



Project:	Sydney Tarponds Agency, Sydney, Nova Scotia
Date of Project:	2010 – 2013
Contracting Engineers:	AECOM

GENERAL DESCRIPTION:

The **Sydney Tar Ponds** were a hazardous waste site on Cape Breton Island in Nova Scotia, Canada. Located on the eastern shore of Sydney Harbour in the former city of Sydney (now amalgamated into the Cape Breton Regional Municipality), the Tar Ponds formed in a tidal estuary at the mouth of Muggah Creek, a freshwater stream that empties into the harbour. Throughout the 19th century, runoff from coke ovens associated with Sydney Steel Corporation's (SYSCO) now-decommissioned steel mill filled the estuary with a variety of coal-based contaminants and sludge. Efforts to clean up the waterway were dogged by false starts, delays, and political controversy. After extensive public consultation and technical studies, a C\$400 million cleanup plan, jointly funded by the Government of Canada and Government of Nova Scotia, was announced in January 2007. The cleanup was completed in 2013 with the opening of Open Hearth Park which is situated on the site of the former steel plant and has hosted events such as an Aerosmith concert in September 2014.

NEW WASTE CONCEPTS INVOLVEMENT:

New Waste Concepts (NWC) was asked by AECOM to be involved in the project at the recommendation of Conestoga-Rovers & Associates (CRA). Our involvement came because of the failure of Rusmar to control odors at the site during the in situ remediation process (see photos of Rusmar application at Sydney Tarponds).

The in-situ process involved the excavation and blending of cement and cement kiln dust to stabilize and solidify the contaminants. Following the excavation and blending, odors were very high. The Sydney Tarponds Authority initially started using the Rusmar product. Because of its webbing that occurs over a short period of time after application, the limitations on spraying distance, and the need for large area coverage, the Rusmar product failed in its ability to minimize odors. The project was in danger of being shut down until the odors could be contained. AECOM contacted CRA and requested their help in securing an appropriate odor control remediation product. CRA recommended NWC and the ConCover 180 product. NWC was contacted immediately and moved quickly to transport two ConCover spraying machines (CAPS 900 gallon units) to the site along with a truckload of product.

NWC, using its ConCover 180 process, was able to apply and seal the surface, creating a durable long term odor controlling cover material that survived a wet and rainy environment during some of the months of the clean up process. NWC's ConCover 180 with HydraGuard was blended and applied each day. On average 5-8 loads a day were applied that kept odors low and the project moving forward.

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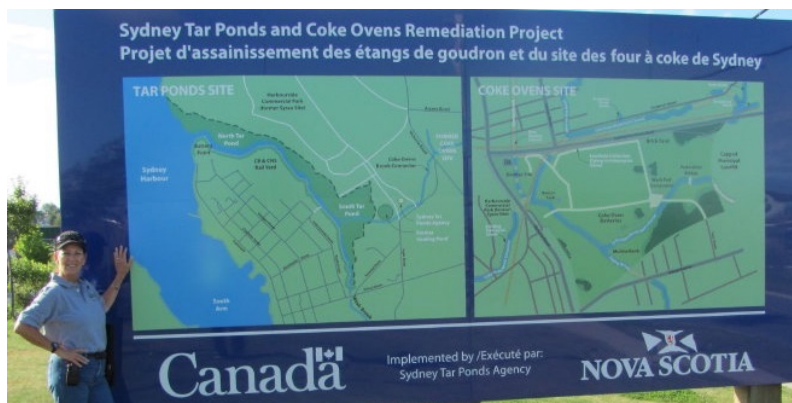
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The product which was used was ConCover 180 with HydraGuard. The HydraGuard added is an acrylic polymer and vinyl acetate blend, which makes the ConCover 180 blend a hydrophobic mixture.

ADVANTAGES OF CONCOVER 180:

- Durability: This product survives rains and being submerged where ponding occurred in flat areas
- Impermeability: This product helps create a vapor seal over the surface of contaminated sediment. That vapor seal restricts evaporation of moisture carrying odorous compounds, volatilization of odorous and harmful compounds, and reduces the penetration of water into the soil.
- Short blending time: 20 minutes of blending
- Non-carcinogenic: cementitious materials are often carcinogenic, and can be potentially harmful to human health. Check out the MSDS sheet on Portland Cement.
- Low exothermic reaction: ConCover 180 generates a 2-5 degree exothermic reaction, whereas cement based products can range between 25 – 110 degree exothermic reactions, which can burn the skin. Dust from cementitious material when in contact with sweat on the skin can create 2 degree burns. Any product which has an exothermic reaction to drive off moisture does have a set time. Although NWC has a non-setting version of ConCover 180, The Sydney Tarponds Authority choose to use the setting version as an incentive to quickly spray out the tank load and blend/load another batch of ConCover 180 for application. AECOM felt if they used the non-setting version of the CC180 product, employees of AECOM might only apply 3-5 loads a day.
- Simple Clean up: Cleaning up the tank on a CAPS machine is as simple as refilling the tank with water for the next days beginning load and run the mechanical mixing auger, and circulation pump through the can and spray hose when used, back into the tank. This compared to the Rusmar process or Posishell process is much simpler.
- Spray Distance: Density of CC180 and power of CAPS machine sprays 100 ft

PROJECT PHOTOS



The Cleanup is funded jointly by the Government of Canada (up to \$280 million) and the Province of Nova Scotia (\$120 million) and is governed by a Final Cost-Share Agreement signed by both parties in 2007.

Contamination on the Coke Ovens site will be managed by a groundwater collection system and a water treatment plant designed to capture water impacted by PAHs and to treat the water before it is released. Other parts of the Coke Ovens groundwater collection system includes rerouting Coke Ovens Brook to two new channels, and to construct two barrier walls in the soil to prevent clean groundwater from entering the site. When complete, both sites will have a protective layer or cap designed to allow for future development.



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APPLICATION OF CC180 WITH HYDRAGUARD:



Shows CC180 with HydraGuard durability after being rained on (compare to Rusmar in red and yellow below)



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APPLICATION OF CONCOVER 180 WITH HYDRAGUARD

CC180 with HydraGuard being sprayed on contaminated sediment at Sydney Tarponds



Loading HydraGuard into CAPS machine

