General Motors (Central Foundry Division) Cleanup Progress Update

Massena, St. Lawrence County, NY

U.S. Environmental Protection Agency **Spring 2016**

Cleanup of GM Site Continues

The cleanup of the GM site is ongoing and is being addressed in stages:

- installation of a cap on the Industrial Landfill at the site in the late 1980's to prevent immediate exposures from contaminants;
- long-term cleanup phases focusing on the cleanup of sediment from the St. Lawrence and Raquette River systems;
- excavation and removal of contaminated on-site soil;
- removal of contaminated soil and sediment on St. Regis Mohawk Tribal properties (including Turtle Cove); and
- treatment of contaminated groundwater.

From 1988 to 2005, GM completed a number of significant cleanups, including the dredging of the St. Lawrence River, Raquette River and Turtle Cove, groundwater collection at the base of the landfill and the development of a system to collect and treat water running off the site before discharge to the St. Lawrence River.

With the bankruptcy of GM in 2011, the Revitalizing Auto Communities Environmental Response (RACER) Trust was formed and assumed ownership of the site. Since that time, the pace of cleanup has quickened. RACER has successfully performed the demolition of the former on-site manufacturing buildings, as well as removal of the contaminated soil from underneath the buildings and the removal of soil in and around the industrial waste water treatment lagoons. In total, ***more than a half million tons of PCB-contaminated materials have been removed*** from the site since RACER Trust assumed ownership.

In 2015, cleanup work included creation of a 150-foot landfill setback – a waste-free buffer zone along the Tribal border and the St. Lawrence River. Work also began on the replacement of the multi-layered engineered cap on the Industrial Landfill and East Disposal Area. Future work at the site includes installation of a permanent groundwater treatment system, completion of the Industrial Landfill/East Disposal Area cap, cleanup of a 10-million gallon lagoon and removal of contaminated soil and sediment from a Tribal property. All of this work is expected to be completed by 2017.

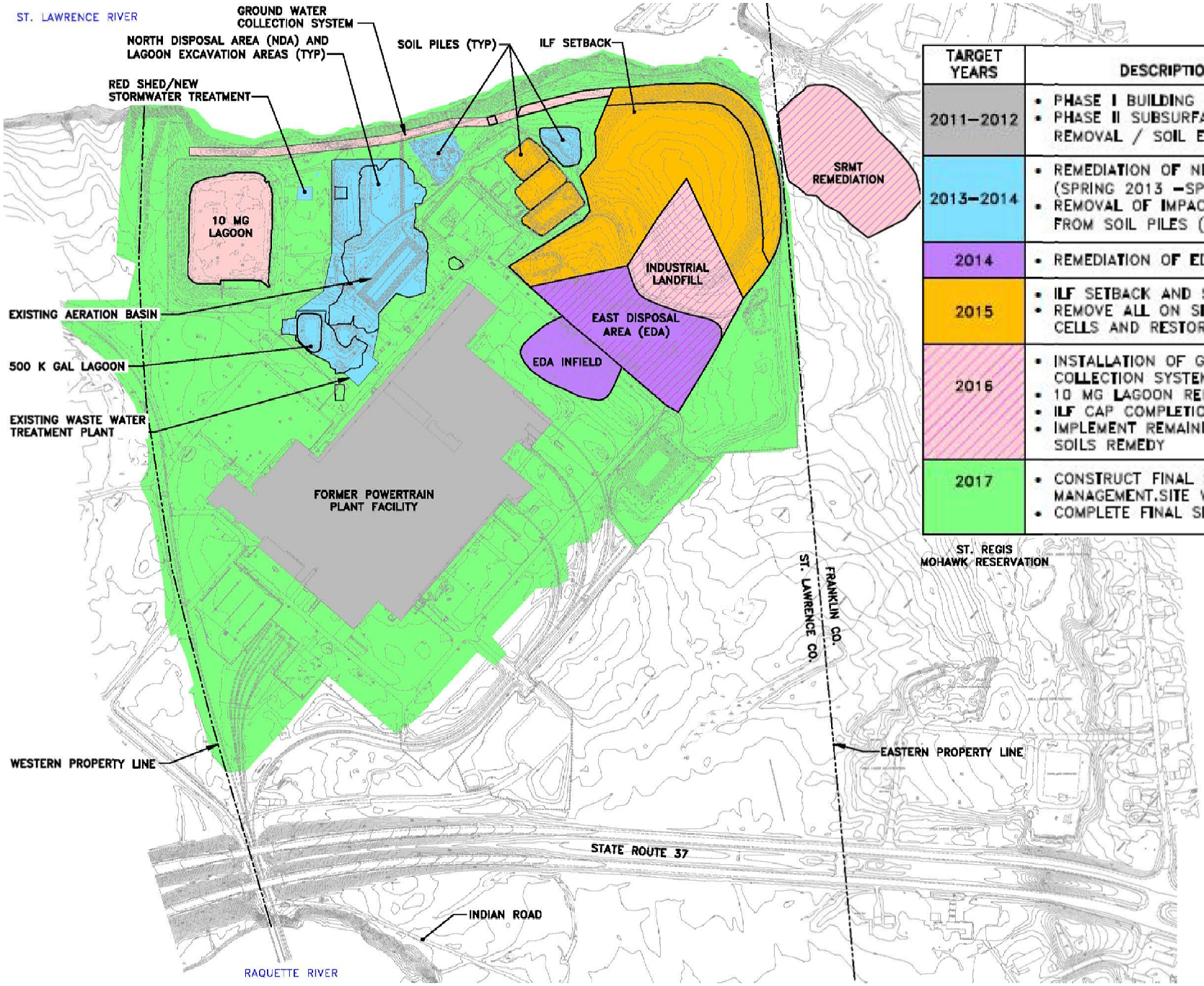
This update provides an overview of the work that has been completed to-date and the next steps in the cleanup of the site.

