

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

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

**CASE NO. 1665
Order No. R-1414**

**APPLICATION OF SUNRAY MID-CONTINENT
OIL COMPANY FOR AN ORDER AUTHORIZING
AN LPG-GAS-WATER INJECTION PROJECT
IN THE BISTI-LOWER GALLUP OIL POOL IN
SAN JUAN COUNTY, NEW MEXICO, AND FOR
THE PROMULGATION OF SPECIAL RULES
AND REGULATIONS GOVERNING SAID
PROJECT**

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 12, 1959, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 5th day of June, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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 the applicant, Sunray Mid-Continent Oil Company, is the operator, under an underwriting agreement pending unitization, of the following-described acreage in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico:

TOWNSHIP 25 NORTH, RANGE 12 WEST, NMPM

Section 3:	SW/4
Sections 4 and 5:	All
Section 6:	E/2, SW/4, S/2 NW/4, and NE/4 NW/4
Sections 7, 8, and 9:	All
Section 10:	NW/4
Section 16:	All
Section 17:	N/2, SE/4, N/2 SW/4, and SE/4 SW/4
Section 18:	NE/4, N/2 NW/4, and N/2 SE/4
Section 20:	NE/4 and NE/4 NW/4
Section 21:	N/2, N/2 SE/4, and NE/4 SW/4

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TOWNSHIP 26 NORTH, RANGE 12 WEST, NMPM

Section 31: S/2 N/2, SE/4, N/2 SW/4, and SE/4 SW/4

Section 33: S/2 SW/4

(3) That the applicant is the operator of the Sunray Mid-Continent Oil Company Federal "C" Gas Injection Project, which project was authorized by Commission Order No. R-1315 and comprises the following-described acreage:

TOWNSHIP 25 NORTH, RANGE 12 WEST, NMPM

Section 6: NE/4 NW/4, S/2 NW/4, NE/4 and the S/2

Section 7: N/2 and the SE/4

TOWNSHIP 26 NORTH, RANGE 12 WEST, NMPM

Section 31: N/2 SW/4, SE/4 SW/4 and the SE/4

Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico.

(4) That said Order No. R-1315 authorized the injection of gas into one well, namely the Sunray Mid-Continent Federal "C" Well No. 18, located in the SW/4 NE/4 of Section 7, Township 25 North, Range 12 West, NMPM, and promulgated special rules and regulations governing the operation of said project.

(5) That the applicant, Sunray Mid-Continent Oil Company, seeks an order amending said Order No. R-1315, to enlarge the area governed by the special rules and regulations for the project to include all of that area described in Finding No. 2 of this order and further, to authorize, in addition to the above-described gas injection well and the two water injection wells authorized by Commission Order No. R-1413, the conversion for injection purposes of the following wells:

LIQUEFIED PETROLEUM GAS (LPG) INJECTION
FOLLOWED BY GAS INJECTION

Sunray Mid-Continent Oil Company

Federal "C" Well No. 4

SW/4 NE/4, Section 6, Township 25 North, Range 12 West

Sunray Mid-Continent Oil Company

Federal "C" Well No. 13

SW/4 NW/4, Section 5, Township 25 North, Range 12 West

Amerada Petroleum Corporation

Gle-Na-Nup-Pah Well No. 1

SW/4 SE/4, Section 5, Township 25 North, Range 12 West

Phillips Petroleum Company

Benally Well No. 1

SW/4 SW/4, Section 5, Township 25 North, Range 12 West

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Sunray Mid-Continent Oil Company
Federal "C" Well No. 10
SW/4 SE/4, Section 6, Township 25 North, Range 12 West

Sunray Mid-Continent Oil Company
Federal "C" Well No. 14
SW/4 NE/4, Section 8, Township 25 North, Range 12 West

GAS INJECTION ONLY

Sunray Mid-Continent Oil Company
Federal "C" Well No. 7
SW/4 SE/4, Section 31, Township 26 North, Range 12 West

Sunray Mid-Continent Oil Company
Federal "C" Well No. 16
SW/4 NW/4, Section 8, Township 25 North, Range 12 West

El Paso Natural Gas Products Company
Benally Well No. 1
SW/4 NE/4, Section 5, Township 25 North, Range 12 West

Amerada Petroleum Corporation
Salina White Well No. 1
SE/4 SW/4, Section 8, Township 25 North, Range 12 West

(6) That the applicant further proposes that special rules and regulations be promulgated to govern the operation of said project, which rules would provide for:

(a) The conversion of additional wells to injection wells without notice and hearing, subject to administrative approval by the Commission.

