plants than just the assembly plants that were shut down over the years." Colleague Kara Allison, Hull's director of government and community relations, points out that the company is involved in the Mayors Automotive Coalition, a group whose members comprise communities with closed automobile assembly and supplier plants. "They got together as a group to steadily lobby EPA and Capitol Hill to help them find funding to address these sites and attract new uses."

Allison's organization within Hull has brought in more than $154 million in funding from various sources for brownfields redevelopment projects. That ability to bring in funding and "our understanding of project development from the beginning of the project" is a key part of Hull's value proposition, according to Kasper. "We understand site development and stakeholder needs, both as owners and as consultants." In addition, "we're controlled risk takers.."

Another source of opportunity in a challenging market has been the teeing up of sites to get them shovel-ready, even if there is no developer. Ohio again serves as an example. The Clean Ohio Fund provides about $40 million in grants each year for brownfields remediation, and "when the program started up, the developer business was very robust," says Kasper. "There were many ways to spend that money. When the development and credit markets tumbled, there was no one to go to a city to develop a project, although the money is still there." Hull has been helping communities assemble portfolios of sites that can take advantage of this funding by putting properties in a position to be redeveloped once the market comes back.

For Hull, the biggest challenge in the brownfields redevelopment market "is to continue to be able to grow in order to invest in these projects we're pursuing, and to figure out different ways of adding value to these projects," Kasper concludes. "The credit market is there, but the money still isn't pouring into redevelopment and renewable energy projects. We need to get these kinds of funding sources off the sidelines and into projects that can support our business." □

COLUMBIA TECHNOLOGIES RIDES DEMAND FOR HIGH-RESOLUTION SUB-SURFACE CHARACTERIZATION

Throughout much of the approximately three-decade-old history of waste site cleanup, sub-surface site characterization has been something of a high-stakes gamble. You could install monitoring wells into the soil and groundwater, spending thousands of dollars per well while essentially guessing how best to develop a picture of where contamination has spread or where a groundwater plume is headed—and you could be wrong, prompting a costly revisiting of the site and possibly even lawsuits.

More recent history has seen the advent of high-resolution techniques that that have reduced the cost and improved the accuracy of sub-surface characterization. One company that has put those techniques to work at approximately 750 sites throughout its 10-year history is **Columbia Technologies** (Baltimore, MD), a provider of high-resolution direct sensing and mapping technologies such as the membrane interface probe (MIP), laser-induced fluorescence (LIF), the hydraulic profiling tool (HPT), a discrete groundwater profiler with on-site volatile organic compound (VOC) analysis, and associated data management tools for real-time information processing and visualization.

Columbia Technologies CEO John Sohl looks back on the company's experience at those 750 sites and sees three principles in play when it engages clients in today's marketplace. First, "they want to define the issue, and not just produce data for data's sake, and to keep regulators off their backs," he says. Second, clients understand that better information leads to better decisions on cleanup and response. Third, "they're saying, 'I'd rather have an abundance of fairly close information and be approximately correct than be precisely wrong.'"

High-resolution characterization can eliminate the chances of being "precisely wrong" while providing dense data quicker decisions, Sohl argues. "We're collecting data 20 times per foot, through a direct-contact reading. We take that data, link it to a central location, and process the data so that the technical team can make decisions on the fly, in real time. It's much more cost-effective investigation that's remediation-focused in real time. You're not getting coarse data, not getting it late, and not using pre-conceived notions about groundwater flow."

This improved level of information attains elevated significance as companies increasingly turn to in situ methods of dealing with their contamination problems, as part of the effort to make cleanups more sustainable and "green." "Dig and haul" is still a common solution, Sohl notes, "but there's a lot more interest in what's going on in the ground and trying to remediate in place—through injection, fracturing, etc. What's needed is a better understanding of the hydrology, geology, chemistry, and even the biology."

SITES RE-VISITED

In fact, high-resolution characterization is playing a role in the re-visitation of sites where initial investigations and remedy selections haven't produced the desired results. Sohl reports a recent conversation with a company that is funding a pump-and-treat remedy at a New England site. The company is burning through its budget on the cleanup and "sees itself as not getting anywhere." Such situations are "giving rise to a better understanding of the value that these high-resolution tools can provide."

Columbia Technologies has developed a solid niche in high-resolution sub-surface characterization; few, if any, other firms offer it as a core specialty, according to Sohl. Most environmental consulting and engineering firms do not have a lot of direct sensing expertise in house, so they "rely a lot on us to get it right," he notes. Other competitors, like drilling companies, "do direct sensing as an add-on to other activ-

ity," he says. "We lead with the science, knowledge, and information, and bring in the local drilling expertise to provide the best of both worlds to our clients. These drilling partnerships are an important element of our client service strategy." He adds, "to my knowledge, no one does the information flow in a cloud-based world as we do, in real time."