By the numbers

- 23,000 tons of PCB-contaminated sediment dredged from the St. Lawrence River system (including 16,900 cubic yards of contaminated soil and sediment from Turtle Cove and the surrounding area)
- 21,389 tons of scrap metal recycled
- 502,228 tons of hazardous waste shipped off site
- 2.6 tons of asbestos removed
- 59,000 tons of contaminated (but not classified as hazardous) waste removed and disposed of
- 21.2 million gallons of remedial wastewater treated since 2011

Aerial View: General Motors Central Foundry Division Site (Sept. 2015)

GM (Central Foundry Division) Site Cleanup Progress by Year



TARGET YEARS	DESCRIPTION
2011–2012	• PHASE I BUILDING DEMOLITION • PHASE II SUBSURFACE STRUCTURE REMOVAL / SOIL EXCAVATION
2013–2014	• REMEDIATION OF NDA AND LAGOONS (SPRING 2013 –SPRING 2014) • REMOVAL OF IMPACTED MATERIAL FROM SOIL PILES (2013)
2014	• REMEDIATION OF EDA (2014)
2015	• ILF SETBACK AND 50% CAPPING • REMOVE ALL ON SITE CONTAINMENT CELLS AND RESTORE AREA
2016	• INSTALLATION OF GROUNDWATER COLLECTION SYSTEM • 10 MG LAGOON REMEDIATION • ILF CAP COMPLETION • IMPLEMENT REMAINING OFF–SITE SOILS REMEDY
2017	• CONSTRUCT FINAL STORM WATER MANAGEMENT.SITE WIDE CAP • COMPLETE FINAL SITE RESTORATION

Background

The EPA added the GM site to the Superfund National Priorities List in 1984. The 217-acre site was originally built to produce aluminum cylinder heads for the Chevrolet Corvair. The facility operated as an aluminum die-casting plant from 1959 to May 2009. Until 1980, polychlorinated biphenyls (PCBs) were a component of hydraulic fluids used in die-casting machines at the facility.

While in operation, various industrial wastes were generated and disposed of on-site. Contamination is located in two disposal areas (the North Disposal Area and the East Disposal Area), an Industrial Landfill and four industrial lagoons. PCBs have been found in the groundwater, on- and off-site soil and sediment in the St. Lawrence and Raquette Rivers, Turtle Cove and Turtle Creek. Groundwater was also found to be contaminated with volatile organic compounds and phenols have been detected in lagoon sludge, as well as in the disposal areas. Public water supply systems have not been impacted.

