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Energy Company Dives Into Aquaculture

Technology: OriginOil's water treatment process may point way to profit.

By: Kay Chinn *Staff Reporter*

More than six years after its founding, **OriginOil Inc.** appears to be on the brink of profitability.

Brothers and co-founders Riggs and Nicoholas Eckelberry have been developing water clean up technologies since forming the West Adams business in 2007, focusing on research and development and relying n the Over-the-Counter market to raise money.

Not being profitable, they said, was never a worry – they were playing the long game.

That patience might be about to pay off. The company last month struck an $800,000 deal with Japanese urban farming company Orca Vision Inc. For the latest application, aquaculture, of its core Electro Water Separation technology.

"This is really the beginning of the company," said Nicholas Eckelberry, who is also the chief inventor. "We are at the point now where we've proven the technology in the lab, in the prototypes and on a small scale. We're proving it now on a large scale."

That technology uses electricity to separate organic materials from large volumes of water. It has always worked in the lab, but Eckelberry said he was only newly confident that it was ready for large-scale applications.

He said with the Electro Water Separation system fish farmers can quickly remove toxins ammonia and kill bacteria in fish ponds. In addition to fish farming, the company has also applied the technology to cleaning water used in hydraulic fracturing in the oil and gas industry as well as cleaning up contaminated farm and sewage water.

“Orders are coming in. People are talking to us,” he said. “All the stuff that goes into the business is happening now, just now.”

OriginOil will soon ship a couple of its machines to Orca Vision, but Riggs Eckelberry said machine sales were only a tiny portion of the $800,000 deal. Orca Vision was mainly paying for the licensing fee to integrate the technology in its own machines, which is exactly how OriginOil sees its business model: not as a manufacturer, but as a tech company that licenses its research and development products.

The small company – it has just 14 employees, mostly researchers and sales personnel – manufactures smaller parts in its 15,000-square-foot building and outsources more complicated work to a local manufacturer.

Riggs Eckelberry, the chief executive, said the long-term goal is to license the technology to companies in a variety of water intensive industries where there is a need to remove organic materials from water; OriginOi does not want to be in the business of manufacturing its machinery at all.

Cleaning Up: Nicholas Eckelberry at OriginOil’s facility in West Adams

Oil origins

Riggs, 61, was born in Toronto and Nicholas, 57, was born in Puerto Rico. The family moved to Europe when they were little and the brothers grew up there, spending most of their time in Paris. They moved to the United States in the 1970s when they found that they

could not get work permits in Europe. Both found work individually before coming together to co-found OriginOil in 2007.

Nicholas, a self-taught inventor, never went to college, but according to Riggs, his brother holds 17 of the company's 24 patents. Only two have been approved; 22 are pending.

Their initial vision was to extract oil from algae. At the time, oil prices had been rapidly increasing and biofuel technologies looked promising. While biofuel turned out to be disappointing, the brothers soon found that removing algae from large amounts of water could be lucrative.

"We decide we will focus on getting things out of water, " Nicholas said, "and let other companies worry what they will do with the algae or oil or whatever later."

The company continued research and development in removing organics from water with electricity, while commercializing its algae harvesting technology.

The brothers' big breakthrough came in 2012, while they were able to apply their technology to cleaning water used in oil drilling. Water used in that industry carries about 1 percent oil and has to be disposed of through special vendors according to Gerald Bailey, an oil and gas industry adviser for the company and former president of Exxon Arabian Gulf.

By removing the oil from the used water, drilling companies not only are able to extract more oil, they also save on water disposal fees. Bailey said the cost of implementing OriginOil's technology is about $2 a barrel, while disposing used water can cost as much as $9.

Bailey said he is using his own connections in the sector to reach out to oil and gas companies all over the world to promote the technology.

After striking a deal 2012 deal with Pacific Advanced Civil Engineering Inc., a water engineering firm in Fountain Valley, OrigiOil continued to look for opportunities in applying its core technology and found aquaculture promising.

According to a report by Earth Policy Institute, a non-profit environmental organization in Washington, the production of farmed fish exceeded beef production for the first time in 2012 and was close to the amount of wild-caught fish products.

Bill Manci, president of Fisheries Technology Associates Inc., a fishing consulting firm in Fort Collins, Colo., said the traditional approach to

treating water in aquaculture is to neutralize toxic materials and then either dispose of the water or reuse it for other purposes.

“The trend now is to directly remove toxins materials from water,” he said. “That’s the future.”

Manci said while OriginOil’s technology fits the trend, there are plenty of companies trying new approaches and it’s hard to tell if there is a single best way to solve the problem.

Riggs Eckelberry said now that the company has enough applications for its core technology, the next step will be focusing on sales and further commercialization. He expects the company to become profitable in one or two years.

The last year, he said, was spent developing commercially viable products, adding that “2014 will be the year of scaling up.”