DECISION DOCUMENT

SMC Brownfield Site
Brownfield Cleanup Program
New Hartford, Oneida County
Site No. C633016
July 2018

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

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Statement of Purpose and Basis

This document presents the remedy for the SMC Brownfield Site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 373 (RCRA) and Subpart 375 (Brownfield Cleanup Program).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the SMC Brownfield Site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

1A. Pre-Design Investigation

A pre-design investigation (PDI) is required as part of the remedial design and is also required here to identify the extent of site related contamination needing remediation. The PDI shall include sampling throughout the site and at the site boundary where further characterization is needed, inspection of all on-site cover types and drainage systems, on-site subsurface soil sampling in identified potential source areas, and off-site sediment and soil sampling in Mud Creek and the Mud Creek floodplain. On-site surface soil sampling and the inspection of the on-site cover and drainage system will be used to verify whether the existing site cover fully complies with the site cover requirement in paragraph 3 below. Subsurface soil sampling will include suspected source areas. Off-site creek and floodplain sampling will be completed to determine the full extent of off-site impacts needing to be addressed by this Decision Document.

2. Industrial Areas - Excavation

Excavation and off-site disposal of contaminant source areas in accessible areas, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Source area excavation will include removals from the pilot plant area, the former landfill area, and any additional areas identified by the Pre-Design Investigation. Source areas beneath active buildings will not be addressed at this time and will be managed under the Site Management Plan (SMP). In addition, all soils in the upper foot which exceed the lower of PGWSCOs and industrial SCOs will be excavated and transported off-site for disposal. Approximately 2,000 cubic yards of contaminated soil will be removed from industrial areas, however this volume may increase substantially based on the PDI. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish design grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 3.

3. Industrial Areas - Site cover

A site cover will be required to allow for industrial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Industrial areas are defined as all areas owned by SMC within the BCP site boundary that are not located in the Mud Creek Corridor. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil will meet the applicable SCOs for industrial use. 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).

Any portion of the site cover identified as deficient during the Pre-Design Investigation will be repaired by excavation and removal as described in remedial element 2 or by placement of an alternative surface (i.e. paving, sidewalks, building slabs). The site cover will be graded to drain to the drainage ditches described in remedial element 6 and on-site sewer system.

4. Former Landfill Capping

Soils in the former landfill area which exceed the excavation criteria set forth in remedial element 2 will be excavated and disposed of off-site at a permitted facility. Remaining soil in this location will be capped. The engineered cap system will be placed over the 1.2-acre landfill and will be designed, constructed and maintained in conformance with the substantive requirements of 6NYCRR Part 360 solid waste regulations. The southern edge of the former landfill will be removed from the Mud Creek stream bank and consolidated beneath the engineered cap system. The stream bank adjacent to the landfill will be restored using natural stream bank restoration techniques consistent with remedial element 8.

5. Demolition Debris Landfill Fencing

The demolition debris landfill is a 3.2-acre area located in the northwest portion of the site with an existing soil cover. A six-foot high chain link fence will be installed around the demolition debris landfill.

6. Drainage Ditches

The southern drainage ditches that were not addressed by the Interim Remedial Measure will be excavated to industrial SCOs and the site-specific drainage ditch action levels of 400 parts per million (400 ppm) for nickel, 200 ppm for chromium and 1 ppm for PCBs. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for unrestricted use will be brought in to replace the excavated soil and establish design grades at the site. Sediment traps will be installed in the southern ditches before each ditch enters the Mud Creek floodplain. Sediment traps will be subject to periodic monitoring and maintenance under the SMP for the site.

7. Mud Creek Corridor Area: Excavation and off-site disposal

All contaminated soils and sediments in the off-site Mud Creek Corridor located on non-residential privately owned properties will be excavated to achieve restricted-residential SCOs, subject to third party agreement with each property owner. Properties within the corridor currently used as residential will be cleaned up to residential SCOs and will not require a third party agreement to restrict future use. If alternative institutional controls or third party agreements cannot be secured for off-site properties where restricted-residential SCOs are contemplated, those properties will be remediated to residential SCOs. Approximately 1,460 cubic yards of contaminated sediment and 19,480 cubic yards of contaminated soil will be removed from the Mud Creek Corridor. The removal volume may increase based on the Pre-Design Investigation and confirmation sampling. Clean fill meeting the lower of unrestricted SCOs and Class A sediment guidance values will be brought in to replace the excavated soil and

sediment and establish design grades at the site. The backfill will also match the physical properties of the sediment and soil removed (i.e. organic carbon, grain size, etc.).

8. Mud Creek Corridor Areas: Restoration

The design will include a habitat restoration plan with the goal of in-kind replacement of the disturbed habitats in Mud creek sediment, floodplain soil, and wetland areas. The restoration plan will include natural stream and wetland restoration techniques to the extent possible and be consistent with 6 NYCRR Parts 663 and 608. Stream bed bathymetry and wetland and floodplain topography will be restored with appropriate stream bed material and native vegetation. The design will include a monitoring plan for the restoration of areas disturbed by the remedy.

9. Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will continue to decrease through natural processes and will not migrate off-site. Reports of the attenuation will be provided at periodic intervals, and active remediation will be required if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ chemical oxidation would be the expected contingency remedial action.

10. Institutional Control

The On-site Industrial Area:

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- 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);
- allow the use and development of the controlled property for industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

Off-site properties that are remediated to restricted-residential SCOs will be subject to alternative institutional controls such as third-party agreements which prohibit the construction of single family homes, gardening, and grazing on these properties.

11. Site Management Plan

A Site Management Plan is required, which includes the following:

1. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The environmental easement discussed in remedial element 10 above.

Engineering Controls: The site cover discussed in remedial element 3, the landfill cover discussed in remedial element 4, the demolition debris landfill fence discussed in remedial element 5, and the sediment traps discussed in remedial element 6.

This plan includes, but may not be limited to:

o an Excavation Plan which details the provisions for management of future excavations in on-site;
o a provision should demolition or redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
o a provision for investigation, removal or treatment of any source areas located under the main plant, the pilot plant, or the rolling plant when the buildings are demolished or become vacant;
o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
o a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site and in areas of off-site VOC contamination, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;

o a provision that should a building foundation or building slab be removed in the future, collection of analytical samples and a cover system consistent with that described in remedial element 3 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs)
o provisions for the management and inspection of the identified engineering controls;
o maintaining site access controls and Department notification; and
o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
o monitoring of soil, sediment, surface water, groundwater, indoor air, ecological restoration (both on-site and off-site), and biota (fish, both on-site and off-site) to assess the performance and effectiveness of the remedy;
o a schedule of monitoring and frequency of submittals to the Department;

o monitoring for vapor intrusion for any buildings on and off the site, as may be required by the Institutional and Engineering Control Plan discussed above.

3. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
o procedures for operating and maintaining the remedy;
o compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
o maintaining site access controls and Department notification; and
o providing the Department access to the site and O&M records.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

July 6, 2018

Date

George Heitzman, Director
Remedial Bureau C

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New Hartford, Oneida County
Site No. C633016
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SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The New York State Hazardous Waste Management Program (also known as the RCRA Program) requires corrective action for releases of hazardous waste and hazardous constituents to the environment.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 373 (RCRA) and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York; (6 NYCRR) Part 373 (RCRA) and Subpart 375-3 (BCP). This document is a summary of the information that can be found in the site-related reports and documents in the document repository identified below.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

New Hartford Public Library
2 Library Lane
New Hartford, NY 13413
Phone: (315) 733-1535

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Special Metals Corporation (SMC) Site is located at 4317 Middle Settlement Road, New Hartford, Oneida County, New York. The 76.8-acre brownfield site is part of a larger parcel owned by SMC.