The site is bordered by the St. Lawrence River to the north, the St. Regis Mohawk Nation to the east, the Raquette River to the south and property owned by Alcoa and CSX to the west.

The cleanup work is being conducted by the current owner of the site, the RACER Trust, which was created through the GM bankruptcy in 2011. The cleanup work is overseen by representatives of the U.S. Environmental Protection Agency (EPA), the St. Regis Mohawk Tribe (SRMT) Environmental Division and the New York State Department of Environmental Conservation (NYSDEC).

While it is anticipated that the GM site will be remediated by 2017, approximately 25 acres on or near the landfill will be restricted for development indefinitely and are suitable for "open space." The RACER Trust is actively marketing the property for re-use/redevelopment.

Cleanup Progress, 2011-Present

Since 2011, the active cleanup of the former GM manufacturing plant site has been underway. Cleanup work is expected to be completed in 2017.

A timeline of activities and details of the work are listed below (see also Figure on page 2):

2011: Demolition of former manufacturing building and water tower. Clean building materials were recycled; contaminated materials were disposed of in permitted landfills.

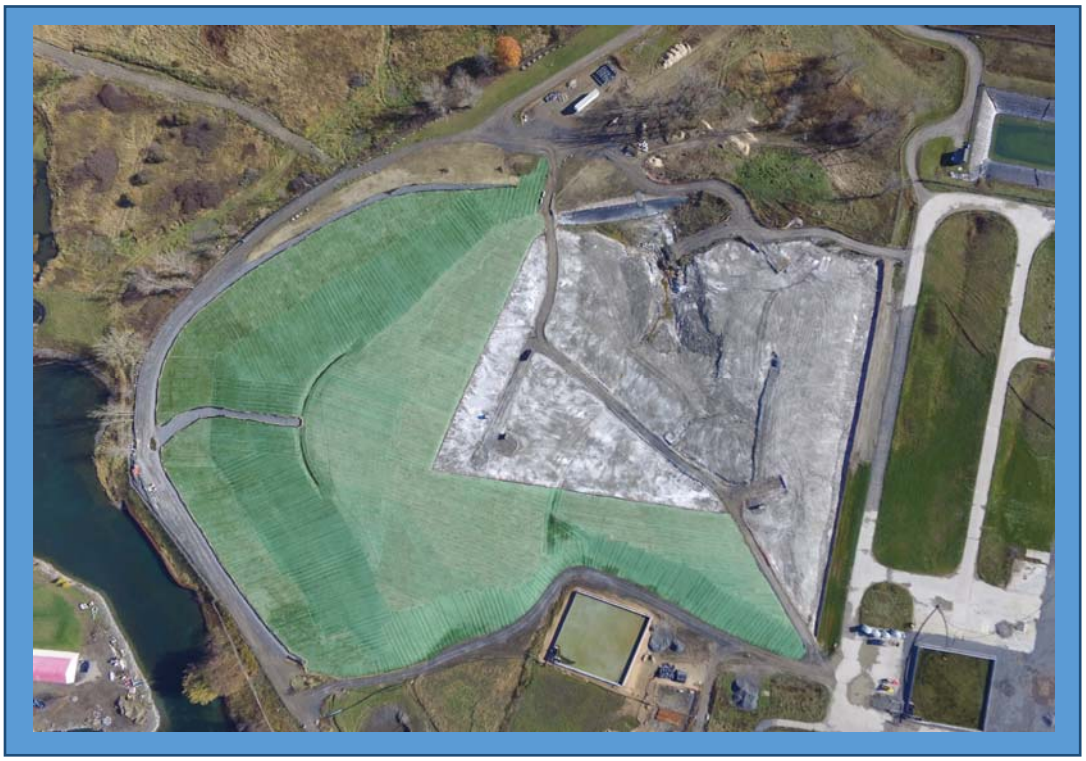
2012: Remediation of the manufacturing building floor slab, sub-surface tunnels, oily waste lines and impacted soil beneath the building. Included backfilling to grade with processed clean floor slab concrete and imported backfill. This phase of work was completed in March 2013.

2013: Remediation of the North Disposal Area and Active and Inactive Lagoon areas. This work involved the excavation of heavily-contaminated areas beneath the lagoons and in the vicinity of the aeration basin. This phase also included the demolition of the wastewater treatment buildings and the Butler Building. This phase of work was completed in early 2014.

