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. 14187
ORDER NO. R-10663-B

APPLICATION OF MERIT ENERGY COMPANY TO EXPAND ITS WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on October 2, 2008, at Santa Fe, New Mexico, before Examiners William V. Jones and David K. Brooks.

NOW, on this 1st day of June, 2009, the Division Director, having considered the testimony, the record, and the recommendations of the Examiners,

FINDS THAT:

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

(2) Merit Energy Company ("Applicant") is the current operator of the Keel-West Waterflood Project in the Grayburg-Jackson Pool which was originally approved by Division Order No. R-2268, as amended, and which encompasses in part, Sections 3 through 10, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) No other parties appeared in this case or otherwise opposed this application.

(4) Applicant seeks authority to expand the Keel-West Waterflood Project by converting the following three existing producing wells to injection wells:

API	WELL_NAME	Stat	FTG NS	NS	FTG EW	EW	Unit	Sec	Tsp	Rge	Proposed Injection Interval
3001525993	H E WEST B 035	A	1980	S	860	W	L	9	17S	31E	3212-3707
3001528079	J L KEEL B 057	A	1980	S	580	E	I	8	17S	31E	3029-3899
3001528279	J L KEEL B 077	A	1930	N	714	E	H	8	17S	31E	3091-3820

(5) The evidence indicates there remains a "Problem Well" located within ½ mile of these proposed injection wells which is not adequately plugged and abandoned so as to confine injected fluid to the proposed injection interval, this being the J.L. Keel "B" Well No. 28 (API No. 30-015-10470) located 1980 feet from the South line and 660 feet from the East line (Unit I) of Section 8, Township 17 South, Range 31 East, NMPM.

(6) On September 9, 1996, the Division issued Order No. R-10663, in Case No. 11580, allowing injection in three wells located to the northwest of the Problem Well, but requiring a row of producers to be maintained between this well and those injectors. Permission to inject into two of these currently proposed injection wells was denied in that order.

(7) In the present case, the applicant presented testimony that:

(a) There is a significant amount of oil that will only be recovered from this reservoir if injection is allowed within this part of the Keel-West Waterflood Project Area.

(b) Applicant wishes to fill in these injection patterns by conversion to injection of the proposed three wells and thereby recover additional oil and gas.

(c) Wells within this waterflood are producing at low rates and injection wells must operate at high pressure in order to inject water into this low permeability reservoir and to achieve a valid waterflood.

(d) The Division in Order No. R-2268-C, has allowed the operator of this waterflood to inject at a maximum surface injection pressure of 2100 to 2500 psi in order to prevent waste of oil.

(e) Surface casing and cement is used in this area to protect any possible fresh water, but fresh water has not been found.

(f) There has been a lengthy attempt in the past to re-enter this poorly plugged well and further attempts will be costly and have a small chance of success.

(g) Applicant is agreeable to a conditional permit to inject with conditions to be determined by the Division; including the possibility of a requirement to re-enter and re-plug the Problem Well.

(h) Applicant will then make a business decision as to whether to risk the possible cost of re-plugging the Problem Well.

(8) The subject matter and facts presented in this case are almost identical to Case No. 11580, heard in 1996 and resulting in Division Order No. R-10663. Merit is proposing a differing waterflood pattern in this case.

(9) Records show the Problem Well was drilled in 1964 and has surface pipe set to 550 feet and circulated with cement. The well was then drilled to 3800 feet and 4-1/2 inch casing run and cemented with 360 sacks of cement resulting in a reported cement top of approximately 2220 feet. The well was used as an injection well in this waterflood, with total perforations from 3118 to 3800 feet, until a waterflow was discovered on the bradenhead or on the tubing-casing annulus in 1979. Attempts to pull the tubing and squeeze the problem areas resulted in collapsed casing within the salt section and lost tubing and casing. Attempts to find the casing within the salt cavern failed and the well was plugged after squeezing from "measured depths" of 1200 feet and setting intermittent plugs to surface. Additional details are contained in the findings in Order No. R-10663 (Case No. 11580.)

(10) It remains the policy of the Division to restrict injection within ½ mile of any well which is not adequately cased, cemented or plugged and abandoned so as to confine injection fluid to the injection interval. However, the Division has on occasion, in waterfloods, permitted injection near poorly plugged wells, but (i) only if adequate drawdown of the reservoir is maintained by intercepting producing well(s) so as to prevent movement of fluids out of the permitted injection interval and (ii) if fresh waters are adequately protected.

(11) The records on the Problem Well indicate it is plugged from a maximum depth of 1200 feet to the surface, thereby covering the top of the salt and protecting any possible fresh water interval. The configuration below 1200 feet provides communication from the high pressures of the waterflood in the Grayburg San Andres formations up and into the lower salt interval and the Tansill, Yates, and upper Seven Rivers formations.

