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FOCUSED CORRECTIVE MEASURES STUDY REPORT
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
ELTINGS CORNERS FACILITY
TOWN OF LLOYD
ULSTER COUNTY, NEW YORK

Prepared For:

People. Power. Possibilities.
Central Hudson
A FORTIS COMPANY

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1 INTRODUCTION

This Focused Corrective Measures Study (CMS) report has been prepared for Central Hudson Gas and Electric Corporation's (CHGE's) Eltings Corners facility consistent with the New York State Department of Environmental Conservation (NYSDEC) Corrective Action Program for Hazardous Waste Facilities.

CHGE has owned the Eltings Corners facility in the Town of Lloyd, Ulster County since the 1950s. The portion of the property on the east side of South Street was developed in the 1950s by CHGE for materials storage, electrical equipment service and repair, utility equipment/vehicle storage, maintenance, and repair. The portion of the property on the west side of South Street was an active orchard until sometime after 1963 when it ceased being cultivated and reverted to wetlands. In 2009, CHGE initiated a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) to comply with CHGE's RCRA Part 373 Permit renewal process. During the RFI, it was confirmed that the storm water sewer system had transported polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) offsite to the Cutfall (SPDES #NY0148849) and into the wetland on the west side of South Street and south of State Route 299.

Several supplemental remedial investigations were conducted in the wetland to delineate the extent of PCB and PAH impacts above NYSDEC Sediment Screening Criteria for Wildlife Bioaccumulation as per the NYSDEC's Technical Guidance for Screening Contaminated Sediments (1999). These data were re-evaluated and classified using the June 24, 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance document. Sediment classifications and remedial action objectives used in this CMS report are based on the 2014 guidance values.

Based on the results of these investigations, the nature and extent of PCB and PAH-impacted sediments have been delineated adequately to evaluate and select the most appropriate corrective measure for the Site. During subsequent discussions and correspondence between CHGE and the NYSDEC, the presumptive remedy consisting of sediment removal and wetland restoration was selected as the preferred, applicable, and most appropriate remedial action for this Site. This focused CMS report presents an overview of the RFI results; development of

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remedial action objectives (RAOs); and evaluation, justification, and recommendation of the preferred corrective measure.

1.1 Site and Facility Description

The Eltings Corners facility is located on a 33.7-acre site along NY Route 299 and South Street in the Town of Lloyd in Ulster County, New York (Figure 1). The property includes the developed eastern portion (east of South Street) and undeveloped western portion (west of South Street). The eastern portion of the property (east side of South Street), hereafter referred to as the "Facility", is utilized by CHGE for storage of electrical equipment (including transformers), vehicle maintenance and storage, transformer repair, materials warehouse and storage, and administrative offices. The western portion of the property (west side of South Street), hereafter referred to as the "Site", is undeveloped and is predominantly wetland with an unpaved parking/storage area located in the southeast corner. The Site consists predominantly of CHGE-owned property in addition to two privately owned parcels. A plan depicting the pertinent Site features is included as Figure 4.

The Facility is relatively flat. Topography in the vicinity of the Eltings Corners property generally slopes from east to west toward the wetland. As shown on Figure 4, the wetland area of the Site drains to the west, then north through a culvert beneath NY Route 299 and discharges on the north side of NY Route 299.

The area surrounding the Site is undeveloped, except for the Facility. The area in the vicinity of the CHGE Eltings Corners Facility and Site contains low density commercial and light industrial properties consisting of Lowe's Home Improvement, several office buildings, and a hotel located on the north side of NY Route 299. Additionally, light residential development is located upgradient and south of the Site along South Street.

Storm water from the Facility is collected by onsite catch basins and conveyed via an underground storm water sewer system to the outfall located on the west side of South Street that discharges to the wetland area. The outfall is a permitted NYSDEC State Pollutant Discharge Elimination System (SPDES) discharge point (SPDES #NY0148849). In addition, a portion of flow originating from Black Creek, located along the east side of the Facility, is

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conveyed through a culvert beneath a former railroad bed and into an on-site fire pond. All of which is hydraulically connected to the Facility's storm water sewer system that ultimately discharges through the SPDES permitted outfall.

The wetland area west of South Street is identified as NYSDEC wetland CD-6 (Online NYSDEC Environmental Resource Mapper accessed 2014) which is part of a large wetland complex (Figure 1). NYSDEC wetland CD-6 expands to the west on both the north and south sides of NY Route 299. Swarte Kill Creek flows northward through the center of NYSDEC wetland CD-6 and eventually drains northwest into the Wallkill River. The wetland area of the Site that has PCB- and PAH-impacted sediments consists of less than 2 acres of the large wetland complex and is comprised mostly of herbaceous vegetation dominated by cattails, loosestrife, sedges, rushes, and numerous other wetland species. Some small areas also contain mature trees.

1.2 Applicable Standards Criteria and Guidance

The Eltings Corners Facility, as a hazardous waste generator, is subject to the Resource Conservation, & Recovery Act (RCRA) regulations to conduct a RCRA Facility Investigation (RFI) to determine the nature and extent of any hazardous waste/material releases from potential source areas on the site. Additionally, Eltings Corners Facility is also subject on the state level to the NYSDEC 6 NYCRR Part 373 regulations for hazardous waste management facilities. Under the state regulations, CHGE is required to investigate and remediate any contamination resulting from their onsite activities. CHGE conducted an RFI in 2008. The RFI and subsequent investigations are discussed in Section 1.3.

Soil investigations were compared to Title 6 NYCRR Part 375.6 Soil Cleanup Criteria for Unrestricted Use. Groundwater investigations were compared to NYSDEC Technical & Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Surface water investigations were compared to TOGS 1.1.1 Surface Water Standards and Guidance Values for Wildlife Protection based on the ecological habitat provided by the wetland that the storm water system discharges to. Wetland sediment investigations were previously compared to the January 1999 NYSDEC Technical Guidance for Screening Contaminated Sediments; however, for this Corrective Measure Study Report sediment concentrations are being compared to the newly approved (June 24, 2014)

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NYSDEC Screening and Assessment of Contaminated Sediment guidance document. As discussed in Section 1.3, soil, groundwater, and surface water have been previously investigated during the course of the RFI with no exceedances noted. Sediment in the wetland is the media of concern and is being compared to the sediment guidance values of the 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance document. Per the guidance document, sediments fall into Class A, B, or C as summarized in the following table:

Class Designation	Total PCB Concentration	Total PAH Concentration
A – little or no potential for risk to aquatic life.	<100 ug/kg	<4,000 ug/kg
B – additional information is needed to determine the potential risk to aquatic life.	100 - 1,000 ug/kg	4,000 – 35,000 ug/kg
C – high potential to be toxic to aquatic life	>1,000 ug/kg	>35,000 ug/kg

CHGE has determined that the Site will be remediated to Class A levels for PCBs and PAHs; therefore Class B and Class C sediments for PCBs and PAHs will be removed.

1.3 Nature and Extent of Contamination

The 2008 RFI included an investigation of soil and groundwater for two areas of concern (AOC) on the facility and an investigation (surface water and sediment) of the stormwater system.

The 2009 RFI Report (Kleinfelder, 2009) included results pertaining to AOC-1 (Southern Steel Garage-Floor Drain Area), AOC-2 (Maintenance Garage-Hydraulic Spill Area identified on the eastern portion of the Elting's Corners Facility), and the Facility's permitted storm water outfall (SPDES #NY0148849). One PCB constituent was identified in MW-7 above the NYSDEC TOGS 1.1.1 groundwater guidance value. Following review of this data, NYSDEC determined no further action was needed for AOC-1 and AOC-2 (May 19, 2009 NYSDEC RFI Review Letter). However, in an April 12, 2012 letter from the NYSDEC, two additional groundwater sampling rounds were requested for semi-volatile compounds (SVOCs) and PCBs to further assist the NYSDEC in determining whether the presumed historical release to groundwater had been controlled or needed additional engineering controls. The two additional groundwater sampling events were conducted at AOC-1 in July and November 2012 (Kleinfelder, 2013). No

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exceedances of SVOCs or PCBs were detected in either round of sampling. The report also concluded that PCB and PAH contamination was present in sediments within NYSDEC wetland CD-6 and were likely attributable to historical discharges from the CHGE Eltings Corners Outfall (SPDES #NY0148849) located west of South Street. Based on these results, the NYSDEC issued a Documentation of Environmental Indicator Determination on March 28, 2013 verifying that the migration of contaminated groundwater was "under control" at the Facility.

