

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 7894  
ORDER NO. 9289

CORRECTED ORDER

IN THE MATTER OF A HEARING CALLED ON  
A MOTION OF THE COMMISSION TO  
CONSIDER THE PETITION OF EAGLE  
OPERATING, INC. FOR AN ORDER  
PROVIDING FOR THE UNITIZED  
MANAGEMENT, OPERATION, AND FURTHER  
DEVELOPMENT OF THE MOHALL-MADISON  
UNIT AREA, CONSISTING OF LANDS WITHIN  
THE MOHALL FIELD IN RENVILLE AND  
BOTTINEAU COUNTIES, NORTH DAKOTA;  
FOR APPROVAL OF THE UNIT AGREEMENT  
AND UNIT OPERATING AGREEMENT  
CONSTITUTING THE PLAN OF UNITIZATION  
FOR THE MOHALL-MADISON UNIT AREA;  
FOR APPROVAL OF THE PLAN OF  
OPERATION; VACATING THE APPLICABLE  
SPACING ORDERS; AND FOR SUCH FURTHER  
AND ADDITIONAL RELIEF AS THE  
COMMISSION DEEMS APPROPRIATE.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 17th day of September, 2002.
- (2) Eagle Operating, Inc. (Eagle) filed an application for an order approving the unitized management, operation and further development of the Mohall-Madison Pool source of supply of oil and gas located in Bottineau and Renville Counties, North Dakota, and for an order approving a plan of operation providing for the injection of water and/or other substances into the common source of supply. A part of said application was a plan of unitization consisting of a Unit Agreement (UA) and Unit Operating Agreement (UOA). The application was filed in accordance with North Dakota Century Code (NDCC) Sections 38-08-09.1 through 38-08-09.16.
- (3) The notice of filing of the application and petition and the time and place of hearing thereof was properly given more than 45 days prior to the hearing. Eagle, as the applicant, did give notice of the time and place of said hearing and did mail, postage prepaid, a copy of the application and the proposed plan of unitization to each affected person owning an interest of record in the Unit outline at such person's last known post office address. Applicant did, more than 45 days

prior to the hearing, file with the Commission engineering, geological and other technical exhibits to be used and which were used at the hearing. The notice given specified that such material was filed with the Commission; that due public notice having been given, as required by law, the Commission has jurisdiction of this subject matter.

(4) The plan of unitization proposed by the applicant consists of a UA for the development and operation of the Mohall-Madison Unit in Bottineau and Renville Counties, North Dakota, together with a UOA.

(5) Eagle made application for the following tracts of land to be included within the Mohall-Madison Unit:

TOWNSHIP 162 NORTH, RANGE 84 WEST, 5TH PM  
THE SE/4 OF SECTION 25 AND THE NE/4 OF SECTION 36,

TOWNSHIP 162 NORTH, RANGE 83 WEST, 5TH PM  
ALL OF SECTION 31, THE S/2 OF SECTION 30, AND THE S/2 OF THE NW/4 AND THE SW/4 OF SECTION 32,

TOWNSHIP 161 NORTH, RANGE 83 WEST, 5TH PM  
THE W/2 OF SECTION 5, THE E/2, THE NW/4, AND E/2 OF THE SW/4 OF SECTION 6, AND THE N/2 OF THE NE/4 OF SECTION 7,

ALL IN BOTTINEAU AND RENVILLE COUNTIES AND COMPRISING 2,454.31 ACRES, MORE OR LESS.

(6) Eagle is proposing a two-phase formula. Phase I of the formula is designed to compensate interest owners for oil which would have been produced from the tract had the Unit not been approved. Eagle's Phase I formula allocates 50% to the projected remaining primary reserves (RPR), 35% to current rate, and 15% to gross acre feet of pay. Phase II of the formula is designed to compensate interest owners for oil which will be recovered from the Unit due to enhanced recovery project operations. Eagle's Phase II formula allocates 37.5% to current rate, 25% to the projected ultimate primary reserves (UPR), and 37.5% to gross acre feet of pay.

