AGENDA

New York State
Department of Environmental Conservation
Operable Unit 2 (OU2) Groundwater
Technical Advisory Committee Meeting
NWIRP Plant 3 Building
South Oyster Bay Road, Bethpage
June 17, 2011 9:00 am – 12 pm

Northrop Grumman Facility	**130003A**
Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage	**130003B**
Grumman Steel Los Site	**130003C**
Town of Oyster Bay Ice Rink	**(C)130003D**
OXY-Hooker Ruco/Bayer Site	**130004**

9:00 – 9:15	**Opening Remarks**	Jim Harrington, Chief-DEC Bureau A
	Introduction & Overview	Steven Scharf, NYSDEC/Moderator
9:15 – 9:55	**OXY Hooker RUCO-Bayer Chemical**	
• Bayer RCRA Corrective Action Overview		Ramon Simon, Bayer Corporation
• CERCLA OU 3 Biosparging (OXY)		Jim Kay, Conestoga Rovers (CRA)
9:55 – 10:20	**Northrop Grumman**	
• On-Site Containment System Performance & Monitoring Status/Results		Carlo San Giovanni & Mike Wolfert, ARCADIS
10:20 – 11:00	**NWIRP-Bethpage**	
• NWIRP Update		Lora Fly NAVFAC
• Outpost Monitoring Well Program		David Brayack, TTNUS
11:00 – 11:15	**Additional Items**	Steven Scharf, NYSDEC/Moderator
11:15 – 12:00	**Question and Answer**	Steven Scharf, NYSDEC/Moderator
12:00	**Conclusion**	Steven Scharf, NYSDEC/Moderator

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TECHNICAL ASSISTANCE COMMITTEE (TAC) MEETING OF 17 JUN. 2011

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TECHNICAL ASSISTANCE COMMITTEE (TAC) MEETING OF 17 JUN. 2011

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TECHNICAL ASSISTANCE COMMITTEE (TAC) MEETING OF 17 JUN. 2011

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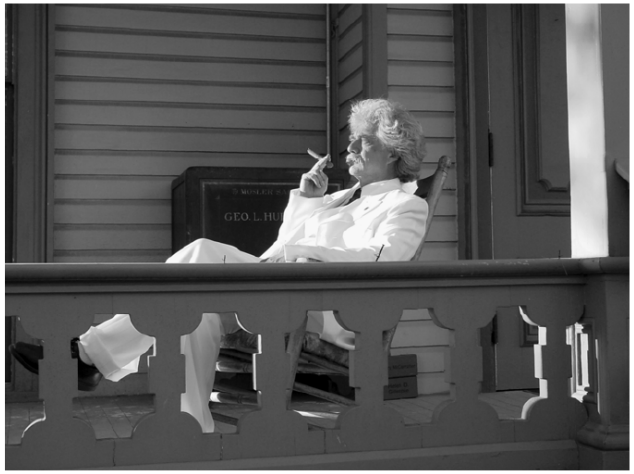

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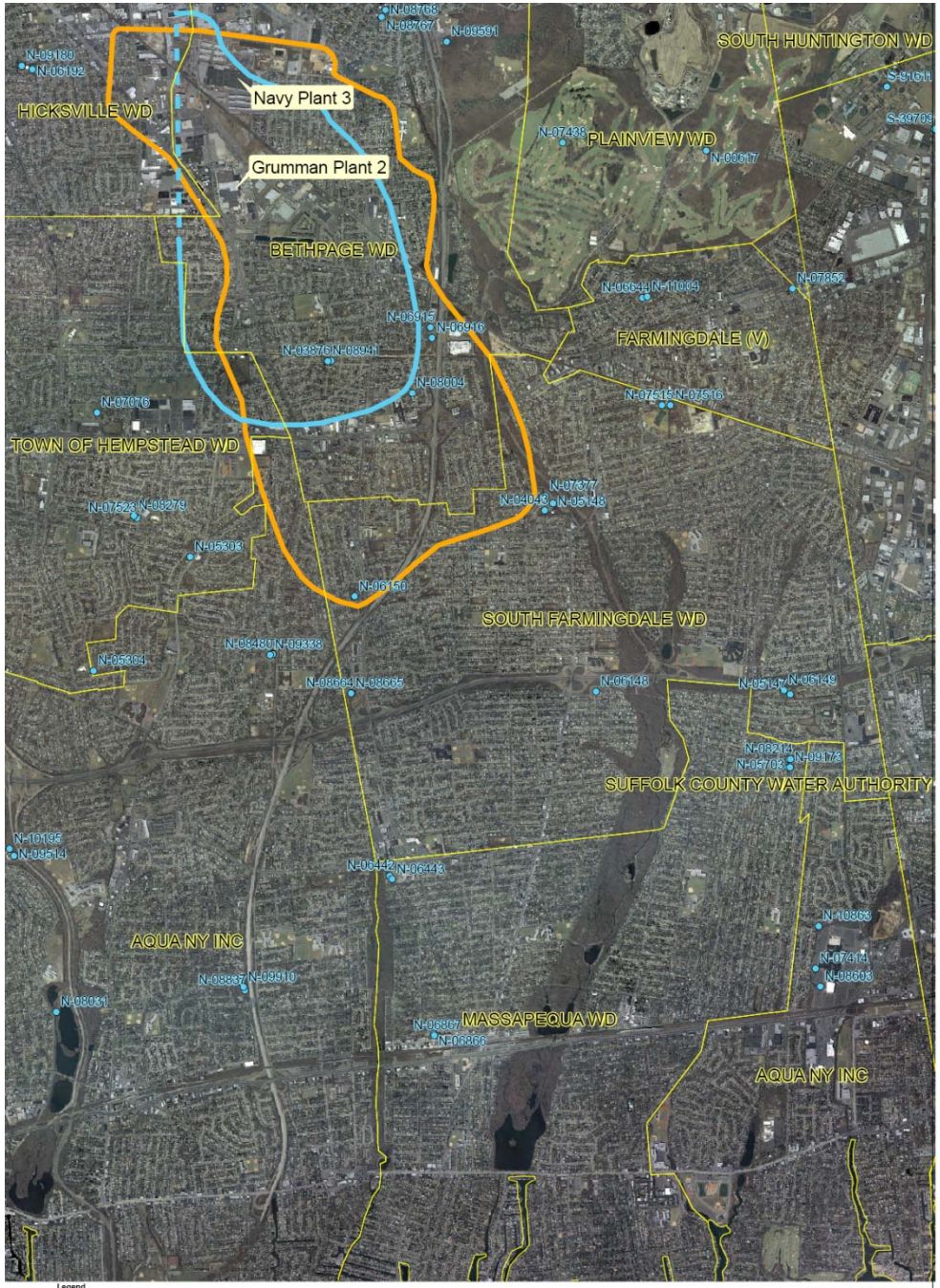

Navy - Grumman
Water Districts
Nassau County, New York

Rev. 1

Bayer MaterialScience

Bayer RCRA Corrective Action Overview

Ramon Simon, Solid Waste & Remediation Coordinator, BMS-NAFTA

OU2 Groundwater TAC Meeting

June 17, 2011

Bayer MaterialScience

125 New South Road

Site Operational History

- Manufactured Latex, Plastics and Esters from 1945 to 2002
- Site Placed on NPL (Superfund List) in 1984
- Site Owners and Operators
    - Hooker Chemical purchased Rubber Company of America (RUCO)
    - Occidental Chemical Corporation (OXY) purchased Hooker (site known as OXY-Hooker RUCO)
    - Ruco Polymer Corporation purchased Site in 1982
    - Sybron Chemicals purchased Ruco Polymers in 1988
    - Bayer purchased Sybron Chemicals in 2000
    - Bayer closed site in 2002

Bayer MaterialScience

Site Operational History

- Manufactured Latex, Plastics and Esters from 1945 to 2002
- Site Placed on NPL (Superfund List) in 1984
  - Operations Resulted in Releases of Hazardous Substances
    - Site Listed on National Priorities List (Superfund List) by EPA
    - Oxy was the Primary Responsible Party for Superfund Cleanup
    - Bayer Required to Perform Site Closure
  - Oxy and Sybron/Bayer Performing Site Remediation Since 1990s

Bayer MaterialScience

Investigation and Remediation Activities

Oxy's Investigation and Remediation Activities

- Oxy's Activities
  - EPA Required Oxy to Address PCB and VOC Impacts During the Superfund Cleanup
  - Divided into Three Operable Units (OUs)
    - OU 1 Addressed VOC Contamination Soil
    - OU 2 Addressed PCB Contamination in Soil
    - OU 3 Addressed Groundwater
  - Oxy Continues to Remediate the Commingled Organic Groundwater Plume

Bayer MaterialScience

Investigation and Remediation Activities

Bayer Investigation and Remediation Timeline

- **2002** – Operations Terminated
- **2002-2004** – RCRA Investigation Performed and Demolition of Above-Ground Structures
- **2005** – First Interim Corrective Measure (ICM) Performed
- **2005-2006** – Foundations Demolished and Material Removed
- **2006** – Second ICM Performed
- **2006-2009** – Subsurface Soil and Soil Vapor Investigations Performed
- **2008-2009** – Site Preparation for and Performance of Third ICM
- **2009-2010** – EPA and DEC Renegotiate Cleanup Requirements
- **Q4 2010** – DEC Requires More Stringent PCB Remediation Standards
- **Q1 2011** – DEC Requires Additional Sampling of Metals
- **Q2 2011** – Off-Site Soil Vapor and Indoor Air Investigation Commenced
- **Q4 2011** – Begin Implementing Final On-Site Soils Remedy????

Bayer MaterialScience

Projects

- **Production Operations Discontinued – 2002**
- **Aboveground Building Demolition – 2003**
- **RCRA Facility Assessment (RFA) & RCRA Facility Investigation (RFI)**
  - RFA/RFI Work Plan – December 2003
  - RFI Field Investigation – February and October 2004
  - RFI Report – June 2004 (Phase I) and January 2005 (Phase II)
- **Initial Interim Corrective Measure (ICM)**
  - ICM Work Plan – April 2005
  - ICM Field Activities (PCB-impacted Soil Delineation/Removal in Transformer Area, Gasoline UST Removal, Subsurface Structure Cleaning) – Summer 2005
  - ICM Report – November 2005

Projects

- **Foundation Demolition**
  - Demolition Work Plan / Stormwater Pollution Prevention Plan (SWPPP) & Notice of Intent (NOI) – August/September 2005
  - Pre-Demolition Characterization Sampling – August/November 2005
  - Demolition Permit – November 2005
  - Foundation Demolition / Additional UST Closure – December 2005 through February 2006
  - Demolition Summary Report – April 2007
- **Second ICM**
  - Area of Concern (AOC) 45 ICM Soil Removal Work Plan / Response to NYSDEC Comments – January/March 2006
  - AOC 45 ICM Soil Removal – June/July 2006
  - AOC 45 ICM Certification Report – May 2007
- **Post-RFI Polychlorinated Biphenyl (PCB) & Volatile Organic Compound (VOC) Soil Delineation**
  - Phase I through VI Soil Sampling – December 2005 through April 2007
  - Phase VII Soil Sampling (After NYSDEC Approval of CMS Work Plan) – June 2008

Projects

- **Soil Vapor Investigation (SVI)**
  - SVI Work Plan – March 2007
  - SVI Field Activities – September 2007
  - Walk-Through of Adjacent Warehouse Complex (Owned by Simone) – June 4, 2008
  - Phase II SVI Field Activities – June 2008
  - Phase III SVI Field Activities – February 2009
  - Phase IV SVI Field Activities – August 2009
  - Conference Call with NYSDEC and NYSDOH to Discuss SVI Activities, Offsite Property Access, and Background Information Search Results – July 30, 2010
  - Site meeting with NYSDEC and NYSDOH in which the Agencies Requested Indoor Air and Sub-Slab Soil Vapor Sampling at the Simone Building Complex – September 28, 2010
  - "Draft" Vapor Intrusion (VI) Investigation Work Plan Submitted to NYSDEC – January 14, 2011
  - Conference Call with NYSDEC, NYSDOH, and Simone to Discuss the "Draft" VI Investigation Work Plan and Access to the Simone Building Complex – March 8, 2011
  - VI Intrusion Work Plan Submitted to the NYSDEC – March 23, 2011
  - Bayer and Simone Fully Executed An Access Agreement to Allow Access for Performing the VI Investigation at the Simone Building Complex on March 25, 2011
  - Sub-Slab and Indoor Air Sampling at Simone – April 27 to May 5, 2011
  - Review of VI Investigation Results and Summary Report Preparation – In Progress

Projects

- **Corrective Measures Study (CMS)**
  - CMS Work Plan submitted – April 2, 2008
  - Revised CMS Work Plan – May 21, 2008
  - NYSDEC Approval of CMS Work Plan – May 27, 2008
  - CMS Soil Sampling (Phase VII Soil Sampling) – June 2008
  - "Draft" CMS Report Submitted to NYSDEC (RCRA Corrective Action Group) – August 2, 2010
  - "Draft" CMS Report Submitted to NYSDEC (Inactive Hazardous Waste Disposal Site Group) – August 24, 2010
  - Bayer Responded to comments on the "Draft" CMS Report from the United States Environmental Protection Agency (USEPA) – September 9, 2010
  - Conference Call with Agencies was Held to Discuss and Agree on Final Remedy for the Site – January 12, 2011
  - NYSDEC Provided Town of Oyster Bay Comments on the "Draft" CMS Report – March 28, 2011
  - NYSDEC Provided Conditional Approval of the "Draft" CMS Report – March 30, 2011
  - Metals Soil Delineation Work Plan submitted to NYSDEC – May 27, 2011

Projects

- **Third ICM (Additional Soil Removal)**
  - ICM Additional PCB Soil Removal Work Plan – November 5, 2008
  - NYSDEC Approval of ICM Work Plan – December 18, 2008
  - Pre-Excavation Verification Soil Sampling Field Activities – February 2009
  - Pre-Excavation Verification Soil Sampling Summary – May 7, 2009
  - Implementation of ICM Soil Removal Activities – Mobilization During Week of 5/11/09
  - Completion of ICM Soil Removal Activities – August 2009

Path Forward

- Implement Metals Soil Delineation
- Finalize CMS
- Statement of Basis
- CMS/CMI Workplan
- Implement Final CMI
- Site Management Plan
- Final Engineering Report
- Site Closure / Finalize Selling of the Property
- Vapor Intrusion (Track II) - ?
- Site Redevelopment

