



September 20, 2007

Mr. Andrew Enzman
National Railroad Passenger Corporation
4001 Vandever Avenue
Wilmington, DE 19802

**RE: Locomotive/Wheel Shop Area Subsurface Investigations Report of Findings;
Amtrak Wilmington Maintenance Facility
Wilmington, Delaware**

Dear Andy:

SECOR International Inc. (SECOR) is pleased to provide National Railroad Passenger Corporation (AMTRAK) with this report of findings of subsurface investigations performed during June through August 2007 in the vicinity of the Locomotive Shop and Wheel Shop located at the Wilmington Maintenance Facility (refer to **Figure 1**). The investigations were performed in order to evaluate the potential occurrence of light nonaqueous phase liquids (LNAPL) on the water table.

The area of investigation is flat and covered with asphalt and concrete. Investigations included peizometer installation, peizometer gauging, and LNAPL sample collection for laboratory analyses. These activities are described below.

Peizometer Installation

On June 15, 2007, ten (10) one-inch diameter peizometers (designated PZ-1 through PZ-10) were installed by East Coast Drilling, Inc. (a Delaware licensed well driller) under the supervision a SECOR geologist. The peizometers were installed to a depth of approximately 10 feet below ground surface (bgs) using direct push (Geoprobe) drilling techniques. The peizometers were constructed by placing eight feet of one-inch diameter PVC well screen (0.010 slot) and two feet PVC casing within each borehole. A sand pack was placed in the annular space to a level above the well screen. A bentonite seal was placed above the sand pack. Each peizometer was completed with a water tight gripper plug in a flush-mount assembly. The approximate peizometer locations are depicted on **Figure 2**. Each peizometer was developed by surging on the day of installation. On July 23, 2007, all peizometers were redeveloped with a small diameter bailer by surging and bailing. All purge water and soil cuttings generated were managed by the facility.

Subsurface materials encountered consisted predominantly of sand and sand with silt. In PZ-7 and PZ-8 clay and clay with silt, respectively, was detected between depths of 7 to 10 feet bgs. Silty clay and silt was reported between depths of 4 and 10 bgs in PZ-9.

Lithologic descriptions, headspace organic vapor measurements (PID readings) and olfactory observations of hydrocarbon odor occurrence are recorded on the drilling logs included in **Appendix A**. Delaware Division of Natural Resources and Environmental Control (DNREC) well completion reports are also included in **Appendix A**.

Peizometer Gauging

All peizometers were gauged on five events to determine the depth to liquids (water and LNAPL). The peizometers were gauged on June 22, 2007; July 3, 2007; July 19, 2007; August 2, 2007; and August 20, 2007. Tabulated well gauging data and hydrographs are presented in **Appendix B**. As indicated, LNAPL (with the maximum apparent LNAPL thickness) was reported in PZ-3 (0.37 feet), PZ-4 (0.02 feet), PZ-5 (0.01 feet), and PZ-8 (1.56 feet). LNAPL was not detected in PZ-1, PZ-2, PZ-6, PZ-7, PZ-9, and PZ-10. The apparent LNAPL thicknesses reported on August 2, 2007 are presented on **Figure 3**. The depth to water generally ranged from approximately 2.5 feet bgs (PZ-9) to 5.0 feet bgs (PZ-1 and PZ-4).

As indicated on **Figures 2 and 3**, storm water sewer, sanitary sewer, and industrial waste sewer piping traverse the area. The storm water piping in the vicinity of Manhole 14 (MH-14; refer to **Figures 2 and 3**) drains to Outfall 007 (refer to **Figure 1**).

In order to evaluate if the water table is above the bottom of the storm sewer, the depth to bottom of the storm sewer from ground surface was determined using a steel measuring tape. Depth to the bottom of the storm sewer measurements are depicted on **Figure 4**. As indicated, the depth to the storm sewer at the manhole locations ranges from approximately 3.67 feet bgs in the area of PZ-8 to 5.67 feet bgs at Manhole 14 (MH-14). The depths to the bottom of two rectangular grates adjacent to Building 16 are approximately 2.75 and 3.17 feet bgs and these are assumed to be associated with laterals to a larger storm sewer pipe (refer to **Figure 4**).

Figure 5 presents a profile of the depths to the bottom of the storm sewer as measured at the manhole locations and the depths to liquids measured in adjacent peizometers. As indicated, in the vicinity of PZ-8, the LNAPL surface is above the bottom of the storm sewer. In the vicinity of PZ-6, PZ-5, and PZ-1 the water table surface is above the bottom of the storm sewer.

