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FINAL CONSTRUCTION COMPLETION REPORT FOR WILLOWBROOK POND INTERIM REMEDIAL MEASURE DESIGN

FORMER ALTECH SPECIALTY STEEL - WILLOWBROOK POND – OPERATING UNIT 2

WILLOWBROOK AVENUE

CITY OF DUNKIRK, CHAUTAUQUA COUNTY, NEW YORK

Site No. 907022
WORK AUTHORIZATION D006132-30
SHAW PROJECT No. 134685.30

September 2015

Submitted to:

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Table of Contents

List of Tables

List of Figures

List of Appendices

Certification

I, Matthew J. Sausville, certify that I am currently a Qualified Environmental Professional as defined in 6 New York Codes, Rules and Regulations, Part 375 and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Department of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Matthew J. Sausville
Printed Name of Professional Engineer

Signature of Professional Engineer

Registration Number: 091031
State: New York

Date: 09-30-2015

1.0 Introduction

The purpose of this Final Construction Completion Report (CCR) is to document the site construction activities that took place at the former Altecth Specialty Steel Facility, Willowbrook Pond remediation project in Dunkirk, New York (**Figure 1**).

Shaw Environmental & Infrastructure of New York, P.C. (Shaw), under contract to the New York State Department of Environmental Conservation (NYSDEC), was retained to complete the construction management for the implementation of the AlTech Specialty Steel OU2A – Willowbrook Pond Closure Interim Remedial Measure (IRM).

2.0 Site Background and Site History

The Former AlTech Specialty Steel site (Site) is an industrial property located within the City of Dunkirk that is currently listed as a Class 2 Inactive Hazardous Waste Disposal (Site No. 907022) (**Figure 1**). Within the Site is Willowbrook Pond, a 1.89 acre surface water impoundment with an approximate capacity of 5.4 million gallons that was originally designed to be a storage area of cooling water for the facility. However, over time the pond evolved into a receptacle for discharges from a number of process-line sources (including product rinsing) and stormwater runoff. Depositions of sediment, metallic fines, and other process wastes from historic facility operations resulted in the buildup of sludge and sediment along the bottom of the pond. This material is known to contain hazardous constituents based upon review of the historic information provided to Shaw by the NYSDEC and the analytical data generated during the site characterization portion of this work.

In October, 2009 an Interim Remedial Measure/Remedial Investigation/Feasibility Study (IRM/RI/FS) was conducted by GZA GeoEnvironmental of New York (GZA) for Special Metals Corporation (SMC), owners of the adjoining property east of the site. According to the results of the GZA assessments, Polychlorinated Biphenols (PCB) concentrations above pertinent Recommended Soil Cleanup Objectives (RSCO's) were detected in side wall confirmation samples located from 0-10 feet and 0-4 feet on the west/northwest and west/southwest SMC property borders, respectively.

In April 2012, Shaw was directed to begin the IRM design in accordance with Work Authorization (WA) D006132-22. A primary assessment task within this WA was the Site Characterization (SC) component of the IRM design, which was completed in July 2011 and May 2012. The intent of the SC was to characterize surface and subsurface soils and sediments within the pond and use this data to develop a remedial strategy and disposal option consistent with the analytical data.

The July 2011/May 2012 SC component consisted of the following elements:

- Advancement of soil borings to facilitate the collection of subsurface soil samples from areas located immediately adjacent to the banks of Willowbrook Pond;
- Collection of surface soil samples from the banks of Willowbrook Pond;
- Collecting of sediment samples from the pond bottom;
- Collecting surface water samples from the pond;
- Installation of test pits;
- Installation of well points for use in dewatering operations during IRM implementation;
- Installation of bedrock wells to evaluate hydraulic communication between the bedrock and overburden;

- Preparing a composite sample from each matrix for Toxicity Characteristics Leaching Procedure (TCLP) analysis for the purpose of characterizing this material for off-site disposal; and;
- Completion of a site-wide utility mark-out and survey showing all sample locations, topography, utilities, and all other relevant site features (**Figure 2**).

The results from the July 2011/ May 2012 SC event showed elevated of PCB and Metal detections exceeding their respective Remedial Soil Cleanup Objectives (RSCOs) for the three media that were sampled. These reports were completed under separate cover. Based on these findings, a remedial design for the IRM was completed in April 2013 (Contract Documents). The Contract Documents prepared for this project are provided in **Appendix A**.

3.0 IRM Design and Scope of Work

3.1 Scope of Work Overview

The Contractor was required to furnish all labor, materials, equipment, subcontractor services, and incidentals related to the implementation of the IRM at the Site. The scope of work included site preparation/clearing and grubbing, the installation of erosion and sediment controls, excavation and handling/off-site disposal of impacted materials, excavation/grading of site materials, installation and use of a groundwater dewatering and treatment system, dewatering the recycle water pond, excavation of pond sediment, excavation of soil, removing/abating certain structures/building (containing asbestos in the roofing tar of shingles) associated with the recycle water pond, backfilling, construction of a final surface soil cover system, grading and drainage as indicated on the Contract Drawings.

The work also required the Contractor to plan, organize, monitor, and coordinate the logical and timely sequence of site activities in accordance with all applicable regulatory requirements. These activities included preparation of submittals, permits, attendance at project meetings, and administrative activities.

The IRM implementation work included, but is not limited to, the following:

General: General activities include setting up Contractor/Shaw field office, staff, and construction facilities; mobilizing and demobilizing all equipment, materials, and labor; performing site monitoring and protection; mobilizing and implementing health and safety equipment and practices; setting up and performing site security during the project construction period; and performing a perimeter air monitoring program; and complying with all requirements specified within the Contract Documents.

In addition, general activities included surveying and survey control, ancillary support services and activities throughout the performance of site activities as well as post-construction activities (e.g., as-built documentation).

Demolition of Existing Structures: As required by the IRM this task included the demolition and removal of onsite structures that were deemed to interfere with proposed construction activities. Specifically, a small structure located at the southwest corner of the pond was demolished. Mastic ACM was identified in the shingle roof tar and these items were abated in accordance with Code Rule 56, and as directed by Shaw. Additionally, concrete structures within the pond were proposed for demolition.

Site Preparation: Site preparation included all activities involving preparation of the Site for the specified work such as obtaining necessary permits; performing water management; providing erosion and environmental controls; clearing and grubbing; removing existing fences (as necessary), installing temporary construction fencing, and removing and plugging abandoned utilities (as encountered during material excavation).

