined based on the inferred flow pathway of groundwater migration from the Site to downstream surface water bodies, including the Delaware Canal and the Delaware River. Selected locations will be easily accessible public areas of the canal and river (e.g., footpaths, bridges/road crossings). Descriptions and GPS coordinates of the locations selected for visual assessment are provided below, and a map of the locations is provided in **Attachment B**.

- VA01: Delaware Canal – at pipeline crossing (40.277044 -74.863154)
- VA02: Delaware Canal – at mouth of unnamed creek (40.274605, -74.862281)
- VA03: Delaware Canal – at mouth of Dyers Creek (40.267261, -74.858753)
- VA04: Delaware Canal – at Lock 7 (40.261389, -74.854202)
- VA05: Delaware Canal – at waste gate upstream of 1799 House (40.257926, -74.852275)
- VA06: Delaware River – on New Jersey side of I-295 bridge (40.259492, -74.846844)
- VA07: Delaware River – on Pennsylvania side of I-295 bridge (40.258108, -74.849205)
- VA08: Delaware River – at Yardley Boat Ramp (40.253311, -74.845385)
- VA09: Delaware River – at pipeline crossing/Houghs Creek (40.277563, -74.858582)

Three upstream locations have also been established as potential locations for visual assessment. Unlike the downstream visual assessment locations, the upstream visual assessment locations are not observed on a regular or defined basis. If product/sheen is observed at a downstream visual assessment location, the upstream visual assessment locations will be observed to evaluate the potential extent of product/sheen impact. If product/sheen is not observed at the downstream visual assessment locations, the upstream visual assessment locations will not be observed. Descriptions and GPS coordinates of the upstream visual assessment locations are provided below, and a map of the locations is provided in **Attachment B** (where the upstream visual assessment locations are designated as "Optional").

- VA10: Delaware Canal – upstream, at Washington Crossing Road (40.289672, -74.877201)
- VA11: Delaware River – upstream, on Pennsylvania side of Washington Crossing Bridge (40.294631, -74.868987)
- VA12: Delaware River – upstream, on New Jersey side of Washington Crossing Bridge (40.296122, -74.867158)

Visual assessments will be conducted daily, as weather and water conditions allow. This frequency may be reduced as the risk of a release to water reduces or is eliminated and with approval from Sunoco Pipeline personnel.

3.2 Visual Assessment Categorization

The following visual assessment categories have been defined for the description and documentation of surface water and shoreline observations. Observations of product, sheen, and odor will be made and categorized as outlined in **Table 1**. The presence or absence of odors potentially associated with gasoline will be documented during every visual assessment event.

Table 1. Visual Assessment Categorization

Value	Category	Description
0	Ice/snow	Unable to observe due to ice/snow cover
1	NOO, partial ice/snow	No observed product or sheen; partial observation due to ice/snow cover
2	NOO	No observed product or sheen
3	Sheen - Light	< 10% sheen or odor*
4	Sheen - Moderate	11 – 50% sheen
5	Sheen - Heavy	> 50% sheen
6	Product - Light	< 10% product
7	Product - Moderate	11 – 50% product
8	Product - Heavy	> 50% product

* Odor with gasoline-like character. If no product or sheen is observed but a gasoline-like odor is observed, a value of 3 will be assigned.

3.3 Data Analysis

If a visual assessment event indicates the presence of sheen or product, the CTEH visual assessment personnel will walk upstream and downstream (in areas of easy and public access) to visually observe, document, and compare conditions in support of delineation of the extent of sheen and/or product presence. In addition, a surface water sample will be collected at the visual assessment location and at the standard surface water sampling locations, as outlined in the Surface Water Sampling and Analysis Plan (SW-SAP). Surface water sampling will initially be conducted once at the visual assessment location; the results of the sampling event will dictate whether follow-up sampling is conducted at the location or whether the location is added as a standard surface water sampling location, in accordance with the data analysis procedures and decision statements outlined in the SW-SAP.

Regardless of whether a visual assessment event indicates the presence of sheen or product, visual assessments will continue daily.

4.0 Air Monitoring

Real-time air monitoring refers to the use of direct-reading instruments to provide a near-instantaneous readout of a chemical concentration in the air. Air monitoring will be conducted at select visual assessment locations based on proximity to residences (VA01, VA03, VA04, VA05, and VA09). Air monitoring will be conducted using a properly calibrated photoionization detector (PID) with a 10.6

electron volt (eV) lamp (e.g., RAE Systems by Honeywell MultiRAE; detection limit = 0.1 parts per million [ppm]). At each visual assessment location at which air monitoring is conducted, the peak reading of volatile organic compounds (VOCs) will be recorded using a mobile application. All air monitoring instruments will be calibrated daily or per manufacturer recommendations.

