



On the Penobscot

Winter 2015 Vol. 9, Issue 1

As final environmental cleanup work begins, a town's future comes into view

Throughout the nearly 15 years since the former HoltraChem Manufacturing plant was suddenly closed and padlocked, a site that was once the town's largest employer and taxpayer has instead been the focus of a long-running debate over how extensive its environmental remediation ought to be and how that would be achieved. With the start of the final remediation now underway, the focus is now turning to the town of Orrington, owner of a majority of the site, and how it might choose to redevelop the largely untouched parcel of nearly 180 acres that sits atop a bluff with commanding views overlooking the Penobscot River.

With a renewed spirit of collaboration between the Maine Department of Environmental Protection and Mallinckrodt US LLC now driving the remediation process, site restoration could be achieved as early as the end of 2018, once extensive soil, sediment and groundwater remediation plans are completed. The shared goal of both the Maine DEP and Mallinckrodt is to complete remediation and restoration as soon as possible so that the town can realize its goal of appropriate reuse of the site.

"Everyone involved in this site wants to see us get this work done sooner rather than later," says Patricia Duft, a representative of Mallinckrodt US LLC who has worked on site issues since HoltraChem's plant closure in 2000. "No one wants to see this completed more than the Town of Orrington, which has a large footprint of industrially zoned property on the Penobscot River either for redevelopment for light manufacturing or other uses. It has been a long time coming for them."

The town's stake in the timeline and success of the remediation is not lost on the environmental engineers recently hired by Mallinckrodt to lead the cleanup and remediation effort.

"In all of the work that we do in environmental remediation, we tend to focus on state and/or federal regulators and the party responsible for the remediation," says John Weston of CDM Smith, the lead firm heading up a consortium of experts who will design and implement the cleanup. "But when this is all said and done, the constituency that is most important is the community that has to live through this work and the landowner that will inherit this property when the work is done."

Continued on back page

Mallinckrodt assembles environmental engineering team with ties to Maine as final remediation work gets underway

After nearly 15 years of site review, engineering studies and substantial site cleanup work at the former HoltraChem manufacturing plant in Orrington, the final environmental remediation process has begun and is being led by Mallinckrodt US LLC and a team of several engineering firms with significant experience in and personal ties to Maine.

After a highly competitive process that brought eight qualified engineering firms to Orrington to review the site, Mallinckrodt selected a combined team of CDM Smith, Geosyntec Consultants, Inc. and Anchor QEA LLC, which was assembled with a focus on firms



What remains of an electrical building on the former HoltraChem site is no match for the grabbing jaws of this front-end loader.

and individuals with specific professional experience working in Maine and on projects similar to the cleanup of the former HoltraChem chlor-alkali plant. (In coordination with Woodard and Curran, a Portland firm, and Sevee & Maher Engineers, Inc., a firm located in Cumberland which are already handling groundwater remediation tasks at the site this team of professionals will lead the remediation project to its completion.)

The Maine Board of Environmental Protection Order, which became effective in April 2014, requires the removal of two landfills and the recapping of three others. Certain site soils within the former manufacturing area must also be removed and sediment both on site and in the adjacent cove in the river will also

be addressed. Due to the scope of remedial activities required in the Order, it was a challenge to find a remedial project management firm that could meet all the selection criteria, which included experience with mercury and chlor-alkali plants, sediment remediation, landfill excavation and capping as well as an understanding of Maine regulations and a history of working successfully with the Maine Department of Environmental Protection.

While selecting a team of different firms requires significant communication and coordination for this type of project, CDM Smith, Geosyntec and Anchor QEA joined together because they recognized that each firm contributes unmatched proven experience in the most important facets of the program – successful design and construction of projects in Maine and successful completion of large-scale mercury remediation sites. The three firms have complementary skills and respect the others' areas of expertise. The key leaders in each firm convinced Mallinckrodt they will work collaboratively as part of an integrated team and their proposal stated a successful project is embodied in the following goals:

- Complete the project with zero injuries or health effects;
- Apply a safe, innovative, state-of-the-art approach to complete the project;
- Prevent release of site contaminants to the environment due to remedial activities;
- Work cooperatively with the regulatory authorities; and
- Be a positive contributor to the community.

"We have the best team in place we could have hoped for," said Kathryn Zeigler, Director for Environmental Remediation. "They not only have extensive experience working on sites with similar characteristics as the Orrington site, but they have completed many of the investigations and demolition work at the site itself. This team has done a lot of work in Maine and has been very successful working with state regulators."

