JOHN A. YATES Oil Producer

ARTESIA: NEW MEXICO - 88210

August 7, 1969

Mr. A. L. Porter Jr, Secretary-Director New Mexico Oil Conservation Commission P. O. Box 2088 Santa Fe, New Mexico, 87501 Case 4208

Re: Application to Inject Water into Seven Rivers Formation, Millman East Pool, Eddy County

Dear Mr. Porter:

Application is hereby submitted by John A. Yates of Artesia for original authority to inject water into the <u>Seven Rivers formation</u> for a waterflood program in the Millman East (Seven Rivers) Pool, Eddy County, New Mexico. The area is located approximately 19 miles southeast of Artesia.

Permission is asked to convert two producing wells to input located as follows:

John A. Yates- Mary Lou #1 1650/N 330/E (Unit H) Sec 29-19-28 John A. Yates- Caroline #4 1650/N 330/W (Unit E) Sec 28-19-28

Cumulative production from the Mary Lou lease thru May 1969 is 25,485 barrels oil, and productivity has declined to 36 BOPM from four wells. Cumulative production from the Caroline lease thru May 1969 is 57,018 barrels oil, and productivity has declined to 136 BOPM from five wells.

The oil pay is a series of thin porous limestone interbedded with sand bodies in the uppermost 140 feet of the Seven Rivers formation, occurring at depths of 1045-1200 feet, and appears as bar-type stratigraphic traps on a north-easterly strike, approximately one-third mile in width. There are no core data available for this pool, but production decline curves indicate relatively high permeabilities and a solution gas depletion mechanism.

Original oil in place is estimated at about 600 STBO/ac-ft, and primary production at about 93 STBO/ac-ft, or approximately 16 percent of oil in place. It is anticipated that injectivity will be 275 BWPD per well at 500 psi well-head pressures. Source water will be fresh water from the Double Eagle Corp., an authorized transporter and vender of Ogallala water from the Caprock.

A plat showing the location of the proposed injection wells and other wells within a two-mile radius, and indicating the lessees and producing formations is appended (Exhibit I). Diagrammatic sketches and copies of the electric logs of the proposed input wells are also attached (Exhibits II, III and IV).

Respectfully submitted,

JOHN A. YATES

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Date 8/15/69

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DIAGRAMMATIC SKETCH OF INJECTION WELL

JOHN A. YATES - MARY LOU NO. 1 1650/N 330/E, H-29-19-28 Millman, East (Seven Rivers) Eddy County, New Mexico

EXHIBIT II

X Wellhead Fittings Elevation - 3389' DF Surface Casing cemented to surface Completed - 7-22-61 Pf 1098-1113, acidized w/ 3000g. 15% w/balls Calculated top of cement behind 41" IP- flowed 46 BOPD 16/64 Ck casing @ 63' from surface. TP-50, CP-210, 340API On pump August 1961 Negligible water encountered 7" 20# Casing @ 202 w/ 50sx Propose to set tubing on Tension Packer at about 1050' with inert fluid in annulus. Top Seven Rivers Fm @ 1030' SEVEN RIVERS PAY- 1069-1160' Perf'd 1098-1102, 1109-13; Treated w/ 3000g. 15% NEA; IP-46 BOPD 16/64 Lt buff-wht w/por & oil stn To pf & tr 1069-73, 1132-37, 58-60. Interbedded lime and sand 4号" 9.5# Csg @ 1157' w/ 100sx Total Depth Drilled - 1252'

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DIAGRAMMATIC SKETCH OF INJECTION WELL

JOHN A. YATES _ CAROLINE NO. 4 1650/N 330/W, E-28-19-28 Millman, East (Seven Rivers) Eddy County, New Mexico

EXHIBIT III

	Wellhead Fittings
Elevation - 3383' Completed - 10-6-61 Pfl100-1172, acidized w/ 8000g. 15% NEA IP- flowed 38 BOPD on 16/64 Ck, TP-50, CP-100 38°API	Surface Casing Cemented to Surface.
Negligible water encount-	7 [™] 20# Csg @ 200 W/ 50sx
	Calculated Top of Cement @ 428
	Proposed to set tubing on Tensi Packer at about 1050' with iner fluid in annulus.
Top Seven Rivers Fm @ 1024	
SEVEN RIVERS PAY - 1100-72 Lt buff-wht w/por & stn Interbedded lime and sand	Perf'd 1100-04, 1128-33, 1139-44 1159-63, 1168-72; Treated w/8000 15% NEA; IP-38 BOPD 16/64 Ck
	4½ 9.5# Csg @ 1190 w/75sx
	PBTD - 1180' Total Depth Drilled - 1190'

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JOHN A. YATES
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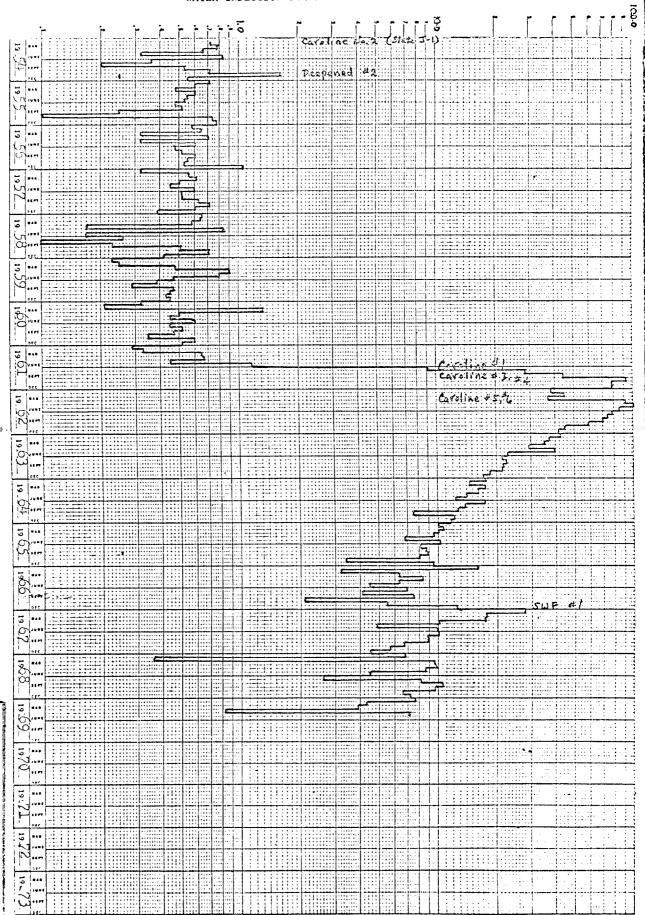
TIME-YEARS

PRODUCTION DECLINE CURVE
MARY LOU LEASE
MILLMAN EAST (SEVEN RIVERS)

JOHN A. YATES

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WATER & OIL PRODUCTION BBLS/DAY WATER INJECTION BBLS/DAY



TIME-YEARS

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PRODUCTION DECLINE CURVE
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