STAUFFER MANAGEMENT COMPANY

SKANEATELES FALLS SITE

4512 JORDAN ROAD

SKANEATELES FALLS,

ONONDAGA COUNTY, NEW YORK

Final Engineering Report

NYSDEC Site Number: 7-34-010

Prepared for:

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Prepared by:

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SEPTEMBER 2014

(REVISED MAY 2015)

CERTIFICATIONS

I, Gianna M. Aiezza, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program activities from 2006 through 2013, and I certify that the Remedial Action Work Plans were implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plans.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan documents and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report will be submitted in accordance with the Department's electronic data deliverable.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class “A” misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Gianna M. Aiezza, of Envirospec Engineering, PLLC, located at 349 Northern Boulevard Suite 3, Albany, New York 12204, am certifying as Owner’s Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the site.

Gianna M. Aiezza

Name

081422

NYS PE License Number

Signature

9/29/14

Date

CERTIFICATIONS

I, Joseph S. Burke, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program activities from 2001 through 2005,

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan documents and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report from 2001 through 2005 have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department, where required.

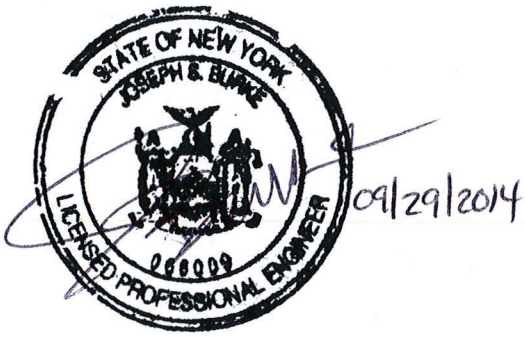
I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Joseph S. Burke, of SPEC Consulting, LLC, located at 349 Northern Boulevard Suite 2, Albany, New York 12204, am certifying as Owner's Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the site.

Joseph S. Burke

Name

066009

NYS PE License Number



Signature

09/29/2014

Date

CERTIFICATION

I, Joseph S. Burke, am currently a registered professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program activities associated with the work completed in AEC-2 and AEC-6. I certify that the work activities associated with the closures of AEC-2 and AEC-6, which formerly contained the former drum storage area, former waste storage tank, and former acid neutralization tank was completed in accordance with approved work plans as documented in this FER. This completes the closure of the RCRA components of the Site.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Joseph S. Burke, of SPEC Consulting, LLC, located at 349 Northern Boulevard Suite 2, Albany, New York 12204, am certifying as Owner's Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the site.

Joseph S. Burke

Name

066009

NYS PE License Number

Signature

Sept. 10, 2014

Date

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LIST OF ACRONYMS

Acronym	Definition
6NYCRR	Title 6 New York Codes, Rules and Regulations
AEC	Area of Environmental Concern
AOI	Area of Interest
ARAR	Applicable or Relevant and Appropriate Requirement
AROD	Amended Record of Decision
CAMU	Corrective Action Management Unit
CCR	Construction Certification Report
Commercial Use	Anticipates a future site use by businesses with the primary purpose of buying, selling or trading of merchandise or services. Commercial use restricts the use of a site to commercial activities including the buying and /or selling of goods or services and requires a Site Management Plan (SMP) to manage any remaining soil contamination and document the institutional/engineering controls implemented as part of the approved remediation.
CSCO	Commercial Use Soil Cleanup Objective as set forth in 6 NYCRR Part 375 6.8 (b). Applicable standard for soil the top two (2) feet of soil outside of 25 feet of Skaneateles Creek.
CY	Cubic Yard
DER-10	Division of Environmental Remediation, DER-10, Technical Guidance for Site Investigation and Remediation
Engineering Control (EC)	A physical barrier or method employed to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to contamination. Engineering controls relevant to this document include soil covers.
ESCO	Ecological Use Soil Cleanup Objective as set forth in 6NYCRR Part 375 6.8 (b). Applicable standard for the top two (2) feet of soil within 25 feet of Skaneateles Creek.
FTL	Field Team Leader

Acronym	Definition
FFS	Focused Feasibility Study
HSO	Health and Safety Officer
HASP	Health and Safety Plan
IC/EC	Institutional Controls and Engineering Controls
Industrial Use	Anticipates a future site use for the primary purpose of manufacturing, production, fabrication or assembly processes and ancillary services. The industrial use category allows the use of the site only for industrial purposes with access to the site limited to workers or occasional visitors; requires a SMP to manage remaining soil contamination and institutional/engineering controls at the site.
Institutional Controls (IC)	A non-physical means of enforcing a restriction on the use of real property that limits human or environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of site management activities at or pertaining to a site. Examples include deed restrictions and a Site Management Plan.
IRM	Interim Remedial Measure
ISCO	Industrial Use Soil Cleanup Objective as set forth in 6NYCRR Part 375 6.8 (b). Applicable standard for soil below two (2) feet.
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
O&M	Operation and Maintenance
PAH	Polynuclear aromatic hydrocarbon / Polycyclic aromatic hydrocarbon
PCB	Polychlorinated Biphenyl
PPE	Personal Protection Equipment
RAO	Remedial Action Objectives
ROD	Record of Decision
SAP	Sampling Analysis Plan

Acronym	Definition
SCC	Stauffer Chemical Company
SSCG	Standards, Criteria, and Guidance. Refers to soil cleanup standards in the 2001 AROD
SCO	Soil Cleanup Objective. Includes ISCO, CSCO, and ESCO, and refers to the currently proposed soil cleanup standards.
SI	Phase II Supplemental Investigation, conducted 2009-2010
SI/RA	Supplemental Investigation and Remedial Activities, conducted 2006-2007
SMC	Stauffer Management Company, LLC
SMP	Site Management Plan
SSRGs	Site Specific Remedial Goals
SVOC	Semi-volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
Unrestricted Use	Unrestricted use means a use without imposed restrictions such as environmental easements, deed restrictions or other land use controls.
VOC	Volatile Organic Compound
QAO	Quality Assurance Officer
QAPP	Quality Assurance Project Plan

FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

Stauffer Management Company (SMC) and The New York State Department of Environmental Conservation (NYSDEC) entered into an Order on Consent in 1991 and 1997 to investigate and remediate a 68.21-acre property (i.e. Site) located in the Town of Skaneateles Falls, New York. The Site was remediated to standards consistent with a commercial end use.

The Site is located in the County of Onondaga, New York and is identified as a portion of Block 04, Lot 31.1 on the Skaneateles Tax Map # 018. The Site is located at 4512 Jordan Road approximately 20 miles west of the City of Syracuse. The Site is situated on an approximately 68.21-acre parcel bounded by a mix of residential and commercial property to the west and north, residential properties to the south, and vacant land to the east (See Drawing L-1). The boundaries of the Site are fully described in the Environmental Easement and associated Alta Survey for the Site included in the Site Management Plan (SMP).

This FER with all supporting documentation is submitted in electronic copy only.

1.1 Historical Operations

The Site was formerly used to manufacture potassium silicates, detergents, and organic intermediates for other industries. The principal organic compound manufactured at the Site was toluic acid, which used xylene as a raw material. Currently there are no manufacturing activities conducted at the Site.

The facility was built in the mid-1920s by Draycott Mills, which manufactured felt roofing materials. Cowles Chemical Company bought the property in the mid-1940s and manufactured potassium and sodium silicates and industrial detergents. Organic compounds were manufactured at the facility from the late 1950s to 1981. Stauffer Chemical Company (SCC) purchased the facility in the late 1960s and continued operations until 1985.

2.0 SUMMARY OF SITE REMEDY

2.1 Remedial Action Goals and Objectives

Based on the results of several Remedial Investigations (RIs), the following Remedial Action Goals and Objectives (RAOs) were identified for this site.

Groundwater, Surface Water, Soil and Sediment RAOs

- Eliminate, to the extent practicable, the potential for direct human or animal contact with site related contaminants in soil and groundwater;
- Reduce, control, or eliminate, to the extent practicable the contamination within soils and wastes on the Site and generation of leachate from areas of environmental concern;
- Mitigate environmental threats to Skaneateles Creek by eliminating, to the extent practicable, further inflows of any contaminated run-off, contaminated groundwater, and leachate from contaminated soils and wastes;
- Prevent, to the extent practicable, migration of contaminants from areas of environmental concern to groundwater;
- Mitigate site-related contamination within creek sediments to levels that will not impair aquatic organisms and promote unimpaired use by aquatic organisms.
- Mitigate the impacts of contaminated groundwater on the environment; and
- Provide for attainment of Site specific cleanup goals (SSCGs) for groundwater quality at the limits of AEC-3, the shallow groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SSSCG attainment within these AECs.
- Dewatering operations and subsequent treatment of water generated from excavation activities.
- Implement Institutional Controls.

Remediation was completed using the Site specific cleanup goals (SSCGs) as established in the 2001 Amended Record of Decision (AROD) up to 2012 and before the 2013 AROD. The 2013 AROD changed the SSCGs (unrestricted) to

6NYCRR Part 375(b) commercial, industrial and/or ecological SCOs where appropriate. This change allowed for a future commercial end use for the Site.

2.2 Description of Selected Remedy

The Site was remediated in accordance with the remedies selected by the NYSDEC in the March 28, 1996 Record of Decision (ROD), the December 13, 2001 Amended Record of Decision (AROD), and the March 2013 AROD.

The factors considered during the selection of the remedy for the Site are those listed in 6NYCRR 375-1.8. The components of the selected remedy are outlined below.

2.2.1 March 1996 Record of Decision (1996 ROD)

During March 1996, the NYSDEC in consultation with the New York State Department of Health (NYSDOH) selected a Site Wide Remedial Alternative SWA-6, which was a composite of no action, containment, removal, treatment and on-site disposal. The following are the components of the 1996 selected remedy:

- Mobilization and construction of on-site haul roads, materials handling facility, and a water treatment system.
- Construction of an on-site, engineered treatment and disposal cell, designated as a Corrective Action Management Unit for hazardous waste management.
- Temporary dewatering and treatment of water from the existing Landfill, AEC 1.
- Excavation and processing of contaminated soils and waste from AEC 1 (est. 45,000 CY), followed by treatment and disposal in the on-site, engineered cell.
- Excavation and processing of organics contaminated soils from AEC 2 (est. 4,100 CY), followed by treatment and disposal in the on-site, engineered cell.
- Construction of a 5 acre clay cap over AEC 2 after excavation, and construction of a vertical cutoff wall between AEC 2 and the creek to isolate residual metals contaminated soils.
- Construction and operation of a Soil Vapor Extraction and Bioventing system within the treatment cell as wastes are placed. Construction and

operation of supporting equipment and air treatment systems needed to operate the SVE/Bio treatment system.

- Dredging and processing of contaminated sediments from AEC 5, Skaneateles Creek, (est. 2,700 CY) followed by treatment and disposal in the on-site engineered cell.

- Design, installation and operation of a shallow groundwater pump and treatment system comprised of extraction wells in the vicinity of AEC 1 and a collection trench at AEC 2.

- No action for deep groundwater, but with monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation.

- Contingency for future pump and treat action on AEC 4 should source removal and natural attenuation not promote adequate improvements to the deep bedrock groundwater.

- Institutional Controls under this remedy included: deed restrictions to protect remedial features and restrict on-site groundwater use; long term monitoring of site conditions; continued site security and access control; and routing maintenance operations like lawn mowing, fence repairs and cap repairs. Site monitoring included a periodic survey of groundwater use in the area and efforts for early identification of any future threats to drinking water wells.

2.2.2 December 2001 Amendment to ROD (2001 AROD)

Based upon the evaluation presented in the May 2001 Focused Feasibility Study (FFS) and the Proposed Amended Record of Decision (AROD), NYSDEC amended the remedy for the Site to include excavation of additional volumes of soil and waste, remediation of AECs 6, 7 and 8, and off-site disposal of soils and sediments instead of excavation with on-site disposal, containment and treatment in a Corrective Action Management Unit (CAMU) cell, as originally specified in the 1996 ROD outlined above. As a result of these changes, no wastes were consolidated and/or buried on-site as part of the remedy. The groundwater remediation components did not change. The following are the components of the 2001 AROD remedy:

- Excavate contaminated soils and waste from the Landfill Area (AEC-1) that exceed SSCGs, characterize, and then dispose off-site at an appropriate disposal facility.

- Excavate contaminated soils and waste from the North Plant Area (AEC-2) that exceed SSCGs, characterize, and then dispose off-site at an appropriate disposal facility.

- Excavate contaminated sediments from the Skaneateles Creek (AEC-5) that exceed SSCGs, characterize, and then dispose off-site at an appropriate disposal facility. Excavate and dispose of off-site identified abandoned pipes in the Skaneateles Creek.

- Excavate contaminated soils and waste from newly identified remedial areas: Main Plant Building as AEC-6, Area in Front of Main Plant Building as AEC-7, and South Plant Area as AEC-8, that exceed SSCGs, characterize, and then dispose off-site at an appropriate disposal facility.

- Excavate PCBs that exceed site cleanup SSCGs, characterize, and then dispose off-site at an appropriate disposal facility.

- Establish Site Specific Remedial Goals (SSRGs) for confirmatory sampling of metals contaminated soils.

- Remediate residual metals contaminated soils that exceed SSRGs by excavation with off-site disposal or on-site isolation/treatment technologies.

- Demolition of Main Plant Building and remediation of impacted soils underneath the building.

- Design, construct and operate a shallow groundwater extraction and treatment system for AEC-3. Treated water will be discharged to Skaneateles Creek through SPDES permitted outfalls and monitored for compliance by the NYSDEC Division of Water.

- No action for deep groundwater (AEC-4), but monitoring will be conducted to assess expected improvements.

- Contingency for future extraction and treatment of deep groundwater (AEC-4), if source removal and natural attenuation fails to promote adequate improvements.

- De-watering operations and subsequent treatment of water generated from excavation activities.

- Ensure and implement truck traffic safety protocols as well as implement appropriate decontamination and emergency spill procedures for disposal trucks along designated transportation routes.

- Institutional controls, including restricting future site use to only Industrial/Commercial purposes and restricting on site groundwater usage.

2.2.3 March 2013 Amendment to 2001 AROD (2013 AROD)

Envirospec prepared a second FFS, dated March 2013, to evaluate a second modification to the prescribed Site remedy. The 2013 FFS demonstrated that a commercial and/or industrial use remedy would effectively mitigate environmental impacts, limit the degree of post-closure care, promote a beneficial re-use of the property, and be protective of human health and the environment. The proposed modification consisted of altering the future end use of the Site from an unrestricted use (2001 AROD) to a commercial use. The course of action under the approved 2013 AROD continued to consist of excavation and off-site disposal of impacted soil and sediment and the use of engineering controls (ECs) such as soil covers/caps and institutional controls (ICs) such as deed restrictions and a Site Management Plan (SMP) that ensures the long term integrity of the engineering controls as outlined in the 2001 AROD.

