Post Remedial Monitoring Work Plan

Former 004 Out-Fall

PREPARED FOR

GENERAL ELECTRIC
CORPORATE ENVIRONMENTAL PROGRAMS
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1 INTRODUCTION

This work plan describes post remedial monitoring that will be undertaken in the area where the New York State Department of Environmental Conservation (NYSDEC) carried out the ROD- selected remedial action for PCB-contaminated sediment related to the former General Electric (GE) Fort Edward plant 004 outfall. The former 004 outfall was located on the east bank of the Hudson River approximately 800 feet west of the GE Fort Edward plant. Figure 1-1 shows the location of the former outfall. Based on the results of this post remedial monitoring, a report will be prepared and submitted evaluating the need for additional investigations. The post remedial monitoring proposed in this work plan will be conducted during the summer of 2005, an expected time of low river flow conditions. The post remedial monitoring report will be prepared during the fall, and if additional investigations are warranted they can take place during the expected low river flow condition in the summer of 2006.

2 BACKGROUND

In 2003 and 2004 NYSDEC implemented the ROD-selected remedy for PCB-contaminated sediment related to the former 004 outfall from the GE Fort Edward plant. The ROD-selected remedy involved excavation and off-site disposal of the PCB-contaminated sediments related to the former 004 outfall. During the excavation activities, NYSDEC observed PCB-containing non-aqueous phase liquid (NAPL) on the fractured bedrock surface exposed during the excavation. The NAPL was also observed in fractures several inches below the exposed rock surface.

Following excavation of the unconsolidated deposits and loose shale fragments from the bedrock surface, the area where the NAPL was observed was covered with a carbon blanket and backfilled with clean fill. To protect the area from erosion, concrete Jersey Barriers were installed along the river side of the backfilled material, and rip rap was placed over the backfill and Jersey Barriers. NYSDEC also had six shallow bedrock monitoring wells installed in the area where DNAPL was observed. The locations of the monitoring wells, the area excavated during the remedial action, and the former 004 outfall are shown on Figure 2-1.

Groundwater samples were collected from the shallow wells in June 2004. Table 2-1 summarizes the PCB concentrations in the samples.

TABLE 2-1. TOTAL PCB CONCENTRATION FORT EDWARD 004 OUTFALL JUNE 2004 GROUNDWATER SAMPLES

WELL	TOTAL PCB CONCENTRATION (µG/L)[1]
MW01	86,200
MW02	70.3
MW03	85.2
MW04	0.250
MW05	1.14
MW06	2.20

NOTES:

[1]All PCB detected were aroclor 1242 except the sample from MW03 that also contained aroclor 1248.

3 SCOPE OF WORK

The preliminary remedial investigation work we are proposing includes:

- Redeveloping the six existing monitoring wells installed by NYSDEC contractors in 2003,
- Collecting groundwater samples from the existing wells,
- Collecting samples of groundwater bank discharge, and
- Collecting surface water samples from the Hudson River.

The samples will be analyzed for PCBs. The results of the analyses will be evaluated and a work plan for additional remedial investigations, if necessary, will be developed. The following sections describe each element of the scope of work in detail.

3.1 WELL REDEVELOPMENT

The six existing wells installed by NYSDEC contractors in 2003 will be redeveloped prior to sampling. The physical condition of the wells will be described and recorded and photographs of the wells will be taken. The depth of the wells will be measured prior to and following the development and compared with the reported depths of the wells. Well redevelopment will be completed by bailing and/or pumping to clear the wells of sediment. Water removed from the wells will be contained and transported to the GE Fort Edward plant for treatment. The wells will be bailed and/or pumped until the water removed from the wells is clear, or a maximum of ten well volumes is removed. Based on the previous field observations and the previous groundwater sample results, it is possible that PCB NAPL may be present in or near wells MW01 and MW02. Prior to beginning development each of the wells will be checked for the presence of NAPL with a swab of adsorbent material. Water removed from the wells during development will also be examined for the presence of NAPL by decanting the water from the bailer into a glass jar before putting the water into the container for transport to the water treatment plant. The volume of water removed from each well will be recorded along with observations regarding the presence of NAPL.