LNAPL Sample Collection and Analyses

LNAPL samples were collected from PZ-3 and PZ-8 on July 3, 2007 using disposable bailers. The LNAPL samples were analyzed for PCBs (method 8082) by Lancaster Laboratories, Inc. The laboratory data report is included in **Appendix C**. The sample from PZ-3 reported 17 mg/kg

PCB aroclor 1254 and 25 mg/kg PCB aroclor 1260. The sample from PZ-8 reported 8.6 mg/kg PCB aroclor 1254 and 22 mg/kg PCB aroclor 1260.

Summary

The findings of the investigations are summarized below:

- Ten (10) one-inch diameter peizometers were installed to a depth of the approximately 10 feet bgs. Materials encountered were dominantly sand and silt with clay at some locations.
- LNAPL was detected in four of the peizometers with a maximum apparent thickness of 1.56 feet (PZ-8).
- The bottom of the storm sewer piping in the area was determined to be below the surface of the water table or LNAPL (where detected).
- The analyses of two LNAPL samples for PCBs reported 17 mg/kg PCB aroclor 1254 and 25 mg/kg PCB aroclor 1260 (PZ-3), and 8.6 mg/kg PCB aroclor 1254 and 22 mg/kg PCB aroclor 1260 (PZ-8).

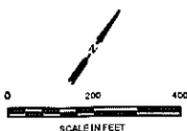
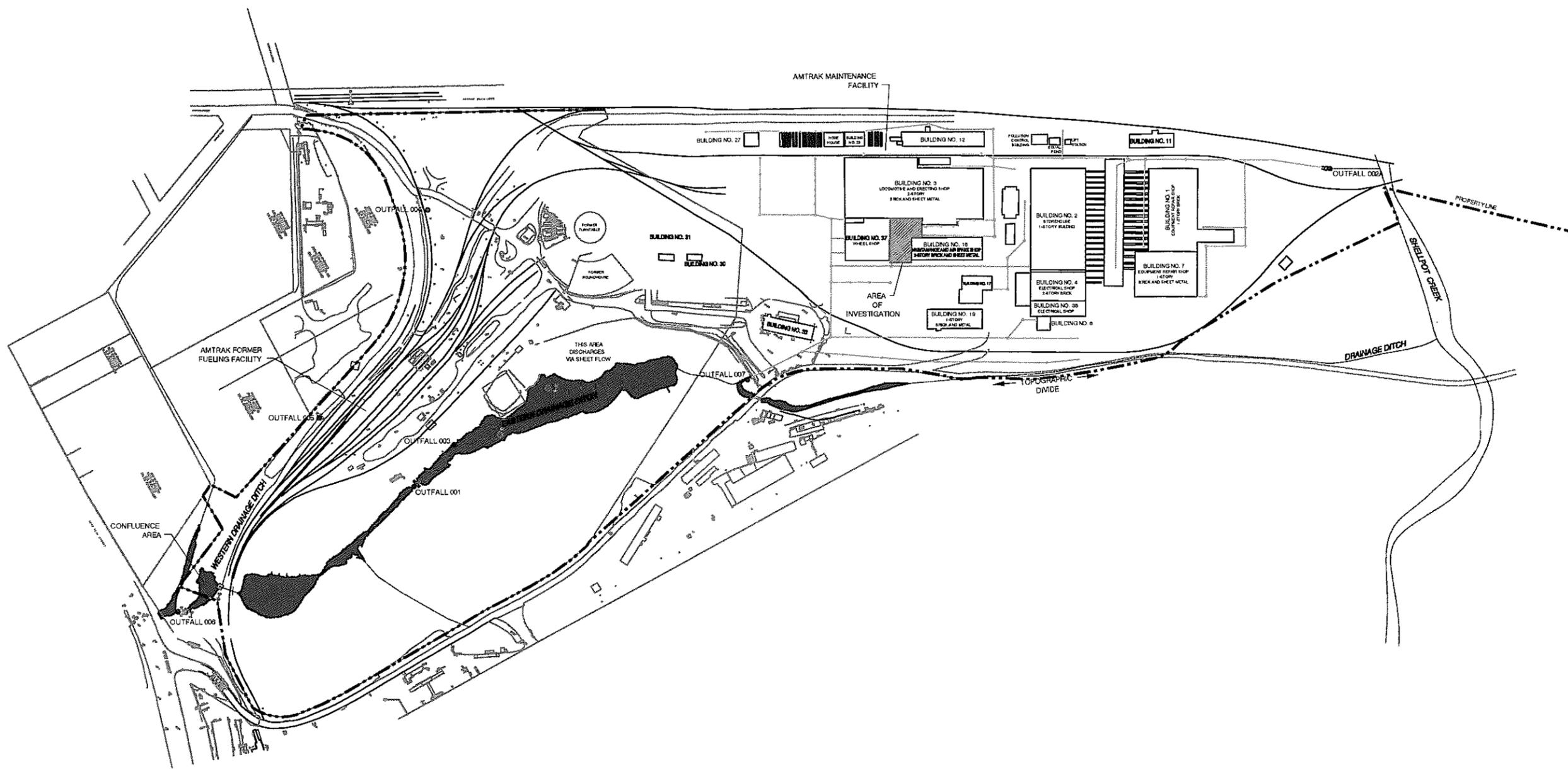
We look forward to discussing SECOR's recommendations for additional activities in this area with Amtrak. Should you have any questions with this report of findings, please contact me at (484) 875-3075.