Site Features: The site contains an active industrial facility with several large structures including an office area, the main plant, the rolling plant, and the pilot plant, as well as several other ancillary structures. The main plant, rolling plan and pilot plant are occupied by industrial staff and the office area is occupied by ancillary support staff. The site buildings are within a fenced perimeter. A demolition debris landfill is located to the northwest of the active facility and a former landfill is located to the southwest of the active facility. A paved road system and parking lots are located around the perimeter of the facility. The site is relatively flat and slopes south towards Mud Creek. There are several drainage swales on-site that drain to Mud Creek. Mud Creek flows east near the southern border of the former landfill and the site.

Current Zoning/Use: The site property is zoned M – Manufacturing District. The site is currently an active industrial facility that produces high nickel alloys used in the aeronautics industry. The surrounding area is comprised of wooded lands, residential homes and apartments, commercial business and a nursing home.

Past Uses of the Site: Prior to SMC developing the property in 1958, the site was undeveloped. Since the facility was constructed, SMC has produced and is currently producing specialty metals most notably for the aircraft industry.

Site Geology and Hydrology: The overburden is comprised of a layer of sand and gravel ranging in depth from 4 to 16 feet underlain by a relatively low permeability, poorly sorted, variably textured dense till consisting of clay, silt-clay, and boulder clay. Bedrock consists of gray shale and siltstones. Depth to bedrock is 25 to 40 feet beneath the active facility. Groundwater is encountered between 8 and 10 feet below grade and flows to the south towards Mud Creek.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to industrial use as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

The NYSDEC and Special Metals Corporation entered into Brownfield Cleanup Agreement Index # C633016-11-09 on December 3, 2009. The BCA was amended on June 27, 2017. SMC is a participant under the BCA.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- surface water
- soil
- sediment
- indoor air
- sub-slab vapor
- biota

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

nickel	1,1,1-TCA
chromium	xylene (mixed)fluoride
polychlorinated biphenyls (PCB)	benzo(a)anthracene
polycyclic aromatic hydrocarbons	benzo(a)pyrene
trichloroethene (TCE)	benzo(b)fluoranthene
tetrachloroethane	dibenzo(a,h)anthracene

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- sediment
- soil vapor intrusion
- biota

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

IRM Phase I - Former Furnace Area 6, 7, & 8

An IRM source removal was completed in the former furnace area of the site in August and September 2011. The IRM consisted of removing soil heavily impacted by PCBs from beneath the active industrial facility. Approximately 587 tons of soil, concrete and metal debris were removed and transported off-site for disposal at a permitted facility. Full removal to industrial and protection of groundwater SCOs was not completed in this area because complete excavation of PCB contaminated soil was not possible without jeopardizing the structural integrity of the building. This IRM is documented in the April 2012 Construction Completion Report (CCR).

IRM Phase II - New Furnace Area Soil Removal

An IRM soil removal was completed in an area within the active facility prior to the installation of new process furnaces from December 2011 through May 2012. Approximately 2,200 tons of non-hazardous PCB impacted soil were removed and transported off-site for disposal at a permitted facility. No PCBs were detected in confirmation samples collected from the sidewalls and base of the excavation, and the unrestricted SCOs were met in this area. The IRM is documented in the January 2013 Construction Completion Report (CCR).

IRM Phase III – Vacuum Enhanced Recovery System

A vacuum enhanced recovery (VER) system was installed in the former furnace area where the Phase I IRM took place. The VER system extracts light non-aqueous phase liquid (LNAPL) from the groundwater surface and groundwater containing PCBs. The system has extracted approximately 350 gallons of LNAPL containing PCBs since start up in September 2013. The IRM is documented in the September 2015 Construction Completion Report (CCR). The system remains active and is subject to an interim Site Management Plan (ISMP).

IRM On-site and Off-site Drainage Ditches

Soil in northern on-site and off-site drainage ditches was excavated and disposed of off-site at a permitted facility between October 2017 and January 2018. Excavation limits met industrial SCOs on site and residential SCOs off-site. Drainage ditches were then restored and sediment traps were installed along the site boundary to prevent soil exceeding the ecological SCOs from entering Mud Creek and to prevent remaining on-site contamination which remains above residential SCOs from further contaminating off-site drainage ditches. A construction completion report documenting the IRM was submitted in February 2018.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Soil, groundwater, and sediment samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and fluoride. Sub-slab vapor and indoor air samples were analyzed for VOCs. Based on investigations conducted to date, the primary contaminants of concern are SVOCs, PCBs, and metals in on-site soils; PCBs, nickel, and chromium in off-site soils; VOCs, PCBs, metals, and fluoride in on-site groundwater; VOCs in sub-slab soil vapor and indoor air; and PCBs, nickel and chromium in on-site and off-site sediment.

Surface Soil: On-site SVOCs, PCBs, and metals were found in surface soils (0 to 2 inches) exceeding unrestricted, residential and industrial soil cleanup objectives (SCOs). Polycyclic aromatic hydrocarbons (PAHs), a subset of SVOCs, were detected above unrestricted and industrial SCOs in two portions of the office lawn area. Elevated levels of PCBs and metals were found in several areas of the site. Concentrations of PCBs in on-site surface soil ranged from non-detect to 48 parts per million (ppm). Nickel and chromium were the primary metals detected in on-site surface soil with maximum concentrations of 10,200 ppm and 1,570 ppm respectively.

Off-site PCBs, nickel and chromium were detected in surface soils (0 to 2 inches) exceeding unrestricted and residential SCOs. PCBs, nickel, and chromium concentrations exceed unrestricted and residential SCOs throughout the Mud Creek corridor (floodplain and wetland) and in several off-site upland areas, mostly near Middle Settlement Road to the east of the site. Concentrations of PCBs in flood plain soil range from ND to 6.24 ppm and the residential SCO for PCBs is 1 ppm.

Subsurface Soil: On-site SVOCs, PCBs and metals were detected in near surface soil (2 to 12 inches) and subsurface soils (greater than 1 foot) above unrestricted and protection of groundwater SCOs and SVOCs, PCBs and metals were detected throughout the site with greater concentrations in identified areas of concern including but not limited to the demolition debris landfill, the former landfill, the former furnace area, and the pilot plant area.

Off-site PCBs and metals (most notably nickel and chromium) were detected in near surface and subsurface soils above unrestricted and protection of groundwater SCOs. Elevated levels of PCBs, nickel and chromium were detected in the top two feet of soils throughout the Mud Creek corridor. In off-site near surface soils, PCBs were detected at concentrations ranging from 0.09 ppm to 4.3 ppm (residential SCO 1 ppm), chromium was detected at concentrations ranging from 7.1 ppm to 200 ppm (residential SCO 36 ppm), and nickel was detected at concentrations ranging from 8.6 ppm to 488 ppm (residential SCO 140 ppm).

Additional investigation of off-site soil will be completed as part of the pre-design investigation to determine the full extent of site-related soil impacts.