2014: The East Disposal Area and East Disposal Infield Area were both remediated.

2015: Excavation for the Industrial Landfill setback and capping of the Industrial Landfill and East Disposal Area began. This work involved the relocation of a significant portion of the existing Industrial Landfill through the excavation and creation of a 150-foot wide "buffer zone," which essentially pulled the existing landfill back 150 feet from Tribal property, Turtle Cove and the St. Lawrence River. The excavation and relocation necessary for the creation of the 150-foot buffer was completed in 2015. Excavated soil was placed under a newly engineered landfill cap or disposed of off-site depending on pre-excavation characterization PCB soil data. The upgrades to the existing landfill cap are ongoing and will continue through 2016.

2016: Throughout 2016 and 2017, final site cleanup will include placement of a soil cover on specific areas as needed, remediation of a 10-million gallon lagoon and installation of the groundwater recovery system.



Minimizing air impacts and conducting air monitoring:

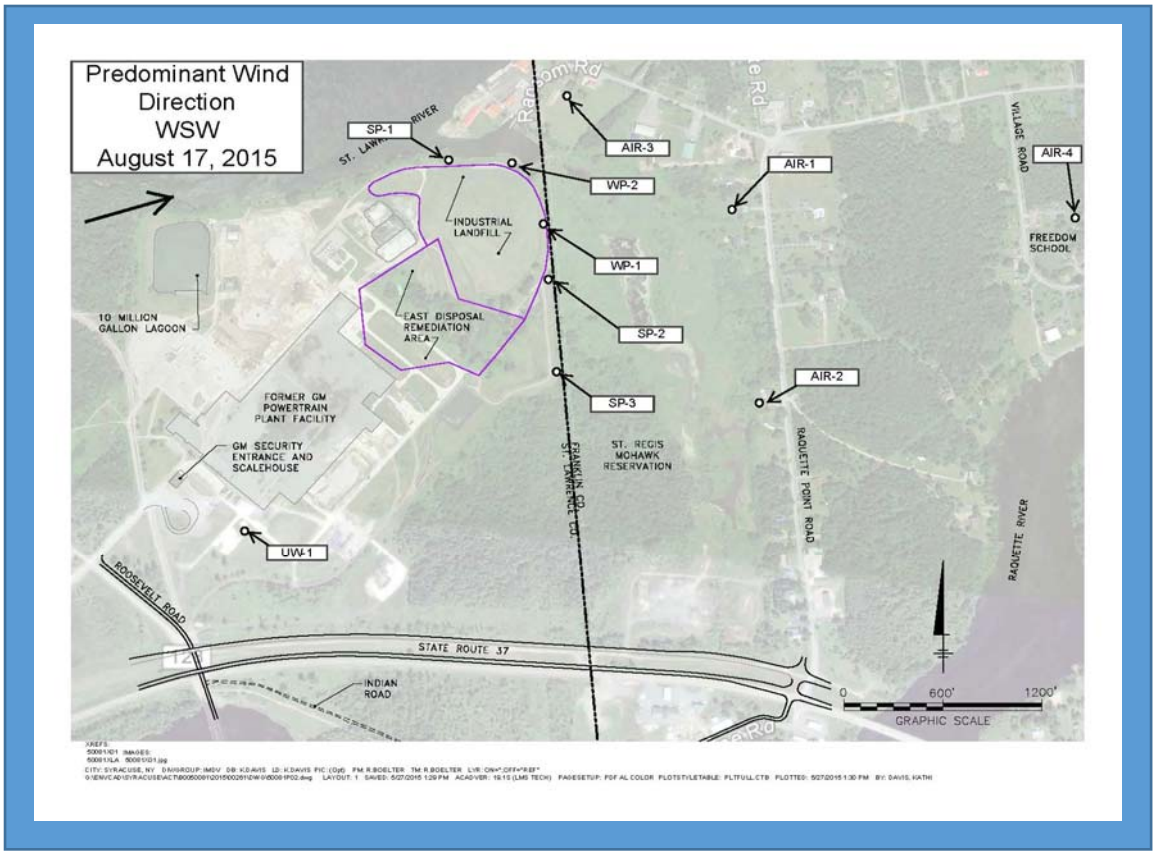
Before and during the cleanup, plans are developed and actions are taken to reduce the potential for the release of contaminants into the air. Prior to the start of work, work plans are prepared and submitted to EPA for approval, which describe how the work will be conducted. These work plans also include a description of the actions that will be taken to reduce or eliminate releases to the air. Prior to approval, all work plans are provided to NYSDEC and SRMT for review and input.