Bayer MaterialScience

Bayer MaterialScience

Thank You for Your Attention


BAYER
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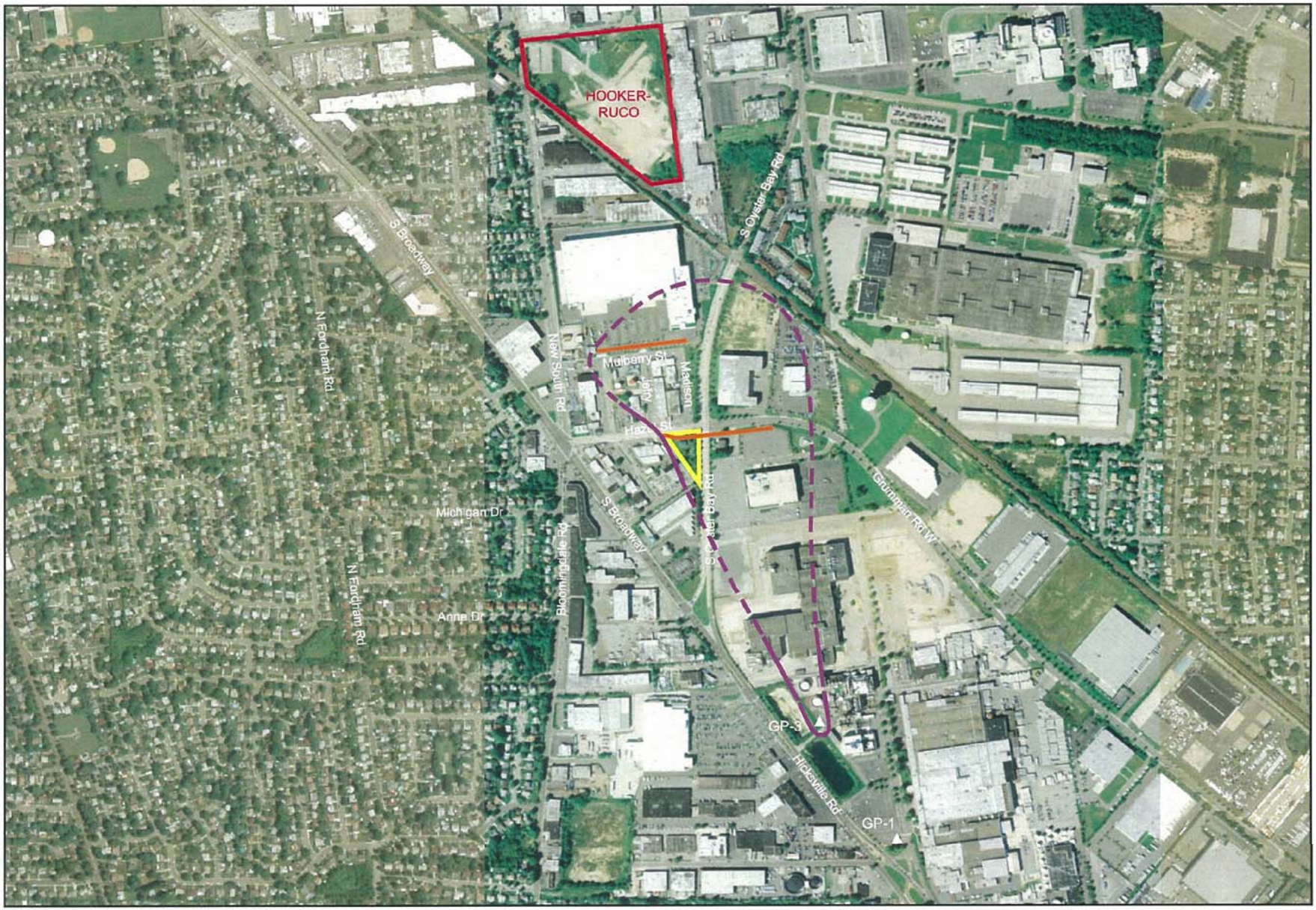
Hooker Chemical & Plastics Corp./Ruco Polymer Corp. Superfund Site Hicksville, New York

Status Update

June 17, 2011

CONESTOGA-ROVERS & ASSOCIATES


HOOKER-
RUCO
S. Broadway
N. Fordham Rd
New South Rd
Mulberry St
Madison
Hazel St
S. Oyster Bay Rd
Michigan Dr
Anne Dr
Bloomingdale Rd
S. Broadway
Hicksville Rd
Grumman Rd W
GP-3
GP-1

Brief History

- Remedial Action Plan – July 2000
- Pre-design Information Report – November 2002
- Final 100% Design Report – May 2005
- Construction and Start-Up of Pilot System – May 2006 to October 2006
- Pilot System Operation – October 2006 through Present

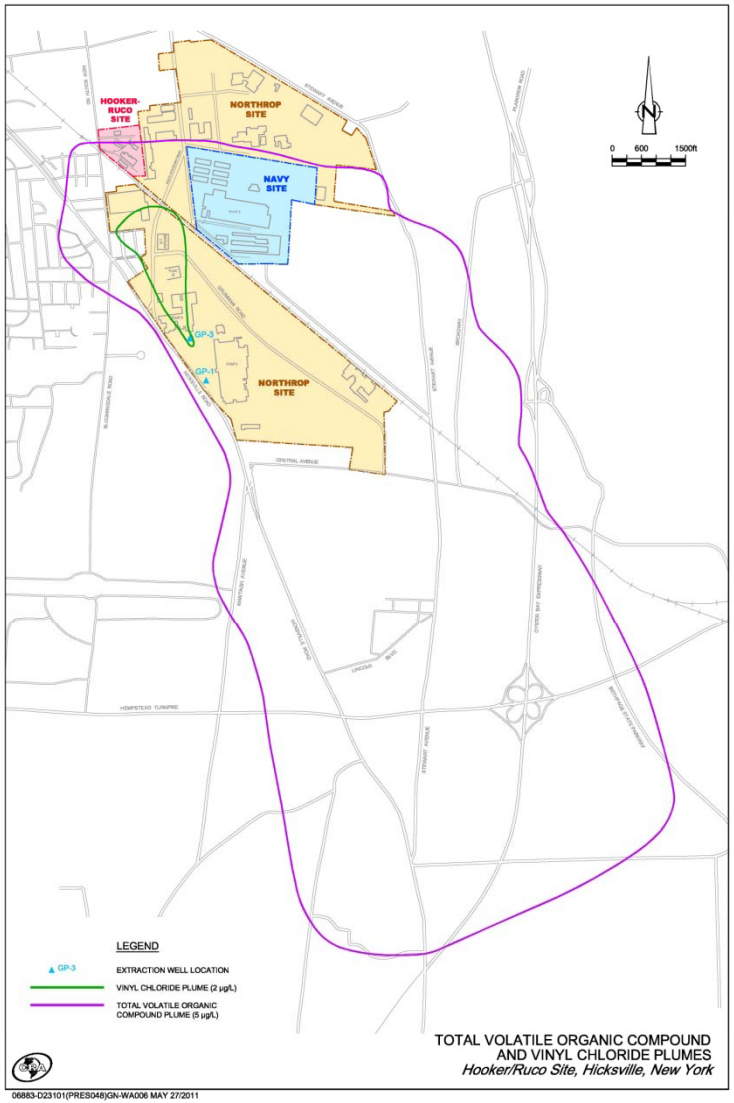
Milestones

- EPA accepts demonstration of system effectiveness and approves expansion to full scale – January 2010
- System expansion will be complete in Fall of 2011

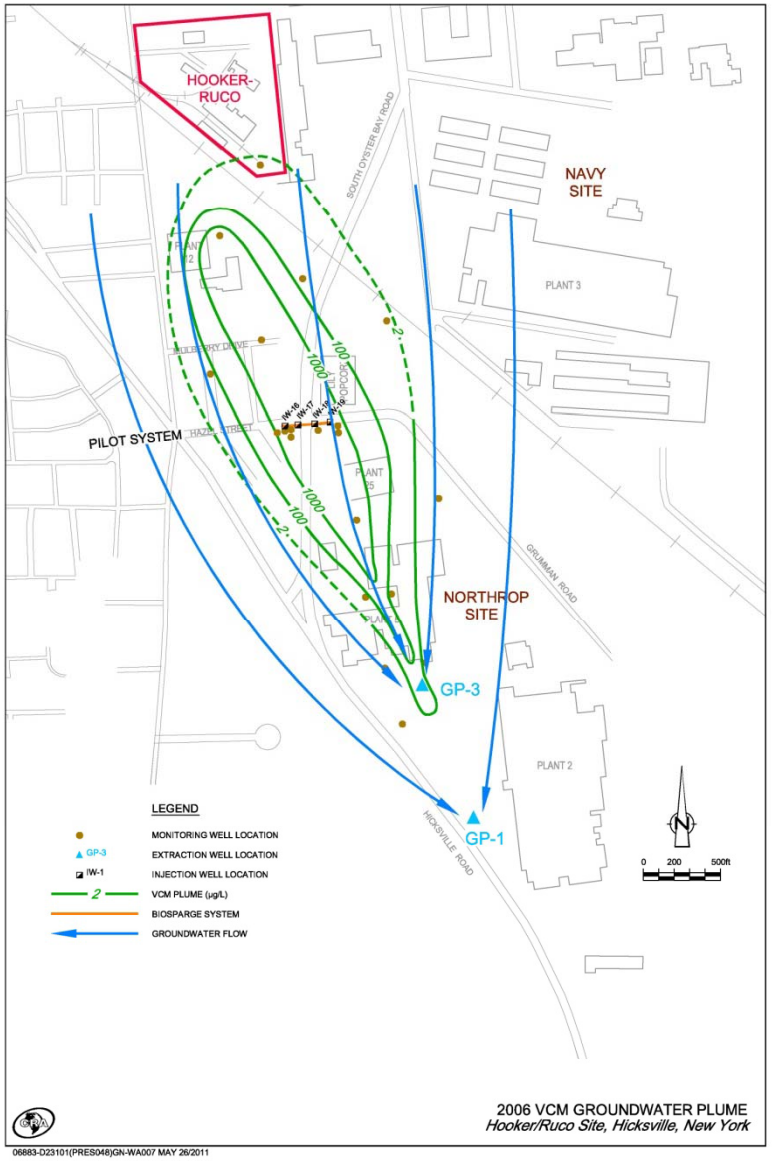
Groundwater Remediation

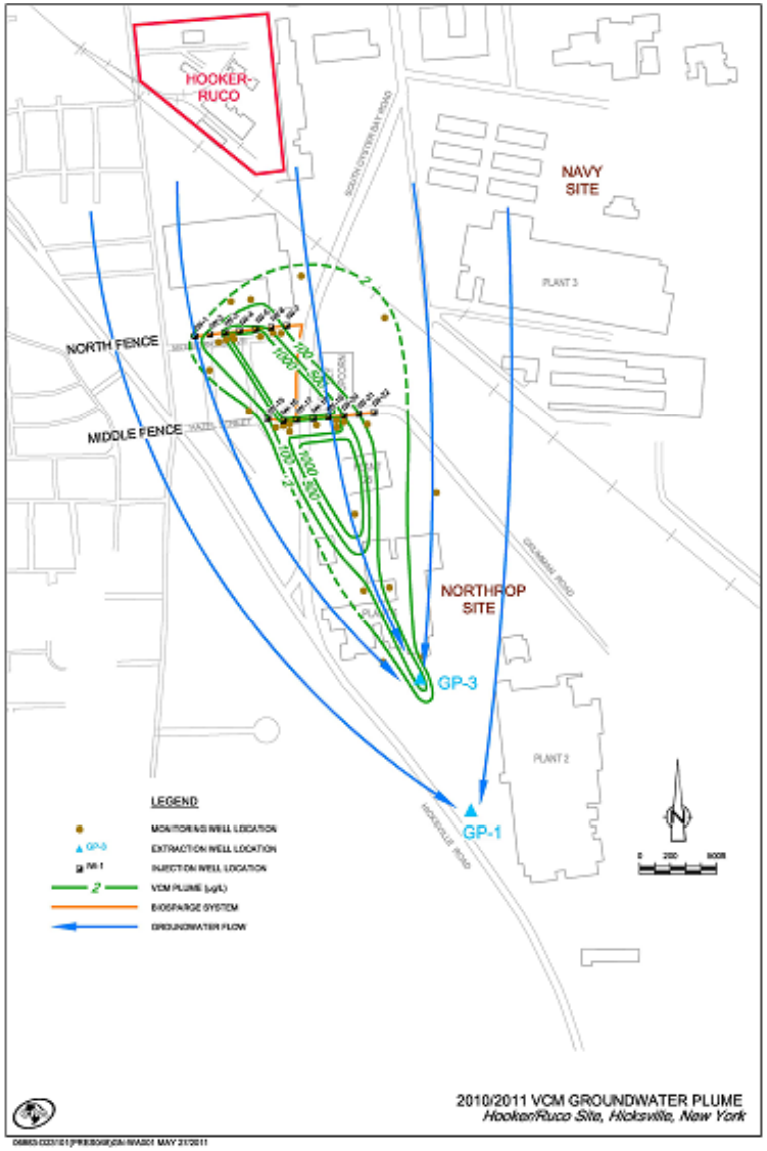
- EPA Approved Remedy
  - Air Injection into and around the impacted groundwater
    - Increases dissolved oxygen speeding biological breakdown of constituent
    - Constituent breaks down to water, carbon dioxide, chloride, and other inert byproducts
  - Measure of Effectiveness
    - Increased levels of dissolved oxygen
    - Reduced concentrations of constituent

Where are the Constituents?



Then and Now


HOOKER-RUCO
NAVY SITE
PILOT SYSTEM
NORTHROP SITE
GP-3
GP-1
PLANT 3
PLANT 2
SOUTH OYSTER BAY ROAD
GRUMMAN ROAD
HICKSVILLE ROAD
LEGEND
MONITORING WELL LOCATION
EXTRACTION WELL LOCATION
INJECTION WELL LOCATION
VCM PLUME (µg/L)
BIOSPARGE SYSTEM
GROUNDWATER FLOW
2006 VCM GROUNDWATER PLUME
Hooker/Ruco Site, Hicksville, New York


HOOKER-RUCO
NAVY SITE
NORTH FENCE
MIDDLE FENCE
NORTHROP SITE
GP-3
GP-1
PLANT 3
PLANT 2
LEGEND
EXTRACTION WELL LOCATION
VCM PLUME (µg/L)
BIOSPARGE SYSTEM
2010/2011 VCM GROUNDWATER PLUME
Hooker/Ruco Site, Hicksville, New York

Current Status

- Expansion of system to full scale
  - Pilots system still operates
  - Injection and monitoring well installations have been completed.
  - Connection and start-up of expanded system to be completed in 2011

NORTHROP GRUMMAN

DRAFT Northrop Grumman OU2 Remediation Status

Bethpage Technical Advisory Committee Meeting

June 17, 2011

Speakers: Carlo San Giovanni and Mike Wolfert

Topics

- OU2 On Site Containment System (ONCT) performance
- OU2 Monitoring Program
- Path Forward

ONCT System Performance

- 2 Treatment systems (Towers 96 & 102)
  - Recovery wells
  - Air strippers with emission controls
  - Treated effluent discharge to recharge basins
- Tower 96 – On-line 1988; Wells 1 and 3 (1,500 gpm)
- Tower 102 – On-line 1998; Wells 17, 18, 19 (2,300 gpm)
- Systems operated, maintained & monitored per OM&M plan
- NG is ad hoc member of Navy Optimization Team reviewing ONCT performance; provided input on draft Optimization Team Report.

