

Cleanup to start at Port Granby Project site



The cleanup of historic low-level radioactive waste and its relocation to the Port Granby Project engineered aboveground mound is scheduled to begin this fall.

Since the general contractor, AMEC-CB&I Joint Venture, began bringing in equipment, materials and construction crews this past spring, the site of the Port Granby Project in southeast Clarington has been the centre of significant activity. Over 14,000 truckloads of clay, specially manufactured materials, gravel and sand have been delivered to the site along the project's designated clean construction material transportation route. The facility's two engineered storage cells and internal roadways have been built.

The work has included the completion of the internal waste haul route and Lakeshore Road underpass along which trucks will transport the waste from the existing site on the shoreline of Lake Ontario to the long-

term waste management facility, 700 metres to the north.

"Everything is now in place for our contractor to start excavating and transferring the waste away from the lake into safe, long-term storage," said Mark Galanter, Port Hope Area Initiative (PHAI) Port Granby Project Manager. "After years of working with the community and government stakeholders to bring this important project to fruition, the cleanup is ready to begin."

Ensuring the environment is protected is a key priority, so preparations have included measures to carefully monitor the waste trucks – all of which will be covered – even though they will not travel on public roadways.

Safety comes first

Each morning before starting work at the Port Granby Project construction site, every AMEC-CB&I worker fills out a Task Analysis Card, listing the hazards of the job and how they'll do the work safely.

Also on site, PHAI and contractor supervisors kick off the workday with a tailgate meeting to review scheduled tasks and environmental conditions that could impact the job, from heat to wind predictions.

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Local clay source provides environmental protection and economic benefits

The PHAI contractor for the Port Granby Project did not have to go far to find high-quality clay to line the cells of the engineered aboveground mound. Sourcing clay that would meet the project's rigorous standards for environmental protection had been identified as a potential challenge, but soon after AMEC-CB&I Joint Venture began its search, it found St Marys Cement in Bowmanville, located just west of the Port Granby Project site.

St Marys Cement's ability to supply the quantity and quality of clay needed for the project is both an environmental and an economic benefit for the area. The clay liner is critical to the mound's performance, as it works with other components to encase the waste within the mound and prevent contaminated water from entering the ground. Testing by the contractor, which has been observed by the Canadian Nuclear Safety Commission, confirmed the clay exceeds the stringent requirements of the project's Canadian Nuclear Safety Commission licence. St Marys Cement will also supply the clay required for construction of the first cell of the Port Hope Project engineered aboveground mound.

Building the Port Granby Project engineered aboveground mound

The highly engineered aboveground mound at the Port Granby Project long-term waste management facility will isolate the waste by encasing it within multi-layer base liner and cover systems.

Completion of the mound's two cells and base liner system this past summer is enabling the excavation of historic low-level radioactive waste at the existing site to begin.

Approximately 450,000 cubic metres of historic low-level radioactive waste will be transported from the

existing site and placed into the new facility, where it will be progressively covered and encapsulated in the engineered mound.

The mound is situated on a 10-hectare site and will rise to a height of about eight metres. The approximately three-metre thick cover system will be constructed once all of the waste has been placed in the cells.

The mound's performance will be closely monitored during construction and for hundreds of years into the future to ensure its safety.



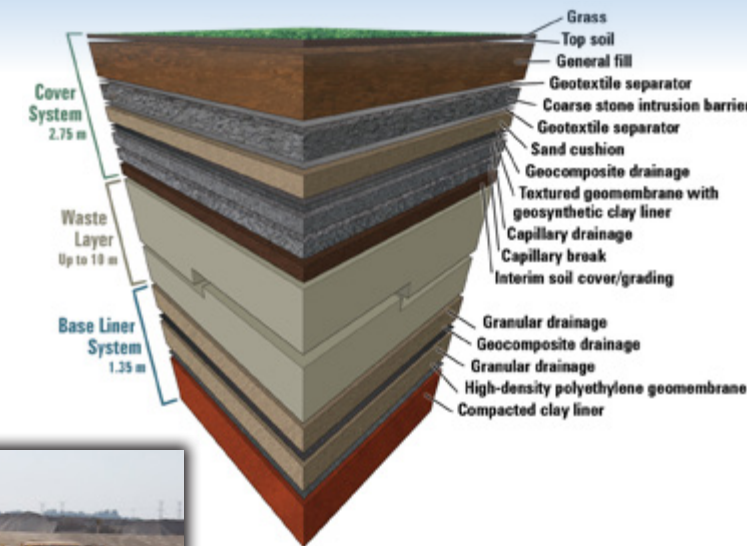
Cell construction

Construction crews excavate to a depth of approximately eight metres below the surface to reach low-permeability natural till that underlies the cells. Clean soil from the area where the cells are constructed is removed and stockpiled on site; the stockpiled soil will be used for the mound's cover system and to restore the existing waste management facility site (south of Lakeshore Road) after the waste has been removed.

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The cards and meetings are just two examples of the PHAI's and contractor's commitment to safety and environmental protection on this highly regulated project.

"Making sure every worker goes home at night to their families in the same condition they came to work is what safety is all about," says AMEC-CB&I Health and Safety Officer, Derek Nicol. "We never stop training, reinforcing the importance of safety and measuring how we're doing."



Compacted clay liner

The clay shown above is placed on top of the natural till in five individual layers and compacted (machine in photo) to a total thickness of 0.75 metres. The compaction of the layer is tested for density and moisture using prescribed methods. The compacted clay is a key component of the composite liner system that forms an impermeable barrier at the base of the mound and keeps contaminated water from entering the environment. Inset: Water trucks add moisture to the clay for compacting.



