

California Regulators Cite Subsidence Concerns in Clamping Down on Freeport-McMoRan Exploration

Richard Nemeec, Natural Gas Intel News, 12-2-15

Under increasing criticism for being too soft on oil and natural gas operators, California regulators on Monday ordered the exploration unit of Freeport-McMoRan Corp. to provide additional data on the Inglewood Oilfield in the greater Los Angeles area.

State officials are concerned about subsidence in the area and whether it may be related to oil production.

Freeport-McMoRan Oil and Gas Co. (FM O&G) officials said the company would continue to cooperate in supplying the information as requested, but they noted that five years of studies have shown no correlation between oil production and sinking land.

The action by the Department of Conservation's Division of Oil, Gas and Geothermal Resources (DOGGR) came a day after the *Los Angeles Times* cited a 2011 case of a Chevron Corp. field supervisor falling to his death in a sinkhole at a Bakersfield area oil well site in which subsidence was reportedly widespread. It also came as DOGGR's head Steve Bohlen resigned (see *Daily GPI*, Dec. 1).

"The geology of the Inglewood field is extremely complex due to faulting," said Bohlen. "It is clear that subsidence is occurring; we need additional data before we can say anything about a possible connection to oilfield operations."

A study completed by the Baldwin Hills Community Standards District determined that from 2010 to this year cumulative subsidence was measured at more than 2.5 inches.

FM O&G spokesman Eric Kinneberg said the DOGGR informational order simply expands on information previously made available in annual ground movement surveys conducted at the Inglewood oilfield for the past five years, as required by the county.

"We believe the information requested by DOGGR will have value in supplementing the ongoing studies FM O&G is conducting," he said.

For FM O&G, the ground movement is common, ongoing and well documented throughout the entire Los Angeles Basin. The company has spent nearly \$2.5 million studying ground movement in the vicinity of the oilfield, Kinneberg said.

"Monitors have recorded both subsidence and uplift over the course of the last five years while operations have remained consistent. The results have consistently shown that no correlation can be made between production operations and observed ground movement in this tectonically active region," he said.

DOGGR's order stated "concern about, and the need for more data on," potential damage to life, health, property or natural resources from the continuing subsidence.

Phoenix-based FM O&G operates 641 producing wells in the Inglewood field, with production hitting more than 2.6 million bbls last year.

DOGGR's order calls for five specific areas of data:

- All well casing damage not solely related to corrosion in certain oil reservoirs for the past 30 years;
- Maps, cross sections and block diagrams showing all known faults in the reservoirs with a plot of the casing damage locations on the illustrations;
- Pressure measurements taken within the past six months for certain wells;
- Maps of wells tracked by the producer that have risen relative to the surrounding land surface; and
- Information on rock compaction in identified reservoirs.

The *Times* reported on the widespread use of cyclic steaming in California's robust enhance oil recovery market and its alleged lack of close state oversight. Bohlen in the story pointed toward the state imposing more regulations on cyclic steaming.

A DOGGR spokesperson told *NGI's Shale Daily* that the new rules are one of the major focal points of an ongoing push by the Department of Conservation to beef up oversight of the energy industry, an effort the industry has supported (see *Daily GPI*, Aug. 26).

"There are no regulations specific to that type of [cyclic steaming] well, and one size doesn't fit all," he said. "Cyclic steam wells are a hybrid that perform the functions of a producing well at times and an injection well at times." DOGGR began drafting cyclic steaming regulations this summer and plans to have the specific rules in place by December 2016.

"The division's position is that cyclic steaming and well stimulation -- synonymous with hydraulic fracturing in the minds of many people -- are different," the spokesperson said. "Cyclic steaming is used mainly in the diatomite formations of Kern County and accounts for about 40% of the state's production. The process is done without chemicals or other additives" associated with fracking.

A spokesperson with California Independent Petroleum said producers already are following all of the rules in place.

"To imply that the industry is not required to follow a complex regulatory framework is patently false," the spokesperson said. Recent newspaper reports allegedly relied on "misinformation generated by anti-oil activists who are focused on stopping all oil production in the state."