BALDWIN HILLS FRACKING STUDY SHOWS NO ENVIRONMENTAL IMPACTS

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On October 10, 2012, Cardno ENTRIX (Cardno) released its much-anticipated report studying the effects of hydraulic fracturing, or "fracking," in the Inglewood Oil Field, located in the Baldwin Hills area of Los Angeles County. The peer-reviewed report, prepared for Plains Exploration & Production Company (PXP) and the Los Angeles County Department of Regional Planning, disclosed no environmental harm, potentially clearing the way for additional fracking in Baldwin Hills.

Cardno's report was the product of a one-year study of fracking in the Inglewood Oil Field. The report was required by a July 15, 2011, settlement agreement between PXP, Los Angles County, Culver City, and various environmental and community groups. The settlement agreement resolved litigation arising out of the County's October 2008 approval of the Baldwin Hills Community Standards District (CSD). The purpose of the CSD was to "provide a means of implementing regulations, safeguards, and controls for activities related to drilling for and production of oil and gas" in Baldwin Hills. (Los Angeles County Code, §22.44.142.A.) Several parties filed actions challenging the adequacy of the environmental impact report for the CSD and the County's approval of the CSD. Those actions culminated in a settlement that, among other things, required PXP to "pay for an independent consultant to conduct a study of the feasibility and potential impacts (including impacts to groundwater and subsidence) of the types of fracturing operations PXP may conduct in the Oil Field." The settlement agreement also mandated that the report be subjected to peer review by qualified experts with access to all the pertinent data and materials.

The report details Cardno's findings from PXP's fracking of two wells in the Inglewood Oil Field — VIC1-330, fracked September 15-16, 2011, and VIC1-635, fracked January 5-6, 2012. The specific findings and conclusions from the report's executive summary are set forth below. In brief summary, the report found no measurable impacts from the two fracking jobs. Among the more significant environmental concerns raised by the litigants was the

potential for adverse effects on groundwater from fracking. The report concludes that pre- and post-fracking groundwater monitoring shows similar water quality results, and adds that the groundwater below the oil field is not a source of drinking water. Most drinking water for the Baldwin Hills area comes from the Sacramento-San Joaquin Delta, and the closest source of drinking water is 1.5 miles from Baldwin Hills. The study also found that fracking did not impact well integrity, that methane levels in soil and groundwater were not impacted by fracking, and that fracking did not cause detectable vibration at the surface and did not result in induced seismicity.

Not unexpectedly, the report has been received with skepticism by the environmental community. A frequent criticism has focused on the source of funding for the study, suggesting that the report is biased and unreliable because it was paid for by PXP. Such criticism, described by one source as not wholly fair, ignores the mandate of the settlement agreement, which compelled PXP to pay for the study. Indeed, one might question whether the plaintiffs demanded that PXP fund the study so they could later challenge the results if they did not conform to their anti-fracking perspective. Another commenter described the results of the report as "manipulated," while another characterized the study as a situation where the fox is guarding the henhouse, calling the report "shill science at its worst." Those criticisms are premature at best, given that there has not been sufficient time for challengers to analyze the report fully and determine — based on science and data — whether the report will hold up under scientific scrutiny.

Ultimately, the Cardno report is one more scientific data point to evaluate as California policy-makers consider the extent to which fracking should be permitted and regulated. As we have previously reported, various California agencies are drafting regulations, including the Division of Oil, Gas & Geothermal Resources (DOGGR) and the South Coast Air Quality Management District (AQMD), among others.

PXP will present the findings of the Cardno report at a public meeting that will be conducted on Monday, October 15, 2012, at the Knox Presbyterian Church, located at 5840 La Tijera Boulevard, Los Angeles, California 90056.

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The report made the following specific findings (see Section ES.6):

Groundwater

"Groundwater monitoring shows similar groundwater quality results before and after high-volume hydraulic fracturing and high-rate gravel packing. The Inglewood Oil Field's groundwater is not a source of drinking water. The groundwater bearing water bodies of the Baldwin Hills are geologically isolated from the nearest groundwater wells used for the municipal supply; and, two-thirds of the community water supply is from Northern California (the Sacramento-San Joaquin Delta) or the Colorado River. The local community does not receive water from closer than 1.5 miles to the Baldwin Hills. Community water supply is tested on a quarterly basis by the water purveyor, meets drinking water standards, and the results are publicly available."

Well Integrity

"Tests conducted before, during and after the use of high-volume hydraulic hydraulic fracturing and high-rate gravel packing showed no impacts on the integrity of the steel and cement casings that enclose oil and gas wells."

Containment

"The results of microseismic monitoring indicate that fractures created during the high-volume hydraulic hydraulic [sic] fracturing operations were contained to the deep Nodular Shale with the exception of a minor few that were not filled with proppant. The fractures were all greater than 7,500 feet below the designated base of fresh water. The fractures created during all high-rate gravel packs were confined to the target zones."

Methane

"The results of methane testing in soil and groundwater showed no influence from high volume hydraulic fracturing or high-rate gravel packing."

Subsidence

"The high-volume hydraulic fracturing and high-rate gravel packing had no detectable effect on ground movement, vibration, seismicity or subsidence, based on the results of studies conducted before and after the activities. As such, there would also be no detectable effect on slope stability."

Vibration and Induced Seismicity

"Results of studies conducted before and after high-volume hydraulic fracturing and high-rate gravel packing operations indicate that the operations had no detectable effect on vibration, and did not induce seismicity at the surface."

Noise and Vibration

"The noise and vibration associated with the high-volume hydraulic fracturing and high-rate gravel pack operations did not exceed CSD limits."

Air Emissions

"Air emissions associated with high-volume hydraulic fracturing and high-rate gravel packing were compliant with the regulations of the South Coast Air Quality Management District and the CSD."

Public Health Study

"The Los Angeles County Health Study found no detectable health consequences to the local community from oil and gas development (including hydraulic fracturing and high-rate gravel packing) at the Inglewood Oil Field. The study recommends careful monitoring of the oil field operations to ensure compliance with regulations and standards to protect community health and safety."