ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Novelis Corporation

Alcan Sheet and Plate Oswego Works Facility

Site Management Plan

NYSDEC Site No.: 7-38-015

December 2013

ARCADIS

Certification Statement

I, Mark O. Gravelding, P.E., certify that I am currently a State of New York registered professional engineer and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Mark O. Gravelding, P.E.
New York State P.E. No. 069985

12-18-2013
Date

ARCADIS of New York, Inc.
6723 Towpath Road, P.O. Box 66
Syracuse, New York 13214-0066
315.671.9230

Site Management Plan

Alcan Sheet and Plate Oswego Works Facility – Scriba, New York

Prepared for:
Novelis Corporation

Prepared by:
ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017

Our Ref.:
B0072208

Date:
December 2013

REVISIONS TO FINAL APPROVED SITE MANAGEMENT PLAN

Revision #	Submitted Date	Summary of Revision	DEC Approval Date

Table of Contents

Tables

Figures

Attachments

1. Introduction and Description of Remedial Program

1.1 Introduction

This Draft Site Management Plan (SMP) is a required element of the remedial program for the Novelis Corporation (Novelis) Alcan Sheet and Plate Oswego Works Facility site (the site) in Oswego, New York. This SMP is a requirement under the New York State (NYS) Inactive Hazardous Waste Disposal Site Remedial Program administered by New York State Department of Environmental Conservation (NYSDEC). The site was remediated in general accordance with the Operable Unit 1 (OU-1) Remedial Design Report (RDR) prepared by ARCADIS (March 2010) and the Operable Unit 3 (OU-3) RDR prepared by ARCADIS (September 2008). Both RDRs were prepared in accordance with the requirements of the Record of Decision (ROD) for the site that was released by the NYSDEC on March 31, 2006 (NYSDEC 2006a) and Order on Consent (Index # A7-0555-0706, Site # 7-38-015; NYSDEC 2006b), effective January 1, 2007.

This SMP was prepared by ARCADIS of New York, Inc. (ARCADIS), on behalf of Novelis, in accordance with the requirements in NYSDEC Division of Environmental Remediation document titled, “DER-10 Technical Guidance for Site Investigation and Remediation” (DER-10; NYSDEC 2010) and the guidelines provided by NYSDEC. This SMP addresses the means for implementing the institutional controls (ICs) and engineering controls (ECs) for the site.

1.1.1 General

Novelis entered into an Order on Consent (NYSDEC 2006b) with the NYSDEC to remediate a 506-acre property located in the Town of Scriba, Oswego County, New York. The site Location Map is provided as Figure 1. For remediation purposes, the site was divided into three operable units (OUs) – OU-1 (North Ponds), OU-2 (Main Landfill), and OU-3 (Tributary 63), as described in the ROD (NYSDEC 2006a); the three OUs are shown on Figure 2. The boundaries of the site areas are more fully described in Section 1.2.

After completion of the remedial work described in the Final Engineering Report (FER; ARCADIS 2012), some residual subsurface impacted material remains at the site, and is hereafter referred to as “remaining impacted material.” This SMP was prepared to manage the remaining impacted material at the site. Reports associated

with the site can be viewed by contacting the NYSDEC or the document repositories for the site.

1.1.2 Purpose

In general, the requirements for the remediation and restoration of OU-1 and OU-3, which included the covering of residual subsurface impacted material remaining at the site, have been satisfied; refer to the FER and Section 1.5 below for additional detail on the remedial actions and remaining impacted material at OU-1 and OU-3. No remedial activities were required to address the impacts at OU-2. Due to the remaining impacts present on the site, EC/ICs have been incorporated into the site remedy to control exposure to remaining impacted material and to ensure protection of public health and the environment. In accordance with the ROD, an environmental easement will be established for portions of the site. The environmental easement will be recorded with the Oswego County Clerk and will require compliance with this SMP. The ICs place restrictions on site use, and mandate operation, maintenance, monitoring and reporting measures for all ECs and ICs. This SMP specifies the methods necessary to ensure compliance with all ECs and ICs required for the site. This plan will be submitted for approval by the NYSDEC, and compliance with this plan is required by the grantor of the environmental easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

This SMP provides a detailed description of all procedures required to manage remaining impacted material at the site after completion of the remedial actions, including: (1) implementation and management of the ECs and ICs; (2) monitoring; and (3) performance of periodic inspections, certification of results, and submittal of Periodic Review Reports.

To address these needs, this SMP includes two plans: an Engineering and Institutional Control Plan (EC/IC Plan) for implementation and management of ECs and ICs (Section 2) and a Site Monitoring Plan (Section 3).

This SMP also includes a description of Periodic Review Reports for the periodic submittal of data, information, recommendations, and certifications to NYSDEC (Section 5).

1.1.3 Revisions

Revisions to this SMP will be proposed in writing to the NYSDEC's project manager. The NYSDEC will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.2 Facility Description and History

The Oswego Works Facility is located approximately four miles east of the City of Oswego on Lake Road North (County Route 1A) in the Town of Scriba, Oswego County, New York and is identified as Block 06, Parcel 19.1 and Lots 27, 28, 29, and 30 on the Oswego Tax Map Numbers 111.00 and 094.00. A site location map is presented as Figure 1. The Oswego Works Facility is situated on an approximately 506-acre parcel owned by Novelis. A site map that shows the layout of the Novelis property, including manufacturing buildings and support facilities, and the three OUs that comprise the site is presented as Figure 2. The Novelis property is bordered by Lake Road North and North Road to the south/southeast, undeveloped and partially developed lands to the west, and Lake Ontario to the north/northwest. A Dynergy, Inc. (formerly Sithe Energies, Inc.) cogeneration plant, known as the Independence Station, borders the property to the northeast. The boundaries of the site are fully described in the Metes and Bounds, which will be added to this SMP as Attachment 1 after it is recorded with the Oswego County Clerk.

The Oswego Works Facility was initially constructed in 1963. Prior to construction of the manufacturing facility, the property consisted of agricultural and undeveloped land. The initial Novelis (formerly Alcan Aluminum Corporation) manufacturing operations at the property consisted of melt and cast centers (Remelt) and hot rolling mills (Hot Mill).

The facility currently produces aluminum ingots and rolled sheet products. Much of the raw aluminum processed by the facility comes from recycled scrap materials such as beverage containers. Aluminum scrap is melted in furnaces, alloying agents are added to achieve the desired product specifications, and the molten aluminum is poured into ingots. Cooling water is circulated through the ingot molds and sprayed onto the surface of the ingots during casting to quickly solidify the metal. The top and bottom faces of the ingots are machined and the ingots are preheated (with air) to prepare for hot rolling. The machined and preheated ingots pass through a reversing mill and a multi-stand single pass hot rolling mill. Proprietary emulsion, mostly consisting of deionized water and oil, is applied to the ingots via sprayers to assist in the rolling process. Ingots are reduced in thickness, coiled, and staged prior to being either

shipped to internal (other Novelis facility) or external customers for further processing or transported to the onsite cold rolling mill (Cold Mill). In the Cold Mill, coils from the Hot Mill are reduced in thickness, cut to the desired width, packaged, and sent to customers.

Cooling water used in manufacturing processes at the Oswego Works Facility is withdrawn from Lake Ontario. Currently, contact and non-contact cooling water is recovered and reused through a cooling water recirculation system that began operation in November 2001. Flow through the OU-1 treatment system was ceased in mid-2002. Prior to mid-2002, contact and non-contact cooling water used at the site was discharged to Lake Ontario after flowing through the OU-1 treatment system as described below.

1.3 Site Description and History

A description and historical information relating to each of the OUs that comprise the site is presented below.

1.3.1 OU-1 (North Ponds)

OU-1 (North Ponds) consists of a system of ponds and marshes located on the northwest portion of the property, immediately south of the Lake Ontario shoreline (Figure 2). The system consists of two ponds, three marshes, the Cold Mill Landfill, which occupies a total area of approximately 21 acres. Portions of the onsite ponds and marshes within OU-1 are currently classified as Federal and New York State regulated wetlands.

Prior to the construction and operation of the Oswego Works facility, the wetted areas associated with OU-1 were limited to portions of North Pond 2, and North Marshes 2 and 3; historical aerial photographs were provided in Appendix C of the Focused Remedial Investigation (FRI) Report (Blasland, Bouck & Lee, Inc [BBL] 2004). Following start-up of the Oswego Works Facility, the wetted perimeter was expanded via the operation of the North Ponds cooling water treatment system to include the areas shaded in Figure 2.

The manufacturing processes at the facility currently use approximately 10 million gallons per day of cooling water. As indicated above, water is withdrawn from Lake Ontario at the Lake Water Pump House (Figure 2) through a submerged intake structure. Beginning in 1968 and continuing through mid-2002, OU-1 was utilized as a

once-through cooling water treatment system. The cooling water was used in various contact and non-contact cooling processes throughout the facility prior to being discharged to OU-1. OU-1 provided natural treatment of the cooling water via settling of entrained solids, oxidation, and natural cooling in the ponds and wetlands, prior to discharge into Lake Ontario through Outfall 002 under a State Pollutant Discharge Elimination System (SPDES) Permit (NY-0002143). The OU-1 treatment system was designed to provide long residence time and slow water flow rates. Settleable solids were separated out from the water throughout the one-half mile long system flow path.

Following cessation of the cooling water discharge (in mid-2002), the only current surface water discharge to OU-1 is surface runoff from areas immediately adjacent to the ponds and marshes. The ponds may also receive storm water runoff from the facility during peak flow runoff events (designed on a 100-year storm event). Due to the cessation of the cooling water discharge (which was approved by the NYSDEC), surface water elevations within the ponds and marshes have dropped significantly from operational levels, to the point where portions of the marshes and limited areas of the ponds are reverting back to upland conditions.

Contact and non-contact cooling water effluent from the facility historically discharged to OU-1 through a pipe north of the manufacturing facility, through a narrow channel into a man-made basin known as North Pond 1, which is approximately 1.5 acres in area and had a historical depth of up to approximately 6 feet. Four submerged, 24-inch diameter, inverted corrugated metal pipes allowed water to flow beneath an access road into North Marsh 1, a shallow, 5-acre area. The water then flowed north under a steel footbridge into a man-made basin known as North Pond 2, which is approximately 2.5 acres in area and had a historical maximum depth of approximately 10 feet. The water then flowed through a constructed flow measurement weir into North Marsh 2, a shallow, 6-acre area, before flowing over a fish weir into Lake Ontario at SPDES-permitted Outfall 002. For approximately 5 years in the 1980s, water in the OU-1 system was partially recirculated to the plant during the winter through an intake structure in the northwest comer of North Pond 2. Prior to 1980, North Marsh 3, a shallow 6-acre area, was also utilized as part of the OU-1 treatment system.

Several physical modifications to the ponds and marshes, and changes to the cooling water flow path were implemented during the operational history of the OU-1 treatment system. Figures which show historical flow patterns through the OU-1 treatment system were presented in Appendix D of the FRI Report (BBL 2004). Modifications to ponds and wetlands that were implemented during the 1970s include the addition of an inverted pipe to discharge to North Pond 1 and the elimination of a side-stream

discharge from North Marsh 1 to North Marsh 3 at the extreme east-northeast end of North Marsh 1. Subsequently, in 1980 a fish weir was constructed at the discharge point from North Marsh 2 (SPDES Outfall 002), the discharge from the northwest comer of North Pond 2 was eliminated, and the berm between North Pond 2 and Lake Ontario was reinforced. A water recirculation structure was also constructed at the northwest comer of North Pond 2 to permit recirculation of water directly to the Lake Water Pump House.

During the facility's manufacturing process, biodegradable oils became entrained in the cooling water. Booms were used to skim the oil from the water surface in the OU-1 treatment system. The recovered oil and unwanted vegetative growth from the ponds were composted in an area between the OU-1 and the facility security fence (Figure 2).

As a result of a former operation of the OU-1 treatment system, polychlorinated biphenyls (PCBs) were incidentally discharged to the ponds and marshes during the late 1960s and early 1970s. A detailed discussion of the historical use of PCBs at the Oswego Works facility is presented in the North Ponds Investigation Report prepared by Dames & Moore, Inc. (Dames & Moore 1997). Previous investigations of OU-1 indicated the presence of PCBs in sediments of North Pond 1, North Pond 2, North Marsh 1, North Marsh 2 and North Marsh 3. PCBs were also identified in fish, turtle and vegetation samples collected from OU-1. Surface soils sampled in the vicinity of OU-1 indicate the presence of low levels of PCBs. Following a site investigation and risk assessment in 1997, a fence was constructed to prevent access to OU-1.

A small construction and demolition debris landfill associated with the construction of the Cold Mill is located to the south of North Pond 2 (referred to as the Cold Mill Landfill). Low levels of PCBs were identified in two surface soil samples collected from the Cold Mill Landfill as part of the Dames & Moore investigation.

1.3.2 OU-2 (Main Landfill)

OU-2 (Main Landfill) consists of a 10-acre landfill which was operated from 1963 to 1978 (shown on Figure 2). Approximately 80,000 cubic yards of facility wastes, consisting of office trash, wooden pallets, and construction debris, were reportedly disposed of in OU-2. In or around 1973, small quantities of rags and absorbent materials containing minor amounts of PCBs from a transformer leak were reportedly disposed of in OU-2. Low levels of certain volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) have been observed in groundwater in the

vicinity of OU-2. Low levels of SVOCs were also observed in soil at specific locations on the surface of OU-2.

No remedial activities were implemented to address OU-2. However, due to the presence of localized low-level impacts, long-term monitoring of OU-2 is required by the ROD and is covered under this SMP.

1.3.3 OU-3 (Onsite Portions of Tributary 63)

Tributary 63 is a small, unnamed, low-gradient, warm-water stream that enters the Novelis property from the south and flows across the southern and western portions of the property prior to flowing into Teal Marsh (Figure 2). OU-3 consists of the portion of Tributary 63 that flows across the southern and western portions of the Novelis property, the South Pond, and the South Marsh. Most of OU-3 is classified as New York State regulated wetland.

Flow within the portion of the tributary upstream of the Novelis property appears to be seasonally intermittent. Current inputs from the facility to OU-3 include process water discharge from a biological wastewater treatment plant, which began operation in June 2002, non-contact cooling water, groundwater, and stormwater from the southern portion of the manufacturing facility (including roof drains and catch basins). Process water and stormwater are conveyed to the South Pond, which overflows into the adjacent South Marsh via SPDES Outfall 001. The South Marsh overflows to Tributary 63 at the south end of the marsh via two culverts located underneath an unimproved access road. Historical inputs from the onsite sewage treatment plant (STP) were discharged directly to Tributary 63 further downstream, however, the discharge was re-routed to the cooling water return line west of the Cold Mill (SPDES internal outfall 03B). The STP currently discharges to Lake Ontario as blowdown from the recirculated cooling water system.

The South Pond is relatively shallow and has a surface area of approximately 75 feet by 100 feet. In the 1990s, the South Pond was partially filled to modify the flow pattern through the pond and increase retention time and an inverted discharge structure was constructed to improve separation and skimming of oil from parking lot runoff. The South Pond discharges to the South Marsh, which is approximately 150 feet by 200 feet.

Portions of Tributary 63 located downstream of the outlet for the South Marsh consists of a series of shallow pools that are linked by a poorly defined flow channel that

meanders towards the west and northwest. From the point where OU-3 flows under the truck entrance road to the Oswego Works Facility, the banks of the tributary are densely vegetated and difficult to access. Tributary 63 continues to flow towards the northwest and eventually flows through several culverts beneath an unpaved road (the Cottage Access Road) that extends along the western portion of the Novelis property. To the west of the Cottage Access Road, Tributary 63 consists of a wetland area with no defined flow channel.

Low levels of PCBs were previously detected in sediment samples collected 75 feet upstream of the South Pond Outfall, 125 feet downstream of the South Pond Outfall and immediately downstream of the confluence of the previous discharge location of the STP and Tributary 63.

1.4 Summary of Site Investigations

This section presents relevant background information used to develop the strategy for implementing remedial activities at OU-1 and OU-3 of the site.

1.4.1 OU-1 Previous Investigations

Several investigations have been conducted to characterize environmental conditions and the presence of chemical constituents in environmental media associated with OU-1. Investigation activities that have been conducted for OU-1 include:

- Implementing sediment investigation efforts, including sediment probing to characterize the depth of surface water and sediment thickness for each of the OU-1 ponds and marshes and the collection of surface and subsurface sediment samples from each of the OU-1 ponds and marshes to characterize the distribution of PCBs, as well as to evaluate total organic carbon (TOC) levels in sediment.

- Conducting a hydrologic evaluation to characterize transient hydrologic conditions in the vicinity of OU-1 resulting from the cessation of the cooling water and stormwater inputs from the facility in mid-2002.

- Collecting surface water samples at various locations throughout the OU-1 ponds and marshes to evaluate the presence of dissolved and particulate-phase PCBs in surface water.

- Collecting surface soil samples to evaluate the presence of PCBs in surface soil in the vicinity of the Cold Mill Landfill, the Lake Water Pump House Backwash Area, former composting locations, and at various locations around the perimeter of the OU-1 ponds and marshes.

- Evaluating concentrations of PCBs in resident biota (fish and turtles) within the OU-1 ponds and marshes.

Based on the results of previous investigation activities, PCBs were identified as the primary constituent of concern in OU-1 soil and sediment. Additional conclusions supported by the results for the OU-1 investigation activities are presented below.

1.4.1.1 Sediment Investigation

The distribution of PCBs in soil and sediment within the OU-1 ponds and marshes has been characterized based on the results of the FRI Report (BBL 2004), the Pre-Design Investigation (PDI) Report (ARCADIS 2009), and the North Ponds Investigation (Dames & Moore 1997). The soil and sediment investigation activities implemented in connection with OU-1 support the following conclusions:

- Hydrologic characteristics of the OU-1 ponds and marshes have been significantly modified by the cessation of the cooling water and stormwater discharges. Portions of the OU-1 ponds and marshes that were historically submerged have begun to revert to upland conditions. Surface water depth measurements collected during both the PDI and FRI activities (following cessation of the cooling water and stormwater inputs) ranged from dry at numerous sediment sampling/probing locations to a maximum depth of 40.8 inches in North Pond 1 and 38.4 inches in North Pond 2. Sediment thickness in the OU-1 ponds and marshes ranged from 4.8 inches (at an upland location in North Marsh 2) to a maximum depth of 8 feet in the central portion of North Pond 2.

- PCBs were detected in surface and subsurface soil and sediment within each of the OU-1 ponds and marshes, with the highest PCB concentration (1,275 parts per million (ppm)] detected in surface sediment within North Marsh 3 (from the 0 to 0.5 foot depth interval at sample OU1SD23).

- Within the OU-1 marshes, PCB concentrations generally decrease with depth (with the exception of a limited number of specific sampling locations). PCB

concentrations in sediment within the OU-1 ponds increase with depth until cessation, with maximum concentrations encountered at depths of 2.5 to 3.0 feet for North Pond 1 and 3.5 to 4.0 feet in North Pond 2.

- NYSDEC sediment screening guidance levels for human health bioaccumulation and wildlife bioaccumulation were exceeded within the OU-1 ponds and marshes.

1.4.1.2 Surface-Water Investigation

As indicated in the Phase Distribution of Polychlorinated Biphenyls and Terphenyls in the North Ponds/Wetland Complex study report (Phase Distribution Study; Pagano 1996), large volume surface water samples were collected from several locations in North Pond 1, North Pond 2, and North Marsh 2. The results of the Phase Distribution Study indicated that total PCB concentrations in the surface water samples ranged from 0.0177 parts per billion (ppb) in a sample collected from the channel leading from the facility discharge to North Pond 1, to 0.3939 ppb at Outfall 002.

1.4.1.3 Upland Soil Investigation

Each surface soil sample collected was visually characterized for color, texture, and moisture content. Based on observations of the recovered surface soil samples, surface soil from the perimeter of the ponds and marshes in OU-1 generally consisted of brown colored silt with a trace of fine sand and gravel. No visible staining or odors were encountered at any of the surface soil sampling locations in OU-1.

PCBs were detected in 11 of the 16 surface soil samples collected from the Cold Mill Landfill and the Lake Water Pump House Backwash Area, at concentrations ranging from 0.32 ppm to 20 ppm. PCBs were detected in five surface soil samples at estimated concentrations of 1.10 ppm, 1.7 ppm, 1.9 ppm, 10.2 ppm, and 20 ppm (locations OU1SS05, SS-CMLF1, SS-IB2, OU1SS01, and SS-CMLF2, respectively), which exceed the 1 ppm NYSDEC-recommended surface soil cleanup objective presented in Technical and Administrative Guidance Memorandum #4046 (TAGM 4046): Determination of Soil Cleanup Objectives and Cleanup Levels (NYSDEC 1994).

PCBs were detected in 6 of the 13 surface soil samples collected from the perimeter of the OU-1 ponds and marshes, at concentrations ranging from 0.14 ppm to 3.52 ppm. PCBs were detected in two surface soil samples located along the southern shore of North Pond 1 at concentrations of 2.26 ppm and 3.52 ppm (locations OU1SS14 and OU1SS15, respectively), which exceed the 1 ppm NYSDEC-recommended surface soil cleanup objective presented in TAGM 4046.

1.4.1.4 Groundwater Investigation

Locations of onsite groundwater monitoring wells are shown on Figure 3 of the Focused Feasibility Study (FFS) Report (BBL 2006a). The PCB concentrations of the most recent sampling (completed in January 2008) were below the laboratory detection limit. Groundwater samples collected from monitoring wells located in the vicinity of OU-1 (monitoring wells MW-02 through MW-05) in October 2002 indicated the following:

- PCBs were detected in one groundwater sample (collected from monitoring well MW-5) at a concentration that was less than the 0.09 ppb New York State Class GA groundwater quality standard. The location of MW-5 and the water level within the well indicate that the sample was most likely surface water in North Pond 2 rather than groundwater. PCBs were not detected in the other three monitoring wells located in the vicinity of OU-1.

- VOCs were not detected in any of the groundwater monitoring wells located in the vicinity of OU-1.

- One SVOC, bis(2-ethylhexyl)phthalate (BEHP), was detected in each groundwater sample at a concentrations exceeding the New York State Class GA water quality standard. BEHP is a common field and laboratory artifact that was likely introduced into the samples as a result of handling and processing. As required by the ROD, groundwater samples were collected from the monitoring wells in January 2008. The sampling confirmed that BEHP was not present in groundwater and was likely introduced during sampling or laboratory handling.

- Target Analyte List (TAL) metals, including iron, magnesium, manganese, and sodium, were detected at concentrations exceeding New York State groundwater quality standards and/or guidance values within each groundwater sample. The inorganic constituent concentrations detected in the groundwater samples collected from the monitoring wells located in the vicinity of OU-1 are consistent

with typical background mineral constituent concentrations that would be expected in shallow groundwater.

1.4.1.5 Pre-Design Investigation

The purpose of the PDI was to address data gaps in the FRI regarding the characterization of the site. Five Work Tasks were established to further define the limits of proposed remediation for the ponds, marshes, and upland areas of OU-1. The results of the PDI were utilized in the remediation design discussed in the Final OU-1 RDR. Listed below are the five Work Tasks and a description of the investigation activities completed in 2007 and 2008 for each task, as outlined in the PDI Work Plan (BBL 2006b).

Work Task 1 – Sediment/Soil Investigation

- Sediment/soil samples were taken from a total of 24 locations to further refine the extent and characterization of PCBs in OU-1 and characterize the native material beneath the sediment/soil at a subset of locations.

- Samples of native material underlying the sediment/soil were collected from 18 locations.

- Sediment/soil probing was conducted to verify the sediment depth within OU-1 at specific locations determined in the field.

Work Task 2 – Groundwater Investigation

- Piezometers were installed at six new locations and at each boring location following the completion of that boring.

- Groundwater samples were collected from the existing monitoring wells to evaluate the presence of BEHP, which was previously detected in groundwater samples. The wells were installed in November through December 2007 and samples were collected in January 2008.

Work Task 3 – Hydrologic Investigation

- Three new staff gauges were installed at OU-1 ponds and marshes.

- Three well points were installed within OU-1 ponds and marshes.

- A complete round of groundwater and surface water level measurements were recorded every two weeks during the November 2007 activities. In addition, groundwater and surface water level measurements were recorded in January 2009. This information was included in the PDI Report (ARCADIS 2009), previously submitted to NYSDEC.

Work Task 4 – Sediment and Wetland Characterization

- The existing limits of OU-1 ponds and marshes were evaluated to determine if the areas capable of supporting wetland vegetation have reduced in size relative to historical conditions and relative to the 12-inch groundwater isopleth.

- A field reconnaissance of North Marshes 2 and 3 was implemented to identify areas where mature trees potentially may be disturbed.

- Boundaries of federally- or state-regulated wetlands were delineated to support wetland permitting for areas that will be disturbed by remedial activities.

Work Task 5 – Archeological Resource Assessment

- An Archaeological Resource Assessment was completed by the Louis Berger Group, Inc. (LBG). The assessment includes the research and organization of information pertaining to previously identified pre-historic and/or historic archaeological resources in the vicinity of the site, a review of the potential for the remedial activities to impact archaeological resources, the development for further investigation activities, and the preparation of an archaeological report. The Stage IA Archaeological Survey was completed in November 2006 and the Stage IB Archaeological Survey was completed in November 2007. Both surveys were included in Novelis' Nationwide General Permit Number 38 Pre-Construction Notification (Novelis 2008).

1.4.1.6 Wetland Delineation

The boundaries of Site wetlands were delineated by ARCADIS between September 25 and November 8, 2007 using the Routine Determination Method presented in the 1987 Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987). Field data sheets were completed, and evaluations of soil, hydrology, and vegetation

characteristics were performed along the wetland/upland interface to locate and refine the wetland boundary. Results of the wetland delineation were discussed in the Final OU-1 RDR.

1.4.2 OU-3 Previous Investigations

Investigation efforts have been implemented for OU-3 as part of the North Ponds Investigation and the FRI. These efforts are documented in the FRI Report (BBL, 2004). The North Ponds Investigation included collecting three sediment samples from onsite portions of the tributary. The FRI included a more extensive sediment investigation, including collecting surface water samples and biota samples from the onsite portions of the tributary and from two areas within Teal Marsh (an offsite wetland area that receives surface-water drainage from the tributary).

For the sediment and biota sampling activities conducted as part of the FRI, OU-3 was divided into four segments (Segments A [upstream] through D [downstream]), as well as the South Pond and South Marsh:

- Segment A consists of the onsite portion of Tributary 63 located upstream from the outlet of the South Marsh.

- Segment B includes the onsite portion of Tributary 63 extending from the outlet of the South Marsh to immediately west of the railroad right-of-way that extends across the southern portion of the site.

- Segment C consists of the onsite portion of Tributary 63 that extends from immediately west of the railroad right-of-way to the Cottage Access Road. The flow channel was defined in Segment C with bathymetric survey. The tributary consists of wetland area with a flow channel that ultimately flows toward the west, off site, and into Teal Marsh.

- Segment D consists of a small wetland area located northeast of the downstream end of Segment C. Segment D is tangential to the main flow path of Tributary 63 and, due to the topography, minimal drainage from the tributary is believed to enter this area.

Based on the results of previous investigation activities, PCBs were identified as the primary constituent of concern in OU-3 sediment. Results of the OU-3 investigation efforts are summarized below.

In 2006, a PDI was conducted as requested in the ROD to reconcile data gaps. Additional sediment samples were collected to further delineate the impacted sediments in the tributary and wetlands were delineated to refine the boundaries between wetland and upland areas to support remedial design.

1.4.2.1 Sediment Investigation

Results of the sediment investigation activities implemented for OU-3 are presented in the PDI Report (ARCADIS 2009) and support the following conclusions:

- PCBs were detected in sediment samples collected from one sample location within the South Pond at concentrations ranging up to 2.57 ppm. Sediment depth ranges up to 2.5 feet.

- PCBs were detected in sediment samples collected from the South Marsh at concentrations ranging up to 161 ppm. The greatest concentrations of PCBs were detected in sediment samples collected from the 0- to 6-inch and 6- to 12-inch sampling intervals. Sediment depth ranges up to 2.5 feet.

- The onsite portion of Tributary 63 is characterized as a low-gradient, warm water stream. Flow within the portion of the tributary located upstream from the outlet of the South Marsh is seasonally intermittent and portions of the tributary located west of the truck entrance road are heavily vegetated. Sediment depths within the tributary are variable, ranging from less than 0.5 feet up to 6 feet. The average depth of sediment encountered at the sediment probing transect locations was 2.5 feet. This average depth is not representative of the entire tributary; however, the probing transects were specifically selected to characterize sediment depositional areas. Sediment depths within the South Pond and South Marsh ranged up to 2.6 feet.

- PCBs were detected at a concentration of 1.2 ppm in samples collected from the portion of the tributary located upstream of the discharge from the South Marsh during FRI activities (Tributary Segment A). PCBs were also detected at a concentration of 15 ppm in one sample that was collected approximately 75 feet upstream from the South Marsh outlet during the North Ponds Investigation.

- Low-level PCBs were detected in each sediment sample collected from Segment B. The greatest PCB concentration within the onsite portion of Tributary 63 was 24 ppm.

- Low-level PCBs were detected in 9 of the 12 samples collected within Segment C. Aside from one sample with a PCB concentration of 46 ppm, all samples with detectable PCB concentrations were less than 6 ppm. In general, PCB concentrations detected in sediment within Segment C were much less than the concentrations detected in Segment B. PCBs were not detected in two samples that were collected at the furthest downstream portion of Segment C (adjacent to culverts that flow beneath the Cottage Access Road).

- PCBs were not detected in any of the sediment samples collected from Segment D.

1.4.2.2 Surface-Water Investigation

Large-volume water samples were collected from four locations in Tributary 63. PCBs were not detected in the surface-water samples collected from Tributary 63. Results and additional details are presented in the FRI Report (BBL 2004).

1.4.2.3 Supplemental Pre-Design Investigation

In response to comments received from NYSDEC in 2007 regarding the draft Remedial Design Work Plan (RDWP), Novelis initiated several supplemental pre-design activities in the spring of 2008 to gather additional characterization data to further the remedial design. Pre-design activities consisted of additional substrate characterization, in-stream structure identification and characterization (i.e., pools, riffles, and other structures), forested wetland habitat characterization, sediment sampling, and tributary cross-section surveying. Results of the supplemental pre-design activities were discussed in the OU-3 RDR.

1.5 Summary of Remedial Actions

The primary remedial action objectives for OU-1 and OU-3, as set forth in the ROD, were to reduce to the extent practicable:

- exposures of persons at or around the site to PCBs in sediments, surface soils, and surface water

- harmful environmental exposures of flora or fauna to PCBs in soils

- harmful environmental exposures of flora or fauna to PCBs and oils in sediments and surface water
- potential release of identified constituents from sediment into surface water
- potential release of identified constituents into Teal Marsh and Lake Ontario

In addition, the ROD required the objectives shown in Table 1 for the OU-1 remediation.

Table 1. ROD Requirements for OU-1 Removal, Backfill, and Cover Placement

Location	Removal	Backfill	Cover
Pond Sediment	>1 ppm	1'	--
Marsh Sediment	>1 ppm	Grade*	--
Pond/Marsh Soil	>10 ppm	1' min.	1 - 10 ppm
Cold Mill/Pump Station Soils	>1 ppm	Grade	--

* For confirmation sample results less than 0.2 ppm, backfill a minimum of 6 inches.

To meet the above objectives, the site was remediated in accordance with the NYSDEC-approved OU-1 RDR dated March 2010 and the OU-3 RDR dated September 2008. The following is a summary of the remedial actions performed at the site:

- Excavation of soil/sediment to meet the remedial action objectives;
- Construction and maintenance of a soil cover system to prevent human exposure to impacted material remaining at the site;
- Execution and recording of a deed notice for OU-1 and OU-2 to restrict land use and prevent development on these onsite areas. OU-3 is sufficiently protected against disturbance and development by existing New York State statutes and regulations and will not be included under the environmental easement; and
- Development and implementation of a Site Management Plan for long term management of remaining impacted material, which includes plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) operation and maintenance and (4) reporting.

OU-1 remedial activities were completed at the site in January 2012, with restoration activities completed in June 2012. For additional details on the remedial activities see the FER.