The elements of the 2013 AROD listed below are identified as unchanged, modified or new when compared to the 2001 AROD remedy:

- Established commercial use and industrial use Soil Cleanup Objectives (SCOs) as established in 6NYCRR Part 375 for the soil remedial action activities at the Site. **(modified)**

- Reduce, control, or eliminate to the extent practicable the contamination within soils and wastes on the Site from AEC-1 (Landfill), AEC-2 (North Plant Area), AEC-6 (Main Plant Building) and AEC-8 (South Plant Area). The soil contamination from these areas will be excavated and properly disposed off-site. **(modified)**

- Mitigate via excavation and off-site disposal environmental threats to Skaneateles Creek (AEC-5) by eliminating to the extent practicable further inflows of any contaminated runoff, and contaminated groundwater from contaminated soils and waste. Modify the sediment clean up objectives from pre-release conditions to Ecological SCOs. Excavate creek sediments and contaminated soils within 25' of the creek to levels that will not impair aquatic organisms and promote unimpaired use by aquatic organisms. The soils and creek sediment will be properly disposed off-site. **(modified)**

- Attain to the extent practicable Ecological SCOs within the 25' buffer of Skaneateles Creek. **(new)**

- Mitigate via treatment with activated carbon the impacts of contaminated groundwater on the environment. Provide for the attainment of SSCGs for groundwater quality at the limits of AEC-3, the shallow groundwater, and AEC-4, the deep groundwater, and to the extent practicable, provide for SSCG attainment within these AECs. Perform one additional year of quarterly groundwater sampling in the northeast quadrant of the Site and if the Department deems it necessary, additional monitoring wells will be installed in that area of localized xylene contamination. **(modified)**

- Certification of 2003 closure of the former drum storage area, former waste storage tank, and former acid neutralization tank following the requirements of the Resource Conservation and Recovery Act (RCRA). **(new)**

- Repair an existing clay cap with a two (2) foot clay cap, as necessary, in former Sludge Lagoons 2, 3, and 4 to complete a 6 NYCRR Part 360 closure. Install a one (1) foot soil cover in areas not covered by a building or pavement and the appropriate demarcation layer over the two (2) former Settling Ponds to complete the remedy. **(new)**

- Dewatering operations and subsequent treatment of water generated from excavation activities. Ensure and implement truck traffic safety protocols as well as implement appropriate decontamination and emergency spill procedures for disposal trucks along designated transportation routes. **(unchanged)**

- A soil cover and the appropriate demarcation layer will be required to isolate metals contamination soils in AOI-3 and AOI-4 exceeding applicable SCOs and to isolate contaminated soils in other areas of the Site. Applying appropriate environmental easements and institutional controls will allow for future commercial use of the Site. For AOI-3 and AOI-4, an excavation will be performed before the soil cover and the appropriate demarcation layer is placed so that contaminated surface soils are shipped off-site for proper disposal and flood plain elevations remain constant. Where the soil cover is required it will be a minimum of two feet of soil, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for commercial use. The soil cover will be placed over a demarcation layer, with the upper six inches of the soil of sufficient quality to maintain a vegetation layer. Any fill material brought to the Site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d). A two-foot excavation was required because the

depth of the contaminated soil exceeding commercial SCOs between the 0' and 2' depth was unknown. **(modified)**

- Conduct an evaluation for the potential inhalation of Site contaminants due to soil vapor intrusion prior to redevelopment and occupancy of the property. **(new)**

- Execution and recording of an Environmental Easement to restrict land use and prevent future exposure to any contamination remaining at the Site.

- Development and implementation of a Site Management Plan for long term management of remaining contamination as required by the Environmental Easement, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting;

- Periodic certification of the institutional and engineering controls listed above.

Copies of the ROD and ARODs are attached in Appendix A.

3.0 INTERIM REMEDIAL MEASURES, AND OPERABLE UNITS AND REMEDIAL CONTRACTS

The information and certifications made in the Lagoon No. 1 Construction Certification Report and the AEC-1 Construction Certification Report were relied upon to prepare this FER and certify that the remediation requirements for those AECs have been met.

3.1 Interim Remedial Measures

Interim Remedial Measures (IRMs) were implemented at the Site when a source of contamination or exposure pathway could be effectively addressed before the issuance of the Record of Decision(s).

The following IRMs were completed as part of the remedial activities at the Site.

3.1.1 AEC-7 Oil Spill Area Interim Remedial Measure (2001 AROD SCOs)

As part of the 2006 Supplemental Investigation Remedial Activities (SIRA), AEC-7 was investigated in the area of former underground oil storage tanks. Groundwater and soil samples collected during the SIRA showed the presence of petroleum related compounds above 2001 AROD SCOs. As a result of the SIRA findings, and upon request by NYSDEC, an IRM work plan, dated October 2007 was developed to excavate and remediate soils at this location. The IRM work plan was approved by the NYSDEC and implemented as discussed below.

As discussed with the NYSDEC during the work plan development, the extent of the IRM excavation was limited due to the proximity to Jordan Road and major Site utilities. In addition, there was limited space to lay back the excavation with an open face as had been done for other areas of the Site. Therefore, it was agreed upon with the NYSDEC to perform the excavation using trench boxes and that the limits of the IRM excavation would be set at Jordan Road to the west, the previously placed clean backfill of AEC-6 to the east, the presence of Site utilities including a gas main to the north and electrical guide wires to the south. The limits of the IRM excavation, the method of excavation and number of samples to be collected were detailed in the IRM work plan and approved by NYSDEC prior to the start of IRM activities.

During 2008, the Oil spill IRM location in AEC-7 (See Drawing D-2) was remediated using open top trench boxes. IRM activities were in accordance with the NYSDEC approved IRM plan. At the completion of the IRM excavation, one soil sample collected from the western sidewall was reported above the STARS regulatory thresholds.

However, as the IRM excavation was at the boundary of the right-of-way, and due to the proximity of Jordan Road, the IRM excavation could not progress further west. One soil sample collected at the north side of the IRM excavation was also above the STARS regulatory thresholds. The IRM excavation could not continue to the north due to the utilities immediately adjacent to the northern excavation limits. The western wall of the IRM excavation was excavated into the previously placed clean backfill of AEC-6.

During the IRM excavation, the bottom could not be adequately assessed by the NYSDEC as saturated sand continually sloughed into the excavation and within the confines of the trench box. As an additional remedial measure, upon the request of the NYSDEC, Oxygen Releasing Compound (ORC) was applied to the bottom of the IRM excavation prior to backfilling. Each trench box was backfilled per the approved IRM plan. See Drawing D-2 for the location of the IRM. Confirmatory soil sample locations are shown on Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy". Analytical data summaries of the oil spill IRM are included as Appendix B.

Test Pits for Oil Spill Area

At the completion of the IRM excavation, the NYSDEC requested additional excavation. Due to the physical restraints of the Site, however, additional excavation was not possible and therefore the NYSDEC requested that Stauffer complete four (4) test pits (OSA-TP-1 through 4) at locations beyond the limits of the 0IRM excavation Samples were collected from the test pits to determine if the extent of the oil spill went beyond the original IRM excavated area. Sample results from the test pits did not show any evidence of petroleum contamination. One sample collected had levels of PAHs above SSCGs. However, the level of PAHs was consistent with background conditions on the Site and in surrounding off-site areas. See Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" for test pit locations and Appendix B for a summary of test pit analytical results.

In response to concerns of potential impacts to groundwater from the Oil spill IRM area, three groundwater monitoring wells were installed cross and down gradient of the IRM excavation and across Jordan Road as per the IRM Work Plan. These wells were installed during 2008 and identified as MW-23S, MW38S and MW39S and are shown on Drawing 1 "Site Plan". Reinstallation of MW-23S (MW-23SR), MW-38S (MW-38I) and MW-39S (MW-39I) was completed during June 2012 at the request of NYSDEC due to the wells being dry. Following reinstallation of these monitoring wells; four (4) quarterly

sampling events were completed and indicated non-detect concentrations for petroleum constituents. See Quarterly Groundwater Report dated, April 2014 attached as Appendix L.

Monitoring wells; MW-23S, MW38S and MW39S were subsequently closed during December 2013in accordance with Commissioner's Policy 43 "Groundwater Monitoring Well Decommissioning Policy" dated November 3, 2009. The NYSDEC Spill No. 0607942 associated with this IRM was closed January 24, 2014.

Approximately 3,717 tons of soil were removed from the Site during completion of this IRM and disposed of at High Acres Landfill as non-hazardous material. The IRM excavation was backfilled from approved backfill sources upon approval of the NYSDEC. Five (5) confirmatory and four (4) test pit soil samples were collected as part of this IRM to confirm soil concentrations met applicable SCOs. All confirmatory soil samples met the 2001 AROD SCOs with the exception of the noted samples above. See Appendix B for a tabulated summary of waste disposal activities associated with the completion of this IRM and for confirmatory sample result summaries. See Drawing D-3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" for confirmatory and test pit soil sample locations.

3.1.2 Lagoon No. 1 Interim Remedial Measure (2001 AROD SCOs)

During the 2006 SIRA, soils contaminated with xylene (up to 25,000 ppm) were identified in the Lagoon No. 1 (AOI-6). As a result, an IRM Work Plan, dated May 3, 2007 was developed and subsequently approved by NYSDEC. The Lagoon No. 1 IRM remedy consisted of excavation of the contaminated soil to bedrock with proper disposal of soils off-site.

The Lagoon No. 1 IRM commenced during May 2007 and was completed in May 2008. In October 2007, during the progression of the excavation, NYSDEC requested that additional investigation of the western and northern portions beyond the excavated limits of Lagoon No. 1. The additional investigation involved excavations into previously approved for backfill portions of AEC-1. The investigation was completed per the request of NYSDEC for visual observation and soil sampling beyond the original Lagoon No. 1 IRM work plan limits. These areas of additional investigation were referenced as the southwest notch, north wall notch and northwest notch of Lagoon No. 1. The notch investigations outside of Lagoon No.1 were completed in December 2007. The backfilling of the notch areas was completed during March 2008. The soil that was excavated was re-used for backfill upon sampling and approval of NYSDEC.

Approximately 47,871 tons of impacted soil were removed during the Lagoon-1 IRM and disposed off-site at High Acres located in Fairport, New York and/or Mill Seat Landfill located in Bergan, New York. The IRM excavation was backfilled with approved backfill sources upon approval of the NYSDEC. Confirmatory soil samples (including additional investigation samples) were collected from the excavation side walls only as the Lagoon No.1 excavation extended to bedrock. All confirmatory soil samples met the 2001 AROD SCOs.

The information and certifications made in the September 2009 Lagoon #1 Construction Certification Report were relied upon to prepare this summary and certify that the remediation requirements for Lagoon No. 1 have been met. See Appendix C for a copy of the Lagoon No. 1 Construction Certification Report, dated September 2009.

3.2 Operable Units

Multiple operable units were established for the Site to represent portions of the remedial activities that for technical or administrative reasons could be addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from contamination.

The Site was divided into nine (9) operable units as follows:

- **Operable Unit 01 (OU01)** pertains to the groundwater treatment plant. *(Completed – Plant constructed 1999-2000)*

- **Operable Unit 02 (OU02)** pertains to the groundwater recovery system that transports the contaminated groundwater to the treatment plant. *(Completed/on-going)*

- **OU03** consists of a Corrective Action Management Unit landfill cell required by the initial Record of Decision. **(The Record of Decision was amended in December 2001 to delete this remedy from the project.)**

- **OU04** pertains to the excavation and off-site disposal of the Area of Concern No. 1 (AEC 1) landfill. *(Completed 2004-2012)*

- **OU05** pertains to the remediation of Skaneateles Creek soils, sediment and creek banks. (AEC-5) *(Completed 2005-2012)*

- **OU06** pertains to the soil remediation for the Site. This Operable Unit includes, but is not limited to, the six Areas of Investigation (AOI).*(Completed 2012)*

- **OU06A** consists of a pilot test to determine the effectiveness of low temperature thermal desorption to remediate on-site soils **(Not required due to changes outlined in the 2001 AROD; see section 2.2.2 above).**

- **OU06B** also includes the excavation and off-site disposal of Lagoon 1, part of the Resource Conservation and Recovery Act- (RCRA) permitted landfills on the Site. *(Completed 2008)*

- **OU07** pertains to the soil/debris remediation in AEC-2, AEC-6, AEC-7, AEC-8A. AEC-8B and AEC-8C. *(Completed 2013)*

- **OU07B** consists of the Petroleum Spill remediation (Spill #0607942) as detailed in the above. *(Closed January 24, 2014)*

- **OU08** pertains to additional groundwater recovery and treatment remediation determined necessary in the supplemental remedial investigation after OU01 and OU02 were completed. *(Continued Operation under evaluation).*

- **OU09** pertains to the soil vapor intrusion evaluation performed in February and March of 2006. *(Completed 2006)*

See Drawing D-2 "Area of Environmental Concern and Area of Interest Map" for AECs and the AOIs boundaries and locations.

3.3 Remedial Contracts

The remediation activities completed at the Site were completed by private contractors and engineers hired by SMC. See Section 4.2 below for a list of contractors and engineers.

NYSDEC completed environmental oversight with the assistance of Dvirka and Bartilucci Engineers and Architects, P.C. (D&B).

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the following NYSDEC-approved work plans:

Table 1: Summary of Work Plans

Date	Report Name	Source	Description of Report
Sept. 1990	Site Investigation Work Plan	BBL	Original investigation work plan, focused on determining the extent and impact of contamination in the landfill area.
Sept. 1992	MW-5 Area Investigation Work Plan	EA	Supplemental investigation of the former organics plant area.
Oct. 1993	Work Plan Amendment for Phase II Investigation	EA	Supplemental Phase II investigation, expanded the scope of the original site investigation to include an area north of the Main Plant Building and the sludge disposal area east of the landfill. Additional on-site and off-site monitoring wells were installed and sampled.
Jan. 1998	SVE/Dewatering System and Groundwater Recovery System Monitoring	OBG	Planned monitoring schedule for dewatering and recovery systems.
Nov. 2000	PCB Investigation Plan	SPEC	Investigation of areas with potential PCB contamination, including north plant, raceway, landfill, Main Plant Building, Main Plant Building roof, and area around MW-2I.
Oct. 2001	PCB Pollution Minimization Plan	SPEC	Summarized the PCB sampling results, proposed PCB interim remedial measures, and suggested future PCB investigations to be conducted at the Site.
Aug. 2002	Final Remedial Design Work Plan Phase I Infrastructure and AEC-1	SPEC	Detailed the tasks necessary to develop remedial infrastructure and complete remediation of AEC-1, the landfill.
Dec. 2002	Final Remedial Design for Site Wide Soils/Debris Remediation	SPEC	Established the site-wide design requirements for the selected treatment of off-site disposal to mitigate impacted soil at the Site.
Dec. 2002	Building Demolition Work Plan	SPEC	Detailed the proposed site-specific activities to demolish the Main Plant Building.

Table 1: Summary of Work Plans

Date	Report Name	Source	Description of Report
Jun. 2003	Final Soil and Debris Characterization Confirmatory Sampling and Analysis Plan	SPEC	Detailed the sampling and analysis to be performed during site-wide remedial activities, including excavation and disposal.
Sept. 2003	Remedial Design Work Plan Phase II AEC-7 and AEC-8	SPEC	Detailed the tasks necessary to remediate AEC-7, front of the Main Plant Building, and AEC-8, South Plant area.
Sept. 2003	Above Grade Concrete Sampling Analysis and Relocation Plan	SPEC	Detailed the sampling and analysis to determine the potential to use above grade concrete for on-site fill and relocate the piles on-site or dispose of off-site.
Oct. 2003	Remedial Design Work Plan Phase IV AEC-2	SPEC	Detailed the tasks necessary to remediate AEC-2, the former Organics Plant.
Dec. 2003	AEC-2 Sanitary System Sand Filter and Subsurface Sampling Plan	SPEC	Detailed the sampling and analysis to investigate the soils within the sand filter system (leachfield) in AEC-2.
Apr. 2004	Remedial Design Work Plan Phase 3B of AEC-6	SPEC	Detailed specific tasks necessary for completion of AEC-6 soil remediation.
Aug. 2004	Skaneateles Creek AEC-5 Sediment Sampling and Analysis Plan	SPEC	Defined creek bed depositional sediment locations to be sampled as part of AEC-5 remedial work.
Jun. 2005	AEC-5 Sediment Removal Plan Rev. 1	SPEC	Detailed infrastructure and creek sediment remedial activities associated with AEC-5 remediation, exclusive of on-site culvert work.
Jun. 2005	AEC-5 Culvert Removal and Replacement Remedial Plan Including Creek Pump Around	SPEC	Detailed the tasks necessary to remove and replace the culvert with use of a creek pump around in order to remove impacted soils in the vicinity of the culvert.
Jul. 2005	Addendum to AEC-5 Culvert Removal Plan	SPEC	Clarified and addressed comments to the culvert removal plan, mostly regarding the pump around and creek sediment removal.

