NAVFAC
Naval Facilities Engineering Command

NAVY UPDATE
QUARTERLY PROGRESS MEETING
DECEMBER 14, 2016

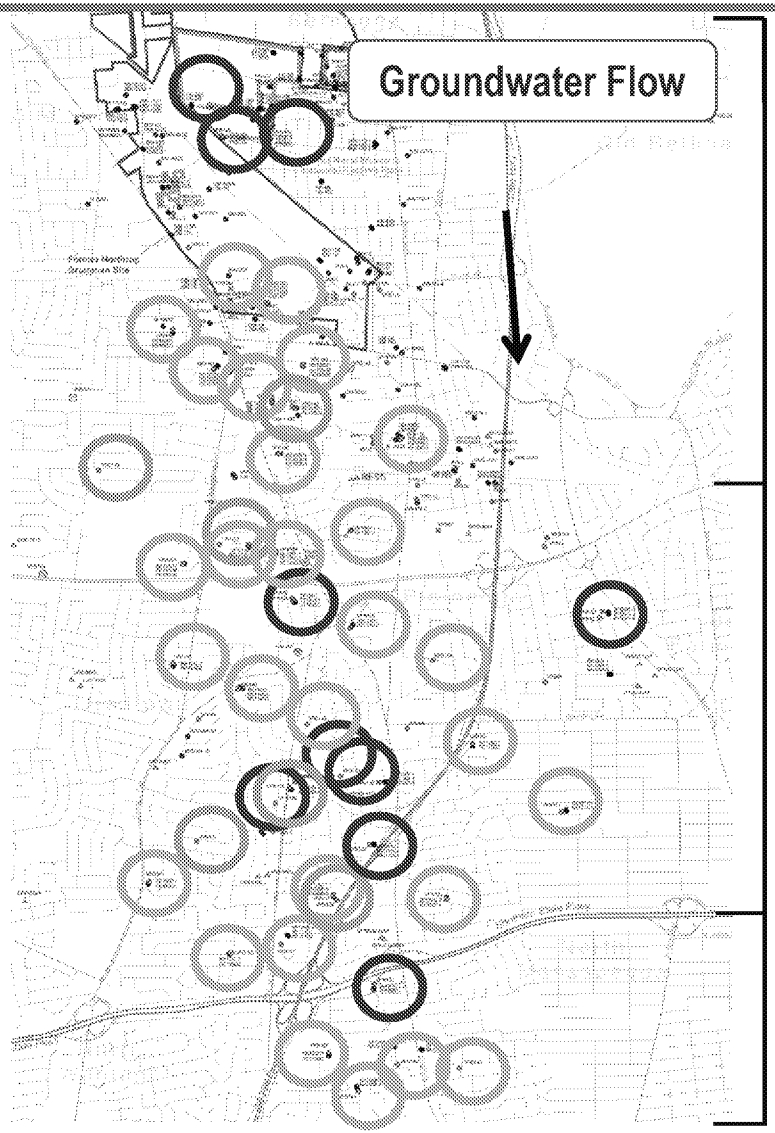
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE
LONG ISLAND, NEW YORK

2009 – 2016
VERTICAL PROFILE BORINGS AND WELLS

2009
Completed
(green)

2010 to 2012
Completed
(blue)

2012 to 2016
Completed
(orange)



