



Grasse River Superfund Site Cleanup Decision Announced

Massena, New York

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Stay Involved

The EPA encourages public participation throughout the Superfund cleanup process. If you have questions or would like additional information, please contact:

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EPA Web Sites

This fact sheet and other site-related documents are available online at

<http://www.epa.gov/region2/superfund/npl/aluminumcompany>

General information about community involvement at Superfund sites are available online at

<http://www.epa.gov/superfund/community/index.htm>

On April 4, 2013, the U.S. Environmental Protection Agency (EPA) issued a record of decision, or ROD, in which it selected a final cleanup plan for the Grasse River Superfund site in Massena, New York. The cleanup will address Grasse River sediments that were contaminated with polychlorinated biphenyls, or PCBs, as a result of past industrial operations at the Alcoa West facility in Massena. The EPA classifies PCBs as probable human carcinogens that build up in the fat of fish and mammals, increasing in concentration as they move up the food chain. The primary risk to humans is from eating fish that have become contaminated with PCBs in the Grasse River.

The EPA's plan requires the removal of approximately 109,000 cubic yards of contaminated sediments from near shore areas in a 7.2 mile stretch of the river. The near shore areas will be covered with clean backfill after they are dredged, and the dredged sediment will be disposed of in a fully permitted landfill on the Alcoa West property. In the river's main channel, approximately 59 acres of contaminated sediment will be covered with an armored cap and another approximately 225 acres of contaminated sediment will be capped with clean sand and topsoil mix to isolate the contamination from the surrounding environment. Habitat that is impacted by the cleanup will be restored. The plan also requires monitoring of fish, water and habitat, along with long-term monitoring of the capped areas to ensure that the caps remain intact.

In November 2012, the EPA held multiple formal public meetings and informal information sessions in Akwesasne and Massena, N.Y. to discuss its proposed cleanup plan and to encourage public participation. The EPA finalized its cleanup decision after reviewing and considering all comments received during the 60-day public comment period, and after consultation with the New York State Department of Environmental Conservation (NYSDEC) and the St. Regis Mohawk Tribe (SRMT). The EPA recognizes that the Grasse River site cleanup has important ecological, cultural, and economic significance for the region. EPA's cleanup plan is designed to protect people and the environment from PCBs in the Grasse River and to allow future generations to more fully use this resource.

Details of the work will be defined during the estimated two-year design phase of the project, and will include plans for worker and community health and safety. A cultural resources survey will also be conducted prior to the start of in-river work. Based on current estimates, dredging, capping, and backfilling will take approximately four years to complete from start of in-river work. The fish consumption advisories established by the New York State Department of Health (NYSDOH) will remain in effect until PCB concentrations in fish are reduced to the point where they can be relaxed or lifted by NYSDOH.

To date, the investigation of the Grasse River has been conducted and paid for by Alcoa Inc. under a 1989 administrative order with oversight by the EPA. It is anticipated that Alcoa will perform the cleanup under this order. The estimated cost of the cleanup is \$243 million.