1.5.1 Removal of Impacted Materials from the Site

As discussed in the FER, approximately 57,300 cubic yards (cy) and 12,800 cy of material were removed from OU-1 and OU-3, respectively. Impacted sediment and soil were excavated in the dry using standard earthmoving heavy equipment. To allow excavation activities to be performed in the dry, work areas were dewatered prior to excavation activities commencing as described in the FER. In general, impacted material was removed to a pre-determined depths based on pre-investigation sampling data or until the native underlying material was reached. Following excavation, confirmation samples were collected of the underlying material (unless bedrock was reached) and sent for analysis. Based on the sample results, a determination was made to either perform additional excavation and confirmation sampling or to backfill the excavation area. The excavations were backfilled with clean material as described in the FER. In select areas, a cover, consisting of a minimum of 12 inches of clean imported material, was placed without excavation as described in the FER and Section 2.2.1.1

After removal, excavated material was transported to temporary staging areas based on waste characterization (i.e., Toxic Substance Control Act [TSCA] material or non-TSCA material) for dewatering and stabilization, as necessary. TSCA material was material with greater than 50 parts per million (ppm) PCBs as sampled in-situ. Dewatered materials were stockpiled at the staging area until they were shipped to the appropriate facility for disposal. Shipping of all material was performed by NYCRR 364 licensed haulers. For additional details on material handling and disposal, refer to the FER.

1.5.2 Site-Related Treatment Systems

No long-term treatment systems were installed as part of the site remedy.

1.5.3 Remaining Impacted Material

Results of the sediment/soil post-excavation confirmation samples collected and analyzed for PCBs during the remedial activities for OU-1 and OU-3 are summarized in the FER in Tables 3 and 5 and Figures 3 through 8.. As discussed in the FER, two

samples collected as a part of the OU-1 confirmation sampling had final total PCB results greater than 1 ppm when the preliminary results were less than 1 ppm. The remaining samples collected as part of the OU-1 confirmation sampling were less than 1 ppm or approval was granted by NYSDEC to leave material in place during construction. Areas where the preliminary or final PCB results were greater than 1 ppm will be included in the cover inspection as discussed in Sections 2.2.1 and 3.6.

2. Engineering and Institutional Control Plan

2.1 Introduction

Since impacted material exists at the site in accordance with the NYSDEC-approved RDRs and the ROD, EC/ICs are required to protect human health and the environment. This EC/IC Plan describes the procedures for the implementation and management of all EC/ICs at the site. The EC/IC Plan is one component of the SMP and provides:

- A description of all EC/ICs on the site
- The basic implementation and intended role of each EC/IC
- A description of the key components of the ICs set forth in the environmental easement for OU-1 and OU-2
- A description of the features to be evaluated during each required inspection and periodic review
- A description of plans and procedures to be followed for implementation of EC/ICs, such as the implementation of the Excavation Work Plan (EWP; Attachment 2) for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the site
- Any other provisions necessary to identify or establish methods for implementing the EC/ICs required by the site remedy, as determined by the NYSDEC

2.2 Engineering Controls

This section provides an overview of the ECs installed at the site as a part of the remedial actions. This section also discusses the criteria used to determine when ECs may be decommissioned.

2.2.1 Engineering Control Systems

2.2.1.1 Soil Cover

In accordance with the NYSDEC-approved RDRs and the ROD, exposure to remaining impacted material at OU-1 is prevented by a soil cover system. The depth and materials of the OU-1 cover system varies depending on the location within the remediation area. Excavation areas, including areas where impacts remain, received various amounts of clean backfill depending on location (e.g., marsh sediment, pond sediment, upland soil) and confirmatory sampling results, as described in the FER. Clean backfill in areas where the preliminary or final result for the confirmation sample will be considered cover for the purposes of this SMP. In cover-only areas, where no excavation was performed, approximately 12 inches of clean import material was placed.

OU-2 also contains a soil cover system that was installed during closure of the landfill. As required by the ROD, the integrity of the cover system will be monitored in accordance with this SMP.

The EWP that appears in Attachment 2 outlines the procedures to be implemented in the event a cover system is breached, penetrated or temporarily removed, and any underlying material is disturbed. The limits of the cover areas for OU-1 and OU-2 are shown in Figure 3. Procedures for the inspection and maintenance of the cover areas are provided in the Monitoring Plan included in Section 3 of this SMP.

2.2.2 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered to be complete when effectiveness monitoring (discussed in Section 3) indicates that the remedy has achieved the remedial action objectives identified by the decision document. The soil cover is a permanent control and the quality and integrity of this system will be inspected for the duration of this SMP, as discussed in Section 3.6.

2.3 Institutional Controls

A series of ICs are required by the ROD to: (1) implement, maintain and monitor ECs; (2) prevent future exposure to remaining impacted material by controlling disturbance of subsurface media; and (3) limit the use and development of the site as discussed below. Adherence to these ICs for the site is required by the

environmental easement for OU-1 and OU-2 and will be implemented under this SMP. These ICs are:

- Compliance with the environmental easement for OU-1 and OU-2 and this SMP by the Grantor (Novelis) and the Grantor's successors and assigns
- All ECs must be maintained as specified in this SMP
- All ECs on the site must be inspected at a frequency and in a manner defined in this SMP
- Monitoring must be performed as defined in this SMP
- Data and information pertinent to management of the site must be reported at the frequency and in a manner defined in this SMP

ICs identified in the environmental easement may not be discontinued without an amendment to or extinguishment of the environmental easement. The environmental easement is discussed in the section below. Upon execution/issuance of the environmental easement, the environmental easement will be added to this SMP as Attachment 3.

2.3.1 Environmental Easement

The site has a series of ICs in the form of site restrictions. Compliance with the ICs is required by the environmental easement for OU-1 and OU-2. OU-3 is sufficiently protected against development and disturbance by existing New York State statutes and regulations and is not covered under an environmental easement. The following site restrictions apply to the site:

- Require compliance with the approved site management plan
- Limit the use and development of OU-1 and OU-2
- Restrict the use of groundwater within the vicinity of the Main Landfill as a source of potable water, without water quality treatment as determined by NYSDOH
- Require the property owner to complete and submit to the NYSDEC a periodic certification report

- Vegetable gardens or farming within the limits of OU-1, OU-2, or OU-3 is prohibited

As discussed in the Compensatory Wetland Mitigation Plan (Attachment 4), the environmental easement for the site will protect the OU-1 wetlands from future development and require compliance with this SMP. A copy of the draft environmental easement will be submitted to the United States Army Corps of Engineers (USACE) for approval, in writing, prior to being recorded. An approved, certified copy of the recorded environmental easement will be provided to NYSDEC and USACE after it is recorded with the Oswego County Clerk.

In addition and as required by the USACE, the environmental easement will prohibit the following uses for the OU-1 wetlands and ponds:

- Clearing, cutting or mowing

- Earthmoving, grading, removal of topsoil, cultivation, burning, filling or changes in the topography of the land

- Placement of refuse, wastes, sewage, dredged spoil, solid waste, incinerator residue, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal, or agricultural waste

- Draining, ditching, diking, dredging, channelizing, pumping, impounding, excavating

- Diverting or affecting the natural flow of surface or underground waters within, or out of OU-1; manipulating or altering any natural water course, body of water or water circulation and any activities or uses detrimental to water quality

- Mining, drilling

- Burning, systematically removing or cutting timber or otherwise destroying vegetation. Upon notification to, and agreement from, the USACE, selective pruning or removal of unsafe trees or removal of exotic non-native vegetation may be performed in accordance with current scientific best management practices as set out by the United States Forest Service or the New York Forestry Commission

- Spraying with biocides or use of herbicides or pollutants that violate water quality standards

- Introducing exotic species, altering the natural state of the wetlands or streams or causing erosion or sedimentation

- Grazing or use by domesticated animals such that animal wastes enter soil and water

- Construction of any kind in the wetlands, streams, buffers or upland, whether temporary or permanent

- Use of off-road vehicles and use of motorized vehicles except on existing roadways is prohibited

- Any other use of, or activity on, the OU-1 wetlands and ponds which is or may become inconsistent with the preservation of the area substantially in its natural condition, or the protection of its environmental systems, is prohibited

- As permitted or approved in writing by USACE OU-1 wetland areas may have: (1) a narrow pedestrian walking trail in the uplands or upland buffer using pervious materials, (2) minimal structures and boardwalks for the observation of wildlife and wetland/stream ecology, (3) crops for wildlife, (4) vehicle access on existing roadways for maintenance

- Display of billboards, signs, or advertisements, except for the posting of safety/security signage (e.g., no trespassing, no fishing), temporary signs indicating the property is for sale, signs identifying the trees, vegetation, wetlands or conservation values of the property and/or signs identifying the owner of the property

- Conservation and wildlife habitat management plans may be implemented by the New York Department of Environmental Conservation, United States Forest Service, conservation land trusts holding conservation easements, or other conservation management entities where the habitat, wildlife or forest management does not result in any impacts to the wetlands/streams/riparian corridors and its buffers, or to property protected for its historical, cultural and/or archeological value, and where the proposal would enhance the management of the property for its conservation use

2.3.2 Excavation Work Plan

Any future intrusive work that has the potential to encounter or disturb remaining impacted material at the site will be performed in compliance with the EWP that is attached as Attachment 2 to this SMP.

Prior to beginning work, a Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP) will be developed by the party performing the work. The HASP and CAMP will be submitted with the notification provided in the EWP (Attachment 2). The HASP and CAMP will comply with DER-10, 29 CFR 1910, 29 CFR 1926, and all other applicable Federal, State and local regulations including any future changes to State and Federal health and safety requirements, and specific methods employed by future consultants/contractors. Any intrusive construction work will be performed in compliance with the EWP, HASP and CAMP, and will be included in the periodic inspection and certification reports submitted under the site Management Reporting Plan (see Section 5).

2.4 Inspections and Notifications

2.4.1 Inspections

Inspections of all remedial components installed at the site, as described in this SMP, will be conducted by Novelis at the frequency specified in the SMP Monitoring Plan schedule. A site inspection will be conducted annually to determine and document the following:

- Whether ECs continue to perform as designed
- If these controls continue to be protective of human health and the environment
- Compliance with requirements of this SMP and the environmental easement
- Achievement of remedial performance criteria
- Results and observations during monitoring events
- If site records of monitoring, inspections, and corrective actions are complete and up to date

- Changes, or needed changes, to the remedial or monitoring system (as required)

- Visual inspection of the culvert connecting the South Marsh with Tributary 63

Inspections will be conducted in accordance with the procedures set forth in the Monitoring Plan of this SMP (Section 3). The reporting requirements are outlined in the Periodic Review Reporting section of this SMP (Section 5).

If an emergency, such as a natural disaster, with the potential to impact the ECs or an unforeseen failure of any of the ECs occurs, an inspection of the site will be conducted within 5 business days of the event (to the extent practical and safe) to verify the integrity of the ECs implemented at the site. The inspection will be performed by a qualified environmental professional as defined in 6NYCRR Part 375.

2.4.2 Notifications

Notifications will be submitted by Novelis to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in the site use that are required under the terms of the Order on Consent, 6NYCRR Part 375, and/or Environmental Conservation Law.

- 7-day advance notice of any proposed ground-intrusive activities pursuant to the EWP.

- Verbal notice by noon of the following business day of any emergency, such as a fire, flood, or earthquake, that reduces or has the potential to reduce the effectiveness of ECs in place at the site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public. If it is not an emergency situation, notification must be made within five business days.

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action will be submitted to the NYSDEC within 45 days and will describe and document actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the site properties or the responsibility for implementing this SMP will include the following notifications:

- At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser has been provided with a copy of the Order on Consent, and all approved work plans and reports, including this SMP.

- Within 15 days after the transfer of all or part of the property, the new owner's name, contact representative, and contact information will be confirmed in writing.

2.5 Contingency Plan

Emergencies may occur that have the potential to affect the ECs such as injury to personnel, fire, serious weather conditions, or an environmental release either as the result of failure of an EC or due to other event at the facility. In the event of such emergencies with the potential to affect the ECs, the actions listed in this Contingency Plan will be followed. This Contingency Plan is not intended to provide contingencies for all scenarios on the site. Novelis emergency procedures must be followed for any emergencies occurring onsite.

3. Site Monitoring Plan

3.1 Introduction

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedial actions at the site. This Monitoring Plan may only be revised with the approval of NYSDEC.

3.2 Purpose and Schedule

This Monitoring Plan describes the methods to be used for:

- Assessing the remedial performance
- Evaluating site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment (i.e., site inspection)
- Preparing the necessary reports for the various monitoring activities

To adequately address these issues, this Monitoring Plan provides information on:

- Monitoring locations, protocol, and frequency
- Reporting requirements
- Quality Assurance/Quality Control (QA/QC) requirements
- Inspection requirements for the ECs
- Annual inspection and periodic certification

3.3 Wetland Monitoring

The wetland monitoring plan is based on an adaptive management approach, which includes the following steps: monitoring, evaluation, and observation-based adjustments in maintenance activities. Adaptive management focuses on interpreting site conditions that are affecting vegetation development and adapting maintenance activities to take advantage of positive responses and reducing conditions resulting in

negative responses to create self-sustaining resources. In general, the wetland monitoring plan includes:

- Active eradication of invasive species observed throughout the five year monitoring period.

- Inspection of the plants after one year following initial planting. At that time, survival of the plants will be assessed and the planted species that did not survive will be replaced in-kind. The assessment of the initial planting will be used to guide the second planting (if any) to increase survival of the plants. For example, plant plugs/tubers may be planted in areas where seeding previously was performed.

- During the second and third years, plants will be replaced to maintain the original planting density; however, the more vigorously growing species may be used. In addition, vigorously growing “volunteers” can be counted in the total (except for exotic species).

- After the fourth year, plants will be replaced to maintain the original planting density, volunteers may be counted, and up to 50 percent of the replacement plants may be cattail.

- If, by the end of the fifth year, plant coverage is less than the original planting density, high density species (e.g., cattail) will be planted to make up the difference, and no further monitoring will be necessary.

- Monitoring for wooded wetlands will continue through the eighth year with replanting as necessary.

In OU-1, initial planting was performed in fall 2011 and an inspection of the plants was performed in 2012. Reseeding of OU-1 took place in June 2013. The first year of the eight years monitoring of wooded wetlands in OU-1 and five year monitoring of emergent and scrub/shrub wetlands in OU-1 is anticipated to be completed in fall 2013.

The Compensatory Wetland Mitigation Plan (Attachment 4) and the USACE authorization for remedial work under Nationwide Permit (NWP) No. 38 dated July 6, 2011 (File Number 2010-0044) outline additional wetland monitoring requirements for OU-1 to ensure establishment of the wetland community, including eight years for

wooded wetlands and five years for emergent and scrub/shrub wetlands. As discussed in Section 8.2 of the Compensatory Wetland Mitigation Plan (Attachment 4), annual monitoring reports are to be submitted to USACE by the end of each reporting year; copies of these reports will also be submitted to NYSDEC. Copies of the Compensatory Wetland Mitigation Plan and NWP authorization are provided in Attachments 4 and 5, respectively.

Protection and maintenance of the OU-1 wetlands will be performed in accordance with the Compensatory Wetland Mitigation Plan (Attachment 4). If necessary, Novelis will control nuisance vegetation in accordance with the Compensatory Mitigation Plan and standard USACE practices for vegetation control.

3.4 Biological Monitoring

Biological monitoring will be performed in accordance with the Alcan Sheet and Plate Site Monitoring Plan (2008 Site Monitoring Plan; ARCADIS 2008a) to assess the effectiveness of the remediation in eliminating or reducing, to the extent practical, potential risks to aquatic biota (i.e., fish) in OU-1, OU-3, and Teal Marsh and terrestrial biota (i.e., small mammals) in OU-1. A copy of the 2008 Site Monitoring Plan is provided as Attachment 6. In accordance with the ROD and the 2008 Site Monitoring Plan, three post-remedial biota monitoring events will be conducted, specifically in years 1, 3, and 5 following remediation.

For OU-3, post-remedial biota sampling events were performed in 2010 and 2012. During the 2012 monitoring event, two samples collected from Tributary 63 showed elevated PCB concentrations. Additional sampling was performed in March and April 2013 to further evaluate the need for additional remediation. Based on the results of the 2013 sediment sampling, an Interim Remedial Measure (IRM) will be develop and implemented to address the additional PCB-impacted sediment identified during monitoring. Biological monitoring in OU-3 will continue on the current schedule, consistent with the 2008 Site monitoring Plan until a five year review of biota monitoring data can be performed as required by the ROD and discussed in Section 3.4.5.

For OU-1, the first post-remedial biota monitoring event for OU-1 will occur in 2013.

3.4.1 Fish Sampling

Fish tissue samples will be collected from three areas in OU-1, four areas in OU-3, and two areas of Teal Marsh, as described in the 2008 Site Monitoring Plan. Five whole body composite samples and five edible size fillet samples will be collected from each location per sampling event for a total of 30 fish tissue samples in OU-1, 40 fish tissue samples in OU-3, and 20 fish tissue samples from Teal Marsh.

The target species for the fish tissue monitoring will be selected in the field based on historical data and availability at the time of sampling. Potential target species include redfin pickerel, sunfish (e.g., bluegill or pumpkin seed), and central mudminnow. Ideally, the ten samples from each location will include 5 composite samples of a lower trophic level forage fish (e.g., bluegill) and five individual edible-size fish samples from an upper trophic level species (e.g., redfin pickerel). Substitution of target fish will be done in consultation with NYSDEC personnel.

For additional details on fish sampling, refer to Section 2.1 and 3.1 of the 2008 Site Monitoring Plan.

3.4.2 Small Mammal Sampling

Small mammal samples will be collected from five areas of upland habit within OU-1 in areas that historically contained elevated levels of PCBs, as described in the 2008 Site Monitoring Plan. Final sample locations will be determined in the field based on habitat availability and in consultation with NYSDEC personnel. Five small mammal samples will be collected from each of the five locations within OU-1, for a total of up to 25 samples per event. Reasonable efforts will be made to collect the target sample size of shrews, however in the event that the target sample size cannot be reached, sample locations may be expanded and/or alternate targets of opportunity may be considered in consultation with NYSDEC personnel. For additional details on small mammal sampling, refer to Section 2.2 of the 2008 Site Monitoring Plan.

3.4.3 Sediment Sampling

Immediately following each fish sampling event, two surface sediment samples (0 to 6 inches) will be collected from the three water bodies sampled in OU-1 and from four reaches in OU-3, as described in the 2008 Site Monitoring Plan. Sampling locations will be selected to provide spatial coverage for the fish collection areas (based on the judgment of sampling personnel) and will be surveyed at the time of

sample collection using GPS survey methods. For additional details on sediment sampling, refer to Sections 2.3 and 3.2 of the 2008 Site Monitoring Plan.

3.4.4 Surface Water Sampling

Immediately prior to each fish sampling event, one large volume surface water sample will be collected from each of the three sampling areas for OU-1 and from four reaches in OU-3, as described in the 2008 Site Monitoring Plan. Surface water sampling locations will be selected by field personnel to represent areas where the deepest water column is generally present in each water body and surveyed at the time of sample collection using GPS survey methods. For additional details on surface water sampling, refer to Section 2.4 and 3.3 of the 2008 Site Monitoring Plan.

3.4.5 Reduction and/or Termination of Biological Monitoring

Following completion of the third post-remedial monitoring event (in year 5 following completion of remediation), the data collected during biological monitoring will be evaluated and reviewed with NYSDEC in accordance with the 2008 Site Monitoring Plan. At that time, if biota PCB levels are consistent with regional background concentrations and/or have reduced to levels that pose no significant ecological risk, the monitoring program may be reduced in scope/frequency or terminated. If biota PCB levels do not meet the performance standards for the site, the scope and duration of additional monitoring will be determined by NYSDEC.

3.5 Groundwater Monitoring

Groundwater monitoring will include the collection of groundwater samples from six monitoring wells located in the immediate vicinity of OU-2 (the Main Landfill) as discussed in Section 4.1 of the 2008 Site Monitoring Plan. In addition, groundwater level measurements will be obtained from additional onsite groundwater monitoring wells that are not sampled to evaluate groundwater flow conditions at the time of each sampling event. Three post-remedial groundwater monitoring events will be conducted concurrent with the OU-1 biota monitoring activities (starting in 2013), specifically in years 1, 3, and 5 following completion of remedial activities.

3.5.1 Reduction and/or Termination of Groundwater Monitoring

Following completion of the third post-remedial monitoring event, the groundwater monitoring data will be evaluated and reviewed with NYSDEC in accordance with the

2008 Site Monitoring Plan. At that time, if groundwater VOC levels are consistent with previous sampling results or have decreased to levels that are below New York groundwater quality standards or guidance values, the groundwater monitoring program may be reduced in scope/frequency or terminated.

3.6 Site Inspection

Inspections of OU-1 and OU-2 (Figure 3) will be performed a minimum of once per year and will include visual inspection of the soil cover systems for evidence of erosion, perturbation, and/or non-soil exposure and the percent of vegetative cover. Inspections will also be performed after severe weather conditions that may affect the soil cover system (e.g., tropical storms, direct tornados, fires). Severe weather conditions will be based on professional judgment and will not include standard rain or thunderstorm events. Additionally, if the soil cover system is covered with snow, inspections will not be performed.

During these inspections, an inspection form will be completed (example form is provided in Attachment 7) that will compile sufficient information to assess the following:

- Compliance with all ICs, including site usage
- An evaluation of the condition and continued effectiveness of the soil cover system
- General site conditions at the time of the inspection
- The monitoring activities being conducted
- Compliance with record keeping requirements (i.e., confirm that site records are up to date)

Additional information on site inspections frequency and reporting can be found in Section 5.1.

3.7 Monitoring Quality Assurance/Quality Control

3.7.1 Documentation

Field personnel will provide documentation of the field data collection. This documentation will consist of a record that allows reconstruction of field events to aid in the data review and interpretation process. Documents, records, and information relating to the performance of the field work will be retained by Novelis. The various forms of documentation to be maintained throughout the monitoring program include field logbooks and/or monitoring log datasheets. Entries into the logbook will contain a variety of information including the information necessary to complete the reporting in Section 3.8.

Measurements made and any observations will be recorded in the field logbook or on a monitoring log datasheet using ink, with no erasures. If an incorrect entry is made, the information will be crossed out with a single strike mark. All equipment used to make measurements will be identified, along with the date of calibration.

3.7.2 Field Quality Control Checks

3.7.2.1 Field Measurements

Monitoring will be conducted by experienced field personnel who have been appropriately trained in equipment use and monitoring methodology.

3.7.2.2 Field Data Reduction and Review

Information collected in the field through visual observation, manual measurement, and/or field instrumentation will be reviewed by the implementing consultant/contractor on behalf of Novelis for adherence to the QA/QC procedures and for consistency. Concerns identified as a result of this review will be discussed with the field personnel, corrected if possible, and, as necessary, incorporated into the data evaluation process.

Field data calculations, transfers, and interpretations will be conducted by the field personnel and reviewed for accuracy by the implementing consultant/contractor on behalf of Novelis. Logs and documents will be checked for:

1. General completeness

2. Readability

3. Usage of appropriate procedures

4. Appropriate instrument calibration and maintenance

5. Reasonableness in comparison to present and past data collected

6. Correct sample locations

7. Correct calculations and interpretations

3.7.3 Laboratory Quality Control Checks

3.7.3.1 Laboratory Analyses and Quality Assurance/Quality Control Procedures

Biota tissue, sediment, and groundwater samples will be analyzed as discussed in Section 5.1 of the 2008 Site Monitoring Plan.

3.7.3.2 Data Validation

Analytical results for post-remedial monitoring will be validated by ARCADIS' data validation staff and will follow the United States Environmental Protection Agency (USEPA) Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA 1999). Results of the data validation process will be documented in a Data Usability Summary Report for each sample delivery group, in accordance with the 2008 Site Monitoring Plan.

3.8 Monitoring Reporting Requirements

Forms and any other information generated during regular monitoring events and inspections will be kept on file at Novelis. All forms and other relevant reporting formats used during the monitoring/inspection events, will be (1) subject to approval by NYSDEC and (2) submitted at the time of the Periodic Review Report, as specified in Section 5.

A monitoring data report will also be prepared subsequent to each monitoring event and sent to NYSDEC to present the monitoring results in accordance with the 2008

Site Monitoring Plan. In addition, monitoring results will also be summarized in the Periodic Review Report, which will include, at a minimum:

- Dates of monitoring event
- Personnel conducting monitoring
- Description of the activities performed
- Copies of all field forms completed
- Summary of monitoring results
- A figure illustrating monitoring locations
- Any observations, conclusions, or recommendations
- A determination as to whether Site conditions have changed since the last reporting event
- Photographs of restored vegetation areas

Periodic Review Reports will be provided in hard copy or digital format as determined by NYSDEC. Monitoring data reports will be provided electronically. A summary of the monitoring program deliverables are summarized in Table 2.

Table 2. Schedule of Monitoring/Inspection Reports

Task	Reporting Frequency*
Monitoring Data Report	Annually
Periodic Review Report	Annually
Inspection of Operable Units	Annually

Note:

* The frequency of events will be conducted as specified until otherwise approved by NYSDEC.

4. Operation and Maintenance Plan

The site remedy does not rely on any mechanical systems to protect public health and the environment. Therefore, the operation and maintenance of such components is not included in this SMP.

5. Inspections, Reporting and Certifications

This section provides additional details on the site inspections, as well as the certifications and reporting to be performed under this SMP.

5.1 Site Inspections

5.1.1 Inspection Frequency

All inspections will be conducted at the frequency specified in the schedules provided in Section 3 Monitoring Plan of this SMP. At a minimum, an inspection of OU-1 and OU-2 will be conducted annually. Inspections of remediated components will also be conducted during the routine monitoring and as soon as safely possible after a severe condition has taken place, with the potential to impact the ECs. Severe conditions will be based on professional judgment and will not include standard rain or thunderstorm events. Additionally, if the soil cover system is covered with snow, an inspection will not be required. Additional details on inspection methods are provided in Section 3.6.

5.1.2 Inspection Forms, Sampling Data, and Maintenance Reports

All inspections and monitoring events will be recorded and maintained by the owner. Additionally, a general inspection form (or comparable document) will be completed during the annual inspection (see Attachment 7). All applicable inspection forms and other records, including monitoring logs and data reports, generated for the site during the reporting period will be provided in electronic format in the Periodic Review Report.

5.1.3 Evaluation of Records and Reporting

The results of the inspection and monitoring events will be evaluated as part of the EC/IC certification to confirm that the:

- ECs/ICs are in place, are performing properly, and remain effective
- The Monitoring Plan is being implemented
- Operation and maintenance activities are being conducted properly; and, based on the above items

- The site remedy continues to be protective of public health and the environment and is performing as designed

5.2 Certification of Engineering and Institutional Controls

After the last inspection of the reporting period, a qualified environmental professional, as defined in 6NYCRR Part 375, will prepare the following certification:

For each institutional or engineering control identified for the site, I certify that all of the following statements are true:

- *The inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction.*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by NYSDEC.*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment.*
- *Nothing has occurred that would constitute a violation or failure to comply with any Site management plan for this control.*
- *Access to the site will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.*
- *Use of the site is compliant with the environmental easement.*
- *The engineering control systems are performing as designed and are effective.*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program.*
- *The information presented in this report is accurate and complete.*

- *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, [name], of [business address], am certifying as [Owner or Owner's Designated Site Representative].*

The signed certification will be included in the Periodic Review Report described below.

5.3 Periodic Review Report

In accordance with the Order on Consent, a Periodic Review Report will be submitted to NYSDEC annually by February 1st summarizing the activities from the previous year. . The report will be prepared in accordance with NYSDEC DER-10. The report will include:

- Identification, assessment, and certification of all ECs/ICs required by the remedy for the site

- Results of the required annual site inspections and severe condition inspections, if applicable. All applicable inspection forms and other records generated for the site during the reporting period in electronic format

- A summary of the results of any monitoring data and/or information submitted during the reporting period.

- A site evaluation, which includes the following:

    - The compliance of the remedy with the requirements of the remedial designs and ROD

    - The operation and the effectiveness of the soil cover system including identification of any needed repairs or modifications

    - Any new conclusions or observations regarding site impacts based on inspections or data generated by the Monitoring Plan

    - Recommendations regarding any necessary changes to the remedy and/or Monitoring Plan

- The overall performance and effectiveness of the remedy

The Periodic Review Report will be submitted, in hard-copy format, to the NYSDEC Central Office and Regional Office in which the site is located, and in electronic format to NYSDEC Central Office, Regional Office and the NYSDOH Bureau of Environmental Exposure Investigation.

5.4 Corrective Measures Plan

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control, a corrective measures plan will be submitted to the NYSDEC for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work will be performed pursuant to the corrective measures plan until it is approved by the NYSDEC.

6. References

ARCADIS. 2008a. *Alcan Sheet & Plate Site Monitoring Plan.* Prepared for Novelis Corporation, Scriba, New York. June.

ARCADIS. 2008b. *Remedial Design Report. Operable Unit 3 – South Pond, South Marsh, and Tributary 63.* Prepared for Novelis Corporation, Oswego, New York (Revised September 2008).

ARCADIS. 2009. *Pre-Design Investigation Report.* April.

ARCADIS. 2010. *Final OU-1 Remedial Design Report.* Prepared for Novelis Corporation, Oswego, New York. March.

ARCADIS. 2012. *Draft Final Engineering Report*. Prepared for Novelis Corporation, Oswego, New York. August.

Blasland, Bouck & Lee, Inc. (BBL). 2004. *Focused Remedial Investigation Report.* Prepared for Novelis Corporation, Scriba, NY. January.

BBL. 2006a. Focused Feasibility Study Report. Prepared for Novelis Corporation. February.

BBL. 2006b. Pre-Design Investigation Work Plan. Prepared for Novelis Corporation. August.

Dames & Moore, Inc. 1997. North Ponds Investigation Report.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

NYSDEC. 1994. *Technical and Administrative guidance Memorandum 4046: Determination of Soil Cleanup Objectives and Cleanup Levels.* HWR-94-4046. January 24.

NYSDEC. 2006a. *Record of Decision.* March.

NYSDEC. 2006b. Order on Consent (Index #A7-0555-0706, Site #7-38-015) effective as of January 1, 2007.

NYSDEC. 2010. DER-10: Technical Guidance for Site Investigation and Remediation. Issuance Date: May 3, 2010. Available on the worldwide web at: http://www.dec.ny.gov/regulations/67386.html.

Novelis. 2008. Nationwide Permit Number 38 – Pre-Construction Notification. May 16.

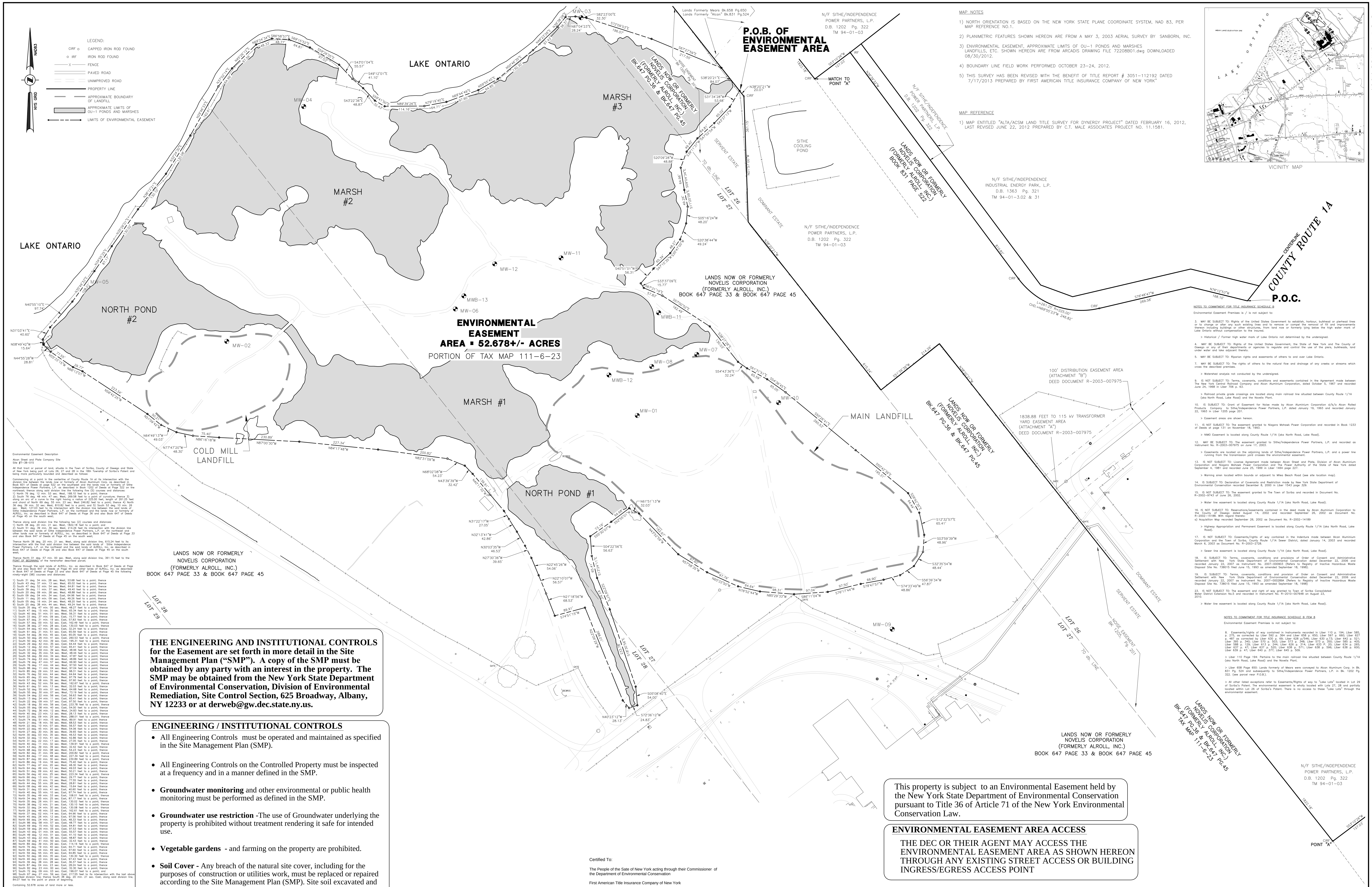
Pagano, J.J. 1996. Phase Distribution of Polychlorinated Biphenyls and Terphenyls in the North Ponds/Wetland Complex.

