

Pending court order will signal green light for Chemetco project to begin reclaiming metals

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Pending approval of an official court order by the U.S. District Court, an Illinois-based company will move full-steam ahead in refining and recycling metals contained in the slag piles surrounding the former Chemetco plant in Hartford, Ill.

Paradigm Minerals & Environmental Services - a privately held, secondary recycling company incorporated in Illinois in 2009 - has been working in close partnership with the US EPA over the past three years. Paradigm CEO Elliott Stegin's affiliation with the site extends further back; his sister company, Industrial Asset Disposition, performed the massive demolition work in 2011, razing a lion's share of the former plant buildings at the site.

Chemetco, once one of the largest U.S. copper refinery operations with reported annual revenues of \$500 million in 1999, opened in 1970 but was shuttered in 2001. Its former owner and CEO, Denis L. Feron, and others, were found guilty of violating the Clean Water Act. A measurable layer of toxic pollution covered the bottom of Long Lake (a Mississippi River tributary) by the time a secret drainage pipe was discovered 10 years later. The pipe had been installed in 1986 by Chemetco to drain several types of toxic metal pollutants.

At press time, a hearing was scheduled for Sept. 6 with Chief Judge David R. Herndon, U.S. District Court for the Southern District of Illinois, to enter a consent decree (filed in mid-July) by the Dept. of Justice in the lawsuit of the *United States v. Chemetco Inc.* Once entered by Herndon, the Superfund project will then be able to accelerate the pace of its work dramatically. Partnering with Paradigm, it will now officially move into the metals reclamation phase.

Kevin Turner, US EPA scientist and project manager for the agency's Superfund Removal Program, says although the EPA prioritized the Chemetco site in March 2010 by naming it to the National Priorities List, the effort got a turbo boost nine months ago.

"The Superfund project at Chemetco was initially being negotiated under what we refer to as the US EPA's Remedial Program," said Turner. "But at the beginning of 2013, the agency looked closely at what Paradigm was trying to do and made the decision to move this project into our Removal Program. That fast-tracked it significantly. Under the Removal Program, we're able to access a site, collect a minimal amount of data and often within weeks we can make a decision on how to proceed and immediately begin the clean-up phase."

Once this program reclassification occurred in January, Turner says he became involved with Paradigm on a daily basis.

The US EPA's ongoing role, according to Turner, is three-pronged: 1) stormwater management (to continue monitoring to ensure that no stormwater leaves the property); 2) site security (to guard against trespassers, both for their safety and to protect against theft); and 3) to oversee processing of heavy metal content inherent in the slag piles.

"I will not get into the weeds on their (Paradigm's) process," said Turner. "But the US EPA will be on site everyday as the process is taking place as a regulator and a steward of the taxpayers and public health. Historically, particularly at this site, industry has not always been interested in doing the right thing. That's why we're here."

Stegin and local investor partner, Paradigm's head of operations Steve Zuber, enthusiastically welcome the US EPA to oversee their process. The intellectual properties and proprietary technologies used by

Paradigm makes use of the large, offensive piles of slag contained on the site as a source of metal and metal compounds. Within the process, says Zuber, the metals are recovered and the resulting products are sold as commodities on the open market. Zuber says Paradigm is reducing - and ultimately removing - a large potential source of contamination from the former Chemetco site, "thereby reducing the risk of further pollution and mitigating remediation expenses for the taxpayers."

"We encourage the US EPA's active involvement in this project," Stegin added. "There's not a better litmus test to pass from an investor standpoint than to have an EPA contractor on our site performing daily monitoring. We formed Paradigm specifically to do the work on this project."

Although the federal court's consent decree established a seven-year time limit by which Paradigm's portion of the project must be completed, the company's goal is much more accelerated than that. Stegin says Paradigm, which has already invested between \$5 million and \$7 million, plans to begin processing 150 tons of metal per day later by the first quarter of 2014 and quickly build plant operations up to handle some 1,000 tons daily. In about a year, he says, motorists on Illinois Rte. 3 and New Poag Road will begin to notice the slag piles shrinking.

The existing slag at the former Chemetco site, Stegin says, is comprised largely of iron, zinc and silica with small amounts of lead, aluminum and copper. Paradigm's proprietary process is unlike traditional metals processing operations that are in existence today.

"The process has been described as 'disruptive' technology, and that's a very good thing in our industry," said Stegin. "It's a game changer. Until now, about the only two methods industry has been using to process slag have been 1) smelting at high temperatures, 2,200°F or more, which creates more environmental problems; and 2) acid leaching and burning. Both are among the predominant methods of processing and reprocessing metals. Paradigm's process is completely different, and environmentally friendly. Part of our technology uses a closed-loop system that recycles water in the process and operates within low-temperature ranges."

Paradigm's refining process can recover most metals, Stegin says. "The final product can then reenter the global marketplace as a usable commodity in an already refined cake, granule or powder form, which is very desirable to refiners. There's a low capital requirement to set it up, low power use and it's low cost to operate."

Zuber, a licensed broker at BARBERMURPHY Group in Shiloh, Ill., first met Stegin five years ago when Industrial Asset Disposition originally entered into an asset purchase agreement with the Chemetco bankruptcy estate. Stegin says the site's immediate access to rail, its location eight miles from America's Central Port and its close proximity to multiple interstates make it prime for redevelopment.

"We envision the future redevelopment of this property for industrial uses," said Zuber. "The site itself spans 41 acres but it also includes 325 acres of surrounding farmland that would all be included for redevelopment. The site's logistics offer enormous potential."

Zuber says even with the US EPA assigned as a daily, onsite watchdog over Paradigm's upcoming metals liberation process in Hartford, the question of environmental responsibility is still an extremely poignant one given the history of what occurred at Chemetco over the past 25 years, and the far-reaching economic and environmental effects of the plant's closure as a result.

Under the Chemetco bankruptcy agreement, a 5 percent escrow provision provides for additional financial security for cleanup of the site itself, says Zuber. This provision is specific to any legacy issues.

"Paradigm has agreed to give 5 percent of every dollar we make to a US EPA fund to be used for any further cleanup requirements at this site," said Zuber. "Think of it as an insurance policy for environmental remediation activities that may be required for this site in the future."