Groundwater: VOCs, PCBs, metals, and fluoride are found in on-site groundwater at levels exceeding groundwater standards. Elevated levels of VOCs, PCBs, metals, and fluoride were observed in monitoring wells in the western portion of the site to the north and south of the pilot plant building. The VOC tetrachloroethene (PCE) was detected over groundwater standards in six wells, with a maximum concentration of 88 parts per billion (ppb) at monitoring well 86-1, located to the north of the pilot plant building. The VOC (TCE) was detected over groundwater standards in four wells, with a maximum concentration of 57 ppb, located to the north of the pilot plant building. PCBs were detected over groundwater standards in one well in the pilot plant area at a concentration of 0.39 ppb at monitoring well 86-6. Nickel was detected over groundwater standards in ten wells with a maximum concentration of 7,330 ppb at monitoring well 86-1. Fluoride was detected over groundwater standards in eight wells with a maximum concentration of 13,100 ppb at monitoring well MW-21.

Non-aqueous phase liquid (NAPL) containing the VOC xylene was observed in monitoring well MW-22. Xylene was not detected above groundwater standards in any other monitoring wells.. NAPL containing PCBs is present beneath the main plant in the former furnace area but does not appear to be migrating to downgradient locations.

Constituents of concern were not detected in downgradient perimeter monitoring wells within the site boundary. The Remedial Investigation results indicates that site-related groundwater contamination is not migrating off-site.

Sediment: Sediments in the Mud Creek are impacted by PCBs and metals originating from the SMC facility. Sediment concentrations exceed Class A sediment guidance values for PCBs, nickel, and chromium in sediment within the site boundary (approximately 1,800 linear feet) and in sediment downstream of the site boundary (approximately 2,400 linear feet). The greatest impacts to sediment are located on-site near and immediately downstream of the former storm water outfall of the active facility. The maximum concentrations of all contaminants were found in this area: 502 ppm of PCBs, 8,740 ppm of nickel, and 2,920 ppm of chromium. The maximum concentrations of contaminants in the off-site sediment were 4.3 ppm of PCBs, 488 ppm for nickel and 200 ppm for chromium.

The Remedial Investigation included sampling of Mud Creek sediments off-site one half mile to the east (downstream) of the site, but the full extent of contamination beyond this point has not been determined. Additional investigation of the downstream sediment will be completed as part of the pre-design investigation to determine the full extent of sediment impacts. This sampling will include all potentially impacted tributaries and wetland areas.

Sub-slab Vapor and Indoor Air: Sub-slab vapor and indoor air samples were collected from five on-site buildings (the pilot plant, the rolling plant, the main plant/office area, the EPA building and the credit union. Analytical results from this sampling indicated that actions are needed (long-term monitoring) in three on-site buildings (the pilot plant, the rolling plant and the main plant/office area). Analytical sampling results indicated that no vapor intrusion actions are

needed for the credit union building and the EPA building. Many VOCs were detected in both concurrent indoor air and sub-slab samples, however the primary VOCs detected were PCE, TCE, and 1,1,1-trichloroethane (1,1,1-TCA). Concentrations of VOCs in sub-slab vapor samples were much greater than concentrations in indoor air. Sub-slab vapor samples for PCE ranged from non-detect to a maximum of 37,000 micrograms per cubic meter (ug/m^3) beneath the main plant and indoor air samples for PCE ranged from non-detect to a maximum of 1.2 ug/m^3 in the pilot plant. Sub-slab vapor samples for TCE ranged from non-detect to a maximum of 400 ug/m^3 beneath the pilot plant and indoor air samples for TCE ranged from non-detect to a maximum of 0.99 ug/m^3 in the rolling plant. Sub-slab vapor samples for 1,1,1-TCA ranged from non-detect to a maximum of 3,900 ug/m^3 beneath the main plant and indoor air samples for 1,1,1-TCA ranged from non-detect to a maximum of 1.1 ug/m^3 in the pilot plant.

Special Resources Impacted/Threatened: A Fish and Wildlife Impact Analysis (FWIA) was completed as part of the remedial investigation of the site to determine the impacts of contaminants emanating from the site to the adjacent Mud Creek and Mud Creek Corridor (floodplains and wetlands). The findings of the FWIA will be incorporated into the remedy for the site.

The SMC facility is located adjacent to Mud Creek which is a tributary of the Sauquoit Creek. Mud Creek and the Sauquoit Creek are classified as Class C(T) waters. The classification of C means the waters shall be suitable for fish, shellfish and wildlife propagation and survival and the water quality shall be suitable for primary and secondary contact recreation. The addition of T means that the stream is a trout water and water quality standard, guidance value, or thermal criterion that specifically refers to trout or trout waters applies. The SMC site is relatively flat and slopes gradually south towards Mud Creek. There are several drainage swales on-site that drain to Mud Creek. Mud Creek flows east about two miles till it reaches the Sauquoit Creek near New York Mills. There are 2 state-regulated wetlands, UW-13 and UW-12 potentially affected by the contamination and remediation.

Sampling of sediment adjacent to the SMC facility has identified Mud Creek as a source of PCBs contamination to fish in Mud Creek and potentially the Sauquoit Creek. During fish sampling trout were captured in the affected portions of the stream. There is currently a “don’t eat” advisory on brown trout and white suckers caught in Mud Creek and the Sauquoit Creek Basin due to site related PCB contamination in fish tissue.

The FWIA has identified ecological resources at or in the vicinity of the site which constitute an important component of the environment. The following environmental exposure pathways and ecological impacts have been identified: Sediment samples from Mud Creek contain PCBs above SCGs. Biota sampling in Mud Creek at locations adjacent to and downstream of the site has identified concentrations of PCBs in forage fish, brown trout and white sucker tissue in exceedence of SCGs. The highest concentrations of PCBs in fish tissue in Mud Creek were found adjacent to the SMC facility.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Persons both on-site and near the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the soil, groundwater, or other sources may move into the soil vapor (air spaces within the soil), which in turn may move into nearby buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for people to inhale site contaminants in indoor air due to soil vapor intrusion in on- and off-site buildings that are nearest the site. People may come into contact with contaminants present in sediments and some floodplain soils of Mud Creek upon entering or exiting the Creek and adjacent wetland areas. Fish and shellfish in the creek are likely to contain the same chemical contaminants that are present in surface water and shallow creek sediments; therefore, people who consume fish and shellfish from the creek are likely to be consuming these contaminants as well. A "do not eat fish" advisory has been placed on the Mud Creek for white sucker and brown trout due to PCBs.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water and sediment.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation exposure to contaminants volatilizing from soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater, surface water, and sediment contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Surface Water

RAOs for Public Health Protection

- Prevent ingestion of water impacted by contaminants.
- Prevent contact or inhalation of contaminants from impacted water bodies.
- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Restore surface water to ambient water quality criteria contaminants associated with the site.
- Prevent impacts to biota from ingestion/direct contact with surface water causing toxicity and impacts from bioaccumulation through the marine or aquatic food chain.

Sediment

RAOs for Public Health Protection

- Prevent direct contact with contaminated sediments.
- Prevent surface water contamination which may result in fish advisories.