United States Environmental Protection Agency. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review

ARCADIS

Attachment 1

Metes and Bounds



MAP NOTES

1) NORTH ORIENTATION IS BASED ON THE NEW YORK STATE PLANE COORDINATE SYSTEM, NAD 83, PER MAP REFERENCE NO.1.

2) PLANIMETRIC FEATURES SHOWN HEREON ARE FROM A MAY 3, 2003 AERIAL SURVEY BY SANBORN, INC.

3) ENVIRONMENTAL EASEMENT, APPROXIMATE LIMITS OF OU-1 PONDS AND MARSHES LANDFILLS, ETC. SHOWN HEREON ARE FROM ARCADIS DRAWING FILE 72208B01.dwg DOWNLOADED 08/30/2012.

4) BOUNDARY LINE FIELD WORK PERFORMED OCTOBER 23-24, 2012.

5) THIS SURVEY HAS BEEN REVISED WITH THE BENEFIT OF TITLE REPORT # 3051-112192 DATED 7/17/2013 PREPARED BY FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK"

MAP REFERENCE

1) MAP ENTITLED "ALTA/ACSM LAND TITLE SURVEY FOR DYNERGY PROJECT" DATED FEBRUARY 16, 2012, LAST REVISED JUNE 22, 2012 PREPARED BY C.T. MALE ASSOCIATES PROJECT NO. 11.1581.

THE ENGINEERING AND INSTITUTIONAL CONTROLS for the Easement are set forth in more detail in the Site Management Plan ("SMP"). A copy of the SMP must be obtained by any party with an interest in the property. The SMP may be obtained from the New York State Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@gw.dec.state.ny.us.

ENGINEERING / INSTITUTIONAL CONTROLS

- All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP).
- All Engineering Controls on the Controlled Property must be inspected at a frequency and in a manner defined in the SMP.
- **Groundwater monitoring** and other environmental or public health monitoring must be performed as defined in the SMP.
- **Groundwater use restriction** -The use of Groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- **Vegetable gardens** - and farming on the property are prohibited.
- **Soil Cover -** Any breach of the natural site cover, including for the purposes of construction or utilities work, must be replaced or repaired according to the Site Management Plan (SMP). Site soil excavated and removed from the property must be managed, characterized, and properly disposed of in accordance with the NYSDEC regulations and directives. Guidelines for management of subsurface soils/fill and long-term maintenance of the natural site cover is provided in the SMP.
- **Land Use -** The use and development of the site is limited to uses consistent with wetland and adjacent Industrial Uses only as defined in 6 NYCRR Part375-1.8(g)(2) (iv).

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law.

ENVIRONMENTAL EASEMENT AREA ACCESS

THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT

Certified To:

The People of the Sate of New York acting through their Commissioner of the Department of Environmental Conservation

First American Title Insurance Company of New York

Alroll, Inc.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 2, 4, 8, 13, and 19 of Table A thereof.

The field work was completed on October 24, 2012.

Date of Plat or Map: January 17, 2012.
Last Revised: August 21, 2013.

David J. Uhrinec, PLS #050052 — 08/21/2013 (Date) — SEAL

"ONLY COPIES OF THIS MAP SIGNED IN RED INK AND EMBOSSED WITH THE SEAL OF AN OFFICER OF C.T. MALE ASSOCIATES, OR A DESIGNATED REPRESENTATIVE SHALL BE CONSIDERED TO BE A VALID TRUE COPY"

David J. Uhrinec, PLS 050052

DATE		REVISIONS RECORD/DESCRIPTION	DRAFTER	CHECK	APPR.
07/30/13	1	Revisions per NYS DEC review/ title report	dju	dju	dju
08/21/13	2	Course 55 on survey map, ownership, note 5	dju	dju	dju
	3				
	4				
	5				
	6				
	7				
	8				
	9				

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW.

APPROVED: dju
DRAFTED : dju
CHECKED : dju
PROJ. NO: 12.2495
SCALE : 1"=100'
DATE : 01/17/13

ALTA/ACSM LAND TITLE SURVEY
ENVIRONMENTAL EASEMENT
ALCAN SHEET AND PLATE COMPANY SITE
SITE #7-38-015
448 COUNTY ROUTE 1A

TOWN OF SCRIBA — OSWEGO COUNTY, NEW YORK

C.T. MALE ASSOCIATES
Engineering, Surveying, Architecture & Landscape Architecture, P.C.
200 GATEWAY PARK DRIVE, BLDG. C, P.O. BOX 3246
SYRACUSE, NY 13220-3246
315.458.6498 • FAX 315.458.4427

SHEET 1 OF 1
DWG. NO: 13-0133

ARCADIS

Attachment 2

Excavation Work Plan

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Attachment 2

Excavation Work Plan

Alcan Sheet and Plate Oswego Works Facility

Date: December 2013

ARCADIS

Table of Contents

1. Introduction

This Excavation Work Plan (EWP) provides protocols that must be followed in the event that soil and/or sediment excavation or other intrusive activities are required in cover areas (refer to Figure 3 of the Site Management Plan [SMP]) at the Novelis Corporation (Novelis) Alcan Sheet and Plate Oswego Works Facility site (the site) in Scriba, New York.

As noted in the SMP, the remedial program for the site addressed three operable units (OUs) as shown on Figure 2 of the SMP. OU-1 (North Ponds) consists of a system of two ponds, three marshes, the Cold Mill Landfill,. OU-1 occupies a total area of approximately 21 acres and portions of the onsite ponds and marshes within OU-1 are currently classified as Federal and New York State regulated wetlands. OU-2 (Main Landfill) consists of a 10 acre landfill which was operated from 1963 to 1978; approximately 80,000 cubic yards of facility wastes, consisting of office trash, wooden pallets, and construction debris, were reportedly disposed of in OU-2. OU-3 (Tributary 63) consists of the portion of Tributary 63 (a small, unnamed, low-gradient, warm-water stream that enters the Novelis property from the south and flows across the southern and western portions of the property prior to flowing into Teal Marsh), the South Pond, and the South Marsh; most of OU-3 is classified as New York State regulated wetland.

1.1 Notification

At least 15 days prior to the start of any activity that is anticipated to encounter remaining impacted soil or sediment, the site owner or their representative will notify the New York State Department of Environmental Conservation (NYSDEC). Currently, this notification will be made to:

Tracy A. Smith
Project Manager
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broad Way
Albany, New York
Telephone: 518.402.9796

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent, plans for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated, and any work that may impact an engineering control established by the site remedy.

- A summary of environmental conditions anticipated in the work areas, including the nature and concentration levels of constituents of concern and plans for any pre-construction sampling

- A schedule for the work, detailing the start and completion of all intrusive work

- A summary of the applicable components of this EWP

- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120

- A copy of the contractor's Health and Safety Plan (HASP) in electronic format

- Identification of disposal facilities for potential waste streams

- Identification of sources of any anticipated backfill, along with all required chemical testing results

2. Material Management

2.1 Soil Screening Methods

Prior to excavation, material within the proposed excavation area will be sampled for polychlorinated biphenyls (PCBs). Material to be excavated will be characterized based on the in-situ concentrations as Toxic Substance Control Act (TSCA) material (i.e., greater than 50 parts per million [ppm] PCBs) or non-TSCA material (i.e., between 1 and 50 ppm PCBs). Material with PCB concentration of less than 1 ppm may be considered minimally impacted. Visual, olfactory, and instrument-based (if appropriate) soil screening will be performed by a qualified environmental professional during all remedial and development excavations into known or potentially impacted material (hereafter referred to as "remaining impacted material"). A qualified environmental professional is defined in 6 NYCRR Part 375 as:

> *a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this Part. Such a person must:*
>
> > *(1) hold a current professional engineer's or a professional geologist's license or registration issued by the State or another state, and have the equivalent of three years of full-time relevant experience in site investigation and remediation of the type detailed in this Part; or*
> >
> > *(2) be a site remediation professional licensed or certified by the federal government, a state or a recognized accrediting agency, to perform investigation or remediation tasks consistent with Department guidance, and have the equivalent of three years of full-time relevant experience.*

Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during development, such as excavations for foundations and utility work. Material stockpiles will be segregated based on previous environmental data, sampling results, and screening results into material that requires offsite disposal, material that requires testing, material that can be returned to the subsurface, and material that can be used as cover soil. Excavated

material that requires offsite disposal will be stockpiled based on material characterization (i.e. TSCA or non-TSCA).

Soil screening will not be required when non-intrusive activities, such as using areas for vehicle parking or material lay-down, are performed.

2.2 Stockpile Methods

All excavated material stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters, and other discharge points.

Material stockpiles will be kept covered at all times with an appropriately anchored impermeable cover(s) to prevent precipitation from entering into the stockpile area when not in use. Stockpiles will be inspected at a minimum once each week and after rain events producing 0.5 inches or more raininfall. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. Water that is generated during construction activities will be collected and stored on site for treatment and discharge or containerized for offsite treatment and disposal.

2.3 Materials Excavation and Load Out

A qualified environmental professional or person under their supervision will oversee all invasive work and the excavation and load-out of all excavated material. The owner of the property and its consultants/contractors are solely responsible for the safe execution of all excavation and other intrusive work performed under this EWP and SMP.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional or designee. It will be determined whether a risk or impediment to the planned work under the SMP is posed by utilities or easements on the site. Material excavation under this EWP will be performed in accordance with the notification made for the work as described in Section 1.1 and the contractor's work plan. The contractor will use appropriate equipment based on site conditions and scope of work; impacts to wetlands will be minimized to the extent practicable.

Excavation activities may require the use of a temporary staging area(s) for material dewatering and/or staging. The temporary staging area(s) will be sized proportionally to

the amount of sediment and soil to be handled on the project and will be lined and sloped so water from the dewatering process can be collected and treated, as necessary. Once at the staging area, excavated material will be dewatered, processed, and stabilized, as necessary, prior to transportation offsite. Dewatered materials will be stockpiled at the staging area until they are shipped to the appropriate facility for disposal.

Material identified for TSCA disposal will be placed in a separate staging area and material will not be commingled with material from outside the source area. All work on this material will be performed to completion and any construction equipment used will be decontaminated prior to use on non-TSCA material. Also, separate personal protective equipment (PPE) will be used on the TSCA material and properly disposed of before handling any non-TSCA material using new PPE.

Locations where vehicles enter or exit the site will be inspected daily for evidence of offsite soil tracking. The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

2.4 Materials Transport Offsite

All transport of site materials offsite will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including New York Codes, Rules, and Regulations Title 6 (6 NYCRR) Part 364. Haulers will be appropriately licensed and trucks properly placarded. Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded. Loose-fitting canvas-type truck covers will be prohibited.

A truck wash will be available onsite during offsite transport of site materials. The qualified environmental professional or designee will be responsible for ensuring that outbound trucks are washed at the truck wash, as necessary, before leaving the site until the activities performed under this section are complete. Truck wash waters will be collected and disposed of in accordance with applicable regulatory requirements.

Entrance and egress points at the site will be agreed to with Novelis. Offsite truck transport routes will avoid county roads to the extent practicable. All trucks loaded with site materials will exit the vicinity of the site using only approved truck routes. Egress

points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.

Queuing of trucks will be performed onsite in order to minimize offsite disturbance. Offsite queuing of trucks will be prohibited. Trucks will also be prohibited from stopping and idling in the neighborhood outside the project site.

2.5 Materials Disposal Offsite

All material excavated and removed from the site will be treated as impacted and regulated material and will be transported and disposed in accordance with all local, State (including 6 NYCRR Part 360), and Federal regulations. If disposal of excavated material from the site is proposed for unregulated offsite disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC. Unregulated offsite management of materials from this site will not occur without formal NYSDEC approval.

Offsite disposal locations for excavated material will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility (e.g., hazardous waste disposal facility, solid waste landfill, wastewater treatment facility, construction/demolition recycling facility), if appropriate. Additional waste characterization analysis may be needed to characterize the material for offsite disposal based on the requirements of the disposal facility.

Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report described in the SMP. This documentation will include: waste profiles, laboratory test results, facility acceptance letters, manifests, bills of lading, and facility receipts.

Non-hazardous historic fill and contaminated soils taken offsite will be handled, at minimum, as a Municipal Solid Waste per 6 NYCRR Part 360-1.2. Material that does not meet Track 1 unrestricted soil cleanup objectives is prohibited from being taken to a New York State recycling facility (6 NYCRR Part 360-16 Registration Facility).

2.6 Materials Reuse Onsite

Only minimally impacted material (as described in Section 2.1) may be reused onsite, with prior NYSDEC approval. The qualified environmental professional will ensure that procedures defined for materials reuse in the SMP are followed and that unacceptable

material does not remain onsite. Impacted onsite material, including historic fill and sediment/soil, that is acceptable for reuse onsite will be placed below a demarcation layer or impervious surface, and will not be reused within a cover soil layer, wetland, within landscaping berms, or as backfill for subsurface utility lines.

Any demolition material proposed for reuse onsite will be sampled for asbestos prior to use onsite. Concrete crushing or processing onsite will not be performed without prior NYSDEC approval. Organic matter (e.g., wood, roots, stumps) or other solid waste derived from clearing and grubbing of the site will not be reused onsite without prior NYSDEC approval.

2.7 Fluids Management

In general, all water management methods will follow the New York State Standards and Specifications for Erosion and Sediment Control (NYSDEC 2005). Surface water (e.g., runoff) diversion methods and impermeable covers may be implemented as necessary to minimize the amount of surface water that enters the excavation area during implementation of remedial activities. Water diversion methods and/or controls for surface runoff may include, but may not be limited to, using hay bales/silt fence or channeling potential surface flow around the removal area by placing a temporary berm. Additionally, an impermeable cover(s) will be used to prevent precipitation from entering into the excavation area when not in use.

All liquids to be removed from the site, including excavation dewatering liquids and groundwater monitoring well purge and development waters, will be handled, transported, and disposed in accordance with applicable local, State, and Federal regulations. Dewatering, purge, and development fluids will not be recharged back to the land surface or subsurface of the site, but will be managed offsite.

Discharge of water generated during large-scale construction activities to surface waters (e.g., ponds, streams, lakes) will be performed under a State Pollutant Discharge Elimination System permit.

3. Cover System Restoration

After the completion of soil removal and any other invasive activities, the excavation area will be restored with clean backfill in a similar manner to the remedy and consistent with pre-excavation conditions (e.g., asphalt will be restored), unless otherwise defined in the work scope. If covered areas where impacts remain (as discussed in the SMP) are disturbed, the cover will be restored in a manner that complies with the Record of Decision. If the type of cover system changes from that which exists prior to the excavation (e.g., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining impacted material. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in any updates to the SMP.

3.1 Backfill from Offsite Sources

All materials proposed for import onto the site for use below, or as part of, the cover/cap will be in compliance with provisions in the SMP prior to receipt at the site. Material from industrial sites, spill sites, or other environmental remediation sites or potentially contaminated sites will not be imported to the site.

Offsite materials brought onsite for use as fill must be from a certified New York State Department of Transportation source, certified by the supplier as native material, or tested and results of analytical testing for volatile organic compounds, semivolatile organic compounds, PCBs, pesticides/herbicides, and inorganics presented to demonstrate that the offsite materials meet NYSDEC Technical Guidance for Screening Contaminated Sediments for use in wetland areas or 6 NYCRR Part 375 unrestricted use soil cleanup objectives for use in upland areas. The laboratory used to analyze imported fill material will be New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program certified for the parameters being analyzed.

Soils that meet ‘exempt’ fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for the site, will not be imported onto the site without prior approval by NYSDEC. Solid waste will not be imported onto the site.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases. All imported soils will be stored by type, separately from one another. All imported soils must be stored in accordance with Federal, State,

and local regulations for proper erosion control requirements, such as covering, while temporarily stockpiled onsite prior to use.

4. Stormwater Pollution Prevention

For projects that disturb an area greater than 1 acre, a Stormwater Pollution Prevention Plan that conforms to the requirements of NYSDEC Division of Water guidelines and New York State regulations will be prepared.

At a minimum, stormwater pollution prevention will include the following best management practices, as applicable:

- Barriers and hay bale checks will be installed and inspected once a week and after rain events producing 0.5 inch or more rainfall. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by NYSDEC. All necessary repairs will be made immediately.

- Accumulated sediments will be removed as required to keep the barriers and hay bale check functional.

- All undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials.

- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

- Erosion and sediment control measures identified in the SMP will be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they will be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

- Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

5. Contingency Plan

The objective of a Contingency Plan is to minimize uncertainties by establishing the provisions and procedures for responding to certain circumstances, including discovery of an unknown source of constituents that may require remediation (e.g., underground storage tanks, stained soil, drums), accidental spills, and discharges that may occur during any excavation work. Prior to beginning an excavation activity, task- or work-specific contingency procedures will be developed and included in the appropriate HASP as described in the SMP. Additionally, the following procedures will be implemented, as applicable:

- Sampling will be performed on product, sediment, and surrounding soils, as necessary, to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes (Target Analyte List metals; Target Compound List [TCL] volatiles and semi-volatiles, TCL pesticides and PCBs), unless the site history and previous sampling results provide a sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC for approval prior to sampling.

- Identification of unknown or unexpected impacted media identified by screening during invasive site work will be promptly communicated by phone to NYSDEC's Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Reports prepared pursuant to Section 5 of the SMP.

6. Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) specific to the excavation work proposed at the site will be prepared in accordance with the guidelines provided in NYSDOH's Generic Community Air Monitoring Plan, which is provided as Appendix 1A of NYSDEC's Technical Guidance for Site Investigation and Remediation (DER-10, May 2010). In accordance with DER-10, the CAMP will be in effect when the soil cover (shown in Figure 3 of the SMP) is disturbed or when there is the potential for exposure to remaining impacted material subject to the SMP. However, a CAMP is not generally required for sampling of site material (e.g, surface soil, groundwater, sediment) for delineation of site conditions as noted in Section 1.9 of DER-10.

At a minimum the CAMP will include:

- Details of the perimeter air monitoring program
- Action levels to be used
- Methods for air monitoring
- Analytes measured and instrumentation to be used
- A figure showing locations of all air monitoring instrumentation

A figure showing the location of air sampling stations will be included in the CAMP based on the work area and average prevailing wind conditions. These locations may be adjusted on a daily or more frequent basis based on actual wind directions to provide an upwind and at least two downwind monitoring stations. Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

7. Nuisance Control Plans

7.1 Odor Control Plan

An odor control plan will be developed by the contractor performing work under this EWP. The odor control plan will be capable of controlling emissions of nuisance odors offsite. If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the property owner and its consultants/contractors, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent onsite and offsite nuisances. At a minimum, these measures may include: (a) limiting the area of open excavations and size of soil stockpiles; (b) covering open excavations with polyethylene sheeting; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances may include: (a) direct load-out of soils to trucks for offsite disposal; (b) use of chemical odorants in spray or misting systems; and, (c) use of staff to monitor odors more frequently offsite where nuisance odors are observed.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to onsite conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

7.2 Dust Control Plan

A dust suppression plan that addresses dust management during invasive onsite work will meet the requirements of DER-10 and include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated onsite water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas, including excavations and stockpiles.

- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.

- Gravel will be used on roadways to provide a clean and low dust road surface.

- Onsite roads will be limited in total area to minimize the area required for water truck sprinkling.

7.3 Other Nuisances

A plan will be developed and utilized by the by the contractor performing work under this EWP to ensure compliance with local noise control ordinances.

ARCADIS

Attachment 3

Environmental Easement

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 16th day of October, 2013 between Owner(s) Novelis Corporation, having an office at 448 County Route 1A, County of Oswego, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233.

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 448 County Route 1A in the Town of Scriba, County of Oswego and State of New York, known and designated on the tax map of the County Clerk of Oswego as portion of tax map parcel numbers: Section 111 Block 6 Lot 23, being the same as that property conveyed to Grantor by deed(s) dated June 6, 1961 and recorded in the Oswego County Clerk's Office in Book 647 of Deeds at Pages 33, 36 and 45. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 52.678 +/- acres, and is hereinafter more fully described in the Land Title Survey dated January 17, 2013 and updated August 21, 2013 prepared by C.T. Male Associates, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Order on Consent Index Number: A7-0555-0706, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) and consistent with adjacent wetland use

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Oswego County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential, Restricted Residential or Commercial purposes as defined in 6NYCRR 375-1.8(g)(i), (ii) and (iii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to

use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved b the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5 the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any

interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: 7-38-015
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by [10/12]

the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor: Novelis Corporation

By: _____

Print Name: John Tillman

Title: Assistant Secretary Date: 10/7/2013

Grantor's Acknowledgment

STATE OF ~~NEW YORK~~ Georgia)
) ss:
COUNTY OF Fulton)

On the 7th day of October, in the year 20 13, before me, the undersigned, personally appeared John Tillman, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public - State of ~~New York~~ Georgia

Ex. 9/22/15

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 16th day of October, in the year 2013, before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2014

SCHEDULE "A" PROPERTY DESCRIPTION

Property Address: 448 County Route 1A, Town of Scriba, Oswego County, NY
Tax Map: P/O 111-6-23

All that tract or parcel of land, situate in the Town of Scriba, County of Oswego and State of New York being part of Lots 26, 27 & 28 in the 18th Township of Scriba's Patent and being more particularly bounded and described as follows:

Commencing at a point in the centerline of County Route 1A at its intersection with the division line between the lands now or formerly of Alcan Aluminum Corp. as described in Book 831 of Deeds at page 522 on the southwest and the lands now or formerly of Sithe Independence Power Partners, L.P. as described in Book 1202 of Deeds at Page 322 on the northeast; thence along said division line the following five (5) courses and distances:

1) North 76 deg. 12 min. 53 sec. West, 168.10 feet to a point; thence
2) South 76 deg. 48 min. 47 sec. Wet, 269.58 feet to a point of curvature; thence
3) Along an arc of a curve to the right having a radius of 225.00 feet, length of 261.25 feet and chord of North 69 deg. 55 min. 23 sec. West 246.82 feet to a point; thence
4) North 36 deg. 39 min. 32 sec. West, 810.82 feet to a point and
5) South 53 deg. 10 min. 26 sec. West, 127.03 feet to its intersection with the division line between the said lands of Sithe Independence Power Partners, L.P. on the northeast and the lands now or formerly of ALROLL, Inc. as described in Book 647 of Deeds a Page 36 and also Book 647 of Deeds at Page 45 on the south west:

Thence along said division line the following two (2) courses and distances:

1) North 38 deg. 20 min. 21 sec. West, 1822.18 feet to a point; and
2) South 51 deg. 39 min. 39 sec. West, 214.26 feet its intersection with the division line between the said lands of Sithe Independence Power Partners, L.P. on the northeast and other lands now or formerly of ALROLL, Inc. as described in Book 647 of Deeds at Page 33 and also Book 647 of Deeds at Page 45 on the south west;

Thence North 38 deg. 20 min. 21 sec. West, along said division line, 615.24 feet to its intersection with the first said division line between the said lands of Sithe Independence Power Partners, L.P. on the northeast and the said lands of ALROLL, Inc. as described in Book 647 of Deeds at Page 36 and also Book 647 of Deeds at page 45 on the south west;

Thence North 01 deg. 57 min. 00 sec. West, along said division line, 361.15 feet to the POINT OF BEGINNING of the hereinafter described parcel;

Thence through the said lands of ALROLL, Inc. as described in Book 647 of Deeds at Page 36 and also Book 647 of Deeds at Page 45 and other lands of ALROLL, Inc. as described in Book 647 of Deeds at page 33 and also Book 647 of Deeds at page 45 the following ninety-eight (98) courses and distances:

1) South 31 deg. 34 min. 28 sec. West, 53.68 feet to a point; thence

2) South 43 deg. 37 min. 13 sec. West, 65.02 feet to a point; thence

3) South 47 deg. 52 min. 54 sec. West, 64.81 feet to a point; thence

4) South 39 deg. 11 min. 37 sec. West, 49.40 feet to a point; thence

5) South 20 deg. 09 min. 28 sec. West, 48.88 feet to a point; thence

6) South 09 deg. 04 min. 34 sec. East, 64.96 feet to a point; thence

7) South 11 deg. 20 min. 09 sec. East, 49.26 feet to a point; thence

8) South 05 deg. 16 min. 24 sec. West, 48.20 feet to a point; thence

9) South 20 deg. 38 min. 44 sec. West, 49.24 feet to a point; thence

10) South 35 deg. 47 in. 00 sec. West, 48.27 feet to a point; thence

11) South 47 deg. 15 min. 35 sec. West, 65.34 feet to a point; thence

12) South 40 deg. 51 min. 01 sec. West, 56.31 feet to a point; thence

13) South 33 deg. 37 min. 09 sec. East, 15.77 feet to a point; thence

14) South 67 deg. 31 min. 19 sec. East, 57.83 feet to a point; thence

15) South 57 deg. 00 min. 52 sec. East, 162.49 feet to a point; thence

16) South 38 deg. 27 min. 28 sec. East, 130.03 feet to a point; thence

17) South 54 deg. 43 in. 36 sec. East, 32.24 feet to a point; thence

18) South 61 deg. 31 min. 51 sec. East, 65.59 feet to a point; thence

19) South 54 deg. 36 min. 45 sec. East, 65.05 feet to a point; thence

20) South 50 deg. 26 min. 41 sec. East, 260.53 feet to a point ;thence

21) South 50 deg. 42 min. 39 sec. East, 195.31 feet to a point; thence

22) South 29 deg. 42 min. 35 sec. East, 64.44 feet to a point; thence

23) South 12 deg. 32 min. 57 sec. East, 65.41 feet to a point; thence

24) South 03 deg. 59 min. 39 sec. West, 48.96 feet to a point; thence

25) South 32 deg. 35 min. 54 sec. West, 48.44 feet to a point; thence South 56 deg. 39 min. 34 sec. West, 47.87 feet to a point; thence

26) South 74 deg. 33 min. 49 sec. West, 48.86 feet to a point; thence

27) South 79 deg. 47 min. 57 sec. West, 66.90 feet to a point; thence

28) South 76 deg. 17 min. 44 sec. West, 97.50 feet to a point; thence

29) South 86 deg. 11 min. 04 sec. West, 97.04 feet to a point; thence

30) North 85 deg. 29 min. 33 sec. West, 98.31 feet to a point; thence

31) North 76 deg. 52 min. 44 sec. West, 64.64 feet to a point; thence

32) North 65 deg. 33 min. 50 sec. West, 97.79 feet to a point; thence

33) North 57 deg. 58 min. 35 sec. West, 97.60 feet to a point; thence

34) North 43 deg. 52 min. 59 sec. West, 162.67 feet to a point; thence

35) North 61 deg. 51 min. 13 sec. West, 32.03 feet to a point; thence

36) South 52 deg. 55 min. 01 sec. West, 64.68 feet to a point; thence

37) South 55 deg. 30 min. 07 sec. West, 73.19 feet to a point; thence

38) South 04 deg. 22 min. 56 sec. East, 56.63 feet to a point; thence

39) South 13 deg. 24 min. 11 sec. East, 65.41 feet to a point; thence

40) South 22 deg. 09 min. 57 sec. East, 97.50 feet to a point; thence

41) South 18 deg. 30 min. 56 sec. East, 233.78 feet to a point; thence

42) South 05 deg. 08 min. 40 sec. East, 54.00 feet to a point ;thence

43) South 72 deg. 36 min. 12 sec. West, 24.83 feet to a point; thence

44) North 40 deg. 23 min. 12 sec. West, 28.13 feet to a point; thence

45) North 22 deg. 09 min. 29 sec. West, 288.01 feet to a point; thence

46) South 74 deg. 51 min. 15 sec. West, 89.91 feet to a point; thence

47) North 21 deg. 18 min. 56 sec. West, 68.53 feet to a point; thence

48) North 22 deg. 10 min. 07 sec. West, 56.57 feet to a point; thence

49) North 22 deg. 45 min. 26 sec. West, 54.06 feet to a point; thence

50) North 27 deg. 30 min. 36 sec. West, 39.65 feet to a point; thence

51) North 30 deg. 03 min. 35 sec. West, 46.53 feet to a point; thence

52) North 32 deg 13 min. 41 sec. West, 42.86 feet to a point; thence

53) North 31 deg. 22 min. 17 sec. West, 27.05 feet to a point; thence

54) North 40 deg. 11 min. 32 sec. West, 138.91 feet to a point; thence

55) North 43 deg. 39 min. 39 sec. West, 32.42 feet to a point; thence

56) North 68 deg. 02 min. 08 sec. West 54.23 feet to a point; thence

57) North 82 deg. 31 min. 09 sec. West, 200.82 feet to a point; thence

58) North 84 deg.17 min. 48 sec. West, 227.34 feet to a point; thence

59) North 87 deg. 00 min. 30 sec. West, 230.89 feet to a point; thence

60) North 86 deg. 16 min. 18 sec. West, 75.40 feet to a point; thence

61) North 77 deg. 47 min. 20 sec. West, 48.30 feet to a point; thence

62) North 64 deg. 49 min. 13 sec. West, 49.03 feet to a point; thence

63) North 51 deg. 09 min. 42 sec. West, 50.21 feet to a point; thence

64) North 56 deg. 42 min. 25 sec. West, 223.34 feet to a point; thence

65) North 66 deg. 13 min. 01 sec. West, 29.77 feet to a point; thence

66) North 55 deg. 33 min. 15 sec. West, 77.55 feet to a point; thence

67) North 44 deg. 55 min. 28 sec. West, 28.81 feet to a point; thence

68) North 08 deg. 49 min. 42 sec. West, 15.64 feet to a point; thence

69) North 31 deg. 03 min. 41 sec. East, 40.60 feet to a point; thence

70) North 40 deg. 55 min. 10 sec. East, 97.74 feet to a point; thence

71) North 35 deg. 49 min. 33 sec. East, 108.01 feet to a point; thence

72) North 34 deg 55 min. 25 sec. East, 87.17 feet to a point; thence

73) North 35 deg . 26 min. 01 sec. East, 130.02 feet to a point; thence

74) North 38 deg. 12 min. 21 sec. East, 130.10 feet to a point; thence

75) North 32 deg. 24 min. 30 sec. East, 130.08 feet to a point; thence

76) North 29 deg. 46 min. 33 sec. East, 162.61 feet to a point; thence

77) North 37 deg. 02 min. 14 sec. East, 64.96 feet to a point; thence

78) North 45 deg. 26 min. 12 sec. East, 97.56 feet to a point; thence

79) North 69 deg. 24 min. 34 sec. East, 48.33 feet to a point; thence

80) South 86 deg. 58 min. 57 sec. East, 48.77 feet to a point; thence

81) South 69 deg. 15 min. 52 sec. East, 64.81 feet to a point; thence

82) South 59 deg. 26 min. 05 sec. East, 97.53 feet to a point; thence

83) South 43 deg. 01 min. 04 sec. East, 55.57 feet to a point; thence

84) South 49 deg. 12 min. 01 sec. East, 41.10 feet to a point; thence

85) South 43 deg. 22 min. 36 sec. East, 48.87 feet to a point; thence

86) South 59 deg. 41 min. 50 sec. East, 32.43 feet to a point; thence

87) North 89 deg. 39 min. 26 sec. East, 114.16 feet to a point; thence

88) North 79 deg. 19 min. 40 sec. East, 64.71 feet to a point; thence

89) North 69 deg. 44 min. 49 sec. East, 97.60 feet to a point; thence

90) North 59 deg. 55 min. 45 sec. East, 64.85 feet to a point; thence

91) North 50. deg. 46 min. 35 sec. East, 130.30 feet to a point; thence

92) North 46 deg. 23 min. 26 sec. East, 97.43 feet to a point; thence

93) North 39 deg. 38 min. 28 sec. East, 36.37 feet to a point; thence

94) North 87 deg. 04 min. 23 sec. East, 28.24 feet to a point; thence

95) South 82 deg. 23 min. 00 sec. East, 32.30 feet to a point; thence

96) South 72 deg. 09 min. 03 sec. East, 196.07 feet to a point; thence

97) South 67 deg. 27 min. 59 sec. East, 217.55 feet to its intersection with the last above described division line; thence South 38 deg. 20 min. 21 sec. East, along said division line, 84.07 feet to the point or place of beginning.

