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From:

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Date:

April 7, 2023

Arcadis Project No.:

30174223

Subject:

Short-Term Slab Construction Groundwater Monitoring Plan
RACER, Buick City, Flint, Michigan

This Short-Term Slab Construction Groundwater Monitoring Plan was developed to monitor conditions during slab removal and construction activities at the RACER Buick City Site (Site). This plan proposes monitoring at select wells in each Block for possible contaminant mobilization during slab removal/construction activities.

Background

As shown on **Figure 1** the Site has been broken into 10 Blocks, to facilitate data evaluation. Blocks 1 through 6 are in the process of being sold and as part of the redevelopment the existing concrete building slabs will be removed and new surface cover (building slabs/parking lots, etc) will be installed. At EGLE's request this plan was prepared to monitor groundwater during these activities. For the purposes of this monitoring plan Blocks 2/3 and Blocks 5/6 are evaluated together.

At the Buick City Site more than 1,400 temporary and permanent monitoring wells have been installed since the 1980s for various investigative and monitoring purposes. In order to ensure that future construction activities do not prompt surface water infiltration or vertical migration through existing monitoring wells that are no longer needed for investigation or monitoring purposes, selected monitoring wells will be abandoned as described in the *Monitoring Well Abandonment Procedure* submitted on February 10, 2023. Detailed plans of the wells proposed to be abandoned and those to be retained for long-term monitoring will be provided under separate cover.

The monitoring wells that will remain in place during slab removal and construction and those identified for long-term monitoring will be identified and protected prior to the onset of any demolition or construction activities.

Monitoring Plan

The wells selected at each Block for monitoring during slab removal and construction are presented on **Figures 2 through 5**. The short-term monitoring network consists of sentinel wells and downgradient wells. Initially, only the sentinel wells will be used for monitoring. The downgradient wells will be added to the monitoring program if the sentinel wells show an increase in concentration of contaminants of concern (COCs), described in further detail below. The analytes selected for each well will be based on the known COCs in the area.

The proposed monitoring plan for each Block is:

1. Prior to the onset of slab removal, the short-term construction monitoring wells (sentinel and downgradient) will be sampled for the COCs and a groundwater level will be collected to establish baseline conditions. Historic information for each well will be included for trend analysis purposes.
2. During active slab removal and construction, groundwater elevations and groundwater samples will be collected from the sentinel monitoring wells quarterly.
3. Groundwater elevations will be evaluated to monitor for changes in groundwater elevations and/or flow directions as a result of the change in surface cover. If substantial changes occur, the monitoring well network may be adjusted, if deemed necessary.
4. The analytical results will be compared to the baseline concentrations and to the relevant Part 201 criteria.
 - a. If the concentration of a COC increases by 25% (from the baseline sample) and/or increases to exceed a relevant Part 201 criteria in two consecutive samples then downgradient well(s) will be added to the monitoring network.
 - b. If the downgradient well shows an increasing trend and exceeds a relevant Part 201 criteria, then relevant pathways will be evaluated to assess if any risks are present and need to be addressed. Please note that additional downgradient wells (beyond those shown herein) are being retained as part of the long-term monitoring network and would be available to add to the monitoring program if necessary.
5. In the event that a significant increase in COC concentrations or new exceedances of Part 201 criteria are identified during slab removal/construction activities, quarterly sampling will continue for up to one year after installation of the new slab/surface cover in that area. However, if the concentrations of COC are stable or decreasing during slab removal/construction activities, then no monitoring will be continued following installation of the new surface cover.
6. Monitoring data will be tabulated and provided to EGLE on a quarterly basis and a summary of changes/trends will be provided in the Site's Semi-annual Progress Reports to EGLE (due April 15 and October 15).

The proposed analyte list to be used for short-term construction monitoring for each Block will be submitted under separate cover.

