Updates on Remedial Programs at the GE Hudson Falls Plant Site and GE Fort Edward Plant Site

USEPA Community Advisory Group Meeting
October 22, 2009

Division of Environmental Remediation
New York State Department of
Environmental Conservation


GE Hudson Falls
GE Fort Edward

GE Hudson Falls Plant Site

Tunnel Drain Collection System
Construction Status Update

Remedial Program
GE Hudson Falls Plant Site

- Record of Decision (ROD) - issued March 16, 2004
- Ongoing work includes construction of the Tunnel Drain Collection System to prevent migration of PCB oil and contaminated groundwater from the bedrock beneath the site to the river

Tunnel Drain Collection System

- Construction began in August 2007
- Four phases – shaft excavation, tunnel excavation, drain installation, tunnel fit-out

TDCS Status

- Vertical shaft completed in March 2008
- Tunnel excavation completed in October 2008
- Concrete floors and sumps completed in January 2009
- Phase 3 (piezometer and drain installation) completed in June 2009

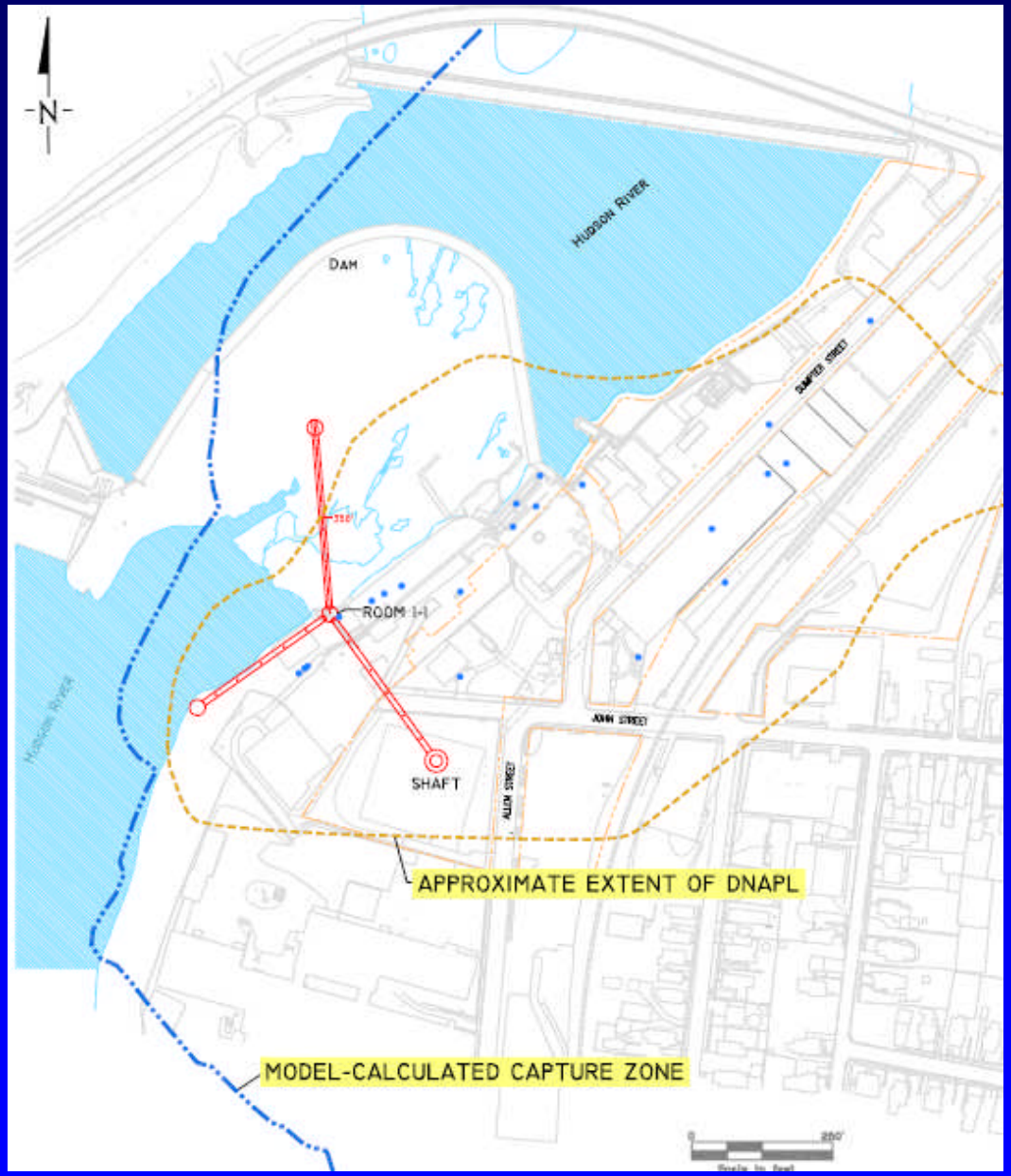
Phase 3 - Piezometers

- Piezometers (instruments to measure hydraulic pressure in the bedrock) were installed from within the TDCS
- Piezometer installation was completed in April 2009

