

# A Better Way to Clean

**A patented tube cleaning process called Hydrokinetics has helped AIMM Technologies build a business domestically and overseas**

**By Carol Brzozowski-Gardner**

**H**ydroblasting and chemical cleaning are the dominant methods for industrial cleaning. But AIMM Technologies, a service company in LaMarque, Texas, has used a patented ultrasonic-based cleaning process to make headway in the United States market as well as internationally.

AIMM manufactures the Hydrokinetic equipment for its own use. The process uses sonic resonance with water to clean pipes and tubes. Most clients are in the petrochemical field; the balance are in government services and food processing.

Brooks Bradford, AIMM president, bought the company five years ago from Ralph and Pat Garcia, who started it in 1991 and patented the Hydrokinetic process (Ralph was the inventor). Since

Brooks took over, the company has expanded the process, received a second patent, and has a third patent pending. Company revenues have tripled, and AIMM has gone global. Besides operating offices in Texas, Louisiana and Monterrey, Mexico (where Miguel Morett is country manager), AIMM partners with companies in Norway, the United Kingdom and Saudi Arabia.

Another partner, The Atlantic Group, provides service to the U.S. Navy, which added Hydrokinetics to its technical manual this year, opening the doors for servicing Naval vessels worldwide.

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**Brooks Bradford**



**Upper photo, heat exchanger tubes before Hydrokinetic cleaning; lower photo, entry to tubes after Hydrokinetic cleaning.**

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## **Shaking it loose**

In Hydrokinetics, the tube or pipe to be cleaned is first filled with an oscillating water stream based on resonant frequency. Once flow is achieved, a bullet is introduced in the tube to maintain the water column. The tube is then refilled with water. The water (or sonic) resonance is transferred through the water column.

The fouling and the tube resonate at different frequencies, breaking the bond between them, allowing the fouling to be easily expelled out of the opposite end of the tube. The fouling is expelled in a snakelike fashion rather than in particles. Additionally, the material comes out the end opposite the operator.

The equipment consists of a hydraulic monitoring device in a sealed cabinet. With the availability of a conventional plunger pump (10,000 psi at 20 gpm) and 120 psi service air, technician and unit can perform cleaning anywhere.



**AIMM employee Americo Almeida operates a Hydrokinetic ram assembly. Hydrokinetics is a new tube cleaning technology developed by AIMM, based in LaMarque, Texas.**

## **P R O F I L E**

### **AIMM Technologies, LaMarque, Texas**

<b>FOUNDED:</b>	<b>1991</b>
<b>PRESIDENT:</b>	<b>Brooks Bradford</b>
<b>SERVICES:</b>	<b>Industrial cleaning of pipes and tubes, using a patented method called Hydrokinetics</b>
<b>CLIENTELE:</b>	<b>Primarily the petrochemical field, with some clients in government and foodservice</b>
<b>EMPLOYEES:</b>	<b>30</b>
<b>WEB SITE:</b>	<b><a href="http://www.aimmtechnologies.com">www.aimmtechnologies.com</a></b>

Brooks, who owned a rental company providing refrigeration services before he acquired AIMM, bought the cleaning company because he was impressed with the Hydrokinetics method and its low ratio of employees to income. He also likes the fact that the method produces

immediate results. Despite its emphasis on Hydrokinetics, AIMM still does traditional cleaning. The company offers hydroblasting up to 36,000 psi for industrial cleaning or surface preparation.

While safety is a prime concern in any industry, it is even more so in

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**Ralph Garcia**

chemical plants, where AIMM does much of its work. AIMM counts on Hydrokinetics to be safe but also has developed a safety program that is approved by all clients and is adhered to daily, says Gary Dunn, health, safety and environment (HSE) manager.

#### **No lost-time accidents**

In AIMM’s 10 years, the company has never had a lost time accident. Clients’ industrial plant safety engineers and supervisors appreciate that record. Ronald Cotton, AIMM operations supervisor, attributes the safety record to the fact that Hydrokinetics does not expose the operator to high-pressure water or waste materials. In addition to safety, AIMM vice-president Ralph Garcia favors Hydrokinetics for:

- **Time savings.** The method is 40

to 50 percent faster than others, reducing the hours needed for pipefitting and saving on downtime for clients. “It gets them back into production faster, and that’s where they make their money,” Ralph points out. “These plants work on several hundred thousand dollars an hour, and if you can bring them back into production 5 to 10 hours faster, then you’ve done a good job for them.”

- **Water savings.** Hydrokinetics uses 90 percent less water than conventional industrial cleaning methods.
- **Ecological advantages.** The method generates 75 percent less wastewater than traditional methods.

So what’s the down side of Hydrokinetics? Some question whether Hydrokinetics stresses tubes and piping. The company says the maximum frequency of 11,250 vibrations per minute is far below the number of cycles that would cause fatigue in even the softest metals.