Geosyntec Consultants brings Maine experience and an international reputation to former HoltraChem site

Editor's Note: In this, and subsequent newsletters, we will highlight the firms and individuals working on the site remediation. In this issue, we look more closely at Geosyntec Consultants, Inc.

Safely removing the decades-old chemical legacy of a manufacturing plant is a job best left to experts who have extensive experience in the field. In its review of engineering firms competing for the role of remedial project manager for the Orrington Site, Mallinckrodt US LLC took notice of Geosyntec Consultants Inc. and its extensive experience remediating former manufacturing plants that once utilized the same chlor-alkali process as did HoltraChem.

A quick look at Geosyntec's website makes it clear this is a company that is filled with people who not only have a high level of technical knowledge but are encouraged to think creatively and to think about the communities in which they are working. The President's Message describes a corporate culture in which engineers and scientists can apply their energies and creativity to solving complex problems of business, industry, and government. Find them at www.geosyntec.com

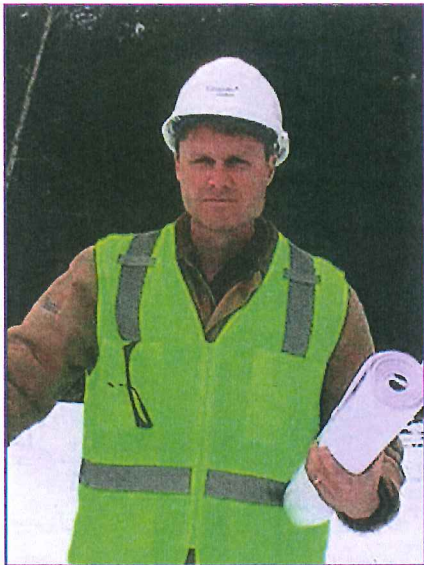
With more than 1,100 employees across the United States and internationally, Geosyntec was founded more than 30 years ago as state and federal environmental officials stepped up regulatory enforcement to bring landfills and other contaminated sites into conformity with stricter environmental regulations. Much of that demand brought them to Maine, and since 1988 Geosyntec has been the lead designer and/or construction manager/quality consultant on over 15 waste disposal units permitted by the State. The firm opened an office in Maine in 2002 and has now completed more than 30 projects in the State, including extensive work at the Crossroads Landfill in Norridgewock. Geosyntec has also served as expert consultants to the Maine Department of Environmental Protection (DEP) and literally wrote the book (a manual) on the design and construction of final landfill covers for the DEP. Geosyntec has also provided consulting services related to the decommissioning and remediation of several former chlor-alkali facilities throughout the northeast and south, and has partnered with other consultants on the remediation of a former plant in British Columbia.

Scott Leuttich, the Geosyntec engineer who will be the landfill expert and construction quality manager for the Orrington Site remediation, has worked in Maine for over 20 years. For a more detailed profile of Scott, please read adjacent article.



Site demolition crews work to remove one of the largest remaining tanks on the site and when it is done these ribbons of steel are awaiting recycling.

Maine environmental engineer travels the world but comes home to Maine



Geosyntec Engineer Scott Leuttich

You can take engineer Scott M. Luetlich out of Maine, but you won't be able to get Maine out of him. Luetlich has broad experience outside of New England and spent several years living outside the state. But like many Maine natives, he always comes back.

A leading engineer with the firm Geosyntec Consultants, Luetlich was "away" from Maine while pursuing his Bachelor of Science degree in civil engineering from the Georgia Institute of Technology (Georgia Tech) and ended up staying long enough to also get his Masters of Science degree in geotechnical engineering there.

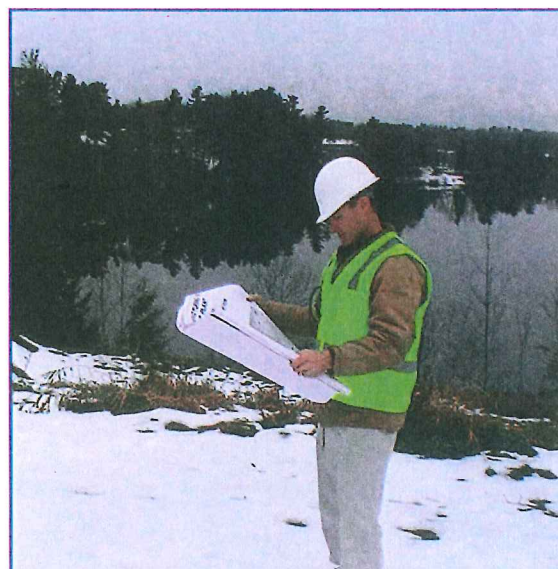
Much of his professional career, however, has been spent doing environmental engineering work in Maine and working directly with the Maine Department of Environmental Protection (DEP) on projects such as the Bridgton Landfill Closure and the Saco Landfill Superfund Closure projects. At the Crossroads Landfill in Norridgewock, Luetlich has served as project manager and/or engineer of record for over 21 years and has

designed, stamped and/or certified construction of the liner systems, leachate collection systems and final covers for most of the disposal units. In his latest assignment, as one of Geosyntec's engineers on the team selected to design and implement the final remediation program at the former HoltraChem manufacturing site, Luetlich brings his extensive career experience in Maine to the project site on the banks of the Penobscot River.