Attachments:

Figure 1 – Site Plan with Block Outlines

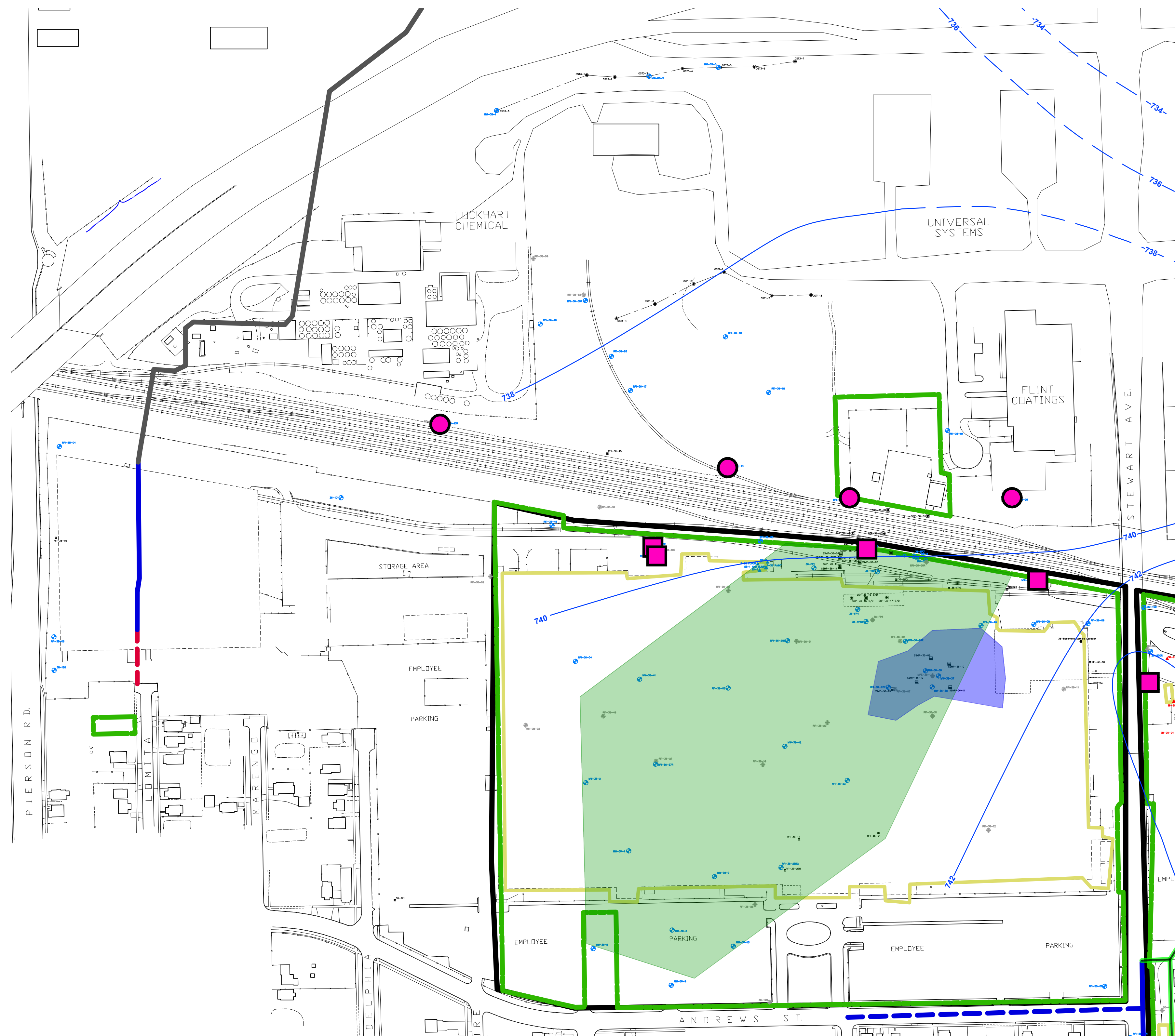
Figure 2 – Block 1 Short-Term Construction Monitoring Wells

