



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

Joanna Prukop

Cabinet Secretary

November 7, 2003

Lori Wrotenbery

Director

Oil Conservation Division

Apache Corporation  
c/o James Bruce  
P. O. Box 1056  
Santa Fe, New Mexico 87504

*Administrative Order NSL-4959 (SD)*

Dear Mr. Bruce:

Reference is made to the following: (i) your application (*administrative application reference No. pMES0-331137733*) dated November 1, 2003 on behalf of the operator Apache Corporation; and (ii) the records of the New Mexico Oil Conservation Division ("Division") in Santa Fe: all concerning Apache Corporation's request for an unorthodox "infill" oil well location within an existing standard 40-acre oil spacing and proration unit comprising the SW/4 SE/4 (Unit O) of Section 9, Township 21 South, Range 37 East, NMPM, Penrose Skelly (Grayburg) Pool (50350), Lea County, New Mexico.

This application has been duly filed under the provisions of Division Rule 104.F, revised by Division Order No. R-11231, issued by the New Mexico Oil Conservation Commission in Case No. 12119 on August 12, 1999.

This 40-acre Grayburg unit is currently dedicated to Apache Corporation's Hawk "B-1" Well No. 28 (API No. 30-025-35880) located at a standard oil well location 420 feet from the South line and 1980 feet from the East line of Section 9.

It is our understanding that the E/2 SW/4 and the SE/4 of Section 8 and the E/2 NW/4 and the S/2 of Section 9, both in Township 21 South, Range 37 East, NMPM, Penrose Skelly (Grayburg) Pool (50350), Lea County, New Mexico, comprise a single federal lease (U. S. Government lease No. NM-90161) with common mineral interest in which Apache Corporation is the leasehold operator; therefore, there are no adversely effected offsets to the subject 40-acre tract within the Grayburg interval.

It is further understood that such unorthodox location is necessitated for geologic and engineering reasons in that this location is approximately equidistance to other offsetting Penrose Skelly (Grayburg) oil producers within this Federal lease. The proposed infill oil well location will enable Apache Corporation to further develop and deplete the Grayburg reserves within the Hawk "B-1" federal lease that might not otherwise be recovered.

By the authority granted me under the provisions of Division Rule 104.F (2), the following described well to be drilled at an unorthodox "infill" oil well location within the SW/4 SE/4 (Unit O) of Section 9 is hereby approved:

**Hawk "B-1" Well No. 38  
1080' PSL & 2551' FEL.**

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Further, both the existing Hawk "B-1" Well No. 28 and the proposed Hawk "B-1" Well No. 38 are to be simultaneously dedicated to the subject 40-acre unit.