Table 1: Summary of Work Plans

Date	Report Name	Source	Description of Report
Jul. 2005	AEC-5 Phase II Creek Pump Around	SPEC	Detailed Phase 2 of the pump around to be used in areas downstream of the culvert in lieu of creek bisection and fording for sediment removal.
Aug. 2005	AEC-5 Culvert Removal and Replacement Remedial Plan	SPEC	Detailed the tasks necessary to remove and replace the culvert in order to remove impacted soils as the head wall and wing wall areas. This plan superseded the June 2003 submittal.
Aug. 2005	Soil Vapor Sampling Work Plan	D&B	Detailed the sampling and analysis to evaluate vapor intrusion for nearby structures.
Feb. 2006	Soil Vapor Sampling Work Plan	D&B	Detailed the sampling and analysis to further evaluate vapor intrusion for nearby structures.
Mar. 2005/ Mar. 2006	On-site Groundwater Sampling AEC-3 and AEC-4	SPEC	Detailed the sampling and analysis to establish a baseline condition of groundwater at the Site. Letter on March 14, 2006 outlined the work to be completed and was approved by NYSDEC.
Sept. 2006	Supplemental Investigation and Remedial Activities (SI/RA) Work Plan	SPEC	Outlined the activities to be completed in the 2006/early 2007 construction season to address outstanding issues as requested by NYSDEC.
May 2007	Lagoon-1 IRM Work Plan	Envirospec	Outlined the activities to be completed to address xylene contamination in Lagoon-1, a former sludge lagoon.
Oct. 2007	AEC-7 Oil Spill Area IRM Work Plan	Envirospec	Outlined the activities to be completed to address NYSDEC spill number 0607942 in AEC-7.
Sept. 2009	Phase II Supplemental Investigation Work Plan	Envirospec	Completed to delineate the nature and extent of remaining contamination at the Site before the NYSDEC will consider a petition to amend the AROD and to approve alternate SSCGs.

Table 1: Summary of Work Plans

Date	Report Name	Source	Description of Report
Jan. 2012	AEC-5 Skaneateles Creek Proposed Scope of Work	Envirospec	Summarized remedial work and presented additional investigation activities previously completed within the Creek, and proposed additional work to be completed within the Creek.
May 2012	Supplemental Remedial Activities Work Plan	Envirospec	Addressed Site items to obtain final remediation and closure of soil and sediment issues at the Site.
Jul. 2013	Pad Investigation/Settling Pond Soil Cover Work Plan	Envirospec	Included an investigation into the Site soil staging pads used during remediation activities. Addressed the closure of the former settling ponds with the placement of soil cover.

IT	IT Corporation
CHA	Clough Harbour & Associates LLP
EA	EA Engineering, Science, and Technology, Inc.
DFW	Division of Fish, Wildlife and Marine Resources
OBG	O'Brien & Gere Engineers, Inc.
SCC	Stauffer Chemical Company
D&B	Dvirka and Bartilucci Engineers and Architects, PC

Deviations from the Work Plans are discussed in sections 4.3 and 4.10 of this report.

A summary of reports and remedial work plan documents is provided below.

Table 2: Remedial Action and/or Investigation Reports per Area

Date	Report Name	Source	Description of Report
Sept. 1986	Summary Report of Site Investigation Activities	SCC	Stauffer Chemical Company's preliminary investigation to identify the hydrogeological conditions around the landfill and to characterize the leachate.
Aug.1994	Final Remedial Investigation Report	EA	Summarized data from the site investigations and determines the nature and extent of contamination present in the soil and groundwater at the site.
Sept. 1995	Field Investigation Results from Supplemental Stream Sediment Sampling	EA	Supplemental sampling of creek sediments.
Dec. 1995	Final Feasibility Study	EA	Identified and evaluated possible site Remedial Actions.
Aug. 1997	Pre-Design Hydrogeologic Investigation Report	OBG	Hydrogeologic monitoring to characterize the groundwater yield and extraction rates over the site.

Table 2: Remedial Action and/or Investigation Reports per Area

Date	Report Name	Source	Description of Report
Sept. 1997	Groundwater Recovery System Basis of Design Report	OBG	Capture zone assessment within the intermediate groundwater zone.
Nov. 1998	Groundwater Recovery Wells 90% Basis of Design Report	SPEC	Design of the recovery well system including well location, installation, and operation.
Dec. 1998	Final Remedial Design Report	OBG	Summarized investigation consisting of 11 soil borings and 73 test pits/trenches in the landfill and north plant areas.
Jan. 1999	Results of Additional Site Assessment Activities	IT	Summarized the supplemental investigation consisting of soil samples from 31 test pits and sampling of 13 wells intended to address potential data gaps that would impede implementation of the 1996 ROD.
Jan. 2000	Low Temperature Thermal Desorption Pilot Test Completion Report	IT	Evaluated thermal desorption as a potential remedial technology for achieving the remedial objectives outlined in the March 1996 ROD.
Sept. 2000	Well Sampling Summary Report	CHA	Summarized activities and results from the collection of samples from 47 onsite and 10 offsite wells.
Jan. 2001	Test Pit Summary Report	SPEC	Summarized supplemental test pit program aimed to investigate the hazardous characteristics of the soil at the site for off-site disposal.
Mar. 2001	PCB Investigation Summary Report	SPEC	Summarized the sampling activities and results of the PCB investigation, and outlined future activities in relation to PCB contamination and remediation at the site.
May 2001	Final Focused Feasibility Study	SPEC	Evaluated off-site disposal as a remedy to address contamination at the Site.
Oct. 2001	Skaneateles Creek Habitat Assessment	DFW	Identified and categorized riparian and aquatic habitat within and immediately surrounding the 2370-foot section of the creek within the property boundaries.
Apr. 2004	AEC-6 Subsurface Sampling Report	SPEC	Summarized subsurface investigation of AEC-6, which consisted of 33 soil samples.
Sept. 2004	AEC-1 Construction Certification Report	SPEC	Certified and summarized remedial construction activities in AEC-1, the former landfill.

Table 2: Remedial Action and/or Investigation Reports per Area

Date	Report Name	Source	Description of Report
Mar. 2005	Skaneateles Creek AEC-5 Sediment Sampling Summary Report	SPEC	Summarized creek sampling activities and results of the investigation.
Jun. 2006	Groundwater Monitoring Report	SPEC	Groundwater Sample Results 2006 event
Oct. 2006	Supplemental Investigation and Remedial Activities	SPEC	Additional areas of the site were investigated with test pits and soil borings. Additional remedial work was completed in AECs.
May 2007	Lagoon 1 IRM	Envirospec	Remediation of Lagoon 1. Excavation and offsite disposal of over 47,800 tons of material.
Jun. 2007	Supplemental Investigation and Remedial Activities Report	Envirospec	Summarized the activities completed in the 2006/early 2007 construction season to address outstanding issues as requested by NYSDEC.
Oct. 2007	Lagoon 1 Additional Investigation	Envirospec	Investigation between Lagoon 1 and AEC-1.
Jan. 2008	AEC-7 Oil Spill IRM	Envirospec	Remediation of oil spill. Excavation and offsite disposal of over 3,700 tons of material.
Mar. 2009	Completion of AROD Goals and Objectives Report	Envirospec	Summary Report
Sept. 2009	Lagoon #1 Construction Certification Report	Envirospec	Certified and summarized remedial construction activities in Lagoon-1, a former sludge lagoon.
Late 2009 / Early 2010	Phase II Supplemental Investigation Field Activities	Envirospec	Soil Borings and Test Pit Completion. Collection of 350 soil samples and 85 groundwater samples.
Jan. 2011	Phase II Supplemental Investigation Report	Envirospec	Investigation and delineation of the nature and extent of remaining PAHs and metals at the Site.
Aug. 2012	Summary of Proposed Changes to AOI-3 and AOI-4 Mercury Caps	Envirospec	Summarized the results of the June 20, 2012 Supplemental Soil Sampling event and outlining the subsequent proposed changes to the extent of the mercury caps in AOI-3 and AOI-4.
Apr.. 2014	Amendment to AEC-1 Construction Certification Report	Envirospec	Summarized completion of removal of chromium impacted soil located in AEC-1

Table 2: Remedial Action and/or Investigation Reports per Area

Date	Report Name	Source	Description of Report
Apr. 2014	2013 Groundwater Monitoring Report	Envirospec	Summarizes historical groundwater monitoring results as well as 2012/2013 groundwater monitoring results for AEC-3 and AEC-4.
Apr. 2014	Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report	Envirospec	Summarized 2012 and 2013 Remedial Activities completed at the Site.

IT IT Corporation
CHA Clough Harbour & Associates LLP
EA EA Engineering, Science, and Technology, Inc.
DFW Division of Fish, Wildlife and Marine Resources
OBG O'Brien & Gere Engineers, Inc.
SCC Stauffer Chemical Company
D&B Dvirka and Bartilucci Engineers and Architects, PC

4.1 Governing Documents

4.1.1 Site Specific Health & Safety Plan (HASP)

A Site Specific Health and Safety Plan (HASP) was prepared that detailed procedures for maintaining safe working conditions and minimizing the potential for exposure to hazardous materials. The Plan was updated regularly throughout the duration of remedial activities and for individual AEC and AOIs, as needed. In general, the plan outlined the necessary health and safety issues including, but not limited to:

- Health and Safety Risks
- System Maintenance
- Site Control
- Decontamination
- Emergency Response
- Noise Control
- System Operation Safety
- Personal Protection Equipment
- Actions levels, and
- Community Air Monitoring

The HASP was used for all contractors, subcontractors, vendors and visitors working at the Site. All personnel working on the Stauffer Site were required to read, understand, sign-off, and adhere to all portions of the current HASP. The selected contractor(s) and their subcontractor(s) were responsible for following the Stauffer Site HASP.

Remedial work performed under the Remedial Actions was in compliance with governmental requirements, including site and worker safety requirements mandated by Federal OSHA requirements.

The Site Health and Safety Plan (HASP) was complied with for all remedial and invasive work performed at the Stauffer Site and overseen by the Site Health and Safety Officer.

Remedial activity Personal Protection Equipment (PPE) levels of protection varied throughout the duration of the project from level B to level D.

4.1.2 Sampling Analysis Plan/Quality Assurance Project Plan/Construction Quality Assurance Plan

A SAP/QAPP, dated December 2002, was included as Appendix B-1 and B-2 of the Final Remedial Design for Site Wide Soils/Debris Remediation Plan dated, December 2002 and the multiple Remedial Action Work Plans (RAWPs) submitted and subsequently approved by the NYSDEC. The SAP/QAPP described the specific policies, objectives, organization, functional activities and quality assurance/ quality control activities designed to achieve the project data quality objectives per the approved work plans.

The sampling and analysis performed under the SAP included characterization of soil, debris, drums, and/or liquids for off-site disposal and end point compliance confirmatory sampling. The QAPP managed performance of the Remedial Action tasks through designed and documented QA/QC methodologies applied in the field and in the lab. The QAPP provided a detailed description of the observation and testing activities that were used to monitor construction quality and confirm that remedial construction was in conformance with the remediation objectives and specifications.

In general the QAPP outlined specific procedures and frequency of testing for environmental sampling including acceptance and rejection criteria, collection of duplicate samples, field quality control, laboratory quality control, routine inspections of work activities, chain of custody procedures, equipment preparation and calibrations and decontamination, as well as project organization. The Engineer's Field Team Leader (FTL) performed all Quality Assurance Officer (QAO) responsibilities during remedial activities.

As an added measure of quality assurance, laboratory data packages were submitted to the NYSDEC for approval prior to backfill activities throughout the duration of Site remedial activities. Backfill submittal packages contained drawings showing locations of

confirmatory soil samples and analytical data summaries indicating whether samples meet or exceeded applicable ROD SCOs.

A Construction Quality Assurance Project Plan (CQAPP) was also prepared to ensure that the Remedial Actions met the design criteria, plans and specifications for remedial activities and was included as Appendix E of the December 2002 Final Remedial Design for Site Wide Soils/Debris Remediation. This document does not reiterate the intent of plans and specifications but provides additional guidance on: 1) remedial design overview, 2) responsibility and authority, 3) construction quality assurance, 4) inspection activities and sampling requirements, 5) procedures for change orders, 6) pre-bid and pre-construction conferences, 7) documentation, and 8) construction oversight.

4.1.3 Soil/Materials Management

The following sections summarize the methods, procedures and controls implemented for handling remediation derived wastes generated during remedial activities including; handling of groundwater, soils, sediments, and drums prior to being transported off-site for disposal.

Groundwater

Groundwater and free liquids from remedial activities were removed from within the excavations using temporary construction water handling systems that conveyed groundwater to an on-site groundwater treatment plant. Treated groundwater was discharged through a SPDES permitted outfall (Outfall 002A). Routine sampling was completed as stipulated in the SPDES permit.

Drums

Drums encountered during the progression of remedial activities were handled and removed in accordance with the Drum Removal/Management Plan included as Appendix G of the Final Remedial Design for Site Wide Soils/Debris Remediation, dated December 2002.

RCRA characteristic testing was completed per the SAP/QAPP for determining if drums contained hazardous waste.

Soil/Debris Stockpile Management

Soil/debris were managed in discrete units of 100, 250 and 500 cubic yard piles. Soil and debris removed from excavations were staged in stockpiles and/or roll-off containers

located within the bounds of the work area, on staging pads or within other designated staging and exclusion areas.

RCRA characteristic testing was completed per the SAP/QAPP for determining if soils/debris was hazardous.

Transportation and Disposal of Remediation Derived Wastes

Once RCRA analytical testing results were logged and reviewed, the excavated material stockpiles and/or roll-off containers were evaluated for off-site disposal. Soils, sediments, drum and debris were managed and transported under appropriate manifests according to applicable State and Federal Regulations.

All materials were maintained on-site and properly managed until shipment of wastes could occur.

4.1.4 Storm-Water Pollution Prevention Plan (SWPPP)

The erosion and sediment controls for remedial construction activities were performed in conformance with requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control and the site-specific Storm Water Pollution Prevention Plan (SWPPP), included in the Final Remedial Design for Site Wide Soils/Debris Remediation, dated December 2002. Revisions to the SWPPP were completed throughout the duration of the remedial activities, as necessary. The SWPPP was prepared in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity. Routine SWPPP inspections were performed throughout the duration of the remedial activities and until vegetative cover was adequately established. SWPPP inspections were completed by a qualified inspector. Required repairs to site controls were made in a timely manner.

4.1.5 Community Air Monitoring Plan (CAMP), Exclusion Zone and Loadout Monitoring

A Community Air Monitoring Plan (CAMP) was implemented during remedial actions to monitor particulate dust and total volatile organic compound (VOC) concentrations during remedial activities. The CAMP entailed continuous real-time monitoring at the perimeter of the Site, the exclusion work zone and during load-out of contaminated media during remedial activities. CAMP, exclusion zone and load out monitoring was

completed using equipment listed in Table 3 below. The Site Health and Safety Officer (HSO) and delegated personnel performed air monitoring on a regular basis in accordance with the HASP within the breathing zone of workers and the exclusion zones.