"I've worked in a lot of places and on many projects," says Luetlich. "But Maine is where I was born and raised. It's my home and it's the place I care deeply about. We are confident in our approach on this Site and we are comfortable working with the DEP's scientific and engineering staff."

Luetlich was the lead author of a manual written several years ago for the Maine DEP titled "Final Cover System Guidance Document - Municipal Solid Waste Landfills." The manual was generated to assist regulators and engineers in evaluating the technical details of the design and construction of landfill closure plans throughout Maine -- further evidence of the strong professional rapport he has with the DEP and other environmental entities with whom he has worked.

"Scott's applied and practical experience makes him an important asset in our work," said Kathryn Zeigler, Director of Environmental Remediation. "Like so many of the key people on this team, his experience and past work at similar remediation sites is extensive across the most important aspects of the work, including the safe removal of unlined wastes in a manner that will minimize exposure during the remediation process and the secure closure of landfills."



Maine DEP approves new groundwater extraction wells to accelerate mercury removal

The Maine Department of Environmental Protection (DEP) has approved a plan by Mallinckrodt US LLC to install additional groundwater extraction wells at the former HoltraChem manufacturing site, which will allow site engineers to increase the amount of groundwater that can be captured and pumped to the new on-site treatment plant.

Kathryn Zeigler, Director of Environmental Remediation, said the additional extraction wells in the vicinity of Landfill 1 will allow site engineers to intercept virtually all mercury in the groundwater and pump it to the site's new groundwater treatment plant. Mercury was used in the manufacture of chlorine for Maine's prolific pulp and paper industry and has been detected in the groundwater beneath the former HoltraChem manufacturing site. The new plant will remove all contaminants from the groundwater before releasing it as clean water as defined under the federal drinking water standards.

The plan was designed by Sevee & Maher Engineers (SME), a local Maine firm with expertise in groundwater issues.

The locations of the additional extraction wells were selected based on SME's knowledge of the site, the groundwater model being developed, and in consultation with the Maine DEP. SME is responsible for installing the new wells and is coordinating with Woodard & Curran, the local firm that is operating the groundwater treatment plant. "Installing these additional extraction wells now, rather than waiting for full implementation of the site remediation plan, will allow us to improve and increase the groundwater capture while providing useful data to refine the groundwater model and design a long-term groundwater extraction system for the site," said Zeigler.

Installation of the additional wells began in October and is expected to be completed by the end of the year. During the installation process, SME engineers are working closely with the Maine DEP representative on site to ensure any field changes are reviewed and approved before being implemented.



The skeletal shell of one of the largest remaining buildings is readied for final demolition ...



... the steel structure begins its final descent ...



... the horizon comes into view as the building disappears

Continued from front page

Although Mallinckrodt purchased some 65 acres of land back from the town in order to have clear access to where the remediation work will occur, the town remains the owner of nearly 180 remaining acres, most of which is virgin land. With support from Mallinckrodt, the town has secured \$1.5 million for the future redevelopment of the site in order to pay for access roads and site utilities should it decide to move forward with reuse of the property. What distinguishes the former HoltraChem site from other closed manufacturing facilities is its location on the Penobscot River; its proximity to all the major highways; access to rail lines, extensive on-site utilities including water and power; and the potential for accessible river transport such as that used successfully by Cianbro just up river in Brewer.

“These are decisions that the town has to make when the time is right,” said Duft. “Our job is to get this work done so that no more time runs on the clock beyond what is absolutely necessary to complete this process.”



The future groundwater cleanup at the former chemical manufacturing plant will be in large measure due to the silent work of these new extraction wells which have increased the amount of groundwater extracted from below ground for purification in the site's new groundwater treatment plant. (see related story).

Printed on 100% recycled paper. Please recycle when done.
Published by Mallinckrodt US LLC.



PRSR STD
U.S. Postage
PAID
Permit #76
Bangor, ME

On The Penobscot
P.O. Box 14
99 Industrial Way
Orrington, ME 04474