Sincerely,



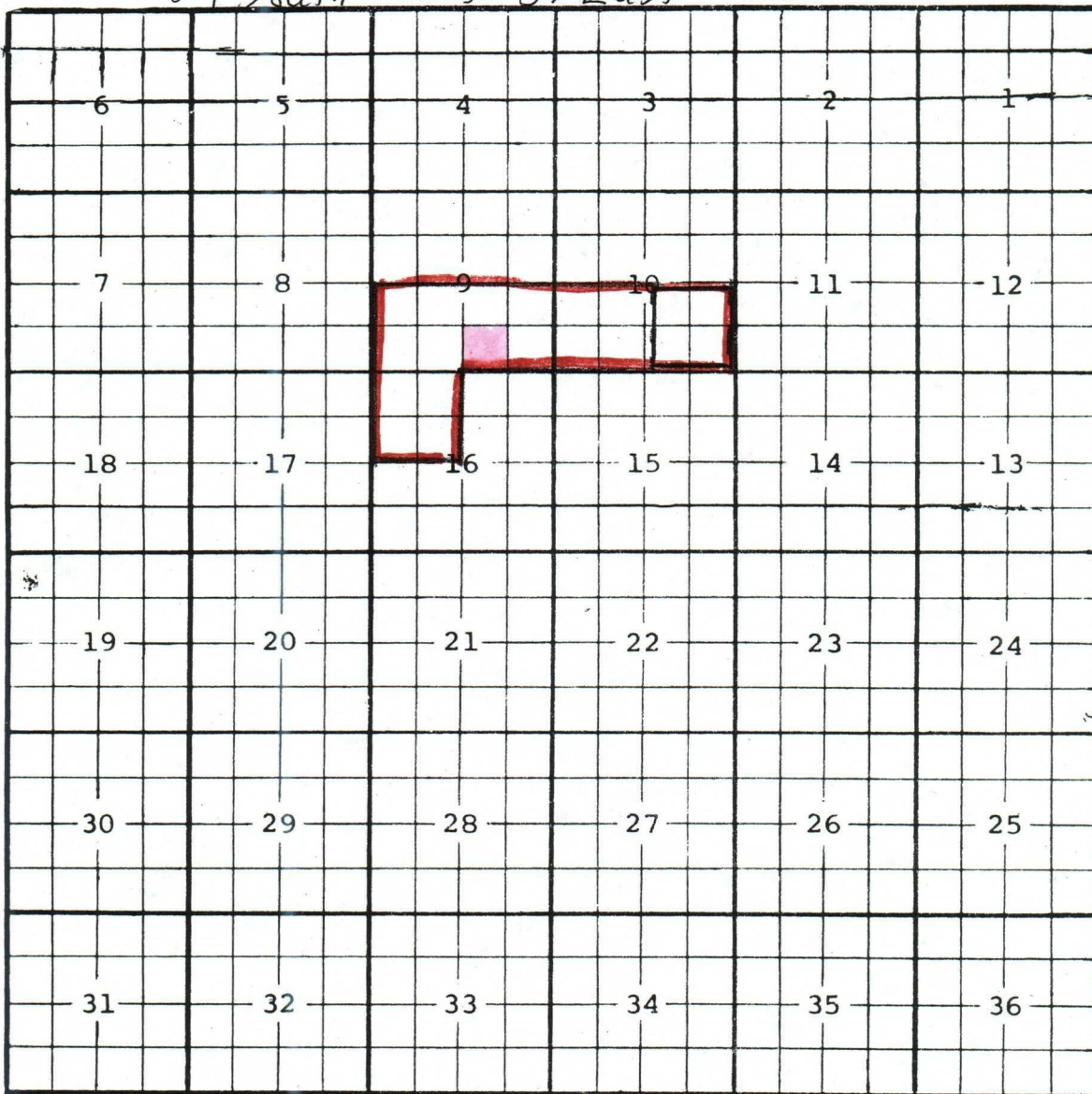
Lori Wrotenbery  
Director

LW/mes

cc: New Mexico Oil Conservation Division - Hobbs  
U. S. Bureau of Land Management - Carlsbad

