

Form C-108

Page Two

Dated: March 11, 1997
Operator: Manzano Oil Corporation
Well: State "22" #1
Sec 22, T10S, R37E
Lea County, NM

- V. Map attached. See Exhibit V.
- VI. No wells within the area of review (1/2 mile radius).
- VII. 1. Average daily rate of salt water injected will be approximately 500 bbls/day. The maximum rate will be approximately 800 bbls/day. Volume of salt water injected will be approximately 15,000 bbls/month.
2. The system will be closed.
3. The average injection pressure is expected to be 100 psi. The maximum injection pressure should not be over 900 psi.
4. Sources for the disposal water will be the Manzano "SV" Sundown State #1, Section 14, T10S, R37E, and the Manzano "SV" Sunrise State #1, Section 15, T10S, R37E. Both wells produce from the Devonian. A water analysis of the produced water is attached. Exhibits VII.4a., b. and c.
5. Water analysis of San Andres zone is attached. Exhibit VII.5.a. Exhibit VII.5.b. is a comparison between the Devonian water and San Andres water. Scaling potential is nil to marginal.
- VIII. The proposed zone for salt water disposal is the San Andres zone at a depth of 5010' in the Union Oil Company of California State "22" #1. The porous interval in which the salt water will be injected is from a depth of 5010' to 5260'. This interval consists of Dolomite. The closest San Andres oil production is some 4 miles to the northeast of this well, with oil production coming from the upper portion of the San Andres.
- The maximum depth for underground sources of drinking water in the area is 300'. These zones will be protected with 13-3/8" and 8-5/8" casing with cement circulated to surface on both strings.
- There are no underground sources of drinking water underlying the San Andres in this area.
- IX. The proposed San Andres zone will be acidized with 10,000 gallons of 20% HCl acid if necessary.
- X. There is no test data at this time on the San Andres. A copy of that portion of the sonic log and laterolog over the proposed disposal interval in the San Andres is attached (Exhibit X). A complete set of open hole logs of this well has already been filed with the division by Union Oil Company of California.
- XI. Attached is a chemical analysis of a fresh water well that is within one mile of the proposed disposal. This sample was analyzed on 1/04/96. See Exhibit XI.
- XII. Manzano Oil Corporation has examined all available geological and engineering data in the surrounding area of the proposed disposal well and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Proof of notice is attached. See Exhibit XIII.A. and XIII.B.