Eagle has established production decline curves on all producing wells in the proposed Mohall-Madison Unit. A computer generated decline was constructed which utilized a root mean square average to predict UPR based upon a historical 120-month data set, a 25-year maximum future well life, and an economic limit of 50 barrels of oil per month.

Many of the wells in the proposed Unit were produced discontinuously which results in some months of very low or no production. The computer program utilized by Eagle to calculate UPR is very sensitive to periods of low or nonproduction, since it assumes the well was produced at a maximum efficient rate throughout the historical evaluation period. Erroneous calculations may result unless such anomalous points are dropped from said data set. The Commission should estimate the UPR for such wells using all available data, an economic limit of 50 barrels of oil per month, a 25-year maximum future well life, and the Commission's current computer software.

(7) Article 1.26 of the UA provides that the Primary Phase will terminate when cumulative oil production from the unitized formation underlying the Unit equals 5,580,008 barrels of oil from

all tracts comprising the Unit, commencing with the date of first production from each tract prior to or during unitization. Due to changes in the UPR in paragraph (6) above, the cumulative oil should be amended.

(8) The unitized management, operation and further development of a common source of supply of oil and gas or portion thereof is necessary for an effective water injection and enhanced recovery project calculated to substantially increase the ultimate recovery of oil and gas from the common source of supply.

(9) One or more unitized methods of operation as applied to such common source of supply or portion thereof are feasible, will prevent waste and is expected to result in the increased recovery of substantially more oil and gas from the common source of supply than would otherwise be recovered.

(10) The estimated additional cost, if any, of conducting such operations will not exceed the value of the additional oil and gas so recovered.

(11) Such unitization and the adoption of one or more unitized methods of operation is for the common good and will result in the general advantage of the owners of the oil and gas rights within the common source of supply or portions thereof directly affected.

(12) The unitization and unitized operation of the common source of supply herein described and upon the terms set forth herein, is fair, reasonable, equitable, and is necessary to protect, safeguard, and adjust the respective rights and obligations of the several persons affected including royalty owners, owners of overriding royalties, oil and gas payments, carried interests, mortgagees, lien claimants, and others, as well as the lessees.

(13) The Unit area as described in paragraph (5) hereof and in the application and plan of unitization constitutes a common source of supply, and the evidence established that the area to be so included within the Unit area is of such size and shape as may be reasonably required for the successful and efficient conduct of the unitized method or method of operation for which the Unit is created, and that the conduct thereof will have no adverse effect upon the remainder of such common source of supply. Provided, however, that injection wells and new wells drilled in the Unit area for production or injection purposes should be located an adequate distance from the Unit boundary in order to fully protect correlative rights.

(14) The plan of unitization filed with the application, as herein amended, contains fair, reasonable, and equitable provisions for:

- (a) The efficient, unitized management and control of the further development and operation of the Unit area for the recovery of oil and gas from the common source of supply affected.
- (b) The division of interest or formula for the apportionment and allocation of the Unit product among the tracts within the Unit area is fair, equitable and reasonable.
- (c) The manner in which the Unit and the further development and operation of the Unit area shall or may be financed and the basis, terms and conditions upon

which cost and expense thereof shall be apportioned among and assessed against the tracts and interest made chargeable therewith, including a detailed accounting procedure governing all charges and credits incident to such operation, and makes reasonable provision for carrying or otherwise financing lessees who are unable to promptly meet their financial obligations in connection with the unit.

- (d) The procedure and basis upon which wells, equipment, and other properties of the several lessees within the Unit area are to be taken over and used for Unit operations, including the method of arriving at the compensation therefor, or of otherwise proportionately equalizing or adjusting the investment of the several lessees in the project as of the effective date of Unit operation.
- (e) The creation of an operating committee to have general overall management and control of the Unit and the conduct of its business and affairs and the operations carried on by it, together with the creation or designation of such other subcommittees, boards or offices to function under authority of the operating committee as may be necessary, proper or convenient in the efficient management of the unit, defining the powers and duties of all such committees, boards or officers, and prescribing their tenure and time and method for their selection.
- (f) The time when the plan of unitization shall become and be effective.
- (g) The time when and conditions under which and the method by which the Unit shall be or may be dissolved and its affairs wound up.