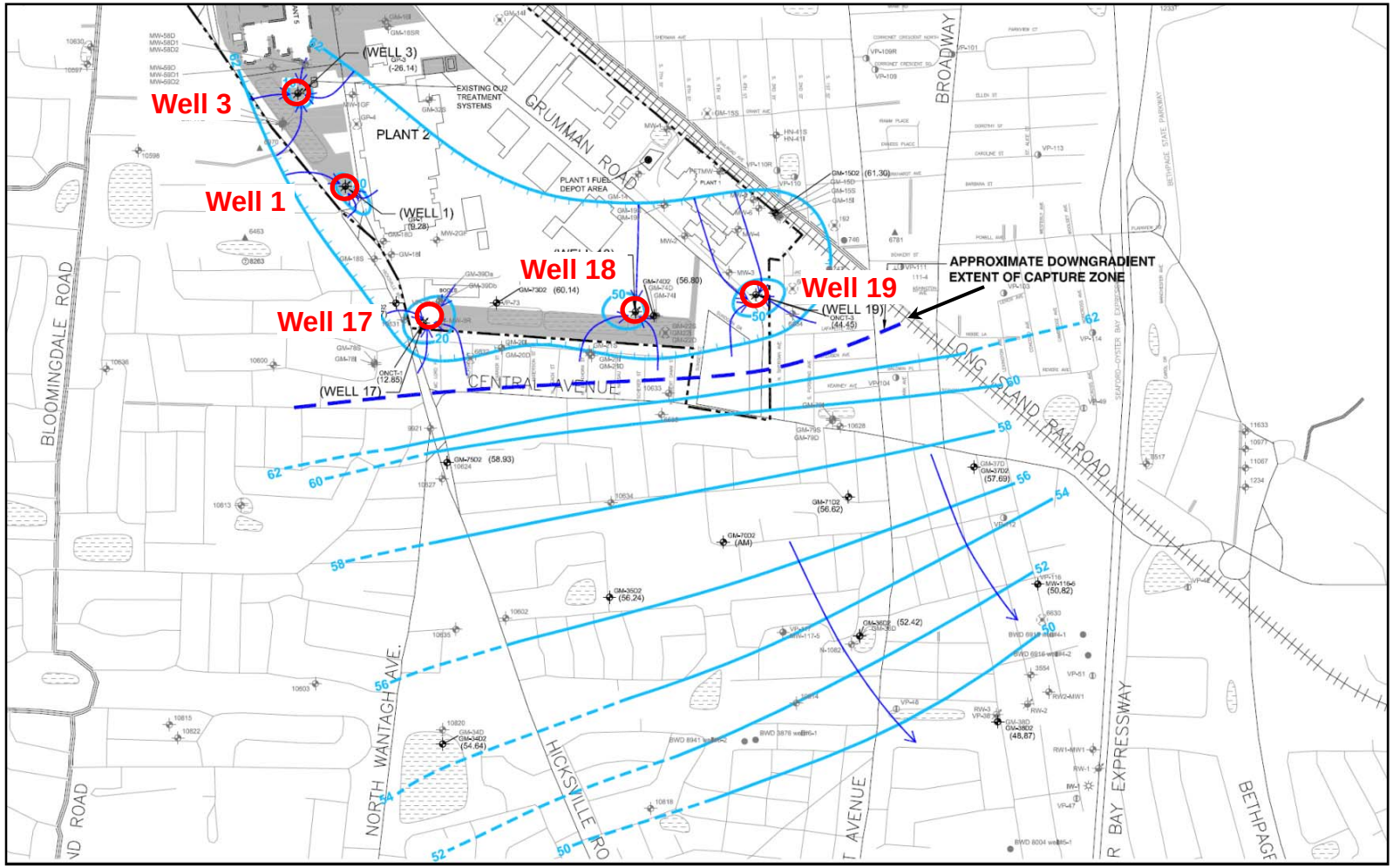
ONCT Performance Objectives / Metrics

- Hydraulic containment > 5 µg/L TVOCs
  - Recovery well pumpage vs design
  - Inward hydraulic gradient
  - Concentrations / trends in monitoring wells
- Remove mass from plume
  - TVOC mass removed over time
  - Treatment system influent concentration / trends
  - Concentrations / trends in recovery wells
- Meet operational metrics
  - Treatment system efficiency
  - Air emissions and water quality effluent requirements

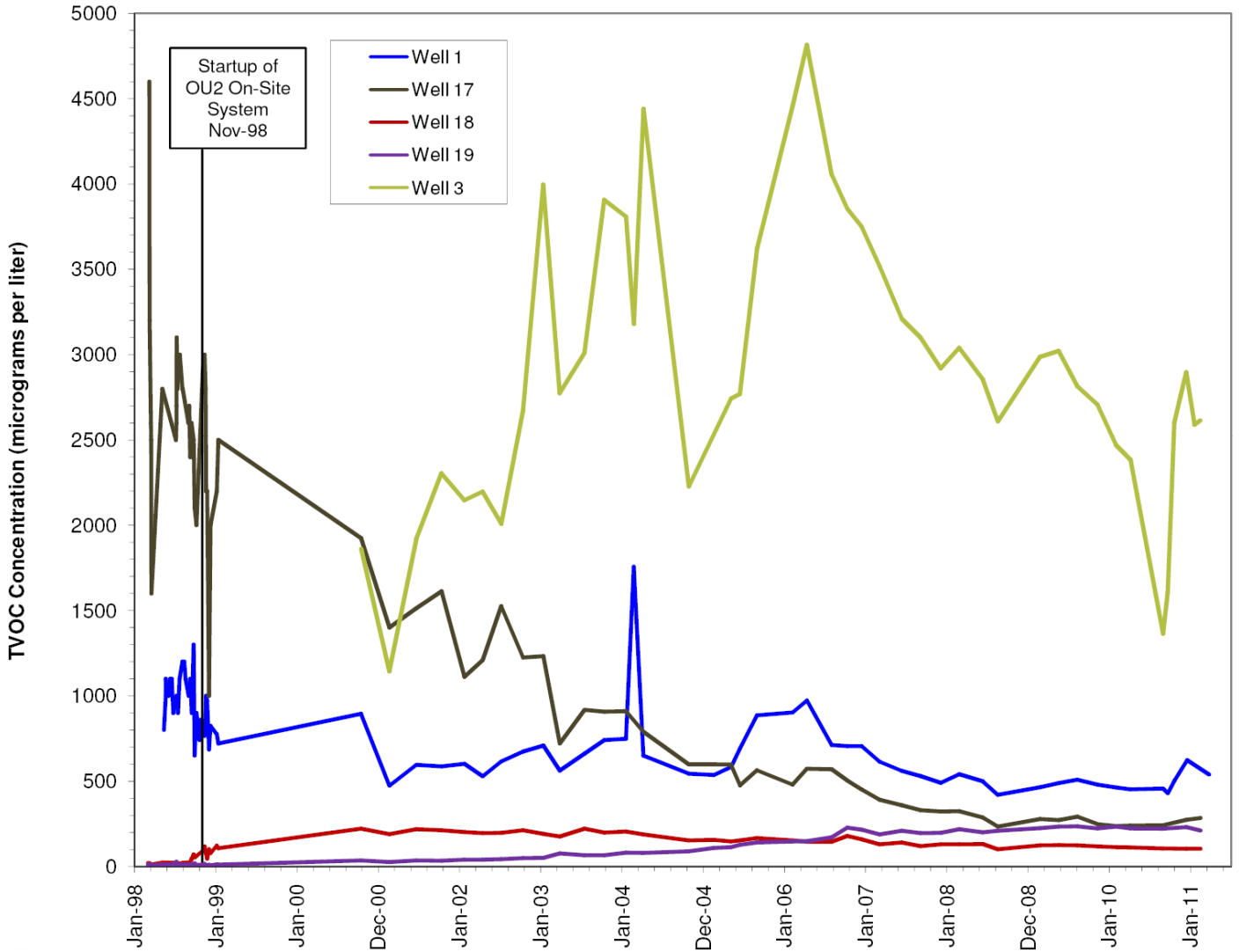
ONCT OM&M Activities

- Hydraulic monitoring
  - Semiannual water levels in monitoring wells
  - Weekly recovery well pumpage
- Water quality monitoring
  - Recovery well (quarterly) & monitoring well (quarterly/semi-annual/annual) sampling
  - Quarterly treatment system effluent sampling
  - Monthly SPDES treated effluent sampling
- Routine maintenance & troubleshooting

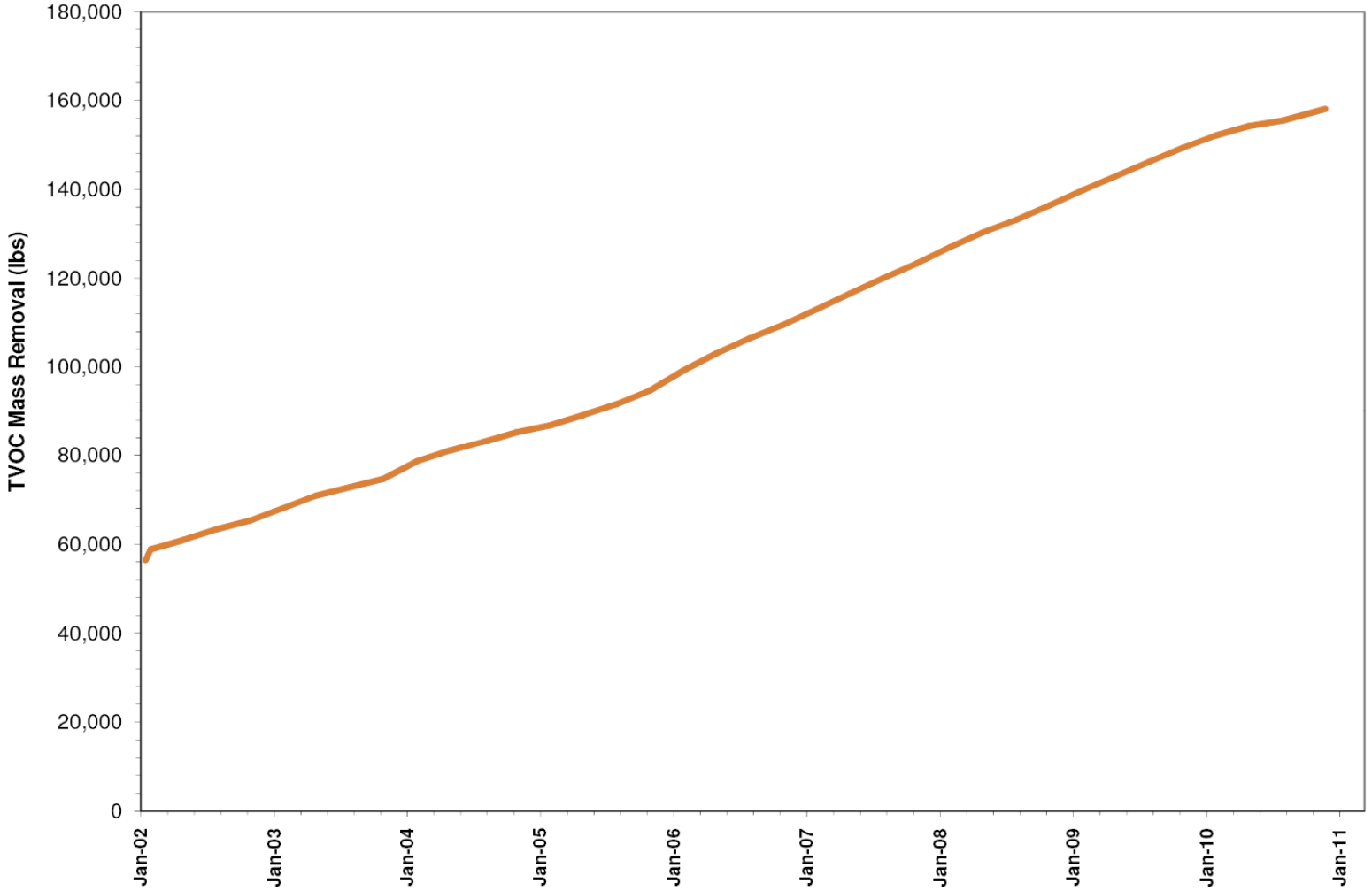
ONCT Hydraulic Containment
September 2010