The CAMP was included as an Appendix of the HASP. Action levels and responses were established for both particulates and VOCs as follows:

Table 3: Air Monitoring and CAMP Action Levels

Monitoring Location/ Personnel	Monitoring Device	Monitoring Frequency	Action Level*	Minimum Protection Level/Action
EX intrusive activities/ Equipment Operator (EO) Recovery Technician (RT)	Photoionization Detector	Continuous during intrusive activities	<5 ppm (5 ppm <50 ppm (50 <1000 ppm > 1,000 ppm	Level D Level C Level B Stop work required
EZ excavation areas; EO, RT	Mini-Ram (total dust)	Continuous during intrusive activities	0- 2.5 mg/m3 (TWA) (2.5 mg/m3 (12.0 mg/m3 (TWA) >12.0 mg/m3 (TWA)	Level D Level C; Initiate dust suppression controls Stop work required
Intrusive work excavation areas; EO, RT	HCL Monitor	Continuous during intrusive activities at AEC-1 Waste Mass	<5 ppm 5 ppm to 50 ppm >50 ppm	Level D Level C; Stop Work - Initiate HCL drum contingency plan Modified Level B
EZ perimeter; EO, RT	HCL Monitor	Continuous if excavation readings exceed Level D protection during intrusive activities at AEC-1 Waste Mass	<5 ppm > 5 ppm	Level D Level C; Stop Work - Initiate HCL drum contingency plan – Perform downwind site perimeter monitoring

Table 3: Air Monitoring and CAMP Action Levels

Monitoring Location/ Personnel	Monitoring Device	Monitoring Frequency	Action Level*	Minimum Protection Level/Action
Site Perimeter	Photoionization Detector/Site perimeter VOC monitors	Continuous during intrusive activities	<5 ppm 5 ppm < 25 ppm >25 ppm max >10 ppm max within 20 ft zone	Normal operations Stop intrusive activities until below 5 ppm at EZ or 200' down and Initiate Vapor Emission Response Plan Stop work and initiate Vapor Emission Response Plan (Major Vapor Emissions) Initiate Major Vapor Emission Response Plan
Site Perimeter	Mini-Ram (total dust)	Continuous during intrusive activities	>150 ug/m3 (TWA) down wind 100 ug/m3 (TWA) above background 150 ug/m3 (TWA) above background	Review upwind background levels Initiate dust suppression an continue work if <150ug/m3 above background. Stop work and reevaluate activities initiated. Submit report to Division of Air within 5 days with actions taken.
Down Wind Site Perimeter	HCL Monitor	Continuous if EZ area exceeds Level D during intrusive activities at AEC-1 Waste Mass	<5 ppm >5 ppm	No action required Stop work and initiate Vapor Emission Response Plan (Major Vapor Emissions)

Perimeter Air Monitoring Stations

The Site had seven air-monitoring stations positioned along the property lines (west-3, north-2, east-1, south-1). Each station contained a VOC sensor and one station along each property line also contained a particulate monitor (dust). The sensors monitored the ambient air for VOC and dust concentrations with a 4-20ma output which were alarmed,

monitored and recorded at the on-site groundwater treatment plant (GWTP). Fence line monitoring locations are shown on Drawing D-1 "Site Plan".

The air and dust monitoring data and alarms along with corrective action were tabulated in Perimeter Air Monitory (PAM) monthly reports. The monthly PAM reports were submitted to the NYSDEC and NYSDOH. Results of the CAMP monitoring related to remedial activities at the Site are summarized in Section 4.2.5 below.

4.1.6 Contractors Site Operations Plans (SOPs)

The Remediation Engineer(s) reviewed all plans and submittals for remedial activities (i.e. those listed above plus contractor and subcontractor submittals) and confirmed that they were in compliance with the Remedial Action Work Plans. Remedial documents were submitted to NYSDEC and NYSDOH in a timely manner and prior to the start of remedial activities and were initiated upon approval of NYSDEC and NYSDOH.

4.1.7 Community Participation Plan

Community Participation activities were guided by NYSDEC citizen participation procedures. The NYSDEC sought input from the community throughout the duration of the Stauffer Site remediation activities through public comment periods and community meetings. The community was also encouraged to review the reports and documents, which are available at the following repositories:

Town of Skaneateles
Town Hall
24 Jordan Street
Skaneateles, NY 13152

NYSDEC Region 7 Office
615 Erie Boulevard West
Syracuse, NY 13204

Public meetings were held through the duration of the investigation and remedial activities. Fact Sheets were distributed at milestones during the project including prior to major remedial activities.

4.2 Remedial Program Elements

4.2.1 Contractors and Consultants

Table 4: Contractors and Consultants

Key Participants	Role and Responsibilities
Environmental Consultant: Envirospec Engineering, PLLC (Gianna M. Aiezza P.E.) & Spec Consulting, LLC (Joseph S. Burke P.E.)	Primary responsibility for remedial program activities including remedial design, field oversight for environmental activities, reporting, inspection, record keeping, QAPP oversight and report preparation. Prepare engineering drawings, including but not limited to excavation plans; preparation of the project Stormwater Pollution Prevention Plan, and addressing issues related to compliance with the SWPPP, the Health & Safety Plan, the Community Air Monitoring Program, excavation and materials handling protocols, and monthly NYSDEC reporting.
Abscope Environmental, Inc. (Remediation Contractor)	Completion of site remedial activities including; soil excavations, SWPPP inspections, backfilling and restoration with direct oversight by Envirospec Engineering, PLLC and Spec Consulting, LLC.
CTMALE Associates	Site Survey
Terrestrial Environmental Specialists, Inc. (TES)	Fauna relocation within Skaneateles Creek Creek Restoration and Plantings
Parrot Wolff, Inc.	Monitoring Well Installations and Soil Borings, well closures.
Certified Environmental Services, Inc. STL Laboratories, Inc.	Analytical testing for soil and groundwater during remedial activities.
Accutest Laboratories, Inc.	Analytical testing for quarterly groundwater sample events.

Table 4: Contractors and Consultants (continued)

Soil and Sediment Transportation and Disposal	
• Riccelli Trucking • DC Rauscher • Silvarole	Transportation of non-hazardous waste, importation of clean fill from approved offsite sources.
• Buffalo Fuel Corp. • Goulet Trucking, Inc. • Tonawanda Tank • Heritage Transport, LLC • Optech Environmental Services, Inc.	Transportation and disposal of hazardous wastes.
• <u>Waste Management of New York</u> -Seneca Meadows Landfill, Seneca Meadows, NY -Model City Landfill, Model City, NY - Mill Seat Landfill, Bergan, NY - High Acres Landfill, Fairport, NY	Disposal of Non-hazardous and Hazardous Wastes and Building Materials
<u>Out of State and County Disposal</u> • Lake Charles, LA. • Port Arthur, TX. • Cycle Chem, Inc. Lewisberry, PA • Stablex in Canada	Disposal of Hazardous Wastes
NYS Oversight	
New York State Department of Environmental Conservation (NYSDEC)	Environmental Oversight and Regulatory Reviews
Dvirka and Bartilucci Engineers and Architects, P.C. (D&B)	Contracted by the NYSDEC to provide project oversight on behalf of NYSDEC

4.2.2 Site Preparation

Multiple mobilizations occurred during the implementation of remedial measures at the Site. Each mobilization generally consisted of transporting necessary equipment to the Site, and setting up equipment storage, material storage and laydown areas, signage, office areas and fencing. During site preparation activities, site security was established, utility mark outs were completed if necessary, and traffic control was identified., Items required by the SWPPP, CAMP, and HASP were also completed along with preparation and installation of temporary facilities and preparation of soil stockpile areas.

Pre-construction or kickoff meetings were held with NYSDEC and contractors before or during each mobilization.

Project documents were supplied to the Town of Skaneateles for informational purposes. All work plans, investigation plans and IRM work plans received NYSDEC approval prior to the start of remedial activities.

Substantive compliance requirements for attainment of applicable natural resource or other permits were achieved during the Remedial Actions.

A NYSDEC-approved project sign was erected at the project entrance and remained in place during all phases of the Remedial Action.

Applicable State agency approvals required by for the completion of remedial activities are included in Appendix F.

4.2.3 General Site Controls

The Site was secured with a temporary 6 foot chain link construction fence with a 40 foot gate opening for vehicular traffic.

Site records were kept in an on-site office trailer. Soil sampling and soil screening results were recorded in field books and soil sample/screening logs throughout the duration of the project.

Erosion control and storm water protection was achieved through the use of berms, collection basins, sumps and silt fencing and implemented per the SWPPP.

Soil, sediments and debris were removed from excavations and were staged in stockpiles or roll-offs ether located within the bounds of the work area, on staging pads or within other designated site staging and exclusion areas.

Equipment decontamination was achieved by scraping, brushing, and washing equipment at the specified decontamination pad located adjacent to the soil staging pad so that wash water could be collected in associated sumps and conveyed to the on-site treatment system. Loose debris were collected and stockpiled with the material stockpiles associated with the equipment being decontaminated.

4.2.4 Nuisance Controls

Dust, vapor, and odor control measures were instituted, as necessary during the remedial process to ensure compliance with the CAMP and HASP and to prevent dust, vapors or odors from migrating offsite and impacting the public.

Noise was minimized to the greatest degree practicable.

The control of dust at the Stauffer Site was suppressed using water trucks to wet surfaces throughout work days and during dry periods. Each stockpile wascovered when not actively receiving materials from work locations to prevent dust and odors from migrating off-site.

Trucks transporting materials off-site and onto public roadways were inspected prior to departure. Inspection consisted of ensuring loads were covered and free of leaking liquids. Trucks transporting wastes from the Site were sprayed with high pressure fire hoses prior to leaving the load out pad. Dirt tracked onto public roads at the stabilized construction entrance were swept up and removed.

Citizen complaints were addressed upon knowledge of community issues.

4.2.5 CAMP Results

As previously discussed, air monitoring was performed during excavation activities at the perimeter of the Site and at the work zones during remedial activities. Air monitoring included PID screenings and dust monitoring using Thermo MIE Personal Data Ram dust monitoring equipment. Copies of field data sheets relating to the CAMP monitoring are provided in electronic format in Appendix G.

4.2.6 Reporting

A daily site observation report was generated each day work occurred and retained in on-site files.

Monthly progress reports were also prepared and submitted to the NYSDEC by the 15th of each month with the exception of the months from October 2007 through May 2011 at which time the project was inactive and/or the status of the Stauffer Site was being driven by discussions with SMC and NYSDEC.

Daily and monthly reports are included in electronic format in Appendix H.

Digital photo of the various phases of remedial work are included in electronic format in Appendix I.

4.3 Summary of Contaminated Materials Removal

On-site locations from which materials were removed included seven (7) AECs and three (3) AOIs. These areas have been identified as follows:

- AEC-1 Former Landfill

- AEC-2 Area North of the Main Plant Building
- AEC-3 Shallow Groundwater (overburden and upper bedrock)

- AEC-5 Skaneateles Creek (seeps, surface water and sediments)
- AEC-6 Main Plant Building
- AEC-7 Area in Front of the Main Plant Building, Oil Spill Area
- AEC-8 South Plant Area (Divided into 8A, 8B and 8C)
- AOI-3 Wetlands
- AOI-4 Northern area of the Stauffer Site (between the Creek and the property line)
- AOI-6 Former Settling Ponds and Sludge Lagoons (Lagoon-1)

The locations of each AEC and AOI are outlined on Drawing 2 "Area of Environmental Concern and Area of Interest Map". Excavation work was performed in accordance with the specifications and details as set forth in the various remedial work plans submitted to the DEC. In general, excavations were extended until confirmatory soil samples met applicable SCOs in place under the ROD at the time of remedial activities. The majority of the Stauffer Site remedial activities occurred during the period when the 2001 AROD was the governing document and entailed applying unrestricted cleanup objectives. All 2012 and 2013 remedial activities were conducted under the March 2013 AROD and entailed applying commercial, industrial and/or ecological SCOs as established under 6 NYCRR Part 375. The 2013 soil cleanup objectives (SCOs) for the Site were established for the protection of public health and environment for a commercial end use.
A list of the soil cleanup objectives (SCOs) for the contaminants of concern for this project is provided below:

Table 5: Contaminants of Concern and Applicable SCOs

Contaminants of Concern		SMC Site Specific Cleanup Goals (SSCGs) (ppm)	6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs) (ppm)	6 NYCRR Part 375 Industrial Soil Cleanup Objectives (SCOs) (ppm)
Volatiles	Toluene	1.5	500	1,000
	Xylenes (total)	1.2	500	1,000
	Other VOC Constituents	Not Specified	Various - See 6 NYCRR Part 375 Commercial	Various - See 6 NYCRR Part 375 Industrial
Semi Volatiles	Benzo(a)anthracene	0.224	5.6	11
	Chrysene	.4	56	110
	Benzo(b)fluroanthene	1.1	5.6	11

Table 5: Contaminants of Concern and Applicable SCOs

Contaminants of Concern		SMC Site Specific Cleanup Goals (SSCGs) (ppm)	6 NYCRR Part 375 Commercial Soil Cleanup Objectives (SCOs) (ppm)	6 NYCRR Part 375 Industrial Soil Cleanup Objectives (SCOs) (ppm)
	Benzo(k)fluroanthene	1.1	56	110
	Benzo(a)pyrene	0.061	1	1.1
	o-Toluic Acid	50	-	-
	m-Toluic Acid	50	-	-
	p-Toluic Acid	50	-	-
	Other SVOCs Constituents	Not Specified	Various - See 6 NYCRR Part 375 Commercial	Various - See 6 NYCRR Part 375 Industrial
PCBs	PCBs (all aroclors)	10 (total)	-	25 (total)
	Other PCB Constituents	Not Specified	Various - See 6 NYCRR Part 375 Commercial	Various - See 6 NYCRR Part 375 Industrial
Metals	Chromium	100	1,500	6,800
	Cobalt	60	-	-
	Lead	500	1,000	3,900
	Mercury	5	2.8	5.7
	Nickel	100	310	10,000
	Zinc	750	10,000	10,000
	Other Metal Constituents	Not Specified	Various - See 6 NYCRR Part 375 Commercial	Various - See 6 NYCRR Part 375 Industrial

A Drawing of the location of AECs and AOIs is provided on Drawing 2 and boundaries of excavations are shown on Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy"

The following sections provide summaries of remedial activities completed under the identified AECs and AOIs.

4.3.1 Summary of AEC/AOI Contaminated Soil/Debris Removals

On-site locations from which contaminated soils were removed included; AEC-1, AEC-2, AEC-6, AEC-7, AEC-8, AOI-3, AOI-4, and AOI-6 (Lagoon-1). The extents of excavations within these locations with confirmatory soil sample locations are shown on Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy"

A master shipping list contained within Appendix E summarizes the total quantities of each category of material (i.e. hazardous vs. non-hazardous) removed from the Site by AEC. Manifests and bills of lading are also included in electronic format in Appendix D.

4.3.1.1 AEC-1 Remedial Activities

Excavation, characterization, and off-site disposal activities for AEC-1 began in September 2002. Work was conducted pursuant to the approved Final Remedial Design Work Plan, Phase I, Infrastructure and AEC-1 (August 2002), the Final Remedial Design Report for Site Wide Soils / Debris Remediation (December 2002), and the Final Soil and Debris Characterization, Confirmatory Sampling and Analysis Plan (June 2003). The AEC-1 Construction Certification Report, which certified and summarized the completion of remedial construction activities, was submitted to the NYSDEC on November 15, 2004, and amended April , 2014 to include certification that 2012 remedial activities related to chromium impacted soil documented at the AEC-1 and AEC-8CSouth boundary was satisfactorily addressed as results met the March 2013 AROD SCOs.

