BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

> CASE NO. 862 Order No. R-646

THE APPLICATION OF THE COMMISSION UPON ITS OWN MOTION FOR AN ORDER CREATING AND DESIGNATING A NEW POOL TO BE KNOWN AS THE NORTH BENSON-QUEEN OIL POOL FOR THE PRODUCTION OF OIL FROM THE QUEEN FORMATION, SUCH POOL TO CONSIST OF THE E/2 OF SECTION 33 AND THE W/2 OF SECTION 34, TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM, EDDY COUNTY, NEW MEXICO, AND FOR THE ESTABLISHMENT OF RULES AND REGULATIONS FOR THE NEW POOL IN ACCORDANCE WITH THE PROVISIONS OF COMMISSION ORDER R-111.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This matter came on for hearing at 9 o'clock a.m. on March 16, 1955, and was continued until April 20, 1955, at Santa Fe, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 13th day of June, 1955, the Commission, a quorum being present, having considered the record and the testimony adduced and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That Simms and Reese Oil Company did complete the McClay No. 1 Well located 1980 feet FSL and 660 feet FEL of Section 33, Township 18 South, Range 30 East, Eddy County, New Mexico, as the discovery well for a new source of supply in this area.
- (3) That said well initially produced oil in commercial quantities from the Queen sand below a depth of 2,844 feet.
- (4) That a second well known as Simms and Reese Oil Company McClay No. 2 Well, located 1980 feet FNL and 660 feet FEL of Section 33, Township 18 South, Range 30 East, Eddy County, New Mexico, has been completed in this new source of supply and is producing commercial quantities of oil from the Queen sand in the depth interval 3,036 to 3,061 feet.

- (5) That sufficient evidence was presented to the Commission as to the probable areal extent and directional trend of the newly discovered common source of supply to justify the creation of the new pool as contemplated.
- (6) That, in conformity with previous practices of the Commission, a pool should be created, defined and classified, and should include such surface acreage as appears to cover the newly discovered common source of supply.
- (7) That such a pool should be designated as the North Benson-Cueen Pool, should be classified as an oil pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM

Section 33: $\mathbb{E}/2$ Section 34: $\mathbb{W}/2$

and that such pool as described above should be subject to additions or deletions after notice and hearing as development and further information may direct or indicate.

- (8) That said pool is situated within the horizontal limits of the so-called "potash-oil" area and that operations within that area are governed by the provisions of Commission Order R-III entered on November 9, 1951.
- (9) That no evidence was entered at said hearing which would indicate that the provisions of Order R-III should be abrogated in establishing rules and regulations for the conduct of drilling and producing operations in this pool.

IT IS THEREFORE ORDERED:

(1) That there is hereby created an oil pool, designated as the North Benson-Queen pool, and described as follows:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM

Section 33: E/2 Section 34: W/2

(2) That drilling and production operations in said pool shall comply with the provisions of those rules of the Commission which may be applicable, and that such operations shall further comply with the provisions of Commission Order R-Ill, as such provisions now dictate, or as such provisions may be modified by future order of the Commission.

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

STATE OF NEW MEXICO

OIL CONSERVATION COMMISSION

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JOHN F. SIMMS, Chairman

E. S. WALKER, Member

W. B. MACEY, Member and Secretary



BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF DEFINING BOUNDARIES OF POTENTIAL OIL PRODUCING AREAS IN EDDY AND LEA COUNTIES, NEW MEXICO, WITHIN WHICH POTASH MINERALS ARE BEING PRODUCED OR POTENTIAL POTASH PRODUCING LANDS ARE LOCATED,

CASE No. 278 ORDER No. R-111

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," on June 21, 1951, and for further hearing on July 10, 1951, and the Commission, a quorum being present, having considered the testimony adduced and the exhibits introduced in evidence and arguments presented and being fully advised in the premises,

- FINDS, (1) That due notice having been given, according to law, and all interested parties having appeared, the Commission has jurisdiction of this cause, and the subject matter thereof.
- (2) That an area defining potential oil and gas reserves within which are proved and potential potash deposits, and the promulgation of rules and regulations for the orderly development of oil and gas resources in such an area known to be productive of potash is within the authority of the Commission for the protection of correlative rights, the promotion of convervation, and the prevention of waste.