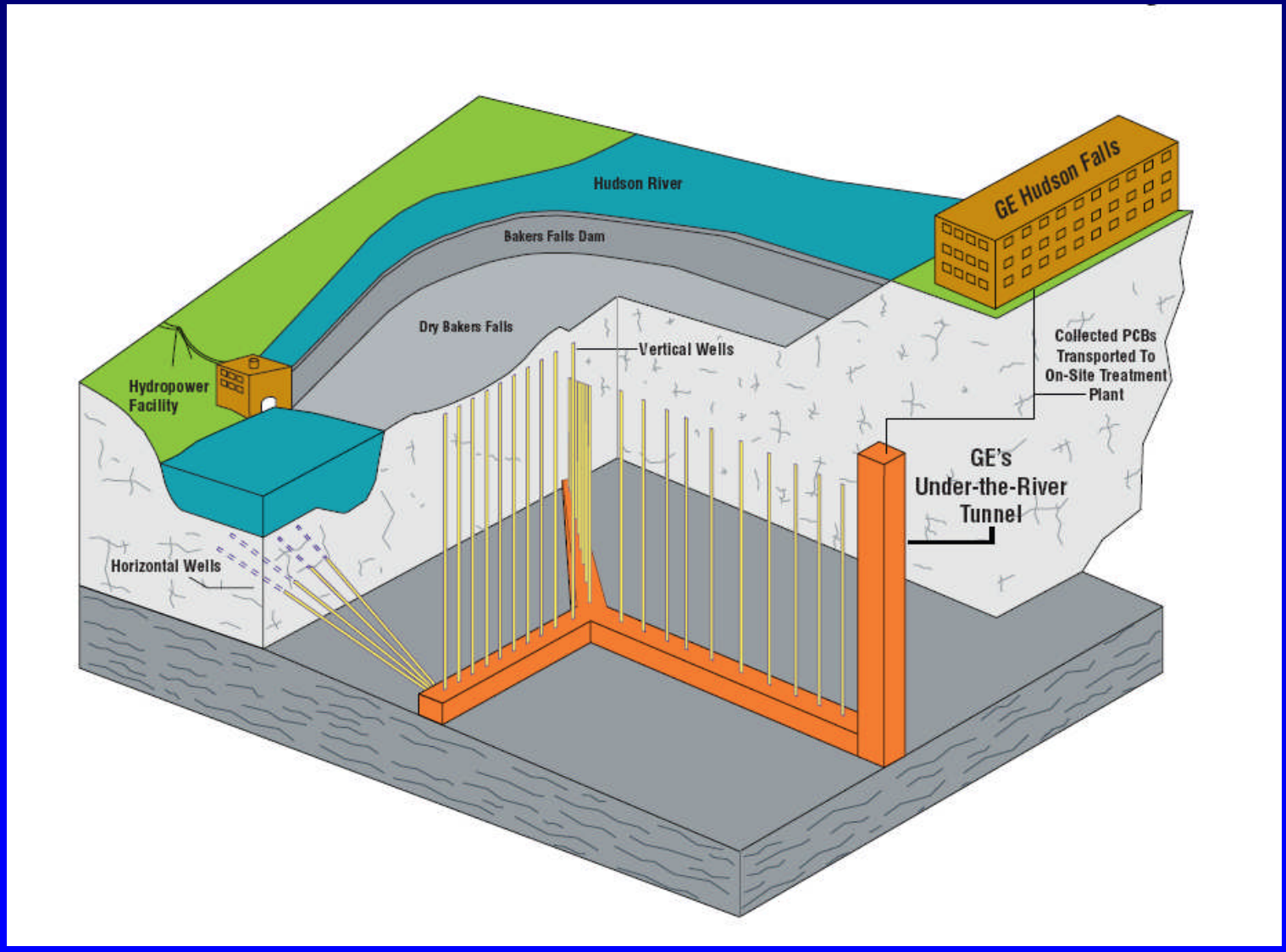
Phase 3 – Drain Wells

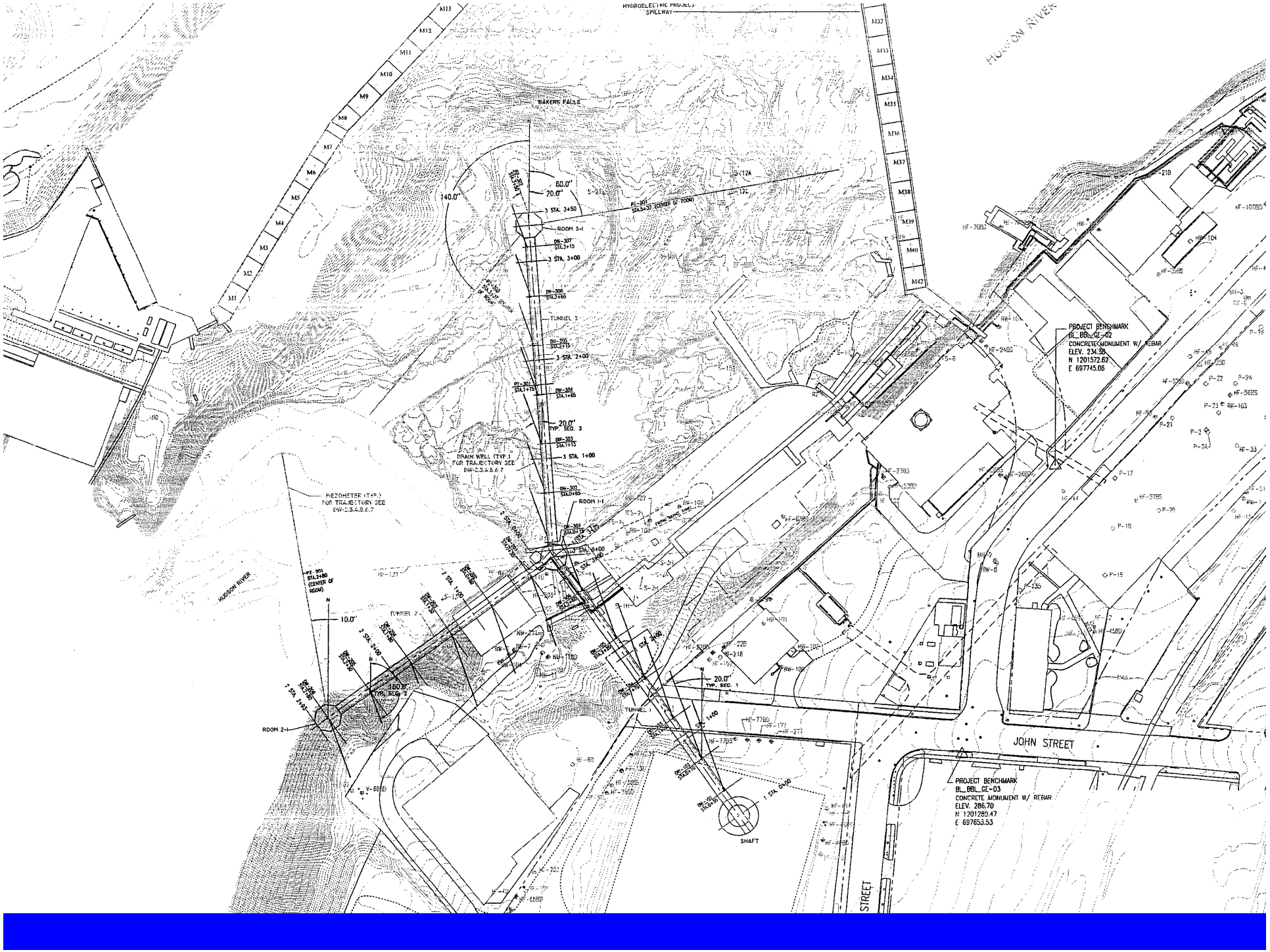
- The drain wells were also installed from within the TDCS
- Drain well construction began in April 2009, and was completed in June 2009
- Drain wells were constructed on a spacing of approximately 50 feet, and extend up into the overlying fractured bedrock