County Lea Pool East Hare-San Andres

TOWNSHIP 21 South Range 37 East NMPM



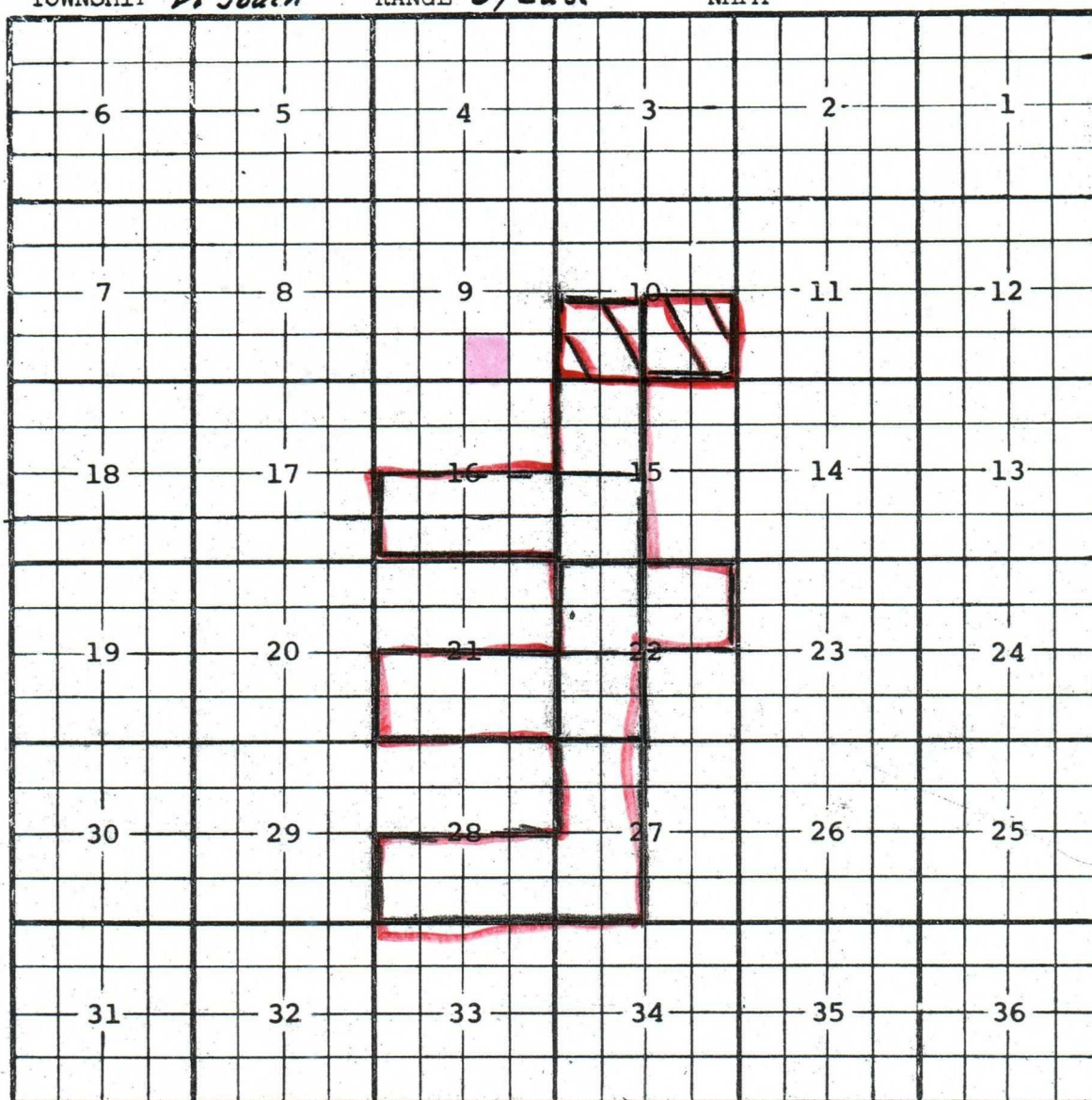
Description: SE 1/4 Sec. 10 (R-10776, 2-28-97)

Ext: SE 1/2 Sec. 9, SW 1/4 Sec. 10, NW 1/4 Sec. 16 (R-12190, 8-12-94)



COUNTY LeaPOOL Hare - San Andres GasTOWNSHIP 21 SouthRANGE 37 East

NMPM

Description: SW 1/4 Sec. 22 (R-4423, 11-1-71)Ext: W 1/2 Sec. 27, S 1/2 Sec. 28 (R-4809, 6-18-74)Ext: S 1/2 Sec. 21 (R-6698, 6-2-81) EXT: NW 1/4 Sec. 22 (R-8946, 7-1-89)EXT: SW 1/4 Sec. 15 (R-9741, 9-1-89) EXT: SW 1/4 Sec. 10, NW 1/4 Sec. 15 (R-10091, 3-28-94)Ext: SE 1/4 Sec. 10, NE 1/4 Sec. 22 (R-10588, 4-26-96)Ext: S 1/2 Sec. 16 (R-11116, 1-7-99) Delete S 1/2 Sec. 10 (R-12190, 8-12-04)

**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. 13256  
ORDER NO. R-12190**

**APPLICATION OF APACHE CORPORATION FOR CONTRACTION OF THE  
HARE-SAN ANDRES GAS POOL, EXPANSION OF THE EAST HARE-SAN  
ANDRES POOL, AND SPECIAL POOL RULES FOR THE EAST HARE-SAN  
ANDRES POOL, LEA COUNTY, NEW MEXICO.**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on April 29, 2004, at Santa Fe, New Mexico, before Examiner William V. Jones.

NOW, on this 12<sup>th</sup> day of August, 2004, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of this case and its subject matter.