IT IS THEREFORE ORDERED:

That this order shall be known as THE RULES AND REGULATIONS GOVERNING THE EXPLORATION AND PRODUCTION OF OIL AND GAS IN CERTAIN AREAS AND SUB-AREAS HEREIN DEFINED AND KNOWN TO CONTAIN PROVED AND SEMI-PROVED POTASH MINERALS IN THE AREA AND SUB-AREAS HEREINAFTER SET OUT.

I OBJECTIVE

The objective of these Rules and Regulations is to prevent waste, protect correlative rights, assure maximum conservation of oil and gas resources of New Mexico and permit the simultaneous economic recovery of potash minerals in the area hereinafter defined.

II THE POTASH - OIL AREAS

- (1) These Rules and Regulations are applicable to oil and gas operations and to exploration for and production of oil and gas in proven or potential Potash-Oil areas herein as "Area A" and "Area B."
- (a) The potash-oil area represents the area in various parts of which potash mining operations are now in progress, or in which core tests indicate potential potash reserves are located and is described, as follows:

T.19S, R.29 E Sec. 11 - SE/4 Sec. 12 - S/2Sec. 13 and 14 - all Sec. 23 - N/2Sec. 24 - N/2T. 20 S, R. 29 E Sec. 12 - NE/4 SE/4 and S/2 SE/4 Sec. 13 - NE/4 and S/2 Sec. 22 to 27, inclusive Sec. 34 to 36, inclusive T. 21 S, R. 29 E Sec. 1 and 2, all Sec. 3 - E/2 Sec. 10 - E/2Sec. 11 to 14, inclusive Sec. 15 - E/2 Sec. 23 - N/2Sec. 24 and 25 - all Sec. 35 - E/2Sec. 36 - allT. 22 S, R. 29 E
Sec. 1 and 2 - all
Sec. 3 - S/2
Sec. 9 - E/2
Sec. 10 to 16, inclusive Sec. 17 - E/2Sec. 20 - E/2Sec. 21 to 28, inclusive Sec. 33 to 36, inclusive T. 23 S, R. 29 E Sec. 1 to 3, inclusive Sec. 4 - E/2 Sec. 9 - E/2 Sec. 10 to 15, inclusive Sec. 22 to 27, inclusive Sec. 34 to 36, inclusive $\frac{\text{T. }18 \text{ S. R. }30 \text{ E}}{\text{Sec. }12 - \text{S/2}}$ Sec. 13 and 14 - all Sec. 15 - SE/4Sec. 21 - SE/4Sec. 22 to 24, inclusive Sec. 25 - W/2Sec. 26 to 28, inclusive Sec. 29 - SE/4 Sec. 32 - SW/4 and E/2 Sec. 33 and 34 - all Sec. 35 - W/2