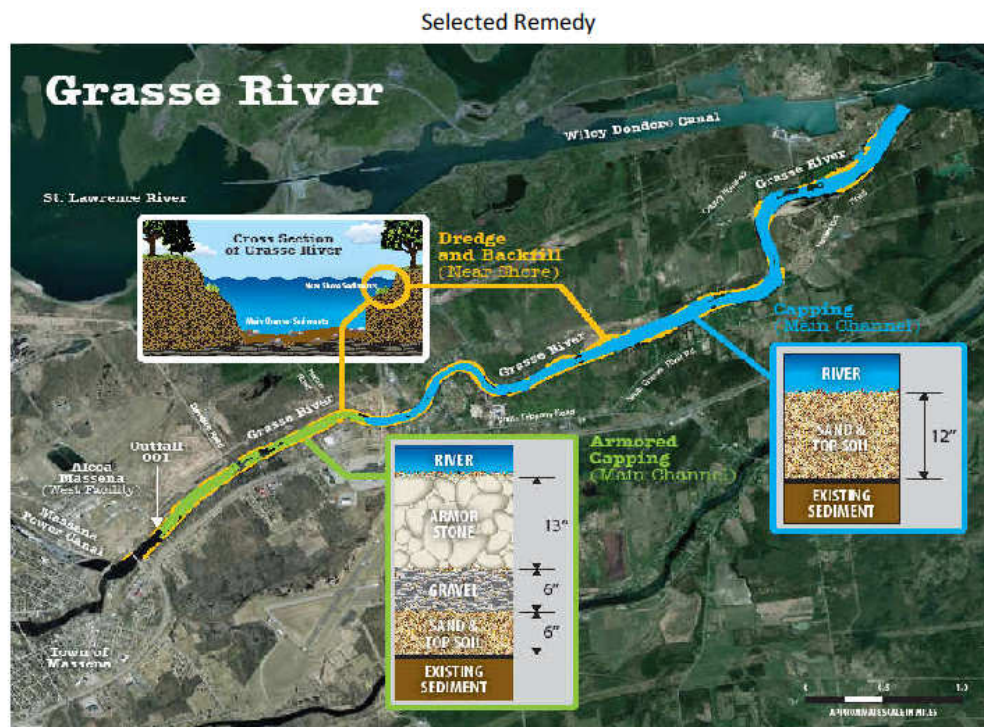
This fact sheet summarizes the EPA's Final Cleanup Decision for the Grasse River Superfund Site. It is intended to provide general information about the *Record of Decision*, and does not take the place of the *Record of Decision*. Copies of the complete *Record of Decision* are available in several document repositories and on the internet at <http://www.epa.gov/region2/superfund/npl/aluminumcompany>.

Frequently Asked Questions

The ROD for the Grasse River Superfund site includes a Responsiveness Summary that addresses the comments that were received on the EPA's Proposed Plan. Some frequently asked questions are discussed below.

1. Why isn't EPA removing the contaminated sediment from the main channel and returning the lower Grasse River to its previous pristine conditions?

The EPA did consider this option. One of the alternatives that EPA evaluated but did not select, "Alternative 10," would have included dredging in all areas with sediment PCB concentrations greater than 1 mg/kg (one milligram per kilogram, or the equivalent of one part per million). Although dredging of the main channel would remove additional PCB mass from the river, PCBs at high concentrations would nevertheless remain in the main channel after dredging. Most of the highly contaminated sediment in the main channel is present over bottom materials such as bedrock, glacial till, and/or marine clay, which prevent a dredge from effectively removing all of the contamination. As a result, and regardless of the type of equipment used for dredging, residual sediments with high PCB concentrations would remain behind after dredging and would still require either armored capping or main channel capping. In other words, every dredging alternative, including Alternative 10, would require a combination of armored capping (conceptual design shown in figure below) and main channel capping (currently assumed to be a 12-inch cap of sand and topsoil) in the main channel, depending on location. Alternative 10 therefore would not return the lower Grasse River to pristine conditions. Furthermore, the short-term impacts to the environment of Alternative 10 would have a longer duration and be more severe, and would generate more than 1,500,000 cubic yards of dredged sediment that would need to be transported for off-site disposal. Alternative 10 is projected to take nearly three times as long as the selected remedy to achieve PCB interim target levels in fish, due to the longer project duration and greater mass of PCBs that would be resuspended as a result of the main channel dredging.



At this Site, additional mass removal from the main channel would not provide any increased risk reduction to human health or the environment. The Superfund law does not require removal of all contaminants, even at sites where that is feasible. Rather, the law requires cleanups to be protective of human health and the environment. The EPA's cleanup remedy for the Site provides protection of human health and the environment, and provides the best balance of tradeoffs with respect to the other remedy selection criteria in the Superfund law and regulations.

The EPA's selected remedy does include dredging in the near shore where approximately 109,000 cubic yards of contaminated sediments will be dredged. Unlike the main channel, dredging in the near shore will be effective because the contaminated sediment can be fully captured. The area where the near shore is dredged will be backfilled to grade, and habitat construction will re-establish valuable and diverse habitat for biota.

