Permit by Rule Application

David E. Epps P.G., Project Director

The Chemours Company FC, LLC

September 26, 2017

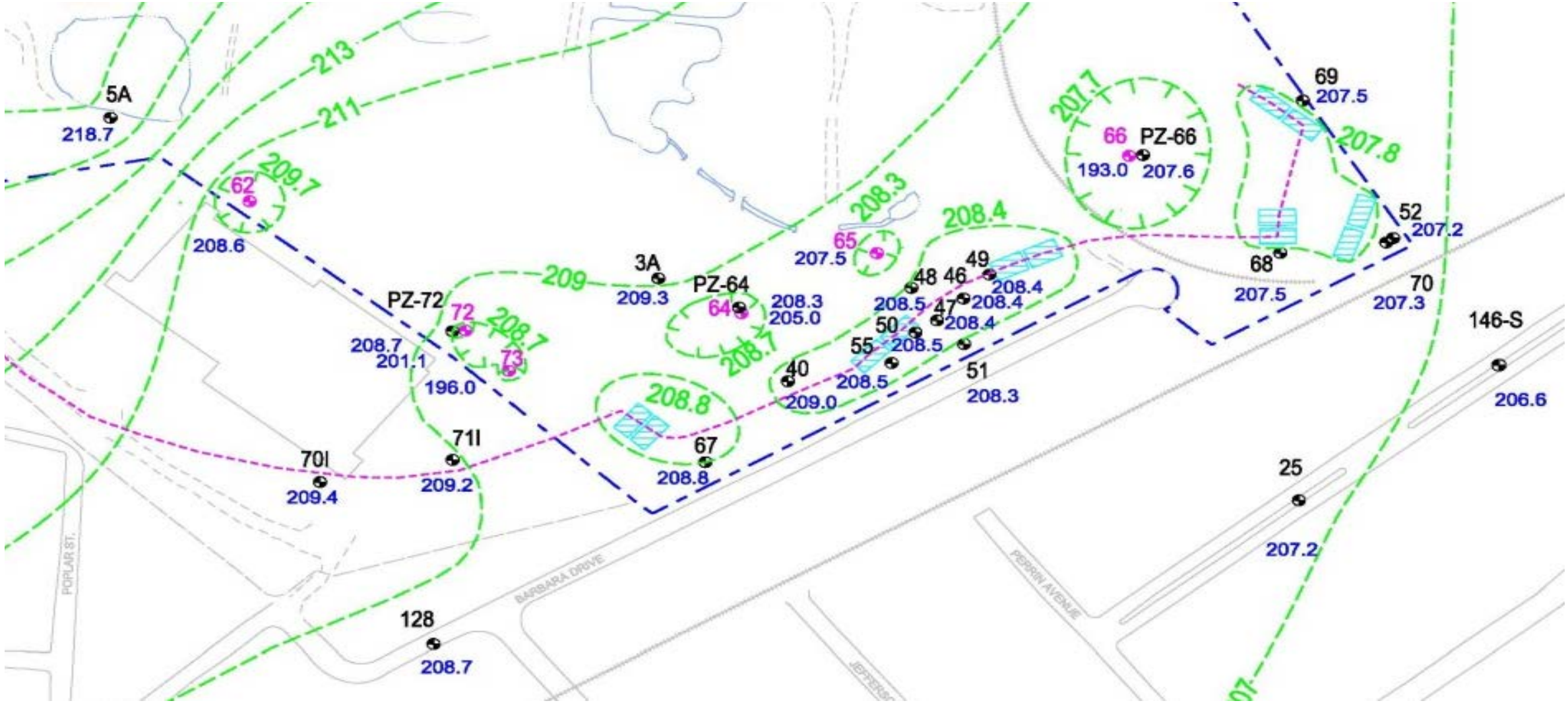
Why is a Permit by Rule needed?

- New Jersey Department of Environmental Protection (NJDEP) permit by rule (PBR) is required for discharge to groundwater
  - New Jersey Administrative Code (N.J.A.C.) 7:14A-7
  - Changing location where water is currently discharged under New Jersey Discharge Pollutant Elimination System (NJPDES) permit
    - From infiltration galleries to horizontal well
    - Part of remedial technology evaluation – hydraulic surcharging pilot study
  - Discharge at new location will be greater than 180 days