T. 19 S, R. 30 E Sec. 2 to 5, inclusive Sec. 6 - SE/4

Sec. 7 - NE/4 and S/2

Sec. 8 to 30, inclusive

Sec. 32 to 36, inclusive

T. 20 S, R. 30 E

Sec. 1 to 36, inclusive

T. 21 S, R. 30 E.
Sec. 1 to 11, inclusive
Sec. 12 - S/2
Sec. 13 to 22, inclusive
Sec. 23, - N/2

Sec. 24 - N/2 Sec. 27 to 34, inclusive Sec. 35 - S/2

T. 22 S, R. 30 E
Sec. 1 to 24, inclusive
Sec. 25 - W/2
Sec. 26 to 35, inclusive
Sec. 36 - W/2

$\frac{\text{T. 23 S. R. 30 E}}{\text{Sec. 1 - S/2}}$

Sec. 2 to 36, inclusive

T. 24 S. R. 30 E Sec. 1 - N/2 Sec. 2 - N/2

Sec. 3 - N/2

$\frac{\text{T. }18 \text{ S. R. }31 \text{ E}}{\text{Sec. }18 - \text{W}/2}$

T. 19 S, R. 31 E
Sec. 9 and 10 - all
Sec. 11 - W/2
Sec. 14 - W/2
Sec. 15 to 17, inclusive

Sec. 19 to 22, inclusive Sec. 23 - W/2

Sec. 25 - S/2

Sec. 26 to 36, inclusive

T. 20 S, R. 31 E Sec. 1 to 36, inclusive

T. 21 S. R. 31 E Sec. 1 - N/2

Sec. 2 - N/2

Sec. 4 - W/2

Sec. 5 and 6 - all Sec. 18 - S/2

Sec. 19 - N/2

T. 22 S, R. 31 E

Sec. 4 to 9, inclusive Sec. 17 and 18 - all Sec. 19 - N/2

T. 23 S, R. 31 E Sec. 7 - all Sec. 8 - S/2

Sec. 16 - SW/4

Sec. 17 to 20, inclusive

Sec. 21 - W/2

Sec. 28 to 33, inclusive

T. 24 S, R. 31 E Sec. 4 to 6, inclusive

T. 19 S, R. 32 E
Sec. 23, S/2
Sec. 24 to 27, inclusive
Sec. 28 - S/2
Sec. 31 - S/2
Sec. 32 - S/2
Sec. 33 to 36, inclusive

T. 20 S, R. 32 E Sec. 1 to 36, inclusive

T. 21 S, R. 32 E

Sec. 1 to 17, inclusive Sec. 21 to 27, inclusive Sec. 35 and 36 - all

T. 19 S, R. 33 E Sec. 19 - all

Sec. 30 and 31 - all

T. 20 S, R. 33 E

Sec. 5 to 9, inclusive Sec. 15 to 23, inclusive

Sec. 25 to 36, inclusive

T. 21 S, R. 33 E Sec. 4 to 9, inclusive Sec. 16 to 21, inclusive Sec. 28 to 33, inclusive

T. 22 S, R. 33 E Sec. 4 to 6, inclusive

T. 20 S, R. 34 E Sec. 31 - all

(b) Area "A" represents the area in various parts of which potash mining operations are now in progress and is described, as follows:

T. 19 S, R. 30 E Sec. 9 - SE/4 NW/4, E/2 SW/4, S/2 NE/4, SE/4 Sec. 10 - SW/4 NW/4, W/2 SW/4 Sec. 15 - NW/4 NW/4 Sec. 16 - N/2 NE/4, NE/4 NW/4 Sec. 26 - S/2 NW/4, SW/4 NE/4, W/2 SE/4, SW/4 Sec. 27 - S/2 NE/4, SE/4 NW/4, NE/4 SW/4, S/2 SW/4, SE/4 Sec. 28 - SE/4 SE/4