(b) The transfer for allowables from injection wells to producing wells within the project area.

(c) The transfer of allowables from wells which have been shut-in for observation, or to increase the efficiency of the project, to other wells within the project area.

(d) Operation of the wells in the project on a net gas-oil ratio basis giving allowance for gas injected.

(e) Such other rules and regulations as are deemed appropriate by the Commission.

(7) That the applicant has established by a preponderance of the evidence that approval of the subject application will prevent waste and result in greater ultimate recovery of oil from the Bisti-Lower Gallup Oil Pool.

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(8) That the applicant's proposal to convert the several wells described in Finding No. 5 to LPG-Gas Injection and Gas Injection should be approved.

(9) That special rules and regulations governing the proposed LPG-Gas-Water injection project area in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico, should be promulgated.

(10) That Order No. R-1315, establishing the Sunray Mid-Continent Oil Company Federal "C" Gas Injection Project and promulgating special rules and regulations therefor should be superseded.

IT IS THEREFORE ORDERED:

(1) That Commission Order No. R-1315, dated December 31, 1958, be and the same is hereby superseded.

(2) That the applicant, Sunray Mid-Continent Oil Company, be and the same is hereby authorized to operate a liquefied petroleum gas-gas-water injection project in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico, subject to the special rules and regulations for said injection project as hereinafter set forth.

(3) That the applicant be and the same is hereby authorized to convert, for the purpose of injecting liquefied petroleum gas followed by gas, the following-described wells:

Sunray Mid-Continent Oil Company
Federal "C" Well No. 4
SW/4 NE/4, Section 6, Township 25 North, Range 12 West, NMPM

Sunray Mid-Continent Oil Company
Federal "C" Well No. 13
SW/4 NW/4, Section 5, Township 25 North, Range 12 West, NMPM

Amerada Petroleum Corporation
Gle-Na-Nup-Pah Well No. 1
SW/4 SE/4, Section 5, Township 25 North, Range 12 West, NMPM

Phillips Petroleum Company
Benally Well No. 1
SW/4 SW/4, Section 5, Township 25 North, Range 12 West, NMPM

Sunray Mid-Continent Oil Company
Federal "C" Well No. 10
SW/4 SE/4, Section 6, Township 25 North, Range 12 West, NMPM

Sunray Mid-Continent Oil Company
Federal "C" Well No. 14
SW/4 NE/4, Section 8, Township 25 North, Range 12 West, NMPM

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(4) That the applicant be and the same is hereby authorized to convert, for the purpose of injecting gas, the following-described wells:

Sunray Mid-Continent Oil Company
Federal "C" Well No. 7
SW/4 SE/4, Section 31, Township 26 North, Range 12 West, NMPM

Sunray Mid-Continent Oil Company
Federal "C" Well No. 16
SW/4 NW/4, Section 8, Township 25 North, Range 12 West, NMPM

El Paso Natural Gas Products Company
Benally Well No. 1
SW/4 NE/4, Section 5, Township 25 North, Range 12 West, NMPM

Amerada Petroleum Corporation
Salina White Well No. 1
SE/4 SW/4, Section 8, Township 25 North, Range 12 West, NMPM

Sunray Mid-Continent Oil Company
Federal "C" Well No. 18
SW/4 NE/4, Section 7, Township 25 North, Range 12 West, NMPM

(5) That the interval of injection for the above-described LPG-gas and gas injection wells shall include the three main sands of the Lower Gallup formation.