(12) The Tansill, Yates, Seven Rivers, and Queen formations are not considered economically productive of oil and gas in this area.

(13) Due to washouts in the Salt and evidence of collapsed and corroded casing, this Problem Well would almost certainly be impossible to re-enter to total depth and re-plug and efforts to do so would be very expensive.

(14) The J.L. Keel "B" Well No. 57 is being proposed by Merit in this application to be converted from a producer to an injection well. This well is located approximately 80 feet directly east of the Problem Well, so it is relatively close. The other two proposed injection wells are located to the North and to the East respectively of this Problem Well. The No. 57 well should remain as a producing well and serve as a pressure sink in order to prevent movement of fluids out of the intended injection interval.

(15) In order to prevent waste and protect correlative rights, the H.E. West "B" Well No. 35 and the J.L. Keel "B" Well No. 77 should be approved as proposed by the Applicant as conversions from producers to injection wells contingent on keeping the J.L. Keel "B" Well No. 57 as a producing well.

(16) The J.L. Keel "B" Well No. 57 should be completed in the equivalent injection interval (3100 to 3800 feet) by perforating and stimulating if necessary, and this well should be maintained as a producing well in a pumped off condition as a pressure sink in this portion of the Grayburg San Andres reservoir.

(17) Applicant's proposed conversion of the J.L. Keel "B" Well No. 57 to an injection well should be denied.

(18) 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 2,100 psi in order to prevent propagation of fracturing between these new injection wells and the Problem Well location.

IT IS THEREFORE ORDERED THAT:

(1) The "Applicant", Merit Energy Company, is hereby authorized to convert the following described two wells for use as injection wells for purposes of secondary recovery within its Keel-West Waterflood Project, Grayburg-Jackson Pool, both within Section 8, Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico:

API	WELL NAME	FTG NS	NS	FTG EW	EW	Unit	Sec	Tsp	Rge	Approved Injection Intervals
3001525993	H E WEST B 035	1980	S	860	W	L	9	17S	31E	3212-3707
3001528279	J L KEEL B 077	1930	N	714	E	H	8	17S	31E	3091-3820

(2) Applicant's proposed conversion of the J.L. Keel "B" Well No. 57 to an injection well is hereby denied.

(3) The J.L. Keel "B" Well No. 57 shall be maintained as a producing well. Injection into these two wells shall only occur at times in which the J.L. Keel "B" Well No. 57 is being produced. Permission for injection into these two wells shall be rescinded *ipso facto* if and when Well No. 57 is temporarily or permanently plugged.

(4) The J.L. Keel "B" Well No. 57 shall be completed in the equivalent injection interval (approximately from 3100 to 3800 feet) by perforating and stimulating if necessary, and this well shall be maintained as a producing well in a pumped off condition as a pressure sink in this portion of the Grayburg San Andres reservoir.

(5) Injection into each of these two wells shall be accomplished through 2-7/8 inch, or smaller, plastic-lined tubing installed in a packer located within 100 feet of the uppermost injection perforation. The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device shall be attached to the annulus in order to determine leakage in the casing, tubing, or packer.

(6) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure **to 2100 psi**. These two wells shall not be eligible for future increases in the permitted maximum surface injection pressure.

(7) The waterflood project operator shall give 72 hours advance notice to the supervisor of the Division's Artesia District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure test will be conducted on the approved injection wells, so that these operations may be witnessed. Injection shall not commence until the Division's district office has approved the report on the mechanical integrity test.

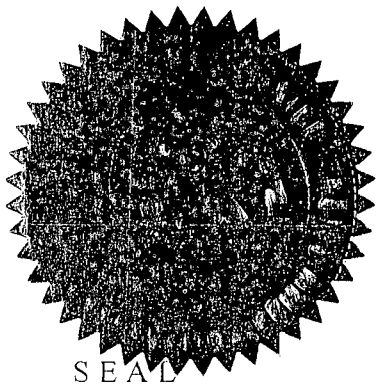
(8) The operator shall immediately notify the supervisor of the Division's Artesia District office of any failure of the tubing, casing or packer in the injection wells or the leakage of water, oil or gas from or around any nearby producing or plugged and abandoned well, and shall promptly take all steps necessary to correct such failure or leakage.

(9) The operator shall conduct injection operations in accordance with Division Rules 26.8 through 26.15, and shall submit monthly reports of the injection operations on Division Form C-115, in accordance with Division Rules 26.13 and 7.24.

(10) Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health, safety, and the environment.

(11) Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein.

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



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STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.
Director