Sec. 33 - SE/4 NW/4, NE/4 NE/4, S/2 NE/4, E/2 SW/4, SE/4

Sec. 34 - all

Sec. 35 - NW/4, W/2 NE/4, NW/4 SE/4, N/2 SW/4, SW/4 SW/4

T. 20 S, R. 30 E

Sec. 2 - W/2 NW/4, NW/4 SW/4

Sec. 3 - N/2, SW/4, N/2 SE/4, SW/4 SE/4

Sec. 4 - E/2, SW/4, E/2 NW/4, SW/4 NW/4

Sec. 5 - SE/4 NE/4, E/2 SE/4, SW/4 SE/4, SE/4 SW/4

Sec. 7 - SE/4 SE/4

Sec. 8 - E/2, E/2 NW/4, E/2 SW/4, SW/4 SW/4

Sec. 9 - N/2, SW/4, N/2 SE/2, SW/4, SE/4

Sec. 10 - NW/4, W/2 NE/4, NW/4, NW/4 SE/4, N/2 SW/4

Sec. 16 - N/2 NW/4, NW/4 NE/4

Sec. 17 - W/2, N/2 NE/4, SW/4 NE/4, W/2 SE/4

Sec. 13 - E/2 NE/4, E/2 SE/4

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T. 20 S, R. 30 E (con't)
Sec. 19 - NE/4 NE/4
 Sec. 20 - N/2 NW/4, NW/4 NE/4
 Sec. 25 - SW/4 SW/4
 Sec. 26 - SE/4 SW/4, S/2 SE/4
 Sec. 35 - E/2 NW/4, NE/4, N/2 SE/4, NE/4 SW/4 Sec. 36 - W/2 NW/4, NW/4 SW/4
T. 21 S. R. 29 E
Sec. 1 - SE/4, S/2 NE/4, SE/4 NW/4, NE/4 SW/4, S/2 SW/4
Sec. 2 - SE/4 SE/4
Sec. 11 - NE/4 NE/4, S/2 NE/4, SE/4 NW/4, E/2 SW/4, SE/4
Sec. 12 - all
Sec. 13 - N/2, SE/4, N/2 SW/4, SE/4 SW/4
Sec. 14 - E/2 NW/4, NE/4, NE/4 SW/4, N/2 SE/4
Sec. 24 - NE/4 NW 4, N/2 NE/4
Sec. 25 - SE/4 SW/4, S/2 SE/4
Sec. 36 - E/2 NW/4, E/2 SW/4, E/2
T. 22 S, R. 29 E
Sec. 1 - E/2 NW/4, SW/4 NW/4, SW/4, E/2
Sec. 2 - SE/4 NE/4, E/2 SE/4
Sec. 11 - E/2 NE/4, NE/4 SE/4
Sec. 12 N/2, N/2 SW/4, N/2 SE/4
 Sec. 6 - SW/4 NW/4, W/2 SW/4
Sec. 7 - NW/4 NW/4, S/2 NW/4, SW/4 NE/4, SW/4, W/2 SE/4
Sec. 18 - NW/4, W/2 NE/4, N/2 Sw/4, SW/4 SW/4, NW/4 SE/4
Sec. 19 - NW/4 NW/4
  T. 21 S, R. 30 E
 T. 21 S, R. 30 E
 Sec. 29 - SW/4 SW/4
 Sec. 30 - S/2 SW/4, S/2 SE/4
  Sec. 31 - all
  Sec. 32 - W/2 NW/4, W/2 SW/4
 \frac{\text{T. 22 S, R. 30 E}}{\text{Sec. 5 - W/2 NW/4, NW/4 SW/4}}
  Sec. 6 - N/2, SW/4, N/2 SE/4, SW/4 SE/4
Sec. 7 - N/2 NW/4, SW/4 NW/4, NW/4 NE/4, NW/4 SW/4
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- (c) Area "B" is defined as that area in which core tests indicate potential potash reserves and includes the entire potash-oil area as described under "The Potash-Oil Areas" Sec. (1) (a), of this order, except and excluding lands defined and described as area "A" in "The Potash -Oil Areas, "Sec. (1) (b) of this order.
- (2) Area "A" and "B" as hereinabove defined may be contracted or expanded by the Commission from time to time as circumstances or conditions may warrant, after due notice and hearing.

III EXPLORATION OF AREAS

(1) Area "A"

- (a) Drilling of oil and gas exploratory test wells shall not be permitted in Area "A" except upon leases outstanding as of the effective date of these regulations, provided, that oil and gas exploratory test wells shall not be drilled through any open potash mines or within 1,320 feet thereof unless agreed to in writing by the potash lessee involved.
- (b) Any oil or gas leases hereafter issued for lands within Area "A" shall be subject to these regulations.
- (c) All future drilling of oil and gas exploratory test wells in Area "A" shall be further subject to these rules and regulations.
- (d) Where oil and gas wells are in production in Area "A," no potash mine opening shall be driven to within less than 100 feet of such wells so that protection of both wells and mine can be afforded.
- (e) Proposals to unitize with respect to land within Area "A", as herein defined and described, will be considered on their merits.