Concentration Trends in ONCT Recovery Wells

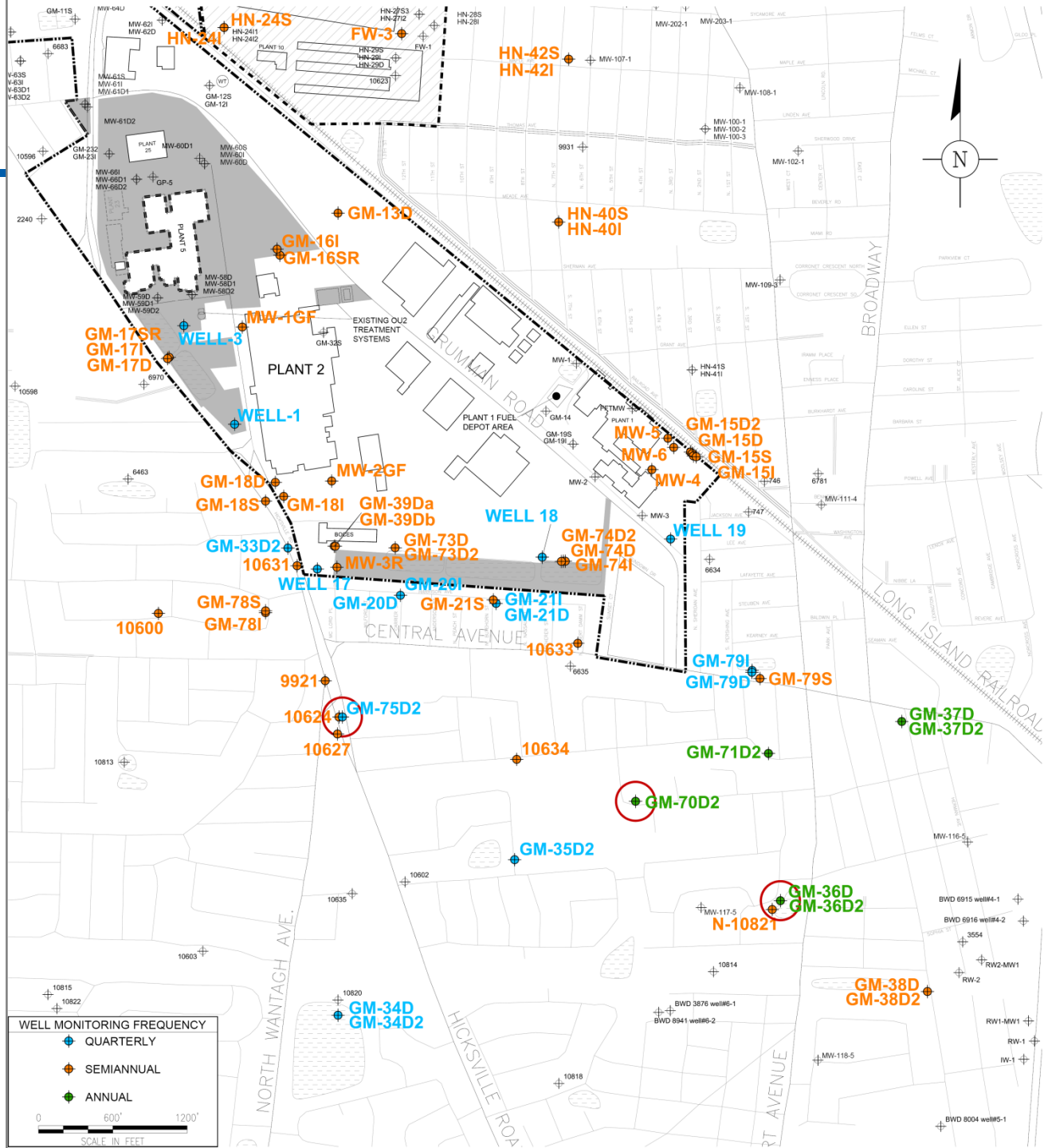


ONCT Cumulative TVOC Mass Removed

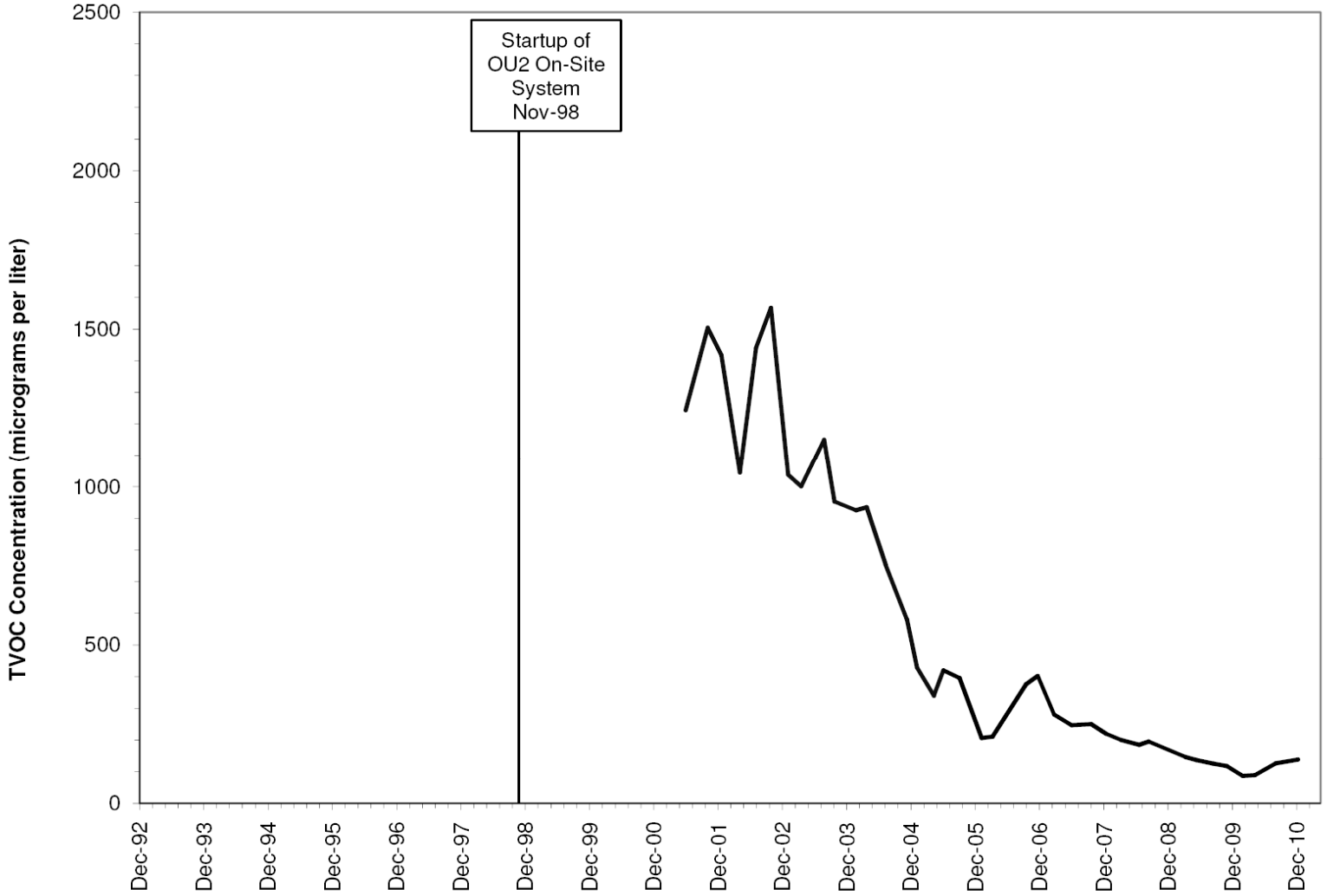


Trends in Key Monitoring Wells

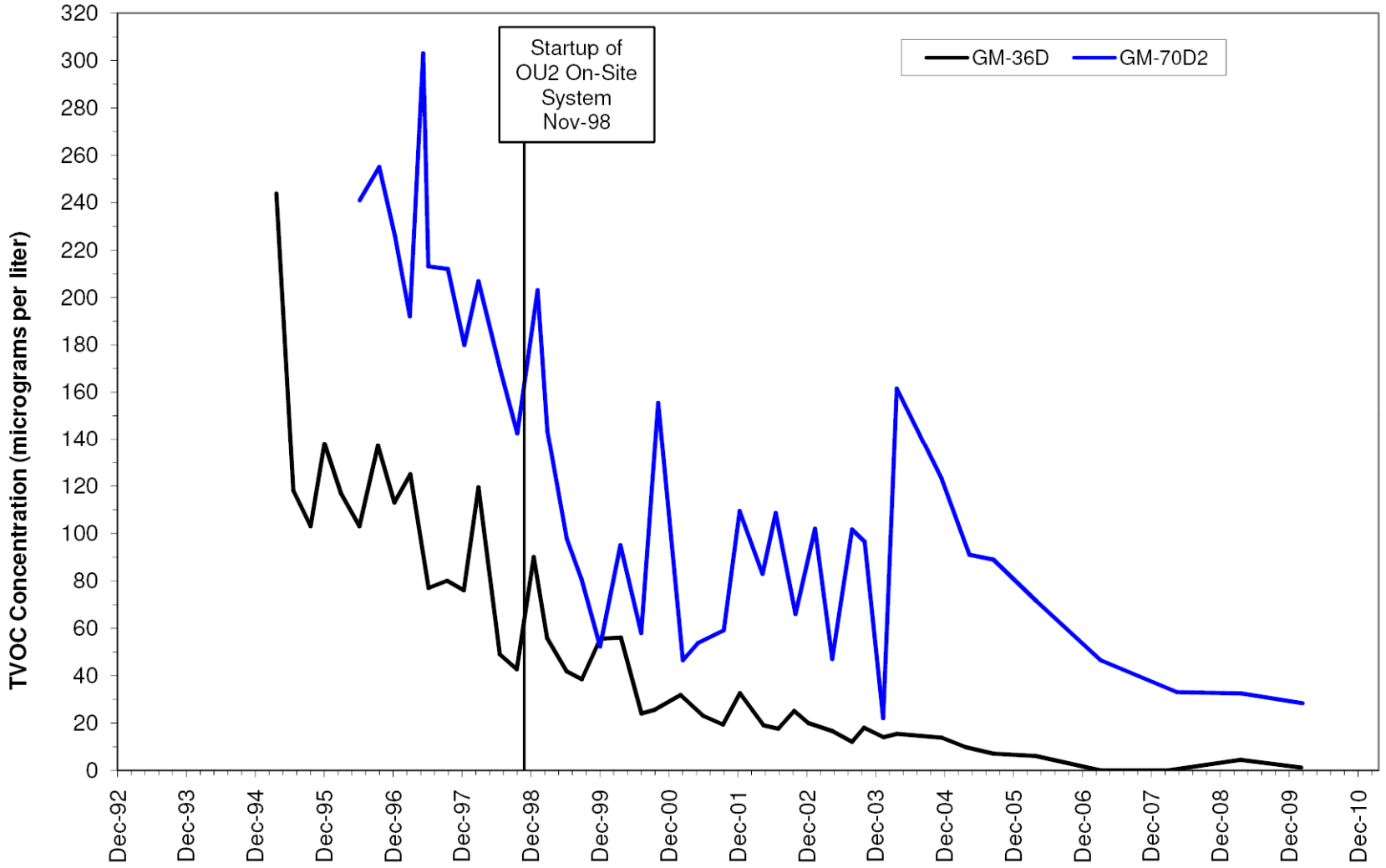
- GM-75D2
- GM-70D2
- GM-36D



Concentration Trends in Off-site Downgradient Monitoring Well GM-75D2

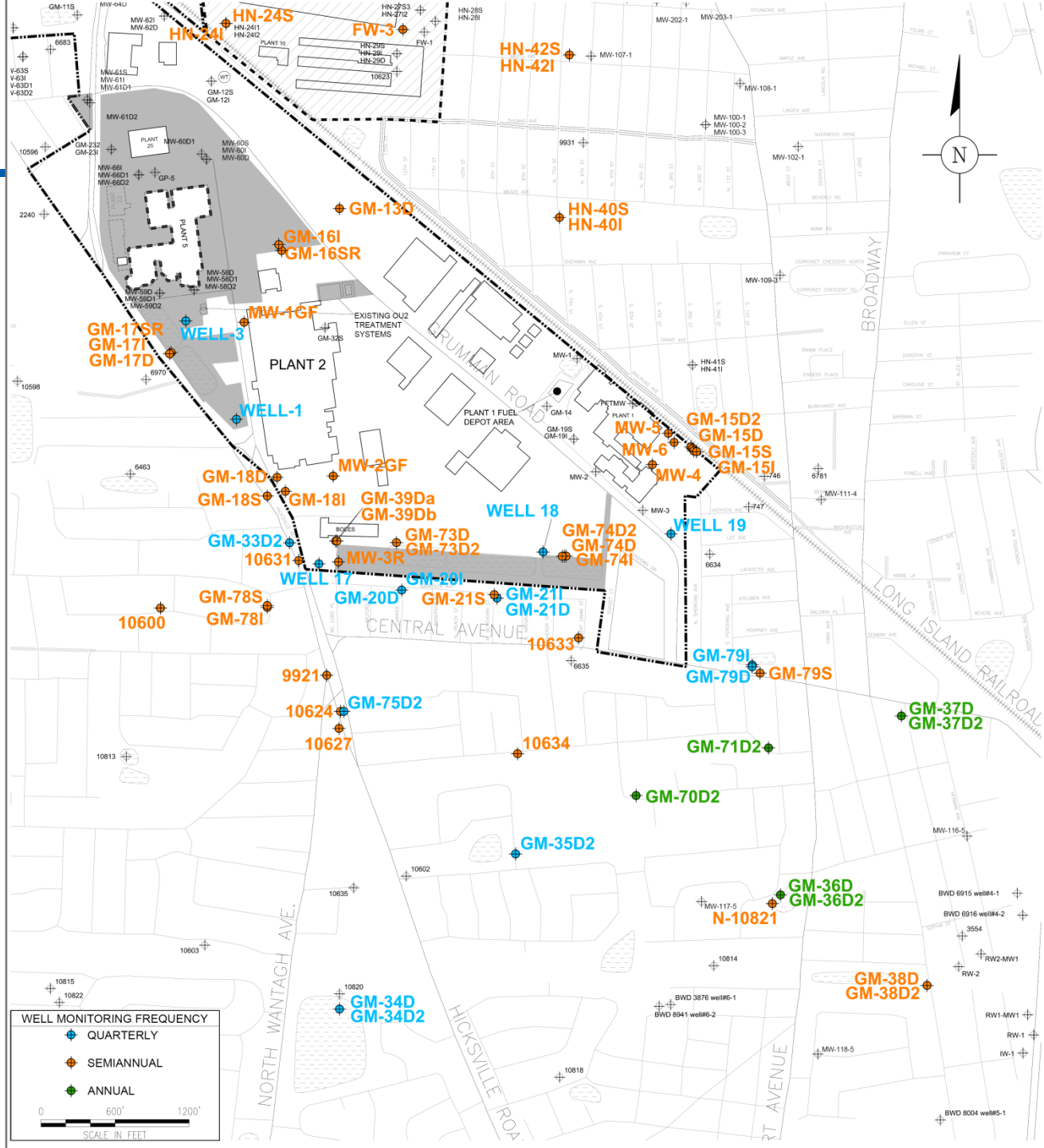


Concentration Trends in Off-site Downgradient Monitoring Wells GM-36D & GM-70D2



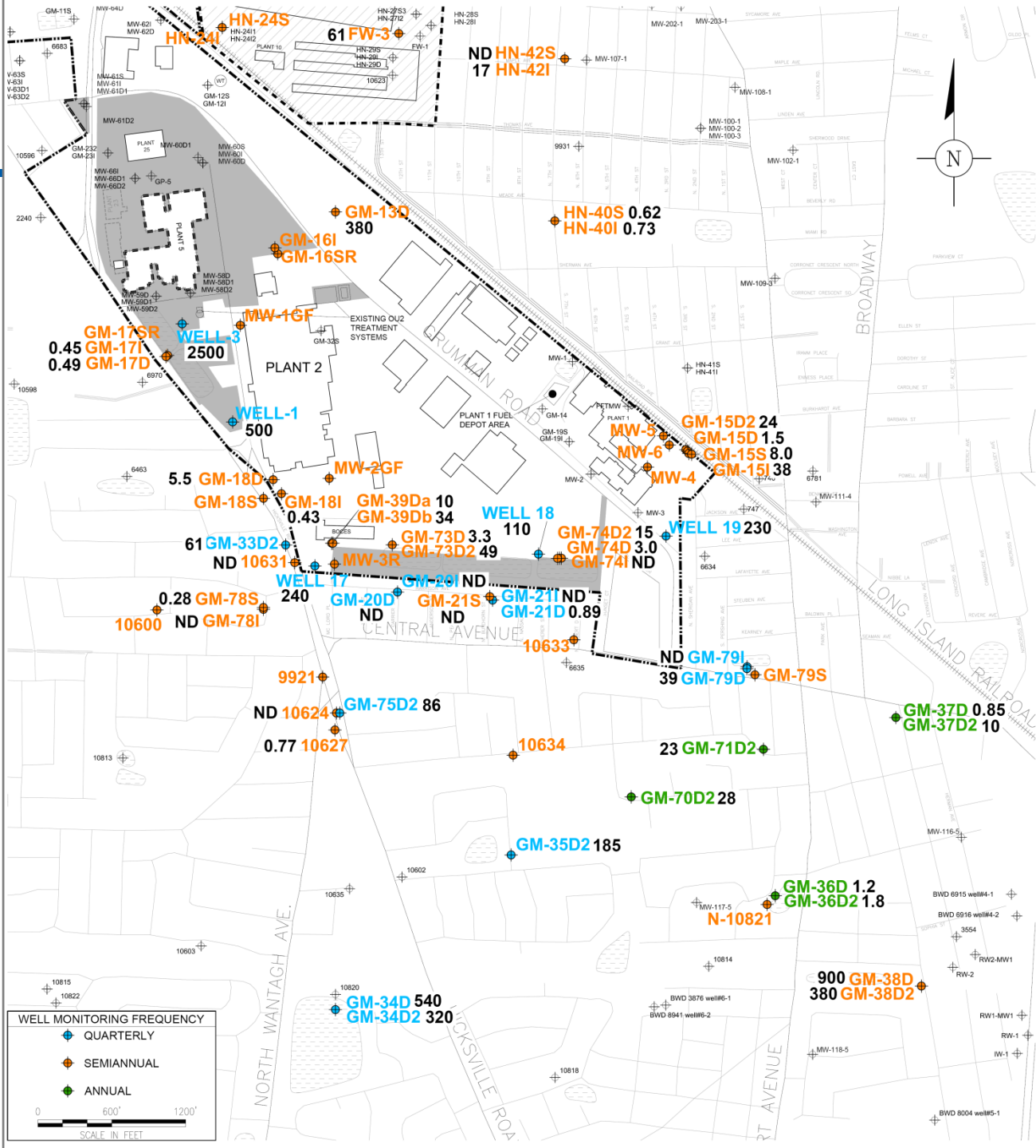
OU2 Monitoring Program

- Northrop Grumman performs routine monitoring
  - Semi-annual water level monitoring
  - Quarterly, semi-annual & annual monitoring well sampling
  - Quarterly outpost well sampling
- Navy performs follow up actions



OU2 Monitoring Results

- TVOCs (ug/L) for latest annual event (1st Quarter 2010)



Path Forward

NORTHROP GRUMMAN

- Continue OM&M of ONCT
- Continue OU2 monitoring program
- Continue providing technical support to Navy Optimization Team


NORTHROP GRUMMAN

NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Technical Assistance Committee (TAC) Meeting

OU2 - Offsite Groundwater Investigation and Public Water Supply Design

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

June 17, 2011

OU2 GROUNDWATER INVESTIGATION - BACKGROUND

- NGC operated the NWIRP Bethpage from 1941 until 1996; also owned and operated it own facility adjacent to NWIRP
- NYSDEC OU2 ROD selected a remedy for Northrop Grumman and the Navy to address the regional groundwater contaminant plume
  - Operation of the ONCT
  - Hot Spot Treatment at GM-38
  - Additional Groundwater investigation of the plume
  - Long Term Monitoring of the groundwater
- Navy expanded GM-75 Area program to address other areas within the OU2 Plume: Program now called OU2 Groundwater Investigation to reflect expansion

OU2 GROUNDWATER INVESTIGATION - PURPOSE