Material Excavation: As required by the IRM design, impacted sediments and soils were to be excavated to the horizontal limits and depths shown on the Contract Drawings. Materials generated during the excavation efforts were to be transported to a designated soil stockpile area within the Site for dewatering/amendment activities (as necessary) to facilitate the material suitable for off-site disposal. The material was to be disposed of as specified and outlined in the Contract Documents. The excavation activities were to require dewatering of pond and groundwater, and drainage of stockpiled material. Water generated as a result of these activities was to be collected, treated, and properly discharged.

Temporary Water Treatment System: Install a water treatment system to treat water generated as a result of dewatering activities during construction and to control groundwater within the Site. Specifically, design the water treatment system to treat pond water and water generated during construction efforts as well as groundwater recovered from groundwater collection system at a rate to prevent water infiltration into excavation boundaries. Operate the pond and water treatment system during the performance of the IRM remedial construction activities. Upon completion of construction activities remove the system from service and restore the area to its original condition.

Backfilling: Backfilling construction includes the placement and compaction of clean imported backfill material in all excavation areas as shown on the Contract Drawings.

Final Surface Cover: Final surface cover system construction includes re-grading of the subgrade, installation of a final soil surface cover system, topsoil and seeding, and associated testing.

Site Restoration: Site restoration includes installing and repairing fences and gates, installing permanent erosion control measures, repairing and replacing any damaged or temporarily relocated site features, seeding and mulching disturbed areas, establishment of upland vegetation, and removing temporary construction and erosion and sediment control measures (e.g., decontamination pads, material staging areas, site trailers, silt fencing, and hay bales).

The detailed scope of work and Contractor requirements were described in several components that collectively represent the IRM design. These components include the following:

1. Contract Drawings - See Contract Documents (**Appendix A**)
2. Technical Specifications - See Contract Documents (**Appendix A**)
3. Construction Quality Assurance Project Plan – See Submittals (**Appendix B**)
4. Ancillary documents including the Storm Water Pollution Prevention Plan, Health and Safety Plan, Community Air Monitoring Plan, and Waste Handling and Disposal Plan, Operations Plan, Work Plan and Contingency Plan. See Submittals (**Appendix B**).

4.0 Remedy Implementation

4.1 Contractor Submittals

The Contractor submitted the following documents in accordance with the approved Contract Documents. The Approved Submittals are in accordance with the Contract Documents. The Approved Submittals are included in **Appendix B** and are listed below.

- Asbestos Abatement Work Plan
- Community Air Monitoring Plan (CAMP)
- Sampling and Analysis Plan
- Site-Specific Health and Safety Plan
- Operations Work Plan
- Pond Water Characterization Results
- Product Data
- Pump Test Sample Plan and Results
- Sampling and Analysis Plan
- Stormwater Pollution Prevention Plan
- Transportation Plan

4.2 Premobilization Site Activities (Dewatering Test)

Horizon Environmental Services (Horizon) proposed to conduct a pump test of Willowbrook Pond in order to help determine the recharge rate for planning the construction phase. The plan was draw down the pond to approximately 1.5-2' above the silt bottom to evaluate the rate of recharge of the pond. On January 16, 2014, Horizon sampled the pond water from 2', 4', and 6' below the surface. Samples indicated that no contaminants exceeded the surface discharge limits with the exceptions of nickel and sodium. The NYSDEC indicated the previously established limits for nickel (which are higher) were not exceeded and that the sampling and analysis conducted on January 16, 2014 were acceptable. Horizon discharged of approximately three million gallons of water in the intermittent stream immediately to the south of the Willowbrook Pond (Willowbrook Creek) within the property boundary.

Horizon mobilized to the site on February 10, 2014 and used DV-80 diesel pump to lower the water level in Willowbrook pond down to approximately to 2 feet above the pond bottom. The test was completed on February 13, 2015. The maximum capacity of the pump was 500 gallons per minute. The estimated flow rate during the pump test was approximately 380 - 400gpm. The pump was operated 24 hours per day until the desired water level in the pond had been reached.

The water was extracted from the pond using a three-inch diameter vacuum line suspended from the pond bottom using a wooden frame inserted through a hole in the ice two feet above the bottom of the pond.

The wooden frame had two 12" x 8" x 16" concrete blocks attached to the bottom to prevent it from floating. The system was installed approximately 20 feet from the south west corner of the pond. The water was discharged to an on-site stormwater catch basin located in the southwest corner of the Site. The outfall of the catch basin discharged to Willowbrook Creek south east of the pond. Horizon completed turbidity measurements as directed and all results were less than 2 NTU.

The diesel pump was re-fueled daily by a local fuel delivery from Griffith Energy. After the pond water was drawn down approximately 1.5-2' above the bottom, Horizon demobilized the pumping equipment and monitored water depth for daily fluctuations. Based on this information Horizon developed their means and methods to dewater the pond and complete the required scope of work.

Two water samples were collected at the discharge point on February 11 and 12, 2014 and analyzed for TAL metals (EPA Method 6010C) and PCBs (EPA method 8082A). Results from both samples indicated the presence of low level detections for PCBs (.089 parts per billion (ppb)) and (.099 ppb) respectively. Following receipt of the results, the pump test was stopped and pump unit was demobilized. Complete analytical results from the dewatering test are summarized on **Table 1** and full analytical data packages are provided in **Appendix C**.

4.3 Contractor Mobilization and Site Preparation

Beginning March 31st, 2014, Horizon mobilized site personnel, heavy equipment, water pumping and treatment equipment, materials and subcontractors necessary for the execution of the work. Horizon also mobilized the temporary storage container and completed the following described herein.

4.3.1 Clearing and Grubbing

On March 31st 2014 Horizon and sub-contractor St. George Construction mobilized to the Site to begin clearing and grubbing activities. The areas cleared and grubbed were completed in accordance with the areas shown on the Contract Documents. Trees and vegetation were left in place along the southern border in order to maintain a visual screen from the residential area across Willowbrook Avenue and to provide a vegetative buffer between the work area and Willowbrook Creek.

A track-mounted hydro-ax was used for all trees and brush small enough to be cut with that method. Trees too large for the hydro-ax were cut using chainsaws. Stumps outside the proposed excavation area were cut as close as possible to ground surface and then ground down with a stump grinder to 6" below ground surface.

Stumps within the proposed excavation area were not removed below ground surface during clearing and grubbing activities but rather were removed by the excavation equipment during the remediation phase of the project and disposed of with the contaminated soils.