(2) Area "B"

- (a) Oil and gas exploratory test wells may be drilled in Area "B" in accordance with these rules and regulations.
- (3) Upon the discovery hereafter of oil and gas in Areas "A" or "B", the Oil Conservation Commission shall promulgate field or pool rules for the affected area after due notice and hearing.
- (4) Nothing herein shall be construed to prevent unitization agreements involving lands in Areas "A" or "B", or both.

IV DRILLING AND CASING PROGRAM

- (1) For the purpose of the regulations and the drilling of oil and gas exploratory test wells, shallow and deep zones are defined, as follows:
 - (a) The shallow zone shall include all formations above the base of the Delaware sand or above a depth of 5,000 feet, whichever is the lesser.
 - (b) The deep zone shall include all formations below the base of the Delaware sand or below a depth of 5,000 feet, whichever is the lesser.

(2) Surface Casing String:

(a) A surface casing string of new, second-hand, or reconditioned pipe shall be set in the "Red Bed" section of the basal Rustler formation immediately above the salt section, or in the anhydrite at the top of the salt section, as determined necessary by the regulatory representative approving the drilling operations

- and shall be cemented with not less than one hundred and fifty percent (150) percent of calculated volume necessary to circulate cement to the ground surface.
- (b) Cement shall be allowed to stand a minimum of twelve (12) hours under pressure and a total of twenty-four (24) hours before drilling the plug or initiating tests.
- (c) Casing and water-shut-off tests shall be made both before and after drilling the plug and below the casing seat as follows:
 - (i) If rotary tools are used, the mud shall be displaced with water and a hydraulic pressure of six hundred (600) pounds per square inch shall be applied. If a drop of one hundred (100) pounds per square inch or more should occur within thirty (30) minutes, corrective measures shall be applied.
 - (ii) If cable tools are used, the mud shall be bailed from the hole, and if the hole does not remain dry for a period of one hour, corrective measures shall be applied.
- (d) The above requirements for the surface casing string shall be applicable to both the shallow and deep zones.

(3) Salt Protection String:

- (a) A salt protection string of new, second-hand, or reconditioned pipe shall be set not less than one hundred (100) feet nor more than two hundred (200) feet below the base of the salt section.
- (b) The salt protection string shall be cemented, as follows:
 - (i) For wells drilled to the shallow zone, the string may be cemented with a nominal volume of cement for testing purposes only. If the exploratory test well is completed as a productive well, the string shall be recemented with sufficient cement to fill the annular space back of the pipe from the top of the first cementing to the surface or to the bottom of the cellar, or may be cut and pulled if the production string is cemented to the surface as provided in sub-section IV (5), (a), (i) below.
 - (ii) For wells drilled to the deep zone, the string must be cemented with sufficient cement to fill the annular space back of the pipe from the casing seat to the surface or to the bottom of the cellar.
- (c) If the cement fails to reach the surface or the bottom of the cellar, where required, the top of the cement shall be located by a temperature or gamma ray survey and additional cementing shall be done until the cement is brought to the point required.
- (d) The fluid used to mix with the cement shall be saturated with the salts common to the zones penetrated and with three (3 percent) percent of calcium chloride by weight of cement.
- (e) Centralizers shall be spaced on at least every one hundred fifty (150) feet of the salt protection string below the surface casing string.

- (f) Cement shall be allowed to stand a minumum of twelve (12) hours under pressure and a total of twenty-four hours (24) before drilling the plug or initiating tests.
- (g) Casing tests shall be made both before and after drilling the plug and below the casing seat, as follows:
 - (i) If rotary tools are used, the mud shall be displaced with water and a hydraulic pressure of one thousand (1000) pounds per square inch shall be applied. If a drop of one hundred (100) pounds per square inch or more should occur within thirty (30) minutes, corrective measures shall be applied.
 - (ii) If cable tools are used, the mud shall be bailed from the hole and if the hole does not remain dry for a period of one hour, corrective measures shall be applied.
- (h) The above requirements for the salt protection string shall be applicable to both the shallow and deep zones except for sub-section IV (3), (b), (i) and (ii) above.