North of Hempstead
Turnpike Area

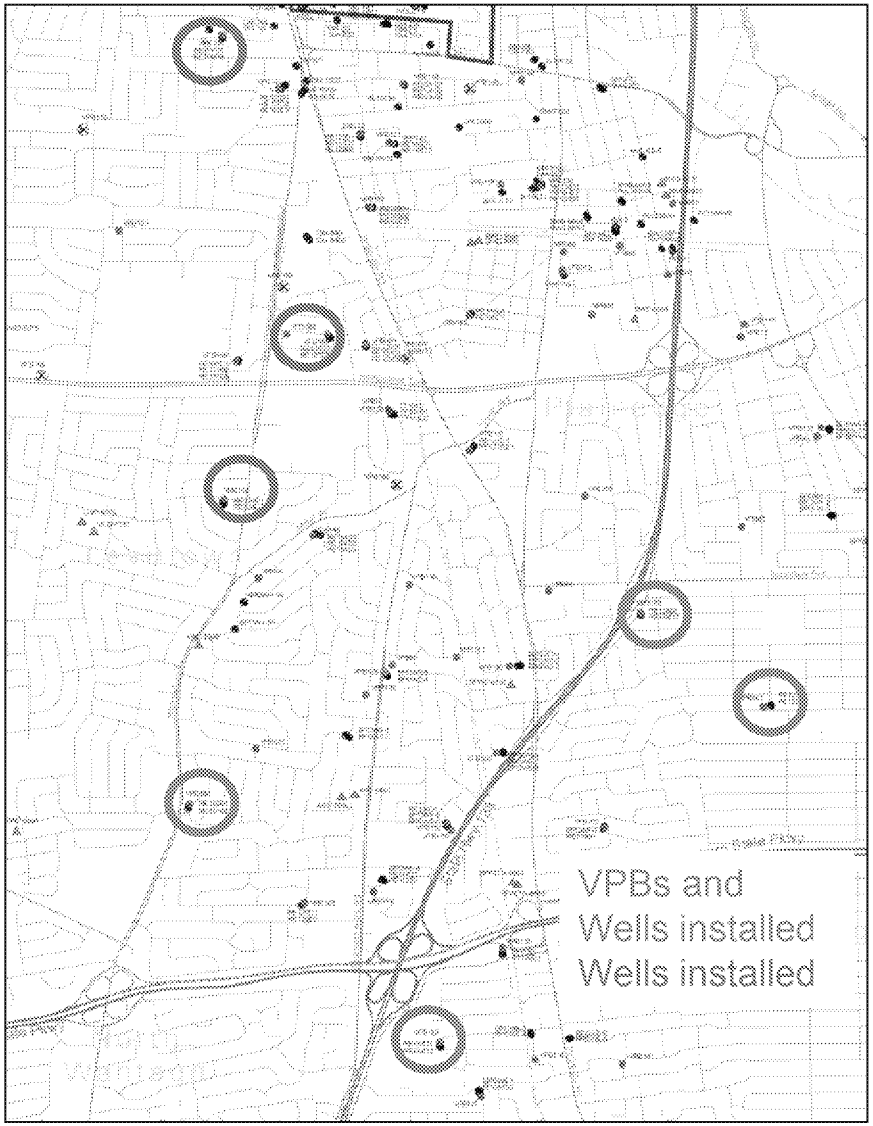
North of Southern State
Parkway Area

South of Southern State
Parkway Area

RECENT WORK
VERTICAL PROFILE BORINGS AND MONITORING WELLS

Operation of 3 drilling rigs

- **North of Hempstead Turnpike**
  - Installed 4 monitoring wells (VPBs 140 &159)
- **North of Southern State Parkway Area**
  - Installed 2 monitoring wells (VPBs 158)
  - Installation of 3 VPBs 161, 162 and 164 plus 6 monitoring wells
- **South of Southern State Parkway Area**
  - Installation of VPB 167 and 2 monitoring wells
- Completion of 2 rounds of quarterly groundwater sampling



FUTURE WORK
VERTICAL PROFILE BORINGS AND MONITORING WELLS

Planned work through November 2017:

- Operation of 3 drilling rigs
- Vertical Profile Borings
  - –4 north of Hempstead Turnpike
  - –1 north of Southern State Parkway
- Monitoring Wells
  - –14 north of Hempstead Turnpike
  - –7 north of Southern State Parkway
- Continue quarterly groundwater sampling
- Installation of VPB 171 and Recovery Well RE137 to address RE108 hotspot

Monitoring Wells to be installed
Monitoring Wells and VPB to be installed
Recovery Well and VPB to be installed