All cut trees were chipped and the chips were scattered along the northern and southern ends of the Site. All chipped material was kept within the project property limits. Clearing and grubbing activities were completed on April 1st, 2014.

Public roadways and improved surfaces (parking lot) were kept free from tracked mud and debris. Tires and tracks were scraped and washed to ensure no soils leave the Site. No vehicle tracks or tires entered the contaminated zone during clearing and grubbing operations.

4.3.2 Installation of Erosion and Sediment Controls

A stormwater pollution and prevention plan is required on construction projects where the area of land disturbance is greater than 1 acre. The estimated disturbance area at the site was greater than 2 acres. However, given that the majority of the site disturbance area was from within the pond, it was not considered as area subject to erosion and sedimentation but rather acted as stormwater control measure by containing runoff. Therefore, a modified Storm Water Pollution Prevention Plan (SWPPP) was submitted to requiring Horizon to conform to the provisions the New York General permit GP-0-10-001 dated January 29, 2010 and the Contract Documents for the subject NYSDEC contract D008535. This documentation is provided in **Appendix B**.

Erosion and sediment control practices implemented at the Site included the installation of silt fence along the southern end of the Site, installation of a construction entrance, and installation of straw hay bales (as needed) to prevent silt and sediment infiltration into adjacent storm drains. Additionally, rip rap outlet protection was installed at the outlet pipe (discussed in Section 4.12) along the sidebank of Willowbrook Creek. These practices were maintained throughout the duration of the work. See **Figure 4** for locations of Erosion and sediment controls.

Erosion and sediment controls were visually inspected on a daily basis. Any deficiencies noticed during the inspections were repaired. Additional erosion control materials were kept on site for repairs and/or additional protection.

4.3.3 Temporary Facilities

On April 16, 2014, HES and subcontractor BECC Electric installed the weather head and electrical meter box on an on-site power pole for the Contractor/Shaw job trailer. The job trailer, provided by William Scotsman was mobilized and placed on the Site on May 19th, 2015. Subcontractor BECC Electric installed the electrical service. The job trailer was installed in the southwest corner of the Site near the construction entrance. The location of the job trailer is shown on **Figure 4**.

Other temporary facilities installed during site preparation operations included a connex box for equipment storage and a portable toilet that was located the office trailer.

On April 15, 2014 Horizon and subcontractor Picket Fence installed the chain link gate at the proposed construction entrance in accordance with the Contract Documents. A stabilized construction entrance was installed in accordance with the Contract Documents on May 19th, 2014.

The entrance was installed on a layer of geotextile overlain by six inches of crusher run material. The construction entrance was installed at the corner of Willowbrook Ave and Brigham Road near the job trailer. The entrance was approximately 20 feet wide by 30 feet in length.

4.4 Pond Dewatering

On April 11th 2014, Horizon mobilized to the Site to begin dewatering of the pond. Based on the analytical results from the February 2014 pump test (Section 4.2) and consultation with NYSDEC and Shaw, the proposed dewatering system was modified to prevent the suction and discharge of PCB contaminated sediments into Willowbrook Creek. The pond water was allowed to be directly discharged to Willowbrook Creek without treatment from the top of the original pond water surface to one (1) foot above the top of sediment (pond depth = 1 foot). After reaching a depth of 1 feet above the top of the sediment, the pond would require treatment.

This was completed by placing a vacuum suction intake line through a wooded floatation platform immediately below the pond water surface. The intent of the system was to ensure the suction hose was not near contaminated sediments. The pumping system consisted of a 6" diameter Sykes pump with a suction and discharge line. Dewatering operations were completed from April 11th, 2014 through April 17th, 2014.

On April 17th, 2014, dewatering operations reached a depth of approximately 1- 2 feet above the top of pond sediment at which point Horizon discontinued dewatering operations and demobilized the pump. On April 24th, 2014, Horizon installed an onsite treatment system as required to continue dewatering operations. Prior to installing the treatment system, a pre-construction soil sample was collected from beneath the proposed foot print of the waste water treatment system and sent to Test America for analysis. The sample was analyzed for PCBs, TCLP Metals, and TCLP Mercury. The results are provided in **Appendix C**.

The treatment system consisted of two bag filter units (capable of 5 micron bag filters), two 2,000 pound carbon (lead and lag) vessels and a 3" power prime pump. A pump test was completed by recirculating the treated effluent water back into the pond and collecting a water sample. The sample analytical results were received on April 29, 2015 and determined to be "non-detect" for PCBs and metals. Upon notification of results, pond dewatering operations were allowed to resume using the installed waste water treatment train.

On April 30th, 2014 one effluent water sample was collected from the pond and analyzed for VOCs (EPA Method 8260C), SVOCs (EPA Method 8270D), Metals (EPA Method 6010C), Mercury (EPA Method 7470A), PCBs (EPA Method 8082A), and Oil & Grease (EPA Method 1664A). Turbidity was monitored at a frequency of approximately 2 hours. Analytical results are reported on **Table 1**. Full analytical data packages are provided in **Appendix C**.

On May 20th, 2014, Horizon began installation of a dewatering sump at the southwest corner of the pond to be used for continuous dewatering throughout the duration of the project to further dewater the pond. The

sump was installed into the bedrock using a Komatsu PC 360 excavator and used to collect and treat groundwater and stormwater runoff into the pond. On May 27th, 2015 Horizon expanded the dewatering sump using the Doosan DL250 front end loader to further increase the storage capacity.

On June 3rd, 2014, Horizon received effluent analytical results from a sample collected on May 30, 2014 with a PCB detection of 0.19 ppb. At that time, the treatment system was shut down and reconfigured to set a lead 20 micron bag filter in front of the two carbon vessels and a lag 5 micron bag filter after the two carbon vessels. An effluent sample was collected on June 3rd 2014 and sent out to the laboratory for analysis. Results indicated detections for PCBs. At that point, Horizon was directed to mobilize a frac tank for batch discharge. Batch discharge of treated effluent was required until further notice to meet discharge criteria in accordance with the August 28, 2013, NYSDEC Memorandum of Understanding (MOU) for Generic Effluent Criteria for Groundwater Discharges which is provided in **Appendix D**. A sample was collected on June 5th, 2014 from the frac tank and sent to Test America for analysis. Results were non-detect for PCBs. From June 9th to August 20th, 2014, Horizon mobilized three additional frac tanks to increase storage capacity for treated effluent pond.