Final Tunnel Layout



Final Tunnel Layout

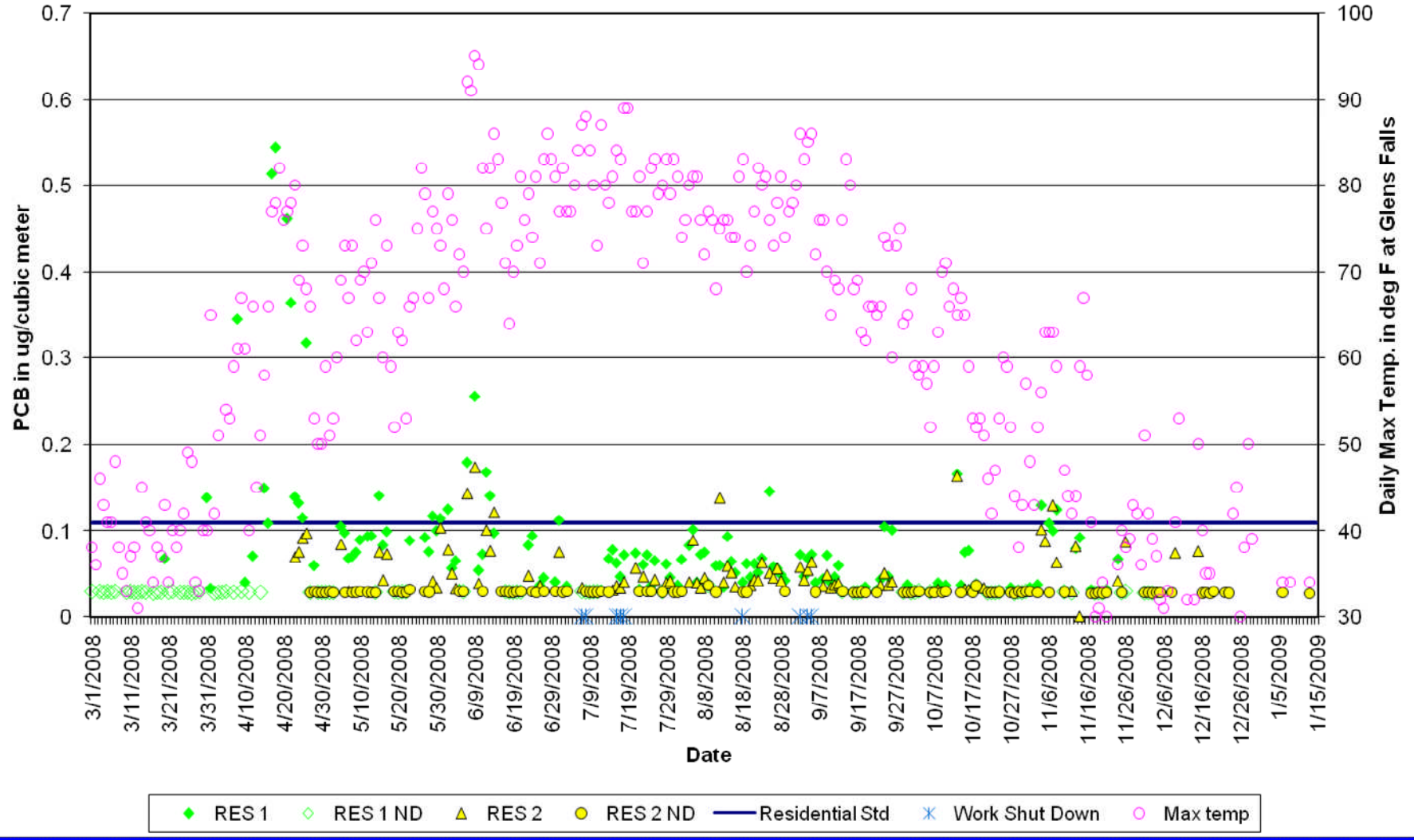



HUDSON RIVER
BAKERS FALLS
PROJECT BENCHMARK
BL_BBL_GE-02
CONCRETE MONUMENT W/ REBAR
ELEV. 234.38
N 1201572.62
E 697745.06
JOHN STREET
PROJECT BENCHMARK
BL_BBL_GE-03
CONCRETE MONUMENT W/ REBAR
ELEV. 286.70
N 1201289.47
E 697653.53
TUNNEL 1
TUNNEL 2
TUNNEL 3
SHAFT
ROOM 1-I
ROOM 2-I
ROOM 3-I
STREET