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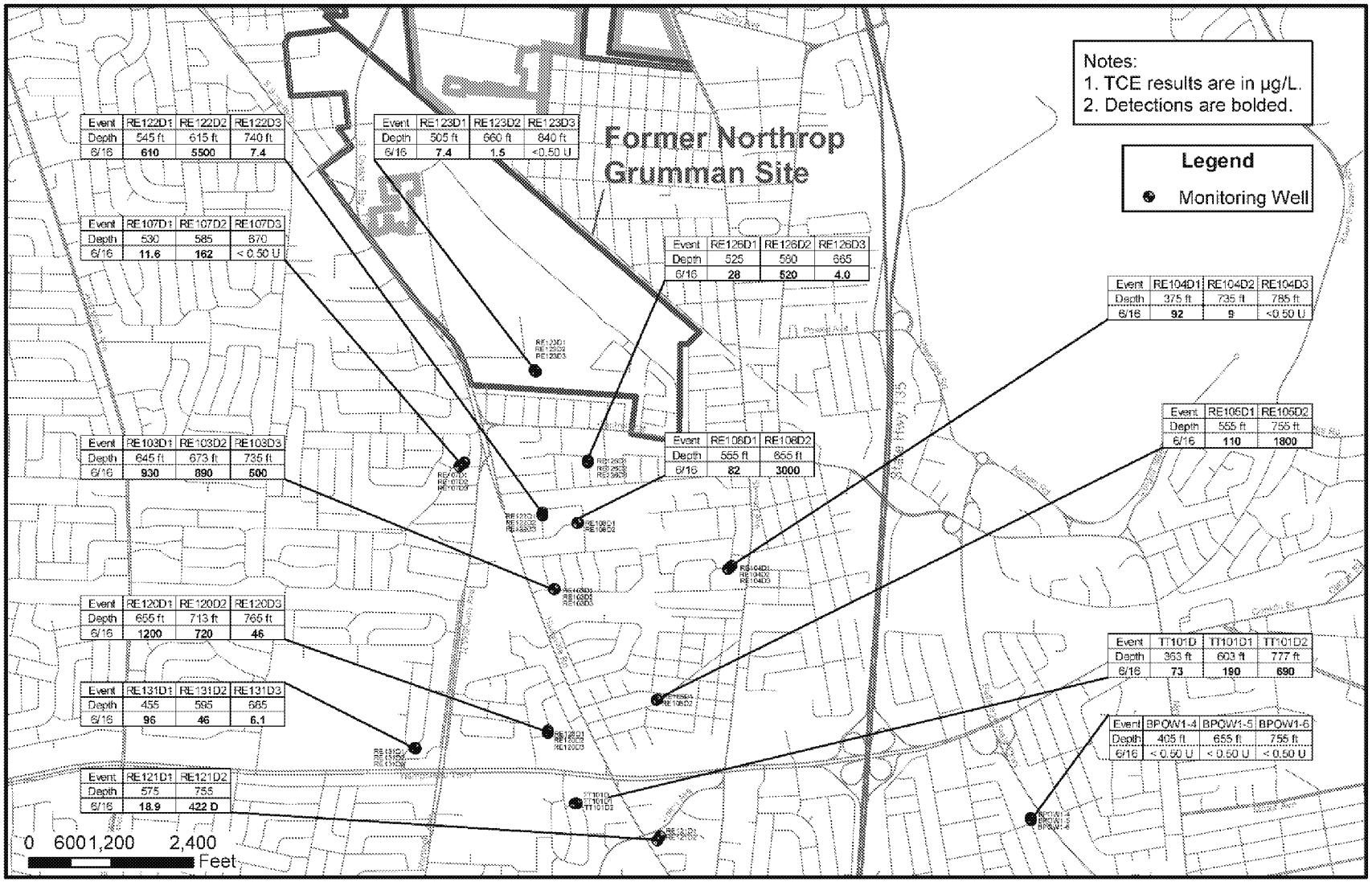
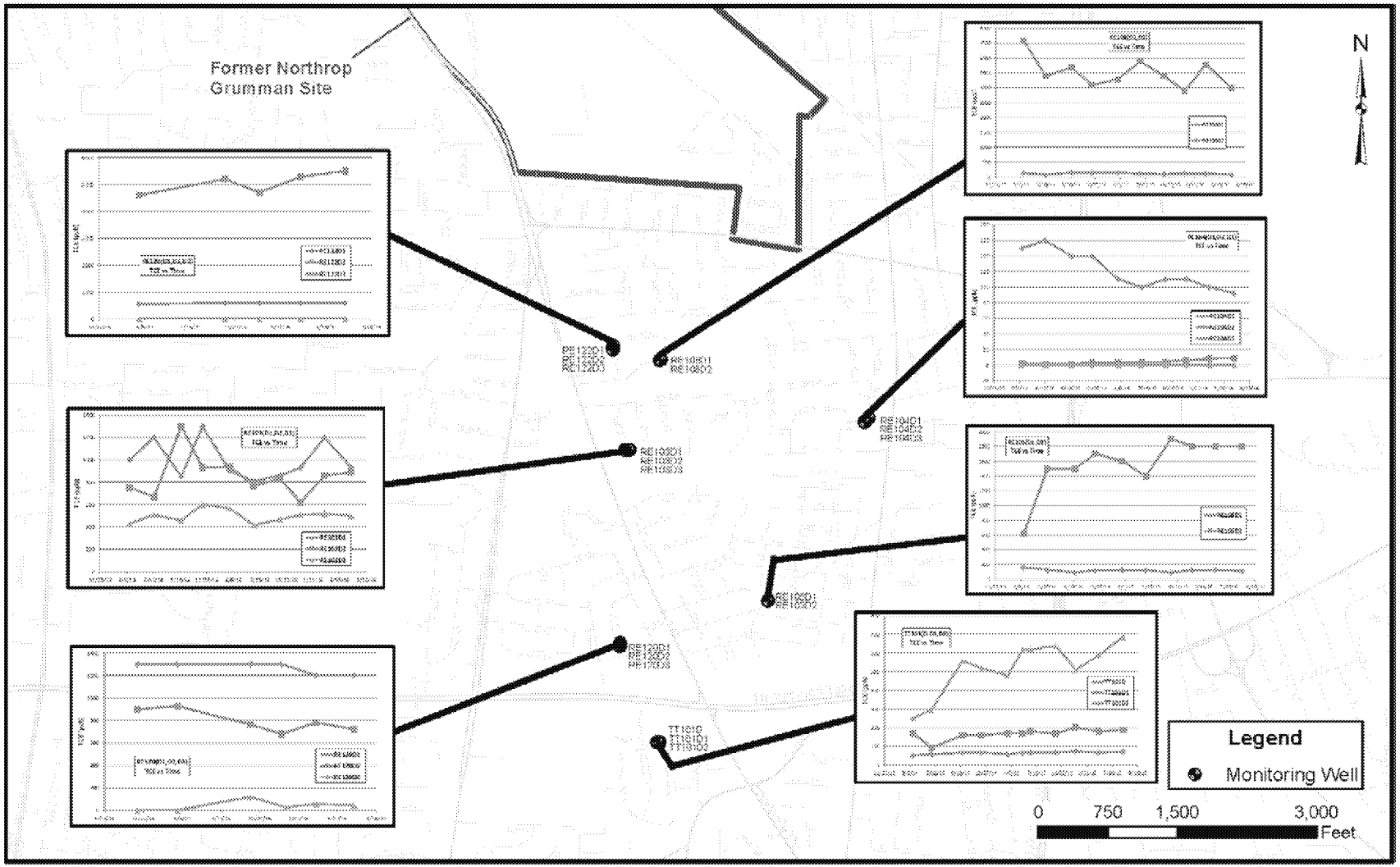