Sincerely,
SECOR International Incorporated



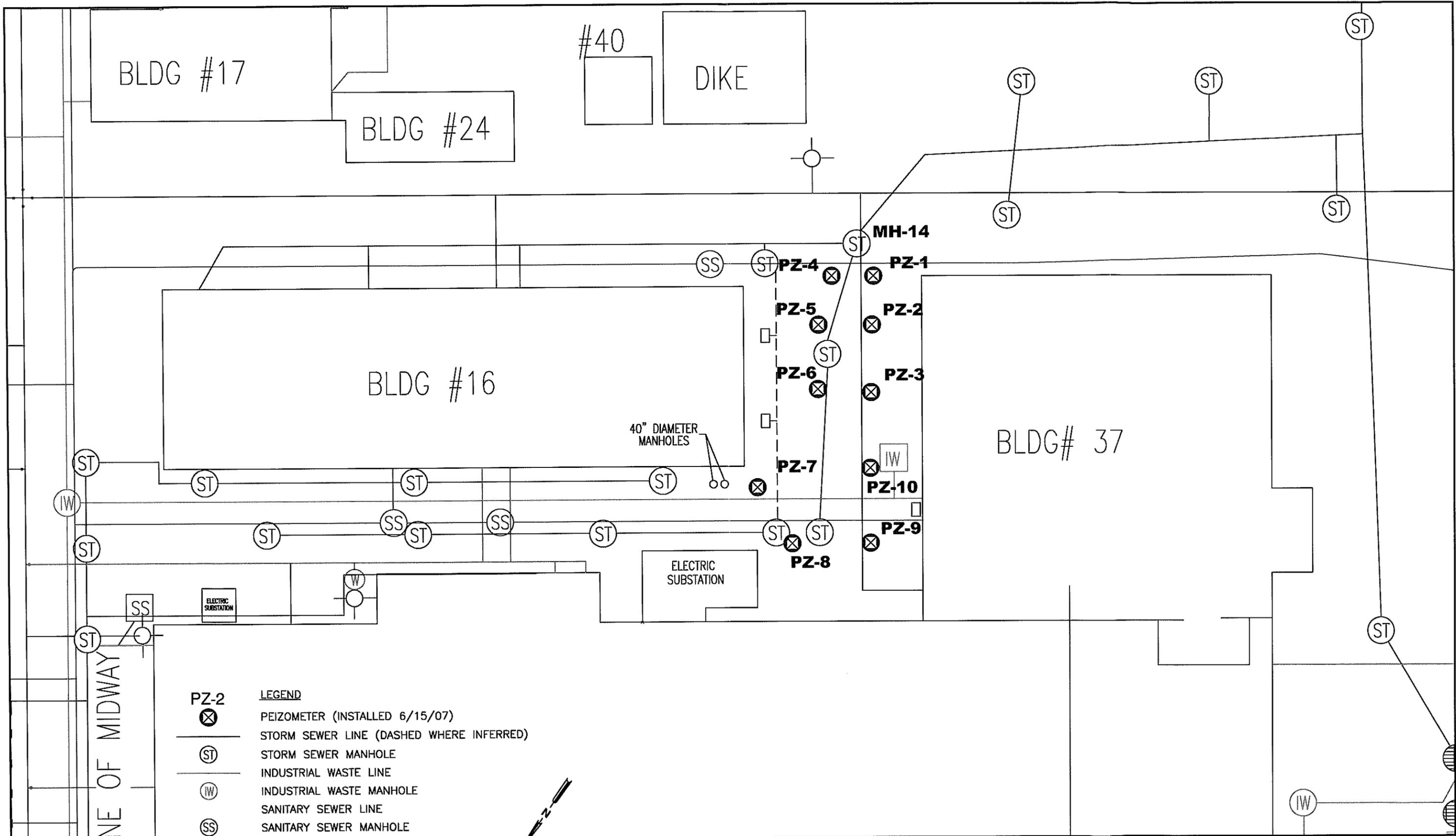
Steve Baggett, PG (84-0000770)
Principal Hydrogeologist