Existing Discharge System

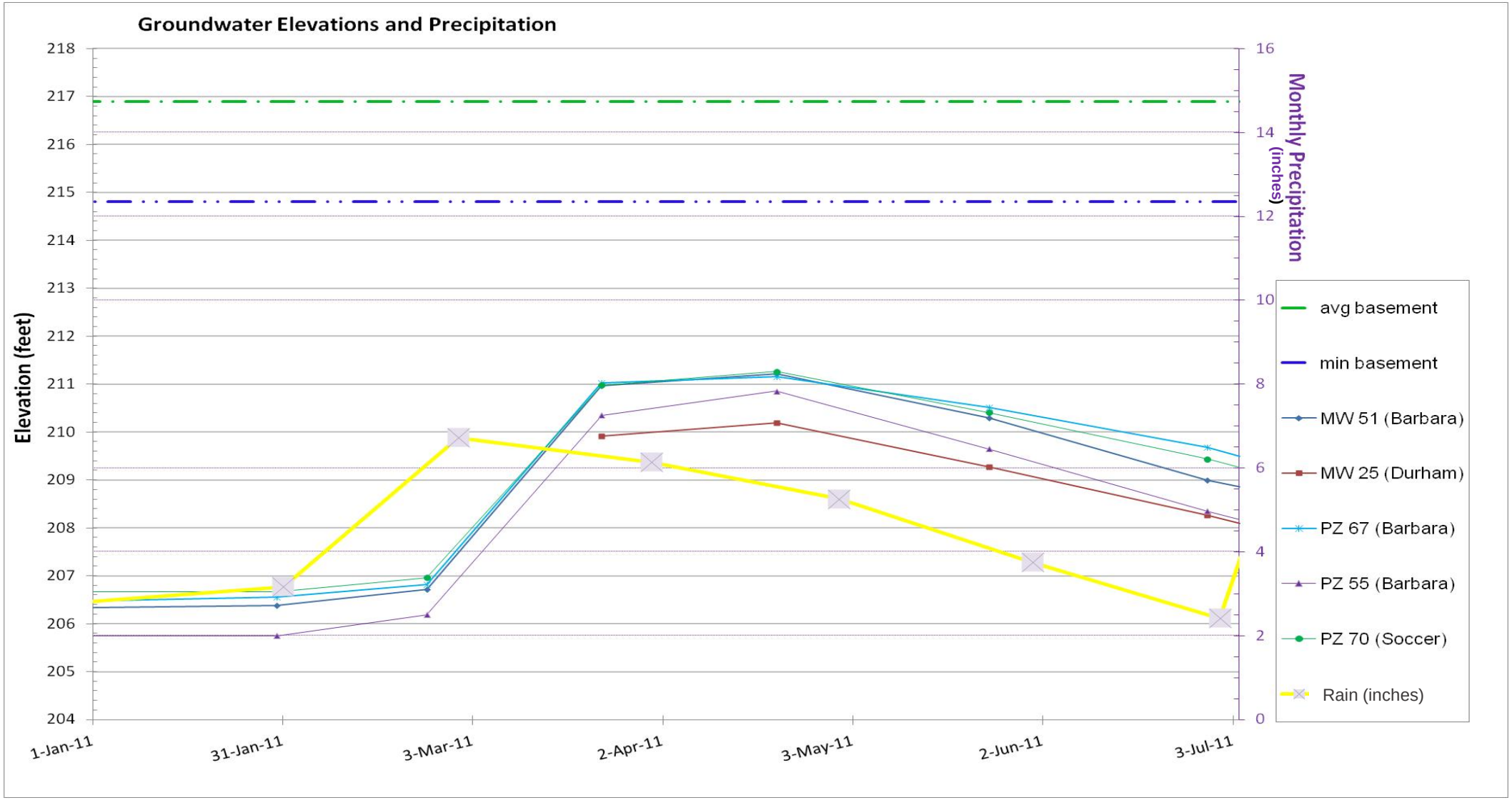
- Treated groundwater from site pumping system
- Permitted under NJPDES program
- 12 infiltration galleries used to discharge water
- Gravity discharge of treated water 8-12 feet below ground surface
- Effective discharge area of existing system ~ 14 ft^2
- Operating since 1998 (adjacent to residential area)
- Discharge operations effect on local water table
  - Groundwater elevations measured adjacent to galleries
  - During time of increased precipitation, water table elevation rises as a result of precipitation but has not been observed to reach basement elevations