Figure 3 – Blocks 2 and 3 Short-Term Construction Monitoring Wells

Figure 4 – Block 4 Short-Term Construction Monitoring Wells

Figure 5 – Blocks 5 and 6 Short-Term Construction Monitoring Wells

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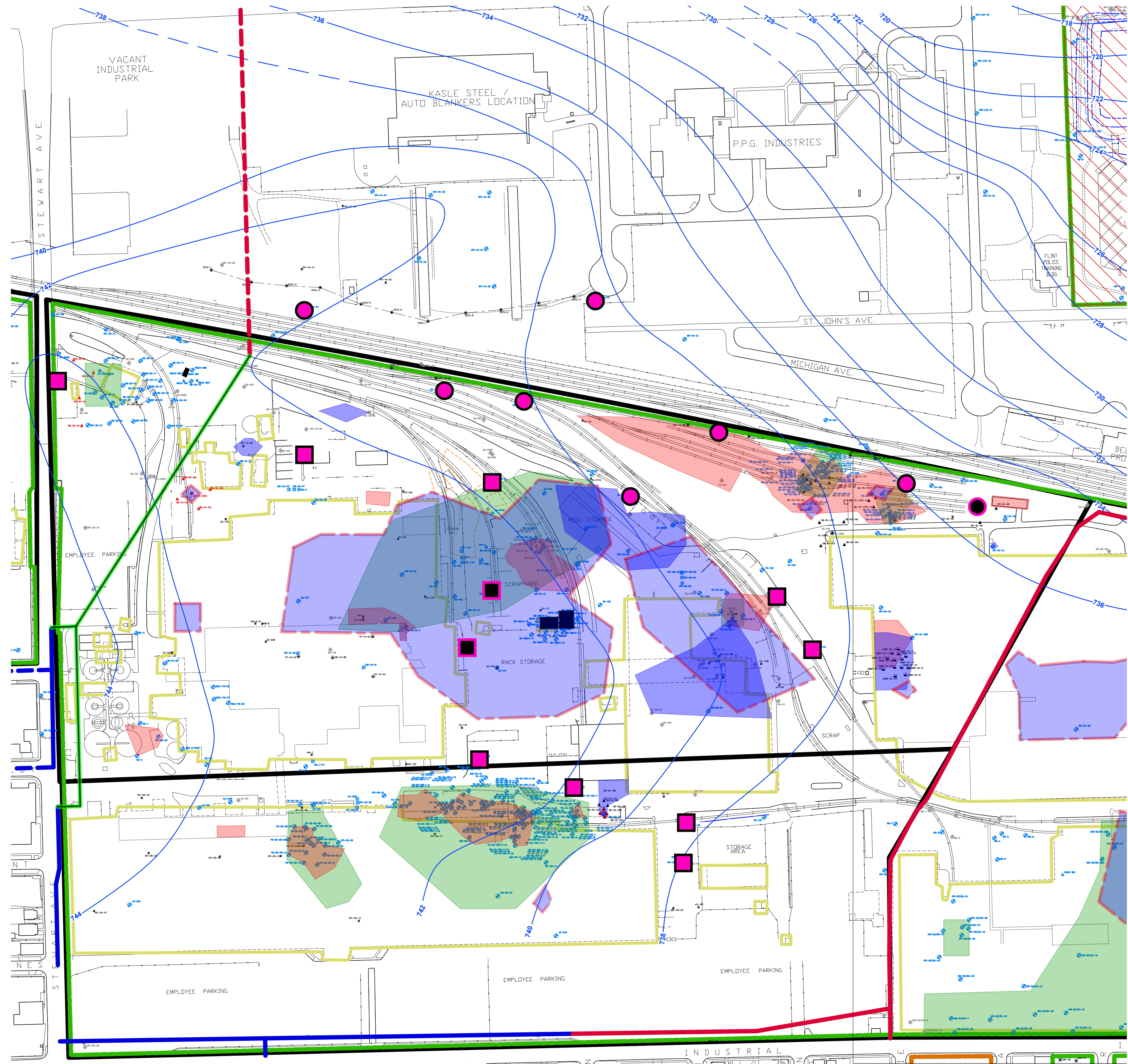
- LEGEND:
- SOIL PILES
 - RESERVED PROPERTIES
 - WMU AREAS
 - LNAPL AREAS
 - PCB IMPACT RESTRICTED AREAS
 - SOIL IMPACT RESTRICTED AREAS
 - SOIL IMPACT AOC AREAS
 - PROPERTY LINE
 - FORMERLY OWNED RACER PROPERTIES
 - SEWER LINE ABOVE WATER TABLE
 - SEWER LINE BELOW WATER TABLE (LIMITED DATA AVAILABLE)
 - SEWER LINE ABOVE WATER TABLE
 - SEWER LINE ABOVE WATER TABLE (LIMITED DATA AVAILABLE)
 - SEALED STORM SEWER LINE
 - INSUFFICIENT DATA AVAILABLE
 - COMPLETED BULKHEADS AND PLUGS
 - SHORT TERM CONSTRUCTION MONITORING SENTINEL WELL
 - SHORT TERM CONSTRUCTION MONITORING DOWNGRADIENT WELL