Due to the change in Site conditions as described in Section 4.9.1, the work at the Site was temporarily "shutdown". During this period Horizon was required to operate and maintain the water treatment system to keep the pond dewatered and to prevent the potential migration of PCB contaminated sediment over previously excavated areas. This was completed from August 30th through October 20th, 2014. Upon remobilization on October 21st, 2014, daily water treatment operation and maintenance resumed as previously described in this Section.

On November 3rd 2014 one of the four frac tanks was demobilized from the Site. This was determined based on discussions with Horizon and Shaw that the additional 20,000 gallons of storage volume was no longer required. Due to impending cold weather and consistent effluent analytical results that were below the MOU discharge limits, the remaining frac tanks were demobilized on November 25th, and 26th 2014. Discussions held with Horizon, NYSDEC and Shaw determined that treatment of water could be completed using only the bag filters, if proper sampling and turbidity measurements were maintained in accordance with the Contract Documents.

On December 3rd, 2014, a field order (FO), FO-6, was issued to allow dewatering operations to continue without the provisions of batch discharge and carbon treatment provided that the turbidity monitoring and effluent sampling was maintained in accordance with the Contract Documents. Water treatment analytical results are summarized on **Tables 2.1** through **2.4**.

4.5 Asbestos Abatement

From March 31st – April 31st, 2014 Horizon and subcontractor Stohl Remediation mobilized and completed the required asbestos abatement of the existing metering shed located in the southwest corner of the Site. Action Environmental (a third party subcontractor) was retained to perform visual inspection/monitoring of the asbestos removal. The abatement was completed in accordance with

Horizon's approved Asbestos Abatement Work Plan submittal which is provided in **Appendix B**. The scope of work included the following:

- Set up perimeter exclusion zone around abatement work area;
- Abate asbestos containing material (ACM) in accordance with Code Rule 56 requirements, technical specifications included in the Contract Documents and the Asbestos Abatement Work Plan;
- Provide third party monitoring of the abatement;
- Dispose of ACM in accordance with all local, state and federal requirements.

Approximately 10 cubic feet of ACM was abated and disposed of at an approved offsite disposal facility (Chaffee Landfill in Chaffee, NY). The area of concern was limited to the shingle roofing of the building. The asbestos waste manifest and third party visual sign off certification is provided in **Appendix E**.

4.6 Demolition of Structures

4.6.1 Pond Catwalk (Pier) Removal and Disposal

Horizon began demolition of the steel catwalk on May 19th, 2014. A Komatsu PC-360-LC Excavator was used to remove the 6" discharge pipe and valves. A cutting torch (oxy/acetylene torch) was used to cut the catwalk into manageable pieces. The demolished pier was staged at the north end of the Site. The steel catwalk was completely removed and staged for offsite disposal on May 20th, 2014. The concrete footings were temporarily left in place, and subsequently demolished and disposed of as described in Section 4.6.3.

On June 2nd, 2014, a 30 cubic yard roll off was delivered to the Site for the catwalk disposal. The steel from the catwalk was placed in the roll off and sent to O'Brocta Salvage located on 157 Willow Road in Dunkirk, NY.

4.6.2 Pond Utility Pipes

During the course of excavation, transportation and disposal of soil and sediment, underground pond utility piping was abandoned in accordance with the Contract Documents by excavating one foot below the bottom of the pipe, cutting the pipe flush with the remaining ground, and filling it with cement prior to backfill. The locations of the utility pipe inlet and outlets are shown on **Figure 2**. All utility lines were abandoned as outlined in the Contract Documents.

4.6.3 Concrete Pier Foundations and Concrete Outlet Structures

Two concrete outlet structures located in the northwest and southwest corners of the pond were sampled, demolished and removed in accordance with the Contract Documents. After being analyzed by Test America, the demolished concrete was re-sized and placed in the pond bottom prior to the commencement of backfill operations. Concrete sample analytical results are provided on **Table 3** and

full analytical data packages are provided in **Appendix F**.

4.6.4 Water Metering Shed

Following abatement of the roof shingle Asbestos Containing Materials, discussed in Section 4.5, the water metering shed was demolished, and removed from the Site in accordance with the Contract Documents.

4.7 Surveying and Field Engineering

Horizon utilized Wendel Engineering P.C., (Wendel) a New York State-registered professional surveyor to complete the survey activities at the site. The scope of work completed by the surveyor included the following:

- Establish and verify survey control points indicated on the Contract Drawings;
- Establish and stake out the Limits of Work, property lines, and the limits of each excavation area around the pond perimeter, along with any other items as directed by Shaw;
- Verify existing conditions as represented by the Contract Drawings and submit any discrepancies to the Shaw prior to construction of areas affected by discrepancies;
- Survey limits of excavated areas once during excavation activities to confirm compliance with the Construction Drawings and to establish vertical and horizontal excavation limits as constructed;
- Survey in all sample point locations for incorporation into final As Built drawings;
- Provide survey data (such as volumes) in support of measurement for payment;
- Survey final site conditions; and,
- Preparation of Record Drawings, stamped and signed by a NYS licensed land surveyor including Pre-Construction Conditions, As-Built Construction conditions and Final Construction Conditions, per the contract documents;

Wendel completed the scope work as summarized herein:

Horizon and subcontractor Wendel arrived at the Site on May 19th, 2015 to complete a survey of the existing site conditions. The survey included existing site conditions to establish a baseline of conditions prior to the work including all topography culverts, basins, utilities, roads, monitoring wells and structures.

Wendel returned to the Site on June 2nd, 2014 to conduct a topographic survey for computation of sediment volume. Based on the change in conditions discussed in Section 4.9.1, it was determined through discussions with Horizon, NYSDEC and Shaw that a sediment volume calculation was required to assess additional potential cost to complete the project. The estimated sediment volume was determined to be 12,082 cubic yards.

Following completion of excavation, transportation and disposal operations Wendel completed the required post excavation survey on December 9, 2014. The survey was completed to establish final

excavation grades and calculate quantities for final payment.

Prior to installation of backfill, Wendel staked out final subgrades on December 17, 2014 and January 05, 2015. Final grades for topsoil placement were surveyed on May 13th, and May 27th, 2015. As-Built documentation, (post excavation and final survey) is provided on **Figures 3** and **4**.