During the 2008 RFI activities, one surface water sample was collected from the catch basin directly upstream from the Outfall. The surface water sample was analyzed for STARS VOCs, STARS SVOCS, PCBs, Total RCRA Metals, and Cyanide (2009 RFI Report). Analytical results were compared to TOGS 1.1.1 Surface Water Standards and Guidance Values for Wildlife Protection. Based on the analytical results, no VOCs, SVOCs, PCBs, or mercury were detected in the Catch Basin surface water sample. Several naturally occurring metals, which have no standard or guidance value for Wildlife Protection (e.g., aluminum, magnesium, iron), were detected in the surface water sample. Based on these data, there were no detected impacts to surface water in the stormwater system at the Eltings Corners Facility. Since no additional water sources enter the stormwater system between the Catch Basin and the Cutfall, surface water quality at the Catch Basin is representative of surface water quality at the Outfall. Therefore, surface water entering the wetland at the Outfall is not impacted, and no additional surface water sampling is warranted.

As part of the RFI investigation, three sediment samples were collected from the base of the stream at 10 feet, 20 feet, and 30 feet downstream of the Cutfall location. Sediment samples were analyzed for STARS VOCs, STARS SVOCs, PCBs, TAL Metals, and Cyanide. Analytical results indicated that sediments downstream from the Outfall were impacted with PCBs and PAHs.

As a result of the levels of PCBs and PAHs observed during the 2009 RFI, subsequent supplemental investigations were conducted to delineate the vertical and horizontal extent of PCB and PAH contamination in the wetland.

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These investigations inciuded the interim Supplemental RFI Report: Wetland Investigation (Kleinfelder, 2010), the November 2010 Wetland Investigation Summary Report (Kleinfelder, 2011), and the 2012 Wetland Investigation Summary Report (Kleinfelder, 2013). PCB and PAH exceedances in the sediment samples have been identified based on the June 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance document as listed in Table 1 and as depicted on Figure 2 (PCB Results) and Figure 3 (PAH Results). Class B and Class C sediments are considered to be exceedances for the purposes of this CMS.

Based on the 2014 criteria, PCB exceedances in wetland sediment range from an estimated (J value) concentration of 100 ug/kg to 12,600 ug/kg, with the greatest density of exceedances concentrated near the Outfall (SPDES #NY0148849) and along the center channel of the stream flowing to the northwest as shown on Figure 2. PAH exceedances in wetland sediment were detected with concentrations ranging from 4,089 ug/kg to 202,190 ug/kg. As with PCB exceedances, the greatest density of PAH exceedances were found near the outfall and along the center channel of the stream flowing to the northwest (Figure 3). As shown in Figures 2 and 3, the lateral extent of PCB exceedances is more broadly dispersed as compared to the lateral extent of PAH exceedances and are considered for remediation throughout this CMS. Except for the Class B PAH concentration at SB-48 (0-0.5), all other Class B and Class C PAH sediments are co-located with Class B or Class C PCB sediments.

1.4 Purpose

The purpose of this focused Corrective Measures Study is to:

- Define generic Remedial Action Objectives (RAOs) for the affected environmental media (i.e., sediment).
- Justify the selected corrective measure to meet the RAOs.
- Identify actual or potential exposure pathways to be addressed by the corrective measure.
- Evaluate the selected corrective measure based on long-term reliability; reduction of toxicity, mobility, or volume; implementability; short-term effectiveness; and cost to address PCB and PAH contamination in the wetland.
- Identify the technical issues and potential impacts to human health and the environment related to the corrective measure. Identify data gaps and gather additional information that may be necessary to further develop the selected corrective measure.

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2 REMEDIAL ACTION OBJECTIVES

2.1 Remedial Action Objectives

RAOs have been established consistent with the NYSDEC Corrective Action Program for Hazardous Waste Facilities. The corrective measure shall meet the following RAOs for public health and environmental protection:

- RAO-1: Prevent direct contact with contaminated sediments.
- RAO-2: Prevent surface water contamination which may result in fish advisories.
- RAO-3: Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of (ambient water quality criteria).
- RAO-4: Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the aquatic food chain.
- RAO-5: Restore sediments to pre-release/background conditions to the extent feasible.

These RAOs are further summarized in **Table 2**.

2.2 Screening of Corrective Measure Technologies

This focused CMS report includes the selection of a presumptive remedy and does not identify and/or screen alternative remedial technologies. The presumptive remedy was selected through discussions with CHGE and NYSDEC and will consist of the removal of sediment that exceeds Class A sediment criteria for PCBs and PAHs based on the 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance document. Sediments with PCB concentrations exceeding 100 ug/kg and PAHs concentrations exceeding 4,000 ug/kg will be removed. Following contaminated sediment removal, wetland restoration will be conducted. NYSDEC agreement on the presumptive remedy to address the conditions at the Site was provided on the following occasions:

- During a site meeting on October 18, 2013, sediment removal was given preliminary verbal approval by NYSDEC Department of Environmental Remediation (DER) staff.
- Written approval was received on April 1, 2014 from Mr. David Crosby of the NYSDEC DER.

- During an onsite meeting on May 12, 2014, Mr. Crosby, Ms. Jennifer Dawson of the NYSDEC Division of Fish and Wildlife (DFW), and CHGE agreed that sediment removal was the preferred corrective measure.

The corrective measure will achieve the RAOs as described below.

RAO-1: Prevent direct contact with contaminated sediments

Although there is no current human use in the wetland at the Site based on Site observations and CHGE information, actual and potential contaminant exposure pathways to humans include wildlife bioaccumulation, direct contact, and offsite migration. Please note that all of the properties included in the Site are privately owned and not open to the public.

The Class B and C PCB- and PAH-contaminated sediment will be removed from the Site eliminating potential future human exposure and biological impact via direct contact. During implementation of the corrective measure, the sediment will be disturbed creating the potential to impact downstream receptors. A site specific health and safety plan will be implemented to minimize workers' direct contact with contaminated sediments. Additionally, engineering controls will be implemented during construction to minimize the disruption to the wetland and reduce and protect downstream receptors from any potential sediment transport.

RAO-2: Prevent surface water contamination which may result in fish advisories

The Eltings Corners Facility has a Spill Prevention Control and Countermeasure (SPCC) Plan (July 17, 2002, amended March 2013) for the management and release of oils to the environment as required by 40 CFR Part 112. PCBs are no longer used in the manufacturing of new transformers; however, the Facility continues to repair or decommission transformers with PCB-containing or PCB-contaminated fluid. Additionally, petroleum and hazardous materials are still used, and petroleum and hazardous wastes are still generated at the Facility. CHGE has well established PCB, petroleum, and hazardous material/waste storage practices in place at the Facility to be more protective of the environment. Therefore, the potential for a future release of hazardous constituents to the environment has been minimized.

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The corrective measure for the impacted wetland area will consist of removal of Class B and C PCB- and PAH-contaminated sediment. Prior to sediment removal, the surface water flow will be diverted around the excavation area so that surface water entering the Site will not be in contact with sediment contamination. Additionally, engineering controls (such as a downgradient sediment barrier) will be implemented during construction to protect downstream receptors.

Following sediment removal, confirmatory sediment samples will be collected for PCB and PAH analysis by a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory. Wetland restoration will follow confirmatory sampling.

RAO-3: Prevent Releases of Contaminants from Sediments that would result in surface water levels in excess of (ambient water quality criteria)

Wetlands function as a sink, trapping and holding sediment and any associated contamination. The disturbance and redistribution of the PCB- and PAH-impacted sediments will be addressed with the corrective measure. Specifically, engineering controls will be utilized to minimize any sediment transport within the wetland. These engineering controls will be detailed in the engineering design plans.

The corrective measure will consist of the removal of sediment classified as Class B and Class C PCB-contaminated sediment as well as Class B and Class C PAH-contaminated sediment. Prior to sediment removal, the surface water flow will be diverted around the excavation area so that surface water will not enter the work area and will not be in direct contact with contaminated sediment. Additionally, engineering controls (such as a downgradient sediment barrier) will be implemented during construction to protect downstream receptors.

It is anticipated that dewatering of the excavation will be needed during the corrective measure activities. A dewatering pilot test will be conducted during the pre-design investigation to establish the basis of design for dewatering during excavation. Water generated during dewatering will be treated onsite and discharged via a SPDES permit to the wetland downstream of the excavation area so that the discharged water will not come in contact with contaminated sediments. The onsite treatment system will be designed by a New York State licensed engineer. The system design, including a description and schematic of the treatment system, will be submitted to the NYSDEC for approval prior to commencing remedial activities.

Following sediment removal, confirmatory sediment samples will be collected for PCB and PAH analysis by a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory. Wetland restoration will follow confirmatory sampling.

As previously discussed, it is not anticipated that the corrective measure will release PCBs and PAHs to the groundwater or surface water system. Excavated sediment will be stored on polysheeting and contained. Water generated from the gravity draining of stockpiled sediment will be collected and treated onsite prior to discharge via a SPDES permit.

RAO-4: Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the aquatic food chain

Under the corrective measure, Class B and Class C PCB- and PAH-contaminated sediment will be removed from the Site eliminating potential future impacts to biota from ingestion/direct contact with contaminated sediments. During implementation of the corrective measure, the sediment will be disturbed creating the potential to impact downstream receptors. Engineering controls (such as a temporary access road and downgradient sediment barrier) will be implemented during construction to minimize the disruption to the wetland and the sediment and to protect downstream receptors. Stockpiled sediment will be covered to prevent scavenging and direct contact of animals to impacted sediments.

