

Approximate Release Location

**Note:**

The topographic map was acquired through the Esri Imagery Web Service. Topographic Map dated 2013.

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April 2025

Twin Oaks – Newark 14" Diameter Pipeline-  
LNAPL Incident : Site Characterization Work Plan

Figure

**Figure 1**  
**Site Location Map**

Upper Makefield Township  
Bucks County, Pennsylvania

**1**

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**Legend**

 Bucks County Parcels

**Note:**  
The aerial photo was acquired through the Esri Imagery Web Service.  
Aerial photography dated 2024.



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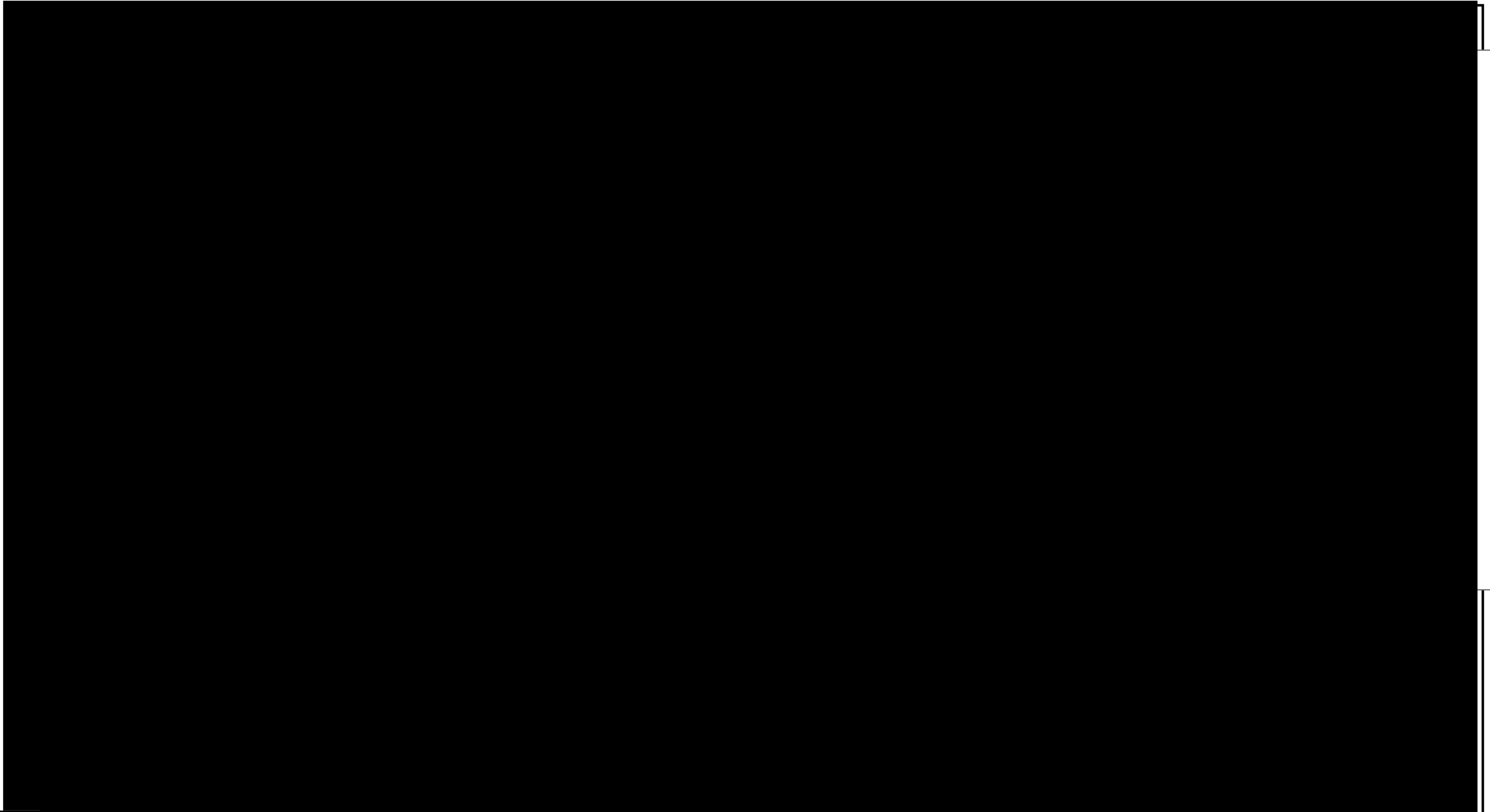
**Figure 2**  
**Site Area Layout Map**

