STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9358
ORDER NO. R-7044-A

APPLICATION OF EL RAN, INC. FOR
THE RECLASSIFICATION OF A PRESSURE
MAINTENANCE PROJECT TO A WATERFLOOD
PROJECT AND FOR WATERFLOOD EXPANSION,
CHAVES AND ROOSEVELT COUNTIES, NEW
MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 27, 1988 and on May 11, 1988, at Santa Fe, New Mexico, before Examiners Michael E. Stogner and David R. Catanach, respectively.

NOW, on this 1st day of July, 1988, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) At the time of the April 27, 1988 hearing, this case was consolidated with Division Case No. 9357 for the purpose of testimony.

(3) By Division Order No. R-8656, issued in Case No. 9357 and dated May 19, 1988, the Chaveroo-San Andres Unit Agreement was approved for all oil and gas in the San Andres formation underlying the SE/4 and E/2 SW/4 of Section 34 and the SW/4 of Section 35, Township 7 South, Range 32 East, NMPM, Chaveroo-San Andres Pool, Roosevelt County, New Mexico; and all of Section 3 and the N/2 NW/4 of Section 10, Township 8 South, Range 32 East, NMPM, Chaveroo-San Andres Pool, Chaves County, New Mexico.

(4) Division Order No. R-7044, dated July 28, 1982, authorized El Ran, Inc. to institute a pressure maintenance project in the Chaveroo-San Andres Pool by the injection of water into its U.S.A. Well No. 1 located 660 feet from the South line and 1980 feet from the West line (Unit N) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico. Order No. R-7044 also

designated this project the "El Ran Chaveroo Pressure Maintenance Project," established its horizontal extent to include the S/2 of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico; and the N/2 of Section 3, Township 8 South, Range 32 East, NMPM, Chaves County, New Mexico; and promulgated special operating procedures for the project area.

(5) The applicant in the immediate case, El Ran, Inc., now seeks to reclassify the El Ran Chaveroo Pressure Maintenance Project to a waterflood project and to extend its horizontal extent to include the area underlying the Chaveroo-San Andres Unit Area as described in Finding Paragraph No. (3) above.

(6) The applicant proposes to develop this area on an 80-acre five-spot injection pattern by utilizing the original injection well as mentioned in Finding Paragraph No. (4) above and also seeks to convert 13 San Andres oil producing wells into water injection wells as listed on Exhibit "A" attached hereto and made a part hereof.

(7) The wells in the project area are in an advanced state of depletion and should be classified as "stripper" wells.

(8) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) No interested and/or affected party appeared or objected to the proposed waterflooding of the subject area.

(10) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production or plugged and abandoned wells.

(11) Within the project area is the El Ran, Inc. Byron Well No. 1 located 660 feet from the South and East lines (Unit P) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico. Originally the well was drilled in December, 1977 and completed as a Chaveroo-San Andres producing well with perforations from 4206 feet to 4276 feet.

(12) At the time of the hearing, no data or testimony was presented on said Byron Well No. 1. Subsequently, it was found to have been plugged and abandoned in April, 1978 after the 4-1/2 inch production casing had collapsed at 1410 feet.

(13) The available information on the Byron Well No. 1 does not indicate that it was adequately completed and/or plugged and abandoned in such a manner as to ensure that it will not act or serve as a conduit for the movement of injected fluid out of the injection interval.

(14) The following five El Ran, Inc. wells are located within one-half mile of said Byron Well No. 1:

(a) Byron Well No. 3 located 1650 feet from the South line and 1980 feet from the East line (Unit J) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico;

(b) Byron Well No. 1-Y located 660 feet from the South line and 990 feet from the East line (Unit P) of said Section 34;

(c) Yeager Well No. 4 located 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico;

(d) Roberts Well No. 1 located 440 feet from the North line and 1980 feet from the East line (Unit B) of Section 3, Township 8 South, Range 32 East, NMPM, Chaves County, New Mexico; and

(e) Roberts Well No. 3 located 1650 feet from the North line and 990 feet from the East line (Unit H) of said Section 3.