Remedial construction work was performed from September 2002 through to November 2003. The remedial excavation of impacted material, characterization and off-site disposal commenced on September 9, 2002 and was completed on October 1, 2003. During the initial remedial excavation 113 confirmatory samples were collected and 93 soil samples met SSCGs/SSRG. Confirmatory analytical packages were submitted to the Department during this period and approval for backfilling was obtained. See Appendix D.

During the progression of the AEC-1 excavation, an area in the northeast corner could not be sampled due to the angle of the side-slope. Areas along the northern sidewall of AEC-1 showed levels of PAHs just above SSCGs. Re-excavation of these areas was not possible during the original excavation due to the location of the main Site access road. As part of the AEC-1 backfill approval from the NYSDEC, these areas were delineated with geofabric and poly and all open areas of AEC-1 were backfilled.

A limited test pit investigation program was conducted on August 20, 2003 to determine the overburden soil conditions in the southern zone of AEC-1 where the subgrade soils had already met site SSCG/SSRG requirements. Four test pits were excavated at locations which were mutually acceptable to NYSDEC, D&B and SPEC personnel. All test pits were excavated to bedrock. The test pits generally showed a silty clay layer overlying a gravelly till layer, below the till layer was fractured limestone. Groundwater

was generally in the till layer above the bedrock although dry summer conditions and open excavation dewatering made determination of the typical seasonal groundwater elevation in this area not possible. Ground water entering the excavation in the test pits had apparent site specific organic contamination as witnessed by the color of the water entering the excavation (typical of the water entering the AEC-1 French Drain which has low levels of xylene). The soils above the till layer appeared clean with no staining or PID hits and it appeared that the soils were free from contamination entering from the previously removed upper contaminated landfill zone or the lower contaminated groundwater zone. Upon approval from the NYSDEC, AEC-1 was backfilled with clean import material, graded, and seeded. Backfilling activities were completed in November 2003.

Confirmatory sampling of the northeast corner of AEC-1 and additional excavation on the northern sidewall were later completed as part of the Supplemental Investigation & Remedial Activities (SI/RA) work, as discussed in the Northeast Corner and Northwall sections below.

Northeast Corner

As part of the September 2006 SI/RA, the northeast corner of AEC-1 was re-exposed in order to collect the missing samples conducted during previous work. Soils generated from this work were characterized as non-hazardous and disposed off-site at Waste Management's High Acres landfill. Approximately 256 tons of additional material were generated and shipped offsite during the SIRA from this location. Newly collected and analyzed confirmatory sidewall samples showed levels of PAHs just above SSCGs (2001 AROD). No bottom samples were necessary as the excavation extended to bedrock.

During 2007, the northeast corner of AEC-1 was re-excavated to remove the PAH failures. An additional 560 tons were excavated and disposed off-site at High Acres and Mill Seat landfills. Two (2) additional sidewall samples were collected. One sample met SSCGs. The other sample showed levels of benzo(a)pyrene just over 2001 AROD SSCGs. No bottom samples were necessary as the excavation extended to bedrock. The sidewall was delineated prior to backfilling as per agreements with the NSYDEC. The area was graded and re-seeded in April 2008.

North wall

The PAH failures on the northern sidewall of AEC-1 were also removed during excavation activities conducted under the approved SI/RA Work Plan. As part of the

SI/RA, the area between AEC-1 and AEC-8C, referred to as 8CSouth, was excavated and disposed off-site. This area encompassed the main Site access road. The excavation of 8CSouth removed the soils on the northern portion of AEC-1, and essentially tied the AEC-1 excavation into the AEC-8C excavation, thus removing the sidewall where previous PAH failures existed.

The excavation of 8CSouth overlapped the northern portion of the previously excavated, backfilled, and approved areas of AEC-1. The 8CSouth excavation extended deeper into the fractured bedrock in some areas than the bottom of the northern portion of the initial AEC-1 excavation. In this general area, a sample collected along the GWTP subsurface water piping showed xylene above the SSCG. This area was excavated during the 2007 remedial activities and extended further into the completed areas of AEC-1. The NYSDEC collected samples of the soils entrained within the bedrock in this area. Those samples showed metals above SSCGs and one failure for chrysene just above the SSCG. The levels of metals are consistent with metals throughout the site and are indicative of background conditions on the site and in the surrounding areas. This area was partially backfilled in order to provide support for the electrical panel in the immediate area. Results from sampling in this area met the 2013 AROD SCOs.

East Wall into Lagoon No. 1

During the 2007 Interim Remedial Measure (IRM) completed for Lagoon No. 1, upon the request of NYSDEC, two sections of the western sidewall of Lagoon No. 1 were excavated into previously excavated, backfilled, and approved portions of AEC-1. The NYSDEC requested that these previously approved and closed areas be re-excavated so that NYSDEC representatives could visually observe the profile of the interface with AEC-1 and Lagoon No. 1. The clean bottom and sidewalls of AEC-1 in these areas had been previously defined through confirmatory sampling during 2002/2003 activities and approved by the NYSDEC. Since the Lagoon No. 1 excavation extended to bedrock, with a depth range of approximately 20 feet to 30 feet below grade surface (bgs), the NYSDEC asked that the portion of unexcavated material below the approved bottom of AEC-1 be exposed for visual observation and sampling. SMC agreed and collected thirty-nine (39) samples from these areas. One sample collected did not meet the SSCG of 1.2 ppm for xylene. NYSDEC Sample "LG1SW7," collected approximately 30' bgs, had a xylene result of 5.7 ppm. In agreement with the NYSDEC, the excavated material was re-used as backfill in the area. Since sample LG1SW7 met commercial standards per the 2013 AROD, this sample remained in place.

AEC-1 Drums

During remedial excavation of AEC-1, thirteen (13) intact drums and seven (7) drums containing various quantities of hydrochloric acid (HCL) were encountered. These drums were addressed in accordance with the appropriate sections of the drum handling plan included as part of the HASP. A drum log was completed giving each drum a unique number. The drum log also contained date of generation, waste stream, off-site disposal, characterization and date of disposal. A drum log is included in Appendix C of the AEC-1 Construction Certification Report attached to this FER as Appendix J.

Summary – AEC-1

Overall, 255 confirmatory and informational samples were collected from AEC-1. A total of 375 waste characterization samples were collected from soils and wastes generated from the excavation of AEC-1. For all work completed in AEC-1, 97,053 tons (excluding Lagoon No. 1 excavated soils removed as part of an IRM) were excavated and disposed off-site of which 808 tons were determined to be hazardous. SMC completed work in accordance with NYSDEC approved work plans and completed additional work beyond the scope of these work plans upon NYDEC request. SMC has completed the remediation of AEC-1 in accordance with the requirements in the 2001 and 2013 ARODs.

Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" illustrates the boundaries of the AEC-1 remedial area and provides locations where confirmatory soil samples were collected.

Appendix J provides a copy of the completed Construction Certification Report for AEC-1, dated September 2004.

4.3.1.2 AEC-2 Remedial Activities

Remediation of AEC-2 commenced in October 2003 with the major footprint of AEC-2 excavated before December 2004. The excavation included the former North Plant Area as well as areas west of the Plant Area. Work was conducted as per the NYSDEC approved Final Remedial Design Report for Site Wide Soils / Debris Remediation (December 2002), the Final Soil and Debris Characterization, Confirmatory Sampling and Analysis Plan (June 2003), and the Remedial Design Work Plan, Phase IV, AEC-2 (October 2003). Additional remediation was conducted during the AEC-5 creek remediation activities and during the 2006 SI/RA excavations under the respective work plans.

Since remediation of AEC-2 began in October 2003, approximately 94,128 tons of contaminated soil and waste has been excavated and disposed off-site. Approximately 87,568 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management landfills in New York. Approximately 6,560 tons were determined, through analytical testing, to be hazardous and were shipped off-site for treatment and disposal at hazardous waste treatment, storage, and disposal facilities in New York and Texas.

As excavation activities progressed, the soil was field-screened for the potential presence of VOCs using a Photo Ionization Detector (PID). The direction, continuation, or cessation of excavation was preliminarily based on these PID readings. Once a sidewall met the field-screening protocol, confirmatory samples were collected and analyzed for SSCGs. Areas that exceeded site SSCGs were re-excavated and re-sampled. The limits of AEC-2 were excavated to bedrock so no bottom confirmatory samples were necessary. A total of 158 confirmatory samples were collected in 2003 and 2004 from the sidewalls of the AEC-2 excavation. In general, the foot-print excavation of AEC-2 during the 2003/2004 work extended to approximately 50' from the Skaneateles Creek to the east, the tree line to the north, AEC-6 and the main access road to the south, and Jordan Road to the west. The majority of the southern portion of AEC-2 was excavated into the northern portion of AEC-6, thus tying the two excavations together and removing soils between.

Upon approval from the NYSDEC, open areas of AEC-2 were backfilled with clean import material, graded, and seeded. Backfilling activities were complete in March 2005. As part of the AEC-2 backfill approvals from the NYSDEC, areas that did not meet SSCGs were delineated with geofabric and poly and backfilled. These areas were reopened and excavated as summarized below.

East Sidewall/Creek Bank

Portions of the eastern sidewall of AEC-2 between AEC-2 and the Creek did not meet SSCGs for PAHs and metals. As such, the area between AEC-2 and the creek to the east was investigated via Geoprobe during May 2004. The investigation showed levels of PAHs and metals above SSCGs and was later remediated during the AEC-5 creek remediation in September and December of 2005. The portion of the eastern wall was excavated such that the AEC-5 excavation encompassed the sidewall of AEC-2, thus tying the excavations together, removing soils between including the failed sample locations. One confirmatory sample was collected at the north end of the AEC-2/AEC-5

creek bank at this location to verify that remedial efforts were complete. This sample met SSCGs.

Leopard Spot

The AEC-2 proposed limits of excavation, as per the 2001 AROD and work plans, included four (4) satellite locations to the west of the former North Plant Area and one to the east. As previously mentioned, the AEC-2 remediation extended west from the North Plant area to Jordan Road. This excavation encompassed those satellite locations to the west of the North Plant Area. The satellite location to the east of the North Plant Area, also referred to as the "Leopard Spot," was excavated during the AEC-5 creek remediation in July 2005 and September 2005. Additional samples were collected from the extents of the leopard spot excavation during the SI/RA work in 2006. In addition, the small area between the AEC-2 eastern limits of excavation and the leopard spot were investigated. Samples collected from these areas showed levels of PAHs and metals just above site SSCGs (2001 AROD). The levels of metals and PAHs are consistent with levels found throughout the Stauffer Site and are indicative of background conditions on the site and in the surrounding areas. The levels remaining were below SCOs identified in the 2013 AROD for a commercial end use.

Leachfield

As the AEC-2 excavation progressed west, past the proposed boundary of the North Plant Area, the excavation abutted an active sanitary sand filter/leachfield. The leachfield was investigated in January 2004 per the approved Sanitary System Sand Filter & Subsurface Sampling Plan, dated December 9, 2003. Results of investigation indicated levels of site COCs above SCOs. Since residential properties located across Jordan Road were still connected to SMCs system, dye-tests were performed to determine which properties were connected. Five properties were found still connected to SMCs system. As such, SMC set up a temporary septic tank system within the excavated area of AEC-6. Following that installation, the leachfield and system components within AEC-2 were closed and excavated. After waste characterization of excavated leachfield soils was complete, the waste was amended with Dolomite lime to raise the pH level for a period sufficient to destroy pathogens. After the pH returned to an acceptable level, the material was shipped offsite to a Waste Management landfill.

SMC continued to operate the temporary sewage handling system for the private residences until March 2006. Private sewage systems were installed by the NYSDEC in February of 2006 for those previously connected to the Stauffer Site leach field and

holding tank. The temporary holding tank was removed in January 2008.

EDW100 Area

A location along the southern limits near the front entrance to the Site failed 2001 AROD SSCGs for metals during the initial excavation of AEC-2. Due to the proximity of the entrance to the Stauffer Site, this area was not remediated during the larger AEC-2 excavation. Additional excavation to remove soil that exceeded the SSCGs was completed in December 2005 and again in October 2006. Excavation of this area was completed and eventually approved by the NYSDEC.

Summary – AEC-2

Overall, 172 confirmatory samples were collected from AEC-2. A total of 500 waste characterization samples were collected from soils wand wastes generated from excavation AEC-2. For work completed in AEC-2, a total of 94,128 tons were excavated and disposed off-site at appropriately licensed facilities. Approximately 87,568 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management landfills in New York. Approximately 6,560 tons were determined, through analytical testing, to be hazardous and were shipped off-site for treatment and disposal at hazardous waste treatment, storage, and disposal facilities in New York and Texas.

SMC completed work in accordance with NYSDEC approved work plans and completed additional work beyond the scope of these work plans upon NYDEC request. SMC has completed the remediation of AEC-2 in accordance with the requirements in the 2001 and 2013 ARODs.

Drawing 2 shows the boundaries of the AEC-2 remedial area and Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" illustrates the boundaries of AEC-2 with confirmatory sample locations. See Appendix D for backfill submittal packages related to AEC-2 of which contain summaries confirmatory soil sample collected. See Appendix E for a Master List of Shipments of wastes generated during AEC-2 activities.

4.3.1.3 AEC-6

AEC-6 remedial activities consisted of building demolition activities as described in the Building Demolition Work Plan, dated December 2002 by SPEC Consulting. The work necessary to complete the building demolition activities was divided into three Phases of

work; AEC-6 Phase I – Demolition Preparation; AEC-6 Phase II – Demolition To Grade; and AEC-6 Phase III – Characterization of Slabs, Foundations, and Subsurface Conditions, followed by remedial activities outlined in the approved April 2004 Remedial Design Work Plan, Phase IIIB.

The NYSDEC approved the AEC-6 (Main Plant Building) Demolition Work Plan on June 16, 2003 and demolition commenced on June 16, 2003. The first phase of demolition entailed Building Preparations. Preparations included the work necessary to remove and/or abate all materials inside the buildings that had the potential to present any environmental concerns with regard to demolition of the Main Plant Building. This involved abatement of friable and non-friable asbestos, abatement of loose lead paint from surfaces, cleaning and removal of on-site tanks, lab packing and removal of remaining process piping. See Appendix E for a Master List of Shipments of wastes generated during AEC-6 activities.

AEC-6 Phase II building demolition was performed after completion of AEC-6 Phase I Work activities. Phase II involved demolition of the building to grade. The demolition was carried out as specified in the project specifications in Section 6 of the Building Demolition Work Plan. The term grade was defined as the lowest external ground surface and the base, basement or subbasement concrete for interior structures including an underground raceway. The raceway was plugged at the inlets and outlet as described in Section 8 of the Building Demolition Work Plan. Under the demolition plan, the building concrete slabs were to remain in place until the Phase III Plan was developed for characterization of the slabs and sub-surface soils. Excess storm water inside the building area was collected through the existing building sump in the lower building area. Storm water was transferred from the sump to the water treatment system and ultimately discharged through 02A.

In September 2003, a subsurface investigation was conducted of the soil below the demolished Main Plant Building. Findings from this sampling were summarized in the AEC-6 Subsurface Sampling Report, dated April 2004. Based on these results, a work plan for the removal of soil was prepared, submitted and approved.

The excavation of AEC-6 (area below the Main Plant Building) began in May 2004. Materials excavated included the concrete foundations as well as subsurface soils. Remediation of AEC-6 was conducted as per the approved April 2004 Remedial Design Work Plan, Phase IIIB, the approved Final Remedial Design Report for Site Wide Soils / Debris Remediation (December 2002), and the Final Soil and Debris Characterization,

Confirmatory Sampling and Analysis Plan (June 2003).