Cc: Charles Lin
Frank Aceto
Project File

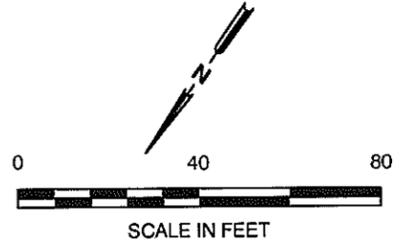


<p>SECOR 102 PICKERING WAY, SUITE 200 ESTON, PENNSYLVANIA PHO: 610.486.8765 FAX: 610.486.8740 FEDPATH: PROPERTY SURVEY</p>	FOR: AMTRAK WILMINGTON LOCOMOTIVE AND WHEEL SHOP AREA VANDEVER AVENUE WILMINGTON, DELAWARE	AREA OF INVESTIGATION	PLATE 1
	JOB NUMBER: 0207.01.01.05.0001	DRAWN BY: TTB	CHECKED BY: SB
			DATE: 03/18/20

8207-11-01-PLATE-PL-ACLDWG

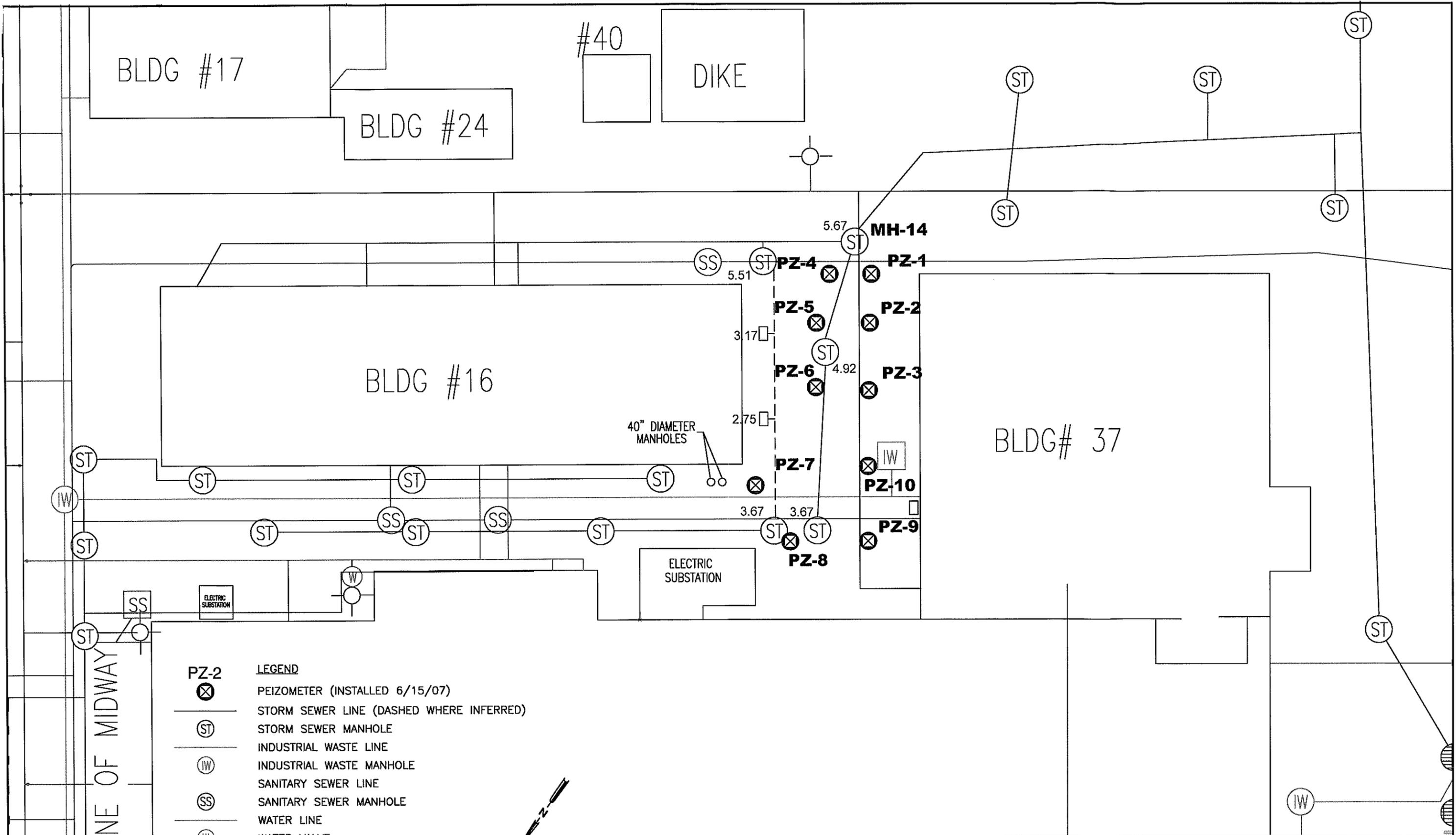


- PZ-2**
- LEGEND**
- ⊗ PEIZOMETER (INSTALLED 6/15/07)
 - STORM SEWER LINE (DASHED WHERE INFERRED)
 - ⊙ (ST) STORM SEWER MANHOLE
 - ⊙ (IW) INDUSTRIAL WASTE LINE
 - ⊙ (IW) INDUSTRIAL WASTE MANHOLE
 - ⊙ (SS) SANITARY SEWER LINE
 - ⊙ (SS) SANITARY SEWER MANHOLE
 - ⊙ (W) WATER LINE
 - ⊙ (W) WATER VALVE
 - AIR LINE
 - GAS LINE
 - ◇ FIRE HYDRANT

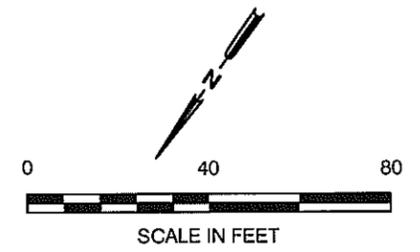


SOURCE: AMTRAK FILE #1010072

 SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075 FAX: (484) 875-9286	FOR:		PEIZOMETER LOCATIONS		FIGURE:
	AMTRAK WILMINGTON LOCOMOTIVE AND WHEEL SHOP AREA VANDEVER AVENUE WILMINGTON, DELAWARE				2
JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:	
	TFB			09/18/2007	