2. Can the armored cap withstand future ice jam scouring?

Yes, the armored cap can and will be designed to withstand future ice jam scouring.

The March 2003 ice jam event in the Lower Grasse River that caused scouring of the river sediment bottom was a very important event in that it brought into focus the potential damage that ice scouring could cause in this river system. As a result, the EPA, NYSDEC, and Alcoa and its consultants spent many years studying ice scour in the river. The efforts included:

- review of the events leading up to the 2003 ice jam, and the impacts of the jam;
- review of historical records, and physical evidence (e.g., scarring of trees that might be the result of ice jams versus ice flows, and sediment cores that might have unusual sediment layers) for information regarding past ice jam events;
- modeling to evaluate the powerful erosive hydraulic forces that can be caused by severe ice jam events as well as to get information on what conditions cause severe ice jam events and how they behave when they break up;
- consultation with national experts for this subject; and,
- consultation with the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory.

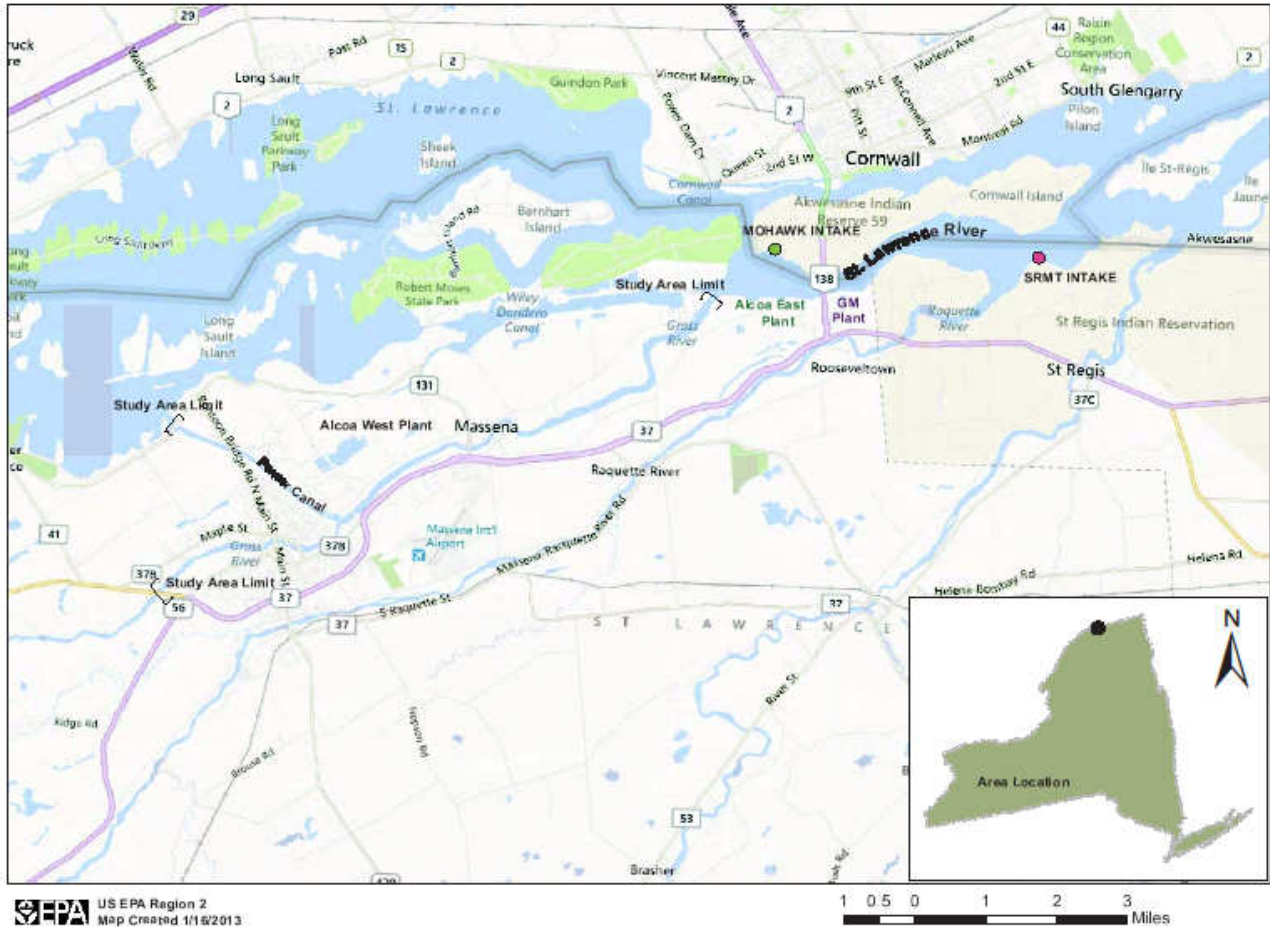
After many years of study, it was concluded that an armored cap can be designed in a manner that can withstand future ice jam scouring and effectively contain the underlying contaminated sediments. The figure above shows the conceptual design of an armored cap. The EPA determined that this type of armored cap will be required in at least the approximately first two miles of the lower Grasse River, because studies revealed that this area is prone to ice jam scour events. If any other area of the river is determined, during the design, to be prone to scouring caused by ice jams, those areas will also receive an armored cap. This armored cap will be much more robust than caps that will be utilized in the remaining portion of the main channel. The EPA will further evaluate the appropriate components of the armored cap during the design to ensure that the caps are effective over the long term. In addition, the EPA will require long-term monitoring to ensure that the caps remain intact. If monitoring reveals damage to the caps, repairs will promptly be made and the cause of the damage will be evaluated to ensure that the cap system continues to provide long-term protection.

