

Project Update

Park Soils and Groundwater Hotspot

Operable Unit 3,
Northrop Grumman Systems
Corporation, Bethpage, New York
June 18, 2015

Park Soils Update

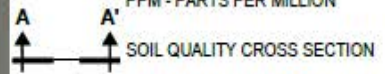
General Status Update

- Draft reports for VOCs and PCBs currently under revision based on Northrop Grumman comments
- Refinements:
 - Additional step out borings for PCB and Metals
 - Contaminant volume estimates (including characteristically hazardous waste determination)
 - Review of remedial technologies/alternatives



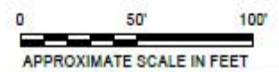
LEGEND:

- TVOC CONCENTRATIONS GREATER THAN 10 PPM IN SHALLOW SOILS (5-15 FEET BELOW LAND SURFACE)
- TVOC CONCENTRATIONS GREATER THAN 10 PPM IN DEEP SOILS (40-66 FEET BELOW LAND SURFACE)
- PPM - PARTS PER MILLION



FORMER RAG PIT

Data and interpretations are considered preliminary

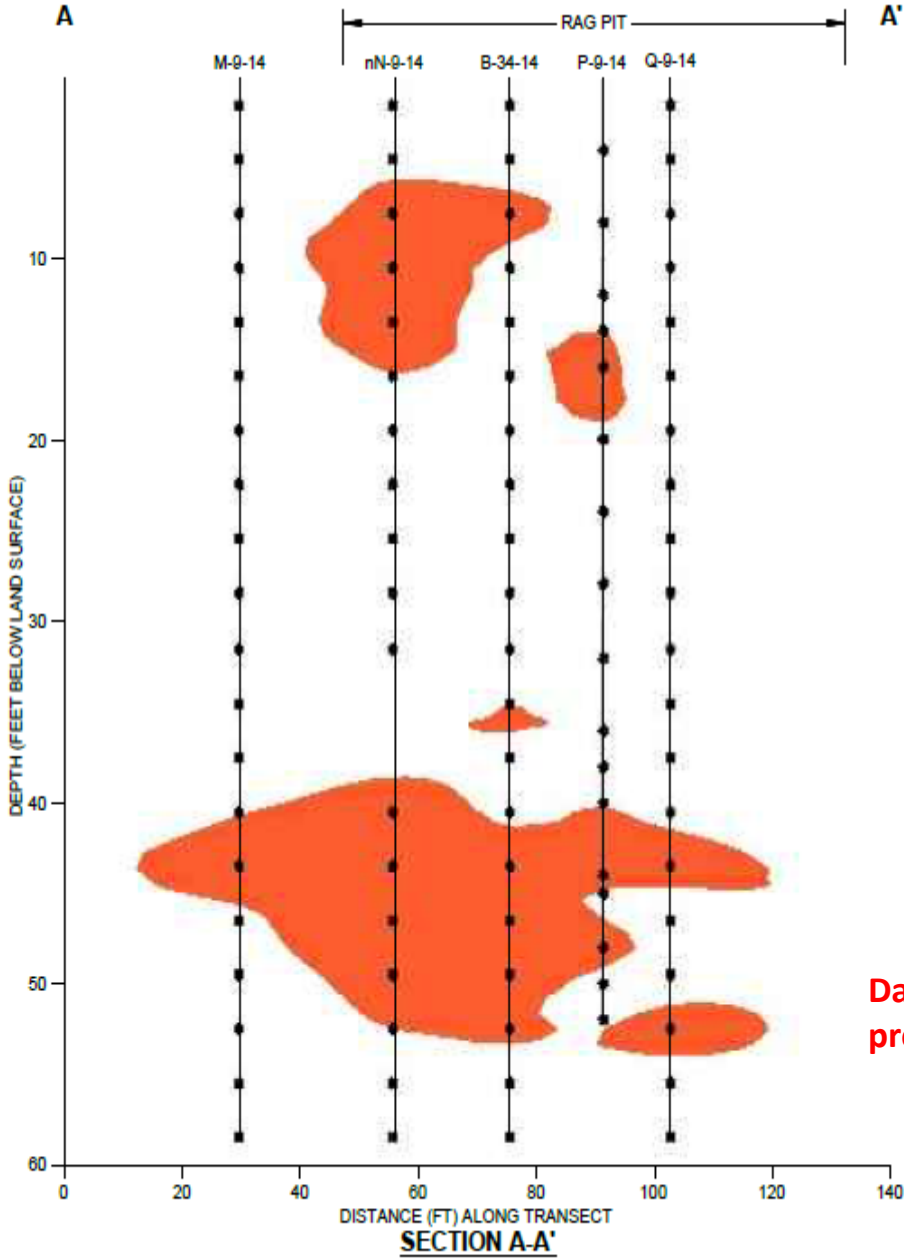


NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

**BETHPAGE COMMUNITY PARK
MAXIMUM AREAL EXTENT OF TVOCs IN
SOILS GREATER THAN 10 PPM 5-55 FEET
BELOW LAND SURFACE**



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LEGEND:

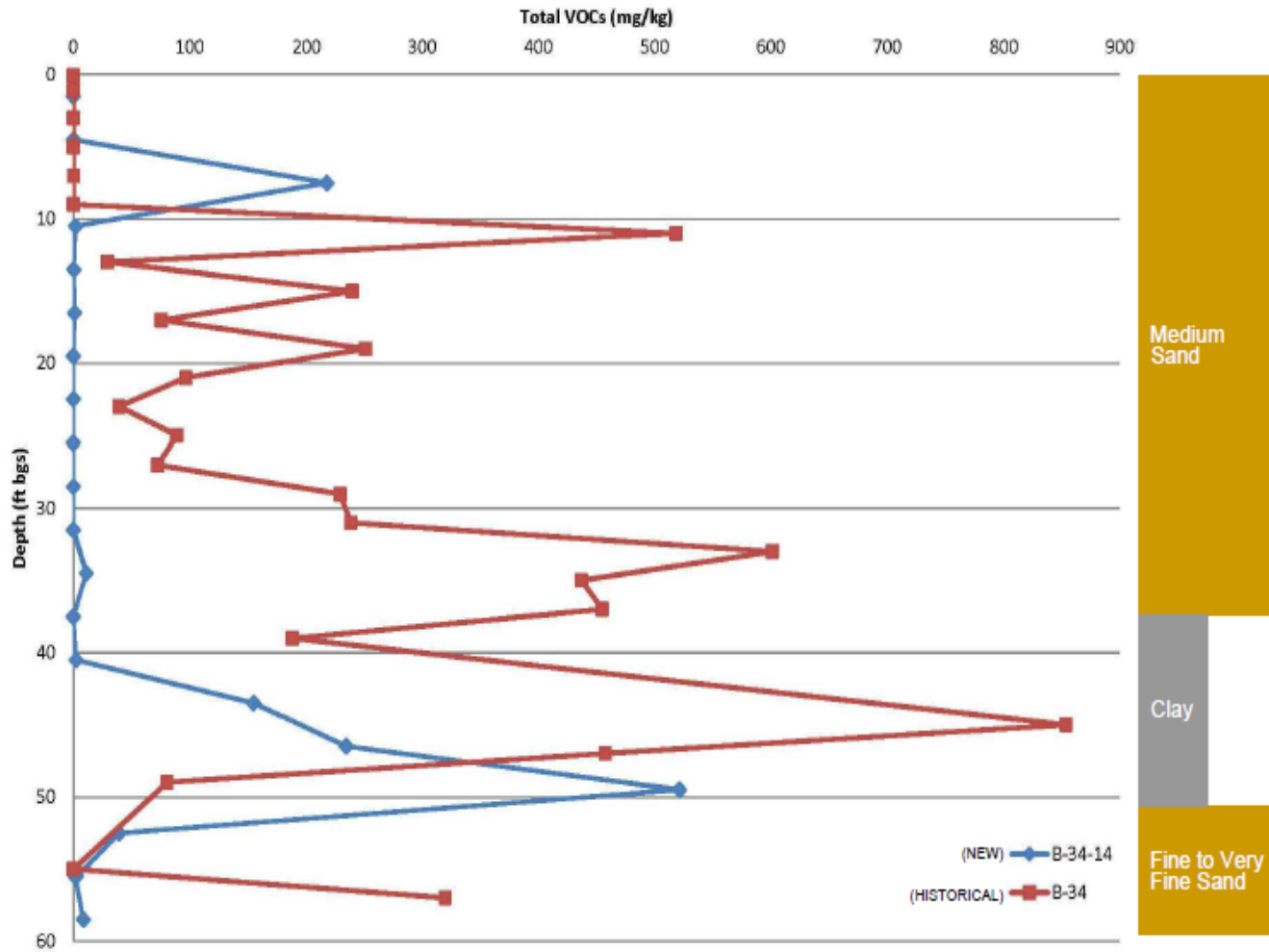
- TVOCs GREATER THAN 10 PPM
- PPM - PARTS PER MILLION
- M-9-14 SOIL BORING LOCATION AND ID
- SOIL SAMPLING LOCATION
- VERTICAL EXAGGERATION: 3x