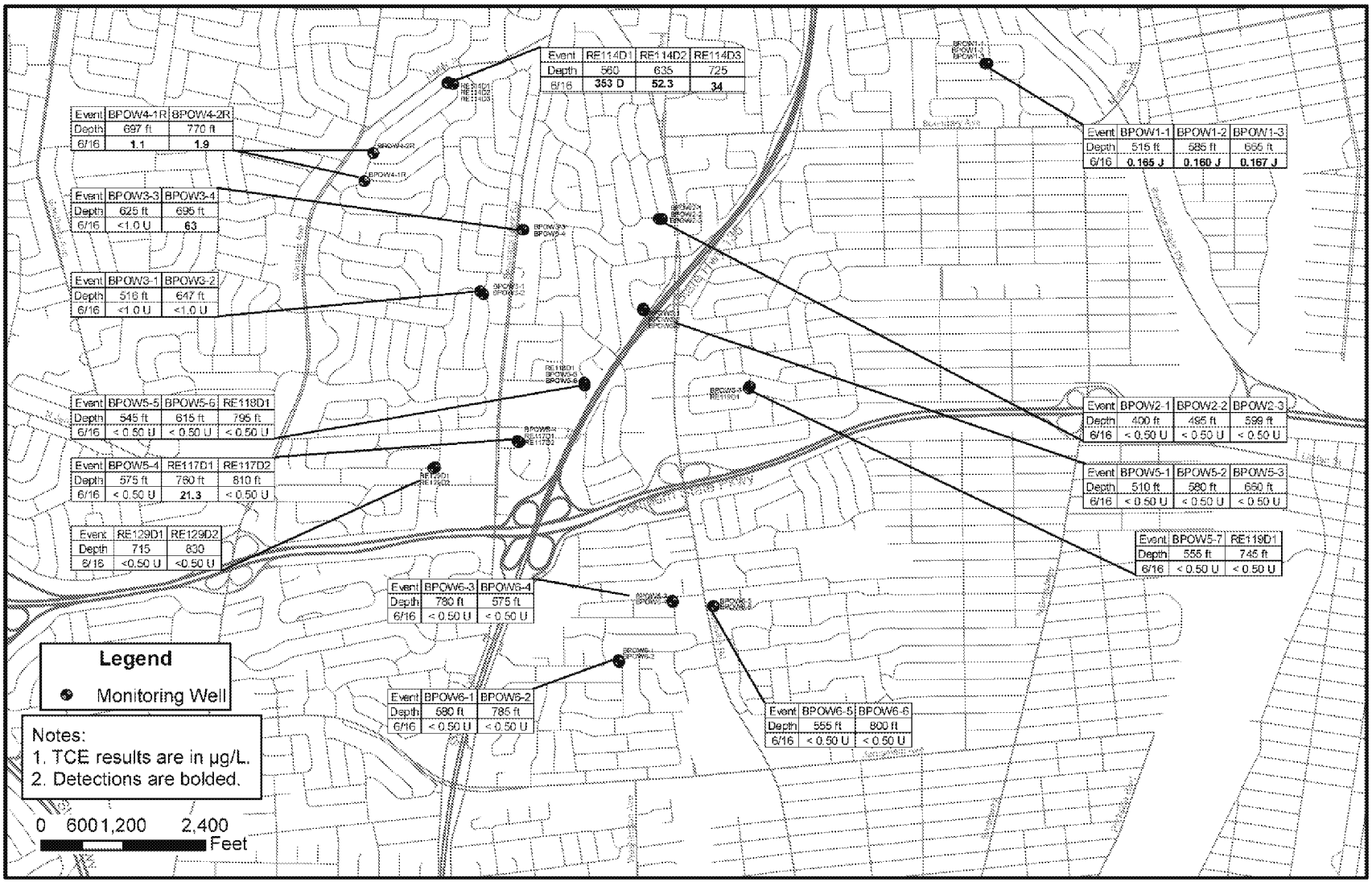
JUNE 2016 GROUNDWATER SAMPLING TRICHLOROETHENE RESULTS NORTHERN WELLS