3. How will the cleanup affect the SRMT's downstream water intake on Raquette Point and at the Mohawks' intake on Cornwall Island in Ontario, Canada?

The figure below (Site Location Map) shows the approximate location of the SRMT water intake at Raquette Point and for the Mohawks water intake on Cornwall Island on the St. Lawrence River. The SRMT intake is located along the southern shore (Raquette Point) on the St. Lawrence River over two miles from the confluence of the Grasse River and the St. Lawrence River. The Grasse River Site in its current unremediated state does not pose a danger to the SRMT water supply, and the EPA does not anticipate that the implementation of the cleanup will have any negative impact on the SRMT water supply. In addition, the implementation of the cleanup will result in less resuspension of PCBs than would occur

under alternatives that involve main channel dredging. It should be noted that during the implementation of the Reynolds Metals site cleanup on the St. Lawrence River in 2009 (which is closer than the Grasse River to the SRMT intake), the sampling plan called for collection and analysis of water intake samples at the Alcoa East Plant, the GM Plant, and the SMRT Water Treatment Building (both raw and filtered water). Total PCB (Aroclor) results for all samples were below corrective action levels at all intake locations; in fact, there were no detections of total PCB (Aroclor) in any water intake samples collected during the Reynolds Metals cleanup monitoring activities). Surface water will be monitored during construction of the Grasse River remedy to ensure the safety of the SRMT's water supply.

FIGURE 1 GRASSE RIVER SITE LOCATION MAP



The EPA similarly does not anticipate that the cleanup will have any impact to the Cornwall Island water intake. Surface water will be monitored during construction to ensure the safety of the Mohawk water supply on Cornwall Island. The EPA notes that the work plan for the 2009 Reynolds Metals site remediation called for sampling of the Mohawk Council of Akwesasne water intake on Cornwall Island only if the corrective action triggers were exceeded at the SRMT's intake on Raquette Point. Because there were no exceedances observed during the monitoring activities, including at the SRMT intake, no sampling was required at the water intake for the Mohawk Council of Akwesasne.

4. What kind of monitoring is planned during and after the remediation?

The EPA will require that extensive monitoring programs be implemented during the construction of the remedy as well as after the construction is completed. These monitoring programs will be developed during the remedial design and will be modified during and after construction, as appropriate. These plans will be shared with the communities.