Upper Makefield Township  
Bucks County, Pennsylvania

Figure

**2**





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Figure 3 - Post-Excavation  
Sample Location Map

Upper Makefield Township  
Bucks County, Pennsylvania

Figure

3



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Figure 4 -  
LNAPL Detections in WSWs

Upper Makefield Township  
Bucks County, Pennsylvania

Figure

4





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Figure

Figure 5 - Dissolved Phase  
Detections in WSWs-April 2025

5

Upper Makefield Township  
Bucks County, Pennsylvania





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**Figure 6**  
**Inferred Fracture Traces**

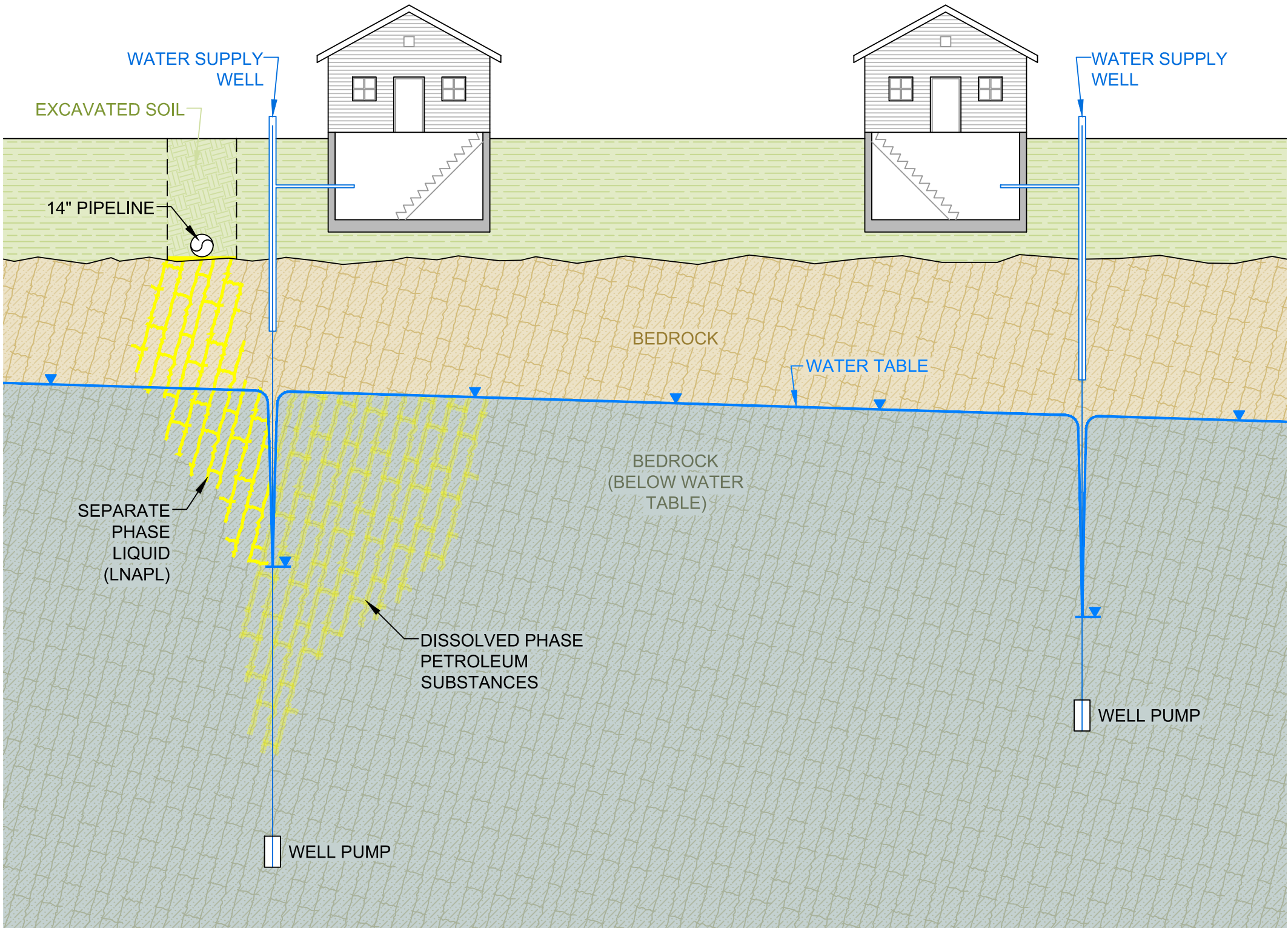
Upper Makefield Township  
Bucks County, Pennsylvania