RAO-5: Restore sediments to pre-release/background conditions to the extent feasible

Under the corrective measure, Class B and Class C PCB- and PAH-contaminated sediments will be excavated and removed from the Site. Following confirmatory sampling, the wetland will be restored in-kind as an emergent wetland marsh with no institutional controls. It is anticipated that the future use will be consistent with the current use in the project area. Therefore, the wetland soils will be restored to the extent feasible and practicable to pre-release (Class A) conditions.

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2.3 Selection of the Corrective Measure Alternative

Sediment removal and wetland restoration is selected as the corrective measure to achieve the RAOs in a reasonable time period. As discussed previously, the NYSDEC has concurred that this corrective measure is the preferred, appropriate, and acceptable corrective measure for this Site. Several benefits of the selected corrective measure are described below.

- The corrective measure will meet NYSDEC Class A levels and be protective of biological receptors.
- Sediment removal is the most expedient and effective means to reduce/remove the contaminant mass load from the ecosystem. Other means (e.g., in situ fixation) may take decades or longer to reduce sediment load.
- Sediment removal expedites improved protection and rehabilitation of the impacted ecosystem. Short-term engineering controls (e.g. stream channel diversion, sediment barriers, etc.) can be deployed to minimize disruption to the ecosystem during construction. Wetland restoration will occur via sequencing as excavation and confirmatory sampling are complete.
- The areal extent of PCB and PAH contamination is predominantly located along the center of the stream channel to distances of approximately 500 feet from the Outfall. Localized exceedances occur beyond the 500-foot extent, but remain south of NY Route 299. The areal extent of the impacted sediment is defined and accessible, and upland areas adjacent to the wetland are accessible and available for staging and support activities. Cutlying areas with localized PCB and/or PAH exceedances will be addressed using mechanical and/or manual excavation methodologies to minimize disturbance to the wetland.
- The remedial area is accessible using conventional excavation equipment. During drier times of the year, areas away from the center of the stream channel may be dry enough to allow mechanical equipment access minimizing wetland disturbance.
- Disruption to wetland substrata can be minimized by deploying construction mats to disperse the weight of the vehicles and equipment.
- Any potential bioaccumulation effects in wildlife are reduced once the excavation is complete, and risks are lessened more rapidly than other remedial alternatives.
- No institutional controls (e.g., environmental easement) are required, and no long-term engineering controls are necessary.

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3 EVALUATION OF THE CORRECTIVE MEASURE

3.1 Technical Issues

3.1.1 Construction Sequencing

The corrective measure will be designed and implemented to be protective of human health and the environment during construction. The technical issues to be addressed during implementation of the remedy and the associated engineering controls to mitigate impacts are summarized below. The main components of the corrective measure implementation are identified on Figure 4.

Anticipated Construction Sequence	Technical Issues	Engineering Controls
Pre-design Activities	Areas not fully delineated.	Perform additional sediment sampling, as necessary to prepare design.
	Top of sediment and wetland is not mapped	Perform a topographic survey and reflag wetland boundary using existing data for the Site. Changes to the wetland boundary will be confirmed by the NYSDEC Region 3 Wetlands staff.
	Dewatering of sediment excavation area and excavated sediment prior to offsite disposal	Obtain SPDES permit for temporary operation of a dewatering treatment system. The treatment system would handle discharges from the dewatering pilot test and the dewatering of stockpiled excavated sediment prior to offsite disposal.
	Dewatering of sediment excavation area	Perform excavation dewatering pilot test to assess and establish basis of design for dewatering during excavation. The design of the onsite dewatering treatment system must be approved by the NYSDEC prior to the start of active remediation.

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	Wetland Restoration Plan	Prepare a Wetland Restoration Plan outlining how excavated areas will be backfilled, and how staging areas and temporary access roads within the wetland boundary will be restored following remedial activities. Backfilling will occur in sequence with removal of contaminated materials. Wetland restoration will be conducted using a NYSDEC-approved wetland restoration contractor. The Wetland Restoration Plan will be approved by the NYSDEC prior to start of excavation.
	Monitoring & Maintenance Plan	A 5-year Monitoring and Maintenance (M&M) Plan will be prepared detailing monitoring of contaminant levels in sediment near the outfall and monitoring of wetland restoration success.
Mobilization and Site Setup	Potential transfer of impacted sediment outside exclusion zone	Establish an exclusion zone within the Site with dedicated site equipment. Provide a decontamination pad for equipment that will exit the exclusion zone.
Sediment barrier	Conveyance of disturbed, impacted sediment downstream	Provide a sediment barrier downstream of the sediment removal area. Sequence the excavation commencing adjacent to the outfall and progress downstream to the lateral extent of impacts. Localized excavation areas will have measures to control sediment migration downstream.
Stream diversion	Stream flow through the sediment removal area	Provide a temporary barrier to inhibit flow from Black Creek to the fire pond with subsequent discharge to the Facility storm sewer system. Provide a bypass from the Facility Outfall (SPDES #NY0148849) to divert the stream and storm water flow downstream of the sediment barrier. The average downstream flow will be maintained during the stream diversion. Additionally, the pumping capacity of the diversion will be sufficient to accommodate additional flow from up to a 2-year storm event.

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Dewatering during excavation	Excavation of saturated sediment	Based on the results of excavation dewatering pilot test, plan and configure sediment excavation using coffer dams/barriers, if necessary, to minimize or eliminate dewatering and the dewatering treatment system. It is anticipated that the treatment system, if necessary, would consist of pumps, filtration and granular activated carbon contactors. The design of the dewatering treatment system will be approved by the NYSDEC prior to active remediation.
Sediment dewatering for off-site disposal	Potential transfer of impacted material off-site	Configure excavated sediment staging/draining area to facilitate transfer to off-site disposal trucks outside exclusion zone. Provide a stabilized construction entrance to minimize nuisance dust transfer off-site.
	Impacted water from sediment staging/draining area	Obtain a SPDES permit for temporary operation of a treatment system. Configure sediment staging/draining area to facilitate collection of water derived from sediment excavation and treat collected water for discharge. It is anticipated that, if necessary, the treatment system would consist of pumps, filtration, and granular activated carbon contactors. The design of the dewatering treatment system will be approved by the NYSDEC prior to active remediation.
	Sediment drying	If necessary, acceptable drying agents (e.g. lime, cement kiln dust, etc.) may be added to accelerate the drying process. If deemed necessary, it is anticipated that drying agent would be added at approximately 2 to 3 percent by weight and the mixture ratio would be adjusted as necessary to absorb free liquid in the sediment before off-site transport.
Temporary access road	Wetland disturbance	Provide a temporary access road consisting of construction matting from the staging area to the center of the stream channel and along the center of the stream channel to the lateral extent of impacts. Utilize suitable

		equipment, such as a long-reach excavator, capable of excavating sediment to the lateral extent on both sides of the stream channel using the temporary access road.
Sediment loading for off-site disposal	Nuisance dust	Provide dust suppression methods as necessary to minimize nuisance dust and protect potential worker inhalation. Provide a stabilized construction entrance to minimize vehicle transfer of soil off-site. Waste classification and disposal requirements are discussed in Section 3.1.4.
Confirmatory sampling	Sampling at limits of excavation	Collect confirmatory sediment samples for PCB and PAH analysis by a NELAP certified laboratory. See Section 3.1.2 for additional details.
Backfill and Wetland restoration	Restore wetland to meet or exceed current conditions	The NYSDEC has indicated that the wetland should be restored in-kind as an emergent wetland marsh. See Section 3.1.3 for additional details. Backfilling and restoration will be in accordance with the approved Wetland Restoration Plan for the Site. Wetland restoration will be conducted using a qualified wetland restoration contractor. Backfilling will occur in sequence with removal of contaminated materials.
Demobilization	Restore site and site area to existing conditions	Decontaminate and demobilize construction equipment to minimize impact to the local area.
Monitoring & Maintenance	Monitor sediment levels at outfall & wetland restoration success	Conduct analytical monitoring of PCB and PAH levels in sediment near the outfall over a 5-year period following the M&M Plan. Also monitor wetland restoration progress over a 5-year period following the M&M Plan.

3.1.2 Confirmatory Sampling

Following excavation, confirmatory sampling of wetland sediments will occur to verify that sediments remaining in-place meet Class A PCB and PAH levels as defined in the 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance. Consistent with guidance from the 2010 NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10), the confirmatory sampling frequency will consist of five confirmatory sediment samples collected from each 100-foot transect from the Outfall to the 500-foot transect as follows:

- sample from center channel,
- sample from southern-most extent,
- sample from northern-most extent, and
- two sample locations along the transect to be determined in the field.

For outlying localized areas of impacted sediment, two sidewall samples and one bottom sample will be collected.