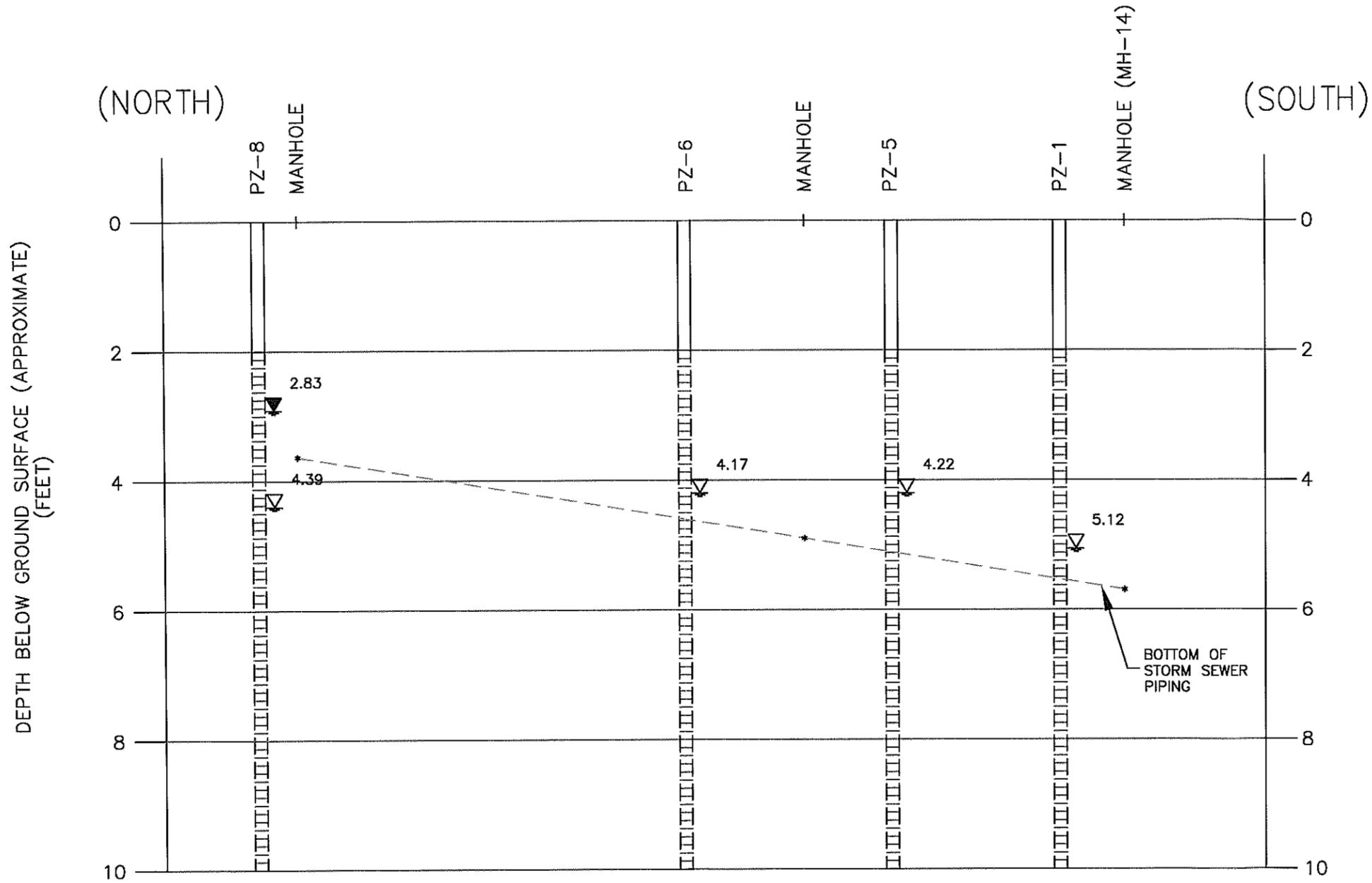


- LEGEND**
- PZ-2 PEIZOMETER (INSTALLED 6/15/07)
 - STORM SEWER LINE (DASHED WHERE INFERRED)
 - STORM SEWER MANHOLE
 - INDUSTRIAL WASTE LINE
 - INDUSTRIAL WASTE MANHOLE
 - SANITARY SEWER LINE
 - SANITARY SEWER MANHOLE
 - WATER LINE
 - WATER VALVE
 - AIR LINE
 - GAS LINE
 - FIRE HYDRANT

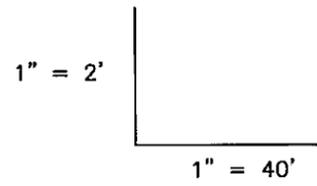


SOURCE: AMTRAK FILE #1010072

 SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075 FAX: (484) 875-9286	FOR:		AMTRAK WILMINGTON LOCOMOTIVE AND WHEEL SHOP AREA VANDEVER AVENUE WILMINGTON, DELAWARE		DEPTH BELOW GROUND SURFACE TO BOTTOM OF STORM WATER PIPING (FEET)		FIGURE: 4	
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	TFB				09/18/2007			



- LEGEND**
- ▼ DEPTH TO LNAPL (AUGUST 20, 2007)
 - ▽ DEPTH TO WATER (AUGUST 20, 2007)
 - ▤ WELL SCREEN
 - ▨ WELL CASING



 SECOR 102 PICKERING WAY, SUITE 200 EXTON, PENNSYLVANIA PHONE: (484) 875-3075 FAX: (484) 875-9286	FOR: AMTRAK WILMINGTON LOCOMOTIVE AND WHEEL SHOP AREA VANDEVER AVENUE WILMINGTON, DELAWARE		PROFILE OF DEPTHS TO LIQUIDS AND BOTTOM STORM SEWER		FIGURE: 5
	JOB NUMBER:	DRAWN BY: TFB	CHECKED BY:	APPROVED BY:	DATE: 09/18/2007