RE108 HOTSPOT GROUNDWATER TREND ANALSIS 2014 - 2016



JUNE 2016 GROUNDWATER SAMPLING TRICHLOROETHENE RESULTS SOUTHERN WELLS



Event	RE114D1	RE114D2	RE114D3
Depth	560	635	725
6/16	**353 D**	**52.3**	**34**

Event	BPOW4-1R	BPOW4-2R
Depth	697 ft	770 ft
6/16	**1.1**	**1.9**

Event	BPOW1-1	BPOW1-2	BPOW1-3
Depth	515 ft	585 ft	655 ft
6/16	**0.165 J**	**0.160 J**	**0.167 J**

Event	BPOW3-3	BPOW3-4
Depth	625 ft	695 ft
6/16	<1.0 U	**63**

Event	BPOW3-1	BPOW3-2
Depth	516 ft	647 ft
6/16	<1.0 U	<1.0 U

Event	BPOW5-5	BPOW5-6	RE118D1
Depth	545 ft	615 ft	795 ft
6/16	< 0.50 U	< 0.50 U	< 0.50 U

Event	BPOW5-4	RE117D1	RE117D2
Depth	575 ft	780 ft	810 ft
6/16	< 0.50 U	**21.3**	< 0.50 U

Event	RE129D1	RE129D2
Depth	715	830
6/16	<0.50 U	<0.50 U

Event	BPOW2-1	BPOW2-2	BPOW2-3
Depth	400 ft	495 ft	599 ft
6/16	< 0.50 U	< 0.50 U	< 0.50 U

Event	BPOW5-1	BPOW5-2	BPOW5-3
Depth	510 ft	580 ft	660 ft
6/16	< 0.50 U	< 0.50 U	< 0.50 U

Event	BPOW5-7	RE119D1
Depth	555 ft	745 ft
6/16	< 0.50 U	< 0.50 U

Event	BPOW6-3	BPOW6-4
Depth	780 ft	575 ft
6/16	< 0.50 U	< 0.50 U

Event	BPOW6-1	BPOW6-2
Depth	580 ft	785 ft
6/16	< 0.50 U	< 0.50 U

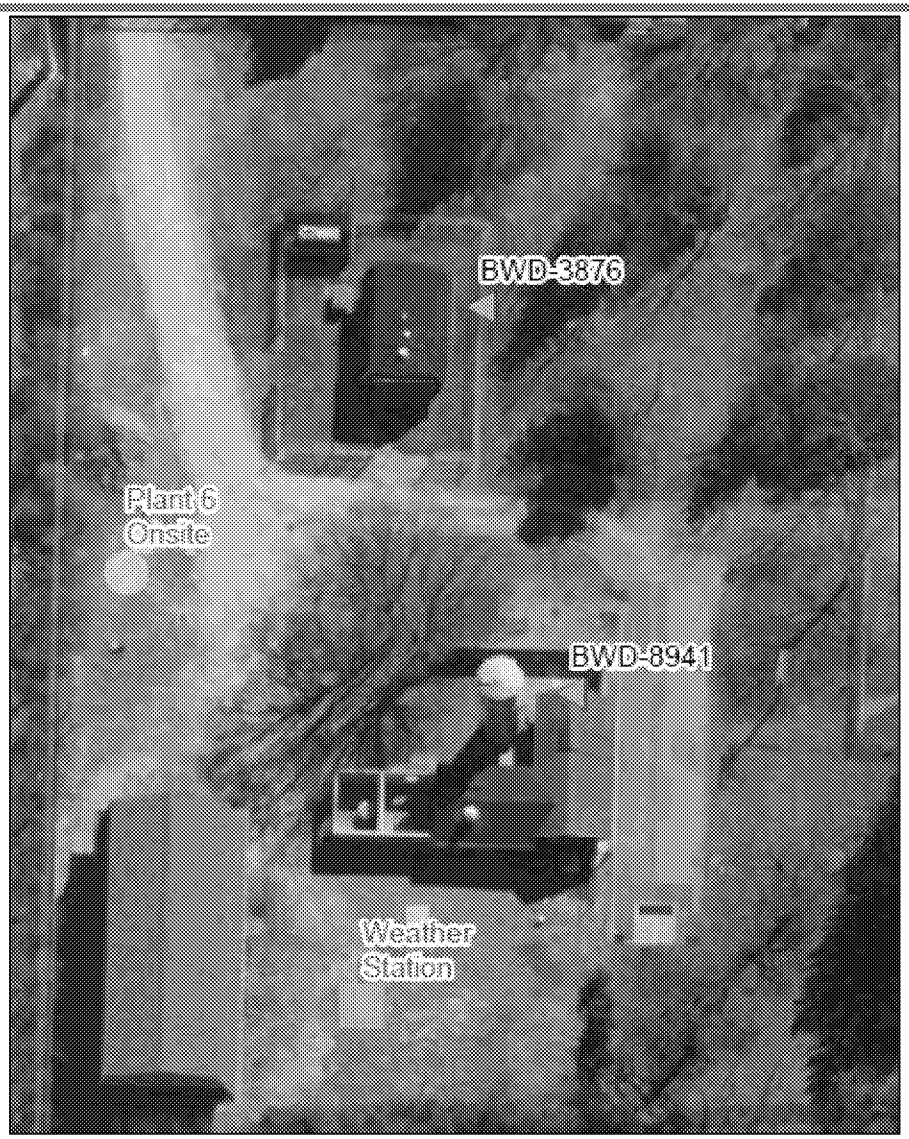
Event	BPOW6-5	BPOW6-6
Depth	555 ft	800 ft
6/16	< 0.50 U	< 0.50 U