Data and interpretations are considered preliminary

DATE: 10/28/2010
PROJECT: BETHPAGE COMMUNITY PARK
PROJECT NUMBER: 10-0001
PROJECT LOCATION: BETHPAGE, NEW YORK
PROJECT STATUS: IN PROGRESS

NORTHROP GRUMMAN SYSTEMS CORPORATION BETHPAGE, NEW YORK
BETHPAGE COMMUNITY PARK CROSS SECTION OF TVOCs IN SOIL SECTION A-A' (AREA 1)
ARCADIS FIGURE 5

B-34 Resampling Comparison



MAXIMUM SCREENED INTERVAL FOR SHALLOW/DEEP BETHPAGE PARK SOIL GAS CONTAINMENT SYSTEM DEPRESSURIZATION WELLS

Data and interpretations are considered preliminary

NORTHROP GRUMMAN SYSTEMS CORPORATION BETHPAGE, NEW YORK	
BETHPAGE COMMUNITY PARK B-34 SOIL RESAMPLING COMPARISON	
	FIGURE 8

SHEET NO. 3165100
 PROJECT NAME: BETHPAGE COMMUNITY PARK
 DRAWING TITLE: B-34 SOIL RESAMPLING COMPARISON
 DATE: 11/10/10
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]



LEGEND:

PCBs EXCEEDING SOIL CLEAN UP GOALS IN OU3 ROD:

- PCBs CONCENTRATIONS GREATER THAN 1 PPM IN SOIL 0-2 FEET BELOW LAND SURFACE
- PCBs CONCENTRATIONS GREATER THAN 10 PPM IN SOIL 2-10 FEET BELOW LAND SURFACE
- PCBs CONCENTRATIONS GREATER THAN 50 PPM IN SOIL DEEPER THAN 10 FEET BELOW LAND SURFACE