3.2 SAMPLING AND ANALYSIS

Following the well redevelopment, groundwater samples, bank discharge samples, and surface water samples will be collected. Samples will be collected from the six monitoring wells, and the Hudson River upstream of the former 004 outfall and down stream of the area excavated during the NYSDEC remedial action. The monitoring wells, surface water sampling locations and approximate locations of the bank discharge samples are shown on figure 3-1. The groundwater samples will be analyzed by Northeast Analytical Laboratory using USEPA method 608. Duplicate, matrix spike, matrix spike duplicate and field blank samples will be collected for quality control The Bank discharge and surface water samples will be analyses by the modified USEPA 8082 method currently being used for Hudson River monitoring.

The groundwater samples will be collected using bailers. A new bailer will be used for each well to limit the potential for cross contamination of sampling equipment. A minimum of three well volumes will be bailed from the wells before collecting the samples.

Bank discharge samples will be collected from up to four locations. The actual number of bank discharge sampling locations will be determined on the basis of field conditions at the time of the initial sampling. The sampling will be scheduled in the summer of 2005 at a time of low flow in the river. In general, bank discharge samples will be collected upstream of monitoring wells MW-1, downstream of monitoring well MW-6, and two samples will be collected near existing monitoring wells MW-1 and MW-2. The surface water samples will be collected up stream of the former 004 outfall and downstream of the area excavated during the NYSDEC remedial action. Approximate bank discharge and surface water sampling locations are shown on Figure 3-1. The precise locations will be determined in the field and will be dependent on the locations where bank discharge is occurring. If it necessary to move rip rap that was placed to protect the area excavated by NYSDEC to gain access for collecting bank discharge samples, the necessary equipment will be mobilized to the site.

The planned frequency of sampling is as follows:

- Groundwater samples; twice during the study period,
- Surface water samples; monthly during the study period,

- Bank discharge samples; every other month during the study period.

Surface water and bank discharge sample collection will coincide with the on-going Hudson River sampling. The surface water and bank discharge samples will only be collected if the river flow to allow safe access to the sampling stations. Groundwater sample collection will be coordinated with the initial and final surface water and bank discharge samples for this study.

Prior to mobilizing to complete the work describe in this work plan and after the river spring high flow has subsided, a site reconnaissance will be conducted to select the locations for the bank discharge sampling. At that time the method for collecting the samples will be developed. A letter describing the bank-discharge sampling methods will be submitted to NYSDEC for review following the site reconnaissance and prior to collecting the samples.

3.3 DATA EVALUATION

The water quality data will be evaluated to estimate the lateral extent of PCB contamination in the shallow bedrock near the former 004 outfall. The data from the sampling and analyses describe here will be compared with the data collected in 2003 and 2004 to determine if there has been a significant change in concentration or the areal extent of PCB-contaminated groundwater. The existing water quality data from the GE Fort Edward Plant monitoring wells located between the river and the GE plant will be reviewed. Based on these evaluations additional investigations may be recommended. Additional investigations may include drilling deeper monitoring wells near the six wells installed by the NYSDEC contractor. The additional wells would be installed to evaluate the current conceptual model that PCB DNAPL observed in the bedrock during the NYSDEC remedial action resulted from downward migration of PCB DNAPL from the PCB-contaminated sediments at the base of the 004 outfall.

3.4 SUMMARY REPORT

The results of the investigations described above will be summarized in a report that will be submitted to NYSDEC. The data that were collected will be summarized in tables and on

maps. Our interpretation of the data will be presented and the need for additional investigations will be evaluated.

4 SCHEDULE

The work will be initiated following NYSDEC approval of this work plan. The scheduling of the field activities is dependent on the flow in the river. To complete the field work safely, no work will be started until the river flow rate at Fort Edward is 5000 cfs or less, and the weather forecast indicates that the river flow will remain low for several days. The summary report and RI work plan will be submitted to NYSDEC 60 days following receipt of the final laboratory data.