- Delineate area of groundwater contamination in areas south of NGC/NWIRP Bethpage
- Program consists of:
  - Vertical profile borings - used to quickly screen areas for the presence, depth, and concentration of contamination
  - Permanent monitoring wells - to confirm presence/absence of contamination and develop trends

OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

- A vertical profile boring is a 12-inch diameter hole drilled into the ground. At select depths, the drilling is stopped, a device is lowered to depth, and a sample of the water is collected
- The borings will extend to the Raritan Clay Layer at a depth up to 840 feet below ground surface
- 36 groundwater samples will be collected per boring and analyzed for VOCs

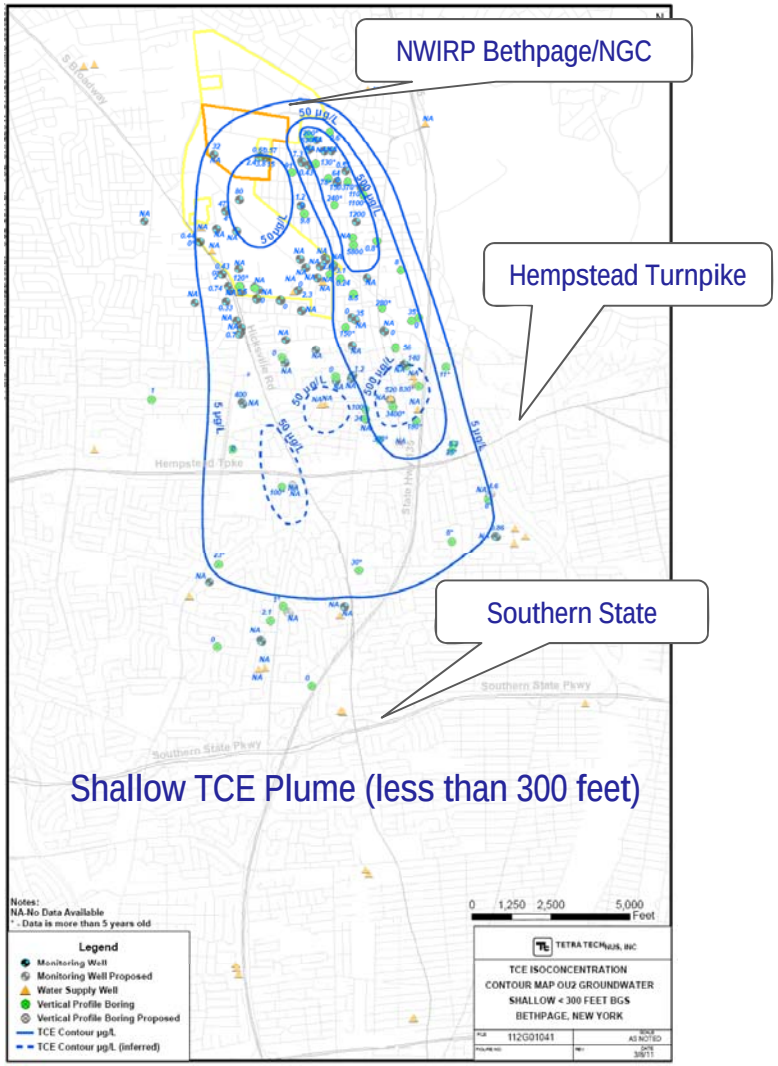
OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

- Each boring requires 4 to 6 weeks to complete
- Six locations were completed in 2009
- Additional borings and monitoring wells are currently being installed through 2012
  - Two borings and five wells have been completed since October 2010; northwest of Aqua New York and north of SFWD Plant No. 1
  - One boring is in progress; north of SFWD Plant No. 3
  - One boring is planned for an area between SFWD Plant No. 3 and Aqua New York

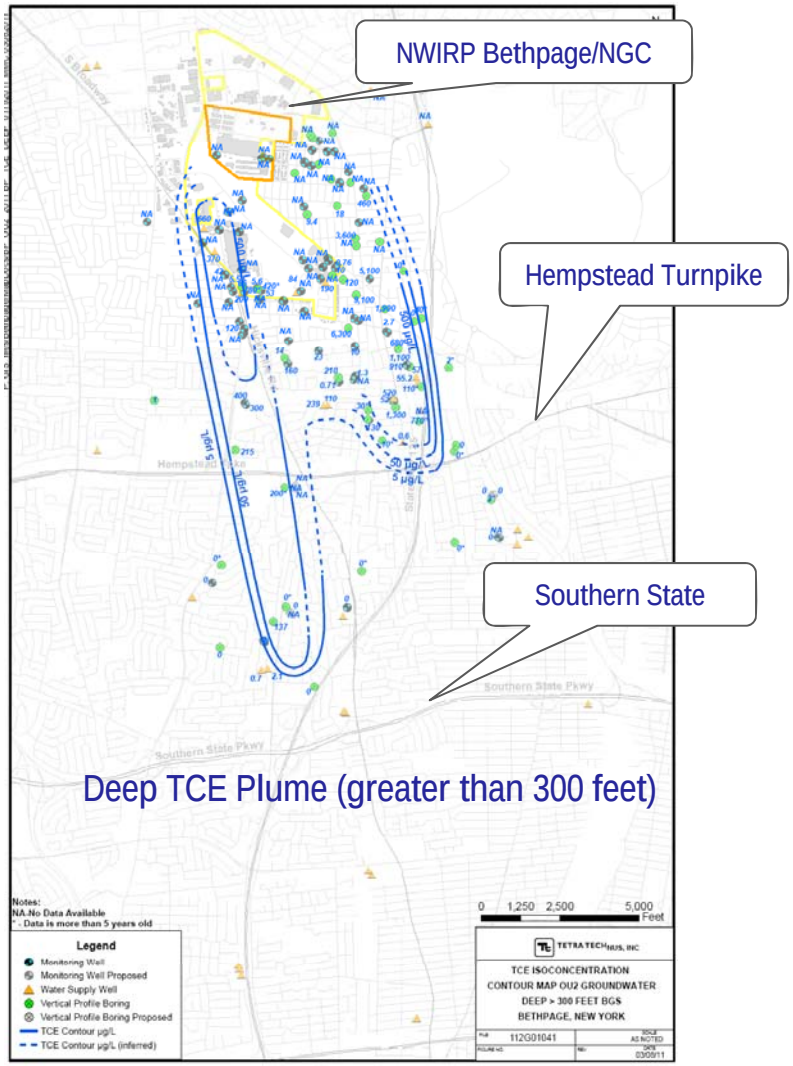
OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

- One boring and two(+/-) wells are planned south of GM-34D
- One boring and two (+/-) wells are planned north of SFWD Plant No. 6
- Several borings are planned north and northwest of BWD Plant 6
- One boring and two (+/-) wells are planned north of MWD
- Conduct connectivity evaluations of water supply wells and monitoring wells
- Long-term monitoring of wells by NGC

OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM



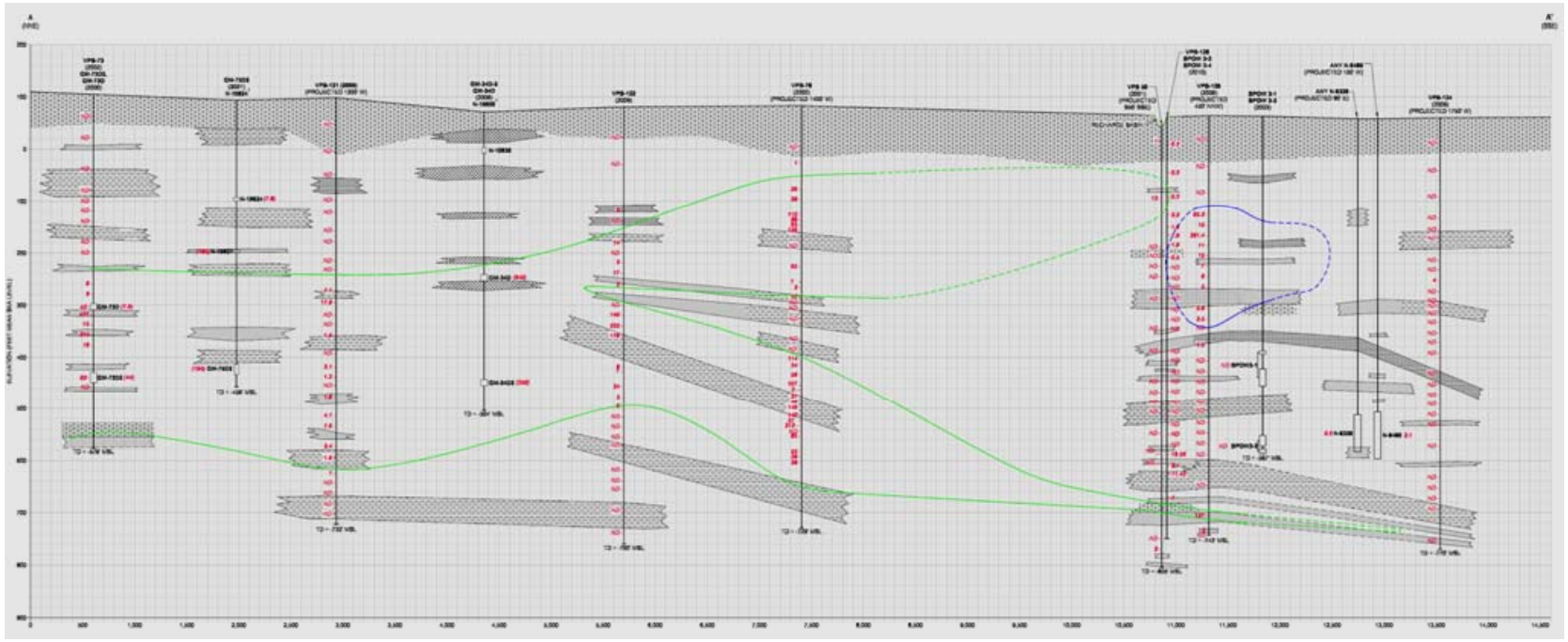
Shallow TCE Plume (less than 300 feet)



Deep TCE Plume (greater than 300 feet)