There are multiple levels and types of air monitoring that take place whenever PCB-contaminated materials are handled on-site. The workers wear personal air monitors to determine their exposure and if breathing protection is required. There are also work perimeter and site perimeter monitors which measure for dust. Additionally, PCB air monitoring is conducted at various downwind locations whenever PCB-contaminated materials are managed on-site. During the 2015 work season, there were four air monitors in the community at Akwesasne – three at private properties and one at the Freedom School (which was added to the monitoring network on May 13, 2015).

PCB air samples were analyzed within 24 hours of collection and all results were sent directly from the laboratory to EPA, the RACER Trust, and SRMT within 48 hours of the sample being taken. The results were then posted on the RACER Trust website at http://www.racertrust.org/Environmental_Cleanup/Massena_Dust_Monitoring_Reports.

The excavation associated with the setback of the Industrial Landfill (buffer zone creation) began in late April 2015. Prior to the start of excavation, an approximate 20-foot high windscreen was placed at the top of the landfill, which was designed to lower wind speed in the excavation area, reducing the potential for dust to be generated. A windscreen was also placed at the eastern site perimeter fence line to further prevent dust from leaving the site. While work was underway, areas of the site where PCBs were being handled were sprayed with water to control dust, or more often, a material called "Posi-Shell," which fully encapsulates the material, greatly reducing the potential for air releases.

While there are no federal or state regulatory standards for daily PCB air emissions, an "action level" for the site was developed by EPA using the Agency's Integrated Risk Information System's (IRIS) Reference Dose for non-cancer health effects. IRIS is a human health assessment program that evaluates information on health effects that may result from exposure to environmental contaminants. The IRIS Reference Dose for noncancer health effects from PCBs is 0.11 parts per billion for a child resident (0-6 years old) and 0.26 parts per billion for an adult resident. These values assume continuous daily exposure at those levels for a six-year period, 350 days per year. The same action levels are being used at many other PCB cleanup sites throughout the country.



Map of air monitoring locations

Minimizing air impacts and conducting air monitoring (continued):

For the duration of the Industrial Landfill work in 2015, there were seven instances where the air monitors on SRMT lands had a sample above the EPA action level of 0.11 parts per billion. These samples were collected between July 23, 2015 and August 17, 2015 when the contractor was excavating in a heavily-contaminated section of the landfill and a significant amount of debris was encountered. None of the samples collected from the monitor at the Freedom School were above the EPA action level. Air levels were evaluated daily and site processes were continuously evaluated and actions were taken to reduce or eliminate the potential for additional release. To address the increases, the work speed was reduced (the contractor used two excavators instead of three) and the contractor sprayed additional Posi-Shell on areas with significant debris during excavation.

The creation of the waste free "buffer zone" is now complete and there is no longer PCB waste within 150 feet of the site boundary. All PCB-contaminated materials in the landfill are now covered with a thick, durable coating of Posi-Shell. The placement of a multilayer, engineered cap began in 2015; the remainder of the landfill will be capped in spring 2016.

Air monitoring will continue while work is underway to cleanup PCBs. There will be little or no movement of hazardous materials at the landfill in 2016 and, therefore, there will be a very low potential for off-site air releases. Air monitoring will be done during the cleanup of the 10 million gallon lagoon as well as cleanup of PCB-impacted soil and sediment on Tribal land.

During the cleanup, the EPA has had and will continue to have daily communication with the SRMT's Environmental Division. This ongoing coordination and consultation will continue until the work is completed at the site.