(6) That special rules and regulations governing the operation of the Central Bisti Injection Project, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico, be and the same are hereby promulgated as follows, effective June 1, 1959.

**SPECIAL RULES AND REGULATIONS FOR THE
SUNRAY MID-CONTINENT OIL COMPANY CENTRAL
BISTI LPG-GAS-WATER INJECTION PROJECT**

RULE 1. The project area of the Sunray Mid-Continent Oil Company Central Bisti LPG-Gas-Water Injection Project shall comprise that area described as follows:

TOWNSHIP 25 NORTH, RANGE 12 WEST, NMPM

Section 3:	SW/4
Sections 4 and 5:	All
Section 6:	E/2, SW/4, S/2 NW/4, and NE/4 NW/4
Sections 7, 8, and 9:	All
Section 10:	NW/4
Section 16:	All
Section 17:	N/2, SE/4, N/2 SW/4, and SE/4 SW/4
Section 18:	NE/4, N/2 NW/4, and N/2 SE/4
Section 20:	NE/4 and NE/4 NW/4
Section 21:	N/2, N/2 SE/4, and NE/4 SW/4

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RULE 6. The allowable assigned to any well which is shut-in or is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event exceed the producing capacity of the well prior to such shut-in or curtailment as determined by the testing procedure prescribed by Rule 7.

RULE 7. The allowable assigned to any well which is used for the purpose of injection, or which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well shall be produced in the same manner and at a constant rate. In no event shall a well receive an allowable greater than its ability to produce during such test, or greater than top unit allowable for the pool at the time of such test multiplied by the well's acreage factor, or greater than the current top unit allowable for the pool during the month of transfer, multiplied by the well's acreage factor, whichever of the three is less. The project operator shall notify all operators offsetting the Project, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 8. No well in the project area shall be assigned any allowable transferred from any other well or wells in the project area unless and until said well has been approved by the Commission as a duly authorized "Transfer Well." To receive approval for any such Transfer Well, the Project operator shall file application with the Secretary-Director of the Commission for permission to transfer allowable to the well, setting forth therein the well's current allowable and the maximum allowable which will be assigned to the well. Copies of the application shall be provided to the operator of each well offsetting the proration unit on which the transfer well is located. The Secretary-Director may designate the well as a Transfer Well subject to the maximum expected allowable for the well if, within 20 days after receiving the application, no objection to the designation is received. The Secretary-Director may grant immediate designation as a Transfer Well provided waivers of objection are received from all such offset operators.

RULE 9. The allowable assigned to any well in the Project shall be based upon the ability of the well to produce and shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Bisti-Lower Gallup Oil Pool, except that any well or wells within the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected into the Bisti-Lower Gallup Oil Pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any such well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_g \times 2,000}{\frac{P}{g} - \frac{1}{g}}$$

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where:

A_{adj} = the well's daily adjusted allowable
 TUA = top unit allowable for pool
 F_a = the well's acreage factor
 P_g = average daily volume of gas produced by the well during the preceding month, cubic feet
 I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet
 P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

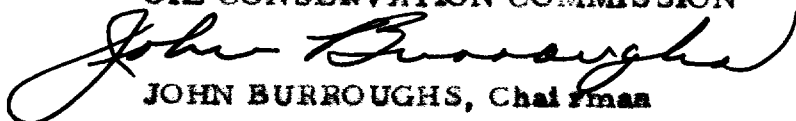
RULE 10. Each month the project operator shall, within three days after the normal unit allowable for Northwest New Mexico has been established, submit to the Commission a Gas Injection Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project.

RULE 11. The Commission shall, upon review of the report and after any adjustments deemed necessary, assign allowables to each well in the Project for the next succeeding month in accordance with these rules.