4.8 Community Air Monitoring Program (CAMP)

On June 10, 2014 a complaint was made to the NYSDEC from the Special Metals facility (located east of the pond) regarding the presence of strong "organic type" odors. Field screening using a photoionization detector (PID) was performed on the pond sediments and found no evidence of fugitive VOC's, although the pond sediments did emit a decaying organic smell that was noticeable. The decision was made to implement perimeter dust and downwind VOC monitoring on days that intrusive work took place. See **Appendix G** for CAMP analytical data.

4.9 Excavation Transportation and Disposal of Contaminated Material

4.9.1 Sediment Excavation and Removal

The Contract Documents provided a delineation of PCB contaminated sediments segregated as Hazardous (TSCA > 50 ppm) and Non-hazardous (<50 ppm); those documents are provided in **Appendix A**. The pond sediments were to be removed to bedrock. Horizon subsequently submitted an Operations Work Plan included in **Appendix B** to indicate their means and methods to complete the work.

On June 2nd, 2014, Horizon mobilized the Doosan DL 250 front end loader into the pond bottom to begin consolidating non-hazardous sediments for dewatering purposes. Hazardous and non-hazardous sediment areas were previously outlined in the Contract Documents (**Appendix A**). Horizon's Work Plan approach entailed consolidation and dewatering of the non-hazardous pond sediments within the footprint of the pond in lieu of removing the pond sediments and placing on sediment staging/dewatering pads outside of the pond constraints. The plan was made to minimize handling of pond sediments outside of the pond before transportation and disposal activities. The non-hazardous pond sediments were consolidated into two areas of the pond, one on the West side and one along the North side. These piles were located in these two areas so that the sediments could be loaded directly onto trucks from an excavator located at the top of the pond bank, eliminating the need to bring the transport trucks down into the pond floor. Photographs are provided in Daily Reports located in **Appendix H**.

On June 11, 2014 Horizon began loading non-hazardous pond sediments from the West pile directly onto trucks. The truck loading area was underlain by a geomembrane/plastic poly to prevent cross-contamination. The sediments were slated for disposal at the Hyland non-hazardous landfill located in Angelica, New York and Chaffee Landfill located in Chaffee, NY. Waste characterization samples of the waste stream were collected and analyzed to meet landfill requirements for disposal. After shipment of non-hazardous sediments to the Hyland and Chaffee landfill began, additional characterization sample

data revealed that the majority of the sediments located within the two stockpiles and remaining in place within the pond footprint contained PCB concentrations exceeding 50 parts per million (ppm) and were therefore required to be regulated under the Toxic Substance Control Act (TSCA) as a hazardous waste. Shipment of pond sediments to the Hyland facility ceased.

After consultation with NYSDEC, it was determined that additional quality control waste characterization sampling of the pond sediments was necessary prior to making the determination that all sediments were TSCA hazardous material. Sample locations at or near waste characterization sample locations collected by Horizon that showed elevated PCB concentrations were selected as QA/QC waste characterization resample locations. The sampling was performed on June 27, 2014 by Shaw and split QA/QC samples were sent to Phoenix Environmental (Phoenix) and Chemtech Laboratories (Chemtech) under a NYSDEC "Call-out" Contract. The results of the additional testing are provided on **Table 4** and full analytical data packages are provided in **Appendix I**.

Based on the elevated analytical results, the remaining sediments were re-classified as hazardous (TSCA) sediments, requiring disposal at Chemical Waste Management's (CWM) facility located at the Model City Landfill in Buffalo, New York (Model City). Waste characterization data is provided in **Appendix I.** Waste characterization sample locations are provided on **Figure 5.**

On July 1, 2014 Horizon started shipment of the re-classified pond sediments to Model City. On July 3, 2014 five (5) trucks that were loaded the previous day (July 2nd, 2014) were returned to the site full. The trucks were rejected at the landfill due to wetness/stability issues. A meeting was held with Waste Management at the Site to inspect the sediments and it was determined that material from the north pile was suitable for transportation and disposal. However, on July 14, 2014 three trucks were again rejected and returned full to the Site due to failing a compressive strength test. Compressive strength information provided by the landfill is included in **Appendix J**. Based on discussions with Horizon, NYSDEC and Shaw, it was determined that a bench scale solidification study should be completed at the Site with Portland cement to determine the required cement ratio to meet landfill compressive strength requirements. The bench scale study was completed on July 15th, 2014 and samples were generated by mixing 20%, 30% and 50% Portland cement by volume with the sediment. The results of the study concluded that a 20 – 30% mixture of Portland cement to the sediment would be sufficient to meet the required landfill requirements. Sediment samples were sent to the landfill with this ratio to confirm that the material would be acceptable for disposal. On July 21st 2014, the landfill had confirmed that a 25% Portland cement ratio would be acceptable for amending/solidifying the sediments, and Horizon was directed to proceed with operations under FO-2 provided in **Appendix K**.

Additionally, as directed under FO-3, remaining contaminated upland and side bank soils were evaluated for use as a stabilization amendment for the sediments. It was determined that mixing the pond sediments with the remaining onsite contaminated soils at a ratio of 50% would also meet landfill disposal criteria. A cost benefit analysis was completed and it was determined that this mixture was cost beneficial to total project cost. Portland cement in 1000 kg "super sacks" were delivered to the site and solidification of the sediments in the West pile took place. The remaining bank soils and upland

excavation soils from the east end were mixed with the pond sediment from the North pile. Transportation and disposal of amended sediments resumed to Model City on July 22, 2014 and continued until August 20th, 2014.

Due to the total project cost increase resulting from the reclassification of sediments from non-hazardous to TSCA hazardous and the required landfill sediment stabilization amendment, it was determined through discussions with Horizon, Shaw and the NYSDEC that the project would be temporarily shut down until a Change Order (CO) could be processed and approved by the State Comptroller's office. Further documentation regarding the change in conditions is included in Proposed Change Order (PCO) #2 and CO-1 provided in **Appendix L.**

On October 27th, 2014 Horizon continued transportation and disposal operations of hazardous amended sediments from the north and west stockpiles to Model City Landfill. Transportation of the material was completed by Page Trucking. On December 3rd, Horizon completed excavation and load out of sediment. A waste material tracking sheet is provided on **Table 5**. Waste disposal manifests are provided in **Appendix M**.

4.9.2 Upland (Spot) Excavation and Removal

On May 21, 2014 Horizon began removing non-hazardous upland soils from the two (2) delineated "spot" excavation areas located to the east and southeast of the pond, see **Figure 3**. The PCB contaminated soils were removed to the depths and horizontal extents indicated on the Contract Drawings. The soils were staged along the eastern pond bank for use as a drying agent for the non-hazardous contaminated sediments.