A A' SOIL QUALITY CROSS SECTION LINE

PCBs POLYCHLORINATED BIPHENYLS
 PPM PARTS PER MILLION
 ROD RECORD OF DECISION

Data and interpretations are considered preliminary

0 120' 240'
 APPROXIMATE SCALE IN FEET

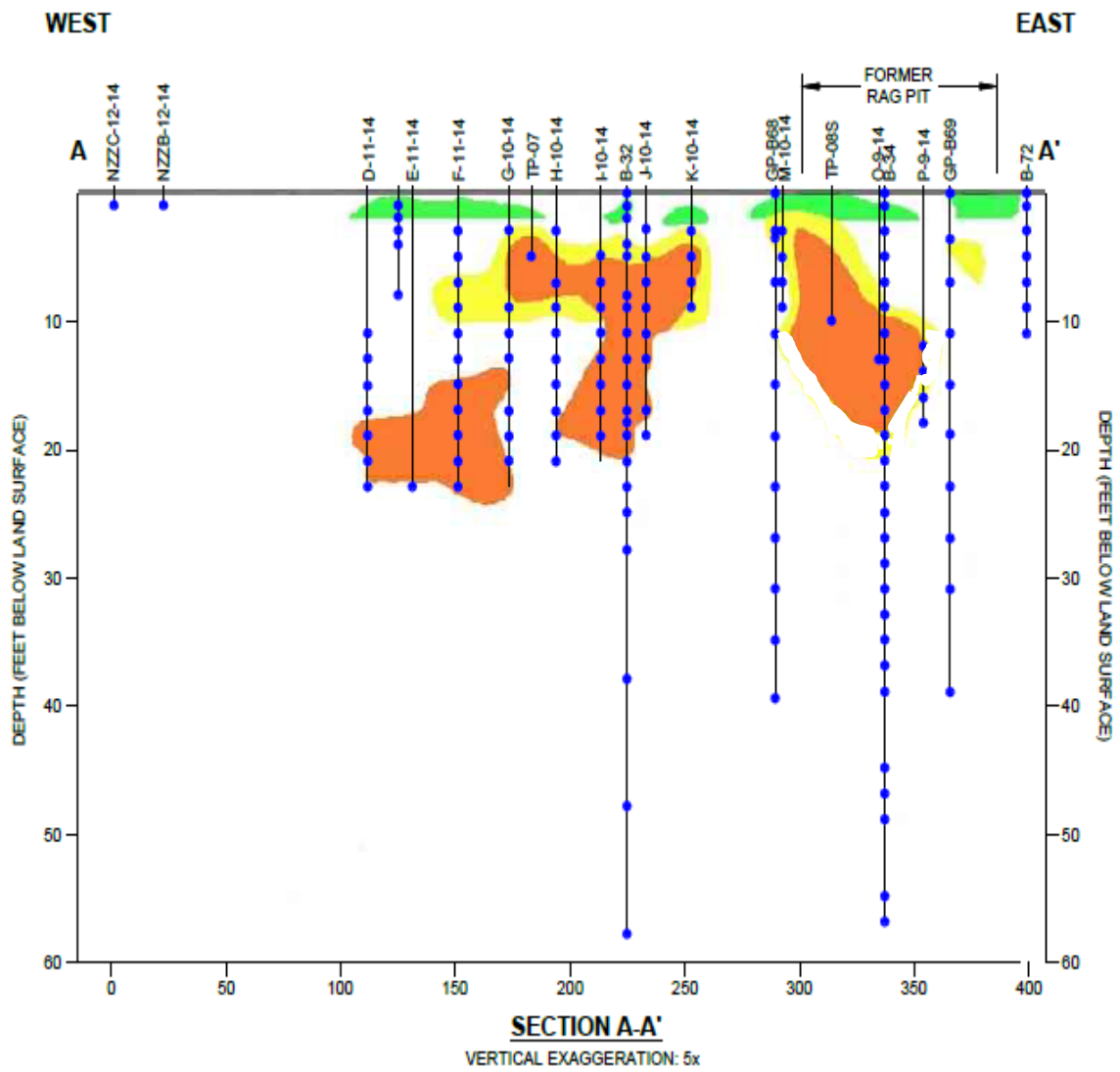
NORTHROP GRUMMAN SYSTEMS CORPORATION
 BETHPAGE, NEW YORK

BETHPAGE COMMUNITY PARK
 EXTENT OF PCBs IN SOIL GREATER THAN
 OU3 ROD SOIL CLEANUP GOALS



DATE: 08/05/08

Data and interpretations are considered preliminary



LEGEND:

PCBs EXCEEDING SOIL CLEAN UP GOALS IN OU3 ROD:

- PCB CONCENTRATIONS GREATER THAN 1 PPM IN SOIL 0-2 FEET BELOW LAND SURFACE
- PCB CONCENTRATIONS GREATER THAN 10 PPM IN SOIL 2-10 FEET BELOW LAND SURFACE
- PCB CONCENTRATIONS GREATER THAN 50 PPM IN SOIL 2-10 FEET BELOW LAND SURFACE AND DEEPER THAN 10 FEET BELOW LAND SURFACE