RULE 12. The Special Rules and Regulations for the operation of the subject Project shall prevail against the Statewide Rules and also against the Special Rules and Regulations for the Bisti-Lower Gallup Oil Pool, if in conflict therewith.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


JOHN BURROUGHS, Chairman


MURRAY E. MORGAN, Member


A. L. PORTER, Jr., Member & Secretary

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 1665
Order No. R-1414-B

APPLICATION OF SUNRAY MID-
CONTINENT OIL COMPANY FOR AN
ORDER AMENDING ORDER NO. R-1414
TO INCLUDE ADDITIONAL ACREAGE
IN ITS CENTRAL BISTI LPG-GAS-
WATER INJECTION PROJECT IN THE
BISTI-LOWER GALLUP OIL POOL IN
SAN JUAN COUNTY, NEW MEXICO,
AND FOR PERMISSION TO DRILL
FOUR ADDITIONAL WATER INJECTION
WELLS AND TO CONVERT ONE ADDI-
TIONAL WELL TO GAS INJECTION

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on August 5, 1959, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 20th day of August, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 Order No. R-1414 authorized the applicant to initiate a liquefied petroleum gas-gas-water injection project in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico.

(3) That the applicant seeks an amendment of Rule 1 of the Special Rules and Regulations for the Sunray Mid-Continent Oil Company Central Bisti LPG-Gas-Water Injection Project, as promulgated by Order No. 1414 and amended by Order No. 1414-A, to include the following acreage in the said project area:

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S/2 and S/2 N/2 of Section 32, Township 26
North, Range 12 West, NMPM
W/2 SW/4 of Section 10, Township 25 North,
Range 12 West, NMPM
W/2 NW/4 of Section 15, Township 25 North,
Range 12 West, NMPM

all in San Juan County, New Mexico, and within the defined limits
of the Bisti-Lower Gallup Oil Pool.

(4) That in connection with the aforesaid Injection Project, the applicant further seeks permission to drill and complete the following-described water injection wells:

CBU-WI Well No. 4, located 2635 feet from
the South line and 1315 feet from the West
line of Section 10, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 5, located 1319 feet from
the South line and 1315 feet from the West
line of Section 10, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 6, located five feet from
the North line and 1315 feet from the West
line of Section 15, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 7, located 1315 feet from
the North line and 1315 feet from the West
line of Section 15, Township 25 North,
Range 12 West, NMPM

(5) That the applicant further seeks permission to convert to dry gas injection the Val R. Reese Hickman Well No. 1, located in the SW/4 SW/4 of Section 32, Township 26 North, Range 12 West, NMPM, San Juan County, New Mexico.

(6) That approval of the subject application will neither cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

(1) That Rule 1 of the Special Rules and Regulations for the Sunray Mid-Continent Oil Company Central Bisti LPG-Gas-Water Injection Project, as promulgated by Order No. R-1414 and amended by Order No. R-1414-A, be and the same is hereby further amended to include the following additional acreage within the defined project area, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico:

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S/2 and S/2 N/2 of Section 32, Township 26
North, Range 12 West, NMPM
W/2 SW/4 of Section 10, Township 25 North,
Range 12 West, NMPM
W/2 NW/4 of Section 15, Township 25 North,
Range 12 West, NMPM

(2) That the applicant be and the same is hereby authorized to drill and complete the following-described water injection wells:

CBU-WI Well No. 4, located 2635 feet from
the South line and 1315 feet from the West
line of Section 10, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 5, located 1319 feet from
the South line and 1315 feet from the West
line of Section 10, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 6, located five feet from
the North line and 1315 feet from the West
line of Section 15, Township 25 North,
Range 12 West, NMPM

CBU-WI Well No. 7, located 1315 feet from
the North line and 1315 feet from the West
line of Section 15, Township 25 North,
Range 12 West, NMPM

(3) That the applicant be and the same is hereby authorized to convert to dry gas injection the Val R. Reese Hickman Well No. 1, located in the SW/4 SW/4 of Section 32, Township 26 North, Range 12 West, NMPM, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico.

PROVIDED HOWEVER, That prior to utilizing the above-described wells as injection wells, the casing in each such well shall be tested at a pressure equal to the hydrostatic head plus the maximum surface pressure of the injection fluid.

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

STATE OF NEW MEXICO

OIL CONSERVATION COMMISSION

John Burroughs
JOHN BURROUGHS, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