Figure

**6**



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PRELIMINARY CONCEPTUAL SITE MODEL SCHEMATIC

TWIN OAKS-NEWARK 14" - DIAMETER PIPELINE LNAPL  
INCIDENT: SITE CHARACTERIZATION WORK PLAN

UPPER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

|                    |                 |                   |                      |
|--------------------|-----------------|-------------------|----------------------|
| DESIGNED BY<br>JPB | DRAWN BY<br>JPB | CHECKED BY<br>JNK | PROJECT NO.<br>34328 |
|--------------------|-----------------|-------------------|----------------------|

|        |           |
|--------|-----------|
| DATE   | 4/16/2025 |
| SCALE  | N.T.S.    |
| FIGURE | 7         |

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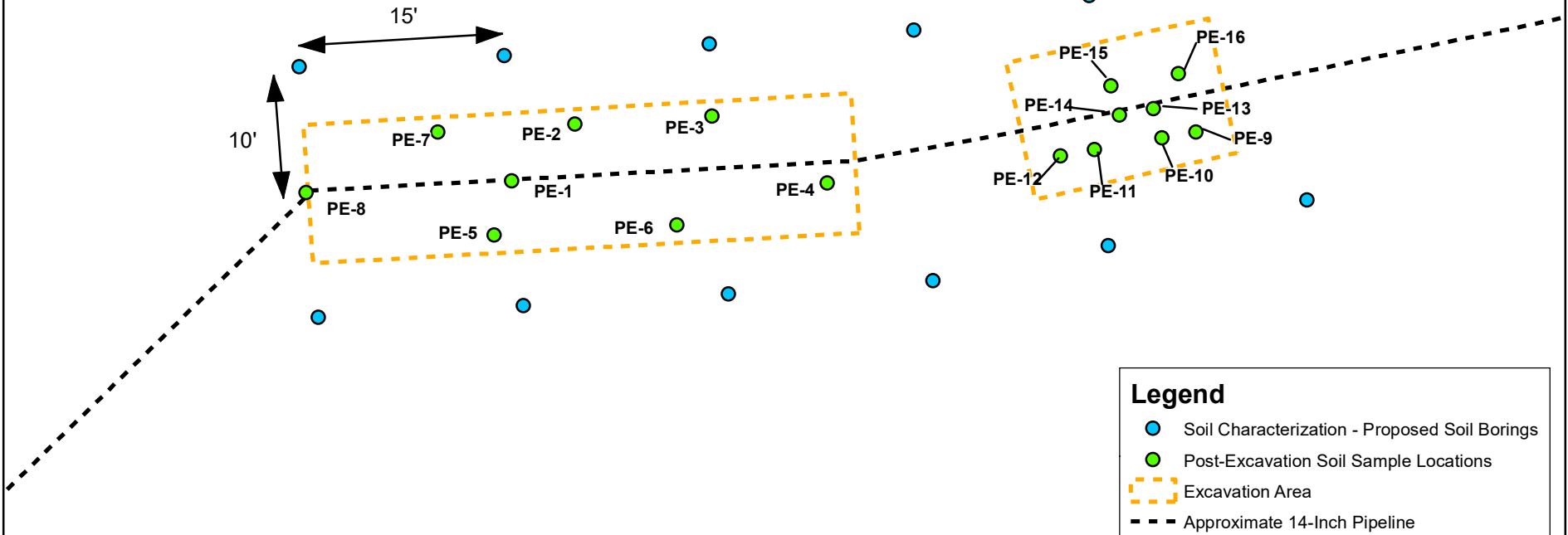
Figure

Figure 8 - Proposed ERI Survey and  
Seismic Refraction Survey Transects

Upper Makefield Township  
Bucks County, Pennsylvania

8





Notes:  
Post-Excavation Soil Sample Locations and  
Excavation Area boundaries were provided by  
Groundwater & Environmental Services, Inc.  
The figure is not drawn to scale.

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**Figure 9 - Soil Characterization  
Proposed Soil Borings**

Upper Makefield Township  
Bucks County, Pennsylvania

Figure

**9**