98) South 67 deg. 27 min. 59 sec. East, 217.55 feet to its intersection with the last above described division line; thence South 38 deg. 20 min. 21 sec. East, along said division line, 84.07 feet to the point or place of beginning.

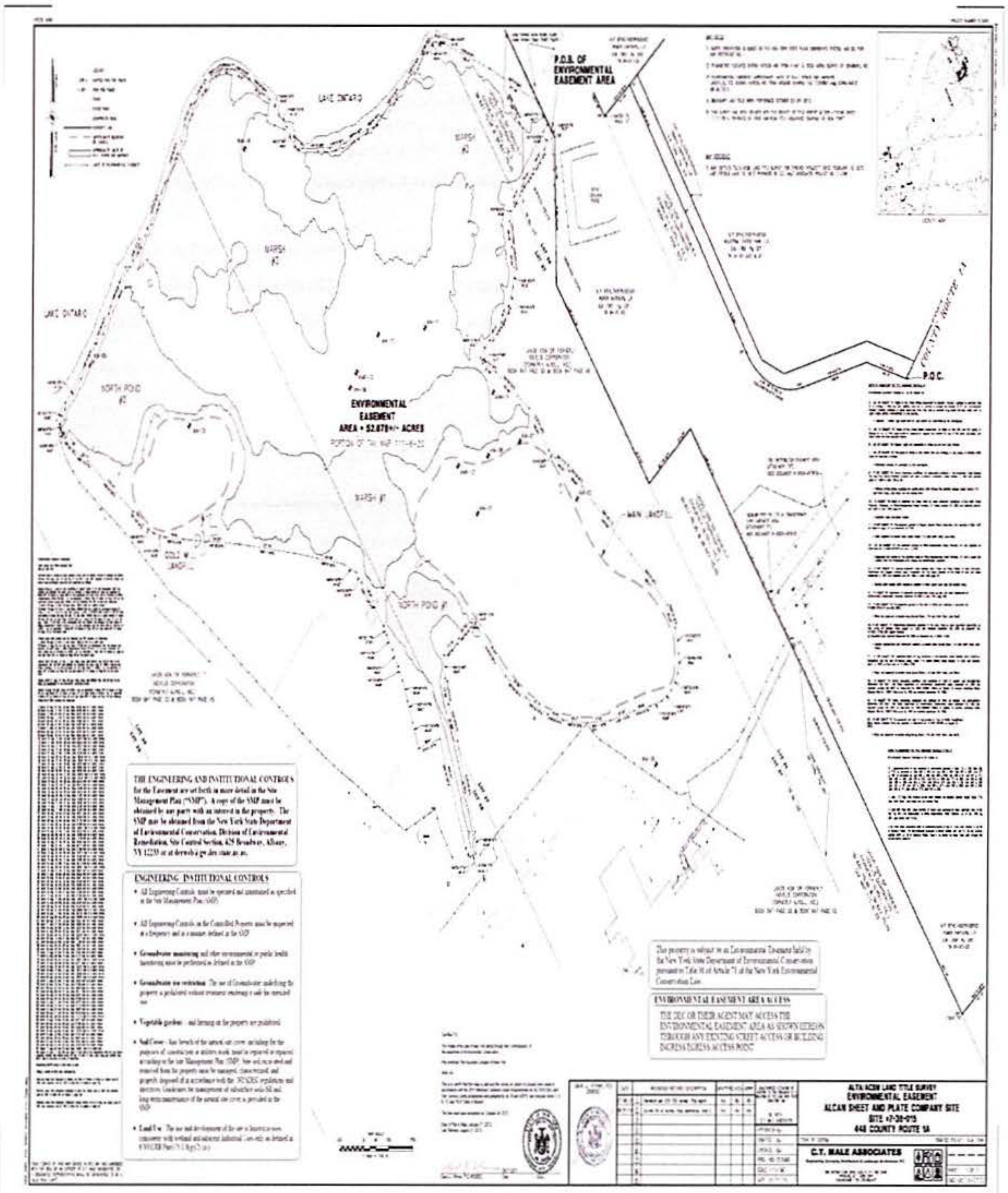
Containing 52.678 acres of land more or less. Being a portion of the lands conveyed by:

Warranty Deed from Raymond G. Walker and Olive M. Walker to Alroll, Inc. dated June 6, 1961 and recorded June 6, 1961 in Book 647 of Deeds at page 33,

Warranty Deed from Catherine Kieliszeski to Alroll, Inc. dated June 6, 1961 and recorded June 6, 1961 in Book 647 of Deeds at page 36,

Quitclaim Deed form Catherine Kieliszeski, Horace Barber, et al to Alroll, Inc. dated June 6, 1961 and recorded June 6, 1961 in Book 647 of Deeds at page 45.

SURVEY


LAKE ONTARIO
P.O.B. OF ENVIRONMENTAL EASEMENT AREA
MARSH #2
NORTH POND #2
ENVIRONMENTAL EASEMENT
MAIN LANDFILL
NORTH POND #1
P.O.C.
ENVIRONMENTAL EASEMENT AREA ACCESS
THE DEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON THROUGH ANY EXISTING STREET ACCESS OR BUILDING INGRESS/EGRESS ACCESS POINT
ALTA/ACSM LAND TITLE SURVEY
ENVIRONMENTAL EASEMENT
ALCAN SHEET AND PLATE COMPANY SITE
448 COUNTY ROUTE 1A
C.T. MALE ASSOCIATES

ARCADIS

Attachment 4

Compensatory Wetland Mitigation Plan

ARCADIS
Infrastructure, environment, buildings

Imagine the result

Novelis Corporation

Compensatory Wetland Mitigation Plan

Oswego Works Facility
Oswego, New York

December 2010 (Revised April 2011)

ARCADIS

Compensatory Wetland Mitigation Plan

Oswego Works Facility
Oswego, New York

Prepared for:
Novelis Corporation

Prepared by:
ARCADIS of New York, Inc.
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.446.9120
Fax 315.449.0017

Our Ref.:
B0072208

Date:
December 2010 (Revised April 2011)

Tables

Figures

Attachments

ARCADIS

1. Introduction

A Pre-Construction Notification Letter (ARCADIS 2010) (PCN Letter) was submitted to the U.S. Army Corps of Engineers (USACE) on February 11, 2010 requesting authorization under Nationwide Permit No. 38 to implement remedial activities for Operable Unit- (OU-) 1 (consisting of North Ponds #1 and #2 and Marshes #1, #2, and #3) at the Novelis Oswego Works Facility (site) located in the Town of Scriba, New York. The location of the site is further detailed in Section 3.1 below. The remedial activities will involve sediment and soil removal and habitat restoration within federal and New York State regulated wetland areas. This Compensatory Mitigation Plan (CMP) is presented in support of the PCN Letter and presents supplemental information associated with remediation activities that will be completed within the wetland areas. This CMP was prepared in accordance with the USACE *Corps of Engineers Checklist for Preparing Compensation Mitigation Plans for the Buffalo District* and includes the following sections:

Section 2 – Overall Mitigation Goals and Objectives

Section 3 – Baseline Information of Proposed Impact Site and Proposed Mitigation Site

Section 4 – Mitigation Site Selection and Justification

Section 5 – Mitigation Work Plan

Section 6 – Performance Standards

Section 7 – Site Protection and Maintenance

Section 8 – Monitoring Plan

Section 9 – Adaptive Management Plan

Section 10 – Financial Assurances

2. Overall Mitigation Goals and Objectives

The sediment and soil removal and habitat restoration activities are part of a remedial program to address the presence of polychlorinated biphenyls (PCBs) within the OU-1 ponds and marshes at the site. The sediment and soil removal and habitat restoration activities will be conducted in accordance with a March 2006 New York State Department of Environmental Conservation (NYSDEC) Record of Decision (ROD) and a Final OU-1 Remedial Design Report (ARCADIS, March 2010)(OU-1 Remedial Design Report), which was prepared pursuant to an existing Order on Consent (Index # A7-0555-0706) between Novelis and NYSDEC. The ROD was included as an attachment to the PCN Letter and the OU-1 Remedial Design Report was submitted to the USACE under separate cover on April 14, 2010.

The primary objectives for remediation of the OU-1 area (including impacted wetlands), as set forth in the ROD, are to reduce to the extent practicable:

- exposures of persons at or around the site to PCBs in sediments and surface soils and surface water
- harmful environmental exposures of flora or fauna to PCBs in soils
- harmful environmental exposures of flora or fauna to PCBs and oils in sediments and surface water
- potential release of contaminants from sediment into surface water
- potential release of contaminants into and Lake Ontario

To achieve these objectives, the remedial activities will address material that contains PCBs at a concentration exceeding 1 part per million ([ppm] sediment) or 10 ppm (upland soil). Remaining upland soil containing PCBs at concentrations exceeding 1 ppm and less than or equal to 10 ppm will be capped with a minimum of 1 foot of clean fill. All sediment and soil removed from OU-1 will be transported for disposal at a permitted off-site facility.

The volume of material to be removed as part of the OU-1 remedial activities is anticipated to be approximately 39,800 cubic yards (CY) of sediment and 8,100 CY of upland soil. Following the remedial activities, excavation areas will be restored by backfilling to pre-existing lines and grades in the OU-1 marshes and by placement of a

minimum of 1 foot of clean fill material in the OU-1 ponds. Organic-rich fill (suitable wetland substrate) will be used to replace excavated sediment and general soil backfill will be utilized in upland areas. Following remediation work activities, the entire OU-1 area (including impacted wetlands) associated with the remedial work activities will be restored to pre-construction conditions as discussed in this CMP. Disturbed areas will be restored by grading, scarifying, and seeding/planting in accordance with the specifications described in this CMP. Following backfilling, wetland areas disturbed as a result of the remedial activities will be restored in accordance with federal, state, and local permit requirements to pre-construction conditions in accordance with the specifications described in this CMP.

The overall objective of the wetland restoration activities will be to establish the hydrology and topography to support self-sustaining hydrophytic native plant communities and to return the disturbed areas to their pre-remediation plant densities with appropriate species. The restored wetlands will establish microtopograhy to create habitats that will support a diverse plant community and will provide suitable habitat for migratory birds (waterfowl), amphibians, fish, and other aquatic organisms. Since the wetlands disturbed by the OU-1 remedial activities will be restored to pre-construction baseline conditions as described in Section 3 of the CMP, a separate wetland mitigation site is not proposed for this project.

3. Baseline Information of Proposed Impact Site and Proposed Mitigation Site

3.1 Location

The site is located approximately four miles east of the City of Oswego on Lake Road North (County Route 1A) in the Town of Scriba, New York, Oswego County, New York. A Site Location Map is presented as Figure 1. The site is situated on an approximately 506-acre parcel owned by Novelis. A Site Layout Plan is presented as Figure 2 which shows the layout of the Novelis Property, including manufacturing buildings, support facilities and the three OUs that comprise the site. The impacted wetlands are located within OU-1, immediately south of the Lake Ontario shoreline (specifically North Ponds #1 and #2 and Marshes #1, #2, and #3). The Novelis Property is bordered by Lake Road North and North Road to the south/southeast, undeveloped and partially developed lands to the west and Lake Ontario to the north/northwest. A Dynegy, Inc. (formerly Sithe Energies, Inc.) cogeneration plant, known as the Independence Station, borders Novelis' Property to the northeast. Additional site background information is presented in Section 1 of the OU-1 Remedial Design Report and in the PCN Letter.

Additional site location/mapping information is presented in the 2008 Wetland Identification and Boundary Delineation Report (ARCADIS, 2008) (Wetland Delineation Report), which is included in the PCN Letter. The Wetland Delineation Report includes the following site-specific maps which are included in Attachment A to this CMP:

- USGS topographic map, presented as Figure 1 in Attachment A.
- Site Plan and Identified Wetland Boundaries, presented as Figure 2 in Attachment A.
- Soil Survey Map, presented as Figure 3 in Attachment A.
- New York State Freshwater Wetlands Map, presented as Figure 4 in Attachment A.
- National Wetland Inventory Map, presented as Figure 5 in Attachment A.
- Identified Wetland Boundaries of Wetlands 1 through 5, presented as Figure 6 through 10 in Attachment A.

The Wetland Delineation Report also includes photographs of the impacted wetlands.

The impacted wetlands are located within hydrologic unit code (HUC) 04140102. The latitude and longitude of the general OU-1 area at the site are provided below:

Latitude: 43.497857
Longitude: -76.457076

3.2 Impacted Wetlands

3.2.1 General

To facilitate the remedial design efforts and identify areas of potential wetland impacts, wetland identification and boundary delineation for OU-1 was conducted between September and November 2007. United States Geological Survey (USGS) Topographic Quadrangle – Oswego East, NY (USGS, 1978), New York State Freshwater Wetlands Maps, National Wetland Inventory Maps, the Oswego County Soil Survey (U.S. Department of Agriculture, 1981), Oswego County Hydric Soils List (USDA, 2006), and the onsite OU-1 area were reviewed and evaluated as part of the wetland delineation process. A representative from the NYSDEC Region 7 office in Cortland, New York also visited the site and reviewed and concurred with the wetland identification and boundary delineation.

The wetlands were delineated based on the routine determination method presented in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Results of the wetland delineation activities are detailed in the Wetland Delineation Report, which is presented as Attachment C to this CMP. Six areas were identified as wetlands in the wetland assessment area. These wetland areas are generally part of the wetland complex of NYSDEC Wetland OE-58 (see Figure 4 in Attachment A). These wetlands comprised a total of approximately 13.0 acres of emergent wetland habitat, 2.1 acres of scrub-shrub habitat, and 2.0 acres of forested habitat. All of the wetland areas delineated will potentially be temporarily disturbed during remedial activities. Following remedial work activities, the impacted wetlands will be restored to pre-construction conditions as discussed in this CMP. The below table summarizes pre-construction habitat type and area (acres) associated with each of the impacted wetland areas and anticipated habitat type and area (acres) following restoration activities.

Detention Pond/	Wetland Aquatic Habitat – Pre-Construction Conditions			Wetland Aquatic Habitat – Anticipated Conditions Following Restoration		
	Emergent Wetland	Scrub-Shrub Wetland	Forested Wetland	Emergent Wetland	Scrub-Shrub Wetland	Forested Wetland
North Pond No. 1	0.2	0.04	NA	0.2	0.04	NA
North Pond No. 2	1.1	0.05	NA	1.1	0.05	NA
Marsh No. 1	4.7	0.3	NA	4.7	0.3	NA
Marsh No. 2	3.9	1.3	0.3	3.9	1.3	0.3
Marsh No. 3	3.1	0.4	1.7	3.1	0.4	1.7
TOTAL	**13.0**	**2.1**	**2.0**	**13.0**	**2.1**	**2.0**

Note: Units are acres.

The final wetland disturbance area will be based on final construction plans (e.g., access roads and staging areas) from the selected contractor. Figures 3 through 7 present project restoration details for each impacted wetland area, which should be considered to represent the "worst-case" wetland disturbance areas – the selected contractor will not disturb areas beyond those to be restored as depicted on the Plans.

Additional construction details and considerations associated with the remedial work activities are included in the PCN Letter and in the OU-1 Remedial Design Report.

3.2.2 Impacted Wetlands Details

The Wetland Delineation Report includes the following details associated with the impacted wetlands:

- Vegetation assessment, presented in Section 3.2 of the Wetland Delineation Report.
- Soil assessment, presented in Section 3.3 of the Wetland Delineation Report.
- Hydrology assessment, presented in Section 3.4 of the Wetland Delineation Report.

- Specific wetland descriptions and delineation results (including wetland classifications and acreages), presented in Section 4 of the Wetland Delineation Report.

- Photographs of the wetlands, presented in the Wetland Delineation Report.

Existing site elevations and plan view drawings of the impacted wetlands are presented in Drawings G-200 through G-204 from the Final OU-1 Remedial Design Report which are included as Attachment B to this CMP.

3.3 Overall Watershed Improvements

The OU-1 remedial activities will result in the removal of PCB-impacted sediment from the OU-1 ponds and marshes which will mitigate ecologic exposure concerns. The project will also remove weeds which dominate portions of the wetland areas and result in improved fish habitat in North Pond 1 and North Pond 2 by increasing the water column depth for overwintering fish. Following completion of soil and sediment removal to achieve the remedial objectives, the entire OU-1 area (including impacted wetlands) will be restored to pre-construction conditions.

During remediation work activities, the water storage capacity of the impacted wetland will only be minimally affected. Surface-water (i.e., runoff) diversion methods and impermeable covers may be implemented as necessary to minimize the amount of surface water that enters the excavation area during implementation of remedial activities. Water diversion methods and/or controls for surface runoff may include, but may not be limited to, using hay bales/silt fence or channeling potential surface flow around the removal area by placing a temporary berm. Water that collects in the excavation from groundwater seepage, seepage of perched water, surface water runoff, or direct interception of precipitation will be removed, to the extent necessary/practicable, to facilitate completion of the removal and backfilling activities. Additional water management details are included in the PCN Letter and in Section 3.3 of the OU-1 Remedial Design Report.

In addition, temporary erosion and sediment controls will be installed prior to initiating excavation activities in accordance with the New York State Standards and Specifications for Erosion and Sediment Control prepared for the NYSDEC by the New York State Soil and Water Conservation Society (NYS Standards and Specifications) (NYSDEC, 2005) and in accordance with the specifications described in the OU-1 Remedial Design Report. Following the remedial activities, excavation areas will be

restored by backfilling to pre-existing lines and grades in the OU-1 marshes and by placement of a minimum of 1 foot of clean fill material in the OU-1 ponds. Organic-rich fill (suitable wetland substrate) will be used to replace excavated sediment and general soil backfill will be utilized in upland areas. Following backfilling, disturbed areas will be restored by grading, scarifying, and seeding/planting in accordance with the specifications described the OU-1 Remedial Design Report and Section 5 of this CMP.

3.4 Proposed Mitigation Site

The entire OU-1 area (including impacted wetlands) disturbed by the remedial activities will be restored to pre-construction conditions. Therefore, a separate mitigation site is not proposed for this project.

The wetland restoration details were designed by ARCADIS as a consultant to Novelis, and Novelis will restore the impacted wetlands in accordance with the design plans presented herein.

The contact names, addresses, and telephone numbers of the project team are provided below.

Mr. David M. Neuner, P.E.
Project Manager
Novelis Corporation
448 County Route 1A
P.O. Box 28
Oswego, New York 13126
Phone: 315.349.0304

Mr. Michael C. Jones
Project Manager
ARCADIS U.S., Inc.
6723 Towpath Road
P.O. Box 66
Syracuse, NY, 13214-0066
Phone: 315.671.9211

3.5 Physical Attributes of Mitigation Site

As previously discussed, a separate mitigation site is not proposed for this project. The physical attributes of impacted wetlands in the OU-1 area have been previously described in Sections 3.1 and 3.2 of this CMP.

4. Mitigation Site Selection and Justification

4.1 Existing Conditions

As previously referenced, the entire OU-1 area (including impacted wetlands) associated with the remedial work activities will be restored to pre-construction conditions. Therefore, a separate mitigation site is not proposed for this project.

4.2 Future Sustainability

The remediation project and subsequent restoration of the impacted wetland to pre-construction conditions will occur entirely on property owned by Novelis, ensuring its long-term sustainability. As required by the conditions of the ROD, Novelis will establish an environmental easement or other suitable restriction (e.g., deed notice) for the site (including the restored wetlands) which will: (i) require compliance with an approved site management plan; (ii) limit the use and development of the property to uses consistent with wetland and adjacent industrial use only; (iii) restrict the use of groundwater within the vicinity of the Main Landfill as a source of potable water; and (iv) require Novelis to complete and submit a periodic certification to the NYSDEC. As the impacted wetlands and upland areas will be restored to pre-construction conditions, water flow and stormwater storage capacity will be similar to current conditions. No water control structures are required for the sustainability of the wetlands. The wetlands will be seeded and planted with trees and shrubs which will provide short-term habitat benefits until trees mature and create a forested wetland community, as discussed in Section 5 of this CMP. However, the function of providing habitat for boreal wildlife will be temporarily reduced until planted trees reach adequate height.

5. Mitigation Work Plan

Wetland restoration design and construction activities for the restoration or impacted wetlands that are disturbed by the remedial work activities are described below.

5.1 Site Preparation

Construction activities associated with remedial activities (including wetland restoration) will be performed by The Shaw Group, Inc (Shaw), as Contractor to Novelis, with construction oversight by ARCADIS.

Existing site elevations and plan view drawings of the impacted wetlands are presented in Drawings G-200 through G-204 which are included in Attachment B. Temporary access roads, material staging areas, dewatering and water management activities, decontamination areas, and erosion and sediment controls are described in the PCN Letter and in Sections 2 and 3 of the OU-1 Remedial Design Report. Drawing G-401 presented in Attachment B also details these work activities.

Remediation and restoration activities for the project will involve the use of various types of earthwork equipment. This equipment will likely consist of bull dozer(s), hydraulic excavator(s), earth roller(s), and articulated truck(s). Removal and delivery of materials from the project site will be accomplished using over the road dump trucks.

NYSDEC water quality certification requirements associated with the project are detailed in the PCN Letter.

5.2 Timing

Novelis anticipates that Shaw will mobilize to the site in January/February 2011 to begin site preparation and site clearing activities. Soil and sediment removal activities are anticipated to begin in March/April 2011. Backfilling/grading and wetland restoration activities are anticipated to begin in mid-2011. ARCADIS will provide field-based construction oversight during the construction and site restoration activities. Oversight responsibilities will include daily observation of the construction work performed by Shaw, verification that construction work is being performed in accordance with the project design documents, coordination with Novelis personnel and contractor(s) to address design conditions and construction progress, reporting and documentation of daily construction activities, and preparation of the Final Engineering Report to document the remedial effort.

5.3 Construction Activities within Impacted Wetlands

5.3.1 Excavation of Soil and Sediments

Soil and sediments will be excavated from the impacted wetlands, separated, dewatered, and transported for appropriate offsite disposal as detailed in the PCN Letter and Sections 2 and 3 of the OU-1 Remedial Design Report.

Sediment removal limits were determined based on the results of previous remedial investigation activities conducted at the site. The horizontal limits for excavation will lie within the limits of the water line as defined on Drawings G-200 through G-204 and G-400 which are included in Attachment B. The vertical limit of sediment excavation will extend to specified elevations based on analytical results, or bedrock, whichever is encountered first.

Soil removal limits in upland areas (as determined based on previous remedial investigation results) are also shown on Drawings G-200 through G-204 and G-400 which are included in Attachment B. Soil excavation depths are estimated to range from 1 to 4 feet based on the investigation data.

Surface-water (i.e., runoff) diversion methods and impermeable covers may be implemented as necessary to minimize the amount of surface water that enters the excavation area during implementation of remedial activities. All water removed from the ponds and marshes (including initial dewatering) and surface water will be treated prior to discharge in accordance with appropriate regulations as specified in the PCN Letter and Section 3 of the OU-1 Remedial Design Report.

5.3.2 Backfill Material/Substrate

Following excavation activities, backfill material/substrate will be placed and graded in the locations shown on Figures 3 through 7 and as detailed in the PCN Letter and Sections 2 and 3 of the OU-1 Remedial Design Report. Backfill material/substrate placement will be conducted in accordance with the details on Drawing G-400 which is included in Attachment B. In addition, the backfill material/substrate will meet the requirements of Technical Specification 02206 presented in Appendix B of the OU-1 Remedial Design Report.

5.3.3 Open Water Restoration

North Pond No. 1 and North Pond No. 2 will be backfilled with substrate/material as specified above. The backfill substrate/material will provide suitable medium for the natural colonization of aquatic vegetation and benthic organisms. Open water will provide habitat for migratory birds (waterfowl), and other aquatic organisms, including providing over-wintering habitat for fish.

To accelerate the restoration of aquatic plants, submerged vegetation will be planted where water levels are sufficiently deep. The objective of these submerged plantings is to provide small groups to support the colonization of aquatic vegetation in the open water zone. Planting plans for the open water (submerged) zone are presented on Figure 3 and 5 for North Pond 1 and North Pond 2, respectively. A summary of the OU-1 wetland restoration plantings for North Pond 1 and 2 (including the anticipated number of each species to be planted) is presented in Table 1. Additional details are included below and presented in the PCN Letter and Sections 2 and 3 of the OU-1 Remedial Design Report.

In each pond, two patches of submerged vegetation will be planted in water depths of two to four feet. In addition, random clumps of water lily (*Nymphea odorata*) will be planted in water depths of four to six feet. Submerged vegetation will be planted by hand and/or using planting bags.

Hand planting is the preferred method in areas where the water depth is conducive for wading (e.g., less than four ft water depths). When used, planting bags will be 100-percent cotton mesh biodegradable socks weighted with gravel and saturated soil mix as ballast and growing medium, respectively. After the excess length of bag is tied off, the planting bag will be dropped at the water surface into the pond at the designated locations. The gravel and planting soil medium will become incorporated into the sediment creating a substrate for the tuber/shoot to root. The plants will take root through holes of the mesh bag. The bags will decompose after approximately 4 weeks.

5.3.4 Wetland Restoration

Following backfilling with suitable substrate/material as specified above, four general habitat types will be restored within the North Ponds and Marshes, specifically: emergent wetland, scrub-shrub wetland, forested wetland and upland island. The restoration plans and requirements for seeding and planting native vegetation for each habitat type are shown on Figures 3 through 7. In addition, cover crops, to include

annual ryegrass (*Lolium multiflorum*) and common oat (*Avena sativa*), will be seeded in restoration areas to provide temporary erosion control during early spring and fall (as necessary) until conditions are appropriate to plant species called for in the planting plan. A summary of the OU-1 wetland restoration plantings for each disturbed wetland area (including the anticipated number of each species to be planted) is presented in Table 1. Additional details are included below and presented in the PCN Letter and Sections 2 and 3 of the OU-1 Remedial Design Report.

The following sections describe the restoration plan for each habitat type.

- *Emergent Wetland*

  The excavated portion of the emergent marshes will be backfilled with imported material as specified above. The fill material will maintain the hydrologic interactions of the wetland with the water table and surface runoff, as well as provide a suitable planting medium to restore an emergent plant community.

  Following backfill activities and while the wetland is still dewatered, an emergent marsh seed mix will be sowed into the surface of the topsoil. Once seeded, the surface hydrology of the wetland will be partially restored to establish saturated soil (non-inundated) conditions. The altered surface hydrology will be maintained for up to six weeks, allowing time for seed germination and seedling establishment (roothold). At that time, the surface hydrology will be restored to normal elevations.

- *Scrub-Shrub Wetland*

  The excavated portion of the scrub-shrub wetland will be backfilled with imported material as specified above. A wetland seed mix consisting of native plant species will be sowed into the surface of the topsoil. In addition, native shrubs will be planted to restore the shrub community.

- *Forested Wetland*

  The excavated portion of the forested wetland will be backfilled with imported material as specified above. Final grade will be restored to pre-construction elevations to maintain the hydrologic interactions of forested wetland with the water table and surface runoff, as well as provide a suitable planting medium to restore native trees and grasses. A wetland seed mix consisting of native plant species

will be sowed into the surface of the topsoil. In addition, native trees will be planted to restore the disturbed forest community.

- *Upland Island*

  The upland islands will be backfilled with imported material as specified above. An upland seed mix consisting of native and naturalized plant species will be sowed into the topsoil.

5.4 General Restoration

Construction activities will be performed so that adverse impacts to the surrounding area are minimized. Disturbed areas will be restored by seeding to match the surrounding conditions. Disturbed upland areas, including areas used for staging and access, will be graded, scarified, and seeded with Upland Wildlife Seed Mix as shown on Drawing G-307 which is included in Attachment B. It is not anticipated that additional topsoil will be required for upland restoration, but topsoil will be used (if needed) to attain final grades in the restored upland areas. Seeded areas with steep slopes (greater than 3:1 slope) will be covered with an erosion control blanket. Upland areas disturbed by the construction activities will be restored with the upland wildlife seed mix, including access roads, equipment storage areas, temporary staging areas, and borrow source areas.

Wetland areas outside the limits of the work area shall be protected and avoided to the extent practicable. Any wetlands disturbed outside the limit of work shall be restored consistent with the project restoration plan and design.

6. Performance Standards

The NWP Authorization will identify performance standards that are to be used to evaluate the success of the mitigation wetland. Required performance standards typically require the establishment of site conditions that meet the federal criteria for wetlands, evaluation of compliance with hydrology design parameters, establishment of adequate ground cover and woody plant stem densities, and establishment of a maximum percentage of allowable weed presence. Anticipated performance standards are discussed below.

1. The created wetland must meet the federal wetland criteria outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987).

   Successful completion of wetland restoration requires that the restored wetland meets the three mandatory criteria for federal wetlands, consisting of hydric soils, a dominance of hydrophytic vegetation, and wetland hydrology. These characteristics in the restored wetland will be evaluated to document the successful mitigation activities.

2. All seeded areas in conjunction with the restoration effort must establish 85 percent cover, with 80% of the species being hydrophytic plants by the end of the monitoring period.

3. Woody plants planted or naturally recruited in the restoration areas must establish 85 percent of the original number of woody plantings by the end of the monitoring period.

4. The vegetation within the wetland mitigation area must not consist of more than a total of 5% areal cover of common reed (Phragmites australis), purple loosestrife (Lythrum salicaria), reed canary grass (Phalaris arundinacea), Japanese knotweed (Polygonum cuspidatum), Tartarian honeysuckle (Lonicera tatarica), Eurasian milfoil (Myriophyllum spicata), and/or other invasive weed species.

   Invasive weeds can quickly overtake and dominate the vegetation of disturbed areas, resulting in a decrease in the diversity and density of desirable species. Dense seeding will be performed in the impacted wetlands to establish an herbaceous plant community that can out-compete invasive weeds. If weeds invade the site at densities that require corrective action, activities will be implemented to reduce their numbers to levels that meet, and will continue to meet, this performance standard.

7. Site Protection and Maintenance

Novelis currently owns the impacted wetlands site. Novelis will secure, and submit to the USACE, an environmental easement or deed notice (or other suitable instrument) to protect the wetlands from future development. If requested, copies of the instrument effecting the easement or deed restriction will be submitted to USACE for approval prior to execution. The instrument will be executed and recorded with the Oswego County Registrar of Deeds after completion (within 3 to 6 months) of the wetland restoration activities. Signs will be posted that define the limits of the protected area to deter trespassers and recreational vehicles from disturbing the mitigation area.

Annual vegetation monitoring timing and frequency are discussed in Section 8 of this CMP. Monitoring results will provide information about the percent cover and the species composition. Inadequate ground cover would be addressed by re-seeding with a seed mix that maintains the vegetative diversity and favors the species that are doing well on the site and/or evaluating nutrient levels in the soil and applying an appropriate fertilizer to maintain the health of desired vegetation. Other disturbances to seeded vegetation that might require maintenance activities are related to weed invasions, excessive herbivory or human disturbances. Excessive weed presence can be managed manually by pulling and disposing off-site, or chemically, with the application of an herbicide under permit by a licensed applicator. Human disturbances, such as ATV traffic, could be controlled by restricting site access, and excessive herbivory can be controlled by fencing affected areas.

Maintenance inspections that identify design problems such as improper ground elevations or inadequate water sources may require more extensive activities, such as re-grading and re-seeding or supplementing hydrology to the site.

8. Monitoring Plan

Novelis will be responsible for monitoring the establishment and development of the restored wetlands. The restored wetlands will be monitored beginning in the first growing season following completion of the wetland restoration activities. It is anticipated that monitoring inspections will occur in the spring and summer for a minimum of five years to evaluate the status of the seeded vegetation and to evaluate the need for maintenance activities.

8.1 Monitoring Activities

A variety of monitoring activities will be implemented to characterize site conditions related to soils, hydrology and vegetation to determine if the restored wetland areas meet the identified performance standards. The monitoring activities associated with each of these site characteristics are described in the following subsections.

8.1.1 Federal Wetland Criteria

During each monitoring year, the restored wetland areas will be evaluated for their ability to meet the federal wetland criteria for soils, vegetation and hydrology. The on-site monitoring will be performed by establishing one random data collection plot per acre in the wetlands and collecting data regarding soil characteristics, dominant vegetative species, and hydrologic indicators. Field data sheets will be completed for each data collection plot to document site observations. USACE Field Data Forms will be included in the monitoring report for each monitoring year.

Although it is not anticipated that hydric soil characteristics will be observed during the monitoring period due to the length of time it typically takes for soils to develop hydric soil characteristics, the observations will be recorded so that the progress of the development of the hydric characteristics can be documented. Hydric soil characteristics will not be used to determine if the restored wetlands meet the wetland criteria of the Manual because the soils will be considered an “atypical” situation because of the recent placement of the soils into the wetland environment.