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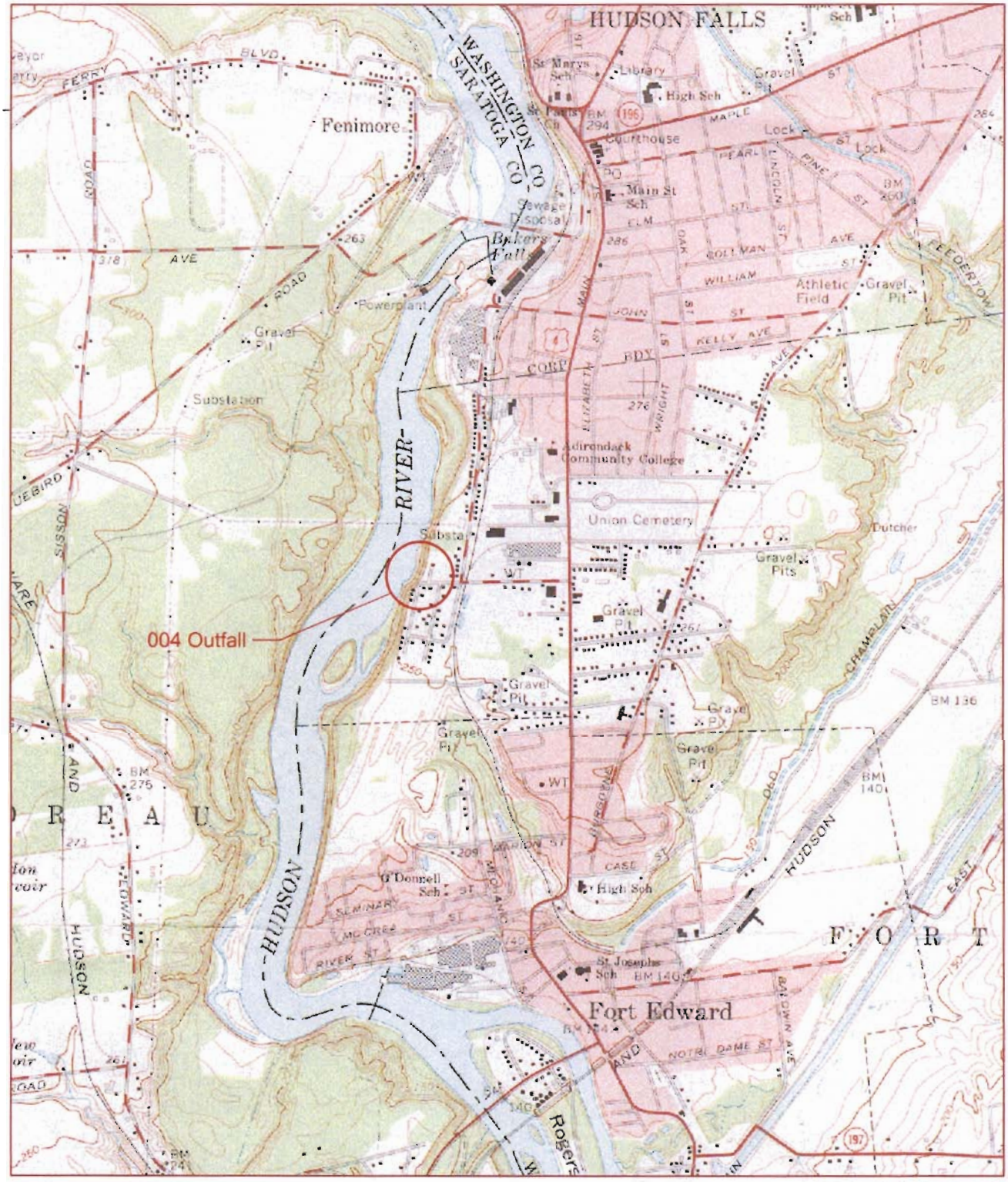