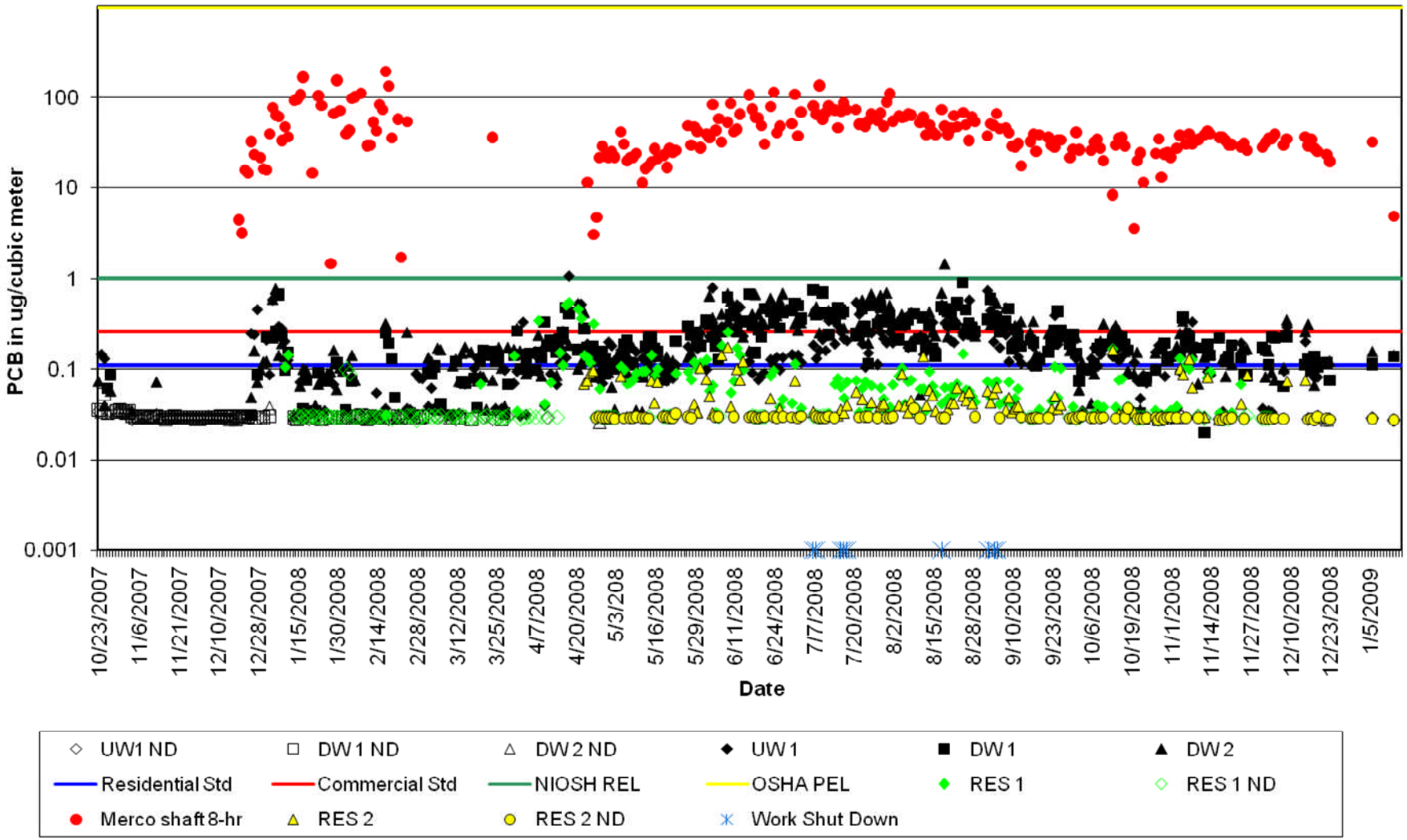
Community Protection

- Air monitoring was being performed during all intrusive activities
- Dust monitoring during all operations
- PCB monitoring during operations when contractor is working in portions of the rock which could contain PCB DNAPL

Ambient Air PCB Monitoring Data with Daily Maximum Temperature at Glens Falls
GE Hudson Falls Tunnel Drain Collection System Construction Project



Ambient Air PCB Monitoring Data at Multiple Locations Compared with OSHA/NIOSH Standards - GE Hudson Falls Tunnel Drain Collection System Construction Project