8.1.2 Vegetation

The establishment of a wetland plant community is important to the restored wetland’s ability to perform its ecological functions habitat. Performance standards have been established for relative percent ground cover by hydrophytic plant species, targeted stem density for woody plantings, and maximum cover by invasive weeds. During

each monitoring year, data will be collected to evaluate the status of the restored wetland's ability to meet the identified performance standards. To evaluate the percent ground cover by hydrophytic and invasive plant species, 10 random vegetation assessment plots of 1 square meter in size will be established per acre of wetland and the percent ground cover and the percent ground cover by each species observed in the plot will be recorded. The data from the monitoring plots will be averaged to determine the percent ground cover by hydrophytic and invasive weeds in the restored wetlands. The average percent ground cover by hydrophytic species from the monitoring plots will be compared to the percent cover performance standard to determine if planted vegetation is adequately surviving or if maintenance activities will be required to maintain the target percent ground cover. Photographs will be taken at each data collection point and also from permanent locations throughout the restored wetlands for temporal documentation of vegetation establishment.

The performance standard for trees and shrub stem densities will be evaluated by determining the health and vigor of each planted tree and shrub during each monitoring year. The total number of planted trees and shrubs will define the quantity of trees and shrubs required for 100% survival. As native hydrophytic tree and shrub species are naturally recruited on the site, their presence will be included in the number of surviving trees and shrubs for evaluation against the percent survival performance standard. Natural recruitment by native hydrophytic species is a positive indicator of the successful establishment of wetland conditions at a site and their use in evaluating the success of establishing woody vegetation on the site is an accepted adaptive management tool.

8.2 Monitoring Report

A summary of each year's monitoring effort and a comparison to the annual performance standards will be presented in an annual monitoring report that will be prepared and submitted to the USACE by the end of each reporting year. The monitoring report for each monitoring year will include the following:

- Completed USACE wetland delineation data sheets for each covertype in the restored wetland areas
- A list of observed plant species and their percent of areal cover in each vegetative strata
- An evaluation of woody plant density

- Photographs of representative areas of the restored wetland areas taken between June 1 and August 15

- A written description indicating whether the proposed functions of the restored wetland areas are being achieved

- A maintenance plan, if necessary, outlining steps taken or proposed to ensure the success criteria

If the restored wetlands performance standards are met within five years, no further monitoring or maintenance will be required. If USACE determines that the performance standards have not been met by the end of the required five year monitoring period, the monitoring and reporting period may be extended until USACE determines that the performance standards have been met.

9. Adaptive Management Plan

Novelis will be responsible for the monitoring, maintenance, and adaptive management of the restored wetland areas to ultimately create self-sustaining wetlands that provide the targeted functions and values to the environment. Adaptive management is a scientific method of correcting site problems based on observed responses in the restored wetlands. Problems with the establishment of the desired wetland plant community could arise from a variety of sources which may or may not be under the control of site managers, including extreme weather conditions, animal interactions, and human vandalism. Improper environmental conditions, such as improper hydrology, incorrect grading, or unanticipated plant responses could also affect the development of the desired plant community. Adaptive management interprets the positive and negative influences on the site and expands successful applications and eliminates detrimental conditions so that response activities are specific to improving what is working in the wetland. Although it is not possible to predetermine problems that could arise in the restored wetland areas, appropriate responses would be implemented to maintain the development of the wetlands towards meeting the performance standards.

Vegetation monitoring will provide information about the percent cover and the species composition. Inadequate ground cover would be addressed by re-seeding with a seed mix that maintains the vegetative diversity and favors the species that are doing well on the site and/or evaluating nutrient levels in the soil and applying an appropriate fertilizer to maintain the health of desired vegetation. Other disturbances to seeded vegetation that might require maintenance activities are related to weed invasions, excessive herbivory or human disturbances. Excessive weed presence can be managed manually by pulling and disposing off-site, or chemically, with the application of an herbicide under permit by a licensed applicator. Human disturbances, such as ATV traffic, could be controlled by restricting site access, and excessive herbivory can be controlled by fencing affected areas.

Maintenance inspections that identify design problems such as improper ground elevations or inadequate water sources may require more extensive activities, such as re-grading and re-seeding or supplementing hydrology to the site.

10. Financial Assurances

Novelis will establish financial assurance for maintenance of the restored wetland for a period of 8 years. Financial assurances may be in the form of a letter of commitment, a financial instrument (e.g., performance bonds, irrevocable trusts, escrow accounts, casualty insurance, letters of credit), or other approved instruments. Financial assurances will be commensurate with the level of impact and the level of restoration. Financial assurances will be sufficient to cover contingency actions such as a default by the responsible party or a failure to meet performance standards. Novelis' financial assurance cost estimate for the restored OU-1 wetlands is presented in Attachment C. Novelis will provide appropriate financial assurance following USACE concurrence with the cost estimate.

11. References

ARCADIS, 2008. *2008 Wetland Identification and Boundary Delineation Report.* November, 2008.

ARCADIS, 2010. Pre-Construction Notification Letter submittal to US Army Corps of Engineers Buffalo District for OU-1 Remedial Activities at the Novelis site. (February 11, 2010).

ARCADIS, 2010. *Final OU-1 Remedial Design Report*. (March 2010).

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

NYSDEC, 2006. *Record of Decision*. March 2006

NYSDEC, 2006. Order on Consent (Index A7-0555-0706) effective as of January 1, 2007.

Novelis. 2008. *Nationwide Permit #38 – Pre-Construction Notification.* May 16, 2008.

United States Army Corps of Engineers, 2004. Mitigation and Monitoring Guidelines. Buffalo District Regulatory Branch.

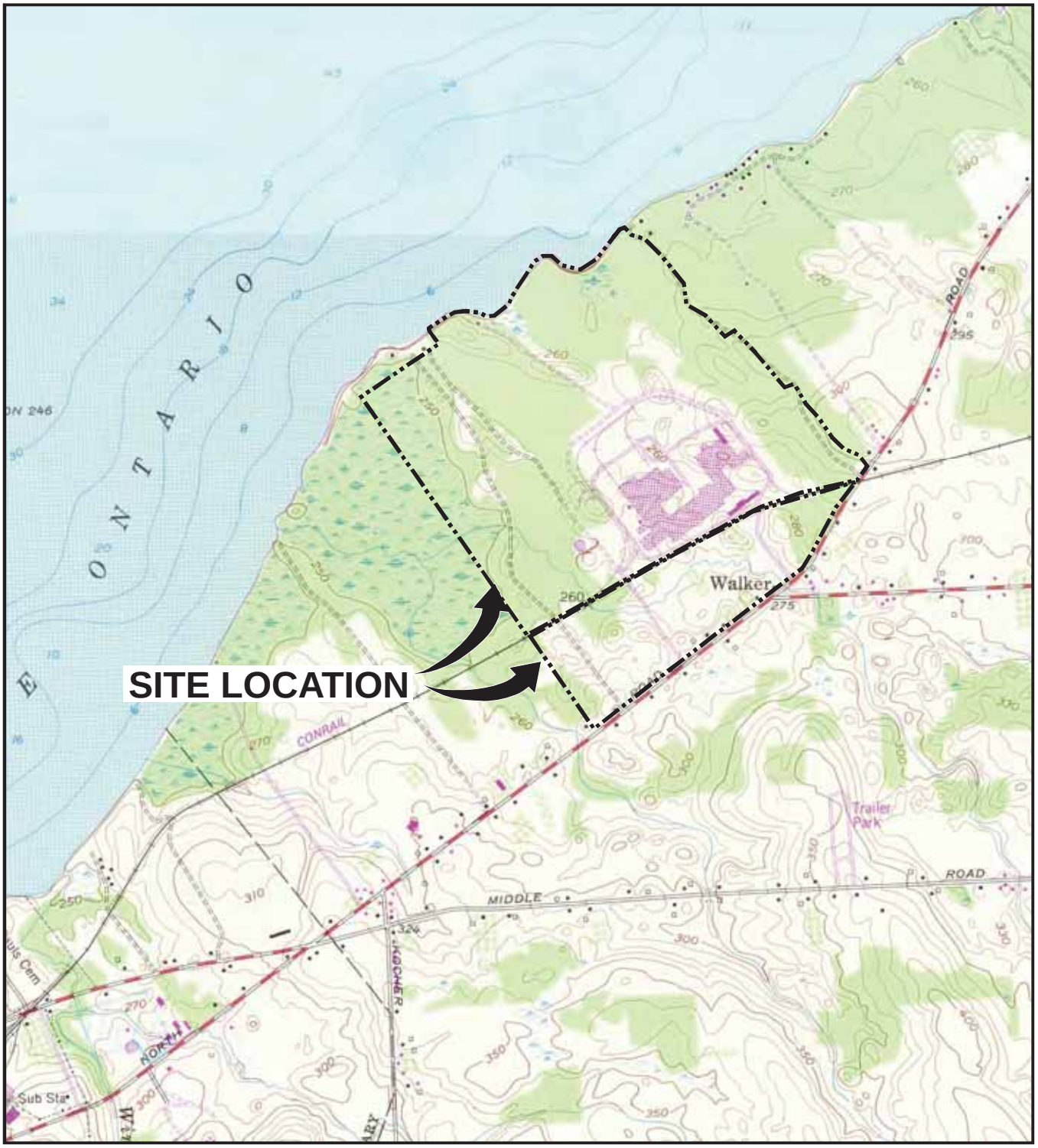
Table

TABLE 1. NOVELIS OU-1 RESTORATION PLANTING SUMMARY TABLE

WETLAND VEGETATION RESTORATION PLAN			NORTH POND 1 (FIGURE 1) 0.02 ACRES SCRUB-SHRUB WETLAND			NORTH MARSH 1 (FIGURE 2) 0.30 ACRES SCRUB-SHRUB WETLAND			NORTH POND 2 (FIGURE 3) 0.05 ACRES SCRUB-SHRUB WETLAND			NORTH MARSH 2 (FIGURE 4) 1.30 ACRES SCRUB-SHRUB WETLAND 0.15 ACRES FORESTED WETLAND			NORTH MARSH 3 (FIGURE 5) 0.44 ACRES SCRUB-SHRUB WETLAND 0.79 ACRES FORESTED WETLAND			TOTAL		
ZONE	SCIENTIFIC NAME (SYMBOL)	WETLAND INDICATOR STATUS	Number of Containers	Number of Bare Root	Number of Trees	Number of Containers	Number of Bare Root	Number of Trees	Number of Containers	Number of Bare Root	Number of Trees	Number of Containers	Number of Bare Root	Number of Trees	Number of Containers	Number of Bare Root	Number of Trees	Number of Containers	Number of Bare Root	Number of Trees
SCRUB-SHRUB WETLAND	CORNUS AMOMUM (CA)	FACW		2			29			3			59					0	93	0
	CEPHALANTHUS OCCIDENTALIS (CO)	OBL				13			4			144			44			205	0	0
	ALNUS INCANA RUGOSA (AI)	FACW				21						36						57	0	0
	ILEX VERTICILLATA (IV)	FACW+	3			13			4			55						75	0	0
	CORNUS SERICEA (CS)	FACW+				21				5			177			32		21	214	0
	SALIX DISCOLOR (SD)	FACW		2			31			2			24			56		0	115	0
	SPIRAEA ALBA (SA)	FACW+	3			14			4			119			33			173	0	0
	SAMBUCUS CANADENSIS (SC)	FACW-				8			3			36			55			102	0	0
FORESTED WETLANDS	CORNUS AMMOMUM (CA)	FACW											3			25		0	28	0
	ILEX VERTICILLATA (IV)	FACW+										2			25			27	0	0
	CORNUS SERICEA (CS)	FACW+											5			20		0	25	0
	SALIX DISCOLOR (SD)	FACW											7			35		0	42	0
	SPIRAEA ALBA (SA)	FACW+										3			20			23	0	0
	CEPHALANTHUS OCCIDENTALIS (CO)	OBL										7						7	0	0
	VIBURNUM LENTAGO (VL)	FAC										3			35			38	0	0
	ACER RUBRUM (AR)	FAC												10			60	0	0	70
	ACER SACCHARINUM (AS)	FACW												15			60	0	0	75
	ALNUS INCANA RUGOSA (AI)	FACW												11			60	0	0	71
	FRAXINUS PENNSYLVANICA (FP)	FACW												9			60	0	0	69
TOTAL BY TYPE			6	4	0	90	60	0	15	10	0	405	275	45	212	168	240	728	517	285
TOTAL BY AREA			10			150			25			725			620			1530		

ONLY TREES AND SHRUBS SHOWN FOR CLARITY.

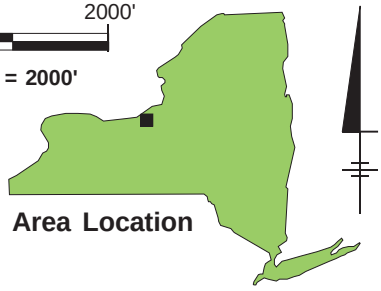
Figures



REFERENCE: Base Map USGS 7.5 Min. Quad., Oswego East, & West of Texas, New York, 1954, Photorevised 1978.

2000' 0 2000'

Approximate Scale: 1" = 2000'



NOVELIS COPORATION
OSWEGO , NEW YORK

SITE LOCATION MAP

ARCADIS

FIGURE
1

12/28/09 SYRACUSE, NY ENV/141-DJH-K.SARTORI
B0072208/0000/00002/CDR/72208n01.cdr

LEGEND:

- APPROXIMATE PROPERTY LINE
- APPROXIMATE EXTENT OF PONDS AND MARSHES DURING OPERATION OF COOLING WATER TREATMENT SYSTEM (1968–2002)
- APPROXIMATE AREA OF OU-1
- APPROXIMATE AREA OF OU-2
- APPROXIMATE AREA OF OU-3

NOTES:

1. BASEMAP GENERATED FROM A MAY 3, 2003 AERIAL SURVEY COMPLETED BY SANBORN, INC. AT A SCALE OF 1"=50'.
2. THE HORIZONTAL DATUM IS BASED ON NORTH AMERICAN DATUM OF 1983, NY CENTRAL ZONE.
3. THE VERTICAL DATUM IS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. PROPERTY LINE WAS APPROXIMATED FROM A SCANNED DRAWING PROVIDED BY ALCAN ALUMINUM CORPORATION, OSWEGO, NEW YORK DATED 10/18/79, DRAWING NO. 46071.
5. BRUSH/STONE STOCKPILES SHALL BE A MINIMUM OF 10 FEET FROM ROADS.

0 400' 800'
GRAPHIC SCALE

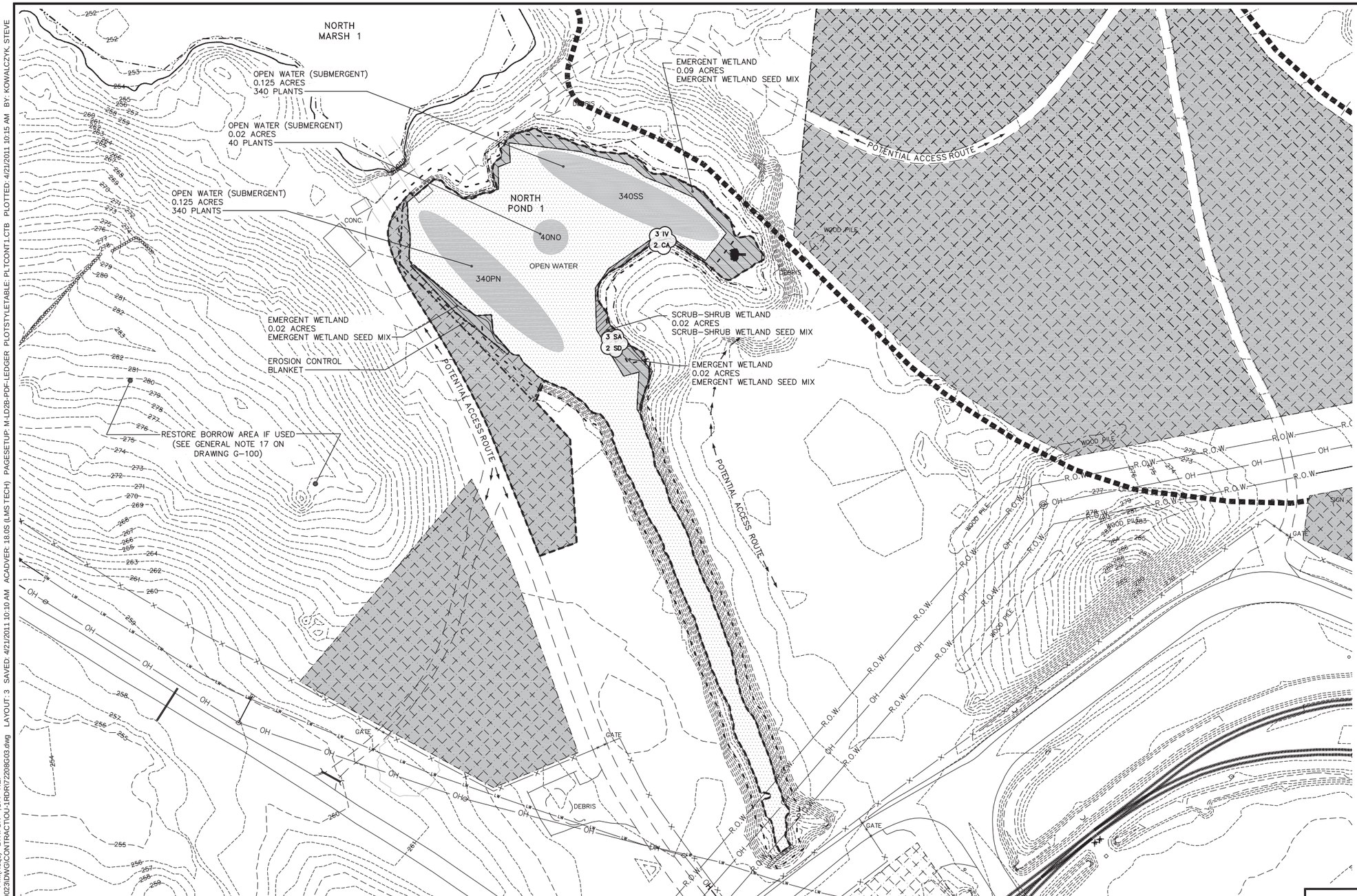
NOVELIS CORPORATION
OSWEGO, NEW YORK

SITE LAYOUT PLAN

ARCADIS

FIGURE 2

CITY: SYRACUSE DIV/GROUP: 141 DB: JER AMS KEW PM:(Reqd) LYR: ON=*OFF=*REF*
G:\ENVCAD\SYRACUSE\ACTIB\07220800\000020\DWG\REPORTNC-OUT\72208G02.DWG LAYOUT: 2SAVED: 10/29/2009 3:57 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 10/30/2009 2:24 PM BY: BASSETT, RICHARD
XREFS: IMAGES: PROJECTNAME: ---
72208X02
72208X07
72208X00



LEGEND:

- SCRUB–SHRUB WETLAND
- EMERGENT WETLAND
- OPEN WATER
- UPLAND
- PLANTING/SEEDING AREA
- LIMIT OF WORK
- GOOSE FENCE
- EROSION CONTROL BLANKET
- LARGE WOODY DEBRIS – SEE TECHNICAL SPECIFICATION 02210
- 3 CS / 3 SSP — SHRUB – QUANTITY AND TYPE
- 340SS — SUBMERGENT PLANT – QUANTITY AND TYPE

NOTES:

1. BACKFILL ACCORDING TO BACKFILL DEPTHS TABLE ON DRAWING G–100.
2. RESTORE ACCORDING TO DRAWINGS G–306 AND G–307.
3. PLANTING QUANTITIES SHOWN ARE CALCULATED FROM ACREAGE OF RESTORATION AREAS WITHIN THE PROPOSED LIMIT OF WORK. FINAL QUANTITIES MAY CHANGE BASED ON ACTUAL LIMITS OF WORK WITHIN WETLAND AREAS.
4. WETLAND AREAS OUTSIDE THE LIMIT OF WORK SHALL BE PROTECTED AND AVOIDED TO THE EXTENT PRACTICABLE. ANY WETLANDS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED CONSISTENT WITH THE PROJECT RESTORATION PLAN AND DESIGN.

50' 0 50' 100'
1"=50'

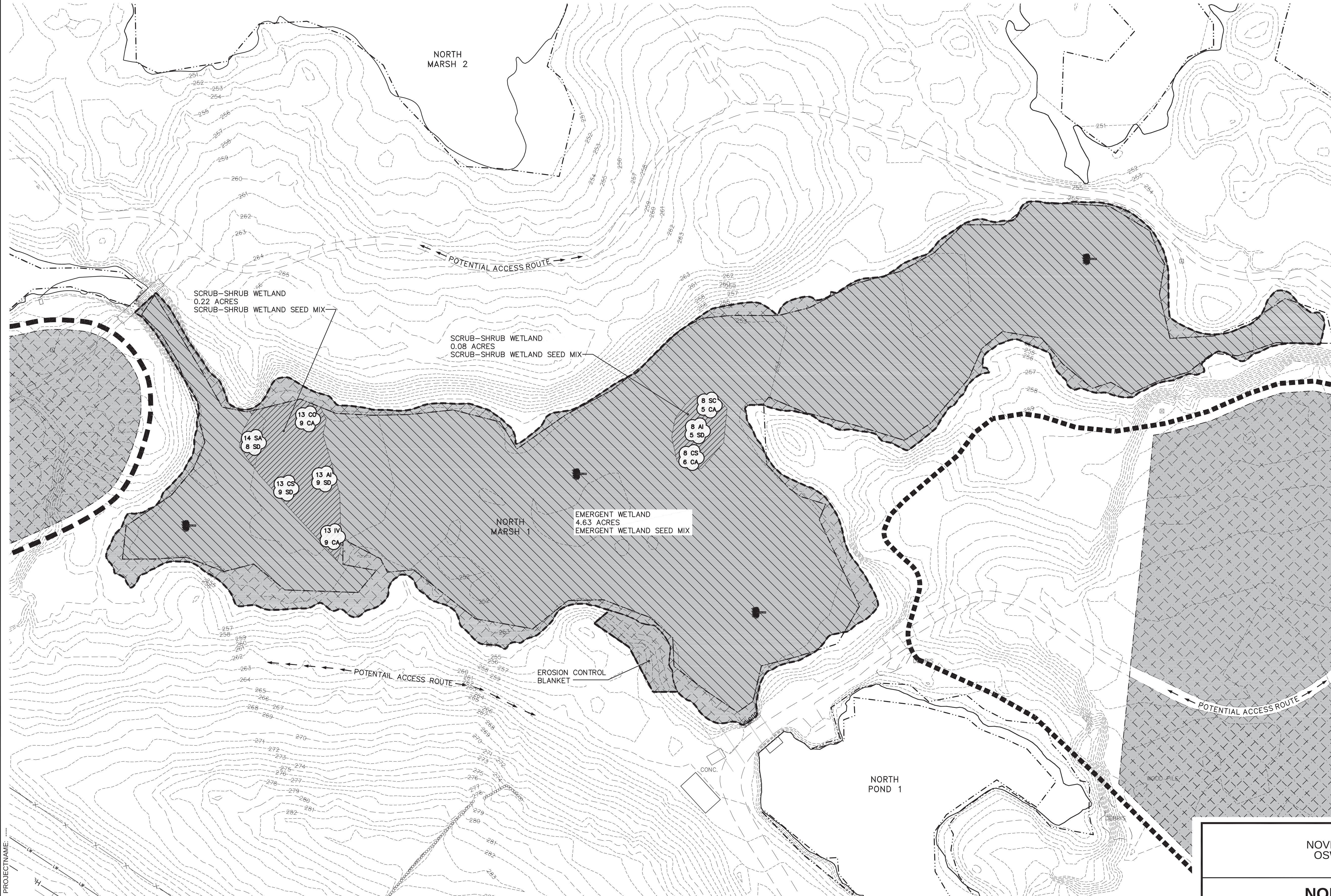
NOVELIS CORPORATION
OSWEGO, NEW YORK

NORTH POND 1
RESTORATION PLAN

ARCADIS

FIGURE
3

CITY: SYRACUSE DIV/GROUP: 141 DB: SJK PM:(Reqd) LYR: ON=*;OFF=REF
G:\ENVCAD\SYRACUSE\ACT\B0072208\0010\00023\DWG\CONTRACT\OU-1RDRV\72208G04.dwg LAYOUT: 4 SAVED: 4/21/2011 10:10 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: M-LD2B-PDF-LEDGER PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 4/21/2011 10:15 AM BY: KOWALCZYK, STEVE
XREFS: IMAGES: PROJECTNAME: ----
72208X01
72208X02
72208X00



LEGEND:

- SCRUB–SHRUB WETLAND
- EMERGENT WETLAND
- UPLAND
- PLANTING/SEEDING AREA
- LIMIT OF WORK
- EROSION CONTROL BLANKET
- LARGE WOODY DEBRIS – SEE TECHNICAL SPECIFICATION 02210
- 3 CS / 3 SSP — SHRUB – QUANTITY AND TYPE

NOTES:

1. BACKFILL ACCORDING TO BACKFILL DEPTHS TABLE ON DRAWING G–100.
2. RESTORE ACCORDING TO DRAWINGS G–306 AND G–307.
3. PLANTING QUANTITIES SHOWN ARE CALCULATED FROM ACREAGE OF RESTORATION AREAS WITHIN THE PROPOSED LIMIT OF WORK. FINAL QUANTITIES MAY CHANGE BASED ON ACTUAL LIMITS OF WORK WITHIN WETLAND AREAS.
4. WETLAND AREAS OUTSIDE THE LIMIT OF WORK SHALL BE PROTECTED AND AVOIDED TO THE EXTENT PRACTICABLE. ANY WETLANDS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED CONSISTENT WITH THE PROJECT RESTORATION PLAN AND DESIGN.

50' 0 50' 100'
1"=50'

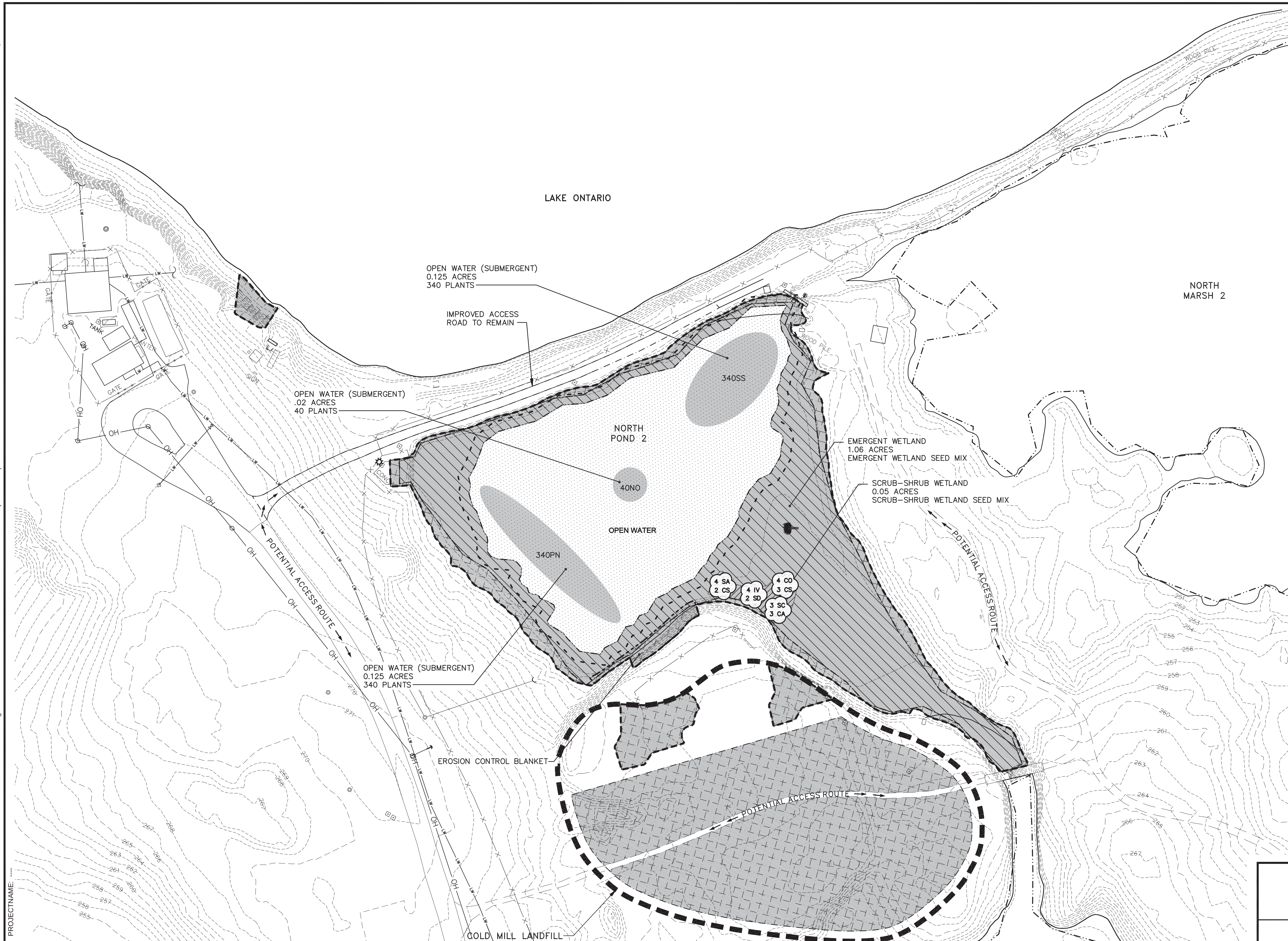
NOVELIS CORPORATION
OSWEGO, NEW YORK

NORTH MARSH 1 RESTORATION PLAN

ARCADIS

FIGURE
4

CITY: SYRACUSE DIV/GROUP: 141 DB: GMS PM:(Reqd) LYR: ON=*;OFF=REF
G:\ENVCAD\SYRACUSE\ACT\B0072208\0010\00023\DWG\CONTRACT\OU-1RDR\72208G05.dwg LAYOUT: 5 SAVED: 4/21/2011 10:11 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: M-LD2B-PDF-LEDGER PLOTSTYLETABLE: PLTCONT1.CTB PLOTTED: 4/21/2011 10:15 AM BY: KOWALCZYK, STEVE
XREFS: 72208X01 72208X02 72208X00 IMAGES: PROJECTNAME: ----



LEGEND:

- SCRUB-SHRUB WETLAND
- EMERGENT WETLAND
- OPEN WATER
- UPLAND
- PLANTING/SEEDING AREA
- LIMIT OF WORK
- GOOSE FENCE
- EROSION CONTROL BLANKET
- LARGE WOODY DEBRIS – SEE TECHNICAL SPECIFICATION 02210
- 3 CS / 3 SSP — SHRUB – QUANTITY AND TYPE
- 340SS — SUBMERGENT PLANT – QUANTITY AND TYPE

NOTES:

1. BACKFILL ACCORDING TO BACKFILL DEPTHS TABLE ON DRAWING G-100.
2. RESTORE ACCORDING TO DRAWINGS G-306 AND G-307.
3. PLANTING QUANTITIES SHOWN ARE CALCULATED FROM ACREAGE OF RESTORATION AREAS WITHIN THE PROPOSED LIMIT OF WORK. FINAL QUANTITIES MAY CHANGE BASED ON ACTUAL LIMITS OF WORK WITHIN WETLAND AREAS.
4. WETLAND AREAS OUTSIDE THE LIMIT OF WORK SHALL BE PROTECTED AND AVOIDED TO THE EXTENT PRACTICABLE. ANY WETLANDS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED CONSISTENT WITH THE PROJECT RESTORATION PLAN AND DESIGN.