5.0 Data Management

Visual assessment data is recorded using a mobile application that electronically captures field data, including geospatial information, visual assessment categories, and photographs. These data are synchronized in real time with CTEH's data management system, allowing for communication and comparison of data (e.g., mapping, utilization of online data dashboards).

6.0 Records Management

Records management refers to the procedures for generating, controlling, and archiving project-specific records and records of field activities. Project records, particularly those that are anticipated to be used as evidentiary data, directly support current or ongoing technical studies and activities, and provide historical evidence needed for later reviews and analyses, will be legible, identifiable, retrievable, and protected against damage, deterioration, and loss on a centralized electronic database. Handwritten records will be written in indelible ink. Records may include, but are not limited to, the following: bound field notebooks on pre-numbered pages, personnel qualification and training forms, maps and drawings, reports issued as a result of the work, procedures used, correspondences, and any deviations from the procedural records. Documentation errors will be corrected by drawing a single line through the error so that it remains legible and writing the correction adjacent to the error; the change will be initialed by the individual responsible, along with the date of change.

Attachment A: Site Map

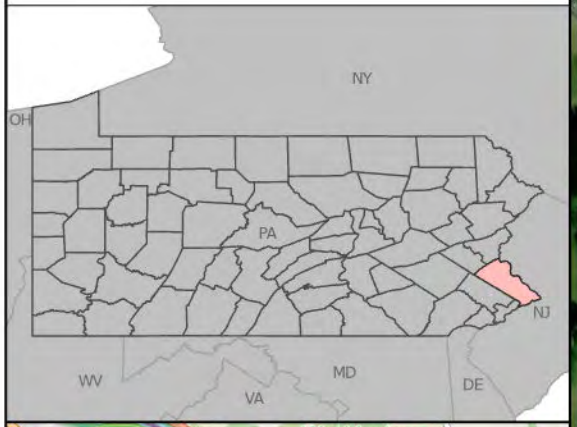
CTEH®

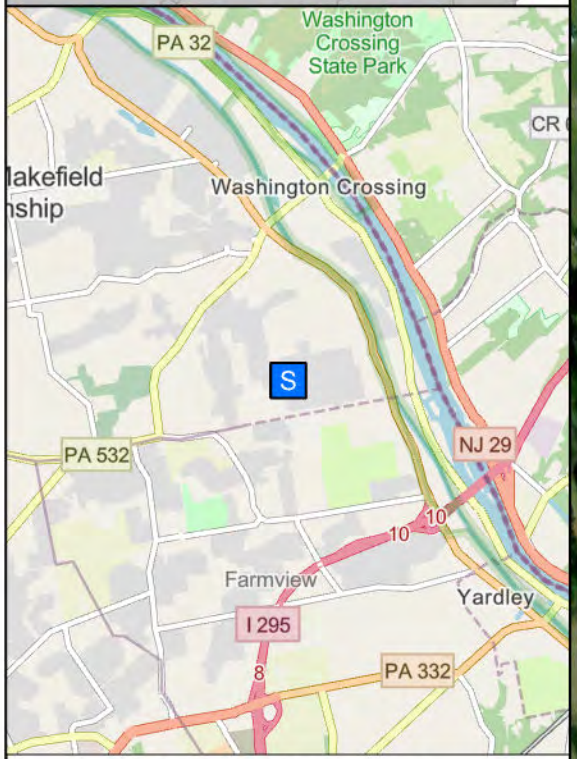
Upper Makefield Response

Incident Location

Washington Crossing, PA | Bucks County

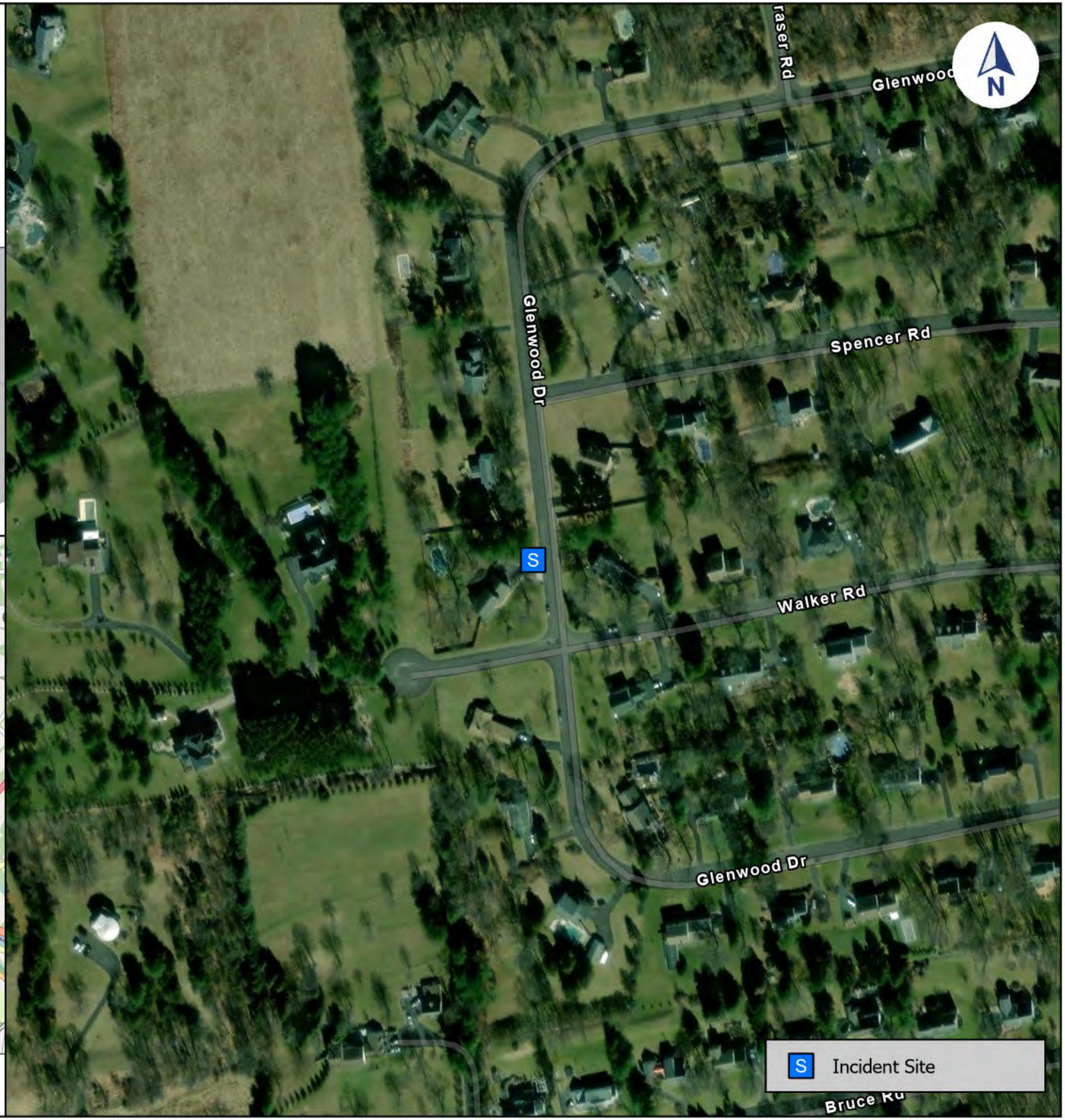
PROJ-051861





Updated At: 2/15/2025 4:18 PM

Projection: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702 Ft US



Attachment B: Map of Visual Assessment Locations

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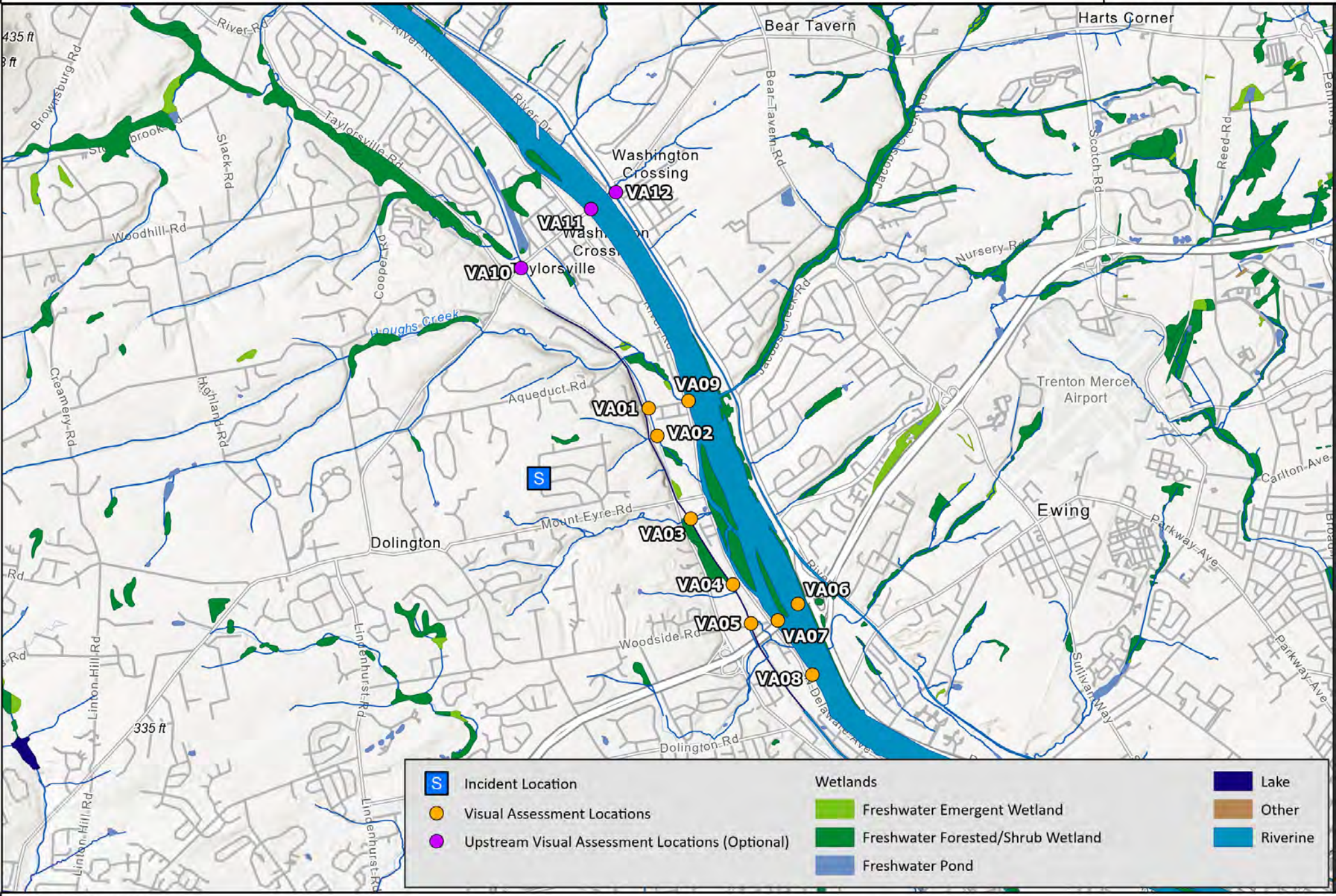
Visual Assessment Locations

Upper Makefield Response

Project: PROJ-051861
Client: Sunoco Pipeline LP
City: Washington Crossing, PA
County: Bucks



Datum: NAD 1983 2011
Projection: NAD 1983 2011 StatePlane Pennsylvania South FIPS 3702

0 0.5 1 Miles

Updated at 2024-11-04 12:45

Management of Change

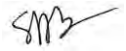
Change from Version 1.0 to 1.1

Summary of Changes: Section 3.0 revised to note that surveys are conducted twice daily, clarify that the inferred groundwater pathway is used to determine assessment locations, and explain the purpose of the upstream locations. Attachment 2 map updated with revised set locations. Title page updated for version control of Version 1.0 to Version 1.1

	NAME/ORGANIZATION	SIGNATURE	DATE SIGNED
Prepared by:	Helen Dubach, CTEH		03/06/2025
Reviewed by:			
Approved by:			
Approved by:			

Change from Version 1.1 to 1.2

Summary of Changes: Corrections made throughout document to replace "Energy Transfer LP" with "Sunoco Pipeline LP"; language and formatting changes throughout; information in previous Sections 3.0 and 4.0 rearranged; detail on visual assessment locations added and frequency of visual assessments decreased from twice daily to once daily (Section 3.1); detail on odor documentation added (Section 3.2); decision statements expanded (Section 3.3); Section 4.0 added to describe air monitoring procedures; title page and page footers updated for version control of Version 1.1 to Version 1.2

	NAME/ORGANIZATION	SIGNATURE	DATE SIGNED
Prepared by:	Sarah Burnett, PhD, CTEH		05/01/2025
Reviewed by:			
Approved by:			
Approved by:			