(15) The plan of unitization has not been signed, ratified or approved by lessees and royalty owners owning the required percentage interest in and to the Unit area, as provided under NDCC Section 38-08-09.5.

(16) Such UA and the UOA, as herein amended, are in the public interest, are protective of correlative rights and are necessary to increase ultimate recovery and to prevent waste of oil and gas, and that said plan of unitization, as contained therein, appears to conform and comply with the provisions and requirements in NDCC Sections 38-08-09.1 through 38-08-09.13.

(17) In order to effectuate the purposes of unitization, NDCC Section 38-08-09.2, provides that the Commission is vested with continuing jurisdiction necessary or proper to enforce the provisions of this order.

(18) In this cause there are certain rules which are necessary and appropriate to the efficient operation of the Mohall-Madison Unit, in order to promote and expedite the objective for which the Unit was formed.

(19) The rules and orders hereby promulgated for the Mohall-Madison Unit, pertaining to the injection of water and/or other substances into the reservoir, to reservoir pressure surveys, to gas-oil ratio surveys and to production tests are necessary, desirable, in the public interest, preventative of waste and protective of correlative rights.

(20) The portion of the common source of supply which will be affected by the project has been adequately delineated.

(21) NDCC Section 38-08-04 and North Dakota Administrative Code (NDAC) Section 43-02-03-15 require each party desiring to drill or operate oil and gas wells in the state to file with the Commission a reasonable bond with good and sufficient surety, conditioned on full compliance with statutes, rules, and orders of the Commission.

(22) On behalf of the Mohall-Madison Unit, the Unit operator as a separate and distinct operator, should furnish a bond as provided under NDCC Chapter 38-08-04 and NDAC Section 43-02-03-15.

**IT IS THEREFORE ORDERED:**

(1) The creation of the Mohall-Madison Unit in Bottineau and Renville Counties, North Dakota, is hereby authorized and approved, contingent upon the following:

- (a) The Unit parameter spreadsheet (Exhibit 14A) must be amended to reflect the respective ultimate primary reserves (barrels of oil) for the following tracts:

<u>Tract</u>	<u>Well Name &amp; Number</u>	<u>UPR</u>
1	Crooks #15-25	96,730
4	Erickson-State #1-36	205,808
8	Wade #1	49,878
10	Mohall Park #1	174,292
13	Ring #2	31,349
15	Skelly Hutton #1	408,455
16	Rhoda Racke #1	543,786
17	Sam Simpson et al #2	405,243
19	Carl O. Gilseth et ux #1	206,987
20	Gail Hutton #1	135,516

- (b) Article 1.26 of the Unit Agreement must be amended indicating Phase I ends after cumulative production from the Mohall-Madison Unit exceeds 5,718,479 barrels of oil.
- (c) The list detailing the participation for each tract (Exhibit C of the Unit Agreement) must be amended.
- (d) The list detailing the working interest participation for each tract (Exhibit D of the Unit Operating Agreement) must be amended.

(2) The Mohall-Madison Unit shall extend to and include the land hereinbefore described in paragraph (5) of the findings.

(3) The Mohall Field is hereby redefined as the following described tracts of land in Bottineau and Renville Counties, North Dakota:

TOWNSHIP 162 NORTH, RANGE 84 WEST, 5TH PM  
THE SE/4 OF SECTION 25 AND THE NE/4 OF SECTION 36,

TOWNSHIP 162 NORTH, RANGE 83 WEST, 5TH PM  
ALL OF SECTION 31, THE S/2 OF SECTION 30, AND THE S/2 OF THE NW/4 AND  
THE SW/4 OF SECTION 32,

