

Signal Hill Petroleum gives public tour of oil drill-site facilities, prepares for permit renewal

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Photos by Sean Belk/Signal Tribune

Sean McDaniel, vice president of production/operations for Signal Hill Petroleum (far right), leads a tour of the oil-well operator's seven drill sites in preparation for a conditional-use permit that is up for renewal in September. Those who were in attendance included Signal Hill residents and city officials.

Sean Belk
Staff Writer

In the middle of the Signal Hill Gateway Center in between Ross and Home Depot off of Spring Street, thousands of barrels of water flow through concrete pipes on a daily basis in an area hidden from public view and enclosed by brick walls.

The water is sent to what's called a central "vacuum cleaner" with large tanks just a few blocks away, where water, oil and gas fluids are separated. The system enables crude oil to be skimmed off the top and then sold. The water is then filtered for contaminants and re-injected into the ground.

"The big mistake everybody thinks is that we're a huge oil company and we just got tanks full of oil," said Sean McDaniel, vice president of production operations for Signal Hill Petroleum. "In reality, we got tanks full of water and about this much oil on the top."

The process is the opposite of "fracking," a controversial oil-well drilling technique that involves injecting fluid at high pressures in order to fracture shale rocks, he said.

McDaniel said Signal Hill Petroleum produces a total of 3,000 barrels of oil per day from more than 300 active wells in the Long Beach/Signal Hill Oil Field. But in order to do that requires about 90,000 barrels of water to be taken out of the ground each day and then re-injected, he said.

"Water injection or secondary enhancement is about putting water back in to pull it out of the reservoir, so that you don't have subsidence, because if we're taking 90,000 barrels of water out a day and we're not putting it back, you could have a drop," McDaniel said. "It isn't about fracking. It's about enhanced recovery. You put it in the oil sands and start pushing that oil over to one of our producing wells, and then our producer brings it up through the production system."

Signal Hill Petroleum, which took over oil-well operations for Texaco, Arco and Shell in the 1970s and is now the biggest oil operator in the city, gave residents and city officials a tour of its seven oil drill sites on Tuesday, June 18.



Signal Hill Petroleum Vice President of production/operations Sean McDaniel holds up a jar of “brine water,” which is re-injected into the ground after water is extracted for oil-production purposes. The operator has 300 active oil wells in the Long Beach/Signal Hill oil field and produces 3,000 barrels of oil per day.

It was the third public tour of the oil-well operator’s facilities since last year, when the company started the process of renewing its conditional use permit (CUP) for operations on all seven sites. The operator has conducted various meetings with the Signal Hill Planning Commission as well.

Colleen Doan, the City’s associate planner who was present during the tour along with City Councilmember Lori Woods, said the Signal Hill Petroleum was granted a one-year extension for its CUP, which is now coming back for renewal in September.

McDaniel said, originally, oil-well facilities were spread out over 800 satellite drill sites, but Signal Hill Petroleum has consolidated its operations in the last 20 years by using more “directional drilling.” However, he added that it’s been “challenging” to consolidate drill sites in a city with so many faults.

Oil-well production, however, isn’t Signal Hill Petroleum’s only operation. McDaniel said the company is able to generate 75 percent of its own power by extracting natural gas or vapor through its oil operations, enabling the company to run a large turbine generator that was built and commissioned about nine years ago.

The operator’s gas-processing facility, also known as Drill Site No. 2, located off of Gundry Avenue, generates about five megawatts of electricity and handles about 2 million McF of natural gas per day, he said. Signal Hill Petroleum also provides vapor recovery for all of the 17 independent oil-well operators in the city as well, McDaniel said.

The plant is one of two sites that filters water extracted for oil-producing purposes that is then re-injected at a low pressure back into the ground as “brine water,” using corrosive inhibitors, all in a 24-hour cycle, he said. “We re-inject every barrel we take,” McDaniel said.



One of seven oil drill sites owned and operated by Signal Hill Petroleum is located in the hilltop area of the city and includes water-treatment facilities for reinjecting wells with water.

The CUP allows for oil and gas production and handling, electrical generation and distribution, drilling, re-drilling, maintaining wells, gas-production handling and oil and gas testing. Signal Hill Petroleum is also required to follow an Idle Well Management Plan. McDaniel said the State's Division of Oil, Gas and Geothermal Resources (DOGGR) requires that the operator return to service or properly abandon 10 wells per year, however the company continues to "stay ahead of the game."

In terms of opportunities for re-drilling, he said, "the future is bright," adding that results from an ongoing seismic survey that started about three years ago in portions of Signal Hill and Long Beach are promising.

"We've been re-drilling for the past few years," McDaniel said. "We have two drilling rigs, and we believe there's a lot of potential and a lot of opportunity... It's an ongoing process with the seismic surveying. The data is coming in that is very exciting to us, and that's why we feel there's a lot of opportunity here."