The confirmatory samples will be submitted to a NELAP-certified laboratory for PCB analysis on expedited laboratory turnaround time. At locations with PAH exceedances as identified in Table 1 and on Figure 3, confirmatory samples will also be collected for PAH analysis under expedited laboratory turnaround time. The expedited turnaround time will be used so that locations with confirmatory samples that fail to meet sediment cleanup criteria (i.e., Class A levels) can be re-excavated and resampled until criteria are met without breaking work flow. Backfilling/wetland restoration will occur in sequence with removal of contaminated materials; however, confirmatory samples must first meet sediment cleanup criteria.

3.1.3 Wetland Restoration

As previously stated, backfilling and wetland restoration will occur in sequence with removal of contaminated materials and confirmatory sampling. Conceptually, the restoration of the excavated area will include bringing the area back up to original grade, using a combination of mineral and organic soils, and replanting with native vegetation that is similar to what is currently present. If possible, some small open water areas (less than 0.1 acre in size would be left unplanted to enhance habitat heterogeneity (i.e., create small areas of open water habitat).

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In addition, the area will be over seeded with a wetland seed mix to encourage greater plant diversity and coverage. A Wetland Restoration Plan including a detailed planting plan will be developed as part of project design documents. The Wetland Restoration Plan will be submitted to and approved by the NYSDEC prior to start of onsite activities. A qualified wetland restoration contractor will be utilized during restoration work. Emphasis will be focused on replacing disturbed vegetation within the wetland with native species grown within the region. Mostly herbaceous plants will be used. Woody shrubs or tree species may be used in specific areas as clumps or clusters. Restored wetland areas will be monitored for 5 years following construction/replanting to ensure that re-vegetation goals are met.

3.1.4 Waste Classification and Disposal

Based on existing data, sediment concentrations of PCBs are below 50 ppm (non-TSCA) and will be transported to ESMI Companies (ESMI) in Fort Edward, New York for thermal treatment and disposal. In accordance with ESMI requirements, waste characterization samples will be collected as follows:

First 750 tons of materials – 3 sets of analysis for:

- TPH
- VOCs
- PCBs
- 14 RCRA metals

Every 750 tons thereafter – 1 set for the above analysis.

3.1.5 Monitoring & Maintenance

In accordance with the Monitoring & Maintenance Plan developed for this project, PCB and PAH contaminant levels in sediment will be monitored on an annual basis near the Outfall for a period of 5 years to ensure that sediment concentrations remain within Class A levels. Additionally, vegetation within the restored wetland will also be monitored for a period of 5 years to ensure that revegetation goals are met. Wetland monitoring will entail an annual inspection.

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3.2 Environmental Resources

3.2.1 Land Use and Zoning

The corrective measure for the Site will not impact land use or zoning. The Site is currently a wetland and will be restored as a wetland.

3.2.2 Topography and Slopes

The corrective measure will not impact topography or slopes of the Site. The Site is relatively flat. The corrective measure will not change topography since the wetland will be restored to grade.

3.2.3 Geology and Soils

There will be short-term impacts to soil since the corrective measure will remove contaminated sediment and soil from the Site. However, no long-term impacts are expected as the excavated areas will be backfilled to grade. The overall geology of the Site will remain the same: glacial sediment overlying bedrock. Soils used to backfill will be mineral soil topped by 12 inches of organic soil.

3.2.4 Wetland and Surface Water

Both the surface water and wetland will be temporarily impacted during the corrective measure. Prior to sediment removal, the stream and stormwater outfall will be temporarily diverted around the area of contamination using an aboveground flexible hose to minimize disruption to the wetland area. Water will be diverted downstream of the excavation area where it will be discharged. In addition, a portion of the stream flow entering the wetland from the CHGE facility originates in Black Creek to the east of the Facility. This flow will be blocked temporarily during remediation activities. Once the remediation is complete, the flow contribution from Black Creek will be restored and allowed to follow natural flow patterns.

There will also be short-term impacts to the wetland along access routes to the staging area. The impacts will be minimized by scheduling field work during seasonally dry periods as well as by using construction mats for vehicular access. Outlying areas having localized exceedances will be mechanically and/or manually excavated to minimize impacts to the wetland from vehicular traffic.

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There will be a long-term positive impact to the wetland with the removal of contaminated sediment and replacement with uncontaminated soil. Additionally, the quality of the restored wetland will likely be improved as the replacement vegetation will be higher quality than the existing mix of native and invasive species.

3.2.5 Vegetation

The vegetation in the excavation area will be removed to facilitate access and sediment removal. Although there will be short-term impacts to vegetation during the sediment removal process, there will be no long-term impacts to vegetation since the wetland will be restored. Additionally, the vegetation restored to the wetland will likely be more desirable (i.e., less invasive species) than what currently exists.

3.2.6 Endangered, Threatened, Rare Species

A desktop analysis using the NYSDEC Environmental Resource Mapper (accessed June 2014) and the NYSDEC EAF Mapping Tool (accessed June 2014) databases indicated that there were no endangered, threatened or rare (ETR) species present at the Site. Intermittent visual observations by Kleinfelder personnel since 2009 have also not noted any obvious ETR species.

3.2.7 Visual Resources

There will be short-term negative impacts on the aesthetic nature of the Site during active excavation and sediment removal due to the equipment, vehicles, staging areas, and material staging. However, no long-term impacts to the visual resources of the site are expected since the wetland will be restored at the end of remediation.

3.2.8 Traffic

There will be short-term negative impacts on traffic in the vicinity of the Site during active excavation and sediment removal due to mobilization/demobilization from the Site, daily worker commuting, soil load out and transport offsite, and wetland restoration activities. The corrective measure may take approximately 16 weeks to complete. It is anticipated that 5 to 10 workers will be involved in daily activities and will arrive and depart from the site at normal commuting

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hours. Excavated sediment will be stockpiled in the soil staging/draining area, and load out will be conducted at a rate of approximately 15 trucks per day. Soil for backfill will be delivered to the Site as necessary to maintain construction sequencing at a rate of approximately 15 trucks per day. Flagmen will be used when trucks are entering or exiting the Site. Once the corrective measure and wetland restoration are complete, there will be no long-term impacts on traffic from the project.

3.2.9 Noise

There will be short-term negative impacts on noise at and adjoining the Site during active excavation, sediment removal, and backfilling due to the operation of heavy equipment and support vehicles. However, there are no nearby receptors for noise, except for CHGE employees at the Eltings Corners Facility. There will be no long-term impacts with respect to noise at the Site or adjoining the Site. The Site will be restored to an undeveloped wetland with no non-native noise sources.

3.2.10 Cultural Resources

A desktop analysis of cultural resources was conducted using the New York State Historic Preservation Office (NYSHPO) GIS database (accessed July 2014). No federal or state historic resources were identified on the Site. However, the Site is located within and at the southern edge of an archeologically sensitive area which is centered on the historic settlement of Eltings Corners (to the north of Route 299). Historic aerials viewed at Historic Aerials online database (accessed July 2014) indicate that the Site was an orchard in 1963. Due to the use of the Site for farming and subsequent ditching for drainage, the Site has been previously disturbed. Therefore, potential impacts to cultural resources are low.

3.2.11 Air Quality

There will be short-term negative impacts on air quality during the corrective measure and wetland restoration due to exhaust emissions from heavy equipment and vehicles. Additionally, fugitive dust may result in the staging area from heavy equipment and vehicular traffic, which is unpaved. No dust is expected to be emitted from sediment being excavated due to its high moisture content. If drying agent is necessary to absorb free liquid in sediment prior to transport,

dust control measures would be implemented to minimize dust migration from the drying agent stockpile. During excavation and load-out activities, measures will be taken to ensure dust is minimized. Dust suppression methods may include wetting down the staging area, covering the drying agent stockpile, and/or reducing and minimizing vehicle speed/trips.

There will be no long-term negative impacts on air quality, since the excavated areas will be restored as a natural wetland.

3.3 Human Health Assessment

There will be no impacts to human health from the corrective action. The Site is private property and is a densely vegetated wetland. There is no human use on the Site and no food or crop production. There is no evidence of recreational use or trespassing, and adjoining parcels are also not developed. Additionally, the contaminants are not volatile and are not wind-dispersed. As evidenced by sediment sampling, contamination has not been detected on the north side of Route 299.

During the corrective measure, soil staging, loading, transporting, and disposal will be conducted using predominantly mechanical means, limiting the amount of human contact with contaminated sediment. A site-specific health and safety plan will also be developed and employed detailing personal protective equipment (PPE) and other measures to minimize human exposure to contaminated sediment. Outlying, isolated areas of contamination will be excavated by light mechanical equipment or manual methods. There may be short-term impacts on workers from direct contact, but the impacts will be minimized by the use of appropriate PPE and appropriate hygiene. Due to the saturated nature of the sediment, dust is not expected to be an issue. Contaminated sediment will be stockpiled on poly-sheeting and covered with poly-sheeting prior to removal from the site. This will further minimize dust.