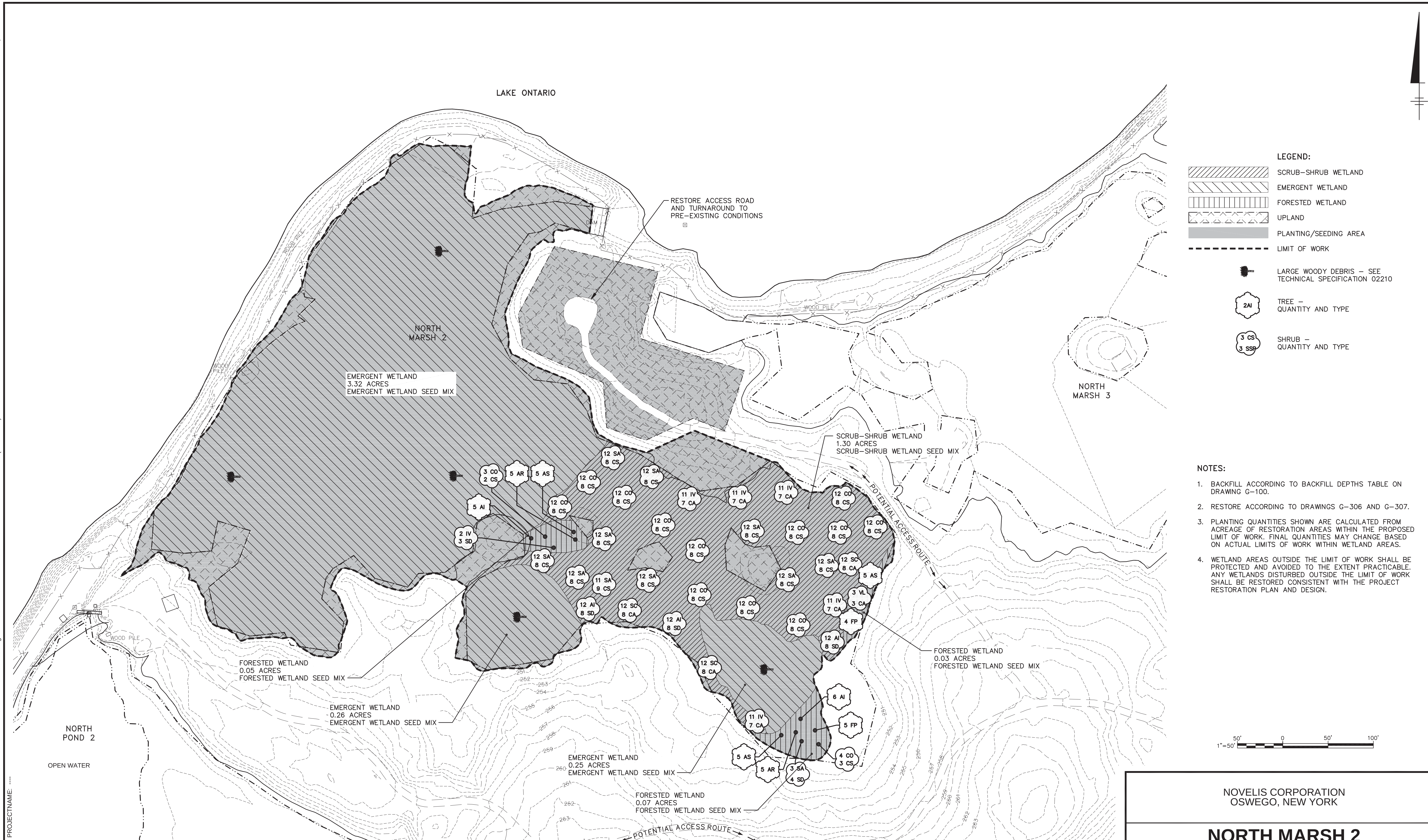
50' 0 50' 100'
1"=50'

NOVELIS CORPORATION
OSWEGO, NEW YORK

NORTH POND 2 RESTORATION PLAN

ARCADIS

FIGURE
5



NOTES:

1. BACKFILL ACCORDING TO BACKFILL DEPTHS TABLE ON DRAWING G-100.
2. RESTORE ACCORDING TO DRAWINGS G-306 AND G-307.
3. PLANTING QUANTITIES SHOWN ARE CALCULATED FROM ACREAGE OF RESTORATION AREAS WITHIN THE PROPOSED LIMIT OF WORK. FINAL QUANTITIES MAY CHANGE BASED ON ACTUAL LIMITS OF WORK WITHIN WETLAND AREAS.
4. WETLAND AREAS OUTSIDE THE LIMIT OF WORK SHALL BE PROTECTED AND AVOIDED TO THE EXTENT PRACTICABLE. ANY WETLANDS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED CONSISTENT WITH THE PROJECT RESTORATION PLAN AND DESIGN.

NOVELIS CORPORATION
OSWEGO, NEW YORK

NORTH MARSH 2 RESTORATION PLAN

ARCADIS

FIGURE 6

LAKE ONTARIO

WOOD PILE

WOOD PILE

SCRUB–SHRUB WETLAND
0.44 ACRES
SCRUB–SHRUB WETLAND SEED MIX

NORTH
MARSH 3

EMERGENT WETLAND
3.00 ACRES
EMERGENT WETLAND SEED MIX

NORTH
MARSH 2

FORESTED WETLAND
0.79 ACRES
FORESTED WETLAND SEED MIX

POTENTIAL ACCESS ROUTE

SITHE COOLING POND

SITHE PROPERTY

CONC

LEGEND:

- SCRUB–SHRUB WETLAND
- EMERGENT WETLAND
- FORESTED WETLAND
- UPLAND
- PLANTING/SEEDING AREA
- LIMIT OF WORK
- LARGE WOODY DEBRIS – SEE TECHNICAL SPECIFICATION 02210
- TREE – QUANTITY AND TYPE (e.g. 2AI)
- SHRUB – QUANTITY AND TYPE (e.g. 3CS 3SSP)

NOTES:

1. BACKFILL ACCORDING TO BACKFILL DEPTHS TABLE ON DRAWING G–100.
2. RESTORE ACCORDING TO DRAWINGS G–306 AND G–307.
3. PLANTING QUANTITIES SHOWN ARE CALCULATED FROM ACREAGE OF RESTORATION AREAS WITHIN THE PROPOSED LIMIT OF WORK. FINAL QUANTITIES MAY CHANGE BASED ON ACTUAL LIMITS OF WORK WITHIN WETLAND AREAS.
4. WETLAND AREAS OUTSIDE THE LIMIT OF WORK SHALL BE PROTECTED AND AVOIDED TO THE EXTENT PRACTICABLE. ANY WETLANDS DISTURBED OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED CONSISTENT WITH THE PROJECT RESTORATION PLAN AND DESIGN.

NOVELIS CORPORATION
OSWEGO, NEW YORK

NORTH MARSH 3 RESTORATION PLAN

ARCADIS

FIGURE
7

ARCADIS

Attachments

ARCADIS

Attachment A

OU-1 Wetland Delineation Report
Figures

ARCADIS

Attachment B

OU-1 Remedial Design Report
Figures

ARCADIS

Attachment C

Financial Assurance Cost Estimates

ATTACHMENT C
FINANCIAL ASSURANCE COST ESTIMATE FOR WETLAND MITIGATION

NOVELIS CORPORATION
OU-1 REMEDIAL ACTIVITIES
OSWEGO, NEW YORK

Item #	Description	Estimated Amount	Total Cost
Annual Wetland Restoration and Monitoring Cost (Year 1)			
1	Annual Wetland Seeding and Planting Costs	$0	
2	Site Grading to Maintain Wetland Hydrology	$15,000	
3	Annual Monitoring and Reporting Costs	$7,500	
	Total Cost for Year 1:	**$22,500**	**$22,500**
Annual Wetland Restoration and Monitoring Cost (Years 2 Through 5)			
4	Annual Wetland Seeding and Planting Costs	$68,000	
5	Site Grading to Maintain Wetland Hydrology	$15,000	
6	Annual Monitoring and Reporting Costs	$7,500	
	Subtotal Annual Cost:(Years 2 Through 5):	$90,500	
	Total Cost for Years 2 through 5:	**$362,000**	**$362,000**
Annual Wetland Restoration and Monitoring Cost (Years 6 Through 8)			
7	Annual Wetland Seeding, and Planting Costs (Forested Wetlands Only)	$20,400	
8	Site Grading to Maintain Wetland Hydrology	$5,000	
9	Annual Monitoring and Reporting Costs	$5,000	
	Subtotal Annual Cost (Years 6 Through 8):	$30,400	
	Total Cost for Years 6 Through 8:	**$91,200**	**$91,200**
	Total Estimated Cost: (Years 1 Through 8):		**$475,700**
	Rounded To:		**$476,000**

General Notes

1. Wetland seeding and replanting costs (year 1) are covered under the Contractor's warranty. Per Novelis' agreement with the remedial Contractor (Shaw Environmental), wetland restoration costs will be held in retainage for a period of 1 year. In the event that the Contract defaults on any obligation to conduct additional reseeding or replanting under the warranty terms, Novelis will utilize the retainage to cover year 1 costs.
2. Site grading to maintain wetland hydrology cost (year 1) includes up to three days of onsite grading with earth moving equipment, contractor personnel, engineering oversight, and surveying at a cost of $5000 per day.
3. Annual monitoring and reporting costs include conducting two site visits per year by a qualified wetland scientist to review the status of the onsite emergent and forested wetlands against the performance objectives outlined in the Compensatory Wetland Mitigation Plan and preparing an Annual Monitoring Report for submittal to the USACE.
4. Annual wetland seeding and planting cost (years 2 through 5) is 50% of actual contractor costs to complete post-remedial restoration and planting for 21 acres or emergent wetland and 3 acres of forested wetland.
5. Site grading to maintain wetland hydrology cost (years 2 through 5) includes up to three days of onsite grading with earth moving equipment, contractor personnel, engineering oversight, and surveying at a cost of $5000 per day.
6. Annual monitoring and reporting costs (years 2 through 5) include conducting two site visits per year by a qualified wetland scientist to review the status of the onsite emergent and forested wetlands against the performance objectives outlined in the Compensatory Wetland Mitigation Plan and preparing an Annual Monitoring Report for submittal to the USACE.
7. Annual wetland seeding and planting cost (years 6 through 8) is 50% of actual contractor costs to complete post-remedial restoration and planting for 3 acres of forested wetland.
8. Site grading to maintain wetland hydrology cost (years 6 through 8) includes one day of onsite grading with earth moving equipment, contractor personnel, engineering oversight, and surveying at a cost of $5000 per day.
9. Annual monitoring and reporting costs (years 6 through 8) include conducting two site visits per year by a qualified wetland scientist to review the status of the onsite forested wetlands against the performance objectives outlined in the Compensatory Wetland Mitigation Plan and preparing an Annual Monitoring Report for submittal to the USACE.

ARCADIS

Attachment 5

Nationwide Permit Authorization

DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO

July 6, 2011

Regulatory Branch

SUBJECT: Application No. 2010-00244, Nationwide Permit No. 38 as Published in the Federal Register, Volume 72, No. 47, on Monday, March 12, 2007, New York State Department of Environmental Conservation No. 7-3556-00001

Mr. David Neuner
Novelis Corporation
448 County Route 1A
P.O. Box 66
Oswego, New York 13216

Dear Mr. Neuner:

This pertains to the application you submitted on behalf of Novelis Corporation for a Department of the Army permit to implement remedial activities and habitat restoration for Operable Unit (OU) 1 at the Novelis Oswego Works Facility along the shoreline of Lake Ontario, located at 448 County Route 1A, in the Town of Scriba, Oswego County, New York.

I have evaluated the impacts associated with your proposal, and have concluded that they are authorized by the enclosed Nationwide Permit provided that the attached conditions are satisfied.

Verification of the applicability of this Nationwide Permit (NWP) is valid until March 18, 2012 unless the NWP authorization is modified, suspended or revoked prior to this date. This verification will remain valid during this period if the NWP authorization is reissued without modification or your activity complies with any subsequent modification of the NWP authorization. Please note in accordance with 33 CFR 330.6(b) that if you commence or are under contract to commence this activity in reliance of your Permit prior to the date this NWP expires, or is suspended or revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the NWP, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of this NWP, unless this NWP has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the NWP program. A public notice announcing any changes will be issued when they occur and will be available for viewing

Regulatory Branch
SUBJECT: Application No. 2010-00244, Nationwide Permit No. 38 as Published in the Federal Register, Volume 72, No. 47, on Monday, March 12, 2007, New York State Department of Environmental Conservation No. 7-3556-00001

at our website: http://www.lrb.usace.army.mil. Finally, note that if your activity is not undertaken within the defined period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

This affirmation is limited to the attached Nationwide Permit and associated Water Quality Certification, and does not obviate the need to obtain any other project specific Federal, state, or local authorization. Specifically, you may need to obtain Article 15 (Protection of Water), Article 24 (Freshwater Wetland), and/or Article 34 (Coastal Erosion Management) authorization from the New York State Department of Environmental Conservation.

In addition to the general conditions attached to the Nationwide Permit, your attention is directed to the following Special Conditions which are also appended at the end of the Nationwide Permit General Conditions:

1. The mitigation plan entitled "Novelis Corporation Compensatory Wetland Mitigation Plan" and dated December 2010 (Revised April 2011) and submitted to the Corps on April 25, 2011, is hereby incorporated into and made part of the permit as Appendix A. The permittee shall implement the mitigation in accordance with the plan and any following conditions.

2. As mitigation to compensate for the unavoidable and temporary impacts to 17.1 acres of Federally jurisdictional wetland, emergent (13.0 acres), scrub/shrub (2.1 acres) and forested (2.0 acres), the permitte shall recreate 13.0 acres of emergent, 2.1 acres of scrub/shrub and 2.0 acres of forested wetlands. The habitats to be created will be emergent, scrub/shrub and forested wetlands. The mitigation must be constructed in accordance with the plan and attached drawings as well as any following condition.

3. As performance criteria for the required forested and scrub/shrub wetland mitigation, as described in Special Condition 2 and referenced in Table 1: Novelis OU-1 Restoration Planting Summary Table in the "Novelis Corporation Compensatory Wetland Mitigation Plan", the permittee is required to maintain a survivability rate of 85 percent of scrub/shrub species planted at the end of the 5 year monitoring period and 85 percent of forested species planted at the end of the 8 year monitoring period. If this criteria is not met during or at the end of 5 or 8 years of monitoring, corrective measures, such as, but not limited to, additional scrub/shrub or tree plantings and/or wetland water manipulation, shall be implemented. If corrective measures are required, additional yearly monitoring, beyond the 5 or 8 year monitoring period, may be required at the discretion of the Corps Project Manager. The permittee shall receive written approval from the Corps Project Manager prior to conducting any corrective measures.

4. The permittee must begin construction of the wetland mitigation area, as described in Special Condition 2, prior to or concurrent with the filling authorized by this permit, and must be completed by November 15th of the year the mitigation construction begins, or by a Corps-approved extension date.

5. The permittee must spread the topsoil to a depth of no less than six (6) inches to bring the mitigation site to final grade. It is recommended that the final grade be "rough" with a pit and mound finish as opposed to a smooth and flat finish.

6. The mitigation area, as described in Special Condition 2, must be vegetated with a minimum of 80 percent (%) areal cover of hydrophytic vegetation (Wetland Indicator Status of FAC, FACW, or OBL), with no more than 50% areal cover of one (1) species by the end of the 5-year monitoring period for the scrub/shrub and emergent wetland areas and by the end of the 8-year monitoring period for the forested wetland.

7. No more than five (5) percent (%) areal cover of the mitigation area including the upland buffer area, as described in Special Condition 2, be vegetated at the end of the 5-year monitoring period (for the emergent/scrub-shrub wetlands area) or the end of the 8-year monitoring period (for the forested wetlands with the following species): Purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), common reed (*Phragmites australis*), buckthorn (*Rhamnus* spp.), Japanese knotweed (*Polygonum cuspidatum*), curly pondweed (*Potamogeton crispus*), Eurasian water milfoil (*Myriophyllum spicatum*), narrow-leaf cattail (*Typha angustifolia*) or hybrid cattail (*Typha* x *glauca*). If this threshold is exceeded during or at the end of the 5 or 8 year monitoring period listed above, corrective measures must be implemented to preclude the growth of the above listed species within the mitigation areas. Corrective measures, such as but not limited to, herbicide application, mechanical/manual removal, etc. shall be implemented. Any corrective measures proposed must be coordinated and approved, in writing, with this office prior to implementation. Additional yearly monitoring of the site, above the 5 year required monitoring for the emergent/scrub-shrub wetlands or 8 year required monitoring for the forested wetlands, may be required at the discretion of the District Engineer.

8. The wetland(s) created, as described in Special Condition No. 2 must meet the vegetative and hydrology requirements specified in the 1987 Corps of Engineers Wetland Delineation Manual, including the Northeast/Northcentral Regional Supplement.

9. The permittee is required to submit annual monitoring and/or compliance reports for the wetland mitigation project, as described in Special Condition No. 2, to this office for the first five

(5) years for the emergent and scrub-shrub wetlands and first (8) years for the forested wetlands following completion of the mitigation construction based upon data collected during each monitored year between June and October. The reports must follow the requirements outlined in Regulatory Guidance Letter No. 08-03 (Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Restoration, Establishment, and/or Enhancement of Aquatic Resources). The first annual report is due by December 31 in the year following completion of mitigation construction, or by an approved extension date (Example – If mitigation construction is completed in 2011, the first year report would be due by Dec. 31, 2012). For purposes of this special condition, "completion" means all activities associated with site grading and seeding and/or planting. All reports must be submitted to Mr. Joseph Rowley by December 31 of the year due, or by a Corps-approved extension date. These reports must include:

a) Comparison of site conditions to an as-built survey.
b) Wetland Delineation, including a map of wetland boundary.
c) Photographs (minimum 5) from fixed locations with a photo location reference map.
d) Plant species list with the following information:
    1. USFWS Wetland Indicator Status and strata.
    2. Dominant plants and percent cover.
e) Plants introduced through seeding or planting.
f) Water depth and date of measurement from representative locations within the mitigation area during the growing season. The sample points will be fixed locations and shall be plotted on a map.
g) Fish and wildlife observations at the mitigation site.
h) Summary statement regarding the perceived success of the wetland creation project. The report will evaluate the goals/performance standards as set forth in the permit or mitigation and monitoring plan as well as current wetland functions. These reports must also address any potential problem areas and include suggestions and timetable for correction if it is anticipated that projected goals may not be met.
i) Date(s) of field inspection(s).

10. The permittee must ensure none of the following activities occur at the mitigation area(s) (as described in Special Condition No. 2): filling, excavating, dredging, mining or drilling, use of ATVs or other recreational motorized vehicles, removal of topsoil, sand, gravel, rock, minerals, or other materials, nor any building of roads or change in topography of the land in any manner (with the exception of the maintenance of small foot trails), construction or placement of buildings, camping accommodations or mobile homes, fences, signs, billboards or other advertising material, or other structures. There shall be no removal, destruction, or cutting of vegetation, spraying with herbicides, grazing of domestic animals, or disturbance or manipulation

of the mitigation area without first obtaining Department of the Army authorization. Control of nuisance vegetation, or any other manipulation within the mitigation areas, shall only occur after Corps of Engineers concurrence that such management practices are necessary to ensure the long-term success of the mitigation program.

11. The permittee has executed a Letter of Credit (LOC) dated June 17, 2011 in the amount of $476,000.00, attached to this permit as Appendix B and made a part of hereof, to provide financial assurance for the performance of all the obligations, covenants, terms, conditions, and agreements required of the Permittee under this permit.

12. If changes need to be made to the environmental easement before executing and recording it with Oswego County, the permittee shall forward a copy to Mr. Joseph Rowley, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199, for review prior to recordation. The permittee shall record the environmental easement with the recording officer of Oswego County 30 days after the mitigation work set forth in Special Condition 2 is completed. The permittee shall forward a copy of the easement to the attention of Mr. Joseph Rowley, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199, within 60 days after recording the easement with the recording officer of Oswego County.

13. Your responsibility to complete the required compensatory mitigation as set forth in Special Condition 2 will not be considered fulfilled until you have demonstrated compensatory project success and have received written verification of that success form the U.S. Army Corps of Engineers.

14. That at the request of an authorized representative of the Buffalo District, U.S. Army Corps of Engineers, you shall allow access to the project site and the mitigation parcel to determine compliance with the conditions of this permit.

15. The Water Quality Certification for this project issued from the State of New York will be a part of this Department of the Army permit pursuant to Section 401(d) of the Clean Water Act. Noncompliance with any limitations or requirements stated in the certification may be a basis for suspension, revocation or modification of this permit.

16. All work on the property must be stopped immediately if any historic or archeological remains are discovered while conducting work authorized by this permit. The permittee must notify Mr. Joseph Rowley, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199, within 24 hours of initial discovery so that any coordination, as required under the National Historic Preservation Act, can be determined.

Regulatory Branch
SUBJECT: Application No. 2010-00244, Nationwide Permit No. 38 as Published in the Federal Register, Volume 72, No. 47, on Monday, March 12, 2007, New York State Department of Environmental Conservation No. 7-3556-00001

17. Should human remains be encountered during any phase of the proposed project, such person or persons encountering the human remains must immediately cease work and must not disturb or remove the remains, must protect the exposed portions of the remains from inclement weather and vandalism, and immediately notify the permittee. The permittee must immediately notify (within 24 hours), Mr. Joseph Rowley, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199, and the New York State Office of Parks, Recreation, and Historic Preservation, Peebles Island State Park, P.O. Box 189, Waterford, New York 12188-0189, (518) 237-8643.

18. All reports required under this permit must be submitted to Mr. Joseph Rowley, U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207-3199, unless otherwise specified.

I have evaluated your submitted wetland delineation map and have determined that the wetland and water boundaries shown on the map (Sheet 1-10 of 27) represent on-site conditions. **Please note that this is a Preliminary Jurisdictional Determination and does not officially confer or decline Department of the Army jurisdiction on any of the on-site waters.** This letter verifies the location of waters on the site only. Further, this delineation/determination has been conducted only to identify the limits of waters that may be subject to Corps Clean Water Act or Rivers and Harbors Act jurisdiction. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resource Conservation Service prior to starting work.

In accordance with Regulatory Guidance Letter 05-02, "Preliminary jurisdictional determinations are not definitive determinations of the presence or absence of areas within regulatory jurisdiction and do not have expirations dates." However, wetlands and waters are dynamic systems whose boundaries change over time. For this reason, I strongly recommend that, if the proposed work is not completed within five years of the date of this letter, the boundaries of waters of the United States be re-evaluated by a qualified wetland biologist. This will ensure that any changes are appropriately identified and you do not inadvertently incur a violation of Federal law while constructing your project or working on your project site.

Pursuant to Regulatory Guidance Letter 08-02, any permit application made in reliance on this preliminary jurisdictional determination will be evaluated as though all wetlands or waters on the site are regulated by the Corps. If you require a definitive response regarding Department

Regulatory Branch
SUBJECT: Application No. 2010-00244, Nationwide Permit No. 38 as Published in the Federal Register, Volume 72, No. 47, on Monday, March 12, 2007, New York State Department of Environmental Conservation No. 7-3556-00001

of the Army jurisdiction for any or all of the waters identified on the submitted drawings, you may request an approved jurisdictional determination from this office.

I have enclosed the Preliminary Jurisdictional Determination Form with this letter. The form identifies the extent of waters on the site and specific terms and conditions of the Preliminary Jurisdictional Determination. Please sign and return a copy of this form to my attention so that I may complete our processing of your application.

Questions pertaining to this matter should be directed to me at (716) 879-4279, by writing to the following address: U.S. Army Corps of Engineers, 1776 Niagara Street, Buffalo, New York 14207, or by e-mail at: joseph.m.rowley@usace.army.mil

Sincerely,

Joseph Rowley
Physical Scientist

Enclosures

COMPLIANCE CERTIFICATION

General Condition 26 of the Nationwide Permit you were affirmed requires that:

"Every permittee who has received a Nationwide permit verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include: a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions; b) A statement that any required mitigation was completed in accordance with the permit conditions; c) The signature of the permittee certifying the completion of the work and mitigation."

APPLICANT:
Novelis Corporation
448 County Route 1A
P.O. Box 66
Oswego, New York 13216

POINT of CONTACT:
Mr. David Neuner
Novelis Corporation
448 County Route 1A
P.O. Box 66
Oswego, New York 13216

File Number: 2010-00244
File Closed: June 28, 2011
NWP No.: 38

Upon completion of the activity authorized by this permit sign this certification and return it to the address listed below within **30-days** of project completion.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

_____ _____

David Neuner Date

Permittee Telephone Number: _____

Project Location: located at 448 County Route 1A, Town of City of Oswego, Oswego County, New York

Project Description: implement remedial activities and habitat restoration for Operable Unit (OU) 1 at the Novelis Oswego Works Facility

Authorized Impacts (Waters of U.S. Impacted by Project): 17.1 acres of Forest, Scrub/Shrub and Emergent Wetland

Waterway and/or Project Setting: along the shoreline of Lake Ontario

Return Completed form to:
Mr. David Leput
Regulatory Branch
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, New York 14207

ATTACHMENT
PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): June 28, 2011

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Novelis Corporation
448 County Route 1A
PO Box 66
Oswego, New York 13216

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:LRB 2010-00244 (Novelis Corporation-Operable Unit 1)

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

The Novelis Corporation is implementing remedial activities for Operable Unit (OU) 1 (consisting of North Pond #1 and #2 and Marshes #1, #2 and #3) at the Novelis Oswego Works Facility located in the city of Oswego, Oswego County, New York. The remedial activities will involve sediment and soil removal and habitat restoration within Federal and New York State regulated wetland areas.

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: New York County/parish/borough: Oswego City: Oswego
Center coordinates of site (lat/long in degree decimal format):
Lat. 43.49165 N Long. -76.45608 W

Universal Transverse Mercator:

Name of nearest waterbody: Lake Ontario

Identify (estimate) amount of waters in the review area:
Non-wetland waters:

linear feet: width (ft) and/or acres.

Cowardin Class:
Stream Flow:
Wetlands: 17.1 acres.
Cowardin Class: Plaustrine forested, scrub/shrub, emergent

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal: Lake Ontario

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: June 28, 2011
☒ Field Determination. Date(s): April 8, 2010

FILE NAME, AND NUMBER: 2010-00244 (Novelis Corporation-Operable Unit 1)

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.
This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

FILE NAME, AND NUMBER: 2010-00244 (Novelis Corporation-Operable Unit 1)

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Wetland 1(North Pond 2)	43.497	-76.463	PEM	1.2 Acres	Section 404
Wetland 2 (Marsh No. 1)	43.496	-76.460	PEM	5 Acres	Section 404
Wetland 3 (Marsh No. 2)	43.498	-76.462	PEM	5.5 Acres	Section 404
Wetland 4 (North Pond 1)	43.495	-76.458	PEM	0.24 Acres	Section 404
Wetland 5 (Marsh No. 3)	43.498	-76.458	PEM	5.22 Acres	Section 404

FILE NAME, AND NUMBER: 2010-00244 (Novelis Corporation-Operable Unit 1)

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:Wetland delineation report submitted by Arcadis on February 16, 2010.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☒ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☐ U.S. Geological Survey Hydrologic Atlas: .

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:1:24,000 Oswego East; Project area was located on the quad map.

☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Oswego County Soil Survey and USDA Web Soil Survey were reviewed; Project location was identified.

☒ National wetlands inventory map(s). Cite name:USFWS Wetland Mapper (http://137.227.242.85/wetland/); The delineated wetlands are Federal Mapped Wetlands and are designated as PUBH, PUBHh, PSS1E and PFO1E.

☒ State/Local wetland inventory map(s):NYSDEC Resource Mapper (http://www.dec.ny.gov/imsmaps/ERM/viewer.htm); the delineated wetlands are designated as NYS Regulated Wetland OE-58.

☐ FEMA/FIRM maps: .

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (Name & Date):Photos submitted by the applicant and a review of Bing and Google maps.

or ☒ Other (Name & Date): .

☐ Previous determination(s). File no. and date of response letter: .

☐ Other information (please specify): .

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

7-6-2011

Signature and date of
Regulatory Project Manager
(REQUIRED)

Signature and date of
person requesting preliminary JD
(REQUIRED)

ARCADIS

Attachment 6

2008 Site Monitoring Plan

72208

ARCADIS
Infrastructure, environment, facilities

Imagine the result

Novelis Corporation

Alcan Sheet & Plate Site Monitoring Plan

Oswego Works Facility
Scriba, New York

June 2008

Figures

Appendices

1. Introduction

This Monitoring Plan describes surface water, sediment, and biological monitoring activities to be completed in support of remedial activities for the North Ponds (OU-1) and Tributary 63 (OU-3) at the Novelis Corporation (Novelis) Oswego Works Facility (the site) located in Scriba, New York. This Monitoring Plan also described groundwater monitoring to be conducted to evaluate groundwater quality in the vicinity of the Main Landfill (OU-2) at the site. This Monitoring Plan has been prepared by ARCADIS on behalf of Novelis (formerly Alcan Sheet & Plate).

The Monitoring Plan is a component of the Remedial Design (RD)/Remedial Construction Management (RCM) activities to be completed to address the presence of polychlorinated biphenyls (PCBs) in soil and sediment at the site. The Monitoring Plan has been prepared in accordance with the requirements of the Record of Decision (ROD) for the site that was released by the New York State Department of Environmental Conservation (NYSDEC) on March 31, 2006 (NYSDEC, 2006), and a subsequent request for additional monitoring presented in a NYSDEC letter dated March 7, 2008. As indicated in the ROD, the NYSDEC has requested that existing site characterization data gaps be addressed.

1.1 Monitoring Program Development

The ROD requires Novelis to develop a Monitoring Plan to monitor sediments, surface water, biota, and groundwater. According to the ROD, the biota monitoring program will be used to assess the effectiveness of the remedy in eliminating or reducing, to the extent practical, potential risks to fish and wildlife. The ROD states that the monitoring program will include collection and evaluation of tissue samples from aquatic biota (fish) from OU-1, OU-3, and Teal Marsh. The ROD also states that the monitoring program will include the collection of tissue samples from terrestrial biota (small mammals) from OU-1. Although the ROD does not include any remedial activities within Teal Marsh, Teal Marsh is included in the biological monitoring program for OU-3 in accordance with the ROD. According to the ROD, monitoring will begin one year after completion of remedial activities and continue every other year until a five year review of the monitoring data can be conducted.

For groundwater monitoring, the ROD requires that Novelis develop a groundwater monitoring program to ascertain the origin of bis(2-ethyhexyl)phthalate in groundwater and to identify groundwater flow direction. The ROD specifies the installation of six new overburden wells (four to the west of OU-1 and two to the east of OU-2). Groundwater

investigation efforts to evaluate bis(2-ethylhexyl)phthalate were implemented during January 2008 as part of a Pre-Design Investigation effort. The ROD also requires Novelis to develop a groundwater monitoring program for low concentrations of volatile organic compounds (VOCs) detected in groundwater in the immediate vicinity of OU-2.

For surface water sampling, the ROD requires Novelis to implement a monitoring program using large volume surface water samples to determine compliance with the surface water standard for protection of wildlife, and to assess whether the OU-1 fish weirs could be removed. Additional surface water sampling for OU-1 and OU-3 was requested in the NYSDEC's March 7, 2008 letter to Novelis.

For sediment sampling, the ROD does not specify the scope or the objectives of the investigation. Sediment sampling for OU-1 and OU-3 was requested in the NYSDEC's March 7, 2008 letter to Novelis.

1.2 Monitoring Program Objectives

The main objective of the monitoring program described in this Work Plan is to monitor the effectiveness of the proposed remedy. As a secondary objective, the data may also be useful in identifying potential short-term impacts resulting from implementation of remedial construction activities.

1.3 Facility Description

The Novelis Oswego Works Facility is located approximately four miles east of the City of Oswego on Lake Road North (County Route 1A) in the Town of Scriba, Oswego County, New York (Figure 1). The facility is situated on an approximately 506-acre parcel owned by Novelis. A site plan that shows the layout of the Novelis property, including manufacturing buildings, support facilities, and the three operable units (OUs) that comprise the site is presented on Figure 2. The Novelis property is bordered by Lake Road North and North Road to the south/southeast, undeveloped and partially developed lands to the west, and Lake Ontario to the north/northwest. A Sithe Energies, Inc. (Sithe) cogeneration plant, known as the Independence Station, borders Novelis' property to the northeast.

1.3.1 OU-1 (North Ponds)

OU-1 consists of a system of ponds and marshes located on the northwest portion of the property, immediately south of the Lake Ontario shoreline (Figure 3). The system

consists of two ponds and three marshes that occupy a total area of approximately 21 acres. Portions of the onsite ponds and marshes within OU-1 are currently classified as federal and New York State-regulated wetlands. PCBs have been detected in soil, sediment, and biological tissue samples collected from OU-1. Soil/sediment removal and backfilling activities will be conducted as part of the remediation of OU-1 which is expected to begin in 2009.

1.3.2 OU-3 (Tributary 63)

OU-3 consists of the onsite portion of Tributary 63 that flows across the southern and western portions of the Novelis property, the South Pond, and the South Marsh. Tributary 63 is a small, unnamed, low-gradient, intermittent warm-water stream that enters the Novelis property from the south and flows across the southern and western portions of the property prior to flowing into Teal Marsh (shown on Figure 4). PCBs have been detected in sediment and biological tissue samples collected from Tributary 63. Sediment removal activities will be conducted as part of the remediation of OU-3 which is expected to begin in 2008.

1.3.3 Teal Marsh

Teal Marsh is a wetland area located northwest of the facility and immediately downstream of Tributary 63 (Figure 5). The ROD does not include any remedial activities within Teal Marsh.

2. OU-1 Monitoring

Monitoring for OU-1 will include:

- Baseline and post-remedial sampling of fish and small mammals.
- Collection of sediment and surface water samples as part of each post-remedial monitoring event.