- PCBs POLYCHLORINATED BIPHENYLS
- PPM PARTS PER MILLION
- ROD RECORD OF DECISION
- SOIL BORING
- SOIL SAMPLE

NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

BETHPAGE COMMUNITY PARK
CROSS SECTION OF PCBs IN SOIL GREATER THAN OU3 ROD CLEAN UP GOALS
SECTION A-A'



SHEET NO. 20
 DATE 08/11/14
 PROJECT NAME
 PCBs in Soil, NYSP, NYC

LEAD CONSULTING ENGINEERS, 1000 WEST 10TH AVENUE, SUITE 1000, DENVER, CO 80202-1000, TEL: 303.733.1111, FAX: 303.733.1112, WWW.LCE.COM

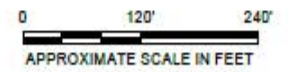


LEGEND:
METALS EXCEEDING SOIL
CLEAN UP OBJECTIVES IN SOIL
0-10 FEET BELOW LAND SURFACE:

- CADMIUM CONCENTRATIONS
GREATER THAN 4.3 PPM
- ARSENIC CONCENTRATIONS
GREATER THAN 16 PPM
- CHROMIUM CONCENTRATIONS
GREATER THAN 180 PPM

PPM - PARTS PER MILLION

**Data and
interpretations are
considered
preliminary**



NORTHROP GRUMMAN SYSTEMS CORPORATION
BETHPAGE, NEW YORK

**BETHPAGE COMMUNITY PARK
EXTENT OF METALS IN SOIL 0-10 FEET
BELOW LAND SURFACE GREATER THAN
SOIL CLEAN UP OBJECTIVES**



Next Steps

- Evaluation of Data
- Incorporation of supplemental data into existing draft reports
- Screening of remedial technologies/alternatives, including but not limited to:
 - Excavation and offsite T&D
 - Soil Washing
 - Bio-Remediation
 - In-Situ thermal
 - Ex-Situ thermal
- Selection of complementary remedial approach for VOCs and PCBs-Metals
- Updates to existing Pre-Design Reports
- Submittal of Reports to NYSDEC and the Town