BWD WELL 6-2
CAPTURE ZONE ANALYSIS

12/14/16

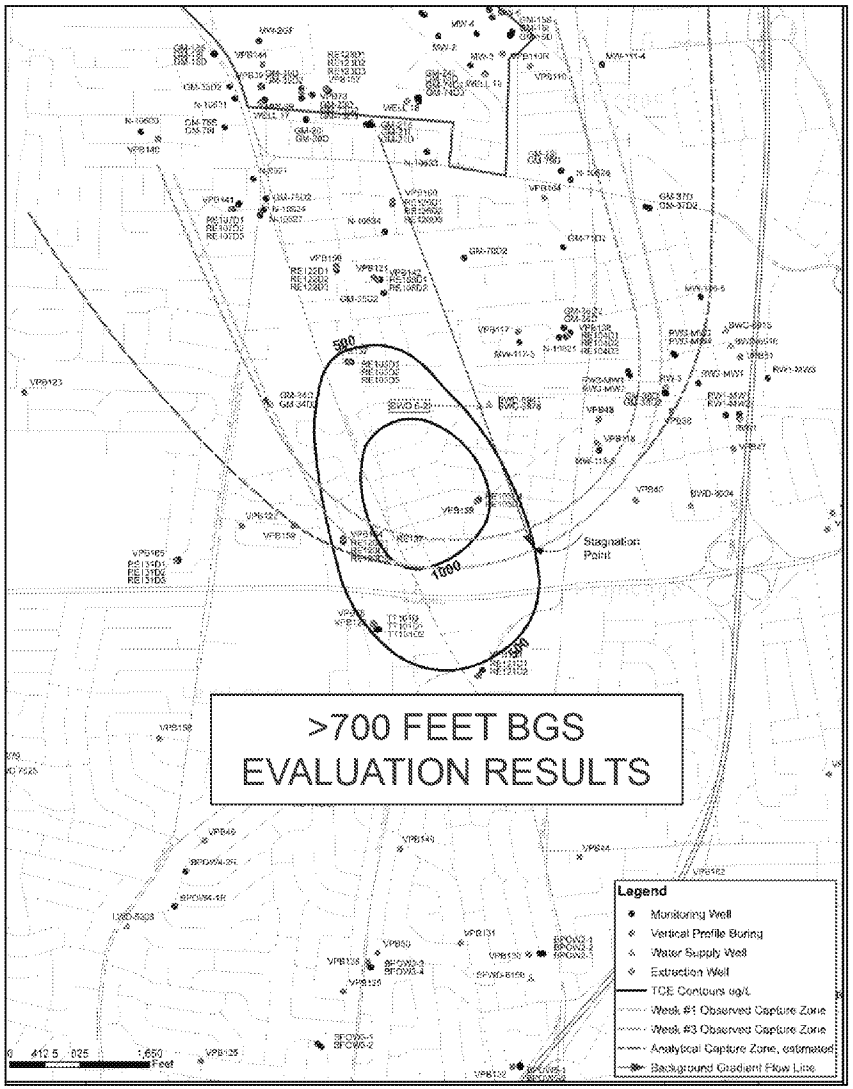
BWD WELL 6-2
2016 CAPTURE ZONE ANALYSIS

- Purpose: identify the capture of the RE108 Hotspot by BWD Plant 6 wells
- Test conducted from March 21, 2016 to April 29, 2016
- Pumping test conducted at an average rate of 1.7 million gallons per day



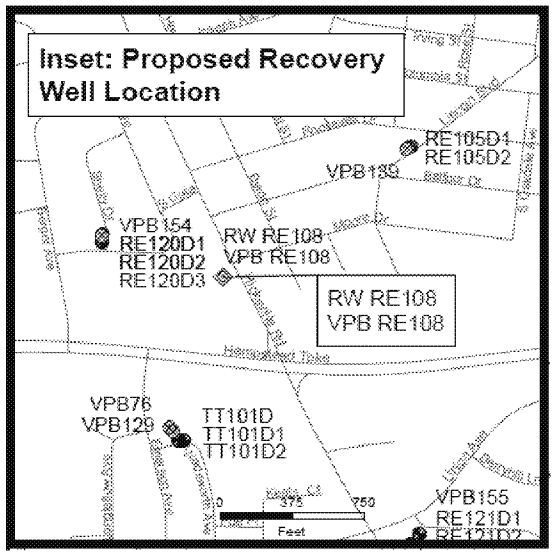
BWD WELL 6-2
TCE PLUME AND CAPTURE ZONE RESULTS

