

## Long Road Ahead for Tainted Tallevast

by Correspondent for the Herald Tribune.Com, Sarasota, Florida

TALLEVAST – June 10, 2007. Cleaning up the majority of the polluted ground water in Tallevast could take 30 years, and getting it all could take a century, Lockheed Martin officials say.

But some experts fear that the Tallevast pollution will never be cleaned up completely.

Lockheed's plan is to build a series of wells and trenches from which it will pump millions of gallons of tainted ground water into a treatment system and then discharge it into the Manatee County sewer system.

Known as pump and treat, the method has been used at hundreds of polluted sites across the country. But some experts have become increasingly critical of the approach, saying it is inefficient and often fails to restore ground water in a reasonable time frame.

One critic is George Robinson, vice president of Oasis Nuclear and a former nuclear power plant operator who worked to clean up Three Mile Island nuclear plant after its partial meltdown in 1979.

"You're dealing with an unknown volume of water," Robinson said. "That pump and treat sounds good, but 30 years sounds optimistic. It could be forever."

The U.S. Environmental Protection Agency has in the past 10 years encouraged companies involved in cleanup operations to develop and adopt alternative approaches.

"The EPA has started realizing that pump and treat does not address a lot of issues and they need to get the ground and the ground water beneath cleaned up a lot quicker," said Michael D. Campbell, P.G., P.H., a hydrogeological consultant and principal instructor and managing director of the Institute of Environmental Technology (IET), Houston, Texas.\*

\* Mr. Campbell is also Managing Partner of M. D. Campbell and Associates, L.P., in Houston, Texas (For further information regarding Mr. Campbell's activities, see: IET: <http://www.ela-iet.com/texasnew/iet/main/index.html> and for C&A: <http://www.mdcampbell.com>).

About 200 acres of ground water are known to be polluted in Tallevast. The pollution was left behind by the former American Beryllium Co. plant, which built parts for nuclear warheads for the federal government for nearly 40 years. See graphic of remediation plan:

**Web Extras**

» [GRAPHIC: Tallevast cleanup](#)

Lockheed bought the site in 1996 and shut down the plant. It later sold the property, but not before discovering soil and ground-water pollution on and around the site. In 2000, Lockheed notified county and state officials of the pollution.

But the residents of about 100 homes, many of whom relied on well water, were not told of the problem until nearly four years later.

The pollutants include trichloroethylene, or TCE, which has been linked to liver and kidney cancer and a host of other ailments.

Water is not safe to drink if the level of TCE exceeds 3 parts per billion, according to state standards. The levels of TCE in Tallevast average 300. One area close to the former weapons site has levels as high as 13,000.

Wells in Tallevast have since been sealed and resident homes connected to the county drinking water system.

Lockheed removed about 530 tons of polluted soil in 2001. Company officials say the remaining soil is not polluted.

Whether Lockheed has removed all the contamination from the soil will be key to its success, said Kurt Pennell, a Georgia Tech professor who has advised the U.S. Environmental Protection Agency on site cleanups.

"TCE goes onto the soil and comes back off," Pennell said. "If all the contaminants are in water, they will get it out, but it's going to be relatively expensive and it's going to take them quite a while."

Building six trenches, some as long as 900 feet, and installing 52 wells will cost Lockheed about \$10 million. The company estimates the pump and treat operation will cost nearly \$1 million annually to run.

The process is so lengthy because for every gallon of ground water removed, another flows in from outside the polluted area and mixes with contaminated water.

Provided that the soil within the aquifer is uncontaminated, eventually the process will dilute the pollutants to below the state standard for drinking water. But that may mean Lockheed will have to replace the water in the 200-acre plume seven times, Robinson said.

"The reason they're saying 30 years is because they don't know the volume of water," he said.

Lockheed is further hampered by the high clay content of the Floridian Aquifer. Clay is denser than soil, making it more difficult to pump ground water through it.

The company calculates it will only be able to pump about 120 gallons of water per minute. By comparison, it pumps 9,000 gallons per minute at another site it is cleaning up in Burbank, Calif.

"The aquifer only yields so much water, and that's our limiting factor," said John Perella, a project engineer with Arcadis BBL, a company hired by Lockheed to manage the cleanup.

Lockheed will also have to negotiate with property owners to purchase easements to install some wells and trenches.

That may not be easy as many Tallevast residents blame Lockheed for not disclosing it knew about the pollution for several years. Also, about 200 residents have filed lawsuits seeking damages from Lockheed.

"We'll have to work with the state, to have the state talk to them or find an alternative," said Gail Rymer, a Lockheed spokeswoman.

The Florida Department of Environmental Protection has given FOCUS, a group representing Tallevast residents, a deadline of June 20 to submit comments or questions on Lockheed's plan. The group's leaders said they are still reviewing the plan.

"We believe there's significant information not included that needs to be," said Jeanne Zokovitch, an attorney with WildLaw, a nonprofit environmental group representing FOCUS.

Alternatives to pump and treat include bioremediation, in which pollutant-eating bacteria are injected into the ground, and steam flushing in which ground water is heated to the boiling point and the resulting vapors extracted before they go into the atmosphere.

It has become more common for cleanup operations to combine pump and treat with more aggressive methods like steam flushing focused on the areas of greatest contamination, Pennell said.

Rymer said Lockheed has not ruled out using alternatives as the cleanup progresses but believes pump and treat is the best approach for Tallevast. She said the company is committed to cleaning up the site for as long as it takes or until the DEP says no further action is needed.

"This is the best method available today based on what we know and getting moving quickly," Rymer said.

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