For some companies, cost may be a factor. Antone Belcher, operations manager, concedes that Hydrokinetics



At left, a heat exchanger loaded with Hydrokinetics bullet plugs. Below, a Hydrokinetics nozzle about to enter a tube. Bottom photo, pieces of scale removed from tubes.



costs more than traditional methods. “But it’s probably less expensive when you consider the entire cost,” he adds. “We get them back into service faster. And we clean much cleaner, so that the tube will stay cleaner longer and allow them to remain in production for a longer period. When you consider all those things, we’re probably cheaper.”

#### **90 percent success**

Company officials say Hydrokinetics cleaning is successful in more than 90 percent of applications. It often works best where other traditional methods fail, such as in U-shaped piping or tubing, confined workspaces, and lines that are completely blocked.

“Anybody who says they’re 100 percent on any job might be hedging a little bit,” says Brooks. “We’re not 100 percent; I don’t know that anyone is. But with things that give us a problem, they’re



impossible for other people.”  
Ask Brooks to cite his company’s



Upper photo, Brooks Bradford, president of AIMM Technologies, shows the equipment used for the company’s patented Hydrokinetics process. Lower photo, technicians Domingo Blanco (left) and Mark Guidry display foulant removed from tubes.

## **Going Global**

There are cultural considerations when a company takes a global presence. Out of respect for the local cultures overseas, AIMM Technologies educates its employees on the local customs through in-house or outsourced training.

“There’s a vast difference between going to England or Norway versus going to Saudi Arabia,” says Brooks Bradford, AIMM’s president. The amount of instruction employees receive depends on where they are going and how long they will stay.

For example, Antone Belcher, operations manager, recently completed a five-month project in Central Africa in an area with few roads, where most travel was by air or water. “As a result, you’ve got to learn to be patient and make do with what you have,” he says. “You learn to work with the local population, not against it. Their workdays and their attitudes are different.”

“You have to be careful who you send on a project like that, as to whether they can stand the type of pressure that comes about both daily and after they’ve been there for 30 days. If they’re off in the jungles, can they handle that isolation? Not many people can do it.”

Productivity takes a nosedive after about three weeks. Consequently, managers rotate employees in and out of international projects on a three- or four-week basis. While Brooks tries to employ local people, he sends an AIMM supervisor to every job. If the job requires more U.S. employees, he’ll send them. But his goal is to have his alliance partners act independently, with little input from the U.S. AIMM office.



**Top photo, foulant exits a pipe during Hydrokinetics cleaning. Bottom photo, foulant comes out in a snakelike fashion.**

most difficult job and, like most company presidents, he laughs and says they're all difficult. But in fact, AIMM's files bulge with examples of challenging projects. For instance, AIMM used Hydrokinetics

to clean 14 heat exchangers in a Houston-area petrochemical plant with a total of 7,000 tubes that were severely fouled with polymers — and did it in one-fifth the time traditional cleaning had taken. In another case, the company saved a Houston syngas plant half a million

dollars in potential capital investment by cleaning nickel and sulphite from an 840-tube exchanger the plant was planning to scrap. While only 35 tubes in the bundle had been open after sand jetting, the AIMM Tech crew opened up 66 percent of the tubes.

#### **Prestigious clientele**

The company's clients include such prestigious firms as Dow, Chevron, Exxon Mobil, Fina, Bayer, and Union Carbide. Brooks is not intent on amassing a large number of clients — he prefers doing quality work for his present base of loyal customers. AIMM focuses on tube and pipe cleaning.

"Everything else we leave to other companies," Brooks adds. "As a result, we know what we're doing. We get in and do it in a safe, fast, profitable manner.

And we're constantly trying to be in front of the customer, trying to determine what his needs are, what his problems are, and helping him to solve those."

AIMM is now considering license agreements or joint venture offers from Brazil, Holland and India and expects these to be in place by 2003.

Ralph says he's happy with the company's growth — each year, revenues

potential to become a supervisor. "We're not looking for laborers," he says. "We're looking for people who can lead and represent the company in the manner that we want it to be shown."

Brooks attributes his company's success to making the right hires. He offers employees incentives such as a percentage of profits from a job, health benefits, and a newly introduced 401k program.

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**Bo Davenport**

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have mushroomed by 30 percent. "A lot of that goes back to a combination of the process and the individuals we have going out and representing the company."

#### **Employees key to success**

AIMM has 30 employees. Antone says that when he looks for an employee, he looks for someone who is a "cut above the rest. We try to find someone who has some formal education. We don't necessarily look for experience. We have them trained in our process rather than repeating some mistakes they may have made somewhere else."

Bo Davenport, shop manager, says he also looks to hire someone with

"Some of these things are very expensive for a small company," he concedes. "But in order to attract the right people, those who we would like to have carry this company to the next level, those are the things that we will have to offer."

Hiring and retaining with such a focus is essential. Brooks says five years from now, his company may be at the point of going public. So he's been developing the management in-house to ensure the company's continued success long after his own retirement. ■