RAOs for Environmental Protection

- Prevent releases of contaminant(s) from sediments that would result in surface water levels in excess of (ambient water quality criteria).
- Prevent impacts to biota from ingestion/direct contact with sediments causing toxicity or impacts from bioaccumulation through the marine or aquatic food chain.
- Restore sediments to pre-release/background conditions to the extent feasible.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for,

soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the On-Site Excavation & Industrial Cover, Off-Site Sediment and Soil Removal remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

1A. Pre-Design Investigation

A pre-design investigation (PDI) is required as part of the remedial design and is also required here to identify the extent of site related contamination needing remediation. The PDI shall include sampling throughout the site and at the site boundary where further characterization is needed, inspection of all on-site cover types and drainage systems, on-site subsurface soil sampling in identified potential source areas, and off-site sediment and soil sampling in Mud Creek and the Mud Creek floodplain. On-site surface soil sampling and the inspection of the on-

site cover and drainage system will be used to verify whether the existing site cover fully complies with the site cover requirement in paragraph 3 below. Subsurface soil sampling will include suspected source areas. Off-site creek and floodplain sampling will be completed to determine the full extent of off-site impacts needing to be addressed by this Decision Document.

2. Industrial Areas - Excavation

Excavation and off-site disposal of contaminant source areas in accessible areas, including:

- grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- non-aqueous phase liquids;
- soil with visual waste material or non-aqueous phase liquid;
- soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

Source area excavation will include removals from the pilot plant area, the former landfill area, and any additional areas identified by the Pre-Design Investigation. Source areas beneath active buildings will not be addressed at this time and will be managed under the Site Management Plan (SMP). In addition, all soils in the upper foot which exceed the lower of PGWSCOs and industrial SCOs will be excavated and transported off-site for disposal. Approximately 2,000 cubic yards of contaminated soil will be removed from industrial areas, however this volume may increase substantially based on the PDI. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil and establish design grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element 3.

3. Industrial Areas - Site cover

A site cover will be required to allow for industrial use of the site in areas where the upper one foot of exposed surface soil will exceed the applicable SCOs. Industrial areas are defined as all areas owned by SMC within the BCP site boundary that are not located in the Mud Creek Corridor. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper one foot of exposed surface soil will meet the applicable SCOs for industrial use. 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). Any portion of the site cover identified as deficient during the Pre-Design Investigation will be repaired by excavation and removal as described in remedial element 2 or by placement of an alternative surface (i.e. paving, sidewalks, building slabs). The site cover will be graded to drain to the drainage ditches described in remedial element 6 and on-site sewer system.

4. Former Landfill Capping

Soils in the former landfill area which exceed the excavation criteria set forth in remedial element 2 will be excavated and disposed of off-site at a permitted facility. Remaining soil in this location will be capped. The engineered cap system will be placed over the 1.2-acre landfill and will be designed, constructed and maintained in conformance with the substantive requirements of 6NYCRR Part 360 solid waste regulations. The southern edge of the former landfill will be removed from the Mud Creek stream bank and consolidated beneath the engineered cap system. The stream bank adjacent to the landfill will be restored using natural stream bank restoration techniques consistent with remedial element 8.

5. Demolition Debris Landfill Fencing

The demolition debris landfill is a 3.2-acre area located in the northwest portion of the site with an existing soil cover. A six-foot high chain link fence will be installed around the demolition debris landfill.

6. Drainage Ditches

The southern drainage ditches that were not addressed by the Interim Remedial Measure will be excavated to industrial SCOs and the site-specific drainage ditch action levels of 400 parts per million (400 ppm) for nickel, 200 ppm for chromium and 1 ppm for PCBs. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) for unrestricted use will be brought in to replace the excavated soil and establish design grades at the site. Sediment traps will be installed in the southern ditches before each ditch enters the Mud Creek floodplain. Sediment traps will be subject to periodic monitoring and maintenance under the SMP for the site.

7. Mud Creek Corridor Area: Excavation and off-site disposal

All contaminated soils and sediments in the off-site Mud Creek Corridor located on non-residential privately owned properties will be excavated to achieve restricted-residential SCOs, subject to third party agreement with each property owner. Properties within the corridor currently used as residential will be cleaned up to residential SCOs and will not require a third party agreement to restrict future use. If alternative institutional controls or third party agreements cannot be secured for off-site properties where restricted-residential SCOs are contemplated, those properties will be remediated to residential SCOs. Approximately 1,460 cubic yards of contaminated sediment and 19,480 cubic yards of contaminated soil will be removed from the Mud Creek Corridor. The removal volume may increase based on the Pre-Design Investigation and confirmation sampling. Clean fill meeting the lower of unrestricted SCOs and Class A sediment guidance values will be brought in to replace the excavated soil and sediment and establish design grades at the site. The backfill will also match the physical properties of the sediment and soil removed (i.e. organic carbon, grain size, etc.).

8. Mud Creek Corridor Areas: Restoration

The design will include a habitat restoration plan with the goal of in-kind replacement of the disturbed habitats in Mud creek sediment, floodplain soil, and wetland areas. The restoration plan will include natural stream and wetland restoration techniques to the extent possible and be consistent with 6 NYCRR Parts 663 and 608. Stream bed bathymetry and wetland and floodplain topography will be restored with appropriate stream bed material and native vegetation. The design will include a monitoring plan for the restoration of areas disturbed by the remedy.

9. Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination and also for MNA indicators which will provide an understanding of the (biological activity) breaking down the contamination. It is anticipated that contamination will continue to decrease through natural processes and will not migrate off-site. Reports of the attenuation will be provided at periodic intervals, and active remediation will be required if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that in-situ chemical oxidation would be the expected contingency remedial action.

10. Institutional Control

The On-site Industrial Area:

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- 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);
- allow the use and development of the controlled property for industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

Off-site properties that are remediated to restricted-residential SCOs will be subject to alternative institutional controls such as third-party agreements which prohibit the construction of single family homes, gardening, and grazing on these properties.

11. Site Management Plan

A Site Management Plan is required, which includes the following:

1. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The environmental easement discussed in remedial element 10 above.

Engineering Controls: The site cover discussed in remedial element 3, the landfill cover discussed in remedial element 4, the demolition debris landfill fence discussed in remedial element 5, and the sediment traps discussed in remedial element 6.