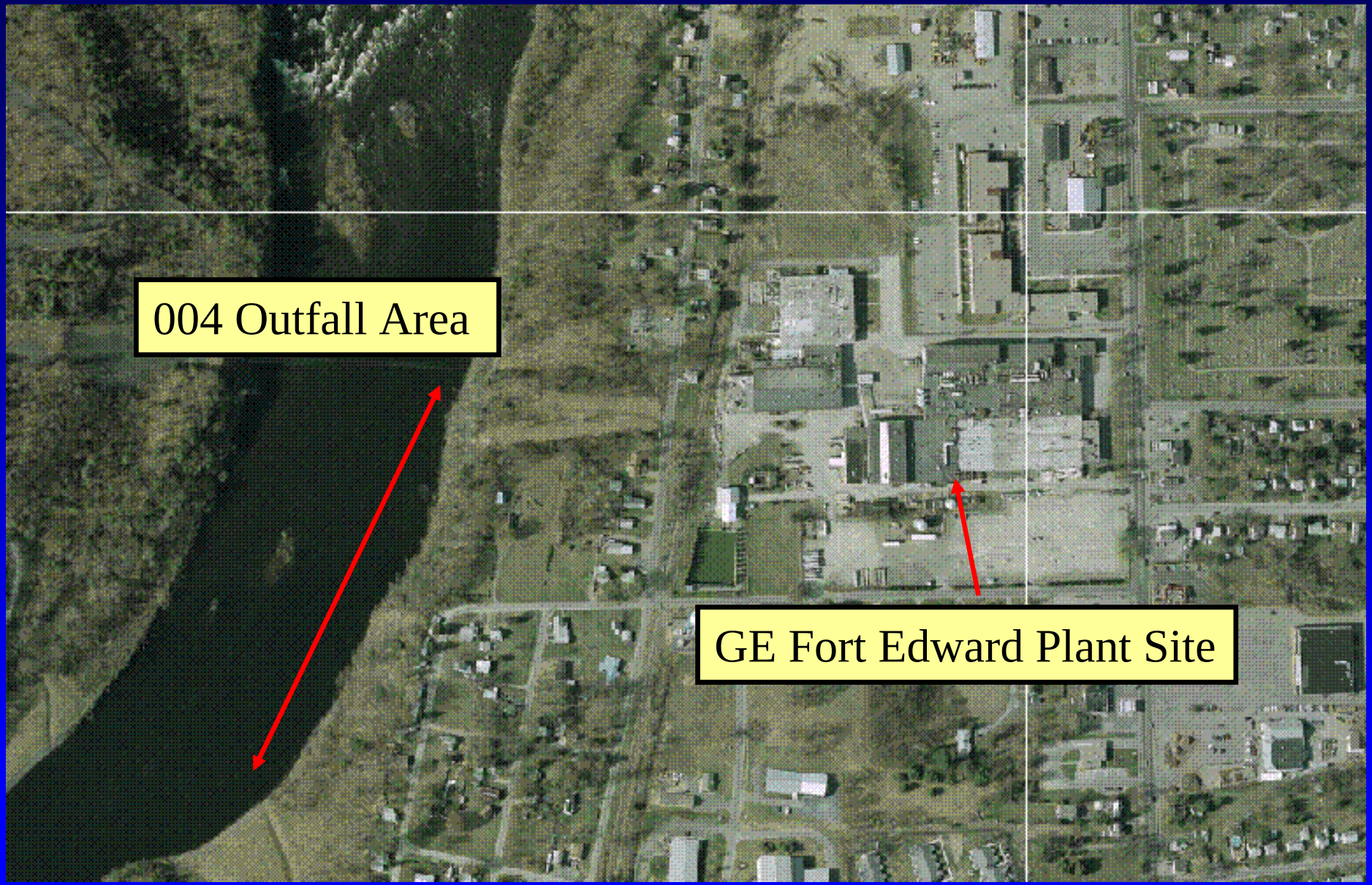
Next Steps

- Phase 3 Hydraulic Monitoring - started in May 2009, will continue through to May 2010.
- Current avg. flows out of tunnel ~ 60 gal / min
- Phase 4 (Tunnel Fit Out) Work Plan – summer 2010; approximate six months duration scheduled for construction once work plans are approved.

GE Fort Edward Plant Site

Investigation of PCB oil in bedrock associated with the former 004 outfall area


GE Hudson Falls
GE Fort Edward


004 Outfall Area
GE Fort Edward Plant Site


28 9:14AM

Bedrock Investigation
004 Outfall Area

- Initial Bedrock Investigations – 2003, during implementation of Operable Unit 4 remedy
- Preliminary Investigations – 2005
- Remedial Investigation – starting in 2007

Ongoing Remedial Investigation (RI)

- GE currently implementing the RI with State oversight
- The objective of the investigation is to delineate the extent of PCB oil in bedrock

Investigation Work

- Monitoring wells have been installed at a number of locations in the vicinity of the former outfall structure, and to the south, east, and west
- All wells are being cored; each identified discrete open horizon was evaluated for well completion
- Rock core samples are sent to lab for rapid turn around PCB analyses

Investigation Work

- Wells bailed / developed to check for DNAPL presence
- Groundwater samples collected for rapid turn around PCB and VOC analyses
- Some well locations adjusted in the field in response to initial investigation results
- Additional well locations / depths continue to be added

Findings To Date

- PCB DNAPL identified at depth (~ 300 feet) in vicinity of former outfall structure and to the south
- Well on west side of river has varying concentrations of PCB in groundwater; however, DNAPL was not observed
- PCB DNAPL extent to south and east likely delineated; possibly to west as well.