- NOTES:
- SYMBOLS WITH BLACK CENTERS WILL BE ABANDONED FOLLOWING SHORT-TERM USE
 - SYMBOLS WITH COLORED CENTERS WILL BE RETAINED FOLLOWING SHORT-TERM MONITORING

0 150' 300'
APPROXIMATE SCALE IN FEET

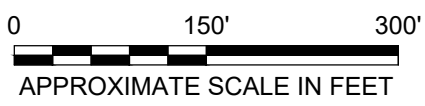
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BLOCK 1 SHORT TERM CONSTRUCTION MONITORING WELLS



- LEGEND:
- SOIL PILES
 - RESERVED PROPERTIES
 - WMU AREAS
 - LNAPL AREAS
 - PCB IMPACT RESTRICTED AREAS
 - SOIL IMPACT RESTRICTED AREAS
 - SOIL IMPACT AOC AREAS
 - PROPERTY LINE
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**BLOCK 2 AND 3
SHORT TERM CONSTRUCTION
MONITORING WELLS**


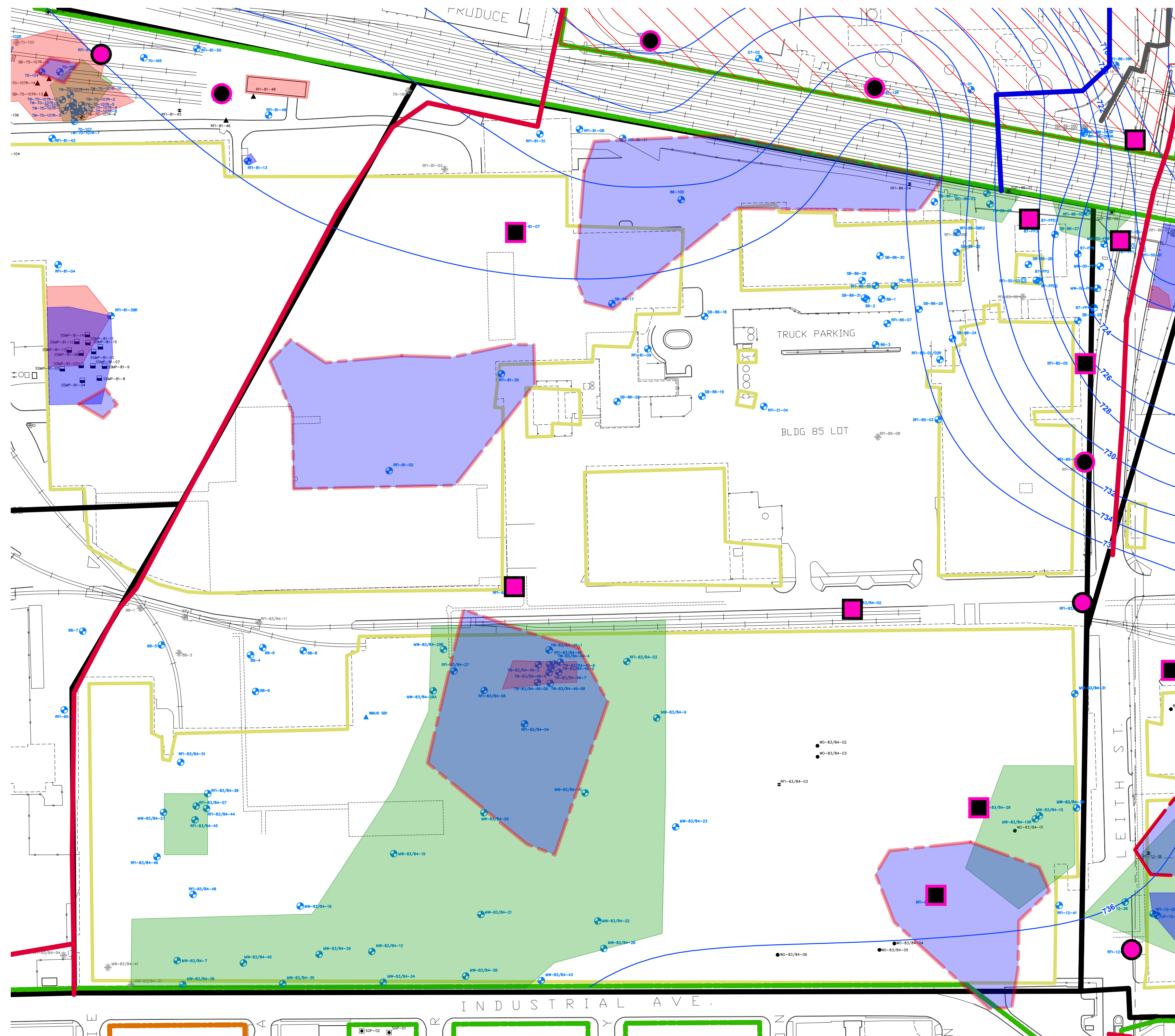
 **ARCADIS** Design & Consultancy
for natural and
built assets