Two bottom confirmation samples were collected on June 17th, 2015 and eight (8) sidewall confirmation samples were collected on June 19th and sent to the Test America laboratory to be analyzed for the constituents required in the Contract Documents. Based on elevated results from the two samples collected on June 17th, confirmation samples AS-CONF-005 and AS-CONF-006 were sent out for analysis as split samples to Test America and ALS laboratories for quality control purposes. Results from both laboratories indicated PCB concentrations greater than 50 ppm. On June 25, 2014, (FO-1) which re-delineated the horizontal and vertical extents and reclassified the upland soil excavation boundaries as hazardous (TSCA) and non-hazardous. Project field orders are provided in **Appendix K**. The re-delineated areas are provided on a figure included in FO-1.

On July 9th, 2014 Horizon began excavation of the southern upland area as directed in FO-1. During the excavation Horizon uncovered a two-inch diameter HDPE gas line. It was determined through contacts with the local utility company that a private gas company, Cotton Well Drilling (Cotton) owned the line. Horizon agreed with Cotton that the line could be temporarily taken out of service until the excavation work was completed. Upon completion of the work, Cotton stated that they would replace the section of the line removed from service. The line was decommissioned on July 10th, 2014.

On July 11, 2014, Horizon advanced the TSCA upland excavation areas to the vertical and horizontal extents indicated in FO-1 and placed the material into the pond to be used as a stabilization amendment for the pond sediments. Confirmation samples were collected according to the Contract documents and the results summarized in **Tables 6.1** through **6.5** and full analytical data packages are provided in **Appendix N**. Confirmatory sample locations are provided on **Figure 3**.

On July, 31, 2014, Horizon excavated an additional 10 foot by 10 foot grid, one foot deep along the north upland excavation area because a confirmation sample indicated an elevated PCB detection. Continued excavation in the northern upland area immediately above a former drainage inlet pipe to the pond revealed a non-native discolored layer of material which had a strong chemical odor. A sample of the material was collected (AS-CONF-14-EF) and sent for analysis to Test America on August 14, 2014. Results indicated elevated PCB concentrations (1,500 ppm). The area is shown on **Figure 3**.

Based on elevated confirmatory sample results, FO-4 was generated to direct Horizon to excavate three test pits to the north of the re-delineated upland excavation area in an attempt to define the northern boundary of PCB impacts. Composite confirmation samples were collected along the north face of each test pit. Horizon continued to excavate additional soil from the south upland area and placed the material in the North staging pile for use as a sediment stabilization amendment. This work continued until the temporary contract "shutdown" as previously discussed in Section 4.9.1. Analytical results are provided on **Tables 6.1** through **6.5** and full data packages are provided in **Appendix N**.

On October 22nd 2014 Horizon resumed upland excavation operations as detailed in FO-5. This FO was provided to Horizon due to the large number of confirmation sample RSCO exceedances. FO-5 directed Horizon to horizontally extend upland excavation areas an additional 15 feet where sidewall confirmation sample results exhibited an RSCO exceedance. The depth of excavation was directed to match existing excavation depths. On October 27th, 2014 Horizon excavated the "hot spot" area with discolored material to the top of the former drainage inlet to the pond. The former utility line was removed approximately 10 feet where the pipe entered the pond. Bottom confirmatory samples were collected at a frequency of 1 sample per every 625 square feet and side wall samples were collected at a frequency of 1 sample per every 30 linear feet as outlined in the Contract Documents. Samples were sent to Test America Labs for analysis of VOCs, SVOCs, PCBs and Metals.

4.9.3 Pond Side Bank Excavation and Removal

On August 6th 2014, Horizon began excavation of the north side bank. Due to change in conditions discussed in Section 4.9.1, the material was placed in the North staging pile for use as a sediment stabilization amendment. Excavation, transportation and disposal of material was temporarily "shutdown" on August 20th due to the change in conditions resulting from the sediment reclassification and landfill sediment stabilization amendment as discussed in Section 4.9.1. Bottom confirmation samples were collected along the side banks at a frequency of one sample per every 625 square feet of excavation area. Composite confirmation bottom samples AS-CONF-14-0054 through AS-CONF-14-0095 were collected from August 26th through August 29th, 2014 and sent to Test America Labs for

analysis of VOCs, SVOCs, PCBs and Metals. Quality Control samples including duplicate, matrix spike and matrix spike duplicates were collected at a frequency on one per 20 confirmation samples as outlined in the Contract Documents and Horizons Sampling and Analysis Plan included in **Appendix B**. Confirmatory sample results are summarized in **Tables 6.1** through **6.5** and full analytical data packages are provided in **Appendix N**. The locations of the samples collected are illustrated on **Figure 3**.

Following the temporary contract "shutdown", Horizon remobilized and resumed excavation, transportation and disposal operations on October 22nd, 2014. Non-hazardous sidebank soil excavation activities were completed through October 24th, 2015. Non-hazardous soils were transported by Riccelli Trucking to Chaffee Landfill. Waste manifests are provided in **Appendix E** and a complete waste material tracking sheet is provided in **Table 5**. Waste manifests are provided in **Appendix M**.

4.9.4 Slag Berm Excavation and Removal

The Contract Documents required the removal and disposal of an existing slag berm located around the perimeter of the pond. On June 17, 2015, Horizon began removal of this berm to a staging area located to the north of the pond. Prior to staging the slag material, a pre-construction sample was collected for analysis by Test America. The sample was analyzed for TCLP VOCs, TCLP SVOCs, TCLP Organic Pesticides, PCBs, TCLP Metals, and TCLP Mercury. The excavation of the slag berm continued through June 19th, 2014. Horizon collected a waste characterization sample and sent to Test America for analysis of constituents required by the landfill and Contract Documents. The results are provided on **Tables 7.1** through **7.3** and indicated the slag berm could be managed and disposed of as non-hazardous material. The slag berm in its entirety was removed and disposed of offsite in accordance with the Contract Documents. Complete analytical data packages are provided in **Appendix O**.

4.9.5 Bedrock Excavation and Removal

The Contract Documents required the collection of respective bedrock samples from impacted pond areas delineated during the SC. Fragmented shale bedrock was scraped at various depths along the pond bottom using an excavator and front end loader until competent bedrock was reached. The material was staged and loaded out with the hazardous sediments. Three bedrock confirmatory samples were collected on November 07th, 2014 in accordance with the Contract Documents. The results are summarized on **Tables 6.1** through **6.5**. Complete analytical data packages are provided in **Appendix N**.

