

Cashman at work on the Hudson River
Cashman Dredging

Partnership cleans up

Contaminated sediment that is, as US dredging contractor **Jay Cashman** and Dutch specialists **Boskalis Environmental** form a joint venture to tackle heavily polluted waterways

The JV is already making plans for a permanent contaminated sediment processing centre in the New York & New Jersey (NY&NJ) region as work continues on some of the most high-profile environmental remediation projects in North America.

The roots of the new alliance stem from Massachusetts-based Cashman's specialisation in environmental work, while Boskalis Environmental is known for the installation and operation of equipment and facilities for contaminated sediment/soil management. Boskalis Environmental now covers all Royal Boskalis Westminster's environmental activities and works as Netherlands-based Boskalis Dolman in Europe and as Stuyvesant Environmental Contracting (SECI) in the US and Canada, with an HQ in Princeton, New Jersey.

Cashman's projects

Currently dredging the NY&NJ harbour in preparation for the Panama Canal expansion, Cashman is also remediating PCBs in the Hudson River for General Electric – one of the

largest environmental dredging projects in US history (see DPCs passim).

The Hudson task began in 2009 with phase I, which saw Cashman remove 219,000m³ of PCB-impacted sediment. During the 2011 and 2012 phase II dredging seasons, Cashman exceeded the US Environmental Protection Agency's (EPA) targeted removal goals, excavating more than 267,000m³ in 2012 alone. That performance played no small part in the company being named a 'Top 20 Contractor in Hazardous Waste' by Engineering News-Record.

SECI in North America

Stuyvesant entered the North American market during this same period; its associated Dutch company Boskalis Dolman has expertise stretching back 30 years and has been involved treatment of more than 12M tons of sediments and soils.

Perhaps the best known example of Dolman's work is the 18-year collaboration with the city of Amsterdam. The general manager of Amsterdam's Water Management Board commented that "this sediment

processing operation may enter the history books as the first large-scale operation for heavily contaminated sediment".

Since 2004, SECI has worked on some of North America's toughest remediation projects:

- Florida's Miami River
- Wisconsin's Fox River
- The proposed redevelopment of Canada's Waterfront Toronto; and
- Phase I sediment removal on New Jersey's lower Passaic River (see DPC Sept.2012).

Let's look at them in more detail.

The Miami River hadn't been dredged for 75 years and the project included processing and disposal of sediments along a near 9km stretch. From the beginning, during the pre-proposal and technical development phase, SECI was extensively involved in the project design.

Phase I was carried out in 2004-2005 and the second phase from February to November 2008; the 550,000m³ of material dredged contained sediments with low-level contaminants, primarily arsenic. SECI's responsibilities included unloading this

feature: environmental dredging

material from barges into the facility where sediment separation and mechanical dewatering occurred.

This achievement led to the Fox River project, whose design started in April 2008, with full-scale remediation begun in May 2009. It's an enormous project, ongoing and scheduled to run for seven years, and it has seen SECI build the largest sand separation and dewatering facilities ever constructed in the US. Yet the firm completed the design, procurement, construction and commissioning in less than one year.

SECI then moved east to the lower Passaic River Superfund site, where Phase I targeted approximately 31,000m³ of material, with the main objective of removing sediments impacted with 2,3,7,8-tetrachlorodibenzo-p-dioxin, PCBs, mercury, PAH and other chemicals. Again, a purpose-built sand separation and dewatering facility was designed and installed, and all sediment processing was successfully completed this summer. It was this project – which demonstrated how to successfully process high levels of contamination on a large scale – that led SECI to refine the concept for a regional sediment processing facility to serve the NY&NJ area.



Stuyvesant's sediment processing plant on the Miami River...

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With environmental dredging, disposal is always problematical, but SECI's technology confronts this directly. Its aim is to reduce the contaminated volume of dredged sediment by separating sand and coarse material and the (mechanical) dewatering of the contaminated fine fraction, leaving the remainder suitable for potential beneficial use. And the dewatering step concentrates contaminants while removing most of the moisture, thus reducing the quantities of contaminated material requiring costly transportation and disposal in licensed landfills.

Integrated approach

The pursuit of additional projects in NY&NJ by Cashman and SECI separately will now be enhanced by their joint venture collaboration. Apart from its extensive dredging track record in the area, Cashman's high-profile Superfund sediment remediation projects have led to the purchase of a waterfront site in Elizabeth, NJ, for performing in-barge or pugmill stabilisation of maintenance dredged material prior to off-site shipment for beneficial use. SECI currently owns multiple mobile and fixed base sediment/soil separation and dewatering systems and is in the process of having other units built.

To enable the processing of a wide variety of impacted sediments, the JV has begun working with regulatory agencies to amend existing site permits. Depending on sediment classification and project specifications, either stabilisation or dewatering could be used. The JV's goal is to offer integrated services as a full-scale dredging contractor with a full-scale sediment dewatering facility – the first in the New York metropolitan area – capable of processing both maintenance-

dredged and contaminated sediment.

This approach emphasises integration of all parties, including the customer, regulatory agencies, local stakeholders, engineers and contractors performing various aspects of the work – ie the entire 'project chain' of dredging, processing, water treatment, beneficial use, transport and disposal.

Finally...

The premise is that performing parties must act as a collaborative team, working together to establish project approaches and operational details within regulatory requirements.

At the practical level, this means that dredging of material; delivery to the processing plant; product management; beneficial use of sand; water management, and other details must be seamlessly and co-operatively co-ordinated.

Given that the US northeast is one of the oldest, most heavily industrialised areas in the country – with numerous concomitant Superfund sites – the Cashman-SECI JV will be well placed to meet the remediation challenges ahead. **DPC**

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Passaic River

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Fox River, and...