

## TERRATHERM TAKES NOW-PROVEN TECHNOLOGY TO INTERNATIONAL STAGE

A provider of thermal technologies for the in situ treatment of organic contaminants in subsurface zones, **TerraTherm, Inc.** (Gardner, MA) has long moved past the point where its technologies were considered “emerging.” With considerable success in proving the technologies at a wide variety of sites in the United States, the company is taking its expertise to international markets, from Europe to Southeast Asia.

A measure of TerraTherm’s success in proving its technologies—electrical resistance heating (ERH), steam enhanced extraction (SEE), and the firm’s in situ thermal desorption (ISTD) and in-pile thermal desorption (IPTD) versions of thermal conduction heating (TCH)—lies in the company’s recent and projected revenue numbers. “From 2009 to 2012, revenue tripled,” says Ralph Baker, founder of the firm and now its chairman and chief scientist. Revenue in 2012 was \$20.4 million, and “our projected 2013 revenue will approach \$30 million,” he tells EBJ.

Another measure of the firm’s achievement is its move last year from offices in Fitchburg, Massachusetts, to a 60,000 square foot facility with manufacturing capacity in nearby Gardner. “We have some impressive fabrication capabilities,” says Baker, who adds that TerraTherm now employs about 60 people, including “a lot of field staff” and a “significantly increased engineering group.”

TerraTherm lays claim to being the only provider of all three of the above-mentioned thermal technologies, and it has the sole worldwide license to deploy the ISTD/IPTD technology (from Shell Oil Co.). “About four or five years ago, we passed the point where our tech was viewed as emerging,” says Baker. “Results

on our projects have been excellent. We’ve reached the goals on every one of our 50-plus projects. Responsible parties have decided they need to solve their organic source problems quickly, and our technology appeals to many clients.”

Work with international partners to deploy the TCH technologies began about 10 years ago, and as of today, TerraTherm has completed or is conducting projects in Denmark, the United Kingdom, and Italy in Europe, and in Japan and Brazil. The big highlight of the past year, however, is the deployment of the ISTD/IPTD technology in Vietnam for the U.S. Agency for International Development (USAID).

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Designating Danang Airport as a dioxin “hot spot” due to high levels of dioxin in soils and sediments—a legacy of the U.S.-Vietnam War—and working in collaboration with the Vietnam Ministry of National Defense, USAID awarded TerraTherm a contract in March 2012 to design a thermal solution for treating the contaminated materials. The design work was obviously to the client’s satisfaction, because in March 2013, USAID awarded a cost-plus-fixed-fee contract in excess of \$37 million on a sole-source basis to TerraTherm to execute the treatment plan.

Under the contract, TerraTherm will use IPTD to treat about 73,000 cubic meters of contaminated soil and sediments in

two phases, with each phase encompassing treatment of about half of all the materials. The goal is to treat the soils and sediments to a contaminant level of 150 parts per trillion (ppt). “We have already demonstrated our ability to do that at sites in the U.S. and Japan,” says Baker. For the job, TerraTherm has selected as the major subcontractor its most experienced partner in ISTD/IPTD deployment—Danish consulting and contracting firm **Kruger A/S**. A subsidiary of Paris-based **Veolia Water** with a branch office in Vietnam, Kruger has worked with TerraTherm on eight ISTD projects in Denmark.

### CALLED FOR POPS

In another sign of the company’s potential opportunity in the international markets, TerraTherm was one of a dozen private companies—including MicroSoft, Oracle, and General Electric—invited to attend the annual meeting of the United Nations Environment Program (UNEP) in Nairobi earlier this year. “Their main interest in inviting us was our ability to treat mercury and persistent organic pollutants, or ‘POPs,’” notes Baker.

A driver for this type of work will be the forthcoming signing of the Minamata Convention on Mercury, named after the Japanese village where mercury poisoning caused widespread health damage in the 1950s. The convention “will really step up the attention on eliminating sources of mercury in the environment, and it will direct a lot of attention to POPs,” says Baker, adding that the dioxin work in Vietnam is a POPs project.

In addition to making considerable headway in international markets, TerraTherm now has numerous engagements around the United States. The company is currently executing on a \$17 million job in New Jersey, “and we have quite a few other significantly sized projects,” says Baker.

“It’s very satisfying that people are recognizing what we can accomplish in

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choosing to select ISTD as the preferred approach. The technology is much less expensive than excavation. At a recent site, the client said our solution was \$2 million less than what they would have incurred by going to an excavation solution.”

Characterizing the U.S. market overall, Baker says that TerraTherm “continues to see a very strong desire on the part of some companies to remove liabilities from their balance sheet.” That trend has been in force for several years, he adds, noting that the recession didn’t present much of an obstacle to pursuing those goals. Companies across a wide range of industries are adopting that stance on their liability issues, but some that have stood out are chemicals, pharmaceuticals, manufacturing, and some of the big developers.

For different reasons—whether to satisfy regulatory requirements or to move a Base Realignment and Closure Program (BRAC) project forward—the federal government has offered solid opportunity as well. Right now, TerraTherm’s federal work is weighted towards USAID, but it has been undertaking assignments for the Air Force, the Navy, the National Aeronautics and Space Administration (NASA), “to some extent” the Army, and the U.S. Environmental Protection Agency (EPA).

Growing at such a fast pace, TerraTherm obviously faces management challenges, including “the need to make sure that our internal capabilities catch up to and stay with the demand,” says Baker. The

company is very focused on training and career development, it has a new CFO, and “we’re making sure all aspects of the business remain in sync and are continually improved,” he notes. “There’s not an awful lot that you can neglect.” ■

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