3.4 Reduction of Toxicity, Mobility, or Volume

There will be a long-term positive impact on the reduction of contaminant levels in the sediment due to the corrective measure of excavation and wetland restoration. The volume of contamination and toxicity of the sediment is expected to be significantly reduced by the

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corrective action. Excavation of contaminated sediment would also significantly reduce the mobility of contaminants in the wetland system.

3.5 Short-term Effectiveness of Corrective Measure

Contaminated sediment removal is the most expedient and effective means to reduce/remove the contaminant mass load from the ecosystem. Other remedial means (e.g., in situ fixation) may take decades or longer to reduce the sediment contaminant levels. Therefore, the corrective measure chosen will have significant short-term effectiveness for the reduction of PCB and PAH contaminant levels, and potential bioaccumulation effects in wildlife will be significantly reduced once the excavation and restoration is complete in the anticipated 16 week time frame.

3.6 Long-term Reliability

Contaminated sediment removal is not only the most expedient means to reduce/remove the contaminant, but also provides for long term reliability of maintaining Class A PCB and PAH levels in the wetland once the remediation is complete. Continued contamination from the Eltings Corners Facility (east side of South Street) has been minimized to the greatest extent practicable; there are no continuous sources of contamination from the storm water sewer system as evidenced by the surface water sample discussed in Section 1.2. Additionally, CHGE has an SPCC Plan in place to prevent and, if need be, respond to any spills at the facility.

Additionally, an M&M Plan will be in place to provide sediment quality monitoring at the Outfall for 5 years following the completion of the corrective measure. The addition of clean backfill at the Site to bring the area back up to grade will also minimize the direct contact of any wildlife with the Class A sediment left in place.

Therefore, there is long-term reliability of the corrective action.

3.7 Permits and Approvals

Based on the selected corrective measure, it is anticipated that the following environmental permits/approvals will be required to initiate and perform the work:

- A SPDES permit may be required for the discharge of treated water draining from the sediments, if necessary.

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- Based on the October 7, 2014 NYSDEC comment letter, a NYSDEC Freshwater Wetland permit will not be required given that the work activities within the scope of the project fall under a corrective action. However, the substantive requirements of the Freshwater Wetland Permit Program must be followed. All plans will be submitted to the NYSDEC for approval and to ensure that Wetland permit requirements are considered and appropriate protection/restoration is taken.
- The project may require a U.S. Army Corp Nationwide Permit for activities that disturb the wetland. A 401 Water Quality Certification will also be needed.
- The project may require a Storm Water Pollution Prevention Plan (SWPPP) to control storm water quality, including turbidity, during excavation and restoration phases of the work. Additionally, a Notice of Intent (NOI) may need to be submitted to the NYSDEC for construction activities on areas over 1 acre in size for coverage under State General permit GP-0-10-001 or any superceding permit.

3.8 Institutional Controls

Currently, it is anticipated that institutional controls will not be necessary with sediment removal and wetland restoration as the selected corrective measure. Sediment removal will be followed by confirmatory sediment sampling to verify that cleanup criteria are achieved. Under this scenario, there will be complete source control and removal, and as such institutional controls will not be necessary.

3.9 Implementability

The selected corrective action of sediment excavation and wetland restoration can be effectively implemented for the area of PCB and PAH contamination at the Site. The Site is an uninhabited wetland with minimal nearby human receptors. The areal extent of PCB and PAH contamination is predominately located along the center of the stream channel to distances of approximately 500 feet from the Outfall. Localized exceedances occur beyond the 500-foot extent, but remain south of NY Route 299, and are to be addressed by local, targeted excavation. Therefore, the areal extent of the impacted sediment is defined and accessible. The success of the contaminated sediment removal will be confirmed via post-excavation sampling for PCBs and PAHs. There are upland areas outside the wetland that are accessible and available for staging

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and support activities. The remedial area is accessible using conventional excavation equipment. Drier periods of the year may allow mechanical equipment access with minimal wetland disturbance. The stream flowing along the center channel is able to be diverted during excavation activities. Additionally, the wetland will be restored to an improved condition since existing invasive species will be eliminated during remedial activities. There will also be no long-term engineering controls or institutional controls needed with this corrective action.

3.10 Cost Estimate

This Focused Corrective Measures Study discusses the presumptive remedy that was selected through discussions with CHGE and NYSDEC. This report does not identify and/or screen alternative remedial technologies and their associated estimated costs.

A cost estimate was prepared for the presumptive remedy of sediment removal (above Class A PCB and PAH levels as defined by the 2014 NYSDEC Screening and Assessment of Contaminated Sediment guidance) and wetland restoration. The estimate to implement the selected corrective measure of sediment removal and wetland restoration is $2,062,833. This includes pre-design activities, sediment removal, backfill, wetland restoration, and post-remediation sediment quality and wetland monitoring.

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4 JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE

Sediment removal and wetland restoration is the recommended corrective measure for the Site. As discussed, this corrective measure will achieve all of the RAOs for the Site. Excavation can be feasibly implemented at the Site and is an immediate and effective method to remove contaminated source materials to attain the selected cleanup level (Class A levels). The corrective measure will be protective of human health and the environment through removal of the contaminated material, thus restoring the wetland habitat in a reasonable timeframe and improving protection of the ecosystem by eliminating bioaccumulation effects. Although there will be short-term impacts, those impacts can be mitigated using engineering controls to minimize wetland disturbance and potential impact to downstream receptors.

Short-term engineering controls and mitigation measures to be implemented during construction to protect human health and the environment include, but are not limited to:

- site specific health and safety plan and PPE to minimize incidental contact with contaminated material and potential exposure of workers;
- stream diversion to manage storm water during construction;
- downstream sediment barrier to minimize the potential for conveyance of impacted sediment from the Site;
- exclusion zone with dedicated construction equipment to minimize potential to transfer impacted material off-site;
- sediment staging/drainage area to condition sediment for transport and disposal off-site,
- collection and treatment of water from sediment dewatering and dewatering from excavated areas, if necessary, for discharge under a construction SPDES permit;
- dust suppression measures in the staging area to minimize nuisance dust;
- temporary access consisting of construction matting and excavation using a long-reach excavator to minimize disturbance to the wetland area; and
- Sequencing of the sediment removal

In summary, given the RAOs for the Site will be achieved with no institutional or long-term engineering controls, sediment removal and wetland restoration is recommended as the preferred corrective action to address Class B and Class C PCB- and PAH-impacted sediments at the Site.

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5 REPORTING

Progress and milestone reports will be provided to the NYSDEC as needed during design and remediation activities in accordance with Conditions B.8.(a) and E.10 of Module II of the Part 373 Permit.

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6 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more-detailed and extensive studies yield more information, which may help understand and manage the level of risk. The client and key members of the design team should discuss the issues covered in this report with Kleinfelder, so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk and expectations for future performance and maintenance.

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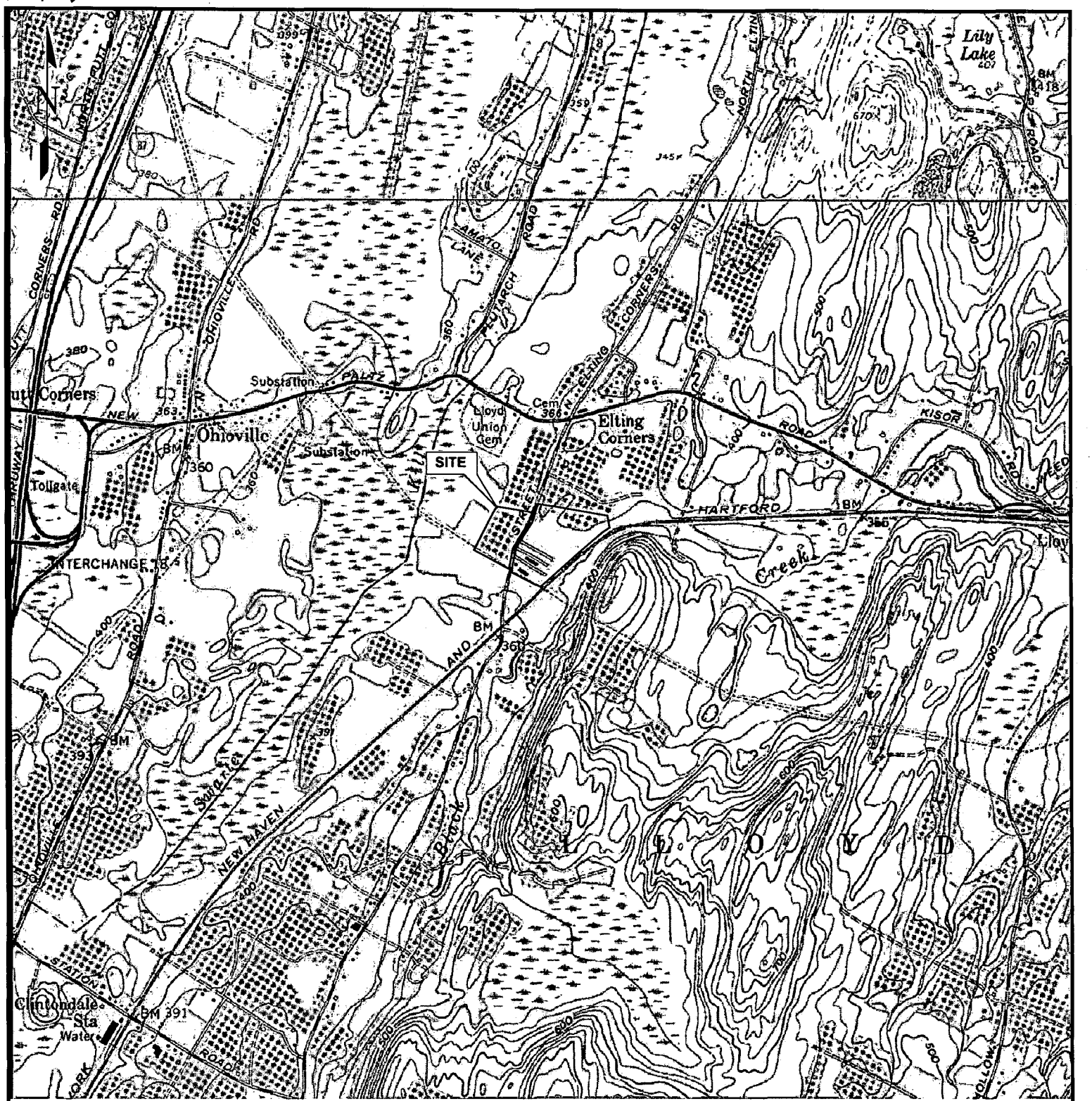
FIGURES