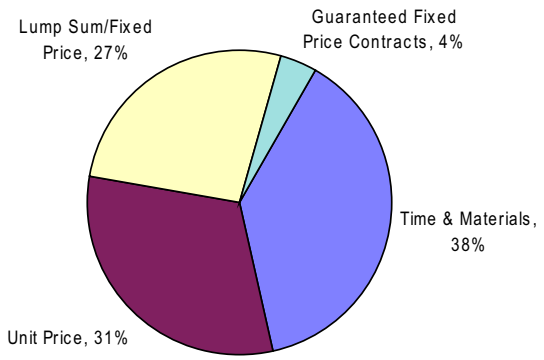
The firm has parlayed that niche into success, even through the economic downturn. Columbia Technologies undertook a little over 100 projects in 2010, about half at petroleum-related sites. One challenging project of note was a jet-fuel pipeline fracture underneath a runway at an East Coast airport. "That fracture had to be identified quickly without interfering with jet traffic. We used the LIF to get that information very fast, over the course of two or three nights."

LIF is a recent addition to the firm's technology portfolio. The technology has actually been in the marketplace for 15 to 20 years, but largely bottled up first as a government technology and then as the offering of a single supplier, **Fugro Geosciences**. Columbia Technologies purchased a new generation of LIF equipment from the developer, **Dakota Technologies**. The technology has particular application to petroleum-contaminated soils and has become a workhorse offering to the oil industry over the past couple of years. LIF "is now a growth area for us and for our clients in the C&E sector," says Sohl.

That growth is evident in a breakdown of Columbia Technologies' client base over the past three years. Business from the petroleum sector increased from 16.7% of revenue in 2008 to 21.2% in 2009 and 25.5% in 2010. This growth reduced the relative percentage of business in the industrial sector from 53.8% to 43.4% and then 39.2% over the same period.

The federal market, primarily consisting of Department of Defense (DOD) projects, accounted for 19.3% of revenue in 2008, dropped to 14.2% in 2009, and bounced back to 19.6% last year. The firm's real estate-related business is small but did jump from 2% and less in 2008-09 to 6.9% in 2010. Public-sector business is also small and has jumped around: State/local markets accounted for 9.0% of revenue in 2008, increased to 19.2% in 2009, and fell back to 8.8% in 2010.

Contract Types in U.S. Remediation Projects: 2010



Source: EBJ Survey of Remediation Companies, Markets, and Technologies 2011

Commenting further on the state of the petroleum segment of the business, Sohl points out that the downstream, retail end of the market "has been a disaster. The few consulting firms maintaining a foothold there are struggling in the red sea of competition, and some are questioning whether they should have stayed."

"In the second half of 2009, we saw the market come back to where it was in 2008. Early 2010 was soft again, with worries about a double-dip recession, and the second half came roaring back."

By comparison, the upstream side—exploration, production, and refining—presents solid opportunity. "We see the petroleum segment further upstream being lucrative in the coming years." These clients have good technical staffs who work well with their cleanup vendors, and "they're trying to do the right thing and clean sites up," says Sohl.

Columbia Technologies felt the beginning of the economic downturn in the second quarter of 2008, when project opportunity began to collapse, particularly as it related to mergers and acquisitions. The overarching uncertainty also put commercial projects on hold—that is, on the shelf, although not entirely cancelled, according to Sohl.

"That lasted about 18 months. In the second half of 2009, we started to see the market come back to where it was in 2008. The first part of 2010 was soft again, with worries about a double-dip recession, and the second half came roaring back." The company is doing well in 2011 thus far. "It's the third year in a row that first-quarter sales have grown," Sohl reports.

He notes that Columbia Technologies did manage to grow profitable revenue in 2009 and 2010, despite the economic slowdown and the difficulties that some client sectors are suffering (the company falls into EBJ's small-firm category, with annual sales of less than $20 million). "The way we dealt with the slowdown was to diversify in geography and add technology. We picked up work in Canada and the West, and we pushed hard in the Midwest."

The company also took aim at selling, general, and administrative (SG&A) expenses, cutting them significantly. That said, the firm did not compromise on sales activity. "When times get tough, you sell harder and you hit more targets," said Sohl.

Looking forward, he sees the opportunities as global, as existing clients ask the company increasingly to follow them outside the United States. "We're thinking from a global perspective. I'm confident that the site investigation/remediation market will grow in certain countries." □