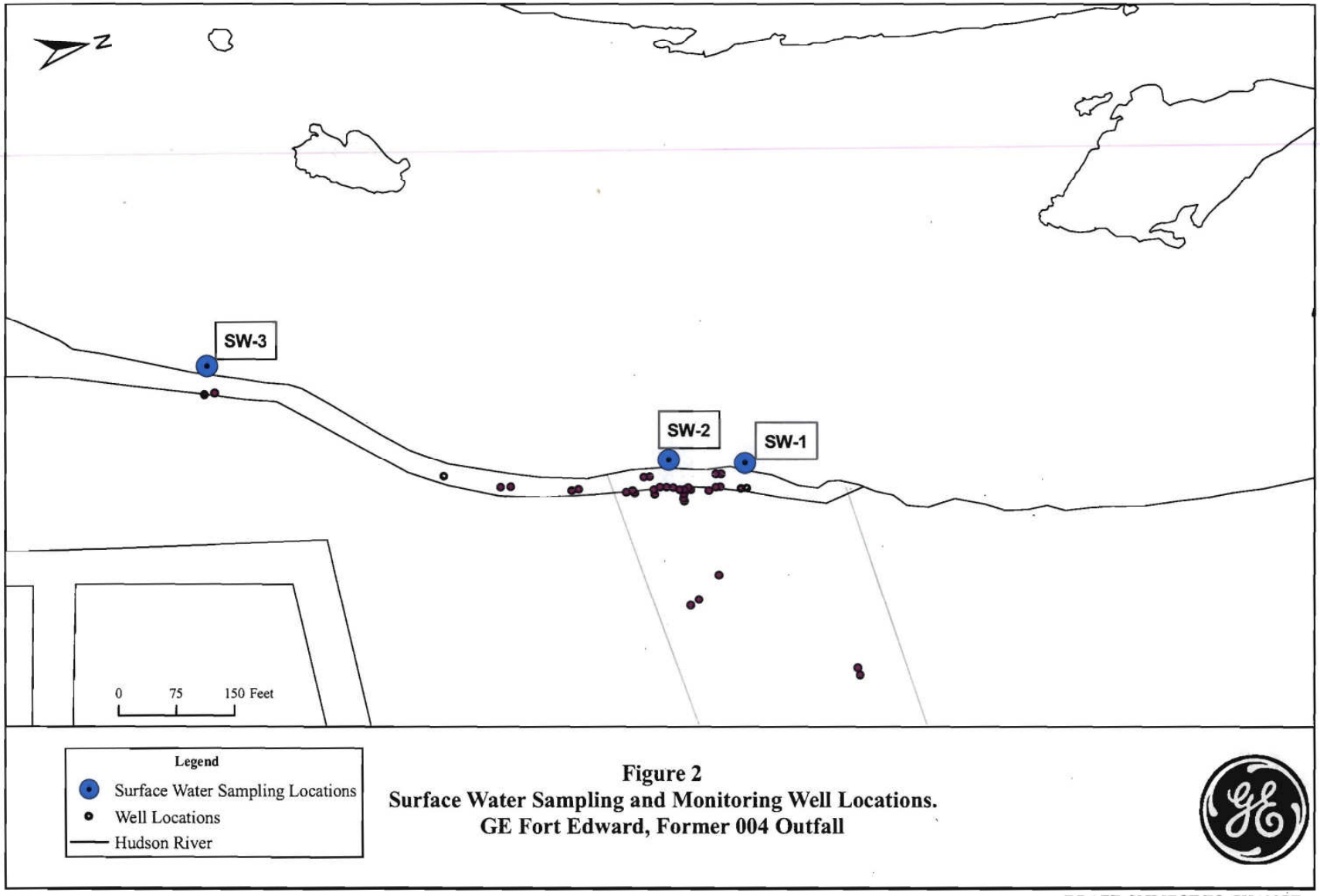


Figure 2
Surface Water Sampling and Monitoring Well Locations.
GE Fort Edward, Former 004 Outfall

Q:\GEN004\GIS\SurfWater_SamplingLocs.mxd

DRAFT, SUBJECT TO CHANGE

Table 5
Summary of Preliminary PCB Analytical Results for Surface Water Samples and Groundwater Seep
General Electric Company
Former 004 Outfall, Fort Edward, New York

Sample ID	Date	Method	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PQL	Total PCB
HR-004 SOUTH20071023	10/23/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.05	ND
HR-004	10/23/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.05	ND
HR-004 NORTH20071023	10/23/2007	SW846-8082	ND	ND	ND	0.162	ND	ND	ND	0.05	0.162
HR-004	10/24/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.05	ND
HR-004 SOUTH20071023	10/24/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.05	ND
HR-004 NORTH20071023	10/24/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.05	ND
NORTH-004-20071102	11/2/2007	SW846-8082	ND	ND	ND	ND	ND	ND	ND	0.714	ND
SOUTH-004-20071102	11/2/2007	SW846-8082	ND	ND	ND	0.44	ND	ND	ND	0.278	0.44
AT-004-200071102	11/2/2007	SW846-8082	ND	0.346	ND	ND	ND	ND	ND	0.208	0.346
004-SEEP-20071106	11/6/2007	SW846-8082	ND	ND	ND	ND	8.32	ND	ND	1.88	8.32
SW-3-20090624	6/24/2009	NE207_03								0.00946	ND
SW-1-20090624	6/24/2009	NE207_03								0.00946	ND
SW-2-20090624	6/24/2009	NE207_03								0.0473	981
NORTH-004-20090826	8/26/2009	SW846-8082	ND	0.0165	ND	0.0256	ND	ND	ND	0.05	0.0421
SOUTH-004-20090826	8/26/2009	SW846-8082	ND	0.0153	ND	0.0159	ND	ND	ND	0.05	0.0312
AT-004-20090826	8/26/2009	SW846-8082	ND	0.0251	ND	ND	ND	ND	ND	0.05	0.0251

Notes:
Results reported in µg/L for samples analyzed using USEPA SW-846 Method 8082
Results reported in ng/L for samples analyzed using NE 207_03
ND - Not Detected; denotes analyte not detected at a concentration greater than the Practical Quantification Limit
PQL - Denotes lowest analyte concentration reportable for the sample
Flow measured at the USGS gauging station in Fort Edward: 10/23/2007 = 3,480 cfs; 10/24/2007 = 2,240 cfs; 11/02/2007 = 1,820 cfs; 06/24/2009 = 7,900 cfs; 8/24/2009 = 3,620 cfs