(4) Intermediate String:

- (a) In the drilling of oil and gas exploratory test wells to the deep zone, an intermediate string shall be set at sufficient depth to case-off all formations in the shallow zone and shall be cemented with sufficient cement to fill the annular space back of the pipe from the casing seat to the surface or to the bottom of the cellar.
- (b) Cementing procedures and casing tests for the intermediate string shall be the same as provided under sub-sections IV (3), (c), (f) and (g) for the salt protection string.

(5) Production String:

- (a) A production string shall be set on top or through the oil or gas pay zone and shall be cemented as follows:
 - (i) For wells drilled to the shallow zone the production string shall be cemented to the surface if the salt protection string was cemented only with a nominal volume for testing purposes, in which case the salt protection string can be cut and pulled before the production string is cemented; provided, that if the salt protection string was cemented to the surface, the production string shall be cemented with a volume adequate to protect the pay zone and the casing above such zone.
 - (ii) For wells drilled to the deep zone, the production string shall be cemented with a volume adequate to protect the pay zone and the casing above such zone; provided, that is no intermediate string shall have been run and cemented to the surface, the production string shall be cemented to the surface.

(b) Cementing procedures and casing tests for the production string shall be the same as provided under sub-sections IV (3) (c), (f) and (g) for the salt protection string.

V

DRILLING FLUID FOR SALT SECTION

The fluid used while drilling the salt section shall consist of water, to which has been added sufficient salts of a character common to the zone penetrated to completely saturate the mixture. Other admixtures may be added to the fluid by the operator in overcoming any specific problem. This requirement is specifically intended to prevent enlarged drill holes.

VI PLUGGING AND ABANDONMENT OF WELLS

All wells heretofor and hereafter drilled within Areas "A" and "B" shall be plugged in a manner that will provide a solid cement plug through the salt section and prevent liquids or gases from entering the hole above or below the salt section.

VII LOCATIONS FOR TEST WELLS

Before drilling for oil or gas on lands in Areas "A" or "B", a map or plat showing the location of the proposed well shall be prepared by the well operator and copy sent by registered mail to the potash lessee involved, if any. Upon proper showing of such notice and if no objection to the location of the proposed well is made by the potash lessee within ten days, a drilling permit may be issued and the work may proceed. If, however, the location of the proposed well is objected to by the potash lessee on the grounds that the location of the well is not in accordance with the foregoing regulations, the potash lessee may file a written objection within ten days for consideration and decision by the Oil Conservation Commission.

VIII INSPECTION OF DRILLING AND MINING OPERATIONS

A representative of the potash lessee may be present during drilling, cementing, casing, and plugging of all oil or gas wells on his lease to observe conformance with these regulations. Likewise, a representative of the oil and gas lessee may inspect mine workings on his lease to observe conformance with these regulations.

IX FILING OF WELL AND MINE SURVEYS

Each oil and gas lessee shall furnish not later than January 31st of each year to the Oil Conservation Commission and to the potash lessees involved certified directional surveys from the surface to a point below the lowest known potash-bearing horizon for each oil or gas well drilled in Area "A" during the preceding calendar year. Each potash lessee shall furnish not later than January 31st of each year to the Oil Conservation Commission and to each oil and gas lessee involved, certified plat of survey of the location of open mine workings underlying outstanding oil and gas lesses.

APPLICABILITY OF STATEWIDE RULES AND REGULATIONS

All general statewide rules and regulations of the Oil Conservation Commission governing the development, operation, and production of oil and gas in the State of New Mexico not inconsistent or in conflict herewith, are hereby adopted and made applicable to the areas described herein.

XI ADOPTION

The foregoing Rules and Regulations are hereby adopted by the Oil Conservation Commission and adopted, ratified and confirmed by the Commissioner of Public Lands of the State of New Mexico this ______day of November, 1951.

DONE at Santa Fe, New Mexico this 9th day of November, 1951.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

GUY SHEPARD, Member

R. R. SPURRIER, Secretary

GUY SHEPARD Commissioner of Public Lands