Leachate collection system

A drainage ditch (circled above) is covered with the high-density polyethylene geomembrane and filled with coarse gravel. This forms the leachate collection system that carries contaminated water out of the mound. The leachate is collected and pumped to the on-site waste water treatment plant.



High-density polyethylene geomembrane

This manufactured layer is placed over the clay as another key component of the mound's composite base liner system. The material is laid in sheets, and the seams are precision welded to form a continuous barrier over the surface of the clay.



Underpass, internal haul route keep waste trucks off public roads

Historic low-level radioactive waste transported from the existing Port Granby Waste Management Facility (WMF) to the engineered aboveground mound, north of Lakeshore Road, will travel along an internal waste haul road and through a temporary underpass at the new long-term waste management facility (LTWMF). Lakeshore Road traffic will be diverted over the underpass while the project is underway. The construction of the internal waste haul road and underpass fulfill a commitment made to the community during the environmental assessment that no waste would travel on public roadways.



Delivery and installation of these pre-cast box culverts for the underpass was completed during the summer.

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Wash stations for vehicle decontamination and vehicle portal monitors to track waste volumes and truck movement have been installed. A dedicated waste water treatment plant was completed last year as a requirement before waste excavation could begin. The plant uses advanced treatment technologies to ensure all treated waste water generated from project activities meets or exceeds Canadian Nuclear Safety Commission requirements for discharge to Lake Ontario.

While the work is underway, the contractor must adhere to stringent health and safety plans, as required by the

PHAI Management Office under the Canadian Nuclear Safety Commission licence for the Port Granby Project. Contractor requirements for the protection of the public, workers and the environment include radiation protection, dust management, occupational health and safety, and traffic safety.

Waste excavation and placement is scheduled to take approximately three years.

Please see pages 3 and 4 for details about how the engineered aboveground mound will be built.

PHAI generating regional business opportunities

The PHAI projects are generating area business as contracts are awarded to provide supplies and services that support the construction underway. AMEC-CB&I Joint Venture, the prime contractor for the Port Granby Project, has already awarded over \$35 million in subcontracts. Examples include:

- Aggregate construction material hauling, internal road and underpass construction at the Port Granby Project long-term waste management facility: Drain Brothers, Peterborough (and regional subcontractors for Drain Brothers);
- Fuel supplier for Port Granby Project construction equipment: Durham Fuels, Bowmanville;
- Clay for the engineered aboveground mound base liner system: St Marys Cement, Bowmanville;
- Elliott Road maintenance, snow removal and site services for the long-term waste management facility: Lakeland Multitrade, Cobourg, which has also won additional contracts for the Port Hope Project.

Through an open and competitive bidding process, the PHAI Management Office also generates millions of dollars in contracts and supplies, from vehicle repairs to printing services. For example:

- Bailey's Automotive of Port Hope provides ongoing vehicle maintenance and repairs for the PHAI Management Office project vehicles;

- Advance Archaeology, based out of Port Hope, completed heritage resource surveys at the long-term waste management facility site;
- Randall's Office of Baltimore supplied furniture and materials for renovations at the PHAI Management Office at 115 Toronto Road;
- Peterborough Fire Extinguisher supplies and maintains extinguishers for the PHAI Management Office and its project sites;
- Ongoing printing services for the PHAI Management Office are provided by Richard's Printing of Port Hope.

The PHAI will continue to create economic opportunities throughout the region in the form of jobs, supplies and services as project activities increase in the coming years. Visit www.phai.ca for more information about current contract and career opportunities.

The Port Granby Project addresses a long-standing environmental problem resulting from the past practices of former Crown corporation Eldorado Nuclear. Waste from Eldorado's Port Hope uranium refining operation was deposited at the Port Granby Waste Management Facility site on Lake Ontario between 1955 and 1988. Relocating the waste away from the lake and placing it into safe, long-term storage provides an environmental solution for generations to come.

Community members encouraged to join the Citizen Liaison Group

The PHAI Management Office is accepting applications for the 2017 Port Granby Project Citizen Liaison Group (CLG). Application deadline is December 9, 2016.

Community members with an interest in learning about the project and providing feedback to the PHAI Management Office are encouraged to apply. Joining as members-at-large or as representatives of community groups or associations, the volunteers reflect broad perspectives and diversity from sectors including the environment, conservation, business, industry, education, health, recreation and general community life.

Members serve for a two-year term, with the option to extend for a maximum term of four years. No special knowledge about the PHAI is required, and anyone over the age of 18 may apply.



A groundbreaking was held in April to mark the start of construction at the long-term waste management facility. (From left): Scott Anderson, AMEC-CB&I Joint Venture; Richard Sexton, Atomic Energy of Canada Ltd.; Mayor Adrian Foster, Municipality of Clarington; MP Kim Rudd, Natural Resources Canada Parliamentary Secretary; Mark Lesinski, Canadian Nuclear Laboratories; Craig Hebert, PHAI Management Office; and Wendy Partner, Clarington Ward 4 Councillor.



In August, CLG members participated in on-site field demonstrations to increase their understanding of how the PHAI conducts various types of environmental monitoring.

To apply to the CLG, visit www.phai.ca

Coming up soon...

Canadian Nuclear Safety Commission holds public meeting to receive update on PHAI projects

November 9-10, 2016

Town Park Recreation Centre
62 McCaul Street, Port Hope

Public Attitude Survey coming this fall

Residents within a 10-km radius of the Port Granby Project area will soon receive a public attitude survey about the project. Please participate. All responses remain anonymous.

Port Hope Area Initiative Project Information Exchange

115 Toronto Road, Port Hope, ON L1A 3S4 • Tel: 905.885.0291 • Fax: 905.885.9344 • info@phai.ca • www.phai.ca



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