Groundwater Hotspot Update

General Status Update

- **Completed**

- VP-3, VP-4, VP-5, VP-7, VP-9, and VP-11

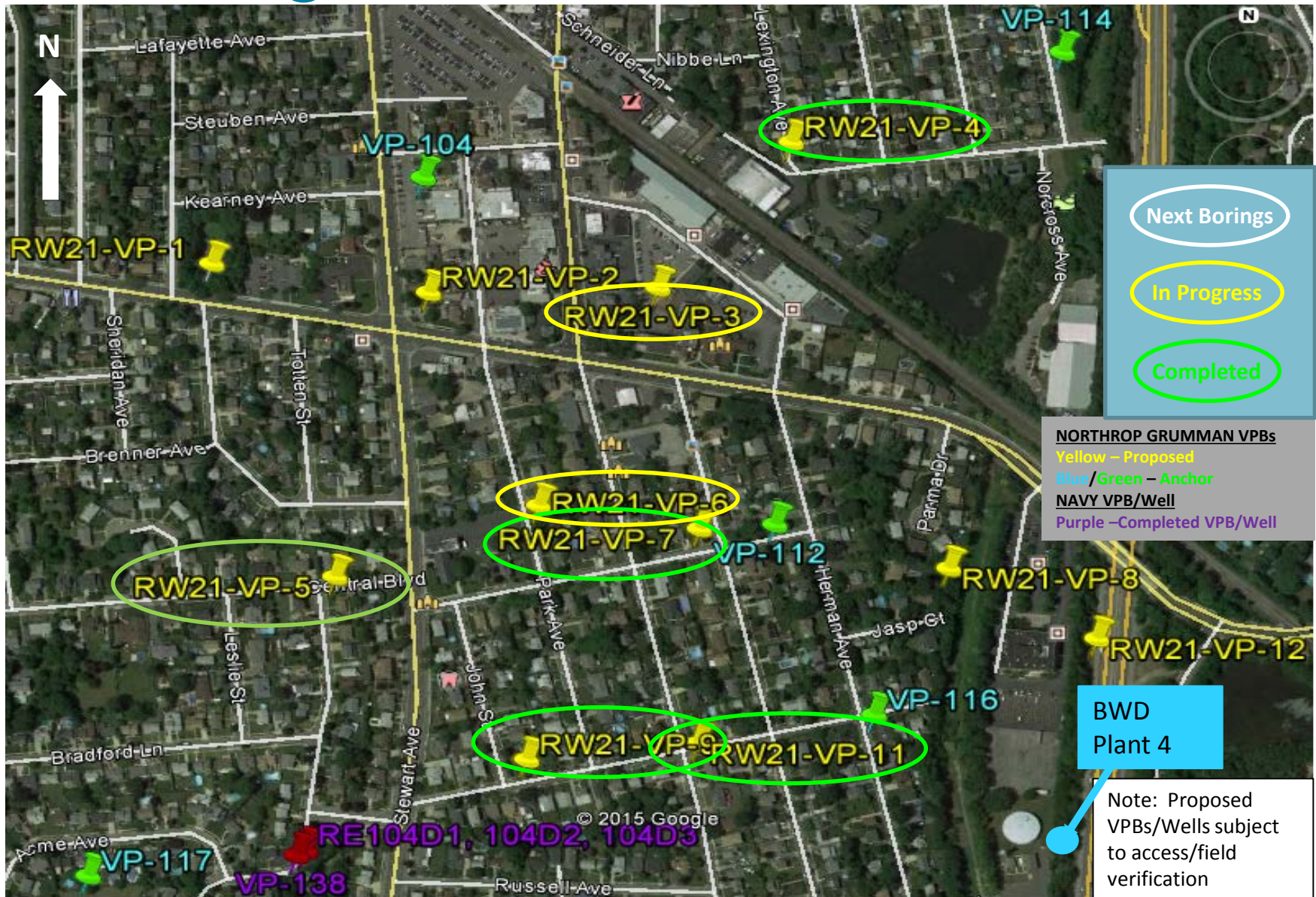
- **In Progress**

- MW3-2, VP-6

- **Pending**

- VP-1 (NCDPW) – awaiting approval of permit
- VP-2 (County and Town) – awaiting County approval of road opening permit and Town determination of ownership
- VP-8 – Awaiting NYSDEC coordination with King Kullen
- VP-10 – on hold (contingency location)
- VP-12 – permit submitted to NYSDOT, responding to questions