OU-1 monitoring activities are described below.

2.1 Fish Sampling

2.1.1 Sample Locations

Fish tissue samples will be collected from three water bodies within OU-1 (Figure 3). These areas are described as follows:

- North Pond #1 (OU1-FI-A);
- the eastern portion of Marsh #1 (OU1-FI-B), and
- North Pond #2 (OU1-FI-C).

These locations were selected because they represent spatial coverage across the site, and these areas have potential aquatic habitat to support fish.

2.1.2 Number of Samples and Species Selection

Five whole body composite samples and five edible size fillet samples will be collected from each location per sampling event for a total of 30 fish tissue samples from OU-1.

The target species for the fish tissue monitoring will be selected in the field based on historical data and current availability. Potential target species that have been sampled during previous collection efforts are redfin pickerel, sunfish (e.g., bluegill or pumpkinseed), and central mudminnow. Ideally, the ten samples from each location will include five composite samples (5 to 10 individuals per sample) of a lower trophic level forage fish (e.g., bluegill) and five individual edible-size fish samples from an upper trophic level species (e.g., redfin pickerel). If enough fish are not available to

meet mass requirements for five samples each from two different species, alternate available fish or invertebrate species (such as crayfish) will be considered. Substitution of such "targets of opportunity" will be done in consultation with NYSDEC personnel. If possible, species from a similar trophic level as the target organism will be substituted (e.g., largemouth bass for redfin pickerel, since they are both considered upper trophic level piscivores). Any composite samples that are retained will be comprised of the same species of similar size,

2.1.3 Collection Methods and Sample Handling

Fish tissue samples will be collected using backpack or boat-mounted electrofishing equipment. Sampling will generally follow the procedures in the Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analyses (NYSDEC, 2003). ARCADIS' Biota Sampling SOP (see Appendix A) describes the methods that will be used for the collection of fish samples using electrofishing. Fish samples will be processed (weighed, measured, and photographed), wrapped, and marked with a unique sample ID according to the procedures described in Appendix A. Samples will then be placed on ice in a cooler for shipment to the laboratory under standard chain of custody (COC) procedures.

2.2 Small Mammal Sampling

2.2.1 Sample Locations

Small mammal samples will be collected from five areas of upland habitat within OU-1 (Figure 3).

- south of the eastern portion of Marsh #1 (OU1-SM-A);
- southwest of the southern portion of Marsh # 3 (OU1-SM-B);
- south of Marsh #2 (OU1-SM-C);
- northwest of Marsh #1 (OU1-SM-D); and
- south of North Pond #2 (OU1-SM-E).

These areas were tentatively selected because they provide spatial coverage of OU-1, have habitat that will likely support small mammals, and soils in these areas have

historically contained elevated levels of PCBs. Final small mammal sample locations will be determined in the field based on habitat availability and in consultation with NYSDEC personnel.

2.2.2 Number of Samples and Species Selection

Five individual (or composite, depending on organism size and species availability) small mammal samples will be collected from each of five locations within OU-1, for a total of up to 25 samples per event. Reasonable efforts will be made to collect the target sample size of shrews. In the event that the target sample size cannot be reached, sample locations may be expanded and/or alternate targets of opportunity (e.g. mice, voles or frogs) may be considered in consultation with NYSDEC personnel. Any composite samples that are retained will be comprised of the same species of similar size,

2.2.3 Collection Methods and Sample Handling

Small mammal samples will be collected using baited snap traps and/or Sherman live traps. Traps will be placed in a grid pattern generally centered around the locations shown on Figure 3 (or adjusted locations). The coordinates for the corners of each grid will be recorded in the field using a hand held GPS, and will be marked with stakes and survey flags for subsequent monitoring events. ARCADIS' SOP for biota collection is included in Appendix A. Samples retained for PCB analysis will be processed (weighed, measured, and photographed), wrapped, and marked with a unique sample ID according to the procedures described in Appendix A. Samples will then be placed on ice in a cooler for shipment to the laboratory under standard chain of custody (COC) procedures.

2.3 Sediment Sampling

Immediately following each post-remedial biota monitoring event for OU-1, two surface sediment samples (0 to 6 inches) will be collected from each of the three water bodies where fish samples are collected (including North Pond #1, the eastern portion of Marsh #1, and North Pond #2). Sampling locations will be selected to provide spatial coverage for the fish collection areas (based on the judgment of sampling personnel) and each sample location will be surveyed at the time of sample collection using GPS survey methods.

Sediment samples will be collected using hand-driven 3-inch diameter lexan tubing in accordance with the sediment sampling methods described in the Field Sampling Plan prepared in support of the Focused Remedial Investigation Work Plan by ENSR Corporation (ENSR, 2002). Following collection, the sediment samples will be placed on ice in a cooler for shipment to the laboratory under standard COC procedures.

2.4 Surface Water Sampling

Immediately prior to each post-remedial biota monitoring event for OU-1, one large volume surface water sample will be collected from each of the three surface water bodies where fish samples are collected (including North Pond #1, the eastern portion of Marsh #1, and North Pond #2). The surface water sampling locations will be selected by field personnel to represent areas where the deepest water column is generally present in each water body. The surface water sampling locations will be surveyed at the time of sample collection using GPS survey methods

Surface water samples will be collected prior to the biota and sediment sampling (as described above) to minimize the potential for introducing suspended sediment disturbed by fish and sediment sampling activities. Surface water samples will be collected in accordance with the surface water sampling protocols presented in the Field Sampling Plan (ENSR, 2002). Following collection, the surface water samples will be placed on ice in a cooler for shipment to the laboratory under standard COC procedures.

2.5 Sampling Frequency

The baseline fish and small mammal tissue sampling for OU-1 will be conducted in spring 2009 prior to the start of remedial activities. Three post-remedial monitoring events will then be conducted, specifically in years 1, 3, and 5 following remediation (during 2010, 2012, and 2014 as shown on Figure 6). Efforts will be made to perform subsequent sampling events in the same season as the baseline sampling to reduce potential seasonal effects on data comparability.

Following the completion of the third post-remedial monitoring event, the data will be evaluated relative to the objectives of the biota monitoring program (outlined in Section 1) and reviewed with NYSDEC. At that time, if biota PCB levels are consistent with regional background concentrations and/or have reduced to levels that pose no significant ecological risk, the monitoring program may be reduced in scope/frequency or terminated.

3. OU-3 Monitoring

Monitoring for OU-3 will include:

- Baseline and post-remedial sampling of fish in the South Marsh, Tributary 63 and Teal Marsh.
- Collection of sediment and surface water samples as part of each post-remedial monitoring event.

OU-3 monitoring activities are described below.

3.1 Fish Sampling

3.1.1 Sample Locations

Fish samples will be collected from four areas within OU-3 (Figure 4). These locations are described below and generally coincide with the areas previously sampled in 2002, and include areas subject to the remedial activities.

- OU3-FI-A: Tributary 63 - sampling will begin 100 feet upstream of the South Marsh outlet in Tributary 63 and work upstream until 200 feet downstream of the County Route 1 bridge and/or until the target number of samples have been collected;
- OU3-FI-B: South Marsh - sampling will occur within the open water of the South Marsh before the outlet to Tributary 63;
- OU3-FI-C: Tributary 63 - sampling will begin 100 feet upstream of the truck entrance road bridge and work upstream to the South Marsh outlet; and
- OU3-FI-D: Tributary 63 - sampling will begin 100 feet upstream of the Cottage Access Road outlets into Teal Marsh and work upstream to the railroad bridge.

Fish tissue samples will also be collected from two areas of Teal Marsh (Figure 5). These areas were previously sampled in 2003, and are described below.

- TM-FI-A. Sampling will begin in boat-accessible water that is closest to the Cottage Road inlets and work down-current towards the marsh channel into sample area TM-FI-B until the target number of samples has been collected.

- TM-FI-B. Sampling will begin in boat-accessible water that is closest to Lake Ontario outlet and work up-current to the channel between the TM-FI-A and TM-FI-B sampling areas until the target number of samples has been collected.

If sufficient sample numbers cannot be obtained in the general locations described above, sample areas may be extended in consultation with NYSDEC personnel.

3.1.2 Number of Samples and Species Selection

Five whole body composite samples and five edible size fillet samples will be collected from each location per sampling event for a total of 40 fish tissue samples from OU-3 and 20 fish tissue samples from Teal Marsh.

The target species for the fish tissue monitoring will be selected in the field based on historical data and current availability. Potential target species that have been sampled during previous collection efforts and may be present are redfin pickerel, sunfish (e.g., bluegill or pumpkinseed), and central mudminnow. Ideally, the ten samples from each location will include five composite samples (5 to 10 individuals per sample) of a lower trophic level forage fish (e.g., bluegill) and five individual edible-size fish samples from an upper trophic level species (e.g., redfin pickerel). If enough fish are not available to meet laboratory mass requirements for five samples each from two different species, samples of alternate available fish or invertebrate species (e.g., crayfish) will be considered. Substitution of such "targets of opportunity" will be done in consultation with NYSDEC personnel. If possible, species from a similar trophic level as the target organism will be substituted (e.g., largemouth bass for redfin pickerel as they are both top trophic level piscivores). Any composite samples that are retained will be comprised of the same species of similar size.

3.1.3 Collection Methods and Sample Handling

Fish tissue samples will be collected using backpack or boat-mounted electrofishing equipment following the procedures in the Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analyses (NYSDEC, 2003). ARCADIS' Biota Sampling SOP (see Appendix A) describes the methods that will be used for the

3.3 Surface Water Sampling

Immediately prior to each post-remedial biota monitoring event for OU-3, one large volume surface water sample will be collected from each of the following sampling areas where remedial activities will be conducted:

- OU3-SW-A: The portion of Tributary 63 starting approximately 100 feet upstream of the South Marsh outlet and extending upstream to a location approximately 200 feet downstream of the County Route 1 bridge;
- OU3-SW-B: Open water of the South Marsh before the outlet to Tributary 63;
- OU3-SW-C: The portion of Tributary 63 starting approximately 100 feet upstream of the truck entrance road bridge and extending upstream to the South Marsh outlet; and
- OU3-SW-D: The portion of Tributary 63 starting approximately 100 feet upstream of the Cottage Access Road and extending upstream to the railroad bridge.

The surface water sampling locations will be selected by field personnel to represent areas where the deepest water column is generally present within each sampling area. The surface water sampling locations will be surveyed at the time of sample collection using GPS survey methods

Surface water samples will be collected prior to the biota and sediment sampling (as described above) to minimize the potential for introducing suspended sediment disturbed by fish and sediment sampling activities. Surface water samples will be collected in accordance with the surface water sampling protocols presented in the Field Sampling Plan (ENSR, 2002). Following collection, the surface water samples will be placed on ice in a cooler for shipment to the laboratory under standard COC procedures.

3.4 Sampling Frequency

The baseline fish tissue sampling will be conducted in spring 2008 for OU-3 and Teal Marsh. Three post-remedial monitoring events will then be conducted, specifically in years 1, 3, and 5 following remediation (during 2010, 2012, and 2014 as shown on Figure 6). Since the restoration activities will likely be completed in 2009, the post-

remediation sampling in OU-3 and Teal Marsh is anticipated to commence in 2010. An effort will be made to perform subsequent sampling events in the same season that the baseline sampling was conducted in to reduce potential seasonal effects on data comparability. Following the completion of the third post-remedial monitoring event, the data will be evaluated relative to the objectives of the biota monitoring program (outlined in Section 1) and reviewed with NYSDEC. At that time, if biota PCB levels are consistent with regional background concentrations, and/or have reduced to levels that pose no significant ecological risk, the monitoring program may be reduced in scope/frequency or terminated.

4. OU-2 Monitoring

Monitoring for OU-2 will include the collection of groundwater samples from select groundwater monitoring wells located in the immediate vicinity of the Main Landfill to monitor low concentrations of VOCs that were detected in groundwater samples collected during the Focused Remedial Investigation. Groundwater sampling activities are described below.

4.1 Groundwater Sampling

4.1.1 Sample Locations

The results for groundwater samples collected during 2002 as part of the Focused Remedial Investigation indicated that VOCs were detected at concentrations that slightly exceeded New York Groundwater Quality Standards at monitoring wells located in the vicinity of OU-2 (including 1,1-dichloroethane at MW-10 and chloromethane at MW-07). Based on the results of the Focused Remedial Investigation, groundwater monitoring samples will be collected for VOC analysis as part of each anticipated post-remedial monitoring event from 6 groundwater monitoring wells located in the vicinity of OU-2, including monitoring wells MW-07, MW-08, MW-9, MW-10, MW-11, and MW-12 (shown on Figure 3). In addition, groundwater level measurements will be obtained from the remaining groundwater monitoring wells that are not sampled to evaluate groundwater flow conditions at the time of each monitoring event.

4.1.2 Collection Methods and Sample Handling

Prior to collecting groundwater samples, a round of water level measures will be obtained form all existing onsite monitoring wells. Groundwater samples will be collected in accordance with the sampling protocols presented in the Field Sampling Plan (ENSR, 2002). Monitoring wells selected for VOC sampling will initially be purged of a minimum of three well volumes using a polyethylene bailer. Following purging, groundwater samples will be collected for VOC analysis using a bailer. Groundwater quality measures will be obtained from each well at the time of sampling, including temperature, conductivity, dissolved oxygen, and pH. Following collection, the groundwater samples will be placed on ice in a cooler for shipment to the laboratory under standard COC procedures.

4.1.3 Sampling Frequency

Three post-remedial groundwater monitoring events will then be conducted on a bi-annual basis, specifically in years 1, 3, and 5 following completion of remedial activities (during 2010, 2012, and 2014 as shown on Figure 6). Following completion of the third groundwater monitoring event, the data will be evaluated relative to the objectives of the monitoring program (outlined in Section 1) and reviewed with NYSDEC. At that time, if groundwater VOC levels are consistent with previous sampling results or have decreased to levels that are below New York groundwater quality standards or guidance values, the groundwater monitoring program may be reduced in scope/frequency or terminated.

5. Laboratory Procedures and Reporting

5.1 Laboratory Analyses and Data Validation Procedures

All biota tissue, sediment, surface water and groundwater samples will be submitted to Northeast Analytical (NEA) in Schenectady, New York for analysis in accordance with the Quality Assurance Project Plan (QAPP) prepared in support of the Focused Remedial Investigation Work Plan by ENSR (ENSR, 2002).

Biota tissue, sediment, and groundwater samples will be analyzed for PCBs using SW-846 Method 8082, as referenced in the NYSDEC Analytical service Protocol (ASP) and modified to include the SUNY-ERC alumina clean up method. Extraction of the PCB samples will follow the Soxhlet extraction procedures contained in USEPA method 3540C Soxhlet Extraction using acetone/hexane (1:1). Groundwater samples will be analyzed for VOCs using USEPA Method 8260 as referenced in the NYSDEC ASP. Biota tissue samples (whole-body composites for fish and individual whole-body for small mammals) will also be analyzed for percent lipids in addition to PCBs using using gravimetric methods and sediment samples will be analyzed for total organic carbon using USEPA Method 9060...

Laboratory Quality Assurance/Quality Control (QA/QC) procedures will include the analyses of matrix spike (MS)/matrix spike duplicate (MSD) samples at a rate of 1 set per 20 samples. Field duplicate samples will be collected for sediment, surface water, and groundwater samples. Field duplicate samples are not appropriate for fish and small mammal tissue samples and will not be submitted. Rinse blanks will also be collected if the samples come into contact with non-dedicated utensils (e.g., scoops, mixing bowls).

Analytical results will be validated by ARCADIS' data validation staff and will follow USEPA (1999) and the results of the data validation process will be documented in a Data Usability Summary Report (DUSR) for each sample delivery group

5.2 Data Reporting

Results of the monitoring will be submitted to NYSDEC in a brief field sampling memorandum at the completion of each sampling event. Each memorandum will include a description of the sampling activities, data tables, figures showing sample locations, and a copy of the data validation report(s). Data will be presented in tables which will show pertinent information such as sample type, collection date, sample

location, ID, species, sediment depth, number collected, length ranges, PCB concentrations and percent lipids.

6. References

Blasland, Bouck & Lee, Inc. (BBL). 2006. *Pre-Design Investigation Work Plan.* Prepared for Novelis Corporation (former Alcan Aluminum Corporation), Oswego Works Facility. Oswego, New York.

BBL. 2004. *Focused Remedial Investigation Report.* Prepared for Novelis Corporation (former Alcan Aluminum Corporation), Oswego Works Facility. Oswego, New York.

BBL. 2006. *Focused Feasibility Study Report.* Prepared for the Novelis Corporation, Oswego Works Facility. Oswego, New York.

Dames & Moore. 1997. North Ponds Investigation Report.

ENSR Corporation. 2002. *Focused Remedial Investigation/Focused Feasibility Study Field Sampling Plan and Quality Assurance Project Plan.*

New York State Department of Environmental Conservation (NYSDEC). 2003. Draft Procedures for Collection and Preparation of Aquatic Biota for Contaminant Analyses.

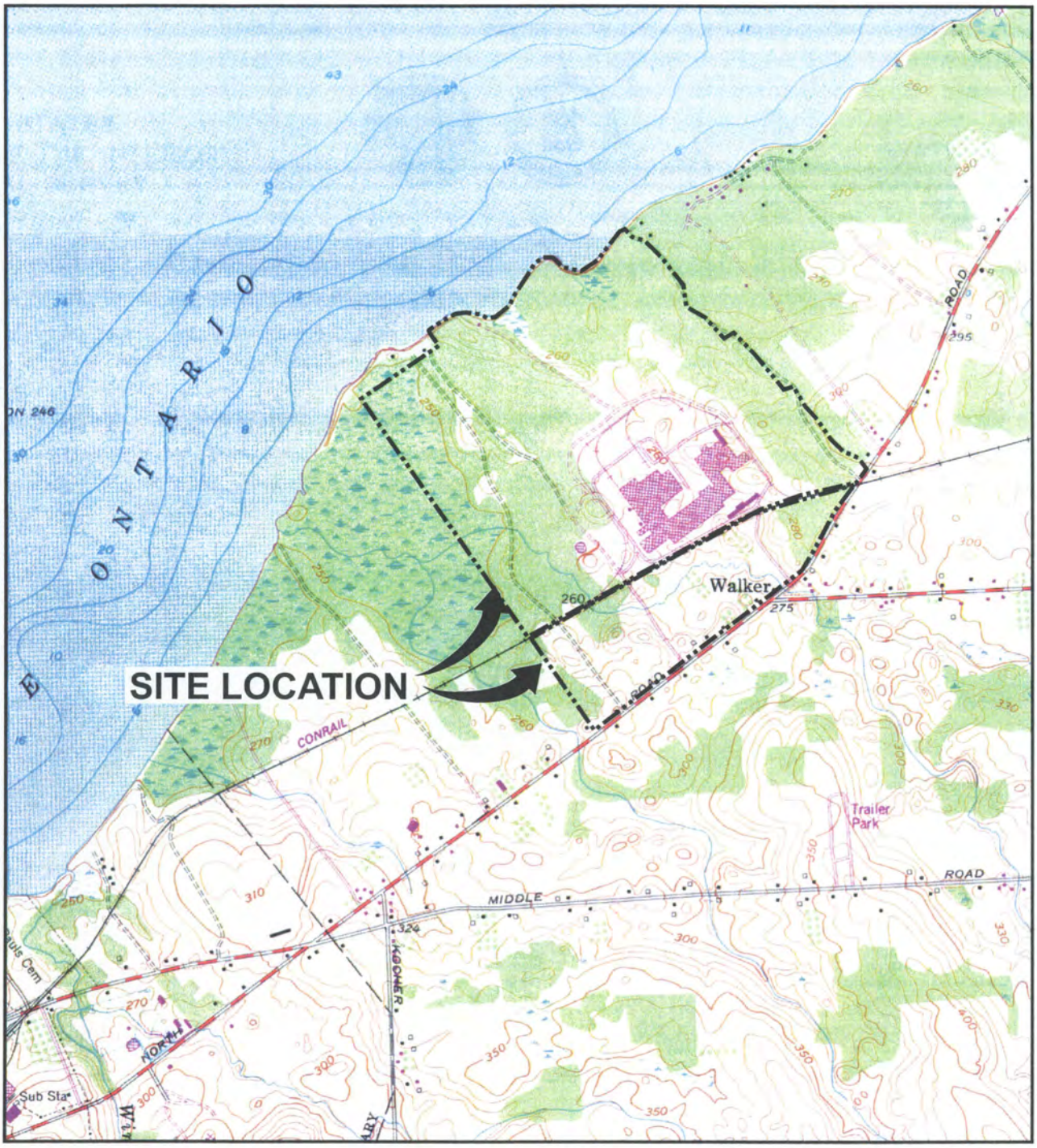
NYSDEC. 2006. Record of Decision, Alcan Sheet and Plate Company Site (March, 2006).

NYSDEC. 2008. Comment letter from T. Smith (NYSDEC) to D. Neuner (Novelis Corp.). March 7, 2008.

USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review.

ARCADIS

Figures



REFERENCE: Base Map USGS 7.5 Min. Quad., Oswego East, & West of Texas, New York, 1954, Photorevised 1978.

2000' 0 2000'

Approximate Scale: 1" = 2000'

NOVELIS COPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK
ALCAN SHEET AND PLATE SITE MONITORING PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1

04/10/08 SYR-D85-DJH-KLS
B0072208/0000/000001/CDR/72208N02.cdr

LEGEND:

APPROXIMATE PROPERTY LINE

NOTES:

1. BASEMAP GENERATED FROM A MAY 3, 2003 AERIAL SURVEY COMPLETED BY SANBORN, INC. AT A SCALE OF 1"=50'.
2. THE HORIZONTAL DATUM IS BASED ON NORTH AMERICAN DATUM OF 1983, NY CENTRAL ZONE.
3. THE VERTICAL DATUM IS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. PROPERTY LINE WAS APPROXIMATED FROM A SCANNED DRAWING PROVIDED BY ALCAN ALUMINUM CORPORATION, OSWEGO, NEW YORK DATED 10/18/79, DRAWING NO. 46071.

0 400' 800'
GRAPHIC SCALE

NOVELIS CORPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK
ALCAN SHEET & PLATE SITE MONITORING PLAN

SITE LAYOUT PLAN

ARCADIS

FIGURE
2

CITY: SYR DIV/GROUP: 141 DB: LD: AM: PD: TM: TR: LYRONM*OFF*REF*
G:\CAD\ACTIB\072208\V0000000\1\DWG\72208G01.DWG LAYOUT: 2 SAVED: 4/17/2008 2:46 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 4/17/2008 2:47 PM BY: LISTER, PAUL
XREFS: 72208X01 72208X00
IMAGES: PROJECTNAME: ---

LAKE ONTARIO

TO WATER INTAKE

MARSH #2

MARSH #3

MARSH #1

NORTH POND #2

NORTH POND #1

SITHE COOLING POND

SITHE PROPERTY

COLD MILL LANDFILL

MAIN LANDFILL

OU1-FI-C

OU1-FI-B

OU1-FI-A

OU1-SM-A

OU1-SM-B

OU1-SM-C

OU1-SM-D

OU1-SM-E

MW-01

MW-02

MW-04

MW-05

MW-06

MW-07

MW-08

MW-09

MW-10

MW-11

MW-12

MWB-11

MWB-12

MWB-13

LEGEND:

- FENCE
- PAVED ROAD
- UNIMPROVED ROAD
- PROPERTY LINE
- APPROXIMATE BOUNDARY OF LANDFILL
- PIPE
- APPROXIMATE LIMITS OF OU-1 PONDS AND MARSHES
- PROPOSED SMALL MAMMAL SAMPLING AREA
- PROPOSED FISH SAMPLING AREA
- MW-01 MONITORING WELL LOCATION

NOTES:

1. BASEMAP GENERATED FROM A MAY 3, 2003 AERIAL SURVEY COMPLETED BY SANDBORN, INC. AT A SCALE OF 1"=50'.
2. SAMPLE LOCATIONS ARE APPROXIMATE.

0 100' 200'
GRAPHIC SCALE

NOVELIS CORPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK

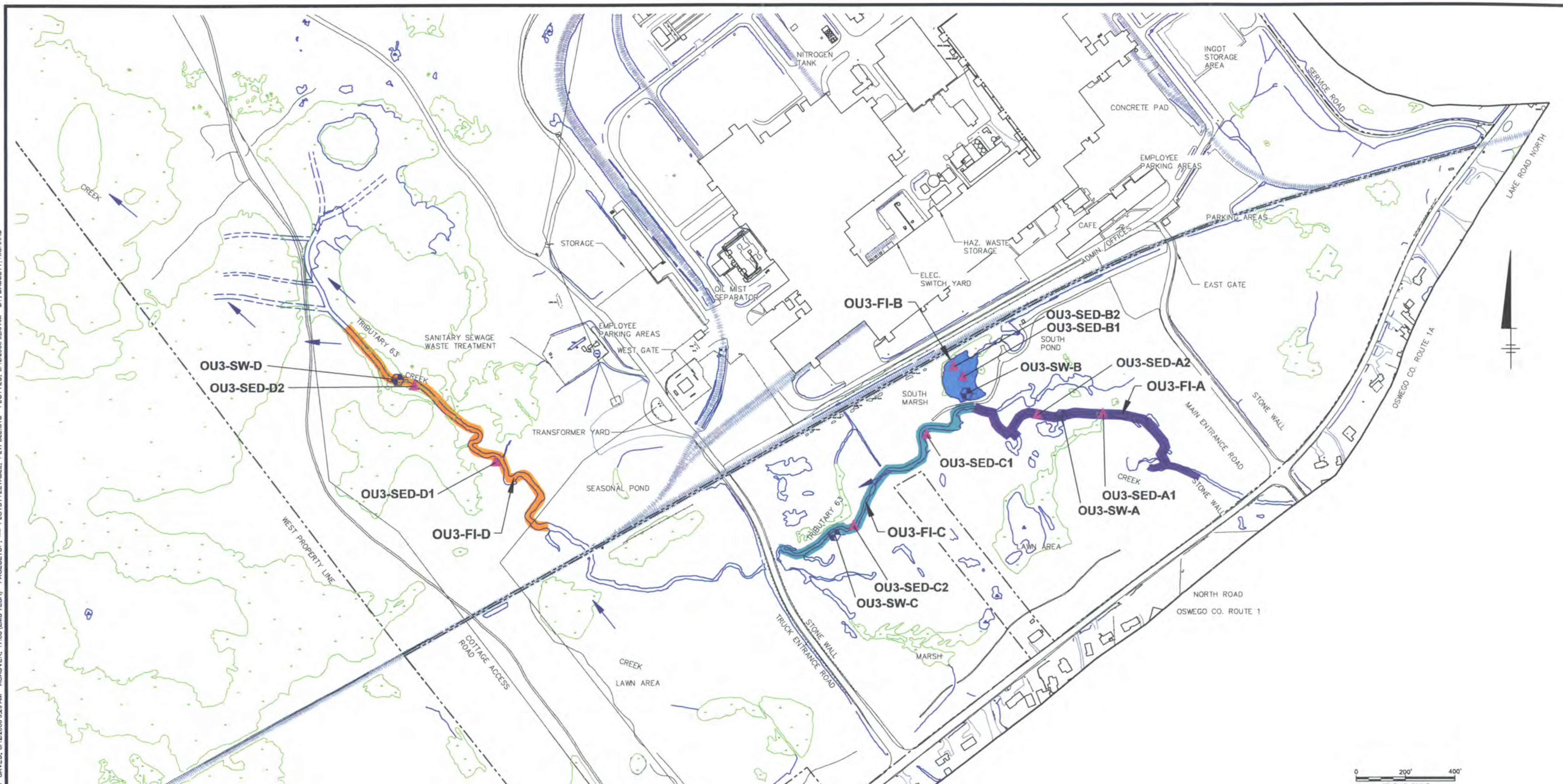
ALCAN SHEET & PLATE SITE MONITORING PLAN

OU-1 & OU-2 MONITORING LOCATIONS

ARCADIS

FIGURE 3

CITY:SYR DIV/GROUP:141 DB:KFB RCB LD: AM: PD: TM: TR: LYR:ON*OFF*REF*
G:\CADACTB\2007220810000\00001\DWG\722080302.DWG LAYOUT: 3 SAVED: 4/18/2008 10:04 AM ACADVER: 17.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/10/2008 5:21 PM BY: BASSETT, RICHARD
XREFS: 722083X04 722083X00 IMAGES: PROJECTNAME: ---



LEGEND:

- RAILROAD
- CHAIN LINK FENCE
- LIMITS OF WETLAND AREA AS MAPPED PER AERIAL SURVEY
- SEGMENT OU3-FI-A PROPOSED FISH SAMPLING AREA
- SEGMENT OU3-FI-B PROPOSED FISH SAMPLING AREA
- SEGMENT OU3-FI-C PROPOSED FISH SAMPLING AREA
- SEGMENT OU3-FI-D PROPOSED FISH SAMPLING AREA
- PROPOSED SEDIMENT SAMPLING LOCATION
- PROPOSED SURFACE WATER SAMPLING LOCATION

NOTES:

1. BASEMAP GENERATED FROM A MAY 3, 2003 AERIAL SURVEY COMPLETED BY SANBORN, INC. AT A SCALE OF 1"=50'.
2. SAMPLING AREAS AND LOCATIONS ARE APPROXIMATE.

NOVELIS CORPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK
ALCAN SHEET & PLATE SITE MONITORING PLAN

PROPOSED OU3 SAMPLING LOCATIONS

ARCADIS

FIGURE
4

LEGEND:

PROPOSED SAMPLING AREA

NOTES:

1. 2006, AERIAL PHOTOS FROM NEW YORK STATE GIS CLEARINGHOUSE, HTTP://WWW.NYSGIS.STATE.NY.US/.
2. SAMPLING AREAS ARE APPROXIMATE.

0 200' 400'
GRAPHIC SCALE

NOVELIS CORPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK
ALCAN SHEET & PLATE SITE MONITORING PLAN

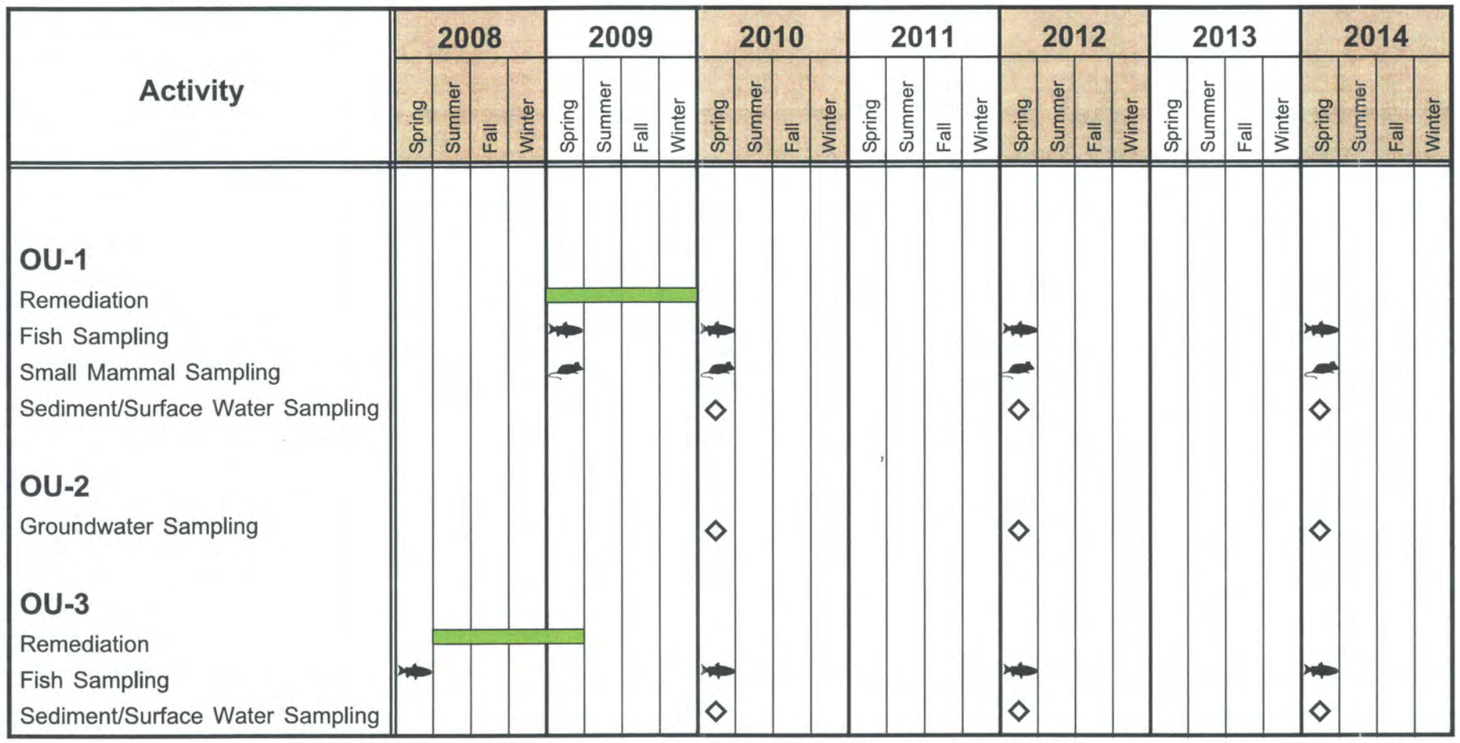
TEAL MARSH BIOTA SAMPLING LOCATIONS

ARCADIS

FIGURE 5

CITY:SYR DIV/GROUP:141 DB:KFB LD: AM: PD: TM: TR: LYRON#OFF#REF*
G:\CAD\ACTIB\072208\000000011\DWG\72208G03.DWG LAYOUT: 5 SAVED: 4/17/2008 2:51 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---
XREFS: IMAGES: PROJECTNAME: ---
72208X00 Teal_Marsh_Aerial

04/17/08 SYR-141ENV-DJH-KLS
B0072208/0000/00001/CDR/72208J02.CDR



NOTE:
This is an anticipated schedule, actual dates may change.