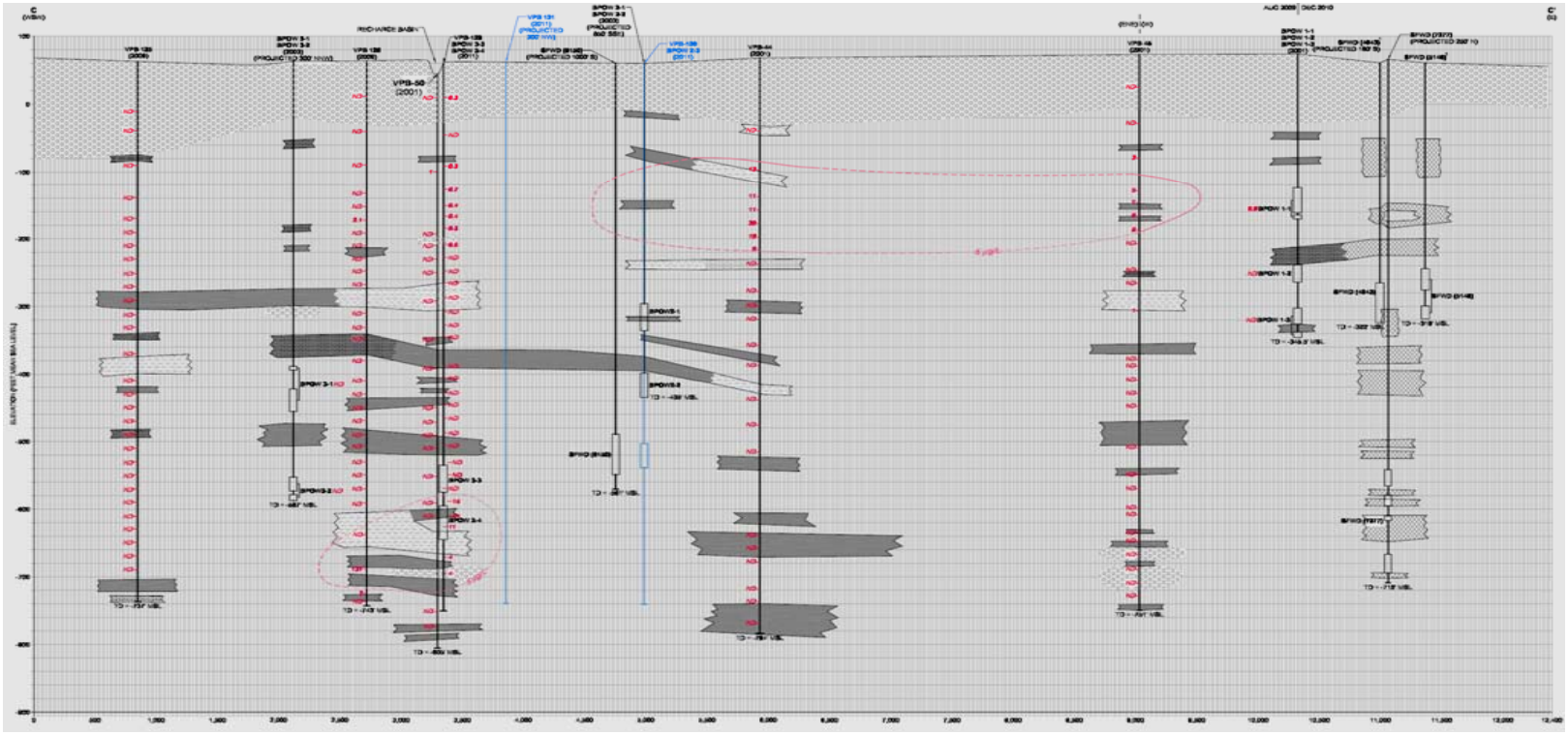
OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

Cross Section A-A', North to South, Western Plume



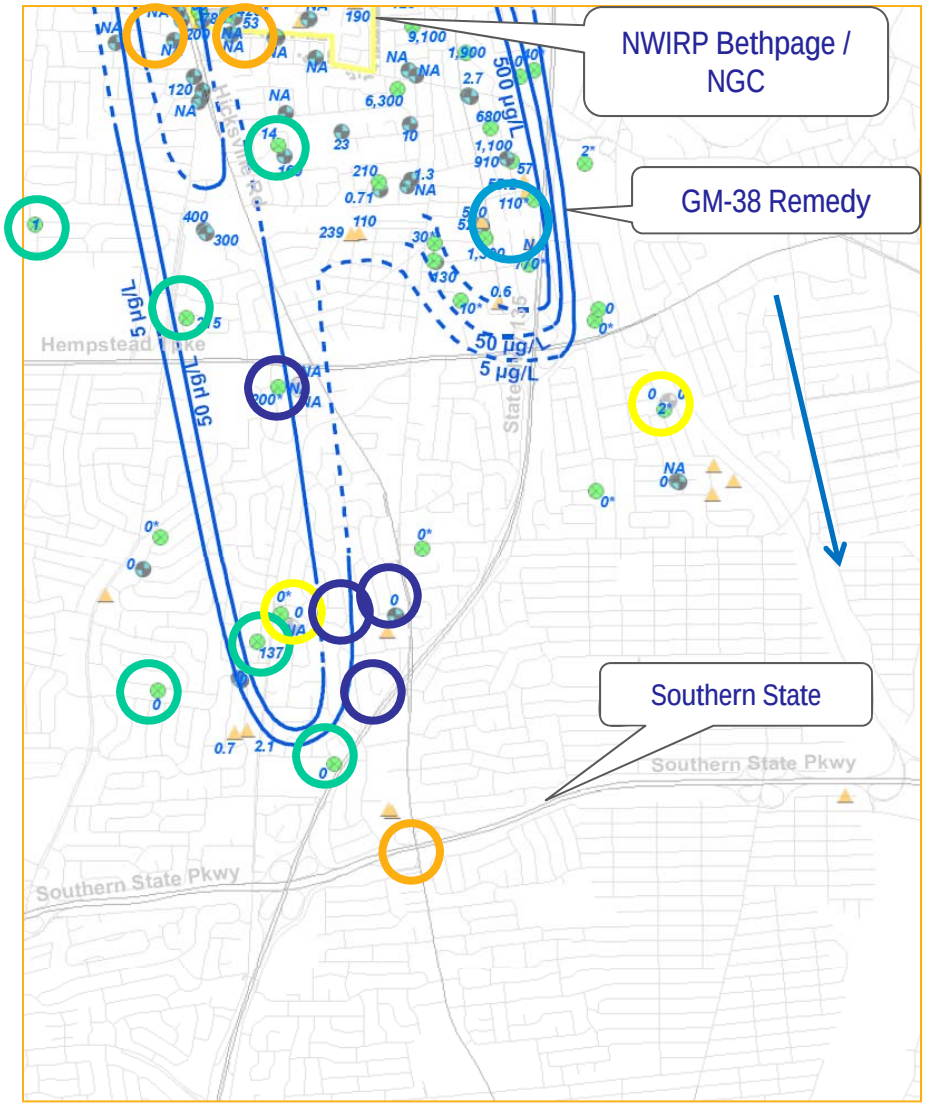
OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

Cross Section C-C', West to East, South of Hempstead Road



OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

- 2009 VPBs Installed
- 2010/2011 VPBs and Wells Installed
- 2010/2011 VPBs and Wells In progress (6 months)
- 2011/2012 VPBs and Wells Being Evaluated



OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

OU2 INVESTIGATION - VERTICAL PROFILE BORING AND MONITORING WELL PROGRAM

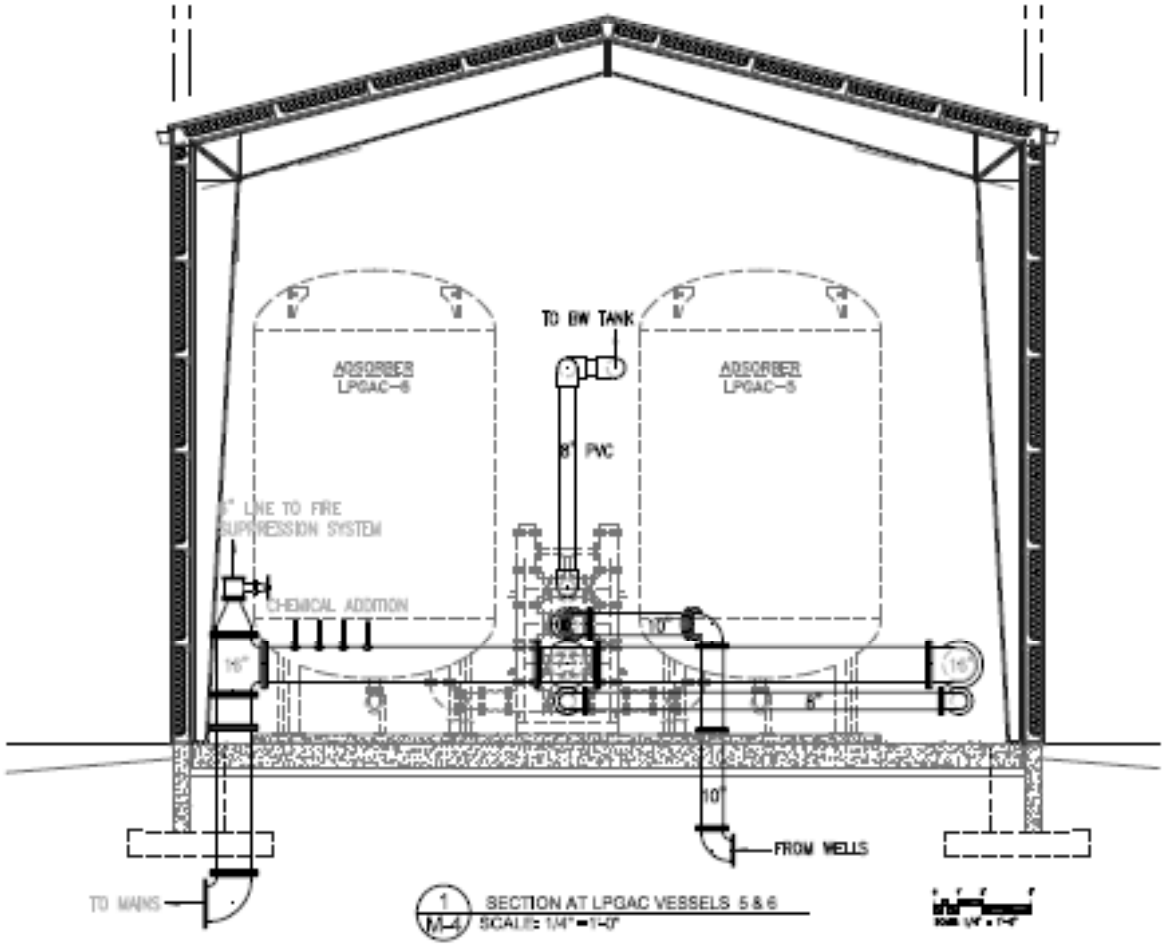
Questions

OU 2 PUBLIC WATER SUPPLY DESIGN

- Navy is currently designing a Granular Activated Carbon treatment system for an offsite Public Water Supply
- 4,200 gallons per minute system
- Design started in 2009 and will be completed in 2011
- Currently are working with NCDOH and Town of Hempstead on permits
- Construction is anticipated to start in early 2012

OU 2 PUBLIC WATER SUPPLY DESIGN

Liquid Phase Granular Activated Carbon System - Profile



OU2 ACTIVITIES

Questions

NAVFAC
Naval Facilities Engineering Command
NAVFAC MID-ATLANTIC

Technical Assistance Committee (TAC) Meeting

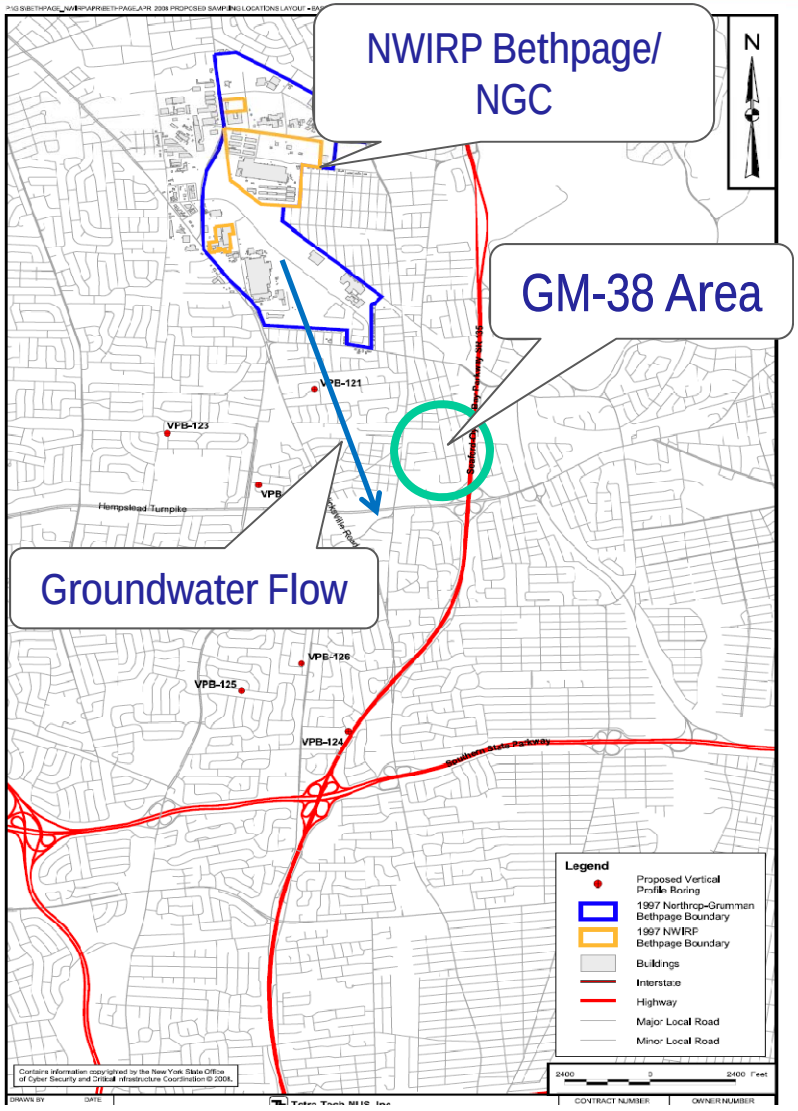
GM-38 System

Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage

June 17, 2011

GM-38 SYSTEM

- Purpose: Treat an area of higher concentration volatile organic compound (VOC)-impacted groundwater
- System started operation in October 2009 and will continue to operate for approximately 5 years
- Extracts 46 million gallons of water and 200 pounds of VOCs per month