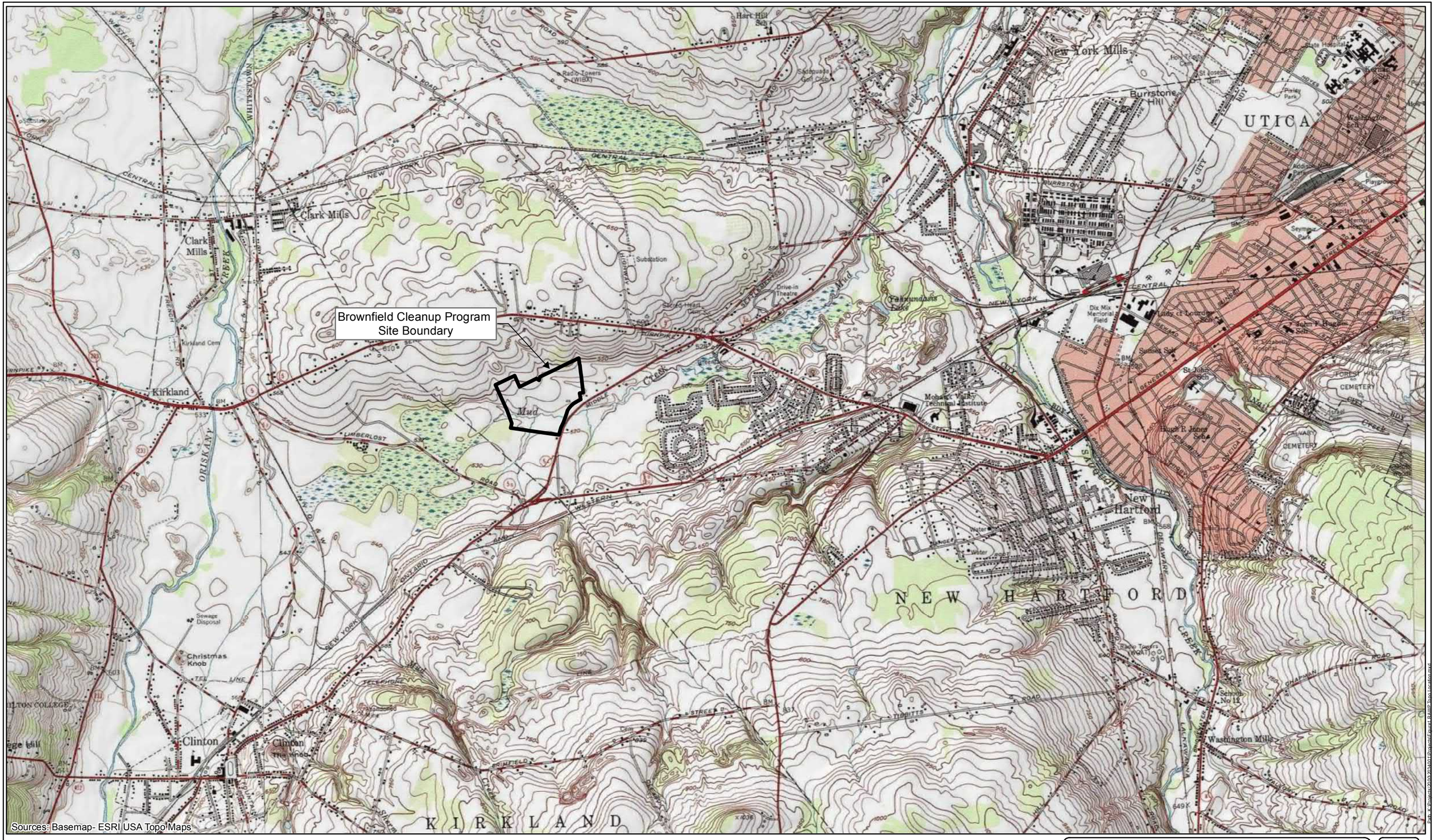
This plan includes, but may not be limited to:

o an Excavation Plan which details the provisions for management of future excavations in on-site;
o a provision should demolition or redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
o a provision for investigation, removal or treatment of any source areas located under the main plant, the pilot plant, or the rolling plant when the buildings are demolished or become vacant;
o descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
o a provision for evaluation of the potential for soil vapor intrusion for any new buildings developed on the site and in areas of off-site VOC contamination, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
o a provision that should a building foundation or building slab be removed in the future, collection of analytical samples and a cover system consistent with that described in remedial element 3 above will be placed in any areas where the upper one foot of exposed surface soil exceeds the applicable soil cleanup objectives (SCOs)
o provisions for the management and inspection of the identified engineering controls;
o maintaining site access controls and Department notification; and
o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
o monitoring of soil, sediment, surface water, groundwater, indoor air, ecological restoration (both on-site and off-site), and biota (fish, both on-site and off-site) to assess the performance and effectiveness of the remedy;
o a schedule of monitoring and frequency of submittals to the Department;
o monitoring for vapor intrusion for any buildings on and off the site, as may be required by the Institutional and Engineering Control Plan discussed above.

3. an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

- procedures for operating and maintaining the remedy;
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
- maintaining site access controls and Department notification; and
- providing the Department access to the site and O&M records.



Barton & Loguidice, D.P.C.
Engineers • Environmental Scientists • Planners • Landscape Architects

1 inch = 2,500 feet

Special Metals Corporation
Remedial Action Work Plan
Topographic Map
Oneida County — March 2018 — New York

Figure 1
Project No. 2034.001

Legend

- Monitoring Well 22
- Streams
- Drainage Ditches
- Area of Concern
- Area of Concern- Isolated Area
- Site Surface & Subsurface AOC
- Mud Creek and Ditch Remedial Area
- FEMA 100-Year Floodplain
- BCP Site Boundary
- Tax Parcel Boundaries
- Alt 3 Hot Spot Excavation Area
- CLF Fence

Notes:
1. BCP= Brownfield Cleanup Program
2. Site Surface & Subsurface Soil/Cover System/Overland Flow Management Area includes grass cover adjacent to entry drive and extending east along the southern site boundary to the south of the Office Lawn Area, parking lots, access roads, & open areas throughout the site.
3. Mud Creek Remedial Area includes merged bounds of the FEMA 100-Year Floodplain, NYSDEC Wetland Buffers, & drainage ditches.

DEMOLITION DEBRIS LANDFILL 3.2 ACRES
CLF FENCE
FORMER GENERATOR & FURNACE AREAS 0.8 ACRES
FORMER WASTE TANK
MAIN PLANT
4343 MIDDLE SETTLEMENT ROAD 0.51 ACRES
ROLLING PLANT
OFFICE AREA
RINSE WATER/ ACID SPILL AREA
MW-22
FORMER SURFACE IMPOUNDMENT
PILOT PLANT
OFFICE LAWN AREA 5.8 ACRES TOTAL
OFF-SITE PROPERTIES (OUTSIDE OF FLOODPLAIN)
PILOT PLANT AREA 2.3 ACRES