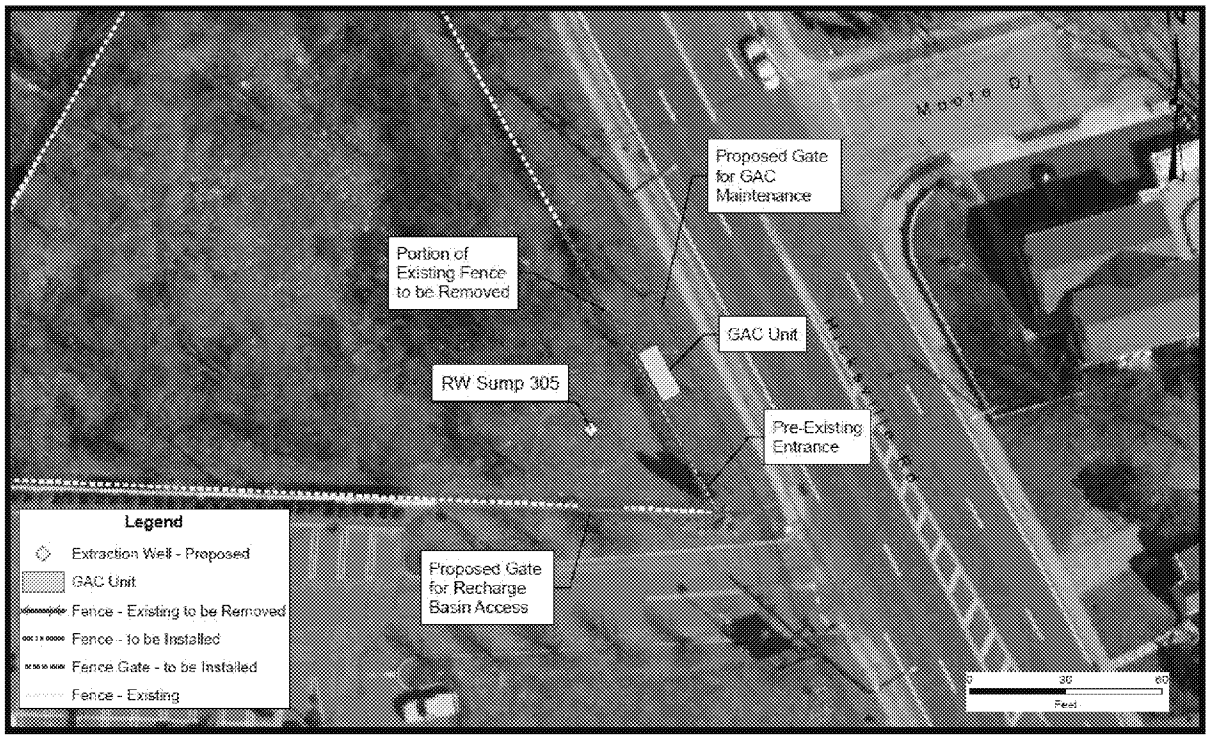
- Well 6-2 would capture 68% of the 500 µg/L contour and approximately 100% of the 1,000 µg/L contour greater than 700 feet bgs
- BWD Well 6-2 would capture 17% of the 500 µg/L contour and 14% of the 1,000 µg/L contour between 600-700 feet bgs
- Well 6-2 would capture 15% of the of the 500 µg/L contour and 14% of the 1,000 µg/L contour between 500-600 feet bgs
- The capture zone size varies depending on the pumping of remediation and water supply wells



VPB AND TEST RECOVERY WELL INSTALLATION IN RE108 HOTSPOT

- VPB 171 and a test recovery well (RE137) are being drilled in Nassau County recharge basin #305, near intersection of Hicksville Road and Hempstead Turnpike
- Drilling is expected to be completed by January 2017
- Aquifer testing to evaluate the capture zone of the test recovery well is expected to take 5 days
- Data analysis is expected to be completed by July 2017



