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# THINKING OUTSIDE THE TRENCH

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iksis Services of Healdsburg, California, learned early that you don't stay in this business more than three decades by finding your comfort zone and staying there.

Co-owner Gary Miksis has moved his company forward for nearly 35 years by staying ahead of the curve on new technologies, building a team he can rely on, and partnering with like-minded equipment and material suppliers to support a progressive approach to problem-solving.

**"A contractor is not going to make it with just a hammer and a toolbox. You have to offer a variety of services to make you a viable competitor."**

Gary Miksis

Resourcefulness and adaptability are the key traits of a successful cleaning contractor in today's demanding market, he says. "A contractor is not going to make it with just a hammer and a toolbox. You have to offer a variety of services to make you a viable competitor. For example, we offer four different methods of pipe lining to cover a wide range of customer needs.

Some characteristics [of each method] cross over into others, but you must understand the qualities as well as the limits of each one to decide on the appropriate solution to a given circumstance."

After studying art in the California University system, Miksis found work as a San Francisco drain cleaning subcontractor in 1978. He opened his own business on April Fool's Day 1981. The company

Ben Robles of Miksis Services assists another crew member deep inside a 24-inch water main during a point repair for the City of Benicia, California.

Gary Miksis, co-owner of Miksis Services, on the job site of a water main repair.



Miksis Services crew members wet out a fiberglass composite liner with polyresin for a point repair.





## MIKSIS SERVICES INC.

**OWNERS:** Gary and Barbara Miksis

**YEARS IN BUSINESS:** 34

**EMPLOYEES:** 16

**AREA SERVED:** Northern California (north of Monterey)

**SERVICES:** Municipal, industrial and residential wastewater maintenance and repair services; pipeline locating; cleaning/jetting; combination vacuum loading; digester, tank, pond and bypass pumping; CCTV investigative assessment; smoke and gravity leak testing; pipe bursting; CIPP pipeline and point repair; manhole rehabilitation

**AFFILIATIONS:** California Water Environment Association (CWEA)

**WEBSITE:** [www.unplugu.com](http://www.unplugu.com)

grew as he got his plumber's and general engineering licenses, but it was when he gave reign to his more artistic impulses that Miksis Services really gained momentum.

### TRENCHLESS TAKES OVER

"We kind of evolved from the inside out," he recalls. "Back in the pre-CCTV days when we were running cables down lines to try to locate blockages, well ... your imagination grows regarding what's happening down there. Thoughts were different then. Instead of saying, 'We're just going to cut this open,' we were always approached by customers asking if we could find the problem and fix it without digging up a line. Digging became a last resort. We would first try the different cables and blades to do whatever we could to avoid it." So moving to trenchless was a natural growth path for Miksis.

They started out doing CIPP point repairs in the early '90s. "There were no real lining 'systems' then," he recalls. "It was called Eco-Liner, based on something the manufacturer saw in Sweden." At an industry trade show, Miksis met some people who had developed a PVC deform/reform technology that eventually morphed into DynaLiner.

"I got a contract with the Navy at a submarine base for an industrial waste line, to replace terracotta line that had been backfilled with copper slag from their ship-blasting work. It involved so much time [to dispose of the potentially toxic waste], they asked for point repairs only, a manhole-to-manhole repair."

Miksis searched for technology solutions and finally found Thad Frisco — son of Ben Frisco of AquaTech in Cleveland — through an ad in *Cleaner* magazine. The two collaborated on the project using Frisco's Ecoliner materials and process, an expensive trial-and-error operation that ended up creating a break-even scenario financially for Miksis. "It was worth it just to try it out and see if it would work," he says without regret. "We ended up becoming their West Coast installer."

### TECHNOLOGY EVOLVES

Though Ecoliner worked for that particular application, Miksis kept his eyes open for a more dependable system for larger jobs, though he still uses the now-improved Ecoliner for point repairs. Again, he networked at industry shows and met Bob Ward of TES, on Colorado's western slope near Aspen.

"He was bench testing above-ground CIPP liners," Miksis remembers. "He and I got together and developed our own system that improved the carriers, epoxy combinations and composite fabrics. We shared notes and resources and had independent testing done on our combined products. This was before there were other established systems. We tried to make the best product possible. I ended up getting a patent on my carrier and have sold it to other people."

Miksis has a master's degree in 3-D sculpture. Having made 3-D molds, he was aware of the dangers of resin poisoning involved in the CIPP liner process. "I knew I wanted to stay clear of working with styrene-based resins in trenchless, so everything we do with CIPP is epoxy-based, and with PVC there's no issue at all."

Miksis now works with the MaxLiner system from Applied Felts. "They have a really nice product with good selection," he says. "And there's no middleman; we work direct with the factory."

At first he was attracted by the simplicity of the system. "Originally you only needed a pipe elbow and mixing drill and no other fancy, dedicated equipment. Though the equipment needed has evolved, we still install the old school way, inverting the resin-impregnated felt into a line."

The company moved up to rehabilitating laterals and short mainlines, and for larger-diameter pipe up to 120 inches, Miksis now uses the centrifugally cast concrete-based Permaform Centripipe.

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Gary Miksis

## MOVIN' ON UP

In the early '90s, Miksis Services won a bid on a sanitary sewer emergency cleaning and maintenance contract for the nearby naval base. Based on successful results, the contract was extended for multiple years. Word-of-mouth endorsements brought in other military work that continues to this day. Though trenchless pipeline rehabilitation forms the foundation of the company's success, Miksis couldn't perform that work without another key piece of technology.