4.10 Decontamination

On July 11th, 2014 Horizon began installation of an equipment decontamination pad immediately south of the southwest corner of the pond. Prior to installing the decontamination pad, a pre-construction soil sample was collected from within the proposed footprint of the decontamination pad and sent for analysis by Test America. The sample was analyzed for TCLP VOCs, TCLP SVOCs, TCLP Organic Pesticides, PCBs, TCLP Metals, and TCLP Mercury. The results are provided in **Appendix P**.

On August 19th, 2014, Horizon began gross decontamination of the Doosan front end loader within in the pond. This method and location was deemed acceptable given that all pond water drained to a sump at the

southwest corner of the pond and all water was treated through the treatment system described in Section 4.4.

On August 21st, 2014, the Komatsu PC360 excavator and Doosan DL250 font end loader were decontaminated in accordance with the Contract Specifications using a decontamination product called CAPSUR®. Rinsate was collected in 55 gallon drums. The equipment was decontaminated in preparation for the contract "shutdown" period.

Additional equipment decontamination was completed following final excavation and load out operations, on December 4th, 2014. Wipe samples were collected from the excavation equipment following the required decontamination procedure with the CAPSUR® product. All decontamination rinsate water was collected from the decontamination pad and transferred to 55 gallon drums for storage and waste profiling. The profiled waste water was subsequently transported by Environmental Service Group, Inc. to American Recyclers Inc. located on 177 Wales Ave, Tonawanda, NY. Analytical results are provided in **Table 8** and **Appendix I**. Wipe sample analytical results are summarized in **Table 6.3.2** and full analytical data packages are provided in **Appendix Q**.

4.11 Utility Markout (GPR Survey)

A ground penetrating radar (GPR) survey was completed by New York Leak Detection on January 29th, 2015 to markout utilities that may be encountered during the installation of the pond outlet pipe, discussed in Section 4.12. The results of the survey are provided in **Appendix R**.

4.12 Outlet Pipe Installation

On February 3rd, 2015, Horizon mobilized an excavator with a bucket and ram hoe to demolish the concrete structure located at southwest corner of the pond where the proposed outlet pipe was to be installed. One hundred and twenty feet of outlet pipe was installed from the southeast corner of the pond to Willowbrook creek between February 4th and 6th, 2014. The pipe was a 12-inch diameter, corrugated, high density polyethylene (HDPE) material, sloped to drain at approximately 0.5%. During the installation a 2" diameter HDPE de-energized gas line was encountered and broken. The line was not marked out near the location shown during the GPR survey which is discussed in Section 4.1. The line was repaired by Cottons Well Drilling on February 6th, 2015.

Following installation of the pipe, HDPE flared ends were placed on both the pipe inlet/outlet, riprap protection was placed at the outlet to prevent erosion into Willowbrook Creek and a welded wire grate was placed over both pipe ends to prevent pipe clogging. Hay bales were placed at the pipe entrance to prevent siltation in the pipe. The installation location of the pipe is provided on **Figure 4**.

4.13 Backfill and Grading

The Contract Documents required complete backfill of the former pond to the pre-construction perimeter grades with clean imported material. Based on the change in conditions previously discussed in Section

4.9.1, and in an effort to minimize total project cost, it was determined that the pond would be backfilled only to a level necessary to provide adequate drainage to the outlet pipe proposed at the southwest corner of the pond (discussed in Section 4.12).

On November 5th, 2014 backfill samples (three 5 gallon pails) were collected from the proposed Pomfret source located on 9654 Chautauqua Road, Fredonia, NY and sent to Baron Associates and Buffalo Drilling Company located in Clarence, NY for geotechnical property testing.

On November 7th, 2014 backfill samples (three 5 gallon pails) were collected from the proposed Olsen source located on 2800 New York route 39, Forestville, NY and sent to Baron Associates P.C. and Buffalo Drilling Company for geotechnical property testing. Backfill geotechnical test results are provided in **Appendix S**.

On December 3rd, 2014 FO-7 was issued to reduce the frequency of backfill sampling to the following:

- 0-1000 yards collect - 4 samples (1 per 250 cubic yards)
- 1000-5000 yards collect - 4 additional samples (1 per 1000 cubic yards)
- Per each additional 5000 yards collect 1 sample (5000-10000 cubic yards collect 1 sample), (10,000-15,000 cubic yards collect 1 sample), (15,000-20,000 cubic yards collect 1 sample) (20,000 – 25,000 cubic yards collect 1 sample), etc.

This direction was provided to Horizon based on initial backfill sample analytical results, summarized on **Tables 9.1** through **9.6** and to reduce total project cost. Full analytical data packages are provided in **Appendix T**. FO-8 was issued on December 18th, 2014 to waive backfill compaction testing to reduce total project time for backfill installation. Compaction criteria, including depths of placed material and compaction equipment was maintained in accordance with the Contract Documents.

On December 8, 2014 Horizon began importing backfill operation from the Olsen gravel pit. The Pomfret source was additionally used as needed to expedite backfilling operations. Due to wet conditions, a street sweeper was mobilized to the Site on December 10th, 2014 to clean Willowbrook Avenue as necessary. These operations continued throughout the entire backfilling process as needed.

Backfill and grading operations stopped on January 7th, 2015 due to inclimate weather conditions. It was determined through correspondence with Horizon, NYSDEC and Shaw that backfill and grading would be shut down (winter shutdown) until spring.

Backfill and grading operations resumed on May 5th, 2015. On May 7th, 2015, Horizon collected topsoil samples from the Olsen Pit for laboratory analysis by Test America. Backfill and grading operations were completed in accordance with the modified documents included in PCO-2 on May 29th, which is located in **Appendix L**.

Backfill was installed and graded at a 1% slope to drain along the pond floor from the northeast corner to the

southwest corner of the pond. Approximately 4 feet of backfill was placed above the bedrock/pond floor. The former pond sidebanks were backfilled and graded at an approximate 2:1 slope around the entire perimeter to the backfilled pond floor. A total of 22,278 cubic yards were imported and compacted in place during backfill operations. Final grades are provided on **Figure 4**. Approximately four inches of topsoil was placed over the pond floor subgrade and sidebanks between June 3rd and June 5th, 2015 in preparation for hydroseeding.

