



Golden Triangle Storage showed off its progress to local reporters and energy media from Houston Nov. 11. About a dozen reporters, photographers and videographers took advantage of the chance to see the construction process first hand, including climbing up to the three stories-high platform of the cavern drilling rig. AGL Resources' David Schultz displays a salt core from Spindletop to Houston Chronicle reporters.

Construction makes significant strides

Golden Triangle Storage construction is proceeding on schedule.

We completed drilling the first cavern well in mid-November, and workers disassembled and moved the rig to the second cavern site nearby over the Thanksgiving weekend. Drilling of the second well began in early December.

Work also is wrapping up on the four brine disposal wells and the brine pipeline that will carry the salty water used in the construction process from the cavern site to the wells. There the brine will be injected into existing salt water formations almost 8,000 feet underground.

Currently, we are finishing up the water handling facilities: installing eight pumps, building the freshwater pipeline and completing related facilities. By late December or early January we will begin hollowing out the first storage cavern, through a solution mining process called "leaching."

"We are very pleased with our progress to date, despite hurricanes and other challenges," said Jim Pitts, vice president of midstream operations, who oversees design, construction and operation of the facility. "We've

had great folks working hard to keep us on schedule and deliver a safe, quality project."

Creating the cavern

Once the leaching process gets underway, it will continue for approximately 18 months. We will flow fresh water into the well, where it circulates below ground dissolving the salt. The salt-filled water, or brine, is removed and piped to the disposal wells.

Periodically, we temporarily will stop leaching to send sonar equipment down the well to monitor progress. Eventually, the finished cavern will look like an upside down soda bottle, stretching 1,500 feet in depth and approximately 300 feet in diameter at its widest point, with the top of the cavern being nearly half a mile deep.

"Imagine almost two of Houston's famous 64-story Williams (formerly Transco) Towers stacked atop each other a half mile underground, but round and as wide as a football field," Pitts explained.

Once the cavern reaches the right size and shape, it must pass a variety of integrity tests before we begin in-



The water-handling facilities manage the flow of fresh water into the cavern well and pull the salty water, or brine, back out. The equipment pictured above is a hydrocyclone filter. It removes insoluble materials from the brine after it is removed from the cavern and before it is pumped to the brine disposal wells.



Crews set up the rig on the second cavern site and drilling began in early December.

(continued from front)

jecting natural gas into storage. Once leaching is complete on the first cavern, we will start the process on the second. The first cavern should begin operating in summer 2010 and the second in 2012.

Next steps

Most of the initial construction activity at the Spindletop site will wrap up during the first quarter of 2009 although leaching at cavern one and drilling of cavern two will continue on a 24-hour, seven-days-a-week basis. Next fall, construction of the remaining facilities needed to operate the storage facility will get underway, including the compressor building and the nine-mile pipeline header system that will connect the storage caverns with intrastate and interstate pipelines.

Since construction began in late spring, up to 200 workers at a time have been involved in building the project. Six permanent employees are on site, along with an intern from Lamar University. Approximately \$150 million has been spent to date on the project.



The pipe pictured above will be used to drill a well deep into the Spindletop salt dome. The process takes several months. Once complete, the well will then be used in the leaching process, in which water hollows out the storage caverns.

Project back on track quickly after Hurricane Ike

Despite a loss of electricity, minor flooding and wind damage to construction trailers from Hurricane Ike, Golden Triangle Storage construction operations were back up and running quickly, initially working off generator power. Full construction operations resumed within two weeks of the storm.

All project personnel and contractors came through the hurricane safely.

AGL Resources Private Foundation donated \$10,000 to the local Red Cross chapter to help with hurricane relief.

“We admire Southeast Texas’ pull-up-your-boot-straps-and-get-back-

to-work attitude, even in the face of massive hurricane damage,” said Dana Grams, president of Pivotal Development, the AGL Resources unit that oversees Golden Triangle Storage. “We wanted to do our part to make it easier for our neighbors to do just that.”

CONNECTIONS

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For more information, please call 409-835-7346 or 832-397-3882. www.goldentrianglstorage-texas.com



6679 Highland Avenue Extension
Beaumont, Texas 77705