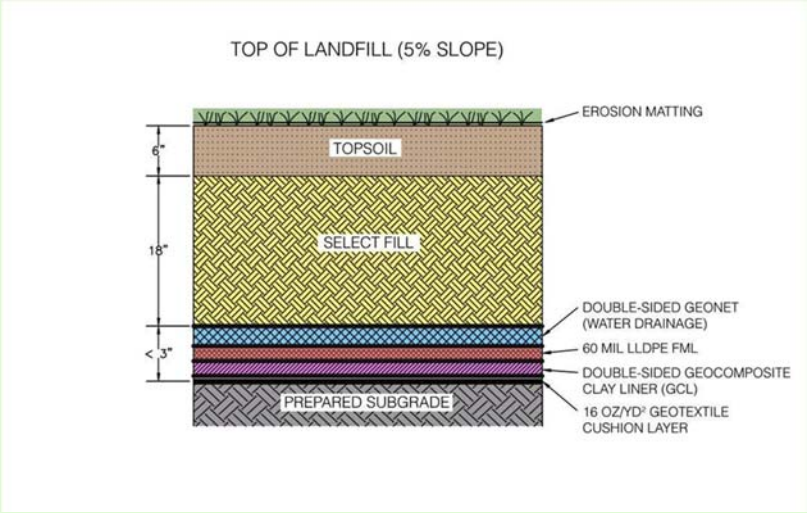
Sampling: By the numbers (2011-2015)

- **Community air samples: 2,633***
- **Soil samples: 3,370**
- **Samples of treated discharge water: 185**
- **Sampling of equipment (decontamination): 523**
- **Groundwater samples: 156**

* Does not include dust or personal monitoring samples

What is the landfill cap made of and how does it work?

Capping involves placing a cover over contaminated material such as landfill waste or contaminated soil. Such covers are called "caps." Caps do not destroy or remove contaminants. Instead, they isolate them and keep them in place to avoid the spread of contamination. Caps prevent people and wildlife from coming in contact with contaminants. The multilayer cap installed at the GM landfill eliminates exposure of the contaminants to the atmosphere and prevents rainwater from contacting the waste, which prevents infiltration of contaminants to the groundwater.



If you have any questions or would like additional information, please contact:

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If you would like information on general environmental concerns or the federal Superfund hazardous waste program, have concerns or complaints about the Superfund program, or if you seek assistance in resolving site-specific issues that were not fully addressed by the EPA, please contact:

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EPA Regional Public Liaison

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Or toll free at (888) 283-7626

Cleanup Progress

Completed (with completion dates):

- Capping of the Industrial Landfill (1987) (upgrades to the cap are currently underway)
- Dredging and/or excavation of contaminated sediment and soil in the St. Lawrence River (1995), Raquette River (2003), and Turtle Cove (2005)
- Collection and treatment of all potentially contaminated surface water (1995)
- Removal of contaminated sludges from the 350,000 gallon "oily waste" lagoon and the 1.5 million gallon lagoon (2000)
- Capture and treatment of contaminated groundwater and excavation of contaminated soil at the toe of the Industrial Landfill (2003)
- Cleanup of tribal property soil (2005 & 2007)
- Demolition of the 850,000 square foot manufacturing building (2011)
- Removal of contaminated soil underneath the former manufacturing building and removal of soil in and around the industrial waste water treatment lagoons (2012-2013)
- Excavation of the North Disposal Area, 1.5 million gallon lagoon, and industrial waste water treatment components (2013)
- Excavation of the East Disposal Area (2014)
- Creation of a 150-foot buffer around the Industrial Landfill, upgrading the cap (2015-2016)

Upcoming (with completion dates):

- Installation of a permanent groundwater treatment system (2016)
- Completion of the Industrial Landfill cap (2016)
- Remediation PCB-contaminated sediment in a 10 million gallon lagoon (2016)
- Removal of contaminated soil and sediment from an off-site Tribal property
- Final site restoration (2017)

EPA Five-Year Reviews

Under the Superfund law, five-year reviews are required when hazardous substances, pollutants or contaminants remain at a site that would not allow for unrestricted use. The purpose of the five-year review is to ensure that implemented cleanups are working as intended and are protective of human health and the environment. The EPA issued five-year review reports for the General Motors (Central Foundry Division) site in 2005, 2010 and 2015. These reports concluded that the implemented actions at the site are protective of human health and the environment.

A summary of cleanup activities completed at the GM site, to date, and an evaluation of the protectiveness of the implemented cleanup remedy is included in the five-year review report.

The 2015 report is available at:
http://semspub.epa.gov/src/document/02/372872.