4.14 Site Restoration

Following the final placement of topsoil on June 5th, 2015 the Site was prepared for hydroseeding. Horizon and St. George Contracting installed the specified hydroseed mix on June 26th, 2015. The former pond bottom, sidebanks and disturbed areas around the perimeter of the pond were seeded. The original scope of work included in the Contract Documents specified a general seed mix that was later modified when it was determined the pond would not be completely backfilled. Backfill and grading operations are discussed in Section 4.13. To accommodate for greater slopes along the sidebanks the following mix was specified and installed:

Common Name	Variety	% of Mix	App. rate /acre
Tall Fescue	KY-31	36	70.6 lb.
Orchard Grass	Pennlate	15	29.4 lb.
Creeping red fescue	Ensylva	20	39.2 lb.
Perrenial ryegrass	Polly	25	49 lb.
Birds-foot trefoil*	Viking	4	7.8 lb

4.15 Monitoring Well Decommissioning

On July 16th 2015, Horizon abandoned/decommissioned three (3) monitoring wells in accordance with the NYSDEC CP- 43 Groundwater Monitoring Well Decommissioning Policy (November 2009). Horizon removed the steel protective cover and tremie grouted a bentonite-cement mix into each well using a pump and a 1" hose. The grout was given time to harden. Upon completion of the grouting, each well was excavated and cut off at five (5) feet below ground surface.

4.16 Substantial Completion

On June 3rd, 2015 Horizon submitted a letter requesting project substantial completion with a requisition date of June 5th, 2015. On June 8th, 2015 Shaw responded with a letter and time schedule for Site inspection. A Site inspection meeting was held on June 16th, 2015 with Horizon, NYSDEC and Shaw to discuss outstanding project tasks and project substantial completion. The inspection was completed and list of outstanding items was generated by Shaw. Substantial completion was granted as of June 5th, 2015. Substantial completion correspondence is included in **Appendix U**.

4.17 Pre/Post-Construction Sampling

Pre-Construction samples were collected as described in Sections 4.4, 4.9.4, 4.10, and 4.13. Post-Construction samples were collected by Horizon on May 29th, 2015 from the decontamination pad, waste water treatment, and slag pile locations and sent to Test America for analysis of PCBs, Metals, SVOCs and VOCs. The laboratory analytical results are included on **Tables 10.1** through **10.3** and **Appendix P**. Sample locations are provided on **Figure 3**.

4.18 Demobilization and Final Completion

On August 12th and September 3rd, 2015 Shaw returned to the site to evaluate the establishment of a vegetated cover, conduct a final inspection and review the substantial completion items list completed as part of the substantial completion inspection performed on June 16th, 2015.

Throughout the course of the project and prior to final completion the following demobilization scope of work was completed in accordance with the Contract Documents:

- Remove temporary site controls and safety measures;
- Equipment and temporary facilities removal;
- Remove all project related signage;
- Remove any remaining temporary erosion and sediment control measures (i.e. silt fence, haybales, etc.);
- Clean/decontaminate all construction-related equipment at the site;
- Remove and dispose of decon pads and waste staging materials;

5.0 Project Summary

5.1 Excavation, Transportation, and Disposal

During excavation transportation and disposal operations:

- A total of 2,922 tons of Portland cement amendment was blended with sediments for offsite disposal.

- A total of 20,547.64 tons of hazardous material (including Portland cement) was removed from Willowbrook Pond for disposal.

- A total of 1,761.91 tons of non-hazardous material was removed from Willowbrook Pond for disposal.

- A total of 22,309.55 tons of material was removed for offsite disposal.

5.2 Sampling

5.2.1 Solid Sampling

- Five pre-characterization samples were collected and analyzed for VOCs, SVOCs, PCBs, Metals, Organic Pesticides, and Mercury. All analytical methods (excluding 8082A for PCBs) used TCLP extraction (in addition to other contaminant specific modes of extraction) to characterize the samples.

- 28 Waste characterization samples were collected for analysis of VOCs, SVOCs, Organic Pesticides, PCBs, and Metals beginning on May 24, 2014 and ending on June 24, 2014. An additional ten QA/QC waste characterization samples were sent to both Chemtech Consulting Group and Phoenix Environmental Laboratories for PCB analysis only on June 27, 2014. One additional duplicate sample from Phoenix only is included in the analytical results.

- A total of 175 confirmatory samples (including re-samples and split-samples) were collected and analyzed. The confirmatory samples were analyzed for VOC, SVOC, PCB, Metal, and Mercury concentrations (with the exception of AS-CONF-14-0032 through AS-CONF-14-0053 that were run only for PCBs). Within the confirmatory samples, AS-CONF-005A, AS-CONF-005B, and AS-CONF-006R were split sampled for analysis by both Test America and ALS Environmental laboratories to assess the accuracy of the elevated PCB concentrations. In addition to the split samples, a total of 21 re-samples were also taken on July 31, 2014, October 28, 2014, October 29, 2014, and November 6, 2014. These re-samples were taken due to elevated concentrations in the original lab results from Test America (particularly when tested for PCBs, Metals, and SVOCs).

- Two composite concrete samples, one from the concrete piers on the West end of the pond bed and the other from the outlets at the Northwest and Southwest pond corners were analyzed for VOC, SVOC, PCB, Metal, and Mercury.

- 22 samples were collected from imported backfill and analyzed for SVOCs, VOCs, PCBs, Metals, Organic Pesticides, and Mercury.

- Three post-construction samples were collected and analyzed for VOCs, SVOCs, PCBs, Metals, and Mercury. Samples were collected from the former decontamination pad area, pump/bag filter area, and slag pile area.

5.2.2 Water Sampling

- Seven samples were collected for laboratory analysis from the Altech Pond and analyzed for VOCs, SVOCs, PCBs, Metals, Mercury, and Oil & Grease.

- A total of 77 effluent waste water treatment samples were collected and analyzed for VOCs, SVOCs, PCBs, Metals, and Mercury.

- One waste characterization sample was collected and analyzed for VOCs, SVOCs, PCBs, Metals, Mercury, Ignitability, and pH for waste profiling.

5.2.3 Wipe Sampling

- Thirteen confirmatory wipe samples were taken from the two excavators and loader after decontamination and analyzed for PCBs.

5.3 Backfill

- From December 8th, 2014 to June 5th, 2015, a total of 22,278 cubic yards of soil were imported and compacted in place during backfill operations.

- See Section 4.13 for more information on backfill.