



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220-6292



In Reply Refer To:
7100(520)

June 9, 2008

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2008 JUN 12 PM 2 30

Will Jones
New Mexico Oil Conservation Division (OCD)
1220 South St. Francis Drive
Santa Fe, NM 87505

Dear Mr. Jones,

I am writing this letter in support of your agency's efforts to discontinue salt water disposal (SWD) in the Exxon State #8 (Exxon) well located: 1268' FSL & 2032' FEL, Sec. 21, T21S, R27E NMPM. The Bureau of Land Management Carlsbad Field Office (CFO) believes that this SWD well should be plugged and abandoned do to the risk of contamination that it poses to ground water and the Pecos River

The Exxon well caught the attention of the CFO after crude oil was observed oozing to the surface from the Magnolia State #1 (Magnolia)—an oil well that produced out of the Yates formation and was plugged in 1957 (conversation with Mike Bratcher-OCD Artesia office). Obviously the Magnolia well needs to be replugged, but the CFO was more concerned with what was driving the fluid to the surface. An investigating of the oil & gas operations in the area revealed that the Exxon well was the closest (2,940') SWD, and the produced water is being disposed into the Yates Formation at a depth of 570'-600' (approximately the same depth as the completion interval of the Magnolia). The Exxon well is accepting approximately 200,000 barrels of produced water per month. It accepts these fluids readily under what has been described as a vacuum (conversation with Will Jones-OCD Santa Fe office). It is unlikely that the Yates Formation is readily accepting this much produced water. The majority of produced water is probably going into the Capitan Reef which has very high secondary karst porosity. It is believed that during times of excessive disposal rates that the produced water volume exceeds what the Reef can accept. At these times the excess produced water could create a high hydraulic head gradient in the overlying formations which could be driving the episodic discharges at the Magnolia well.

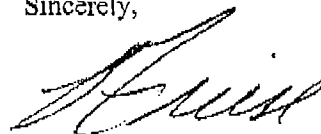
Water in the Capitan Reef in this area flows to the east, and it is too saline to warrant protection under New Mexico State regulations. Water in the overlying formations flows to the south/southwest (towards the Pecos River). In this down-gradient direction (south/southwest) there are no water wells within 2.5 miles of the Exxon well. This is probably because the water quality is poor due to the presence of the Salado Formation (an evaporate sequence that is primarily salt). Ground water quality improves down-gradient outside of the Salado outcropping, and there are numerous domestic wells in this area. The water quality in these wells is suitable for irrigation and stock use, and the CFO is concerned that any degradation may render the water unusable. Also, the groundwater in this area (above the Reef) eventually discharges into the Pecos River.

The CFO would like to see a reduction in produced water disposal in the Capitan Reef. The ground water in the Reef east of the Pecos River was of poor quality prior to oil & gas development, but there was probably a larger area that contained usable (<10,000 ppm tds) water. Furthermore, the Capitan Reef is a large reservoir with high secondary porosity. The large volume of water contained in the Reef may become an important resource as new water treatment technologies are developed. If the natural ground water chemistry is restored, it will make treatment options more viable.

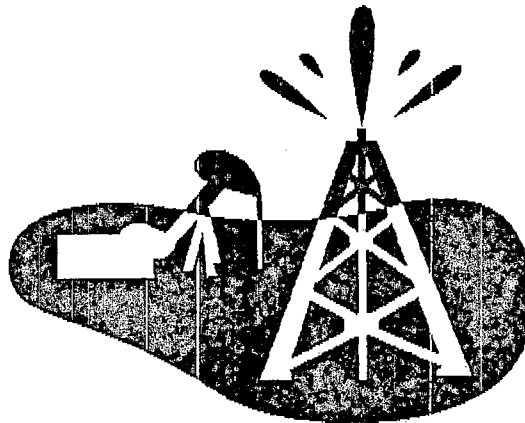
The Exxon State #8 is of particular concern to the CFO because of its shallow injection depth, and its proximity to the Pecos River and the City of Carlsbad. If disposal is to continue in the Exxon well, the CFO proposes a dye tracing campaign be initiated to determine if there connectivity between the Exxon well and down-gradient waters. The dye tracing will involve installing dye receptors in down-gradient wells, monthly injections of dye into the Exxon well, monthly removal and replacement of the dye receptors, and monthly lab analyses of the removed dye receptors.

Please contact me at (575) 234-2220 should you have any questions or if we can be of any additional help.

Sincerely,



Rick Friese
Hydrologist



TRANSMITTAL COVER SHEET

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1220 S. ST. FRANCIS DRIVE
SANTA FE, NM 87505
(505) 476-3440
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PLEASE DELIVER THIS FAX:

TO: Kelley Nichols

FROM: Sandy Swazo

DATE: July 9, 2008

PAGES: 3 (includes this page)

SUBJECT: June 9, 2008 letter from BLM

Mesaquite SWD, INC.

Exxon State NO. 008

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