During construction, water column and air sampling will be conducted to ensure that the construction is being performed in a manner that is protective of human health and the environment. Fish tissue sampling will also occur on a regular basis. While it is anticipated that increased PCB concentrations may be observed in fish during construction, these impacts are anticipated to be short-lived and fish tissue levels should decline to pre-construction levels within a year or two of construction completion, after which significant improvements in fish tissue levels should be observed. The EPA will ensure that these monitoring data are available to the public in a readily accessible and timely manner.

The post-construction monitoring program will also include monitoring of the water column, sediment, and fish, as well as other biota, along with other measures to evaluate the long-term effectiveness of the remedy. Monitoring will be performed to ensure habitats that have been impacted are recovering; that the integrity of the caps is being maintained; and that the PCB concentrations in fish are decreasing as expected and are on a trajectory to meet (or are continuing to meet) the cleanup goals for the project.

5. How will you ensure that the caps (armored cap and sand/topsoil cap) will effectively contain the contaminated sediments?

Caps such as the ones to be installed at the Site have been used successfully at other Superfund sites, and the EPA expects the armored and main channel caps to effectively contain contaminated sediments in the lower Grasse River. As mentioned above, the selected cleanup includes a long-term, post-construction monitoring program that will be developed during design to ensure that the caps remain protective of human health and the environment. In addition to monitoring at periodic intervals, monitoring will also be driven by particular events, such as a large storm or severe ice jam events. Such regularly scheduled periodic monitoring and event-driven monitoring, in conjunction with the five year reviews of the remedy that are required by the Superfund law, will enable the EPA to identify conditions that may jeopardize the long-term effectiveness of the remedy and to take appropriate steps to correct those conditions should they arise.

6. What happens if the cap fails?

Monitoring will be designed to identify areas of the caps that need repair as a result of localized cap erosion or movement caused by manmade actions or by nature. Appropriate maintenance and repair will be implemented to ensure protection to human health and the environment.

If at any time the EPA determines that the cleanup is no longer protective of human health or the environment, the EPA may select further response actions for the Site in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA (the Superfund law) and the National Oil and Hazardous Substances Pollution Contingency Plan, or NCP (the Superfund regulations). In addition, Alcoa is required to implement the Grasse River cleanup pursuant to the 1989 administrative order issued by the EPA. Under the administrative order, if the EPA determines that activities being conducted pursuant to the order, or any other activities being conducted at the Site, or changes in conditions at the Site, pose a threat to public health or welfare or the environment, the EPA may direct Alcoa to stop further implementation of the actions required by the order and/or to take other actions that are reasonably necessary to abate the threat. The order also requires Alcoa to submit a proposed modification to the remedy for EPA approval if the remedy cannot be operated in a manner that is protective of human health or the environment.

7. How does this decision apply EPA's Environmental Justice policy?

The EPA has identified Akwesasne as a Community with Environmental Justice Concerns, and the selected remedy includes a remedial goal that is specifically designed to protect the Mohawk community. The EPA recognized that Akwesasne is a subsistence fishing/high fish consumption community, and thus the EPA selected a fish ingestion rate of 142 grams/day in order to assess risks to members of the Mohawk community

from consuming Grasse River fish. By comparison, the fish ingestion rate used for non-SRMT adults was 31.9 grams/day. Using the Mohawk-specific fish ingestion rate, the EPA developed the remedial goal of 0.01 mg/kg PCBs in fish. This remedial goal is designed to be protective of the Mohawk community that consumes fish from the Grasse River, and the EPA will not deem the Site remedy to be complete until this goal is achieved. In addition, following the 2003 ice jam event, and in consultation with the State of New York and the SRMT, the EPA re-evaluated two aspects of the 2003 Proposed Plan (which the EPA had at that time proposed but did not proceed with). First, the EPA lowered the action level that would trigger dredging from 25 mg/kg in surface sediments to 1 mg/kg in near shore sediments, and lowered the action level that would trigger capping from 5 mg/kg to 1 mg/kg in main channel surface sediments. The EPA also revised the 2003 proposed plan's definition of surface sediments from the top 3" to the top 6" in the main channel, and the top 12" in the near shore, which increased the areas and sediment volumes subject to cleanup.