August 2017 Piezometric Surface



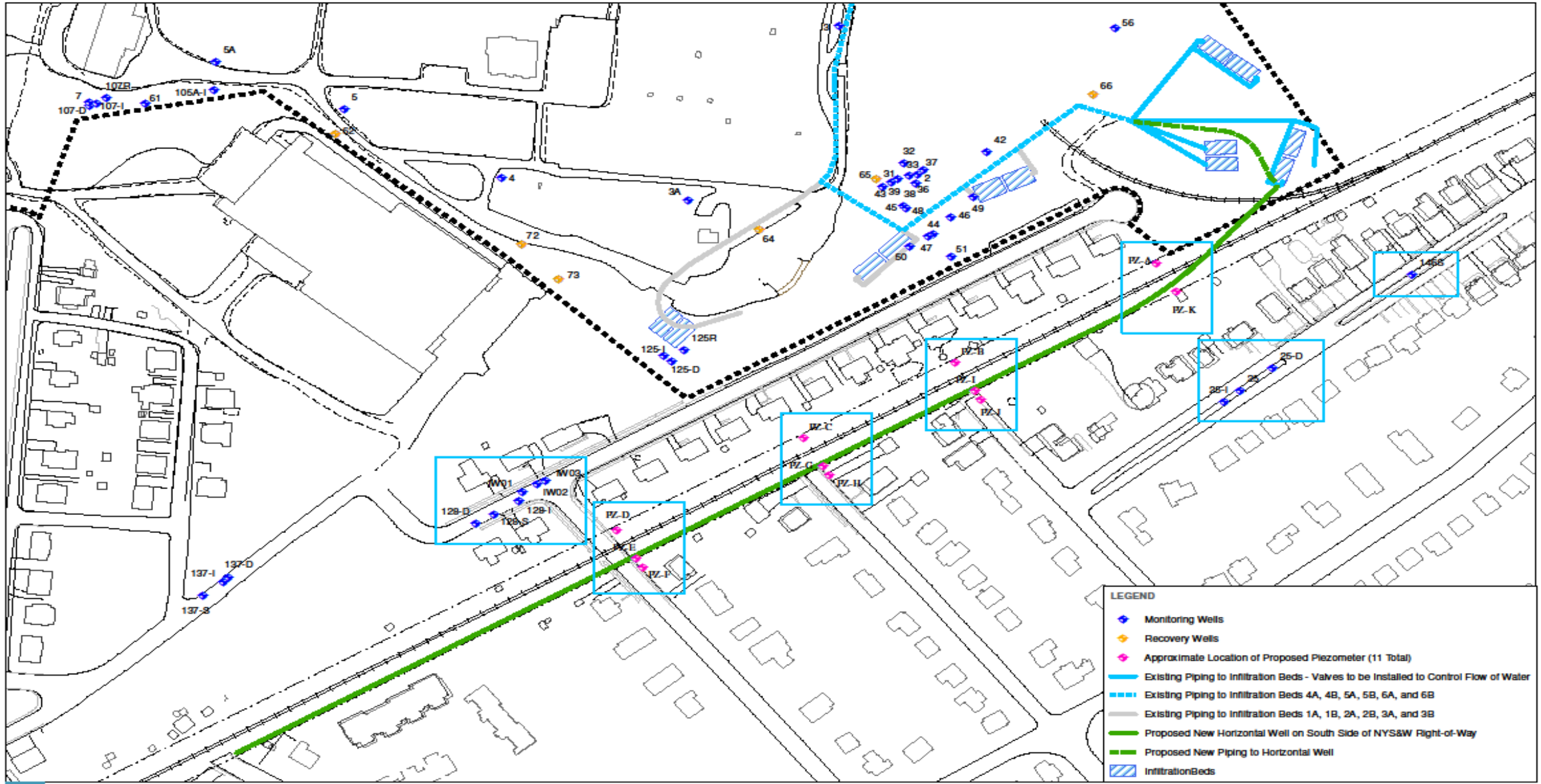
Shallow Alluvial Zone

Existing System Evaluation



NJDEP Permit by Rule Application

- Treated groundwater from site pumping system
- Discharge to ~1,400 foot long well, ~20-25 feet below ground surface
- Discharge is to same geologic unit as existing operation
- Effective discharge area of horizontal well ~ 14 ft^2
- Water table elevation measurement points will be installed at locations along horizontal well length and width
- Pilot system for approximately 1 year
- If water table elevation rises above established threshold levels, then flow can be reduced to horizontal well and additional water can be diverted back to infiltration galleries



HDR

0 37.5 75 150 225 300 Feet

GWET SYSTEM AND PROPOSED HORIZONTAL WELL LOCATION

POMPTON LAKES WORKS

FIGURE 2

Hydrogeologic Evaluation

- Computer modeling of groundwater flow completed
  - Using hydrogeologic characteristics for subsurface material
    - Permeability – measures the ability of material to allow fluid to pass through
    - Gradient – measures the change in elevation of the water table
    - Hydraulic conductivity – measure of a material's ability to transmit fluid
  - Characteristics established through field measurements (e.g., pump test)
  - Using data from 20+ years operation of existing system
    - Monitoring wells located adjacent to infiltration galleries
  - Basement slabs are typically 9-10½ feet above the water table
- Results
  - ~ 2 foot rise in water table at well centerline
  - ~ 1.5 foot rise in water table 30 feet away from well centerline

Comparison of Operating Requirements

NJPDES Discharge Operation

- Monitor flow into galleries
- Inspect system components
- Measure groundwater elevations
- Meet NJDEP discharge requirements (drinking water)
- Quarterly report data to NJDEP
- Maintain system components
- Operate in accordance with permit

PBR Discharge Operation

- Monitor flow into well
- Inspect system components
- Measure groundwater elevations
- Meet NJDEP discharge requirements (drinking water)
- Quarterly report data to NJDEP
- Maintain system components
- Operate in accordance with permit