SOURCE:

1. USGS 7.5' TOPOGRAPHIC MAP, CLINTONDALE QUANDRAGLE (1957)

2000 1000 0 2000

APPROXIMATE SCALE (feet)

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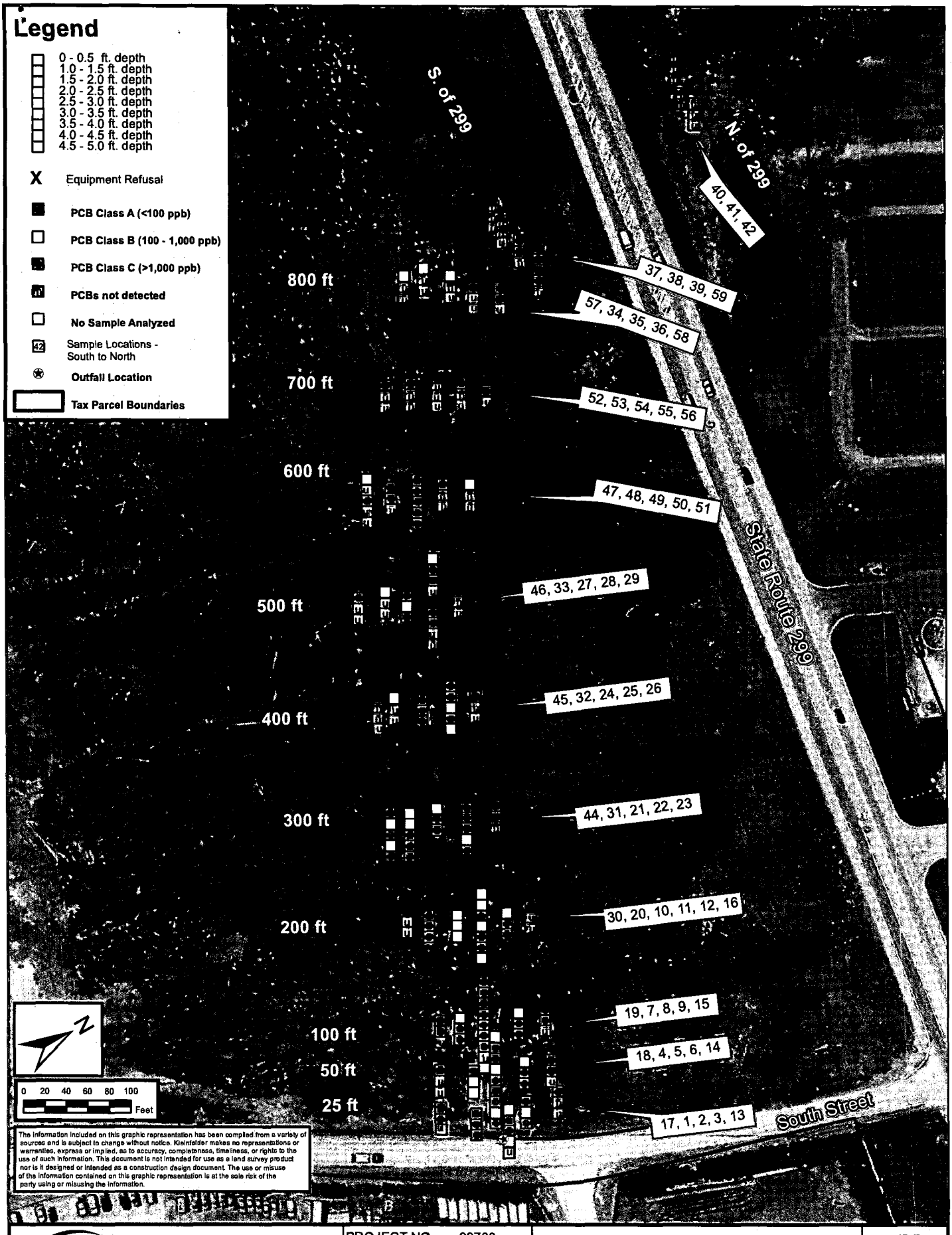
PROJECT NO.	99768
DRAWN:	03/12/2010
DRAWN BY:	CTH
CHECKED BY:	
FILE NAME:	99768LLOYD.dwg

SITE LOCATION MAP

CHG&E
ELTINGS CORNERS PROPERTY
24 SOUTH STREET
TOWN OF LLOYD, ULSTER COUNTY, NEW YORK

FIGURE
1



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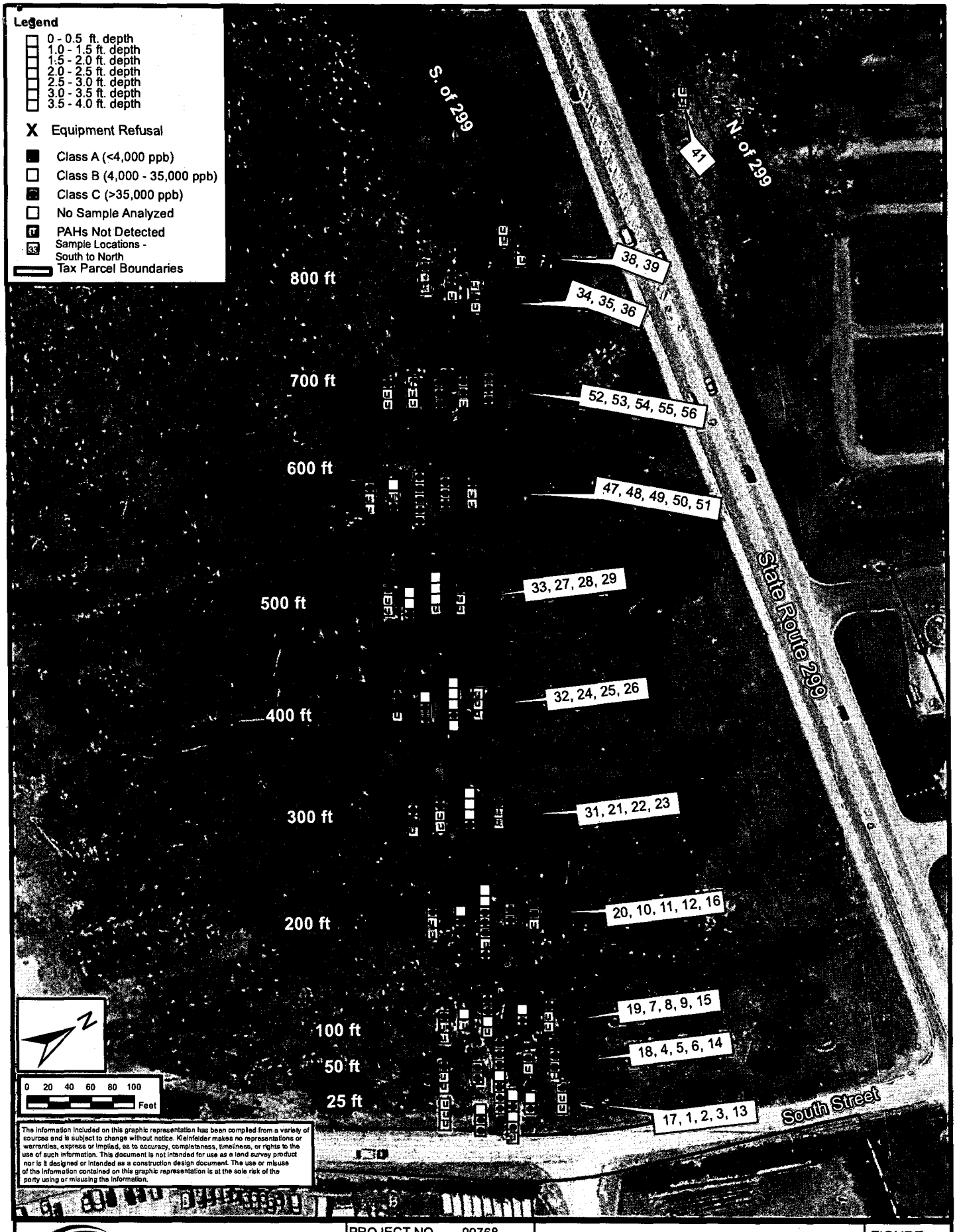
PROJECT NO.	99768
DRAWN:	10/17/2014
DRAWN BY:	GO/SC
CHECKED BY:	JC
FILE NAME:	Fig2_PCB