Sources: Site Data Files- Arcadis; Basemap- NYSDOP 2008

Path: K:\Projects\2010\2034001\Drawings\Figure 3 Proposed Alternative.mxd

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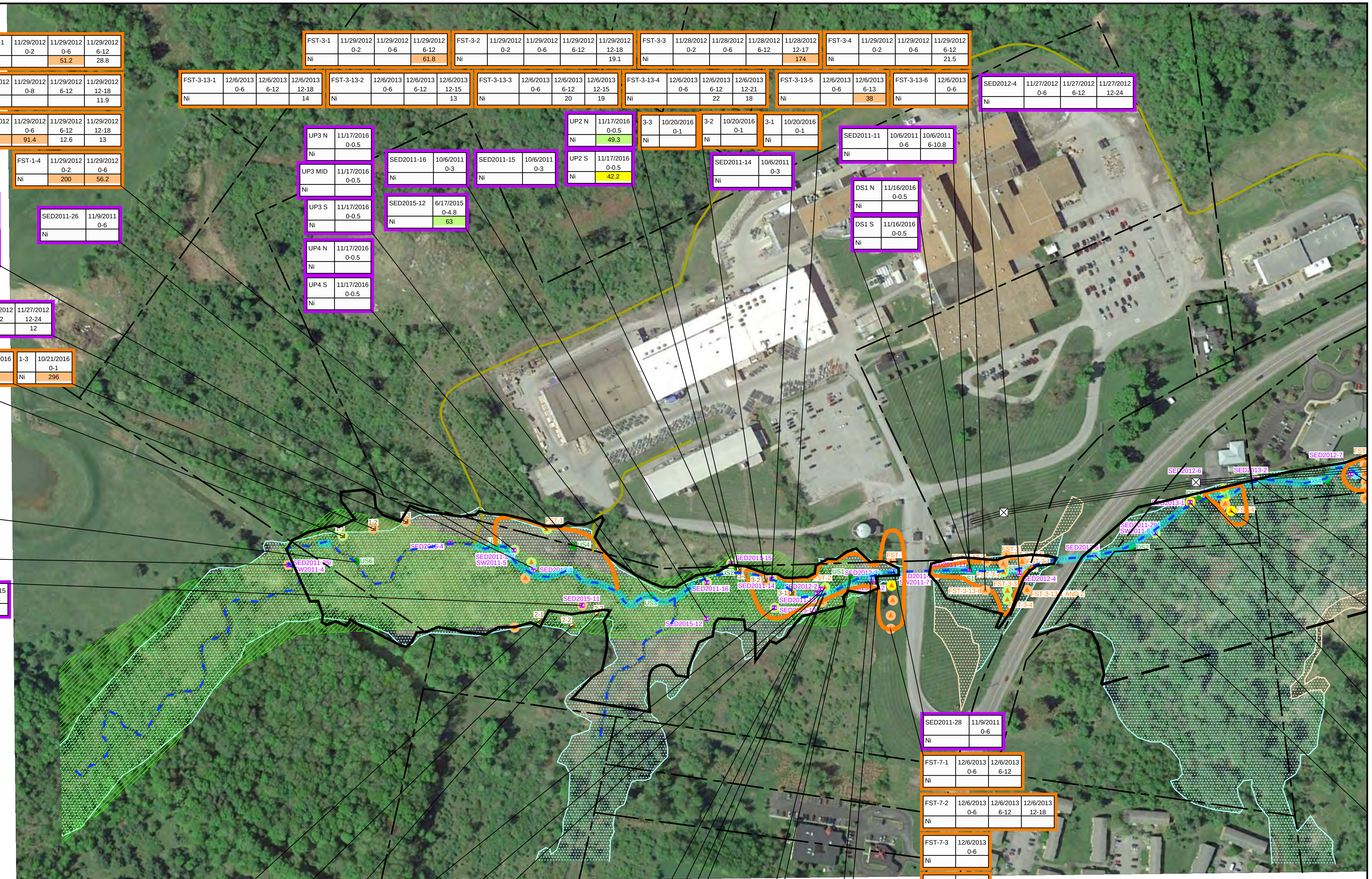
N W E S

1 inch = 250 feet

Special Metals Corporation
Remedial Action Work Plan
Preferred Comprehensive Remedial Alternative
Comprehensive Remedial Alternative 3
Oneida County March 2018 New York

Figure 4

Project No. 2034.001



FST-1-1	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni		51.2	28.8

FST-1-2	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 0-8	11/29/2012 6-12	11/29/2012 12-18
Ni					11.9

FST-1-3	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12	11/29/2012 12-18
Ni	59.3	91.4	12.6	13

FST-1-4	11/29/2012 0-2	11/29/2012 0-6
Ni	200	56.2

UP5 N	11/17/2016 0-0.5
Ni	

UP5 S (US)	11/17/2016 0-0.5
Ni	

UP5 S (DS)	11/17/2016 0-0.5
Ni	

SED2011-26	11/9/2011 0-6
Ni	

SED2012-1	11/27/2012 0-6	11/27/2012 6-12	11/27/2012 12-24
Ni			12

1-1	10/21/2016 0-1
Ni	407

1-2	10/21/2016 0-1
Ni	225

1-3	10/21/2016 0-1
Ni	296

UP6 N	11/17/2016 0-0.5
Ni	26.8

UP6 MID	11/17/2016 0-0.5
Ni	21.8

UP6 S	11/17/2016 0-0.5
Ni	81.8

SED2011-25	11/9/2011 0-3.6
Ni	27.2

SED2015-11	5/17/2015 0-6	5/17/2015 6-10.8
Ni	25	10

FST-3-1	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni			61.8

FST-3-2	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12	11/29/2012 12-18
Ni				19.1

FST-3-3	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-17
Ni				174

FST-3-4	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni			21.5

FST-3-13-1	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-18
Ni			14

FST-3-13-2	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-15
Ni			13

FST-3-13-3	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-15
Ni		20	19

FST-3-13-4	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-21
Ni		22	18

FST-3-13-5	12/6/2013 0-6	12/6/2013 6-13
Ni		38

FST-3-13-6	12/6/2013 0-6
Ni	

SED2012-4	11/27/2012 0-6	11/27/2012 6-12	11/27/2012 12-24
Ni			

UP3 N	11/17/2016 0-0.5
Ni	

UP3 MID	11/17/2016 0-0.5
Ni	

UP3 S	11/17/2016 0-0.5
Ni	

UP4 N	11/17/2016 0-0.5
Ni	

UP4 S	11/17/2016 0-0.5
Ni	

SED2011-16	10/6/2011 0-3
Ni	

SED2015-12	6/17/2015 0-4.8
Ni	63

SED2011-15	10/6/2011 0-3
Ni	

UP2 N	11/17/2016 0-0.5
Ni	49.3

UP2 S	11/17/2016 0-0.5
Ni	42.2

3-3	10/20/2016 0-1
Ni	

3-2	10/20/2016 0-1
Ni	

3-1	10/20/2016 0-1
Ni	

SED2011-14	10/6/2011 0-3
Ni	

SED2011-11	10/6/2011 0-6	10/6/2011 6-10.8
Ni		

DS1 N	11/16/2016 0-0.5
Ni	

DS1 S	11/16/2016 0-0.5
Ni	

SED2011-28	11/9/2011 0-6
Ni	

FST-7-1	12/6/2013 0-6	12/6/2013 6-12
Ni		

FST-7-2	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-18
Ni			

FST-7-3	12/6/2013 0-6
Ni	

FST-7-4	12/6/2013 0-6
Ni	

FST-7-5	12/6/2013 0-6
Ni	

FST-7-6	12/6/2013 0-6
Ni	

2-1	10/21/2016 0-1
Ni	52.2

2-2	10/21/2016 0-1
Ni	90.4

2-3	10/21/2016 0-1
Ni	64.0

SED2015-13	6/17/2015 0-6	6/17/2015 6-12
Ni	62	28

SED2012-2	11/27/2012 0-6	11/27/2012 6-12	11/27/2012 12-18
Ni			

SED2011-13	10/6/2011 0-3
Ni	

FST-2-1	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12	11/29/2012 12-18
Ni			7.5	15.1

FST-2-2	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni			45.2

FST-2-3	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12	11/29/2012 12-18
Ni	266	165	61.2	20.3

FST-2-4	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni	195	71.5	20.5

UP1 N	11/16/2016 0-0.5
Ni	

UP1 S	11/16/2016 0-0.5
Ni	

SED2011-12	10/6/2011 0-6
Ni	

SED2012-3	11/27/2012 0-6	11/27/2012 6-10.8
Ni		

ALTERNATIVE 5A REMOVES:

COMPOUND	POUNDS	PERCENT
NICKEL	13,520	63
CHROMIUM	3,530	74
PCBs	122	82

N

0 50 150ft

APPROXIMATE SCALE

LEGEND

- STREAMS
- DRAINAGE DITCH
- PROPERTY BOUNDARY
- WETLAND DELINEATION
- POWER TOWER AND POWER LINE
- SEDIMENT SAMPLE
- PEEPER SEDIMENT SAMPLE LOCATION
- FLOODPLAIN SOIL TRANSECT WITHIN WETLAND
- FLOOD PLAIN SOIL SAMPLE LOCATION
- STATE-REGULATED FRESHWATER WETLAND (FROM CUGIR: CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY)
- 100-YEAR FLOOD
- 500-YEAR FLOOD
- CREEK EXCAVATION AREA
- FLOODPLAIN EXCAVATION AREA (MINIMUM EXPECTED)