FIGURE
3



LEGEND:

- SOIL PILES
- RESERVED PROPERTIES
- WMU AREAS
- LNAPL AREAS
- PCB IMPACT RESTRICTED AREAS
- SOIL IMPACT RESTRICTED AREAS
- SOIL IMPACT AOC AREAS
- PROPERTY LINE
- FORMERLY OWNED RACER PROPERTIES
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NOTES:

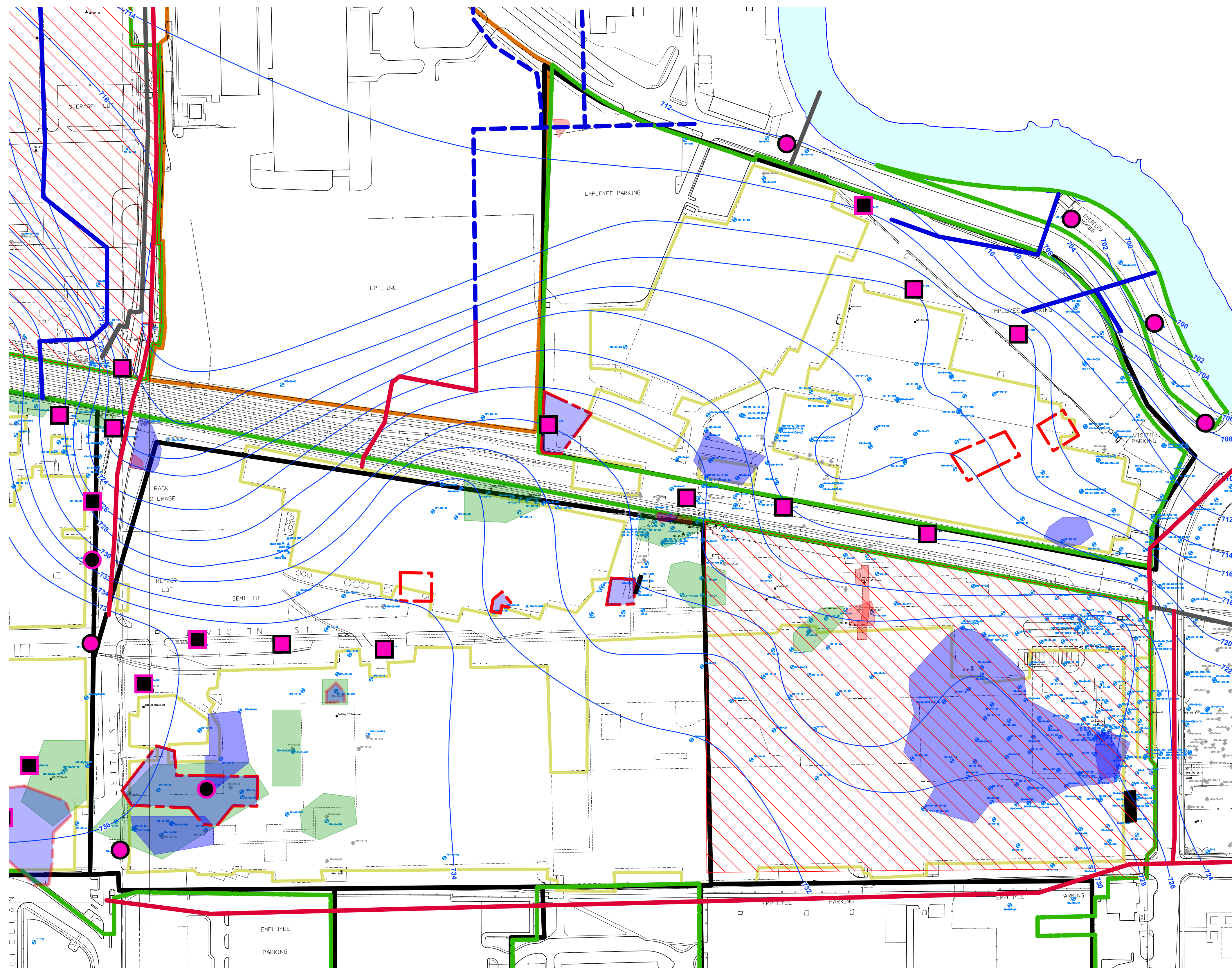
- SYMBOLS WITH BLACK CENTERS WILL BE ABANDONED FOLLOWING SHORT-TERM USE
- SYMBOLS WITH COLORED CENTERS WILL BE RETAINED FOLLOWING SHORT-TERM MONITORING

0 100' 200'
APPROXIMATE SCALE IN FEET





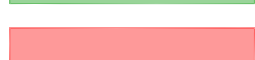










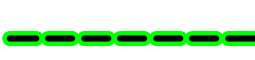


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BLOCK 4
SHORT TERM CONSTRUCTION
MONITORING WELLS

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LEGEND:

-  SOIL PILES
-  RESERVED PROPERTIES
-  WMU AREAS
-  LNAPL AREAS
-  PCB IMPACT RESTRICTED AREAS
-  SOIL IMPACT RESTRICTED AREAS
-  SOIL IMPACT AOC AREAS
-  PROPERTY LINE
-  FORMERLY OWNED RACER PROPERTIES
-  SEWER LINE ABOVE WATER TABLE
-  SEWER LINE BELOW WATER TABLE (LIMITED DATA AVAILABLE)
-  SEWER LINE ABOVE WATER TABLE
-  SEWER LINE ABOVE WATER TABLE (LIMITED DATA AVAILABLE)
-  SEALED STORM SEWER LINE
-  INSUFFICIENT DATA AVAILABLE
-  COMPLETED BULKHEADS AND PLUGS
-  SHORT TERM CONSTRUCTION MONITORING SENTINEL WELL
-  SHORT TERM CONSTRUCTION MONITORING DOWNGRADIANT WELL

NOTES:

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2. SYMBOLS WITH COLORED CENTERS WILL BE RETAINED FOLLOWING SHORT-TERM MONITORING

0 150' 300'
APPROXIMATE SCALE IN FEET

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BLOCK 5 AND 6 SHORT TERM CONSTRUCTION MONITORING WELLS