Approximately 39,613 tons were excavated and/or removed, and disposed off-site from AEC-6. Based on this sampling, approximately 36,565 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management landfills in New York. Approximately 2,957 tons were determined, through analytical testing, to be hazardous and were shipped off-site for treatment and disposal at a hazardous waste treatment, storage, and disposal facility. AEC-6 building foundation and concrete disposal consisted of approximately 6,290 tons of concrete and scrap metal, 5 tons of non-hazardous drums, and 4 tons of hazardous lab packs and drums.

The limits of the AEC-6 excavation abutted the limits of AEC-2 and AEC-8, with the southern and western limit defined by confirmatory sampling as shown on Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy." Levels at the limits of excavation met SCOs as stipulated in the 2013 AROD. As excavation activities progressed, the soil was field-screened for the potential presence of VOCs using a Photo Ionization Detector (PID). The progression of excavation was generally based on these PID readings. Once a sidewall met the field-screening protocol, confirmatory samples were collected and analyzed for SSCGs. Areas that exceeded site SSCGs were re-excavated and re-sampled. The limits of AEC-6 were excavated to bedrock so no bottom confirmatory samples were necessary. A total of 36 confirmatory samples were collected in 2004 from the AEC-6 excavation. In general, the AEC-6 excavation extended into the AEC-8A excavation to the south, the AEC-2 excavation to the north and east, the AEC-8B excavation to the east, and confirmatory samples to the west. Excavation to the west was determined by confirmatory samples meeting 2013 AROD SCOs (See D-4). One location along the west within the main access road was not sampled until 2006 due to the progression of work and the location of the main access road. This sample confirmed that the limits had extended far enough to the west at this location. Excavation activities for the Oil Spill Interim Remedial Measures in AEC-7 tied into the western wall of AEC-6.

Upon approval from the NYSDEC, AEC-6 was backfilled with clean import material, graded, and seeded. Backfilling activities were complete in December 2005. As part of the AEC-6 backfill approvals from the NYSDEC, areas that did not meet SSCGs were delineated with geofabric and poly and backfilled.

Remediated areas of AEC-6 were backfilled in accordance with NYSDEC approvals. One location, MPKWESTSW-1, did not meet the 2001 AROD site specific cleanup goal

for PAHs. This location was delineated with geofabric and poly prior to backfilling. Levels remaining meet commercial SCOs as stipulated in the 2013 AROD.

Summary – AEC-6

Overall, 37 confirmatory and informational samples were collected from AEC-6. A total of 121 waste characterization samples were collected from soils and wastes generated from the excavation of AEC-6. SMC has completed the remediation of AEC-6 in accordance with the requirements in the 2001 and 2013 ARODs.

Drawing 2 illustrates the boundaries of the AEC-6 remedial area and Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" illustrates the boundaries of AEC-6 with confirmatory sample locations. See Appendix D for backfill submittal packages related to AEC-6 of which contain summaries of confirmatory soil sample locations. See Appendix E for a Master List of Shipments of wastes generated during AEC-6 activities.

4.3.1.4 AEC-7

AEC-7, the area in Front of the Main Plant Building, was excavated during remedial work conducted for AEC-6 and AEC-8A. Excavation into AEC-7 started in August 2004, concurrent with AEC-6 remediation. Portions of AEC-7 were also excavated with the AEC-8 remediation in 2005. Excavation, characterization, and offsite disposal was conducted in accordance with approved work plans including the September 2003, Remedial Design Work Plan Phase II AEC-7 and AEC-8, the April 2004 Remedial Design Work Plan, Phase IIIB, the approved Final Remedial Design Report for Site Wide Soils/Debris Remediation (December 2002), and the Final Soil and Debris Characterization, Confirmatory Sampling and Analysis Plan (June 2003). Additional remediation was performed in 2007 as part of the AEC-7 Oil Spill Area IRM (See Section 3.1.1.) and again during 2012 Supplemental Remedial Activities.

The limits of AEC-7 consist of Jordan Road to the west, unexcavated material to the north, AEC-6 to the east, and AEC-8A to the south. AEC-7 was excavated such that portions met and blended into the limits of AEC-8A and AEC-6. As previously discussed, western portions of AEC-6 were excavated into what was defined as AEC-7. Similarly, the excavation of AEC-8A progressed such that it continued into the defined limit of AEC-7. The western limit of AEC-7 was immediately adjacent to the right-of-way of Jordan Road, thus impeding additional excavation in this direction. Confirmatory sidewall samples were collected at the limits of the AEC-7 excavation.

Areas of AEC-7 were excavated to bedrock so no bottom confirmatory samples were necessary.

Sidewall samples collected and analyzed from along the western portion of AEC-7, adjacent to Jordan Road, did not meet the 2001 AROD SSCGs for PAHs. One location (sample 4CWESTSW) did not meet 2001 AROD SSCGs for PCBs. However, due to the proximity of Jordan Road, excavation could not progress further west to remove these areas. This sample was removed during 2012 remedial activities (See 2012 Supplemental Remedial Activities summary below). The levels of PAHs reported were determined to be consistent with levels found throughout the Site and are indicative of background conditions on the Site and in surrounding off-site areas. Samples showing residual PAHs are shown on D-3.

AEC-7 was backfilled with clean import material, graded, and seeded. As part of the AEC-7 backfill approvals from the NYSDEC, areas that did not meet SSCGs were delineated with geofabric and poly and backfilled. As approved by the NYSDEC, the location with PCBs (4C-WESTSW) above SSCGs was delineated with orange snow fence as well as geofabric and poly to provide a visual demarcation of the area.

SI/RA Activities

As part of the 2006 SIRA, AEC-7 was investigated in the area of the former underground oil storage tanks. Groundwater and soil samples collected during the SIRA showed the presence of petroleum related compounds in excess of SCOs. As a result of the SIRA findings, and upon request by NYSDEC, a work plan was developed to excavate soils in the area of the former tanks. This work was completed as an Oil Spill IRM that was approved by the NYSDEC and as discussed in Section 3.1.1 above.

2012 Supplemental Remedial Activities (2013 AROD)

As indicated above, sample location 4C-WESTSW was a sidewall confirmatory sample collected from the western limit of the previously completed AEC-7 excavation that did not meet the 2001 AROD SSCGs for PCBs. The sample was collected adjacent to Jordan Rd at approximately 10 feet bgs. Although soil sample 4C-WESTSW did not exceed ISCOs for PCBs, as per the 2013 AROD, the NYSDEC requested re-excavation of this location.

Excavation of the 4C-WESTSW sample commenced on August 21st, 2012 and was completed on August 23rd, 2012. One (1) additional confirmatory sample (BIIW60SW1) was collected from the western sidewall following removal of 4C-WESTSW which met

SCOs. The final limits of the excavation were bound to the North, South, and East by previous excavations while the western boundary was bounded by both a clean confirmatory sample and the proximity of Jordan Road. The 4C-WESTSW excavation progressed to bedrock. Approximately 401 tons of material was excavated from the 4C-WESTSW excavation during 2012, none of which was disposed of as hazardous material.

Summary – AEC-7

Overall, 33 confirmatory and informational samples were collected from AEC-7 (including samples collected during the Oil Spill IRM discussed above). A total of 61 waste characterization samples were collected from soils and wastes generated from the excavation of AEC-7. Approximately 8,822 tons (including the Oil Spill IRM location and the 2012 Supplemental Remedial Activities) were excavated, characterized, and disposed off-site from AEC-7. Based on waste characterization samples, approximately 8,534 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management landfills in New York. Approximately 288 tons were determined, through analytical testing, to be PCB hazardous waste and were shipped off-site for treatment and disposal at a hazardous waste treatment, storage, and disposal facility.

Drawing 2 illustrates the boundaries of the AEC-7 remedial area and Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" illustrates the boundaries of AEC-6 with confirmatory sample locations. See Appendix D for backfill submittal packages related to AEC-7 of which contain summaries of confirmatory soil sample locations. See Appendix E for a Master List of Shipments of wastes generated during AEC-7 activities. Additional information related to the 2012 remedial activities at 4C-WESTSW can be reviewed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report, dated April 2014 attached as Appendix K.

4.3.1.5 AEC-8

Excavation of soils, characterization, and off-site disposal for AEC-8 (South Plant Area) was completed as part of the September 2003 Remedial Design Work Plan Phase II AEC-7 and AEC-8, the April 2004 Remedial Design Work Plan, Phase IIIB, the approved Final Remedial Design Report for Site Wide Soils / Debris Remediation (December 2002), and the Final Soil and Debris Characterization, Confirmatory Sampling and Analysis Plan (June 2003). Since AEC-8 was geographically widespread and on both sides of Skaneateles Creek, it was divided into three (3) sections and were identified as

AEC-8A, AEC-8B, and AEC-8C. References to AEC-8A, AEC-8B, and AEC-8C (North and South) all were collectively considered to be part of AEC-8.

Remediation of areas within AEC-8 began in September 2003 and generally continued through December 2005. Excavation under the SI/RA work plan commenced in October 2006 and continued until January 2007 with some additional work performed in 2008. Additional remediation was completed as part of the 2012 Supplemental Remedial Activities Work Plan, dated May 2012. Remedial activities are summarized below.

AEC-8A (West of Skaneateles Creek)

The majority of AEC-8A was excavated in 2005. The area designated as AEC-8A is generally located immediately south of AEC-6 and AEC-7. It is bound by the creek to the east, Jordan Road to the west, AEC-6 and AEC-7 to the north, and unexcavated soils (AOI-5) to the south. Approximately half of AEC-8A consisted of subsurface concrete slabs from the former south tank farm associated with the Main Plant Building. An adjacent below grade slab in AEC-8A was also investigated during remedial activities. These slabs were investigated in 2005 and again during the SI/RA and the Phase II. In 2005, samples were collected from under the slab. Concrete cores and additional soil samples were collected during the SI/RA and soil borings Were completed during the Phase II.

Sample results documented that the concrete and soil below the slab met the Site 2001 AROD SSCGs and 2013 AROD SCOs.

Locations within AEC-8A did not initially meet site SSCGs for PAHs and metals. Excavation of these areas to the east and west was not possible due to the location of the Creek and Jordan Road. The remaining levels of metals and PAHs are consistent with levels found throughout the Site and are indicative of background conditions on the site and in the surrounding areas. Levels remaining are consistent with a commercial end use as stipulated in the 2013 AROD. AEC-8A was excavated to bedrock, so no bottom confirmatory samples were necessary. The AEC-8A excavation remained open from when it was first excavated in 2005 until 2013 AROD work was completed in 2012 at which time it was backfilled.

In July 2012, the NYSDEC confirmed its approval that the AEC-8A soil remediation was complete and approved AEC-8A to be backfilled as prescribed in the Supplemental Remedial Activities Work Plan, dated May 2012. As a result, the NYSDEC also concluded that RW-8, located in the foot print of AEC-8A, was no longer needed at the

and approved this recovery well to be properly decommissioned.

AEC-8B (West of Skaneateles Creek)

AEC-8B was excavated between August 2004 and November 2005. The area designated as AEC-8B is generally located immediately east of AEC-6 and west of the Creek. It is bounded by the onsite culvert to the east, the creek retaining wall to the south, AEC-6 to the west, and AEC-2 to the north. Some areas of AEC-8B were excavated during the AEC-6 remediation. All areas of AEC-8B were excavated to bedrock, so no bottom confirmatory samples were necessary. The progression of excavation resulted in no sidewalls in the AEC-8B excavation since it extended to adjacent excavation areas on all sides. All areas of AEC-8B were backfilled in 2005.

AEC-8C

AEC-8C was generally excavated between April 2005 and December 2005. The area designated as AEC-8C is located to the east of the onsite culvert. The initial excavation of AEC-8C was determined by field screening of soils and PID readings. Areas to the east were confirmed through samples which met site SSCGs under the 2001 AROD. The western portion of AEC-8C was excavated to the clean fill placed during the culvert replacement. The southern boundary was excavated to the main access road. Confirmatory samples located on the southern portion did not initially meet the 2001 AROD SSCGs for metals. These locations (8CSouth) were later excavated during the 2006 SIRA work. No samples were collected from the northern wall of AEC-8C (8CNorth). Additional excavation to complete the northern portion was conducted as part of the 2006 SI/RA work described below. AEC-8C was excavated to bedrock, so no bottom confirmatory samples were necessary.

8C South

The area between the northern limits of excavation of AEC-1 and the southern limits of AEC-8C is considered 8CSouth. It is bounded by AEC-1 to the south, the creek to the west, AEC-8C to the north, and unexcavated areas to the east. Excavation of 8C South was completed as part of the 2006 SI/RA work.

The limits of 8CSouth were defined through field screening and confirmatory sidewall sampling. The eastern limits of AEC-8CSouth and the southern limits on the west side were confirmed through sidewall sampling. The western limits were defined by the proximity of the creek. Samples in this area collected by the NYSDEC did not meet 2001 AROD SSCGs for metals or PAHs However levels remaining meet the 2013

AROD SCOs. The north side of 8CSouth was excavated into the clean fill of the previously excavated AEC-8C, thus removing previous sample failures. The majority of the south side of 8CSouth was excavated into the clean fill of AEC-1. As previously discussed in the overview of AEC-1 remediation above, this excavation was also below the previous bottom bedrock of AEC-1, thus revealing a layer of fractured rock with entrained soil between the fractures. Samples collected by the NYSDEC of the soil within the fractures of the rock showed levels of metals above SSCGs. However, only one sample exceeded the 2013 AROD SCOs (8CSGWRL5). A description of additional remediation in this area is included in the 2012 Supplemental Work Activities summary below.

Although the eastern portion of 8C South was approved for backfill, and subsequently backfilled, the NYSDEC requested that the area be re-excavated so that additional fractured rock can be removed from this area. Although excavation of fractured rock was beyond the scope of the work plan, SMC agreed to the excavation of the rock in the open portion of 8CSouth based on NYSDEC's request. This excavation was completed during 2012 as described in the SI/RA work below.

8C North

The area immediately north of AEC-8C is considered 8C North. It is bounded by AEC-8C to the south, unexcavated area to the east and north, and the creek to the west. This area was excavated as part of the 2006 SI/RA work. Excavation progressed to the north and east based on PID readings. Samples collected from these sidewalls confirmed the limits. The southern portion of 8CNorth was excavated into the clean fill of AEC-8C. Some areas were excavated below the previous floor of AEC-8C, thus revealing a profile of fractured rock and soil. Excavation progressed north to the creek bank. Confirmatory samples were collected from this sidewall and one location (MW50SW) showed xylene, metals, and PAHs above SSCGs. This location failed for xylene at 2.3 ppm which was above 2001 AROD SCGs but below 2013 AROD SCOs. 8C North was excavated to bedrock so no bottom samples were necessary. Due to the proximity of the creek, this area was backfilled soon after excavation for fear of a wall breach. The MW50SW sample failure was investigated during 2012 Supplemental Remedial Activities and is discussed below.

SI/RA

As part of the 2006 SI/RA, additional investigation was performed in AEC-8A. Test pits and soil borings were conducted in areas south of AEC-8A and below the concrete slab.

Samples of the concrete slab were also collected. Some samples showed levels of PAHs above SSCGs. However, the levels of PAHs are consistent with levels found throughout the Site and are indicative of background conditions on the Site and in the surrounding areas. Samples collected from a test pit located west of 8CNorth also confirmed the western limits of 8C North.

