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. 10192
ORDER NO. R-9453

APPLICATION OF BEACH EXPLORATION INC.
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE DIVISION

This cause came on for hearing at 8:15 a.m. on January 10, 1991 at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 12th day of March, 1991, 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) Division Case Nos. 10192 and 10193 were consolidated at the time of the hearing for the purpose of testimony.

(3) The applicant, Beach Exploration Inc., seeks authority to institute a waterflood project in its Red Lake Unit (being the subject of Division Case No. 10193) by the injection of water into the Penrose Sand member of the Queen formation, East Red Lake-Queen-Grayburg Pool, through the gross perforated interval from approximately 1537 feet to 1838 feet in fourteen existing wells located in Sections 24, 25, 35 and 36, Township 16 South, Range 28 East, NMPM, and in Section 30, Township 16 South, Range 29 East, NMPM, Eddy County, New Mexico, all as shown on Exhibit "A" attached hereto.

(4) The wells located within applicant's Red Lake Unit Area are in an advanced state of depletion and should properly be classified as "stripper wells".

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

(6) The applicant 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.

(7) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation; 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.

(8) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(9) There are 4 wells, shown on Exhibit "B" attached hereto, which are located within the "area of review" which may not be completed or plugged in such a manner which will assure that their wellbores will not serve as a conduit for movement of injected fluid out of the injection interval.

(10) Prior to initiating injection operations within one-half mile of any of the wells shown on Exhibit "B", the applicant should be required to complete or re-plug said wells in a manner which will assure that these wellbores will not serve as a conduit for migration of injected fluid and to the satisfaction of the supervisor of the Artesia district office of the Division.

(11) The applicant requested that it be allowed to inject fluid into each of the wells shown on Exhibit "A" at a surface pressure not to exceed 1500 psi, as an exception to the standard injection pressure limitation of 0.2 psi per foot of depth to the top perforation.

(12) According to applicant's testimony, approximately half of the proposed injection wells are located in "tight" areas or areas of decreased permeability within the Penrose Sand member, and injection into these wells at the proposed rates of 150-250 barrels of water per day cannot be accomplished at the standard injection pressure limitation normally imposed by the Division.

(13) Prior to authorizing injection at the proposed surface injection pressure of 1500 psi. the applicant should be required to conduct a minimum of four step rate injection tests in order to properly determine the current fracture pressure of the Penrose Sand member, and in order to allow the Division the opportunity to assess the potential for fracturing and/or migration of injected fluid out of zone as a result of injection at the proposed pressure.

(14) The injection wells or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 0.2 psi per foot of depth to the top injection perforation, or in the case of open hole completions, the casing shoe, all as shown on Exhibit "A".

(15) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(16) The operator should give advance notification to the supervisor of the Artesia district office of the Division of the date and time of the installation of injection equipment, of the mechanical integrity pressure tests, and of the conductance of any remedial cement or plugging operations in order that the same may be witnessed.

(17) The application should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Beach Exploration Inc., is hereby authorized to institute a waterflood project in its Red Lake Unit (being the subject of Division Case No. 10193) by the injection of water into the Penrose Sand member of the Queen formation, East Red Lake-Queen-Grayburg Pool, through the gross perforated interval from approximately 1537 feet to 1838 feet in fourteen existing wells located in Sections 24, 25, 35 and 36, Township 16 South, Range 28 East, NMPM, and in Section 30, Township 16 South, Range 29 East, NMPM, Eddy County, New Mexico, all as shown on Exhibit "A" attached hereto.

(2) Prior to initiating injection operations within one-half mile of any of the wells shown on Exhibit "B", the applicant shall complete or re-plug said wells in a manner which will assure that these wellbores will not serve as a conduit for migration of injected fluid and to the satisfaction of the supervisor of the Artesia district office of the Division.

(3) The applicant shall 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.

(4) Injection into the proposed injection wells shall be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(5) The injection wells or pressurization system shall be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 0.2 psi per foot of depth to the top injection perforation, or in the case of open hole completions, the casing shoe, all as shown on Exhibit "A".

(6) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(7) Prior to commencing injection operations into the proposed injection wells, the casing in each well shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(8) The operator shall give advance notification to the supervisor of the Artesia district office of the Division of the date and time of the installation of injection equipment, of the mechanical integrity pressure tests, and of the conductance of any remedial cement or plugging operations in order that the same may be witnessed.

(9) The applicant shall immediately notify the supervisor of the Artesia district office of the Division of the failure of the tubing, casing or packer in any of the injection wells, 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 steps as may be timely and necessary to correct such failure or leakage.

(10) The subject waterflood project is hereby designated the Red Lake Unit Penrose Waterflood Project, and the applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.

(11) 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"
RED LAKE UNIT
APPROVED INJECTION WELLS
CASE NO. 10192
ORDER NO. R-9453

Well Name	*Location*	*Unit*	*S-T-R*	*Injection Perforations*	*Packer Depth*	*Tubing Size*	*Maximum Surface Injection Pressure*
Amoco State No. 1	2310' FSL & 2287' FWL	K	25-16S-28E	1609' - 1634'	1559'	2 3/8	322
Bogle Farms No. 1	660' FSL & 990' FWL	M	25-16S-28E	1575' - 1599'	1525'	2 3/8	315
Hinkle State "A" No. 1	2310' FSL & 2310' FEL	J	36-16S-28E	1762' - 1809'	1712'	2 3/8	352
N.M. State "35" No. 1	660' FNL & 660' FEL	A	35-16S-28E	1560' - 1585'	1510'	2 3/8	312
N.M. State "36" No. 3	1980' FNL & 990' FWL	E	36-16S-28E	1618' - 1672'	1568'	2 3/8	324
N.M. State "36" No. 4	660' FNL & 1980' FWL	C	36-16S-28E	1656' - 1675'	1606'	2 3/8	331
N.M. State "36" No. 5	1986' FNL & 1983' FEL	G	36-16S-28E	1778' - 1824'	1728'	2 3/8	356
N.M. State "36" No. 6	330' FNL & 981' FEL	A	36-16S-28E	1814' - 1825'	1764'	2 3/8	363
Government No. 1	660' FSL & 1980' FEL	O	25-16S-28E	1779' - 1804'	1729'	2 3/8	356
Government No. 4	2310' FNL & 1980' FEL	G	25-16S-28E	1642' - 1660'	1592'	2 3/8	328
Government No. 5	1650' FSL & 990' FEL	I	25-16S-28E	1816' - 1838'	1766'	2 3/8	363
Allen Federal No. 1	860' FNL & 660' FEL	A	25-16S-28E	1687' - 1807'	1637'	2 3/8	337
Max Federal No. 3	2310' FNL & 330' FWL	E	30-16S-29E	1828' - 1838'	1778'	2 3/8	366
State "24" No. 1	660' FSL & 1980' FEL	O	24-16S-28E	1537' - 1599'	1487'	2 3/8	307

EXHIBIT "B"
RED LAKE UNIT
INADEQUATELY COMPLETED, PLUGGED OR ABANDONED WELLS
CASE NO. 10192
ORDER NO. R-9453

Well Name	*Location*	*Unit*	*S-T-R*
Meridian Federal No. 1	2310' FNL - 990' FWL	E	25-16S-28E
State "24" No. 1	2310' FNL - 2310' FEL	G	24-16S-28E
Kemper State No. 2	660' FNL - 660' FEL	A	36-16S-28E
Southern Union Federal No. 1	660' FSL - 1980' FEL	O	26-16S-28E