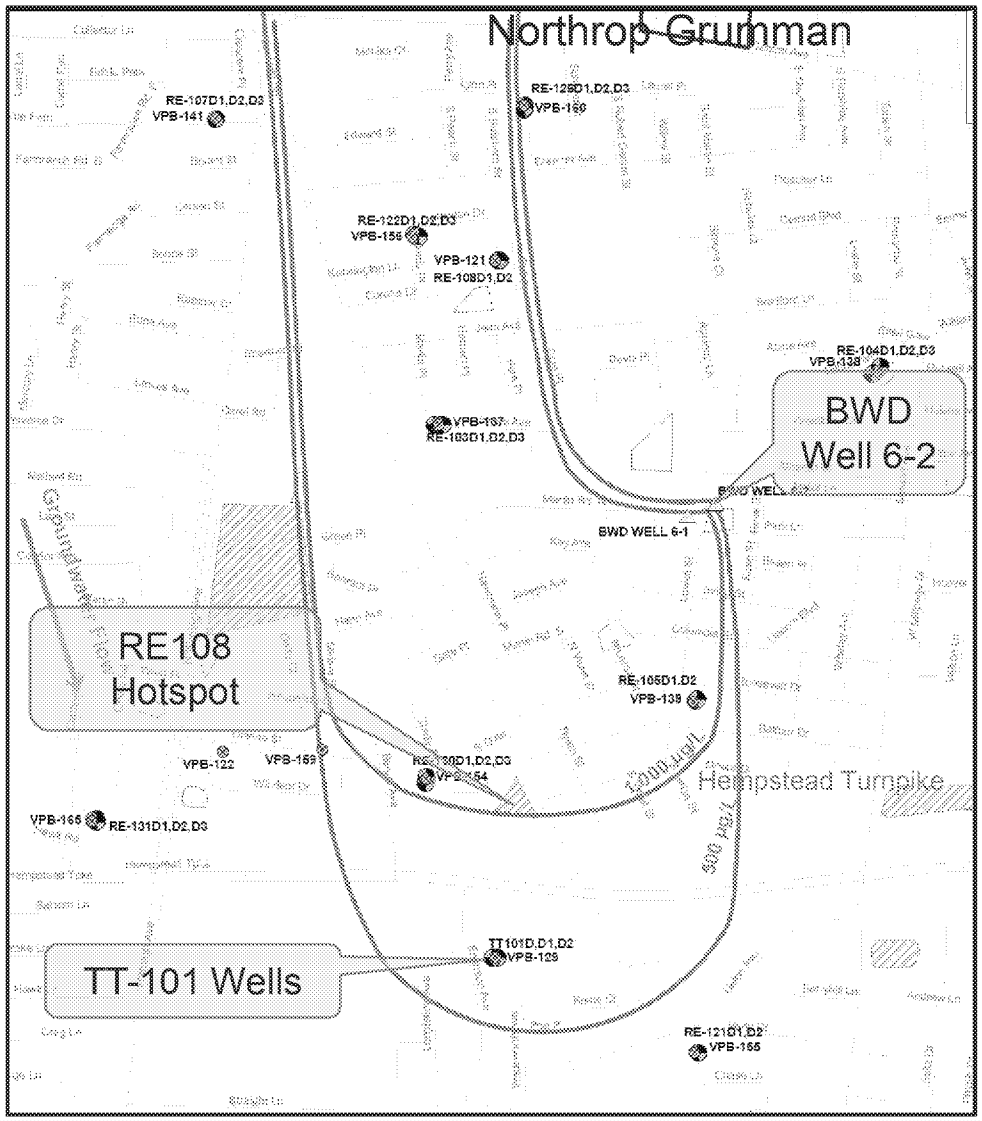


RE108 HOTSPOT
PRELIMINARY DESIGN ACTIVITIES

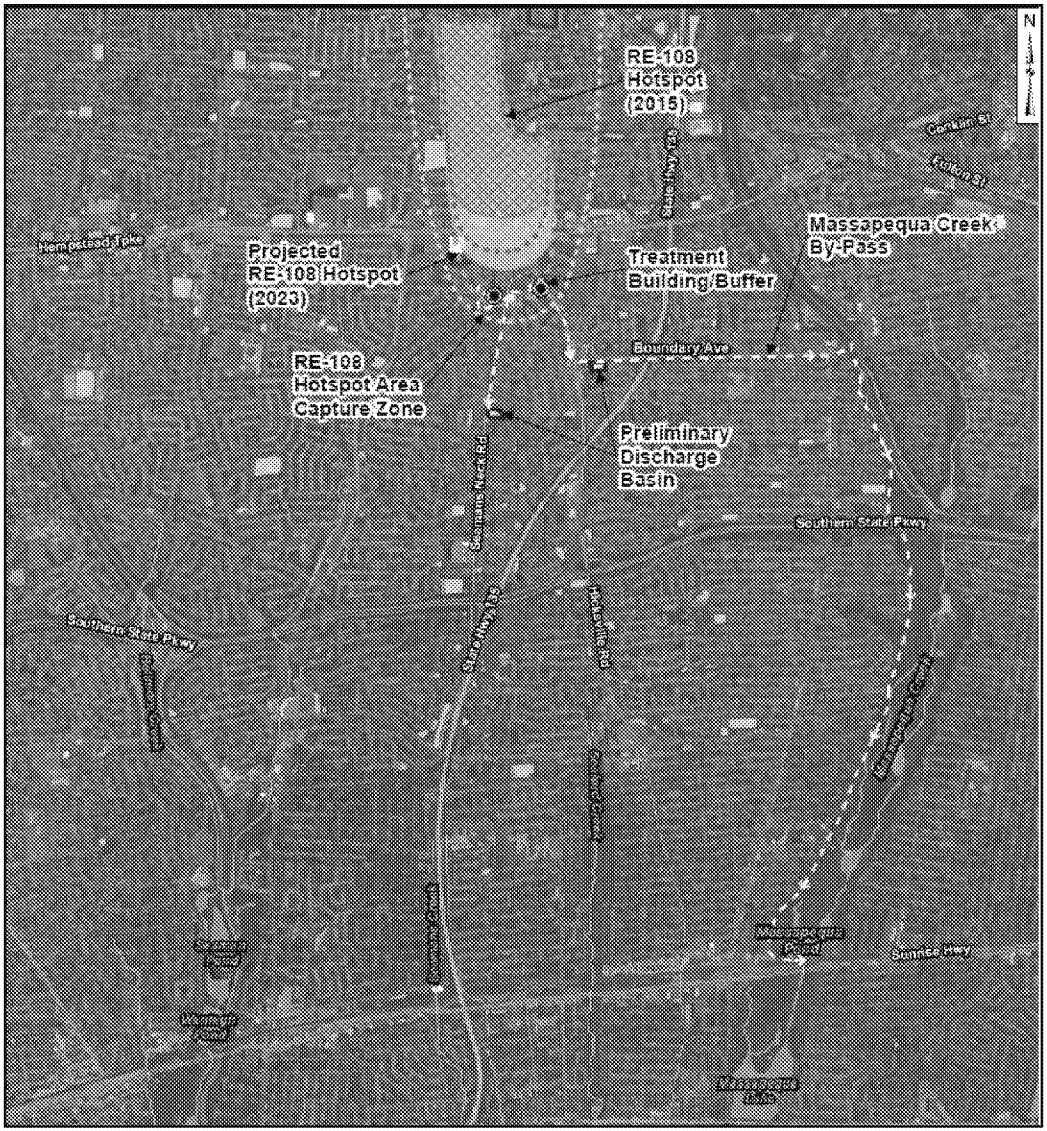
12/14/16

RE108 Hotspot Area Investigation

- RE108 Hotspot Area
  - Vertical profile boring and monitoring well investigations are ongoing, but is sufficient to proceed with preliminary design activities



RE108 HOTSPOT OVERVIEW



RE108 Hotspot Area Path Forward

Path Forward

- Preliminary design activities underway, including pumping and basin recharge testing planned for 2017
- Basis of Design Report – 2017
- Property Access Underway – 2016 to 2019
- Detailed Design Activities – 2019 and 2020
- Construction/Startup – 2021 and 2022