2012 Supplemental Work Activities (2013 AROD SCOs)

Residual chromium impacted soil was present at the interface between AEC-1 and AEC-8C South (soil sample 8CSGWRL5) following initial excavations. Residual chromium was present within a horizontal fracture between layers of bedrock. The location was documented to be under the northern end of AEC-1, which was excavated to bedrock and backfilled with approximately five (5) feet of clean material.

Per the NYSDEC's request, SMC excavated fractured bedrock and soil from this sample location. Excavation of this area was initiated and completed on July 10th, 2012. No confirmatory sampling was required. Approximately ten (10) tons of soil was excavated as part of this excavation, all of which was disposed of as non-hazardous material.

As indicated in the AEC-8CNorth summary above, the MW50SW sample presented concentrations of xylene above SSCGs. To further investigate the MW50SW sample, five (5) soil borings were advanced around the MW50SW sample location and found to meet 2013 AROD SCOs. For an analytical summary of these borings, see Appendix K: Construction Certification Report Supplemental Remedial Activities 2012-2013.

Summary – AEC-8

Overall, 111 confirmatory and informational samples were collected from AEC-8. A total of 205 waste characterization samples were collected from soils and wastes generated from excavation of AEC-8. Approximately 50,055 tons have been excavated, characterized, and disposed off-site from all areas of AEC-8. Material generated from excavation activities was loaded into roll offs or staged in stockpiles for waste characterization sampling. Based on this waste characterization sampling, approximately 45,537 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management landfills in New York. Approximately 4,029 tons were determined, through analytical testing, to be hazardous waste and were either shipped off-site for treatment and disposal at the Model City Landfill in Model City, New York, or transshipped for incineration at Stablex in Canada. Drawing 2 illustrates the boundaries of the AEC-8 remedial areas and Drawing 3 "Exceedances of 6NYCRR Part 375

Commercial/Industrial SCOs after Remedy" illustrates the boundaries of AEC-8 areas with confirmatory sample locations. See Appendix D for backfill submittal packages related to AEC-8 of which contain summaries of confirmatory soil sample locations. See Appendix E for a Master List of Shipments of wastes generated during AEC-8 activities. Additional information related to the 2012 remedial activities at can be reviewed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report, dated April 2014 attached as Appendix K.

4.3.1.6 AOI-6 Lagoon No. 1

Excavation, characterization, and off-site disposal activities for Lagoon No. 1 began in May 2007 and were completed as an IRM activity. Work was conducted pursuant to the approved May 2007 Lagoon No. 1 IRM Work Plan. The Lagoon No. 1 Construction Certification Report, which certified and summarized the completion of remedial construction activities, was submitted to the NYSDEC in September 2009. Additional details related to the Lagoon No. 1 IRM are summarized in Section 3.1.2.

Lagoons 2, 3, 4 and the former settling ponds located in AOI-6 were investigated in 2006. Sampling determined no excavation was required in these areas. See section 4.7 Soil Cover Systems for a summary of the closures of Lagoons 2, 3, 4 and the former settling ponds.

4.3.1.7 Area Between AEC-2 and AOI-3: Lead Impacted Soil

At the completion of the AEC-2 excavation in 2004, a composite soil sample identified as NW-1 was collected from the sidewall of the northwest corner of the excavation and was hazardous for lead.

This area was remediated under the 2012 Supplemental Remedial Activities Work Plan Dated May 2012. Remedial activities in the AEC-2 / AOI-3 Lead Area commenced on July 23, 2012 and were completed on July 24, 2012. All confirmatory soils samples met ISCOs for lead upon removal of the lead impacted soils during 2013.

Summary – Area Between AEC-2 and AOI-3: Lead Impacted Soil

Overall, approximately 1,075 tons have been excavated, characterized, and disposed off-site from the AEC-2 / AOI-3 Lead Area. Material generated from excavation activities were loaded into roll offs or staged in stockpiles for waste characterization sampling. Approximately 805 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at Waste Management's High Acres landfill located in Fairport, New York. Approximately 270 tons were determined to be hazardous waste and were shipped

off-site for treatment and disposal at the Model City landfill located in Model City, New York.

Excavation, characterization, and disposal activities performed in the AEC-2 / AOI-3 Lead Area are detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

4.3.1.9 AOI-3 Soil Cover

AOI-3 was identified during the SI/RA and the Phase II SI as having mercury impacted soil above ISCOs. In order to eliminate the potential for exposure, a soil cover was installed. The cover consists of one (1) foot of clean material on top of a permeable filter fabric demarcation layer. Two (2) feet of soil was installed as cover within 25 feet of the Creek. Excavation and removal of soil was required for installation of the soil cover in order to maintain pre-excavation grade adjacent to the Creek.

Remedial activities in AOI-3 commenced on September 6, 2012 and were completed on September 12, 2012. The AOI-3 Mercury Soil Cover excavation was bound to the North by the Creek and to the East, West, and South by the maximum proposed limits of excavation.

Summary – AOI-3

Overall, approximately 1,311 tons were excavated, characterized, and disposed off-site from AOI-3. Material generated from excavation activities was loaded and staged in stockpiles for waste characterization sampling. Based on characterization sampling, approximately 1,014 tons were determined to be non-hazardous solid waste and shipped off-site for disposal at a Waste Management landfill in New York. Approximately 297 tons were determined to be hazardous waste and were shipped off-site for treatment and disposal at a hazardous waste treatment, storage, and disposal facility in New York.

Excavation, characterization, and disposal activities performed in the AOI-3 Soil Cover Area are detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

4.3.1.10 AOI-4 Soil Cover

AOI-4 was identified during the SI/RA and Phase II SI as having mercury impacted soil above ISCOs. In order to eliminate the potential for exposure, a soil cover was installed. The cap consisted of one (1) foot of clean material on top of a permeable filter fabric demarcation layer. Two (2) feet of soil was installed as cover within 25 feet of the Creek.

Similar to AOI-3, excavation and removal of soil was required for installation of the soil cover in order to maintain pre-excavation grade adjacent to the Creek.

Remedial activities in AOI-4 commenced on September 17, 2012 and were completed on October 8, 2012. The AOI-4 Mercury Soil Cover excavation was bound to the North, East, and West by the maximum proposed limits of excavation and South by the Creek.

Summary – AOI-4

Overall, approximately 4,054 tons were excavated, characterized, and disposed off-site from AOI-4. Material generated from excavation activities was loaded and staged in stockpiles for waste characterization sampling. All of the soil generated from this excavation was determined to be non-hazardous solid waste and was shipped off-site for disposal at a Waste Management landfill in New York.

Excavation, characterization, and disposal activities performed in the AOI-3 Soil Cover Area are detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

2012 Additional Excavations AOI-3 and AOI-4

Per the NYSDEC's request, SMC completed limited excavations of three (3) Phase II soil boring locations. Two (2) locations within AOI-3 (SB77 and SB86) had results of PCBs above CSCOs and one location within AOI-4 (SB84R) had mercury above ISCOs. Each area was excavated to a 10 foot radius around the boring location. SB77 and SB86 were excavated to a depth of two (2) feet and SB84R was excavated to bedrock (approximately 2.5 feet).

Confirmatory samples were collected from each of these three (3) specific 10 foot radius excavations. For all three (3) excavations, one (1) sidewall sample was be collected from the sidewall facing the Creek. For the SB77 and SB86 excavations, one (1) bottom sample was also collected from the base of the excavations. No bottom sample was required from the SB84R excavation since it extended to bedrock.

Confirmatory soil sample results confirmed that soils met ESCOs and CSCOs.

Excavation, characterization, and disposal activities performed in the AOI-3 and AOI-4 areas are detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

4.3.2 Sediment and Creek Bank Soil Removal

4.3.2.1 AEC-5

In October 2001, as stipulated in the 2001 AROD, a Creek Habitat Assessment was conducted of the Skaneateles Creek by NYSDEC's Division of Fish and Wildlife (DFW). Depositional areas identified in the Habitat Assessment were sampled consistent with the approved Skaneateles Creek AEC-5 Revision 2.0 (Final) Sediment Sampling and Analysis Plan dated August 9, 2004. Sampling was conducted between October and December 2004. A report detailing findings of the creek sampling was submitted to the NYSDEC in March 2005. Work plans for the remediation of the creek were completed based on the information obtained during the 2004 creek sampling and the 2001 DFW Creek Habitat Assessment.

Initial excavation, characterization, and off-site disposal activities for the Skaneateles Creek (AEC-5) commenced in July 2005. Remediation included removal of creek sediments, replacement of the on-site culvert, removal of an abandoned pipe located in the creek, excavation into creek banks and excavation of an off-site Mill Pond and spoils located downstream at Madison Filter. Work was conducted pursuant to the approved AEC-5 Sediment Removal Plan (June 2005), the approved AEC-5 Culvert Removal and Replacement Remedial Plan Including Creek Pump Around (June 2005), and the approved July 2005 Addendum to the AEC-5 Culvert Removal Plan. Additional creek activities were completed during 2012.

Consistent with the approved work plans, a pump around was set-up onsite to divert creek flow around portions of AEC-5 to be excavated. The pump around was monitored 24 hours a day to ensure quick response to any potential flow surges or pump malfunctions. The pump intake was located upstream of the culvert invert. Multiple 12 inch diameter diesel powered construction water pumps capable of handling baseflow in the Creek were placed adjacent to the impounded area of the Creek. Water was discharged to the Creek downstream of work areas.

While employing the pump around these portions of AEC-5, fish and wildlife found trapped in dewatered areas were removed from standing pools and relocated to safe havens both upstream and downstream of the Site. After water and wildlife were removed from the creek, the creek sediment and portions of the creek banks were excavated to a minimum depth of 2' and immediately backfilled with clean cobbles imported from an approved off-site source.

The areas of the creek that were selected for remediation were stipulated in the approved work plans. Additional areas beyond the scope of the approved work plans were remediated based on agreements with the NYSDEC. All remediated areas of AEC-5 were backfilled in accordance with the approved work plans and in accordance with NYSDEC approvals. At the completion of remediation, creek improvements were made as per agreements with the NYSDEC and the DFW. Improvements included the addition of large rock in formations that would allow for fish habitat (i.e. boulder clusters, cross vanes, newbury weir, and J-Hooks). Creek improvements and restoration were completed to the satisfaction of both the NYSDEC and DFW.

During remediation, additional abandoned pipes were encountered in approximately the same area as the one noted in the AROD. These pipes, as well as the one noted in the 2001 AROD, were removed and disposed off-site.

Prior to construction, a buffer zone was identified along the Creek and defined as 25 feet from the limits of the Creek. Confirmatory samples from the bank of AEC-5 were subject to Ecological Soil Cleanup Objectives (ESCOs) in the top two (2) feet of soils and sediments located within the buffer.

Throughout initial AEC-5 creek remediation in 2005, sediment was removed via pressure washing from below the footer of the retaining wall as well as from below the headwall of the culvert. Both the creek side and ground sides were completed. Samples were collected from below the headwall and retaining wall. Headwall samples that exceeded 2001 AROD SCGs were excavated again during the SI/RA work and sample results met SCGs. Three samples from soil entrained in the mud mat below the retaining wall did not meet the 2001 AROD SCG for xylene. The sample locations were encased in concrete prior to backfilling the area, See Section 4.7 for a description of the headwall encapsulation.

Remedial activities in the Mill Pond, located downstream at Madison Filter, began on July 29, 2005 in accordance with the AEC-5 Sediment Removal Work Plan, dated June 2005 due to nine (9) investigative samples containing PAHs, PCBs and metals above SSCGs. Work began with the dewatering of the east side of the Mill Pond after installation of a sump on the east bank, which was removed during the excavation process. Fish and wildlife were relocated from dewatered areas. During excavation activities, excavators were situated on crane mats placed on the creek bank. Excavation depth was to bedrock with at least two (2) feet of sediment removed. Rip-rap was placed at the bar screens in the northeast section of the excavation, where the creek runs under

the Madison Filter building. As excavation progressed to the west and south, excavators were decontaminated and used to place clay berms and poly surrounding the excavated areas, and water flow was directed to these areas. After dewatering of areas to be excavated, poly was removed and clay berms were packed into the creek bank. Biologs and hay bales were placed at the discharge "mouth" section of excavated areas as well as at the bar screens on the northeast corner.

A PCB spot on the west bank (spoils area) of the Mill Pond was excavated on August 3, 2005. The excavated volume of this area measured 9'-6" (running north to south), 13'-7" across (running east to west) and 2'6" deep. The outline of this area fell on two trees – one located on the north side and one on the south side of the excavation. The area around each tree was dug with hand tools to minimize damage to the trees. A small amount of material was left within the root structure of the trees. Material consisted of brown sand with some clay noted beneath each tree, and some debris. Two composite samples were taken from the soils remaining around each tree, which indicated low levels of PCBs.

Excavated material from the Mill Pond and PCB spot was staged on a rolloff staging pad prior to shipping. All material excavated from the Mill Pond and PCB spot was found to be non hazardous and shipped to High Acres Landfill. A total of 2,680 tons of soils and sediments were excavated and disposed off-site from these areas from August 1, 2005 to August 11, 2005. During the 2005 AEC-5 creek work, a total of 12,398 tons were excavated, characterized, and shipped off-site at appropriately licensed facilities. Of this amount, 1,256 tons were determined to be hazardous waste and disposed off-site at approved facilities. This hazardous waste was generated from areas excavated below the culvert during the culvert removal and replacement.

SI/RA

At the NYSDEC's request, additional investigation of creek sediments was conducted as part of the 2006 SI/RA work. The sampling program was outlined in the SIRA Work Plan, which was approved by the NYSDEC. The number of samples collected in the Creek was in accordance with what was requested by the NYSDEC. Sampling within the creek and on the banks of the creek was performed via split spoon sampling. A total of 26 samples were collected. In general, the analytical results showed levels of PAHs above site SSCGs. Some locations also failed for metals while one location, AEC5-SB8 indicated xylene above the creek SSCGs. The levels of metals and PAHs are consistent with levels found throughout the site and are indicative of background conditions on the

site and in surrounding off site areas. After completion of the sampling, the NYSDEC requested that additional sampling be completed beyond the scope of the approved work plan.

2012 Supplemental Remedial Activities

Based on a Proposed Creek SOW document and subsequent correspondence with NYSDEC, SMC completed additional remedial work in two (2) areas of the Creek, identified as Area A and Area B during 2012. These two (2) sections of the Creek were investigated during the 2006 SI/RA and were identified as potential areas of concern.

Additional Creek remedial activities occurred during 2012 and were completed in accordance with the AEC-5 Skaneateles Creek Proposed Scope of Work, dated January 2012, and the Supplemental Remedial Activities Work Plan, dated May 2012. Supplemental creek activities included soil excavations described later in this Section as well as remediation of locations identified as Areas A and B. Creek remediation activities completed during 2012 are summarized below.

AREA A

Area A encompassed Creek sediment sample location AEC5-SB8, which was collected during the 2006 SI/RA work from a depth of 8.0 feet to 9.3 feet.

Remedial activities in Area A commenced on July 12th, 2012 and were completed on August 13th, 2012. Confirmatory soil samples were collected from ten (10) locations while performing this excavation. There were two (2) initial ISCO exceedences and three (3) initial ESCO confirmatory sample exceedances encountered during the excavation of this area, all of which were located on the southern sidewall of Area A. These ISCO and ESCO exceedances were subsequently removed and additional confirmatory samples were collected to confirm that soils met applicable ISCO and ESCOs as required by the 2013 AROD. The final limits of the excavation were bound to the north by clean confirmatory samples, to the East and West by sections of the Creek previously remediated or sampled and to the South by clean confirmatory samples previously placed clean backfill., and the previously delineated limits of the excavation. The Area A excavation progressed to bedrock except in a portion of the southern bank, located in the buffer zone, where only the top two (2) feet of material was removed out to 25 feet from the limits of the Creek. Approximately, 1,405 tons were removed from the creek during 2012.