TOWNSHIP 161 NORTH, RANGE 83 WEST, 5TH PM  
THE W/2 OF SECTION 5, THE E/2, THE NW/4, AND E/2 OF THE SW/4 OF SECTION  
6, AND THE N/2 OF THE NE/4 AND THE SE/4 OF THE NE/4 OF SECTION 7,

together with those additional quarter-quarter sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

(4) The plan of unitization, as herein amended, consisting of the UA and the UOA, is hereby incorporated in this order by reference, and shall apply to the same extent and with the same force and effect as if actually set forth herein; that the said plan of unitization of and for said Mohall-Madison Unit is approved, all to the same extent and with the same force and effect as if set forth herein in its entirety, as herein amended; that if said plan of unitization does not in all respects conform to and comply with the provisions and requirements under NDCC Sections 38-08-09.1 through 38-08-09.13, the statute shall prevail.

(5) The unitized formation shall mean the Mohall subinterval of the Mission Canyon Formation as identified by the neutron/density log run on August 14, 1980, in the Ring #2 well, located in the NE/4 SW/4 of Section 32, Township 162 North, Range 83 West, Bottineau County, North Dakota, which encompasses the stratigraphic interval from a depth of 4334 feet to a depth of 4382\* feet as measured from the Kelly Bushing elevation of 3222 feet, within the limits of the Unit area.

(6) The injection of water and/or other substances into the Madison zone underlying the Mohall-Madison Unit area by the Unit operator for the purpose of operating an enhanced recovery project is authorized; provided, however, that prior to the commencement of such injection the operator shall obtain such permits as are required under NDAC Chapter 43-02-05.

(7) The Unit operator of the Mohall-Madison Unit may, from time to time, use certain existing wells, or wells to be drilled, for the purpose of injecting water and/or other substances into the unitized formation upon approval by the Commission. The application for such approval shall be in accordance with statutes and rules of the Commission.

(8) The Unit operator shall be permitted to drill additional wells at any location within the Unit area, no closer than 500 feet to the boundary of the Unit.

(9) All bottom hole pressures and gas-oil ratios obtained by the Unit operator shall be filed with the Commission. Additional bottom hole pressure and gas-oil ratio measurements may be required by the Director, if deemed necessary.

\*Originally stated 4282

(10) A report of Unit operations shall be filed annually with the Commission. Such report shall include but not be limited to production and injection amounts, recorded pressures, and gas-oil ratios. Proposed plans for the Unit for the coming year shall also be included in the report.

(11) The termination of the Mohall-Madison Unit shall be as prescribed in the UA, or as provided under NDCC Section 38-08-09.4; and that notwithstanding any provisions to the contrary, in the event the Unit operator fails to commence or ceases enhanced recovery operations, the Commission upon its own motion, after notice and hearing, may consider rescinding this order so that the Mohall-Madison Unit will terminate and cease to exist.

(12) The effective date of the Mohall-Madison Unit shall be the first day of the month following the month in which the plan of unitization, as herein amended, has been signed, ratified, or approved by lessees and royalty owners owning the required percentage of interest in the Unit area, and has been so certified by the Commission.

(13) In the event lessees and royalty owners, owning the required percentage interest in and to the Unit area having not signed, ratified, or approved the plan of unitization, as herein amended, within a period of six months from the date hereof, this order shall cease to be of further force and effect, and shall be revoked by the Commission.

(14) The provisions of this order shall supersede and replace the provisions of all previous rules and orders not consistent herewith, including without limitations all otherwise applicable spacing orders and well location rules.

(15) The Unit operator, on behalf of the Mohall-Madison Unit, shall cause to be transferred to a separate blanket bond, all wells in the Unit area used in Unit operations.

(16) Said blanket bond in paragraph (15) shall be in the applicable dollar amount as provided under NDAC Section 43-02-03-15.

(17) This order shall remain in full force and effect until further order of the Commission.

Dated this 17th day of October, 2002.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

/s/ John Hoeven, Governor

/s/ Wayne Stenehjem, Attorney General

/s/ Roger Johnson, Agriculture Commissioner