(15) Prior to initiating injection into any of the five above-described wells, the applicant will be required to demonstrate, to the satisfaction of the supervisor of the Division's district office in Hobbs, that the Byron Well No. 1 has either been re-entered and properly plugged, abandoned and cemented or has previously been plugged, abandoned and cemented in such a manner as to ensure that it does not provide an avenue of escape for waters from the proposed injection zone.

(16) At the time of the hearing, the applicant requested that it be allowed to inject into the proposed injection wells at a pressure greater than 0.2 psi per foot of depth from the surface to the uppermost perforation.

(17) Prior to approval of the proposed higher injection pressure, the applicant should be required to conduct step-rate tests on the proposed injection wells to ensure said pressure will not result in the fracturing of the injection formation or confining strata.

(18) The injection wells or injection pressurization system should initially be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth from the surface to the top injection perforation in any injection well, but the Division Director should have authority to increase said pressure limitation upon a

proper showing that said pressure increase would not result in the fracturing of the injection formation or confining strata.

(19) The injection of water into each of the injection wells in the project should be accomplished through internally plastic lined tubing and the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(20) Prior to commencing injection into any of the injection wells in the project the casing should be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to ensure the integrity of such casing.

(21) The operator should give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(22) The subject application should be approved and the El Ran Chaveroo Pressure Maintenance Project as authorized by Division Order No. R-7044 should be reclassified a waterflood project and redesignated the El Ran Chaveroo-San Andres Unit Waterflood Project.

(23) Said Order No. R-7044 should be rescinded and continued authorization to inject into the U.S.A. Well No. 1 should be incorporated in an order issued in this case.

(24) The subject waterflood project should be governed by the provisions of Rules 701 through 708 and Rule 104 F.I. of the Division General Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) Division Order No. R-7044, dated July 28, 1982, which authorized the El Ran Chaveroo Pressure Maintenance Project is hereby rescinded.

(2) The applicant, El Ran, Inc., is hereby authorized to operate a waterflood project in the Chaveroo San Andres Unit Area, as described below, located entirely in the Chaveroo-San Andres Pool, by the injection of water into the unitized interval which shall include the San Andres formation as found from a depth of 4177 feet to a depth of 4676 feet as recorded on the Nuclear Log of the applicant's Roberts Well No. 1 located 440 feet from the North line and 1980 feet from the East line (Unit B) of Section 3, Township 8 South, Range 32 East, NMPM, Chaves County, New Mexico:

ROOSEVELT COUNTY, NEW MEXICO
TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM

Section 34: SE/4 and E/2 SW/4
Section 35: SW/4

CHAVES COUNTY, NEW MEXICO
TOWNSHIP 8 SOUTH, RANGE 32 EAST, NMPM
Section 3: All
Section 10: N/2 NW/4.

(3) Said project shall be designated the El Ran Chaveroo-San Andres Unit Waterflood Project and shall consist of the existing water injection well, which is further described in Ordering Paragraph No. (4) below, and 13 wells as further described in Exhibit "A" attached hereto and made a part hereof.

(4) The operator of the unit is hereby authorized to continue injecting water in the Chaveroo-San Andres Pool into the perforated interval between 4169 feet and 4276 feet in the U.S.A. Well No. 1 located 660 feet from the South line and 1980 feet from the West line (Unit N) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico, (originally approved by said Order No. R-7044.) Said well shall be equipped with internally plastic coated tubing, set in a packer located at approximately 4100 feet. Further, the casing-tubing annulus shall be kept filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak-detection device.

