

SECTION 1 INTRODUCTION

This document summarizes a portion of the field sampling activities and data collected by Alcoa Inc. (Alcoa) in the Grasse River Study Area (Study Area) located in Massena, New York (NY) during the 2006 field sampling season. Sampling activities and data results described in this report include the annual Supplemental Remedial Studies (SRS) Program monitoring and total suspended solids (TSS) monitoring during spring high flow/ice breakup conducted in 2006 as part of the Focused Studies. In addition, this report discusses the 2006 Post-Remedial Options Pilot Study (ROPS) monitoring, 2006 Phase 1 Sediment Sampling Program, and 2006/2007 ice monitoring activities. Monitoring conducted prior to and during the implementation of the 2006 Activated Carbon Pilot Study (ACPS), which was conducted in the lower portion of the river during the summer/fall, is presented in the draft *Grasse River Activated Carbon Pilot Study Construction Documentation Report* (Alcoa, June 2007a).

The Study Area is located along the northern boundary of NY State in the town and village of Massena, and encompasses approximately 8.5 miles of the Grasse River from Massena (just downstream of the Route 37 Bridge) to the confluence of the St. Lawrence River (**Figure 1-1**). The Study Area also includes Robinson Creek (which discharges to the St. Lawrence River) and the Massena Power Canal (which extends from the Massena Intake Dam located on the St. Lawrence River to the former Massena Power Dam). Monitoring and sampling activities were performed throughout the Study Area (except Robinson Creek).

The 2006 sampling program included the following activities:

2006 SRS Program

- routine water column monitoring;
- resident fish trend monitoring;
- TSS monitoring during spring high flow/ice breakup; and
- field reconnaissance of fish advisory signs.

2006 Post-ROPS Monitoring

- sediment sampling;
- multibeam bathymetry monitoring;
- cap observation/underwater video; and
- ecological monitoring.

2006 Phase 1 Sediment Sampling Program

- sediment sampling.

2006/2007 River Ice Monitoring

- climatological monitoring;
- river stage monitoring;
- river ice formation monitoring; and
- ice thickness monitoring and predictive modeling.

The field sampling activities conducted as part of the 2006 SRS program are described in the *Addendum Letter, Routine Monitoring Activities – 2006* (Alcoa, April 2006a), while the sampling protocols used during these activities are presented in the *2005 Monitoring Program Work Plan* (Alcoa, March 2005). The remaining field activities were conducted in accordance with the *2006 Post-ROPS Monitoring Work Plan* (Alcoa, July 2006), *2006 Sediment Sampling Program for the Lower Grasse River Work Plan* (Alcoa, April 2006b), and *2005/2006 Grasse River Ice Monitoring Work Plan* (Alcoa, December 2005), as modified by the December 8, 2006 e-mail from Alcoa to the U.S. Environmental Protection Agency (USEPA), and approved in a December 11, 2006 reply. **Table 1-1** provides a summary of each sampling event conducted and the total number of measurements made/samples collected as a result of each activity.

Sample collection summaries and results for the SRS Program, Post-ROPS, Phase 1 Sediment Sampling, and River Ice Monitoring are provided in Sections 2, 3, 4 and 5, respectively. Section 6 presents a review of the quality assurance/quality control (QA/QC) samples collected and analyzed as part of the above studies. In addition to the main body of this report, seven appendices are included. An electronic database containing field-derived data from

the 2006 sampling programs discussed in this report, as well as data collected historically from the river, is included as **Appendix A**. A data summary package, including a map of sampling locations, tables of analytical results, data profiles, sediment core photos, and field notes, for the 2006 Post-ROPS sediment sampling effort is included as **Appendix B**. **Appendix C** contains the data generated during the 2006 Post-ROPS multibeam survey, and representative underwater video coverage of the post-ROPS caps in each main channel cap area (i.e., Work Zones 1 and 2 and the armored cap area) is included as **Appendix D**. A data summary package, including a map of sampling locations, tables of analytical results, vertical core profiles, sediment core photos, and field notes, for the 2006 Phase 1 Vibracore sediment sampling effort is included as **Appendix E**. **Appendices F** and **G** contain the spring 2007 ice monitoring photos and ice breakup video observations, respectively.