Total PCB Results

Source: NYS GIS Clearinghouse 2004 ORTHOPHOTO

C.H.G.E.
ELTINGS CORNERS PROPERTY
SOUTH STREET
TOWN OF LLOYD, ULSTER COUNTY, NEW YORK

FIGURE
2



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DRAWN:	10/17/2014
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CHECKED BY:	JC
FILE NAME:	Fig3_PAH

Total PAH Results

Source: NYS GIS Clearinghouse 2004 ORTHOPHOTO

C.H.G.E.
ELTINGS CORNERS PROPERTY
SOUTH STREET
TOWN OF LLOYD, ULSTER COUNTY, NEW YORK

FIGURE
3

KEY

- 0-0.5
- 1.0-1.5
- 1.5-2.0
- 2.0-2.5
- 2.5-3.0
- 3.0-3.5
- 3.5-4.0
- 4.0-4.5
- 4.5-5.0

- CLASS C CATEGORY SEDIMENT PCB SAMPLES
- CLASS B CATEGORY SEDIMENT PCB SAMPLES
- CLASS A CATEGORY SEDIMENT PCB SAMPLES
- NO SAMPLE COLLECTED

NOTE:
1. BYPASS FROM OUTFALL TO BE INSTALLED FOR DURATION OF SEDIMENT EXCAVATION AND RESTORATION.
2. LOCALIZED IMPACTS RELATED TO CLASS B PAHs AT SP-48 TO BE REMOVED BY MECHANICAL AND/OR MANUAL METHODS.

LOCALIZED IMPACTS TO BE REMOVED BY MECHANICAL AND/OR MANUAL METHODS EXCLUSION ZONES AROUND EACH LOCALIZED IMPACTED AREA

SEDIMENT BARRIER

APPROXIMATE LIMITS OF EXCAVAVTION

STREAM CHANNEL BYPASS

EXCLUSION ZONE

DECONTAMINATION PAD

EXCAVATED SEDIMENT STAGING/DRAINING AREA

STAGING AREA

TEMPORARY ACCESS ROAD

SOIL STAGING FOR BACKFILL

STABILIZED CONSTRUCTION ZONE

OUTFALL (SPDES #NY0148849) (See Note 1)

South St

CHGE ELTINGS CORNERS FACILITY

0 30 60 120 Feet

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PROJECT NO.	20143521
DRAWN:	10/27/2014
DRAWN BY:	JR
CHECKED BY:	JM
FILE NAME:	Corrective Measures.mxd

CORRECTIVE MEASURES PLAN

C.H.G.E CORP.
ELTINGS CORNERS PROPERTY
SOUTH STREET
TOWN OF LLOYD, ULSTER COUNTY, NEW YORK

FIGURE
4

TABLES

Table 1
CHG&E Eltings Corners Facility, Lloyd, New York
2012 Wetland Investigation
Sediment Analytical Results
Summary of Total PCBs and Total PAH Concentrations