NOVELIS CORPORATION
OSWEGO WORKS FACILITY
SCRIBA, NEW YORK

ALCAN SHEET & PLATE MONITORING PLAN

PROPOSED SCHEDULE OF ACTIVITIES

ARCADIS

FIGURE
6

ARCADIS

Appendices

ARCADIS

Appendix A-1

Standard Operating Procedure - Electrofishing

I. Scope and Application

This document describes the general field methodology for using boat-mounted and backpack electrofishing equipment to collect fish.

II. Personnel Qualifications

ARCADIS field personnel will have current health and safety training, including 40-hour HAZWOPER training, site supervision training, and site-specific health and safety training. In addition, personnel overseeing, directing, or supervising the electrofishing activities will be versed in the applicable SOPs to successfully complete the activities.

III. Equipment List

The following collection equipment and materials will be available, as required, during fish sampling:

- Personal protective equipment (as required by the HASP);
- Water body name and Site maps;
- Appropriate state or federal wildlife contact;
- Sampling permits and licenses (if applicable);
- Boat, engine, life jackets, anchors, buoys, and rigging;
- Electrofishing equipment;
- Dip nets with non-conductive handles;
- Linesman gloves;
- Chest or hip waders;
- Live well, cooler, or 5-gallon bucket;

- Measuring board or ruler;
- Top-loading electronic and suspended-weight spring balances;
- Insulated coolers with ice;
- Plastic sealable bags and indelible ink markers;
- Camera;
- Hand-held GPS unit; and
- Field notebook.

IV. Cautions

Cautions include typical hazards associated with working around water (e.g., drowning, falling on slippery surfaces, etc.). Also, the potential for an electrical hazard exists through the operation of the electrofishing equipment.

V. Health and Safety Considerations

Personnel will wear life jackets when working around water. Personnel will also wear personal protective equipment (e.g., non-conductive waders and gloves, etc.) to avoid electrical hazards.

VI. Procedure

Fish will be collected using trained personnel and approved sampling techniques. Electrofishing activities will be temporarily halted when any persons, pets, or livestock are observed in the water or on the shore in close proximity to the electrofishing unit. State personnel (conservation officers) will be notified of the sampling activities prior to going into the field. Only those target species identified in the Work Plan and scientific collectors permit will be retained. Collection of other species may occur when target species are absent, and as approved. Non-target species will be released back to the system. The following procedures will be used, as necessary, to collect fish:

1. Boat-Mounted Electrofishing

The following procedures describe the use of an electrofishing boat to collect fish:

a. The field crew will don personal protective equipment (e.g., life jackets, non-conductive shoes and gloves, etc.), set up the electrofishing equipment, and test it upon arrival at the Site.

b. The boat operator will be responsible for control of the boat, and operation of the control equipment and generator. The remaining field crew will operate from the front of the boat and will be responsible for control of the on/off floorboard switch, and capturing the fish.

c. Electricity will be applied to the water by actively maintaining the on/off switch in the closed position while the generator and control equipment are operative.

d. The electrical current will be set to stun the fish, but should not cause mortality.

e. Target species of appropriate size will be collected using non-conductive dip-nets and will be placed in a live-well with fresh water until they can be transferred to a cooler with ice.

2. Backpack Electrofishing

The following procedures describe the use of a backpack electrofishing unit to collect fish:

a. The field crew will don personal protective equipment (e.g., non-conductive waders and gloves, etc.), set up the electrofishing equipment, and test it upon arrival at the Site.

b. The backpack operator will be responsible for control of the on-off switch on the anode handle, operation of the control equipment, and for capturing fish. The remaining field crew will work alongside the backpack operator and will capture fish.

c. Electricity will be applied to the water by actively maintaining the on/off switch in the closed position while the control equipment is operative.

d. The electrical current will be set to stun the fish, but should not cause mortality.

e. Target species of appropriate size will be collected using non-conductive dip-nets and will be placed in a 5-gallon bucket with fresh-water until they can be transferred to a cooler with ice.

f. Backpack electrofishing batteries will be recharged or replaced as needed.

VII. Sample Handling

The following identifies the temporary storage procedures that will be used to preserve fish in the field prior to sample processing, handling, and shipment to the laboratory:

1. Measure or weigh each fish after collection, as necessary, to ensure that appropriate sized fish are taken and that minimum sample mass requirements are satisfied.

2. Count the number of fish to ensure that the correct amount is taken.

3. Transfer fish to sealable plastic bags (if not done previously) and label with sampling date and capture location, and place in coolers with ice until field processing can occur. Large fish that do not fit into plastic bags may be placed on ice in clean coolers that are clearly labeled.

VIII. Waste Management

All disposable equipment will be bagged and appropriately handled based on Site-specific requirements (if applicable).

IX. Data Recording and Management

Field notes will be recorded during sampling activities, and at a minimum, will include the following:

- Names of field crew and oversight personnel;
- General weather conditions;
- Date, time, and general capture location (GPS, if specified);
- Capture technique;
- Sample duration;
- General observations of fish habitat, abundance, and diversity; and
- Photograph number when pictures are taken (if necessary).

X. Quality Assurance

The fish sampling will be conducted consistent with the procedures outlined in this SOP. Deviations from the SOP will be discussed with the project manager prior to changing any field procedures.

XI. References

None.

ARCADIS

Appendix A-2

Standard Operating Procedure –
Biota Processing

I. Scope and Application

The following procedures describe the general methodologies that will be used in the field to process biota samples (i.e., fish and small mammals) for laboratory analysis.

II. Personnel Qualifications

ARCADIS field personnel will have current health and safety training, including 40-hour HAZWOPER training, site supervision training, and site-specific health and safety training. In addition, personnel overseeing, directing, or supervising the biota processing activities will be versed in the applicable SOPs to successfully complete the activities.

III. Equipment List

The following collection equipment and materials will be available, as required, during biota processing:

- Personal protective equipment (as required by the HASP);
- Measuring board or ruler;
- Top-loading electronic and suspended-weight spring balances;
- Tape (i.e., duct, strapping, masking or freezer, and clear packing);
- Sealable plastic bags and indelible ink markers;
- Cleaning and decontamination materials;
- Potable water;
- Insulated coolers with or without ice;
- Forms (COC, custody seal, address label, and air-bill);
- Ziploc®-type bags;
- Camera; and
- Field notebook.

IV. Cautions

Cautions include hazards associated with lifting heavy objects (e.g., coolers), potential for punctures from fish spines or teeth, or when working with small mammals (e.g., transmission of Hantavirus).

V. Health and Safety Considerations

Personnel will wear nitrile gloves at all times. Care shall be taken to minimize the risk of aerosolization of small mammal feces to reduce the risk of coming in contact with Hantavirus. Personnel will use proper lifting techniques at all times.

VI. Procedure

The following identifies the procedures that will be used to handle, pack, and ship whole-body biota samples:

A. Handling

1. All samples will be given a sample identification number that will be recorded in the field notebook, and that corresponds to the sample analysis, sampling date, and collection location.

2. COC forms, custody seals, address labels, and air-bill forms will be initiated. COC forms will identify the tissue sample preparation procedure and chemical analysis that the lab will follow. A copy of the completed COC form and air-bill form will be retained by the sampler.

3. To begin processing, sediments, soil, and other debris will be removed from the biota samples by hand-picking or by rinsing with potable water.

4. Biota samples will be measured and weighed following project-specific requirements. For composite samples, total length measurements of each individual in a sample and total weight measurements of the entire sample will be recorded.

5. Individual and composite biota samples will have sufficient sample mass to meet the minimum sample mass requirements for chemical analysis.

6. Photographs will be taken, as required, and any external abnormalities or visible parasites will be noted in the field notebook.

7. Fish and small mammals will be placed in Ziploc®-type bags to maintain sample integrity. The Ziploc®-type bags will be secured with masking or freezer tape. The sample identification number will be written on the sample container with a waterproof marker.

8. Samples will be separated by organism type and by sample location, and will be placed into large sealable plastic bags in preparation for packing.

9. All equipment will be cleaned with a laboratory grade detergent and a potable water rinse as required or immediately following processing.

B. Packing

1. Coolers used for transport will be duct-taped at the drain plug on the outside and inside of the cooler.

2. Ice will be packaged in sealable plastic bags (i.e., double-bagged with the outer seal duct-taped) and placed in the bottom of the cooler. The sealed biota samples will be placed inside the cooler with enough room for additional ice bags to be placed on top.

3. The completed COC form will be placed into a plastic bag and duct-taped to the inside of the cooler lid.

4. The cooler will be closed and fastened with duct tape around the seam of the lid to prevent water leakage and with strapping tape around the entire cooler to prevent it from opening during transport.

5. A completed custody seal will be placed across the seam of the cooler lid. A completed address label will be placed on top of the cooler. Both will be taped over using clear packing tape.

C. Shipping

1. Samples with holding time requirements will be shipped to the laboratory by hand or by express carrier within 48 hours or less from the date of sample collection. Samples that are fixed with preservative, or that do not have stringent holding times, will be delivered in a timely manner.

2. The laboratory will be notified of the shipment and will be contacted immediately following the arrival date to ensure that delivery has occurred.

VII. Waste Management

All disposable equipment will be bagged and appropriately handled based on Site-specific requirements (if applicable).

VIII. Data Recording and Management

Field notes will be recorded during processing of the biota samples, and at a minimum, will include the following:

- Names of field processing crew and oversight personnel;
- Date and time of processing;
- Sample identification numbers that correspond to analysis, sampling date, and collection location;
- Body lengths and weights, and number of organisms per sample;
- Gross external abnormalities and visible parasites; and
- Photograph number when pictures are taken (if necessary).

IX. Quality Assurance

The biota processing will be conducted consistent with the procedures outlined in this SOP. Deviations from the SOP will be discussed with the project manager prior to changing any field procedures.

X. References

None.

ARCADIS

Appendix A-3

Standard Operating Procedure –
Small Mammal Sampling

I. Scope and Application

The following procedures describe methods to be used for field collection of small mammals (mice, moles, shrews, etc.).

II. Personnel Qualifications

ARCADIS field personnel will have current health and safety training, including 40-hour HAZWOPER training, site supervision training, and site-specific health and safety training. In addition, personnel overseeing, directing, or supervising the small mammal sampling activities will be versed in the applicable SOPs to successfully complete the activities.

III. Equipment List

The following collection equipment and materials will be available, as required, during small mammal sampling:

- Personal protective equipment (as required by the HASP);
- Site maps;
- Appropriate state or federal wildlife contact;
- Sampling permits and licenses (if applicable);
- Field keys for mammals;
- Rubber or latex and/or leather gloves;
- Sherman® traps;
- Museum Special® or Victor® snap traps;
- Oats;
- Peanut butter;
- Sack or shoulder bag;
- Surveyor's flagging;

- Plastic sealable bags and indelible ink markers;
- Cooler with ice;
- Appropriate decontamination equipment (as specified in the HASP);
- Camera;
- Hand-held GPS unit; and
- Field notebook.

IV. Cautions

Cautions include hazards associated with working in wilderness conditions (e.g., ticks, cuts, scrapes, etc) as well as the potential for heat stroke. When dealing with small mammals there is also the possibility of being bitten, as well as transmission of Hantavirus. Slips, trips, and falls are also a potential hazard due to the natural terrain.

V. Health and Safety Considerations

Personnel will wear appropriate clothing for working conditions (e.g., light colored, long-sleeved clothing) and will have access to cold beverages to avoid dehydration and overheating. Personnel will wear nitrile gloves at all times, and thick leather gloves when handling specimens. Care shall be taken to minimize the risk of aerosolization of small mammal feces to reduce the risk of coming in contact with Hantavirus. Personnel will be careful walking along the varying terrains, and will use the buddy system at all times.

VI. Procedure

Small mammals will be collected using approved sampling techniques. If required, state personnel (conservation officers) will be notified of the sampling activities prior to going into the field. Only those target species identified in the work plan and scientific collectors permit will be retained. Collection of other species may occur when target species are absent, and as approved. Non-target species will be released back to the system.

The following procedures will be utilized to conduct the small mammal sampling:

A. Field Preparation

1. In advance to the trapping exercise, obtain necessary trapping permits. Obtain information on any endangered species in the anticipated trapping area and learn how to avoid them, or recognize and release them upon capture.

2. Check proper functioning and integrity of equipment. Be sure traps have been properly cleaned using household bleach.

3. Prepare bait using rolled oats mixed with a small amount of peanut butter within a large Ziploc®-type bag.

B. Trap Placement

1. Arrive at trapping site in time to set out and bait all traps before dark. If traps are to be set out several hours before sunset or left open during the day, they should be checked frequently for captures of diurnal animals.

2. Place trap lines in areas that are out of sight of roads, sidewalks, paths, or other areas of human activity. Avoid areas frequented by livestock to prevent destruction or accidental tripping of traps.

3. Indicate the beginning of each trap line by marking the nearest tree or shrub with two pieces of surveyor's flagging marked with the trap line number and number of traps in the line.

4. Walk the trap line and look for suitable habitat to place each trap. Mark each trap location with a labeled piece of surveyor's flagging. Place traps in lines of 10 to 20 traps at approximately 10 to 20-ft intervals. Run 4 to 5 trapping lines parallel to one another to form a sampling grid of 80 to 100 traps; dependent upon suitable habitat for sampling.

5. Carrying the traps required for the line in a sack or shoulder bag, walk the trap line, placing each trap as level as possible, with the mouth of the trap flush with the ground. The ground may be cleared and leveled by scraping the soil with the foot. Before baiting each trap, check the trigger mechanism for proper adjustment and sensitivity as it is placed. For Sherman® traps, place small amount of bait in the back on the spring platform and depress trigger mechanism. For snap traps, pack a small amount of bait on the trigger tab and carefully set the trigger mechanism. When possible, place traps near brush piles, fallen logs, burrows, or other items that provide shelter.

6. After placing the last trap, mark the end of the trap line with two pieces of surveyor's flagging.

7. Using a handheld GPS unit, mark the ends of each trap line or the four corners of the sampling grid and record the latitude and longitude of each position. The location of the trapping site may be recorded on a local topographic map. If using available base maps for the site, then sketch the general location and direction of each trap line on the map. Record within the field notebook the habitat type, general weather conditions, number of trap lines, and the type and number of traps being used.

C. Collecting Captured Rodents

1. Traps should be checked as early in the morning as possible, especially in hot weather and when traps are exposed to direct sun.

2. Crew members should wear protective clothing, including long pants and long-sleeved shirt, socks and heavy shoes, and rubber or latex gloves. Each member should also carry Ziploc®-type bags, note paper, indelible marker, and spare traps and bait.

3. Check each trap for evidence of capture or visitation. If a trap appears to have been visited but not sprung (e.g., urine or feces in or on the trap), place the trap in a double plastic bag to be decontaminated and checked for proper function. Replace the trap with a clean trap.

4. When a live trap is encountered with the door closed, lift the trap without shaking it. Standing with the wind to your left or right side, and the trap held at arm's length, push the door open just enough to peer into the trap and confirm the presence of a captured rodent. If there is no capture and no evidence of visitation, check the adjustment of the trap and replace it in the trap line. If a non-target species has been captured (e.g., toad, bird, chipmunk, or endangered species), carefully release the animal outside of the sampling grid and then reset the trap or place it in a bag for decontamination. If a snap trap is sprung and has no visible signs of visitation, then reset the trap and place back in the trap line.

5. If the trap contains a target species, label a plastic bag with the appropriate trap line and trap numbers. Carefully place the trap into the plastic bag and zip close. Then place the bagged trap into a second plastic bag and secure. Place the double-bagged trap on the ground to be picked up on the return and continue checking the rest of the trap line. If the organism is still alive, use cervical dislocation to quickly kill the animal. Hold the animal firmly by the tail, place a stick behind the animal's head to hold it down, and swiftly pull on the tail. Put the animal into a labeled plastic bag.

6. Upon completion of checking the trap lines, place bagged rodents into sack or shoulder bag and return to vehicle to complete the field notebook with the following information: number of captures in each trap type, number of sprung traps that were empty, and number of traps which were missing.

7. Dependent upon trapping success, traps may be collected to place in a different location for the next evening or, if trap success was reasonable (10% or better), they may be left in the same location for a second night. If left for the rest of the day, then check periodically throughout the day and baited if necessary before evening.

8. Wash rubber gloves with soap and water, place in proper waste container, and then wash hands thoroughly.

VII. Sample Handling

The following identifies the temporary storage procedures that will be used to preserve small mammals in the field prior to sample processing, handling, and shipment to the laboratory:

1. Measure or weigh each retained organism after collection, as necessary, to ensure that appropriate sized organisms are taken and that minimum sample mass requirements are satisfied.

2. Count the number of small mammals to ensure that the correct number are taken.

3. Transfer organism to sealable plastic bags (if not done previously) and label with sampling date and capture location, and place in coolers with ice until field processing can occur.

VIII. Waste Management

All disposable equipment will be bagged and appropriately handled based on Site-specific requirements (if applicable).

IX. Data Recording and Management

Field notes will be recorded during sampling activities, and at a minimum, will include the following:

- Names of field crew and oversight personnel;

- General weather conditions;

- Date, time, and general capture location (GPS, if specified);
- Capture technique;
- Sample duration;
- General observations of small mammal habitat, abundance, and diversity; and
- Photograph number when pictures are taken (if necessary).

X. Quality Assurance

The small mammal sampling will be conducted consistent with the procedures outlined in this SOP. Deviations from the SOP will be discussed with the project manager prior to changing any field procedures.

XI. References

None.

ARCADIS

Attachment 7

Example Operable Unit Inspection Form

Novelis Corporation
Alcan Sheet and Plate Oswego Works Facility
Oswego, New York

Operable Unit 1 and 2 Inspection Form

Inspection Date: _____

Inspector(s): _____ Weather: _____

_____ _____

_____ _____

Time Arrived: _____ Time Departed: _____

A. Describe Site Usage/General Site Conditions			
Inspection Item	Comments		
OU-1 ☐ CHECK IF NO CHANGES IN USE SINCE LAST INSPECTION			
OU-2 ☐ CHECK IF NO CHANGES IN USE SINCE LAST INSPECTION			
B. Visual Inspection of Soil Cover System Condition			
Inspection Item	Satisfactory	Unsatisfactory	Comments
OU-1			
North Pond 1: Upland Cover (vegetated; no evidences of erosion, perturbation, non-soil exposure)			
North Pond 1: Wetland Cover (vegetated [if applicable]; no evidences of erosion, perturbation, sheens)			
North Marsh 1: Upland Cover (vegetated; no evidences of erosion, perturbation, non-soil exposure)			
North Marsh 1: No Wetland Cover Area; Inspection Not Required	NA	NA	NA
North Pond 2: Upland Cover (vegetated; no evidences of erosion, perturbation, non-soil exposure)			
North Pond 2: Wetland Cover (vegetated [if applicable]; no evidences of erosion, perturbation, sheens)			
North Marsh 2: Upland Cover (vegetated; no evidences of erosion, perturbation, non-soil exposure)			
North Marsh 2: Wetland Cover (vegetated [if applicable]; no evidences of erosion, perturbation, sheens)			
North Marsh 3: No Upland Cover Area; Inspection Not Required	NA	NA	NA
North Marsh 3: Wetland Cover (vegetated [if applicable]; no evidences of erosion, perturbation, sheens)			
OU-2			
Upland Cover (vegetated; no evidences of erosion, perturbation, non-soil exposure)			

- Refer to Figure 3 of the Site Management Plan for Limits of Inspection.
- Collect photos of any potentially unsatisfactory items. Room for additional comments on Page 2.

Novelis Corporation
Alcan Sheet and Plate Oswego Works Facility
Oswego, New York

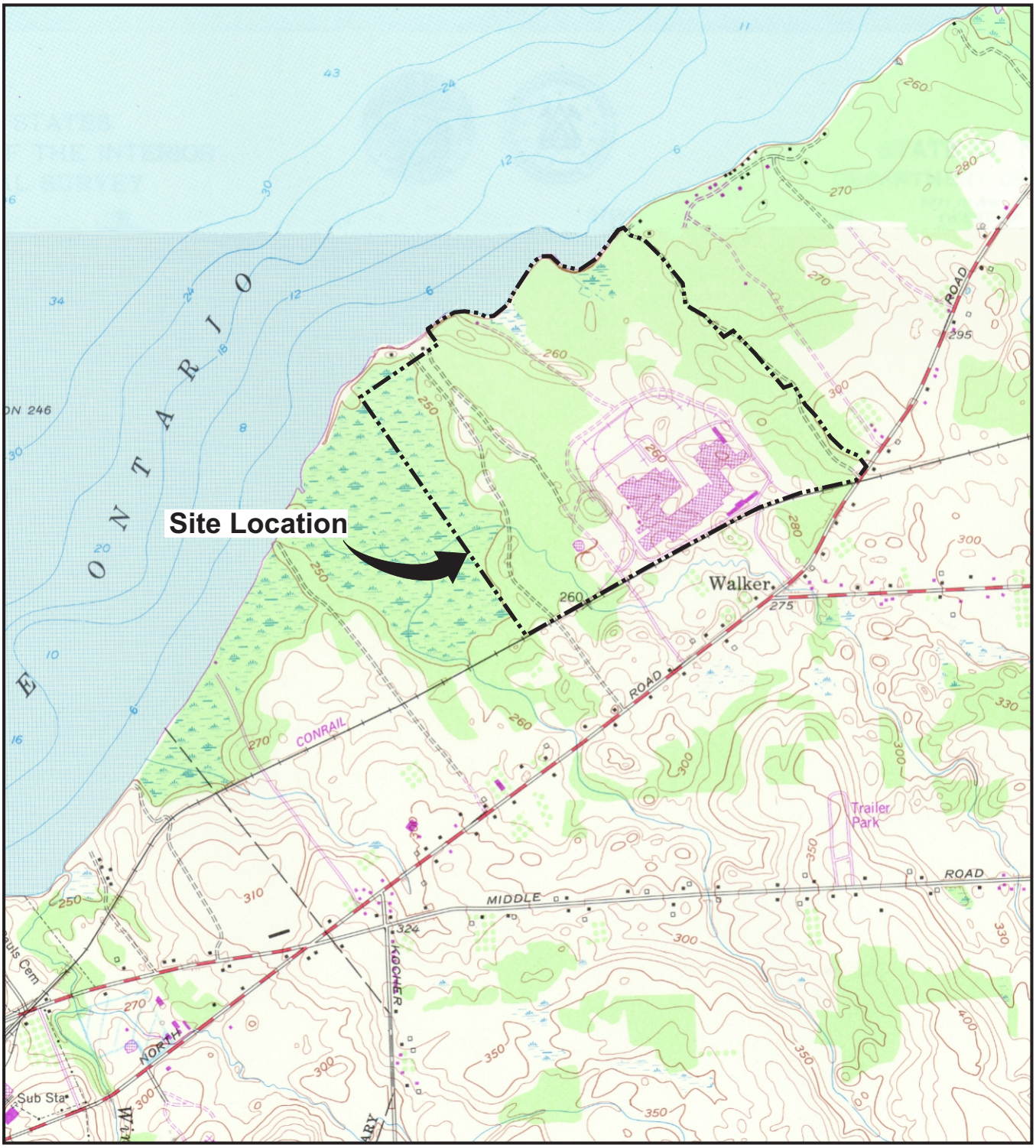
Operable Unit 1 and 2 Inspection Form

Inspection Date: _____

Additional Comments

ARCADIS

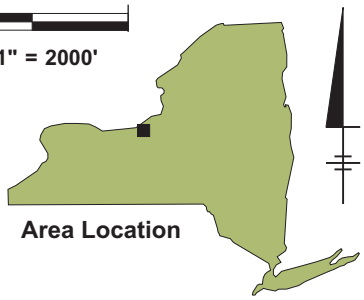
Figures



REFERENCE: BASE MAP USGS 7.5 MIN. QUAD., OSWEGO EAST, & WEST OF TEXAS, NEW YORK, 1954, PHOTOREVISED 1978.

2000' 0 2000'

Approximate Scale: 1" = 2000'



Area Location

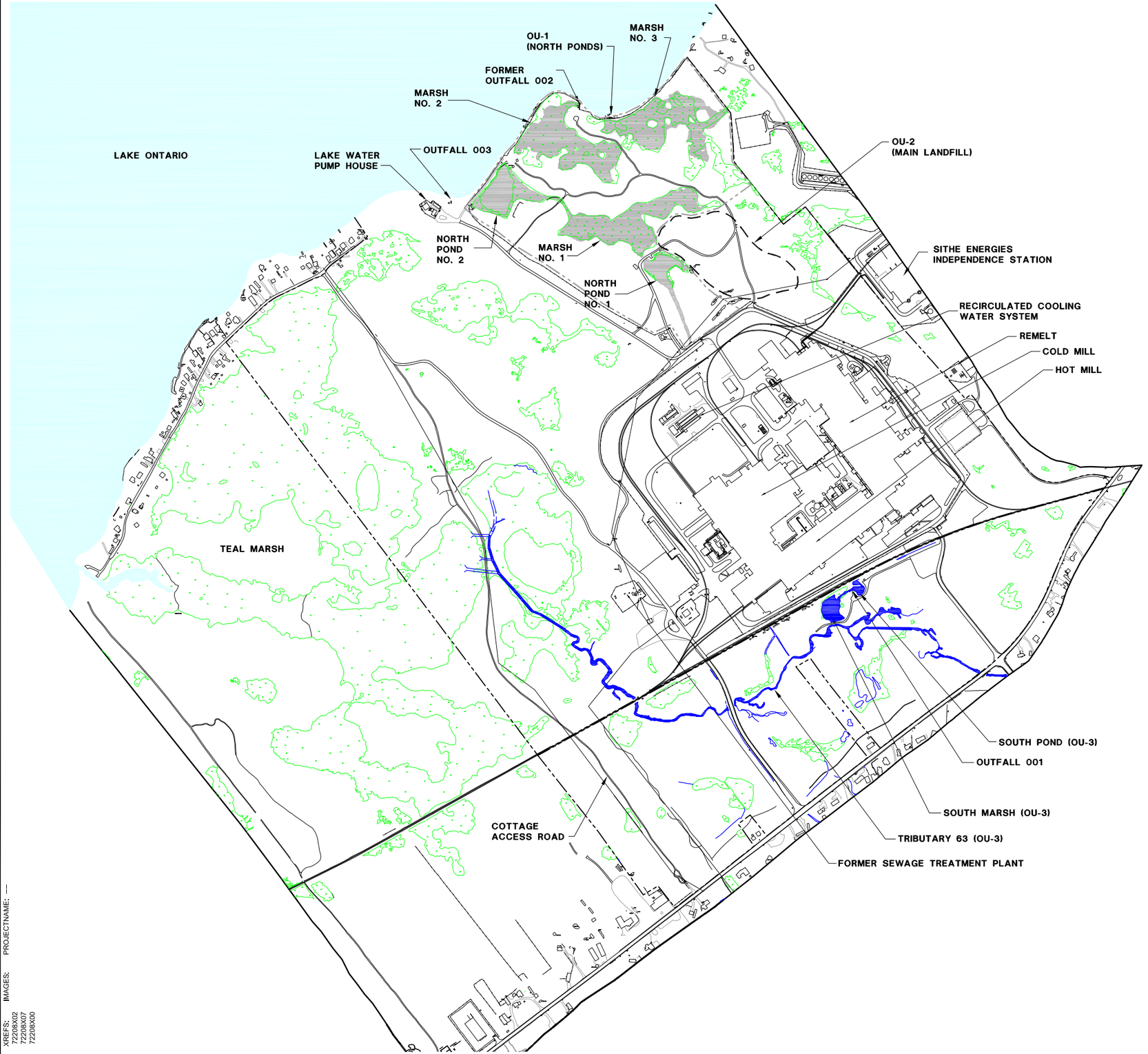
NOVELIS CORPORATION
OSWEGO, NEW YORK
SITE MANAGEMENT PLAN

SITE LOCATION MAP

ARCADIS

FIGURE
1

10/25/2012 SYRACUSE, NY-ENV/141-DJHOWES
B0072208/0010/00024/SMP/CDR/72208N01.CDR



LEGEND:

- APPROXIMATE PROPERTY LINE
- APPROXIMATE EXTENT OF PONDS AND MARSHES DURING OPERATION OF COOLING WATER TREATMENT SYSTEM (1968–2002)
- APPROXIMATE AREA OF OU–1
- APPROXIMATE AREA OF OU–2
- APPROXIMATE AREA OF OU–3

NOTES:

1. BASEMAP GENERATED FROM A MAY 3, 2003 AERIAL SURVEY COMPLETED BY SANBORN, INC. AT A SCALE OF 1"=50'.
2. THE HORIZONTAL DATUM IS BASED ON NORTH AMERICAN DATUM OF 1983, NY CENTRAL ZONE.
3. THE VERTICAL DATUM IS BASED ON NATIONAL GEODETIC VERTICAL DATUM OF 1929.
4. PROPERTY LINE WAS APPROXIMATED FROM A SCANNED DRAWING PROVIDED BY ALCAN ALUMINUM CORPORATION, OSWEGO, NEW YORK DATED 10/18/79, DRAWING NO. 46071.
5. BRUSH/STONE STOCKPILES SHALL BE A MINIMUM OF 10 FEET FROM ROADS.

0 400' 800'
GRAPHIC SCALE

NOVELIS CORPORATION
OSWEGO, NEW YORK
SITE MANAGEMENT PLAN

SITE LAYOUT PLAN

ARCADIS

FIGURE
2

LAKE ONTARIO

PREVAILING WIND DIRECTION (WNW)

NORTH MARSH 2

NORTH MARSH 3

NORTH MARSH 1

NORTH POND 2

NORTH POND 1

M3-C6

M3-E7

M3-K6

M2-I8-3

P2-B7

P1-C3

OPEN WATER

OPEN WATER

FOOT BRIDGE (NO VEHICLE ACCESS)

ALCAN ROAD

EXISTING ACCESS ROAD

WETLAND CONTINUES OFF-SITE

WETLAND CONTINUES OFF-SITE

SITHE COOLING POND

SITHE PROPERTY

UTILITY ROW (115kV HIGH VOLTAGE POWER LINE)

BL_ALCAN-11(RTK/DL)_02247

BL_ALCAN-07(RTK/DL)_02247

BL_ALCAN-08(RTK/DL)_02247

BL_ALCAN-10(RTK/DL)_02247

BL_ALCAN-09(RTK/DL)_02247

BL_ALCAN-12(RTK/DL)_02232

LEGEND:

COVER AREA

CONFIRMATION SAMPLE LOCATION WITH A PRELIMINARY OR FINAL PCB CONCENTRATION GREATER THAN 1 MILLIGRAM PER KILOGRAM

NOTE:

REFER TO THE FINAL ENGINEERING REPORT (ARCADIS 2013) FOR ADDITIONAL INFORMATION ON THE CONFIRMATION SAMPLING AND RESULTS.

0 120' 240'

GRAPHIC SCALE

NOVELIS CORPORATION
OSWEGO, NEW YORK
SITE MANAGEMENT PLAN

COVER INSPECTION AREAS

ARCADIS

FIGURE 3

CITY: SYRACUSE, NY DIV/GROUP: ENV/141 DB: JER AMS KEW KLS PIC: / PM: TM: M. JONES LYR: ON='OFF='REF' G:\ENV\CAD\SYRACUSE\ACTIVITY\00722008\001\000024\DWG\DWG\CIV\SMP\722208G03.DWG LAYOUT: 3 SAVED: 5/3/2013 10:29 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: C-LD2B-PDF PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/3/2013 10:29 AM BY: KOWALCZYK, STEVE

XREFS: 722208X02 722208X07 722208X00 722208X01 IMAGES: PROJECTNAME: ---