"By far, the video camera is most pivotal to our business," he says with conviction. "It is the introduction to our customers' problems, and the results of the video dictate which options are available to complete the project." The video inspection itself is not a money-maker for the company, Miksis reveals. "The cost of the video work is incidental to the client and often is included in the overall project. Competition in the video inspection market has reduced the fees we can charge to the point that it is break-even at best."

Still, CCTV work is an absolutely necessary step in getting to the profit centers, and Miksis depends on a close relationship with his supplier, RS Technical Services, to maintain those profits.



**ABOVE:** The Miksis Services crew includes (from left) Ben Robles, Gary Miksis, TJ Sales, Manuel Lemos, Geoff Ensing and Fritz Betschart.

**BELOW:** Miksis crew members (from left) Geoff Ensing, TJ Sales and Ben Robles roll a polyresin-coated fiberglass liner onto an inflatable plug for a point repair.



"I was Rod Sutliff's first customer before he developed his first CCTV," Miksis says. "I bought a used Cyclops camera with a Vidicon tube from a guy in San Rafael and met Tom Sutliff at 3T in Santa Rosa through him. Tom introduced me to his dad, who was able to fix it for me. I told him if he ever wanted to manufacture dedicated CCTV cameras, I'd buy one. Soon after that, he did start designing and manufacturing push cameras. I was their first customer and have been with them ever since. I've either bought or been the guinea pig for every piece of equipment they've ever manufactured."

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Miksis Services workers (from left) Ben Robles, Manuel Lemos and TJ Sales insert an inflatable carrier with a polyresin-coated fiberglass composite point repair liner into a 24-inch water main.

## OUTFITTED FOR SUCCESS

Miksis Services runs RS Technical CCTV trucks, including a 2001 Ford F350 4x4 van, a 2001 Ford F350 NBVC van, two 2010 and one 2013 Mercedes-Benz Sprinter vans, and a 2014 Ford Transit Connect Mini Inspection System they consider their real “money maker.”

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These trucks use Infrastructure Technologies pipeline software to process video from RS Technical Services inspection equipment, including OmniEYE II, TrakStar, OmniStar Probe, Lateral Launch and 1545 portable cameras and a DeepStar Probe well camera. These are deployed on RST Tractors, including a Steerable Storm Drain, TransStar II, Mighty Mini, EP Standard Mainline and ProTrak.

This imaging equipment is supplemented by several Ratech Elite Series push camera systems, an Aries CCTV system with lateral launcher carried in a 2001 Isuzu box van, a 2009 Inuktun long-range camera/sonar system (5,280 feet of fiber optic cable and 2,000 feet of copper cable), and a 2012 Mercedes-Benz Sprinter instrumentation and control truck.

Pipe cleaning is accomplished using a fleet of three Vactor 2100 industrial loader combination trucks, model numbers 1645, 1650 and XPS. These work alongside five Camel jet/vac trucks manufactured by Super Products with Myers pumps and Roots blowers (GE Water & Process Technologies).

These are accompanied by two small-diameter, 500-foot-capacity trailer jettors, a 2011 Eagle 300 (Hot Jet USA) with a 4,000 psi pump and a non-branded 4,000 psi unit; several Harben 4016 truck and trailer jettors; a Harben Century 10-20 Water Blaster Trailer; and a Sherman Hose Reel Trailer (available with T95) long-range (up to 1,800 feet) cleaning system.

Several other vehicles and systems for spill response, point repair, pipe locating, loading, dewatering and storage round out an impressive equipment inventory.

## RESOURCEFUL AND CREATIVE

Miksis Services has developed a reputation for being resourceful and creative in solving customers’ problems. Miksis says this has always been part of his business approach, though it wasn’t necessarily a conscious business strategy.

“It’s always been shooting from the hip, I guess,” he says. “The main challenge on any job arises, and we figure out our options. At the university, I took some basic engineering courses, but I think my art training equipped me to have an open mind about other potential solutions or approaches than we or others have maybe tried before.”

The contractor and his team are frequently approached by customers with unique and/or challenging conditions in search of possible solutions. In one such case recently, a large CMP culvert directing a seasonal creek beneath a roadway and part of two residences was discovered to be in poor condition. The municipality was concerned that the pipe might fail if it had to endure another winter.

The culvert was constructed of two different sizes of pipe (48- and 54-inch) with their ends butted together but lacking any mechanical binding. Dirt was falling into the pipe where the ends had worked apart during normal ground shifting, and it was relatively deep inside the pipe. Sinkholes were forming above, and if they didn't do anything, the repercussions would be disastrous: a potential roadway collapse and the undermining of at least one of the homes' foundations.

"At the time, we were only able to rehab pipe up to 36-inch diameter," Miksis recalls. "We combined materials and methods we already used along with a new technique called spin casting that can jump sizes."

This process involves the aforementioned Centripipe, developed by Permaform, which is similar to a cement grout containing fiberglass fibers and plasticizers. Thickness of the centrifugally cast product is controlled by adjusting the speed of the winch dragging the sled on which the spinner is mounted.

According to Miksis, this process works well for any pipe shape. "It's all done with calculations. You go back in and measure the internal diameter when you're done to make sure you've got a uniform application. It almost turns a corrugated metal host pipe into a concrete form, in which you manufacture a concrete pipe *in situ*. The results are just dynamic. In this way, we were able to rehabilitate the storm drain before winter began." **C**

## more info

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