QUADRANGLE LOCATION

0 2000

Scale in feet

CONTOUR INTERVAL 10 FEET

REFERENCE: SCANNED PORTION OF 7.5 MINUTE USGS HUDSON FALLS QUADRANGLE, NEW YORK 1988

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Figure 2-1 Site Locus

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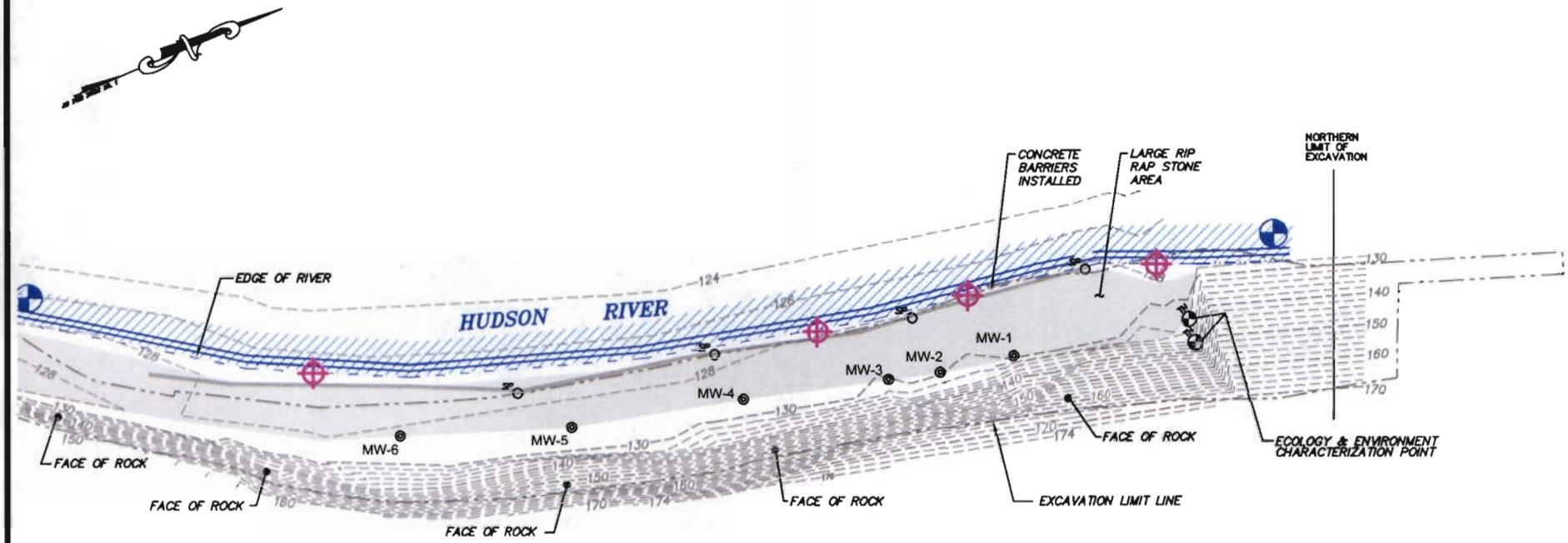

EXPLANATION

MW-5 MONITORING WELL

BANK DISCHARGE SAMPLE LOCATION

SURFACE WATER SAMPLE LOCATION

TH P9

0 80

Scale in feet

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NOTE:

1. REFERENCE DRAWING IS SHEET 2 OF 11, MADE BY ECOLOGY & ENVIRONMENT ENGINEERING, P.C., DATED 11/6/01, C.A.D FILE NO. NY05-1.dwg.
2. COORDINATES AND ELEVATIONS BASED ON INFORMATION THAT WAS OBTAINED ON CONTROL POINTS NOTED IN DRAWING AS BASELINE 300 & 301, THAT WERE FOUND & CHECKED IN THE FIELD.
3. CONTOUR LINES FROM AN ACTUAL FIELD SURVEY BY W.J. ROURKE ASSOCIATES, DONE WITHIN THE EXCAVATION AREA, ALONG THE NEW STONE ROAD TO SITE ENTRANCE, DATED JULY 15, 2004.

TITLE: Sampling Location Map

LOCATION: GE Fort Edward, 004 Outfall

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FILE	
DATE	Mar 2005

FIGURE: 3-1