ALTERNATIVE NO.5		
	RESIDENTIAL/CLASS C SEDIMENT	RESIDENTIAL WETLAND/FLOODPLAIN
PCBs	> 1.0	> 1.0
Ni	> 49	> 140
Cr	> 36	> 36

NICKEL CONCENTRATIONS

SEDIMENT SAMPLE LOCATION

SED2013-5	12/5/2013 0-3.6
Ni	48

SAMPLE DATE
DEPTH (INCHES BELOW GROUND SURFACE)
SAMPLE RESULT (mg/kg)
PARAMETER

SEDIMENT CRITERIA (mg/kg)

< 23	NO EXCEEDANCE
> 23.0 TO < 30	CLASS B EXCEEDANCE
> 30.0 TO < 49	ECOLOGICAL EXCEEDANCE
> 49.0 TO < 400	CLASS C EXCEEDANCE
> 400.0	SITE SPECIFIC EXCEEDANCE

FLOODPLAIN SAMPLE LOCATION

FST-6-1	11/28/2012 0-2
Ni	262

SAMPLE DATE
DEPTH (INCHES BELOW GROUND SURFACE)
SAMPLE RESULT (mg/kg)
PARAMETER

FLOOD PLAIN CRITERIA (mg/kg)

< 30	NO EXCEEDANCE
> 30.0 TO < 310	UNRESTRICTED / RESIDENTIAL / ECOLOGICAL EXCEEDANCE
> 310.0 TO < 400	COMMERCIAL EXCEEDANCE
> 400.0 TO < 10,000	SITE SPECIFIC EXCEEDANCE
> 10,000	INDUSTRIAL EXCEEDANCE

0.039 [0.044]	PARENT [DUPLICATE RESULT]
J	ESTIMATED
U	QUALIFIED NOT DETECTED ABOVE THE SAMPLE REPORT LIMIT

NOTES:
- AERIAL IMAGERY DATED MAY 13, 2015 © GOOGLE EARTH. (NEW YORK CENTRAL STATE PLANE NAD83 US SURVEY FOOT).
- BCP = BROWNFIELD CLEANUP PROGRAM.

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

SPECIAL METALS CORPORATION
NEW HARTFORD, NEW YORK

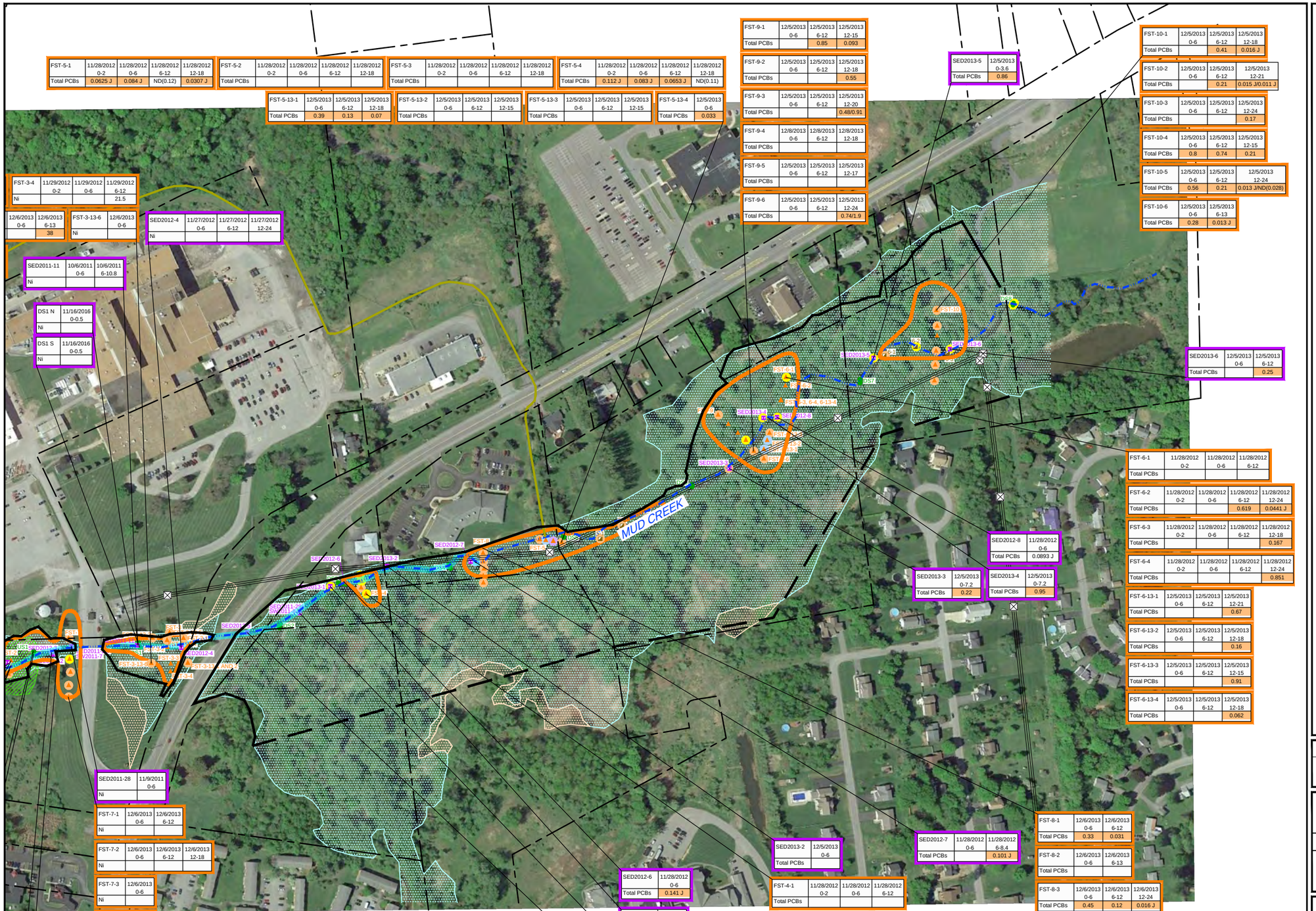
ALTERNATIVE 5A
RESTRICTED RESIDENTIAL
EXCAVATION AREAS - MUD CREEK (WEST)

GHD

Source Reference:

Project Manager:	Reviewed By:	Date:	
J.D.	P.K.	FEBRUARY 2018	
Scale: 1:150	Project Nº: 86188-00	Report Nº: 022	Drawing Nº: figure 6.3a

86188-00(022)GN-WA037 MAR 13, 2018



FST-5-1	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs	0.0625 J	0.084 J	ND(0.12)	0.0307 J

FST-5-2	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs				

FST-5-3	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs				

FST-5-4	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs	0.112 J	0.083 J	0.0653 J	ND(0.11)

FST-5-13-1	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-18
Total PCBs	0.39	0.13	0.07

FST-5-13-2	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-15
Total PCBs			

FST-5-13-3	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-15
Total PCBs			

FST-5-13-4	12/5/2013 0-6
Total PCBs	0.033

FST-9-1	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-15
Total PCBs		0.85	0.093

FST-9-2	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-18
Total PCBs			0.55

FST-9-3	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-20
Total PCBs			0.48/0.91