Transect	75' South of stream channel			50' South of stream channel			25' South of stream channel			Centerline of stream channel			25' North of stream channel			50' North of stream channel		
	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)	Sample Location	Total PCBs (µg/kg)	Total PAH's (µg/kg)
North of Route 299							SP40 0-0.5	ND	na	SP41 0-0.5	ND	ND	SP42 0-0.5	ND	na			
							SP40 1-1.5	ND	na	SP41 1-1.5	ND	ND	SP42 1-1.5	ND	na			
							SP40 1.5-2	ND	na	SP41 1.5-2	ND	na	SP42 1.5-2	ND	na			
							SP40 2-2.5	na	na	SP41 2-2.5	na	na	SP42 2-2.5	na	na			
							SP40 2.5-3	na	na	SP41 2.5-3	na	na	SP42 2.5-3	na	na			
South of Route 299							SP37 0-0.5	ND	na	SP38 0-0.5	ND	ND	SP39 0-0.5	2,900	2,164	SB59 0-0.5'	21 J	na
							SP37 1-1.5	ND	na	SP38 1-1.5	ND	ND	SP39 1-1.5	27J	ND	SB59 1-1.5'	9.6 J	na
							SP37 1.5-2	ND	na	SP38 1.5-2	ND	na	SP39 1.5-2	ND	na	SB59 1.5-2'	16 J	na
							SP37 2-2.5	na	na	SP38 2-2.5	na	na	SP39 2-2.5	na	na	SB59 2-2.5'	15 J	na
							SP37 2.5-3	na	na	SP38 2.5-3	na	na	SP39 2.5-3	na	na	SB59 2.5-3'	ND	na
800-foot				SB57 0-0.5'	610	na	SP34 0-0.5	400	941	SP35 0-0.5	110	93	SP36 0-0.5	69J	ND	SB58 0-0.5'	16 J	na
				SB57 1-1.5'	ND	na	SP34 1-1.5	ND	na	SP35 1-1.5	ND	na	SP36 1-1.5	ND	na	SB58 1-1.5'	7.9 J	na
				SB57 1.5-2'	ND	na	SP34 1.5-2	ND	ND	SP35 1.5-2	ND	ND	SP36 1.5-2	ND	ND	SB58 1.5-2'	ND	na
				SB57 2-2.5'	na	na	SP34 2-2.5	na	na	SP35 2-2.5	na	na	SP36 2-2.5	na	na	SB58 2-2.5'	E&A	na
				SB57 2.5-3'	na	na	SP34 2.5-3	na	na	SP35 2.5-3	na	na	SP36 2.5-3	na	na	SB58 2.5-3'	E&A	na
700-foot				SB52 0-0.5'	35	432	SB53 0-0.5'	24 J	ND	SB54 0-0.5'	ND	46	SB55 0-0.5'	38	834	SB56 0-0.5'	71	290
				SB52 1-1.5'	ND	ND	SB53 1-1.5'	ND	ND	SB54 1-1.5'	ND	55	SB55 1-1.5'	ND	30	SB56 1-1.5'	17 J	33
				SB52 1.5-2'	ND	ND	SB53 1.5-2'	ND	ND	SB54 1.5-2'	ND	34	SB55 1.5-2'	ND	ND	SB56 1.5-2'	ND	27
				SB52 2-2.5'	na	na	SB53 2-2.5'	na	na	SB54 2-2.5'	na	na	SB55 2-2.5'	na	na	SB56 2-2.5'	na	na
				SB52 2.5-3'	na	na	SB53 2.5-3'	na	na	SB54 2.5-3'	na	na	SB55 2.5-3'	na	na	SB56 2.5-3'	na	na
600-foot				SB47 0-0.5'	590	3182	SB48 0-0.5'	55	7,465	SB49 0-0.5'	27	300	SB50 0-0.5'	80	2,320	SB51 0-0.5'	110	1,253
				SB47 1-1.5'	ND	ND	SB48 1-1.5'	4.6 J	ND	SB49 1-1.5'	26	190	SB50 1-1.5'	ND	69	SB51 1-1.5'	ND	ND
				SB47 1.5-2'	5.5 J	ND	SB48 1.5-2'	ND	27	SB49 1.5-2'	34	575	SB50 1.5-2'	ND	56	SB51 1.5-2'	ND	ND
				SB47 2-2.5'	ND	na	SB48 2-2.5'	na	na	SB49 2-2.5'	4.7 J	61	SB50 2-2.5'	na	na	SB51 2-2.5'	na	na
				SB47 2.5-3'	ND	na	SB48 2.5-3'	na	na	SB49 2.5-3'	5.4 J	64	SB50 2.5-3'	na	na	SB51 2.5-3'	na	na
500-foot	SB46 0-0.5'	26	na	SP33 0-0.5	130	92	27A 0-6"	1,600	9,574	28A 0-6"	570	17,298	29A 0-6"	15J	145			
	SB46 1-1.5'	ND	na	SP33 1-1.5	ND	ND	27B 12-18"	110	12,135	28B 12-18"	3,000	25,916	29B 12-18"	ND	ND			
	SB46 1.5-2'	ND	na	SP33 1.5-2	ND	ND	27C 18-24"	19J	780	28C 18-24"	5,300	21,865	29C 18-24"	ND	ND			
	SB46 2-2.5'	na	na	SP33 2-2.5	na	na				SP28 2-2.5	ND	ND						
	SB46 2.5-3'	na	na	SP33 2.5-3	na	na				SP28 2.5-3	na	na						
										SB28 3-3.5'	1,600	na						
										SB28 3.5-4'	28	na						
										SB28 4-4.5'	ND	na						
										SB28 4.5-5'	ND	na						
400-foot	SB45 0-0.5'	ND	na	SP32 0-0.5	290	980	24A 0-6"	1,100	9,939	25A 0-6"	3,900	22,700	26A 0-6"	15J	ND			
	SB45 1-1.5'	ND	na	SP32 1-1.5	ND	na	24B 12-18"	66	266	25B 12-18"	2,600	27,317	26B 12-18"	ND	ND			
	SB45 1.5-2'	ND	na	SP32 1.5-2	ND	ND	24C 18-24"	42	401	25C 18-24"	360	8,584	26C 18-24"	ND	ND			
	SB45 2-2.5'	na	na	SP32 2-2.5	na	na				SB25 2-2.5'	1,700	599						
	SB45 2.5-3'	na	na	SP32 2.5-3	na	na				SB25 2.5-3'	510	4,089						
										SB25 3-3.5	Refusal							
										SB25 3.5-4'	Refusal							
										SB25 4-4.5'	Refusal							
										SB25 4.5-5'	Refusal							
300-foot	SB44 0-0.5'	1,500	na	SP31 0-0.5	550	511	21A 0-6"	590	1,438	22A 0-6"	1,500	10,361	23A 0-6"	17J	1,062			
	SB44 1-1.5'	100	na	SP31 1-1.5	430	na	21B 12-18"	33	ND	22B 12-18"	1,600	22,450	23B 12-18"	4.4J	ND			
	SB44 1.5-2'	62	na	SP31 1.5-2	21J	ND	21C 18-24"	25	ND	22C 18-24"	4,000	19,991	23C 18-24"	ND	ND			
	SB44 2-2.5'	470	na	SP31 2-2.5	26J	na				SP22 2-2.5	610	110						
	SB44 2.5-3'	4 J	na	SP31 2.5-3	29J	na				SP22 2.5-3	16J	na						
										SB22 3-3.5'	Refusal							
										SB22 3.5-4'	Refusal							
										SB22 4-4.5	Refusal							
										SB22 4.5-5'	Refusal							
200-foot	SP30 0-0.5	ND	na	20A 0-6"	58	235	10A 0-6"	185	30,864	11A 0-6"	298	21,568	12A 0-6"	600	3,631	16A 0-6"	5.1J	90
	SP30 1-1.5	ND	na	20B 12-18"	8.6J	ND	10B 12-18"	890	3,901	11B 12-18"	197	25,099	12B 12-18"	21J	105	16B 12-18"	ND	12
				20C 18-24"	4J	ND	10C 18-24"	210	na	11C 18-24"	1,450	84,950	12C 18-24"	29	na	16C 18-24"	ND	ND
										SB11 2-2.5'	330	1,346						
										SB11 2.5-3'	33	44						
							8			SB11 3-3.5'	8.8 J	ND						
										SB11 3.5-4'	1,000	437						
										SB11 4-4.5'	Refusal							
										SB11 4.5-5'	Refusal							
100-foot				19A 0-6"	9J	153	7A 0-6"	900	7,780	8A 0-6"	3,200	49,040	9A 0-6"	310	10,136	15A 0-6"	27J	844
				19B 12-18"	4.8J	ND	7B 12-18"	74	ND	8B 12-18"	1,900	47,793	9B 12-18"	28	72	15B 12-18"	3.1J	ND
				19C 18-24"	ND	ND	7C 18-24"	4.7J	na	8C 18-24"	1,900	24,149	9C 18-24"	9J	na	15C 18-24"	ND	ND
										SP8 2-2.5	87	ND						
										SP8 2.5-3	96	na						
										SB8 3-3.5'	68	na						
										SB8 3.5-4'	26	na						
										SB8 4-4.5'	ND	na						
										SB8 4.5-5'	280	na						
50-foot				18A 0-6"	17J	114	4A 0-6"	3,600	54,302	5A 0-6"	530	202,190	6A 0-6"	890	50,099	14A 0-6"	33	485
				18B 12-18"	ND	ND	4B 12-18"	300	76	5B 12-18"	9,700	50,235	6B 12-18"	23	ND	14B 12-18"	4.5J	80
				18C 18-24"	ND	ND	4C 18-24"	240	na	5C 18-24"	3,600	66,410	6C 18-24"	4.3J	na	14C 18-24"	ND	ND
										SB5 2-2.5'	320	19,940						
										SB5 2.5-3'	45	285						
										SB5 3-3.5'	12,600	192						
										SB5 3.5-4'	66	16						
										SB5 4-4.5'	140	na						
										SB5 4.5-5'	8.4 J	na						
25-foot				17A 0-6"	7.3J	ND	1A 0-6"	2,100	24,756	2A 0-6"	940	26,470	3A 0-6"	6,200	20,474	13A 0-6"	26J	236
				17B 12-18"	2.7J	ND	1B 12-18"	2,800	1,770	2B 12-18"	2,000	3,334	3B 12-18"	270	854	13B 12-18"	ND	ND
				17C 18-24"	ND	ND	1C 18-24"	1,100	280	2C 18-24"	2,610	13,434	3C 18-24"	87	na	13C 18-24"	ND	ND
										SP2 2-2.5	430	24						
										SP2 2.5-3	ND	ND						
Upgradient Fire pond										SP43 0-0.5	ND	ND						
										SP43 1-1.5	ND	ND						
										SP43 1.5-2	ND	ND						
										SP43 2-2.5	na	na						
										SP43 2.5-3	na	na						

NOTES:
E&A - Extracted and Archived
na - not analyzed
ND - not detected
µg/kg - microgram per kilogram
Yellow Shading Denotes **Class B** Sediment for PCBs: 100-1000 ppb
Yellow Shading Denotes **Class B** Sediment for PAHs: 4,000-35,000 ppb
Red Shading Denotes **Class C** Sediment for PCBs: > 1000 ppb
Red Shading Denotes **Class C** Sediment for PAHs: > 35,000 ppb

TABLE 2
Summary of Selected Remedial Actions to Meet Remedial Objectives
Corrective Measures Study Report – Eltings Corners Facility, Town of Lloyd, Ulster County

Remedial Action Objectives (RAOs)	Selected Remedial Actions
Sediment RAOs for Protection of Public Health	
Prevent direct contact with contaminated sediments	• Site is privately owned property that is not open to the public and is an uninhabited wetland. • Achieved by implementing a site-specific Health and Safety Plan to minimize workers' direct contact with contaminated sediment. • Achieved by removing Class B and Class C PCB- and PAH-impacted sediment from the Site. Confirmatory sampling will be conducted. • Achieved by implementing engineering controls during construction to minimize disruption to the wetland and reduce and protect downstream receptors from any potential sediment transport.
Prevent surface water contamination which may result in fish advisories	• Achieved by continuing to follow the Eltings Corners Facility SPCC Plan. • Achieved by removing Class B and Class C PCB- and PAH-impacted sediment from the Site. Confirmatory sampling will be conducted. • Achieved by implementing engineering controls during construction to minimize disruption to the wetland and reduce and protect downstream receptors from any potential sediment transport.
Sediment RAOs for Environmental Protection	
Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of (ambient water quality criteria)	• Achieved by diverting surface water flow around the excavation area during sediment removal. • Achieved by implementing engineering controls (such as a downgradient sediment barrier) during construction to minimize disruption to the wetland and minimize any sediment transport within the wetland. • Achieved by removing Class B and Class C PCB- and

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	PAH-impacted sediment from the Site. Confirmatory sampling will be conducted. • Achieved by stockpiling excavated sediment in a containment area so that it will not come in contact with ground surface and runoff will be contained and treated. • Achieved by treating water from dewatering onsite prior to discharge via a SPDES permit.
Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the aquatic food chain.	• Achieved by removing Class B and Class C PCB- and PAH-impacted sediment from the Site. Confirmatory sampling will be conducted. • Achieved by implementing engineering controls (such as a downgradient sediment barrier) during construction to minimize disruption to the wetland and minimize any sediment transport within the wetland. • Achieved by covering stockpiled excavated sediment to prevent scavenging and direct contact of animals.
Restore sediments to pre-release/background conditions to the extent feasible	• Achieved by removing Class B and Class C PCB-and PAH-impacted sediment from the Site. Confirmatory sampling will be conducted. • Achieved by restoring wetland in-kind as an emergent wetland marsh.