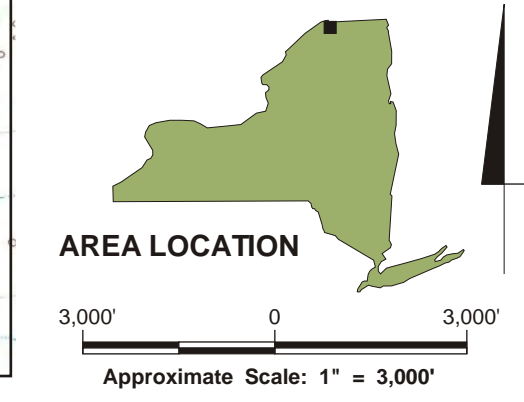
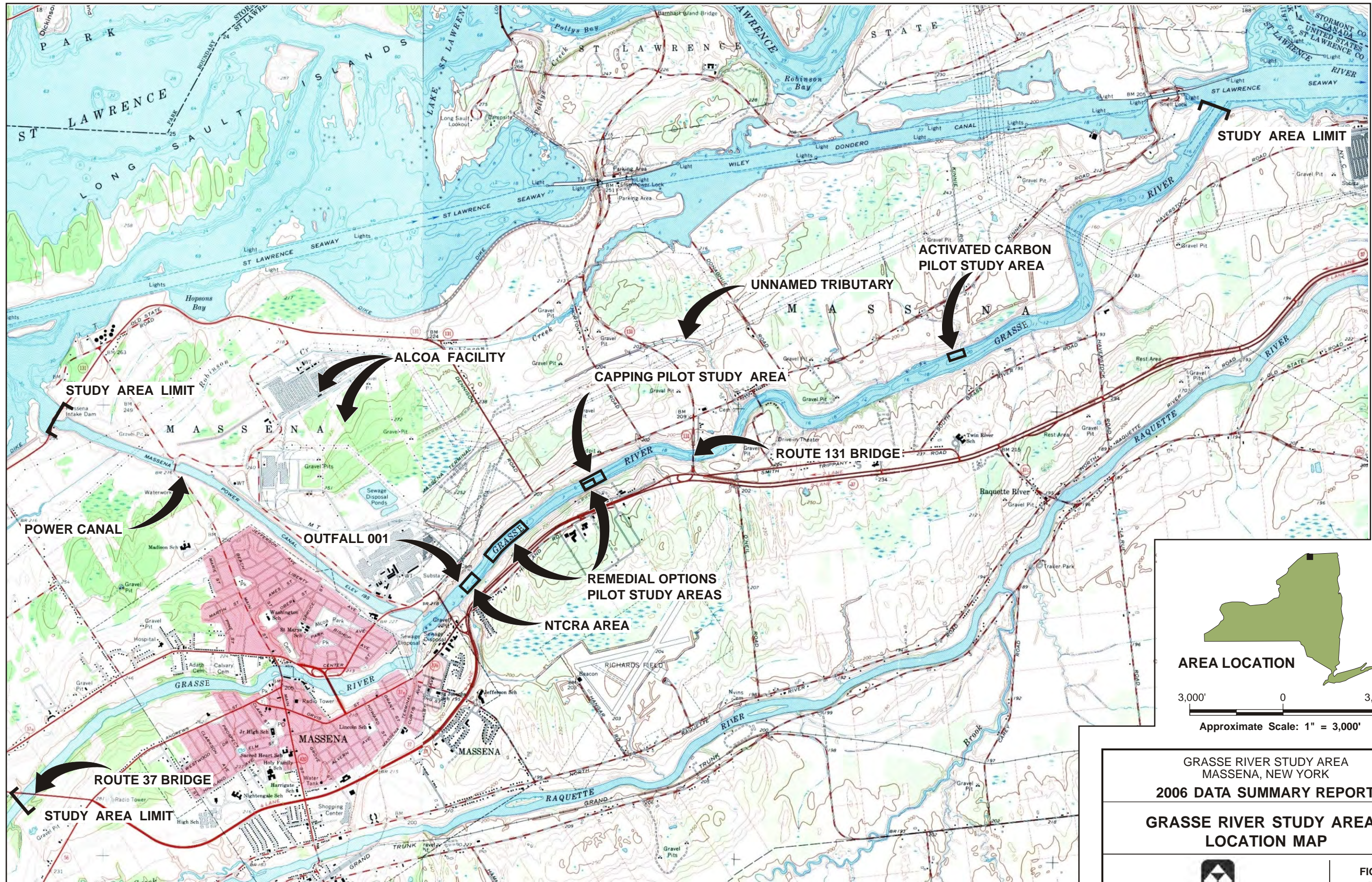
**Table 1-1
2006 Data Collection Summary**

**2006 Data Summary Report
Grasse River Study Area, Massena, New York**

Program	Activity	Number of Sampling Events	Number of Field Samples¹	Laboratory Analyses
2006 SRS	Routine Water Column	15	195	PCB, TSS ²
	Resident Fish	1	144	PCB, Percent Lipid
	TSS Monitoring	5	10	TSS
	Fish Advisory Signs	1	N/A	None
2006 Post-ROPS	Sediment	1	238	PCB, TOC, Percent Solids, Percent Moisture, Bulk Density, Grain Size
	Multibeam Bathymetry	1	N/A	None
	Cap Observation Video	1	N/A	None
	Benthic Invertebrate	2	36	TOC, Grain Size
2006 Phase 1	Sediment	1	206	PCB, TOC, Percent Solids, Percent Moisture, Bulk Density, Grain Size
2006-2007 Ice Monitoring	Ice	9	N/A	Visual Observation Only


Notes:

- Counts do not include QA/QC samples. Counts do not include multiple samples to be analyzed for various parameters from the same location/sample submitted to the same laboratory.
- Four sample bottles broke during shipment to the laboratory. Only 191 samples were analyzed for TSS
- N/A - Not Applicable; PCB - polychlorinated biphenyls, TSS - total suspended solids
- Two additional sampling programs were conducted in 2006 and are summarized elsewhere:
 - river ice monitoring over winter 2005/2006 (Alcoa, July 2006)
 - pre and during monitoring associated with the 2006 Activated Carbon Pilot Study (Alcoa, August 2006)



GRASSE RIVER STUDY AREA
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**GRASSE RIVER STUDY AREA -
 LOCATION MAP**



**FIGURE
 1-1**