Drilling/Well Installation Status

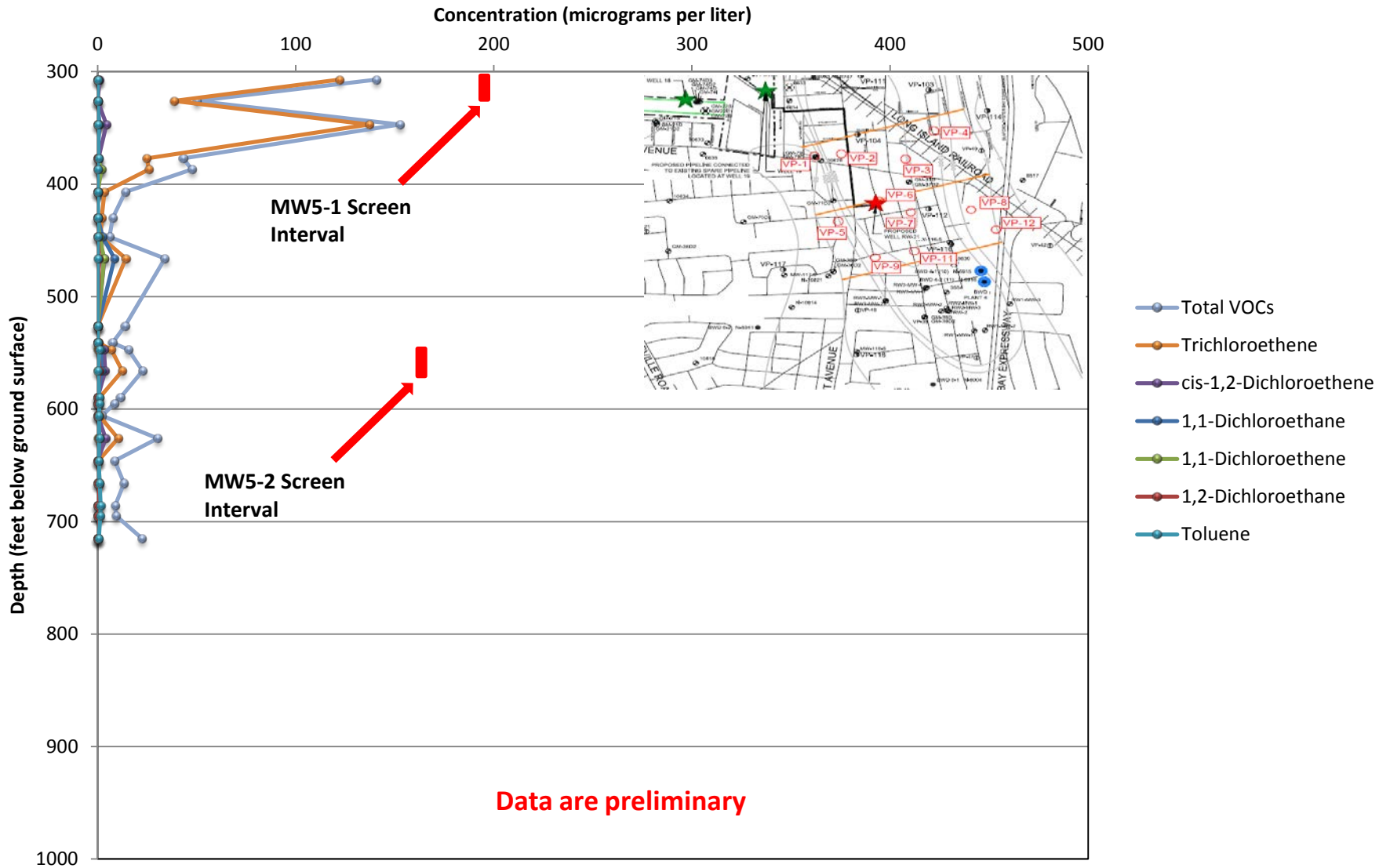


Groundwater Hotspot Summary

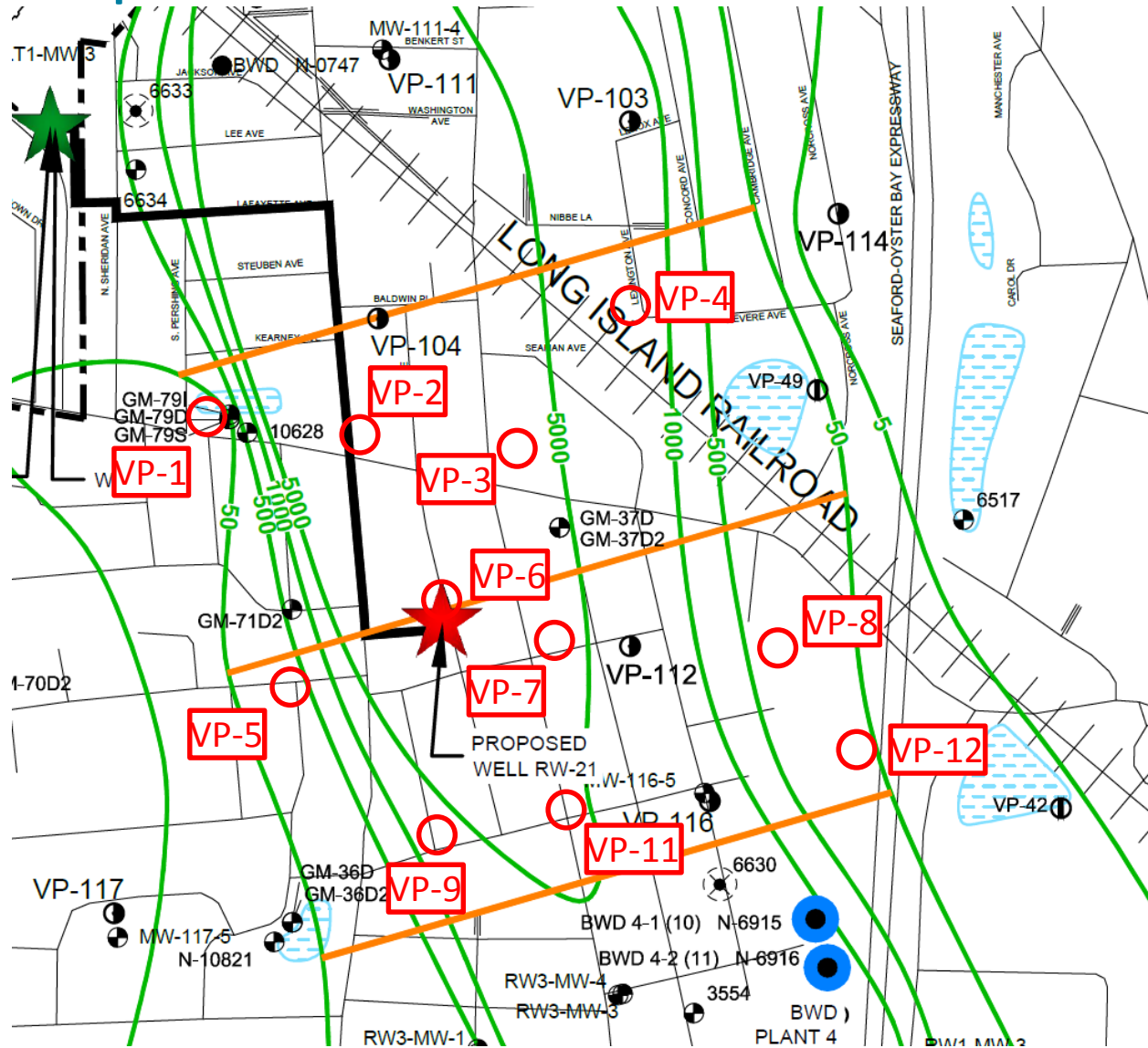
As of 6/12/15

VPB Terminal Depth (ft bls)	Monitoring Well (ft bls)	Mon. Well TVOC (ug/L)	VPB Maximum TVOC (ug/L)
VP-109 (522 ft bls)			9,173
VP-111 (631 ft bls)			10,500
VP-104 (887 ft bls)			6,626
VP-112 (702 ft bls)			870
VP-116 (699 ft bls)			2,040
RW-21_VP-3 (860 ft bls)	RW-21_MW-3 (556 to 566)	14,700	14,113
RW-21_VP-4 (710 ft bls)	RW-21_MW-4 (369 to 384)	973	989
RW-21_VP-7 (827 ft bls)	RW-21_MW-7 (580 to 590)	5,906	5,252
RW-21_VP-9 (706 ft bls)	RW-21_MW-9 (630 to 640)	860	400
RW-21_VP-11 (817 ft bls)	RW-21_MW-11 (638 to 648)	1,992	1,956

VP-5 - VOC Concentrations with Depth



Comparison of New VPBs to RI Results



Contours displayed are from Study Area Feasibility Study Operable Unit 3 (Former Grumman Settling Ponds),

Bethpage, New York

November 10, 2010, Revised April 7, 2011

5000

TVOC concentration in ug/L

TVOC concentrations within 5000 ug/L contour line are equal to or greater than 5000 ug/L