GM-38 SYSTEM


Air Stripping Tower
Equalization Tank
United Rentals
12 29 2008

GM-38 SYSTEM

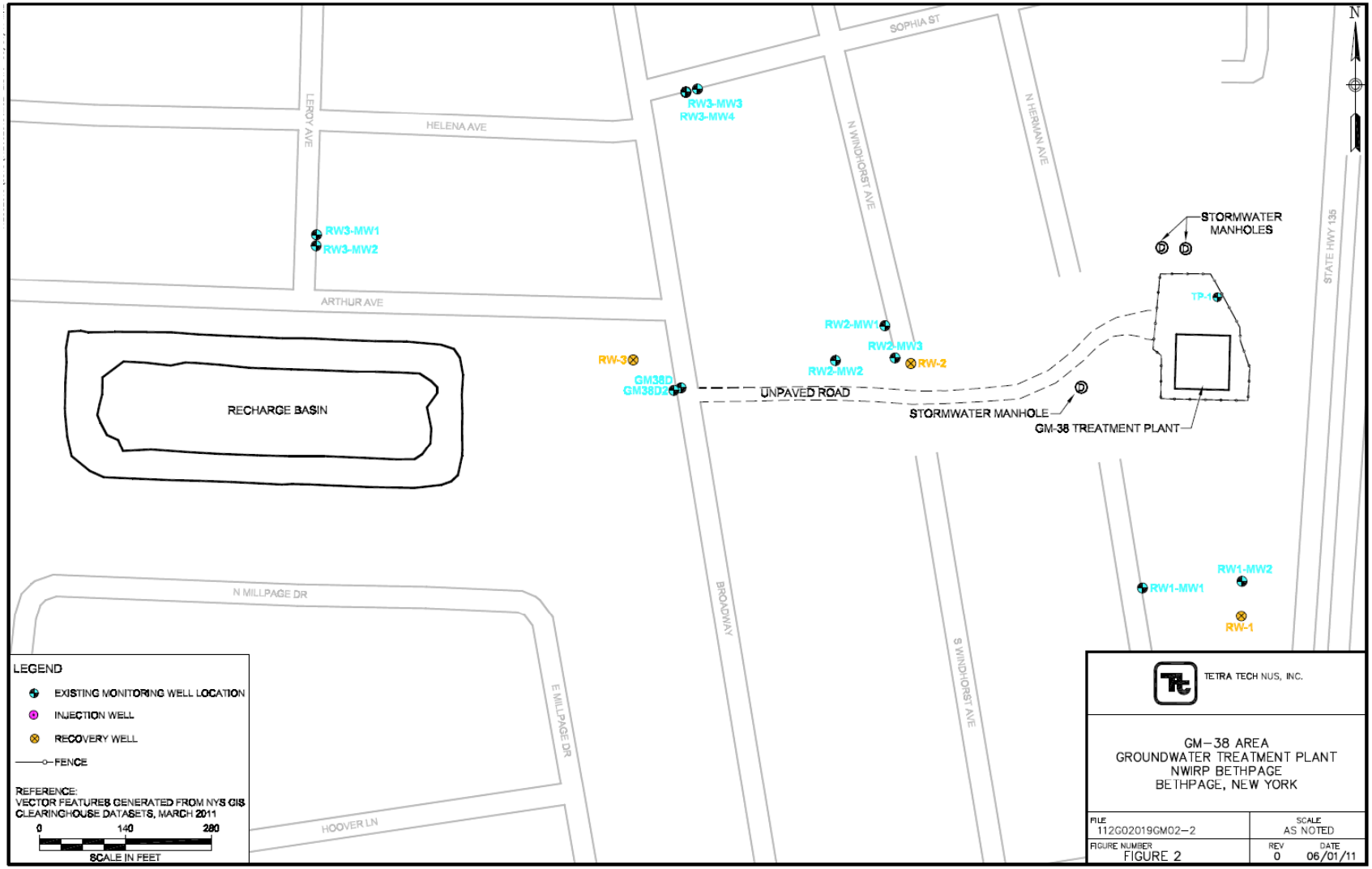
GM-38 SYSTEM

- Optimization activities are ongoing
  - Improve performance (Air Stripping & GAC Use)
  - Evaluate capture zone (2012)
  - Continue evaluation of contaminant trends

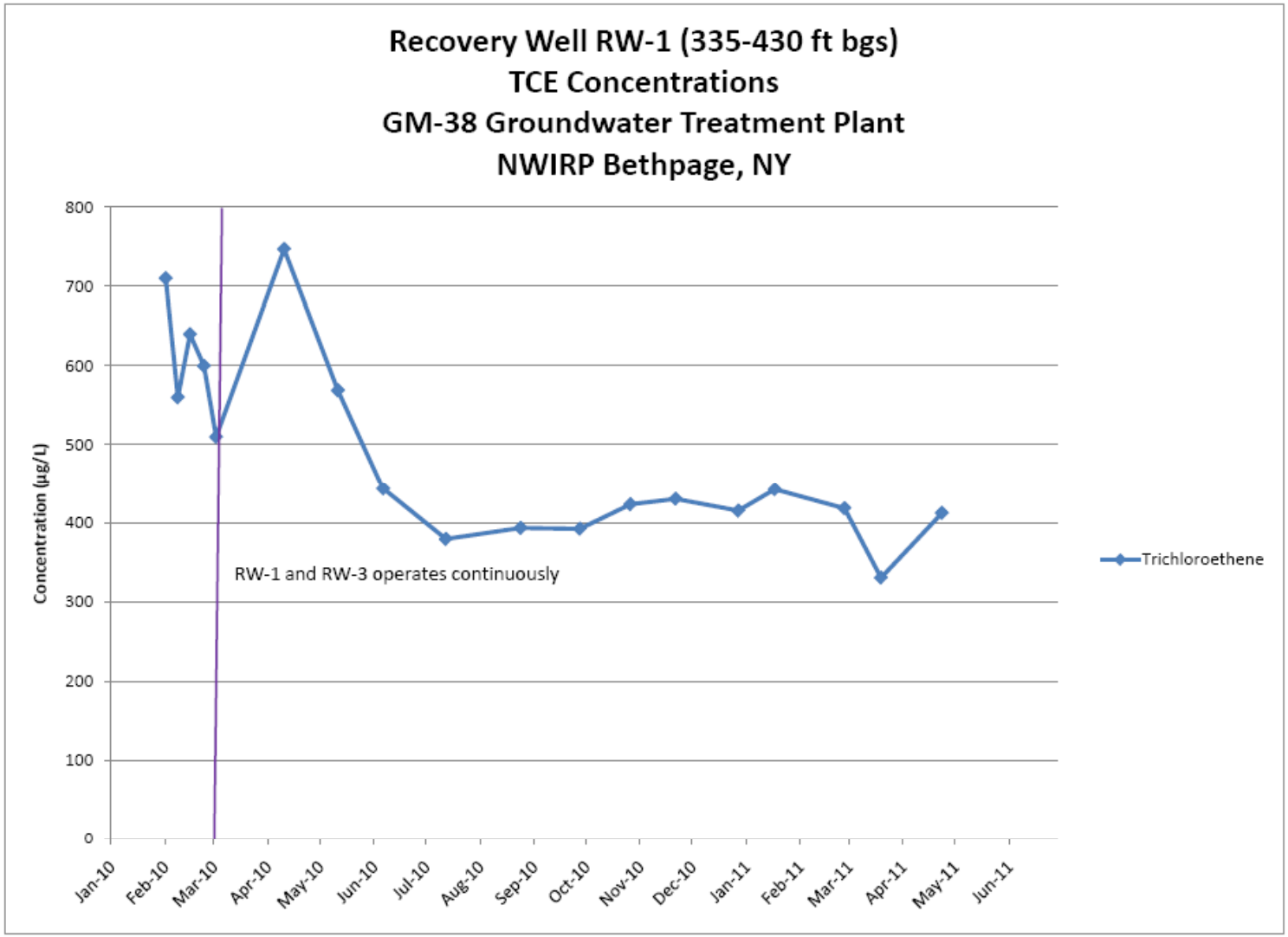
GM-38 SYSTEM


RW3-MW3
RW3-MW4
RW3-MW1
RW3-MW2
STORMWATER MANHOLES
RW1-MW3
TP-1
RW2-MW1
RW2-MW3
RW-2
RW-3
RW2-MW2
GM38D
GM38D2
RECHARGE BASIN
DRIVEWAYS
STORMWATER MANHOLE
GM-38 TREATMENT PLANT
RW1-MW2
RW1-MW1
RW-1
RW1-MW1
LEGEND
EXISTING MONITORING WELL LOCATION
INJECTION WELL
RECOVERY WELL
RECOVERY WELL
REFERENCE
AERIAL PHOTOGRAPHS PROVIDED BY THE NYS GIS CLEARINGHOUSE, MARCH - MAY 2007
0
140
280
SCALE IN FEET
TETRA TECH NUS, INC.
GM-38 AREA
GROUNDWATER TREATMENT PLANT
NWIRP BETHPAGE
BETHPAGE, NEW YORK
FILE
112G02019GM02-1
SCALE
AS NOTED
FIGURE NUMBER
FIGURE 1
REV
0
DATE
06/02/11

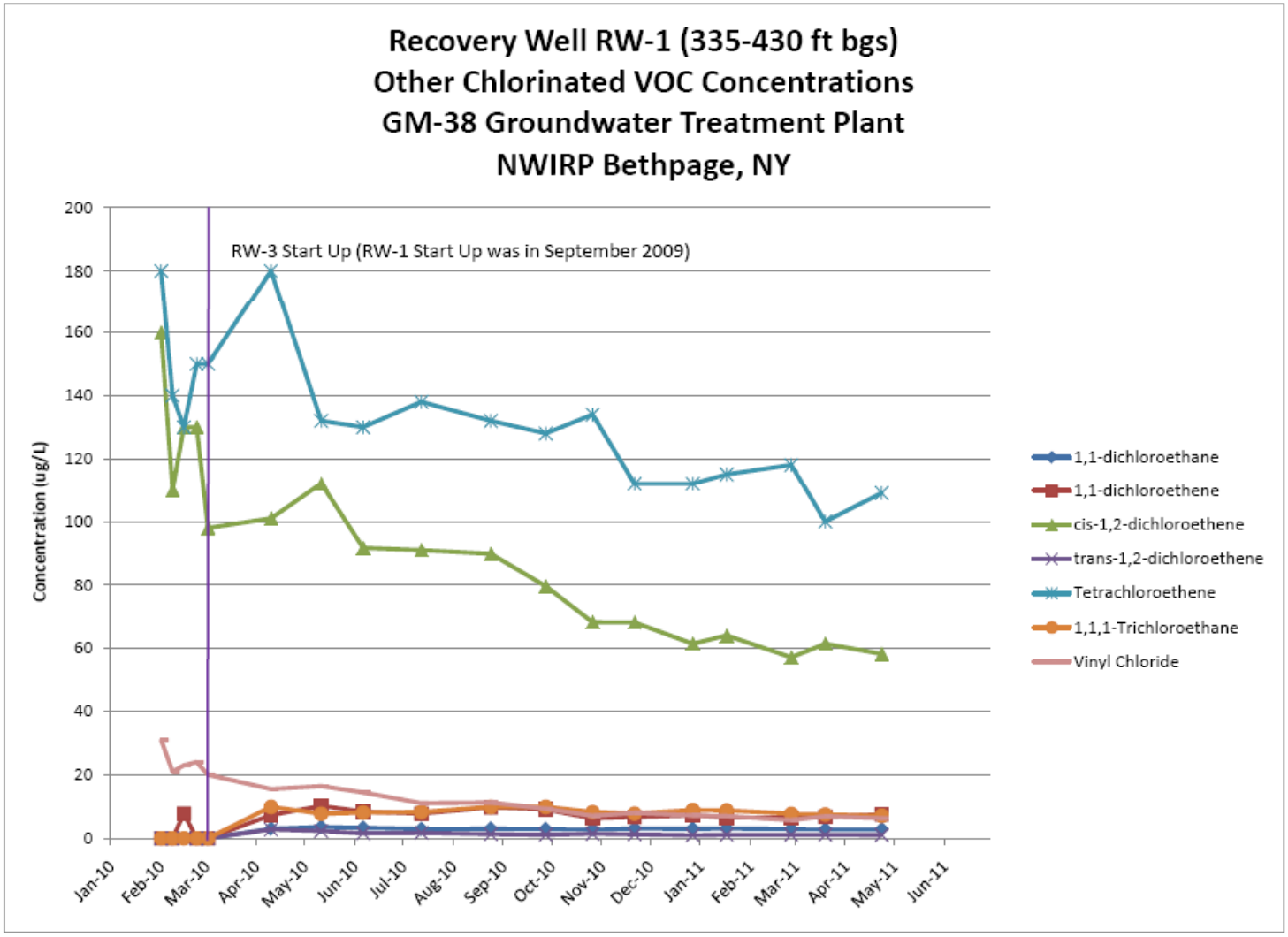
GM-38 SYSTEM


SOPHIA ST
HELENA AVE
LEROY AVE
N WINDHORST AVE
N HERMAN AVE
STATE HWY 135
ARTHUR AVE
RW3-MW3
RW3-MW4
RW3-MW1
RW3-MW2
STORMWATER MANHOLES
TP-1
RW2-MW1
RW2-MW3
RW2-MW2
RW-2
RW-3
GM38D
GM38D2
UNPAVED ROAD
STORMWATER MANHOLE
GM-38 TREATMENT PLANT
RECHARGE BASIN
N MILLPAGE DR
BROADWAY
S WINDHORST AVE
E MILLPAGE DR
HOOVER LN
RW1-MW2
RW1-MW1
RW-1
N
LEGEND
EXISTING MONITORING WELL LOCATION
INJECTION WELL
RECOVERY WELL
FENCE
REFERENCE:
VECTOR FEATURES GENERATED FROM NYS GIS CLEARINGHOUSE DATASETS, MARCH 2011
0
140
280
SCALE IN FEET
TETRA TECH NUS, INC.
GM-38 AREA
GROUNDWATER TREATMENT PLANT
NWIRP BETHPAGE
BETHPAGE, NEW YORK
FILE
112G02019GM02-2
SCALE
AS NOTED
FIGURE NUMBER
FIGURE 2
REV
0
DATE
06/01/11