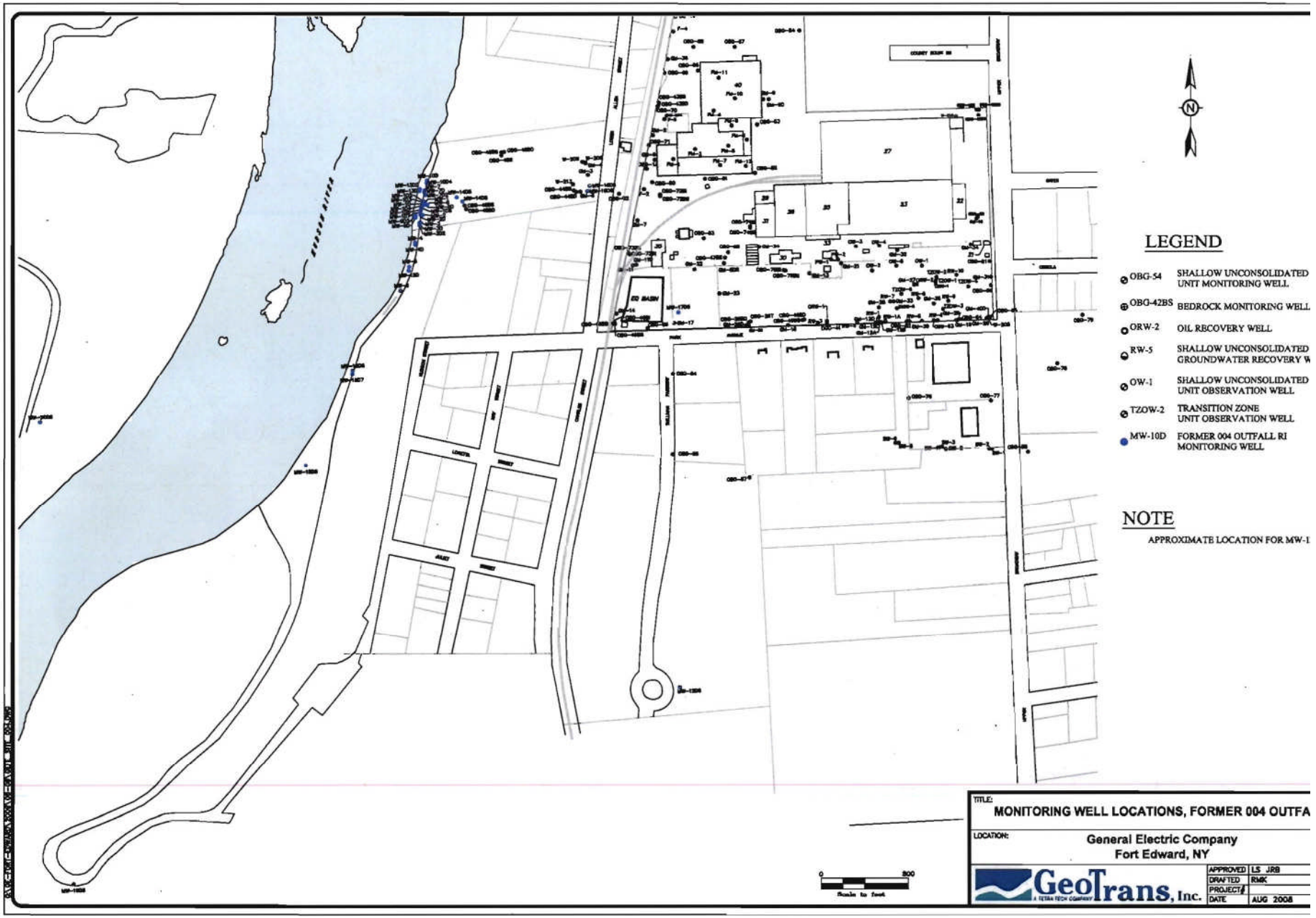

LEGEND
OBG-54 SHALLOW UNCONSOLIDATED UNIT MONITORING WELL
OBG-42BS BEDROCK MONITORING WELL
ORW-2 OIL RECOVERY WELL
RW-5 SHALLOW UNCONSOLIDATED GROUNDWATER RECOVERY W
OW-1 SHALLOW UNCONSOLIDATED UNIT OBSERVATION WELL
TZOW-2 TRANSITION ZONE UNIT OBSERVATION WELL
MW-10D FORMER 004 OUTFALL RI MONITORING WELL
NOTE
APPROXIMATE LOCATION FOR MW-1
0
800
Scale in feet
TITLE:
MONITORING WELL LOCATIONS, FORMER 004 OUTFA
LOCATION:
General Electric Company
Fort Edward, NY
GeoTrans, Inc.
A TETRA TECH COMPANY
APPROVED LS JRB
DRAFTED RMK
PROJECT
DATE AUG 2008

Table 1
Dense Non Aqueous Phase Liquid Recovery Data
September 2009
General Electric Company
Fort Edward, New York

Well Name	Observation Frequency	DNAPL Recovered (liters)					
		September 2009	August 2009	May 2009	2008	2007	Total
MW-1D2	NA	NM	0.005	0.720	NM	0.025	**0.750**
MW-1D6	biweekly	0.375	NM	0.655	2.050	NA	**3.080**
MW-1D7	monthly	1.150	1.420	16.250	NM	NA	**18.820**
MW-2D	weekly	0.186	0.490	1.600	NM	0.080	**2.356**
MW-7D2	monthly	0.135	0.220	1.450	0.810	0.020	**2.635**
MW-9D2	NA	NM	NM	NM	0.002	0.004	**0.006**
MW-13D2	NA	NM	NM	NM	NM	0.025	**0.025**
MW-18D6	monthly	13.550	18.550	24.650	25.960	NA	**82.710**

GeoTrans, Inc.
10/9/2009

Next Steps

- Currently evaluating potential additional monitoring well locations to complete / refine the delineation of DNAPL in bedrock
- DNAPL bail-down tests are being performed to evaluate the amount of oil recovery from existing wells
- Continuing to perform periodic surface water monitoring

For More Information

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