AREA B

Area B was also bounded by previously remediated areas of Skaneateles Creek both upstream (Creek bed adjacent to AEC-2 Creek bank) and downstream, as well as unexcavated areas along its banks. Area B encompassed Creek sample AEC5-SB13, collected during the 2006 SI/RA from a depth of two (2) to ten (10) feet. This sample showed elevated levels of metals (copper, lead, nickel, and zinc) greater than ESCOs. Area B was expanded per the approved work plan to include a three (3) foot wide by three (3) foot deep excavation along the eastern bank to AEC-8C North.

The extent of excavation at the southern end of the Area B eastern bank was determined based on sample results collected via soil borings conducted on June 27th, 2012. Soil borings were advanced at the southwestern edge of AEC-8C North, between the southwest sidewall of AEC-8C North and the Creek. Since the soil boring results did not show contamination above applicable site cleanup values the Area B excavation ended at the northwest side of AEC-8C North.

Remedial activities in Area B commenced on July 17th, 2012 and were completed on July 27th, 2012. Confirmatory samples were collected from twenty four (24) locations while performing this excavation. There were four (4) ISCO exceedances and one (1) ESCO confirmatory sample exceedances encountered during the excavation of this area, all of which were removed and soils resampled. Additional excavation toward the southern limit of the Area B was driven by elevated headspace readings. The final limits of the excavation were bound to the North and South by sections of the Creek, to the East by clean confirmatory samples, and to the West by clean confirmatory samples and the delineated limits of the excavation. The Area B excavation progressed either to bedrock or as dictated by confirmatory samples. Approximately 1,550 tons of material was excavated from Area B, approximately 780 tons of which was disposed of as PCB hazardous material.

Excavation, characterization, and disposal activities performed in Areas A and B are detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

AEC-5 Soils - *NRCB-1*

Sample location NCRB-1 was a NYSDEC sample collected from the Skaneateles Creek bank during the 2005 remediation of AEC-5. The Creek bank in this area was excavated to bedrock (approximately three (3) feet below grade) and approximately five (5) feet

laterally to the North from the limits of the Creek. Prior to delineating the excavation limits with plastic and backfilling with approved material, the NYSDEC collected sample NCRB-1 from the northern sidewall of the excavation. Results from the sample location exceeded the ISCOs for PCBs.

NCRB-1 was excavated during the 2012 work. Remedial activities commenced on October 8th, 2012 and were completed on October 9th, 2012. There were no confirmatory samples collected per the approved NYSDEC work plan. The NCRB-1 excavation progressed to bedrock. Approximately 108 tons of material was excavated from the NCRB-1 excavation, none of which was disposed of as hazardous material.

Excavation, characterization, and disposal activities performed in NRCN-1 location is detailed in the Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure Report dated April 2014 attached as Appendix K.

Summary – AEC-5

Approximately 143 samples were collected from AEC-5 during Creek remediation and additional investigation activities and a total of 67 waste characterization samples were collected from sediment, soils, and wastes generated from the excavation of AEC-5. Overall, approximately 15,461 tons of sediment, soils, and wastes were generated from the excavation of AEC-5, characterized, and shipped off-site at appropriately licensed facilities. Based on characterization sampling, 2,036 tons were determined to be hazardous waste and disposed off-site at approved facilities.

4.3.3 Groundwater Remediation

4.3.3.1 AEC-3 and AEC-4

The March 1996 ROD outlined a remedy for soil and groundwater. Shallow groundwater was to be extracted and treated via an on-site groundwater treatment system consisting of shallow recovery wells located throughout the Site. As part of the 2001 AROD, the recovery system was modified and sumps and recovery wells were installed. During AEC-1 excavation, a collection trench was installed and connected to the treatment system. The groundwater treatment system to address shallow groundwater contamination (AEC-3) was approved in 1998 and completed in 1999. Since that time, SMC continued to pump and treat groundwater at an average rate of 20,000 gallons per day. Treated groundwater is discharged through a SPDES permitted outfall and monitored for compliance. Monthly and quarterly discharge monitoring reports are submitted to the NYDEC Division of Water.

The level of groundwater contamination has significantly decreased since the 1996 ROD. The treatment has been successful and the quality of the shallow and upper bedrock groundwater has significantly improved. SMC has met the objectives set in the AROD, as off-site groundwater now meets the groundwater cleanup standards and on-site groundwater has improved dramatically since remedial activities commenced.

The remedy in the ROD for the deep bedrock groundwater was "monitoring to assess improvements expected to accrue from removing site source areas and natural attenuation." The current levels in the overburden and upper bedrock aquifers are consistent with the levels in the deep bedrock and are at levels lower than at the time of the ROD when monitoring was chosen as the remedy.

SMC has successfully implemented the groundwater remedy for AEC-3 and 4 in accordance with the 1996 ROD and has met this requirement of the 2001 AROD. Current groundwater concentrations support monitoring as opposed to continued operation of the groundwater treatment plant. A detailed summary of groundwater monitoring results to date is included in the Groundwater Monitoring Report submitted to the NYSDEC on April 2014 attached as Appendix L.

Since identified sources of contamination on site have been removed, and the levels of contamination in the groundwater have significantly decreased, SMC was granted approval by NYSDEC to temporarily shut down the treatment plant on November 18, 2013 in order to evaluate the need for continued operation of the treatment plant and its effectiveness for treatment of shallow groundwater at the Site. Sampling of the system will continue through Spring 2014 to evaluate permanent shut down of the system. A letter of approval from the NYSDEC to temporarily shut down the treatment system is included with this report as Attachment F.

4.4 Remedial Performance/Documentation Sampling

In accordance with the approved RAWPs for each AEC and AOI location, a sample grid was used for sediment and soil excavations and end-point confirmatory samples. As excavation activities progressed, soil was field-screened for the potential presence of VOCs using a Photo Ionization Detector (PID). The progression of excavation was preliminarily based on these PID readings. Once a sidewall or bottom sample met the field-screening protocol, confirmatory samples were collected and analyzed for SSCGs. Areas that exceeded SCGs were re-excavated and re-sampled. Final sample locations met the 2013 AROD cleanup objectives for commercial end use with the exception of the sample results shown on Drawing 3 "Exceedances of 6NYCRR Part 375

Commercial/Industrial SCOs after Remedy." .

Excavation endpoint samples were collected under the following conditions:

- One sample collected from the bottom of each sidewall for every 30 and/or 50 linear feet of sidewall.
- One sample collected from the excavation bottom for every 900 square feet of bottom area. Confirmatory soil samples were not collected in the when excavations extended to bedrock depths.

Tables and area figures summarizing end-point sampling within each AEC area are included in Appendix D Backfill Submittal Packages all of which have been previously submitted to and approved by the NYSDEC. Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" provides a compiled site wide drawing showing the locations of all confirmatory sample locations. Electronic copies of the laboratory analytical data packages are also included as Appendix M.

4.5 Imported Backfill

Imported backfill consisting of virgin gravel/stone/clay/bank run and sand, and rock were imported from various approved sources for construction of the ingress/egress roadways and for backfilling of each AEC and AOI excavation and restorations as detailed in Section 4.3 of this report. Per NYSDEC direction, each source was tested and approved for use prior to import and placement.

Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy" shows the general locations of where backfill has been placed at the Site.

4.6 Contamination Remaining at the Site

Soil

The Site was remediated to levels consisted with the SCOs established in the 2001 and 2013 AROD documents described above. The achieved cleanup objectives are consistent with the intended future commercial use of the Site. Residual contamination remaining at the Site above commercial SCOs includes certain PAHs and Metals as summarized in the backfill data packages (Appendix D), AEC-1 Construction Certification Report, dated September 2004 (Appendix J), the Lagoon No. 1 Construction Certification Report, dated September 2009 (Appendix C), the Supplemental Remedial Activities, Settling Pond Closure, and Soil Staging Pad Closure Activities Report, dated April 2014 (Appendix K), the SIRA, dated June 2007 and Phase II Supplemental Investigation Report, dated August 2010. These reports include detailed summaries regarding

confirmatory sampling locations, depths and residual concentrations. Sample results with levels above SCOs are shown on Drawing 3 "Exceedances of 6NYCRR Part 375 Commercial/Industrial SCOs after Remedy." Certain areas containing residual contamination will be managed under the SMP and Deed Restrictions.

Groundwater

The level of groundwater contamination has significantly decreased since the 1996 ROD and the operation of the groundwater treatment plant. The treatment plant has been successful in remediating groundwater and the quality of the shallow and upper bedrock groundwater has significantly improved.

Current groundwater concentrations support monitoring as opposed to continued operation of the groundwater treatment plant. Based on historical data and recent concentration trends, it is expected that the remaining low concentrations of constituents in groundwater will continue to attenuate with time.

A detailed summary of current groundwater monitoring results is included in the Groundwater Monitoring Report submitted to the NYSDEC on April 2014 attached as Appendix L.

Soil Vapor

A soil vapor intrusion evaluation was performed in February and March of 2006. This evaluation determined that SVI was not impacting off-site structures.

Soil vapor intrusion was added as a component to the 2013 amended remedy discussed in Section 2.2.3 above. Per the amended 2013 AROD, a soil vapor intrusion survey will be required to evaluate the potential inhalation of site contaminants prior to any redevelopment and occupancy of the property.

4.7 Soil Cover Systems

Since contaminated soil and groundwater remains beneath the Site after completion of the Remedial Actions, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (ECs/ICs) are described in the following sections. Long-term management of these EC/ICs and the residual contamination will be performed under the Site Management Plan (SMP) approved by the NYSDEC.

Former Settling Ponds Cover System

In order to achieve closure of the former settling ponds, they have been covered with a

soil cover system measuring twelve (12) inches including a demarcation layer and a minimum of six (6) inches of topsoil. The two (2) former settling ponds share a common boundary and encompass a combined area of approximately 77,000 square feet as Shown on Drawing 4 "Engineering Controls Plan". Construction of the soil cover on the former settling ponds was performed consistent with the Pad Investigation and Former Settling Pond Soil Cover Work Plan, dated July 2013. Soil cover details are shown on Drawing D-5 "Engineering Details."

Lagoons 2, 3 and 4 Cover Systems

Historical documentation confirms that Lagoons 2 & 3 were "closed with an impervious barrier consisting of a 12 inch of clay cover, 12 inches earth fill, 6 inches top soil seeded cap, or equivalent, installed with proper grading and slope." Visual observations from test pits completed in Lagoons 2 and 3 during the 2006 SI/RA support the aforementioned documentation that over 24 inches of clean fill comprising a final cover was used, as this layer was documented in the field. Sample results collected from ground surface to two (2) feet below grade from both lagoons during the SI/RA were non-detect (ND) for VOCs, SVOCs, and PCBs, with metals concentrations below ISCOs.

The closure plans for Lagoon 4 were detailed in an October 25, 1982 letter to the NYSDEC. In this letter, SMC stated the detailed closure plans for Lagoon 4, specifically with a three (3) degree sloped 18 inch clay cap compacted by bulldozers, with 6 inches of topsoil cover. It was further stated in the letter that final raking and seeding would be completed in the spring of 1983. In other words, the requirements for thickness of the cover (two (2) feet, 18 inches of which consists of material with a permeability of less than 1x10-7 cm/sec), grading (three (3) degrees), and a cover crop were met.

The caps were confirmed through visual observation in test pits completed in each Lagoon during the SI/RA in 2006. Samples collected from ground surface to two (2) feet below grade during the SI/RA confirmed the material was clean and met 2001 AROD SCGs.

AOI-3 and AOI-4 Engineered Soil Caps

In order to isolate remaining mercury contamination in AOI-3 and AOI-4, these areas have been covered with a two (2) foot cover within 25 feet of the Creek and a one (1) foot cover outside 25' of the Creek. The cover includes a demarcation layer and a minimum of six (6) inches of topsoil. Work done in these areas was performed consistent with the Supplemental Remedial Activities Work Plan, dated February 2012.

Creek Headwall Encapsulation

As detailed in the above AEC-5 soil removal summary (Section 4.3.2.1), impacted soil was found underneath portions of the headwall and wing walls of the culvert during the removal and replacement of the culvert performed in 2005. Soil in these areas were removed, and the remaining void space under the headwall footer was filled with unreinforced lean concrete. Additional excavation was performed under the headwall during the SI/RA work in May 2007 and backfilled per NYSDEC's approval. An additional sample (FOOTER) was collected and met site SCGs for xylene and 2013 AROD SCOs for PAHs.

4.8 Other Engineering Controls

The remedy for the Site did not require the construction of any other engineering control systems.

4.9 Site Restoration

In support of the management of contaminated soil and debris generated during remediation activities at Site, three (3) soil staging / load out pads, one (1) drum pad, and one (1) decontamination pad with associated collection sumps were constructed. As a result of the completion of the remedial action at the Site, the pads are no longer needed. In order to close the pads, soil under the pads was investigated to determine if they had been impacted.

Approximately thirty-two (32) soil borings through the pads were conducted during August 2013. Soil borings were completed on a 50 foot grid, with at least four (4) borings per pad. Soil borings were advanced through the pad, and the first two (2) feet of soil immediately below the pads was sampled and analyzed.

Each pad and sump was pressure washed and the water collected in the associated sump. One wash water sample was collected from each pad.

In addition, underground piping connected to the decontamination pad sump, LTTD pad sump, and the drum pad sump were grouted and sealed using a cement/bentonite grout mixture during settling pond cover placement activities. All sumps cleaned of sediments and backfilled with clean clay and graded at the surface.

Soil sampling locations are shown on Drawing D-3. Soil sample results and pad rinse results are summarized in the Construction Certification Report for Supplemental Remedial Activities, Settling Pond and Soil Staging Pad Closure, dated April 2014.

4.10 Institutional Controls

The Site remedy requires that an environmental easement be placed on the property to document the Engineering Controls and ensure proper monitoring and maintenance of the controls in order to:

1. Prevent future exposure to remaining contamination by controlling disturbances of the caps;
2. Require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
3. Allow the use and development of the controlled property for commercial and industrial uses as defined by Part 375-1.8(g) which are consistent with the remedial elements. This land usage is consistent with current local zoning laws;
4. Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the Department, NYSDOH or Onondaga County DOH; and
5. Require compliance with the Department approved Site Management Plan.

The environmental easement for the Site will be executed by the NYSDEC, and filed with the Onondaga County Clerk. . A copy of the easement and proof of filing will be provided in the SMP.

4.11 Deviations From the Remedial Action Work Plan

Deviations from the approved Remedial Action Work Plans were completed during implementation of the individual AEC work plans and generally included expansions of the excavation areas due to NYSDEC requests and as a result of confirmatory sample results.

At the request of the NYSDEC, additional rounds of investigation were also completed during remedial activities including test pits and soil borings to evaluate the nature and extent of contamination. These investigations included the completion of the SIRA and Phase II Supplemental Investigations, which included installation of multiple groundwater monitoring wells and collection of multiple soil and groundwater samples to support the extents of on-going remedial activities.

Based on the results of the SIRA , Phase II, and discussions with the NYSDEC, the

December 2001 AROD was modified to alter the future end use of the Site from an unrestricted use to a commercial end use. This approved change to the SCOs permitted concentrations of COCs, once viewed as exceedances under the unrestricted use soil cleanup goal, to remain in place while effectively mitigating the environmental impacts, limiting the degree of post-closure care, promoting a beneficial re-use of the property, and protecting human health and the environment.

All deviations from the approved work plans were either requested by the NYSDEC and/or SMC. All SMC requested deviations were approved by NYSDEC prior to implementation.