FST-9-4	12/8/2013 0-6	12/8/2013 6-12	12/8/2013 12-18
Total PCBs			

FST-9-5	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-17
Total PCBs			

FST-9-6	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-24
Total PCBs			0.74/1.9

SED2013-5	12/5/2013 0-3.6
Total PCBs	0.86

FST-10-1	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-18
Total PCBs		0.41	0.016 J

FST-10-2	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-21
Total PCBs		0.21	0.015 J/0.011 J

FST-10-3	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-24
Total PCBs			0.17

FST-10-4	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-15
Total PCBs	0.8	0.74	0.21

FST-10-5	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-24
Total PCBs	0.56	0.21	0.013 J/ND(0.028)

FST-10-6	12/5/2013 0-6	12/5/2013 6-13
Total PCBs	0.28	0.013 J

FST-3-4	11/29/2012 0-2	11/29/2012 0-6	11/29/2012 6-12
Ni			21.5

12/6/2013 0-6	12/6/2013 6-13
	38

FST-3-13-6	12/6/2013 0-6
Ni	

SED2012-4	11/27/2012 0-6	11/27/2012 6-12	11/27/2012 12-24
Ni			

SED2011-11	10/6/2011 0-6	10/6/2011 6-10.8
Ni		

DS1 N	11/16/2016 0-0.5
Ni	

DS1 S	11/16/2016 0-0.5
Ni	

SED2011-28	11/9/2011 0-6
Ni	

FST-7-1	12/6/2013 0-6	12/6/2013 6-12
Ni		

FST-7-2	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-18
Ni			

FST-7-3	12/6/2013 0-6
Ni	

FST-7-4	12/6/2013 0-6
Ni	

FST-7-5	12/6/2013 0-6
Ni	

FST-7-6	12/6/2013 0-6
Ni	

SED2012-6	11/28/2012 0-6
Total PCBs	0.141 J

SED2013-1	12/5/2013 0-6
Total PCBs	0.62

SED2011-29	11/9/2011 0-6
Total PCBs	

SED2012-5	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-19.2
Total PCBs			0.125 J

SED2013-2	12/5/2013 0-6
Total PCBs	

SED2012-7	11/28/2012 0-6	11/28/2012 6-8.4
Total PCBs		0.101 J

FST-4-1	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12
Total PCBs			

FST-4-2	11/28/2012 0-2	11/28/2012 0-6
Total PCBs	ND(0.12)	0.0519 J

FST-4-3	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-17
Total PCBs			0.0406 J	ND(0.14)

FST-4-4	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs	ND(0.16)	ND(0.14)	ND(0.14)	ND(0.13)

SED2013-3	12/5/2013 0-7.2
Total PCBs	0.22

SED2012-8	11/28/2012 0-6
Total PCBs	0.0893 J

SED2013-4	12/5/2013 0-7.2
Total PCBs	0.95

SED2013-6	12/5/2013 0-6	12/5/2013 6-12
Total PCBs		0.25

FST-6-1	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12
Total PCBs			

FST-6-2	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-24
Total PCBs			0.619	0.0441 J

FST-6-3	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-18
Total PCBs				0.167

FST-6-4	11/28/2012 0-2	11/28/2012 0-6	11/28/2012 6-12	11/28/2012 12-24
Total PCBs				0.851

FST-6-13-1	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-21
Total PCBs			0.67

FST-6-13-2	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-18
Total PCBs			0.16

FST-6-13-3	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-15
Total PCBs			0.91

FST-6-13-4	12/5/2013 0-6	12/5/2013 6-12	12/5/2013 12-18
Total PCBs			0.062

FST-8-1	12/6/2013 0-6	12/6/2013 6-12
Total PCBs	0.33	0.031

FST-8-2	12/6/2013 0-6	12/6/2013 6-13
Total PCBs		

FST-8-3	12/6/2013 0-6	12/6/2013 6-12	12/6/2013 12-24
Total PCBs	0.45	0.12	0.016 J

FST-8-4	12/6/2013 0-6	12/6/2013 6-12
Total PCBs	0.076	ND(0.027)

FST-8-5	12/6/2013 0-6	12/6/2013 6-12
Total PCBs	0.034	0.13

FST-8-6	12/6/2013 0-6	12/6/2013 6-12
Total PCBs	0.028 J	0.013 J

ALTERNATIVE 5A REMOVES:

COMPOUND	POUNDS	PERCENT
NICKEL	13,520	63
CHROMIUM	3,530	74
PCBs	122	82

0 50 150ft

APPROXIMATE SCALE

LEGEND

- STREAMS
- DRAINAGE DITCH
- PROPERTY BOUNDARY
- WETLAND DELINEATION
- POWER TOWER AND POWER LINE
- SEDIMENT SAMPLE
- PEEPER SEDIMENT SAMPLE LOCATION
- FLOODPLAIN SOIL TRANSECT WITHIN WETLAND
- FLOOD PLAIN SOIL SAMPLE LOCATION
- STATE-REGULATED FRESHWATER WETLAND (FROM CUGIR: CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSITORY)
- 100-YEAR FLOOD
- 500-YEAR FLOOD
- CREEK EXCAVATION AREA
- FLOODPLAIN EXCAVATION AREA (MINIMUM EXPECTED)

ALTERNATIVE NO.5		
	RESIDENTIAL/CLASS C SEDIMENT	RESIDENTIAL WETLAND/FLOODPLAIN
PCBs	> 1.0	> 1.0
Ni	> 49	> 140
Cr	> 36	> 36

PCB CONCENTRATIONS

SEDIMENT SAMPLE LOCATION

SED2013-6	12/5/2013
	6-12
Total PCBs	0.25

- SAMPLE DATE
- DEPTH (INCHES BELOW GROUND SURFACE)
- SAMPLE RESULT (mg/kg)
- PARAMETER

SEDIMENT CRITERIA (mg/kg)

< 0.1	NO EXCEEDANCE
> 0.1 TO < 1	UNRESTRICTED USE EXCEEDANCE
> 1.0	RESIDENTIAL EXCEEDANCE

FLOODPLAIN SAMPLE LOCATION

FST-6-1	11/28/2012
	0-6
Total PCBs	0.537

- SAMPLE DATE
- DEPTH (INCHES BELOW GROUND SURFACE)
- SAMPLE RESULT (mg/kg)
- PARAMETER

FLOOD PLAIN CRITERIA (mg/kg)

>1 TO < 5	
> 5 TO < 10	
>10 TO <25	
> 25.0	

0.039 [0.044]	PARENT [DUPLICATE RESULT]
J	ESTIMATED
U	QUALIFIED NOT DETECTED ABOVE THE SAMPLE REPORT LIMIT

NOTES:

- AERIAL IMAGERY DATED MAY 13, 2015 © GOOGLE EARTH. (NEW YORK CENTRAL STATE PLANE NAD83 US SURVEY FOOT).
- BCP = BROWNFIELD CLEANUP PROGRAM.

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

SPECIAL METALS CORPORATION
NEW HARTFORD, NEW YORK

ALTERNATIVE 5A
RESTRICTED RESIDENTIAL
EXCAVATION AREAS - MUD CREEK (EAST)

GHD

Source Reference:

Project Manager:	Reviewed By:	Date:	
J.D.	P.K.	FEBRUARY 2018	
Scale: 1:150	Project №: 86188-00	Report №: 022	Drawing №: figure 6.3b

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