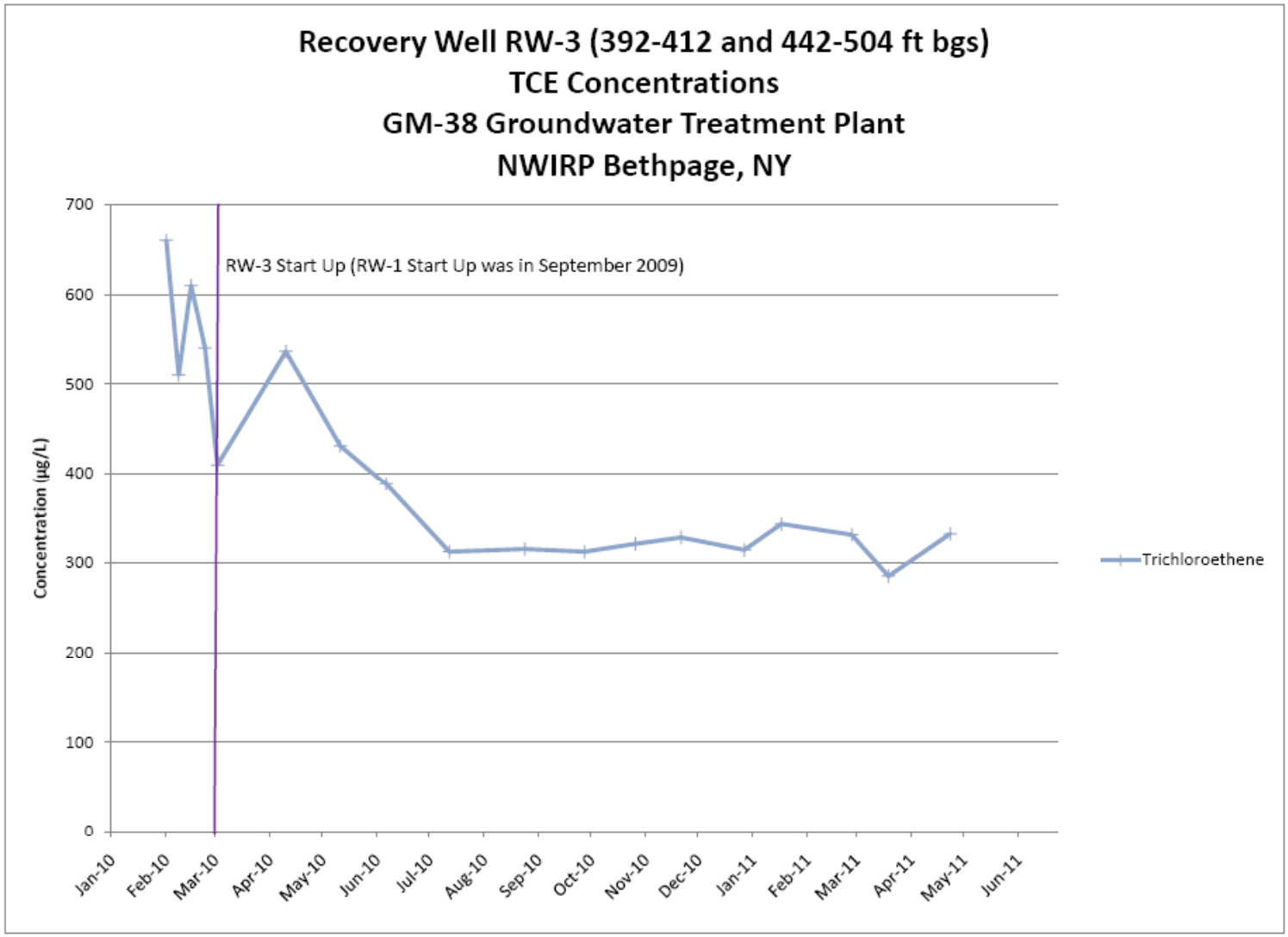
GM-38 SYSTEM


Recovery Well RW-1 (335-430 ft bgs)
TCE Concentrations
GM-38 Groundwater Treatment Plant
NWIRP Bethpage, NY
Concentration (µg/L)
800
700
600
500
400
300
200
100
0
RW-1 and RW-3 operates continuously
Trichloroethene
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11

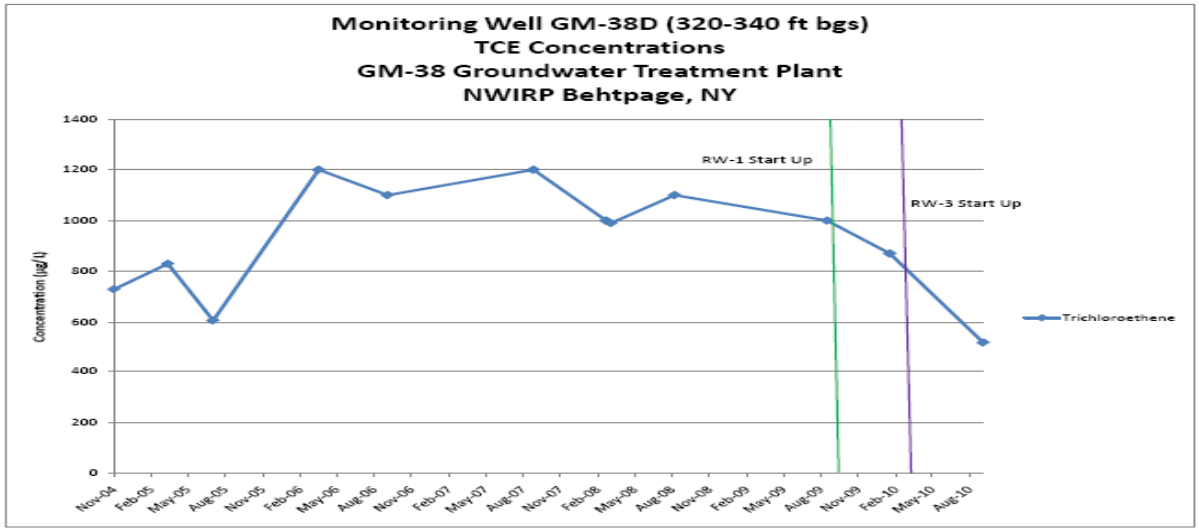
GM-38 SYSTEM

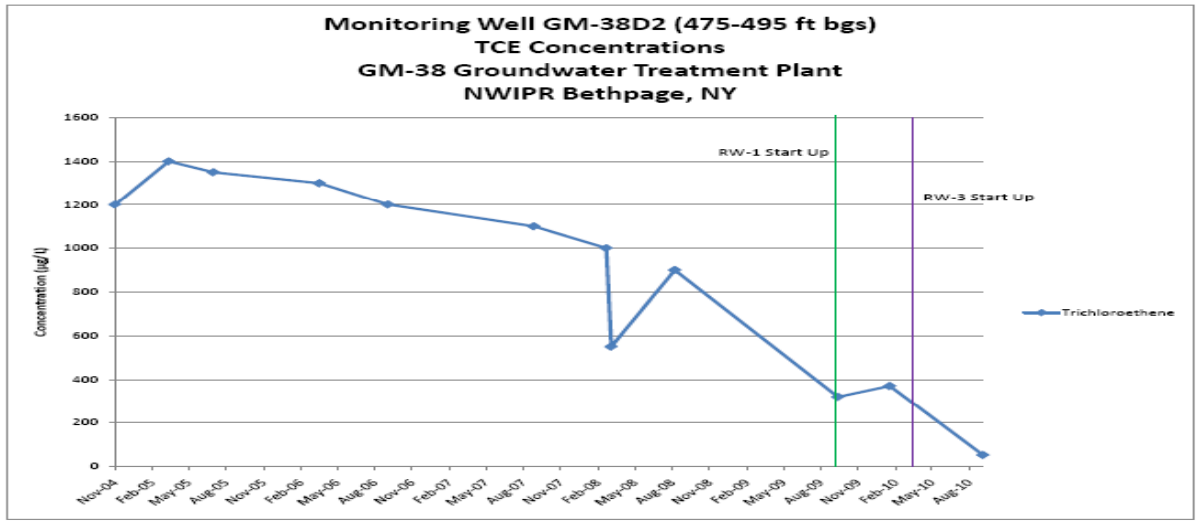

Recovery Well RW-1 (335-430 ft bgs)
Other Chlorinated VOC Concentrations
GM-38 Groundwater Treatment Plant
NWIRP Bethpage, NY
RW-3 Start Up (RW-1 Start Up was in September 2009)
Concentration (ug/L)
200
180
160
140
120
100
80
60
40
20
0
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
1,1-dichloroethane
1,1-dichloroethene
cis-1,2-dichloroethene
trans-1,2-dichloroethene
Tetrachloroethene
1,1,1-Trichloroethane
Vinyl Chloride

GM-38 SYSTEM

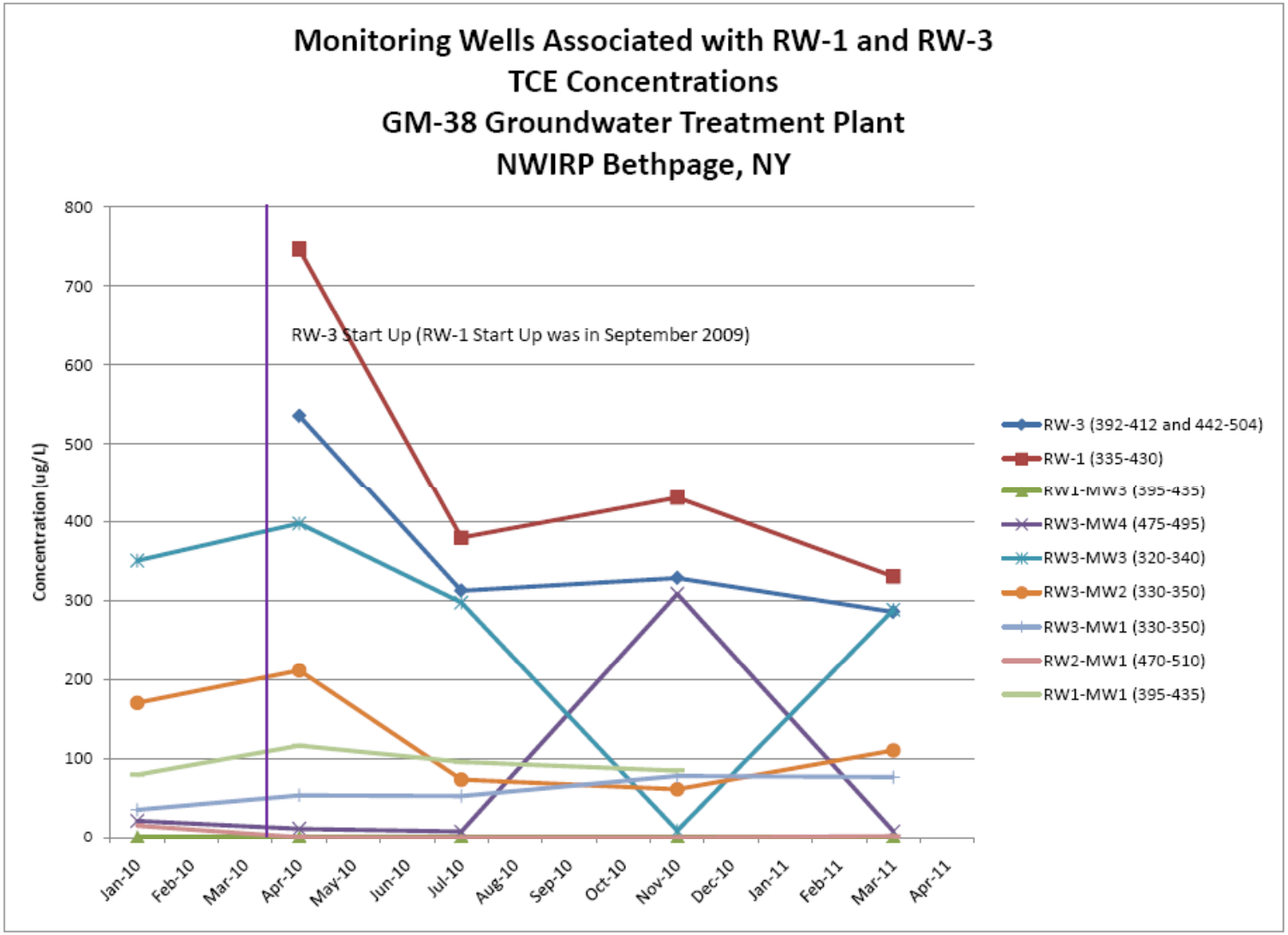

Recovery Well RW-3 (392-412 and 442-504 ft bgs)
TCE Concentrations
GM-38 Groundwater Treatment Plant
NWIRP Bethpage, NY
Concentration (µg/L)
700
600
500
400
300
200
100
0
RW-3 Start Up (RW-1 Start Up was in September 2009)
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Trichloroethene

GM-38 SYSTEM


Monitoring Well GM-38D (320-340 ft bgs)
TCE Concentrations
GM-38 Groundwater Treatment Plant
NWIRP Behtpage, NY
Concentration (µg/L)
1400
1200
1000
800
600
400
200
0
RW-1 Start Up
RW-3 Start Up
Trichloroethene
Nov-04
Feb-05
May-05
Aug-05
Nov-05
Feb-06
May-06
Aug-06
Nov-06
Feb-07
May-07
Aug-07
Nov-07
Feb-08
May-08
Aug-08
Nov-08
Feb-09
May-09
Aug-09
Nov-09
Feb-10
May-10
Aug-10


Monitoring Well GM-38D2 (475-495 ft bgs)
TCE Concentrations
GM-38 Groundwater Treatment Plant
NWIPR Bethpage, NY
Concentration (µg/L)
1600
1400
1200
1000
800
600
400
200
0
RW-1 Start Up
RW-3 Start Up
Trichloroethene
Nov-04
Feb-05
May-05
Aug-05
Nov-05
Feb-06
May-06
Aug-06
Nov-06
Feb-07
May-07
Aug-07
Nov-07
Feb-08
May-08
Aug-08
Nov-08
Feb-09
May-09
Aug-09
Nov-09
Feb-10
May-10
Aug-10

GM-38 SYSTEM


Monitoring Wells Associated with RW-1 and RW-3
TCE Concentrations
GM-38 Groundwater Treatment Plant
NWIRP Bethpage, NY
Concentration (ug/L)
800
700
600
500
400
300
200
100
0
RW-3 Start Up (RW-1 Start Up was in September 2009)
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
RW-3 (392-412 and 442-504)
RW-1 (335-430)
RW1-MW3 (395-435)
RW3-MW4 (475-495)
RW3-MW3 (320-340)
RW3-MW2 (330-350)
RW3-MW1 (330-350)
RW2-MW1 (470-510)
RW1-MW1 (395-435)

Questions