(5) Injection into the five following described wells shall not commence in any manner until the El Ran, Inc. Byron Well No. 1 located 660 feet from the South and East lines (Unit P) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico, has either been re-entered and properly plugged, abandoned and cemented; or can be shown that said well was previously plugged and abandoned and cemented all in such a manner as to ensure that it does not provide an avenue of escape for waters from the proposed injection zone and in accordance with a program that is satisfactory to the supervisor of the Division's district office in Hobbs:

(a) Byron Well No. 3 located 1650 feet from the South line and 1980 feet from the East line (Unit J) of Section 34, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico;

(b) Byron Well No. 1-Y located 660 feet from the South line and 990 feet from the East line (Unit P) of said Section 34;

(c) Yeager Well No. 4 located 1980 feet from the South line and 660 feet from the West line (Unit L) of Section 35, Township 7 South, Range 32 East, NMPM, Roosevelt County, New Mexico;

(d) Roberts Well No. 1 located 440 feet from the North line and 1980 feet from the East line (Unit B) of Section 3, Township 8 South, Range 32 East, NMPM, Chaves County, New Mexico; and

(e) Roberts Well No. 3 located 1650 feet from the North line and 990 feet from the East line (Unit H) of said Section 3.

(6) Prior to commencing injection operations, the casing in each of the proposed injection wells in the project shall be pressure-tested to ensure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's district office in Hobbs.

(7) Injection into any and all of said wells shall be through internally plastic-coated tubing, set in a packer which shall be located as near as practicable to the uppermost perforation; the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak-detection device.

(8) The injection wells herein authorized and/or the injection pressurization system shall be so equipped as to limit injection pressure at the wellhead to no more than 0.2 psi per foot of depth from the surface to the uppermost perforation, as shown in column "G" of Exhibit "A", provided however, the Division Director may authorize a higher surface pressure upon satisfactory showing that such higher pressure will not result in fracturing of the injection formation or confining strata.

(9) The operator shall notify the supervisor of the Hobbs district office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure test for each injection well in order that the same may be witnessed.

(10) The operator shall immediately notify the supervisor of the Division's Hobbs district office of the failure of the tubing or packer in any of said injection wells in the project area, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(11) The subject waterflood project shall be governed by the provisions of Rules 701 through 708 and Rule 104 F.I of the Division General Rules and Regulations.

(12) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division General Rules and Regulations.

(13) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

EXHIBIT "A"
CASE NO. 9358
ORDER NO. R-7044-A
EL RAN CHAVEROO SAN ANDRES UNIT
WATERFLOOD PROJECT
TABLE OF INJECTION WELLS

(A) Well Name and Number	(B) Footage Location	(C) Unit-Section Township-Range	(D) County	(E) Proposed. Tbg/Pkr. Depth(ft.)	(F) Proposed Injection (perforated) Interval (ft.)	(G) Max. Inj. Pres. (PSI)
Byron Well No. 3	1650' FSL-1980' FEL	J-34-7S-32E	Roosevelt	4064	4164-4297	833
Byron Well No. 1-Y	660' FSL- 990' FEL	P-34-7S-32E	Roosevelt	4076	4176-4294	835
Yeager Well No. 4	1980' FSL- 660' FWL	L-35-7S-32E	Roosevelt	4162	4262-4326	852
Yeager Well No. 2	660' FSL-2310' FWL	N-35-7S-32E	Roosevelt	4050	4150-4334	830
Roberts Well No. 1	440' FNL-1980' FEL	B- 3-8S-32E	Chaves	4077	4177-4284	835
Dashner Well No. 4	660' FN & WL	D- 3-8S-32E	Chaves	4112	4212-4390	842
Dashner Well No. 2	1650' FNL-2200' FWL	F- 3-8S-32E	Chaves	4087	4187-4272	837
Roberts Well No. 3	1650' FNL- 990' FEL	H- 3-8S-32E	Chaves	4087	4187-4286	837
Carroll Well No. 1	2200' FS & EL	J- 3-8S-32E	Chaves	4147	4247-4278	849
Dachner Federal Well No. 6	2200' FSL- 990' FWL	L- 3-8S-32E	Chaves	4080	4180-4304	836
Dachner (Federal) Well No. 8	990' FSL-2200' FWL	N- 3-8S-32E	Chaves	4076	4176-4295	835
Carroll Well No. 2	990' FS & EL	P- 3-8S-32E	Chaves	4093	4193-4281	839
Griffin Well No. 2	660' FNL- 990' FWL	D-10-8S-32E	Chaves	4068	4168-4291	833