(2) Apache Corporation ("applicant"), seeks an order:

(a) Contracting the horizontal boundaries of the Hare-San Andres Gas Pool (78080) by deleting the following acreage;

Township 21 South, Range 37 East, NMPM  
Section 10: S/2

(b) Expanding the horizontal boundaries of the East Hare-San Andres Pool (96601) by adding thereto the following acreage; and

Township 21 South, Range 37 East, NMPM

Section 9: S/2  
Section 10: SW/4  
Section 16: NW/4

(c) Creating Special Pool Rules for the East Hare-San Andres Pool, providing for; (i) a gas-oil ratio of 5000 cubic feet of gas for each barrel of oil produced, and (ii) all other rules to comply with statewide rules.

(3) The Hare-San Andres Gas Pool was created by Division order No. R-4423 in Case No. 4848, issued on November 1, 1972, and currently covers the following acreage:

Township 21 South, Range 37 East, NMPM

Section 10: S/2  
Section 15: W/2  
Section 21: S/2  
Section 22: NE/4 and W/2  
Section 27: W/2  
Section 28: S/2

The Hare-San Andres Gas Pool was discovered by the Shell Oil Company Turner Well No. 16, located in Unit M of Section 22, Township 21 South, Range 37 East, NMPM. It was completed in the San Andres formation on June 2, 1972, with the top perforation at 4004 feet. The pool has no special pool rules and is therefore being developed on statewide rules with 160-acre gas spacing units and only one well allowed per unit.

(4) The East Hare-San Andres Pool was created by Division order No. R-10776 in Case No. 11737 issued on February 28, 1997, and currently covers the following acreage:

Township 21 South, Range 37 East, NMPM

Section 10: SE/4

The East Hare-San Andres Pool was discovered by the Exxon Corporation New Mexico "PO" State Well No. 1 located in Unit O of Section 10, Township 21 South, Range 37 East, NMPM. It was completed in the San Andres formation on October 13, 1996, with the top perforation at 4,022 feet. The pool has no special pool rules and is therefore being developed on statewide rules with 40-acre oil proration units, 40-acre depth bracket oil discovery allowable, and a 2,000:1 gas-oil ratio.

(5) Notice was provided to operators within the East Hare-San Andres Pool and within one mile surrounding the pool. No one appeared at the hearing or otherwise opposed this application.

(6) Exxon Mobil Corporation ("ExxonMobil") operates a San Andres gas well located within the SW/4 of Section 10 and within the current boundaries of the Hare-San Andres Gas Pool. The applicant provided testimony that the entire S/2 of Section 10 is a single State of New Mexico lease with identical ownership and Exxon would therefore not be affected by switching the SW/4 of Section 10 from the Hare-San Andres Gas Pool to the East Hare-San Andres Pool. Division records indicate that ExxonMobil's well has not in the past produced enough gas, on the average, to be restricted in the future by the applicant's proposed 5,000:1 gas-oil ratio limitation.

(7) The applicant provided geological and engineering testimony as follows:

(a) The productive portion of the San Andres reservoir in this area does not behave in a conventional manner, with gas over oil, and oil over water. Some wells will produce primarily gas even though they are lower in structure than offsetting oil producers.

(b) The San Andres reservoir provides water supply wells for the deeper Drinkard formation waterflood in this area. Some of these water supply wells actually flow gas at the same time as water is being pumped and are classified as gas wells.

(c) Oil wells in this area producing from the Grayburg formation, which is stratigraphically higher than the San Andres, are spaced on 40-acres. If this application is approved, these existing Grayburg wells can be deepened without obtaining Division approval for rule exceptions, the San Andres formation can be developed, and the wells possibly downhole commingled.

(d) The producing lenses in the San Andres formation are at various stages of pressure depletion. Original reservoir pressure was approximately 1,700-psi and the pressure in some wells is still above the bubble point.

(e) Ultimate primary oil and gas production from this reservoir will not be decreased as a result of allowing a 5,000:1 or higher producing gas-oil ratio. The applied for 5,000:1 gas-oil ratio limit is consistent with the special pool rules existing on other San Andres oil pools in this area.

(f) To aid in determining the limits of the East Hare-San Andres Pool as applied for herein, the applicant has drilled three delineation wells, each in the center of a possible 160-acre San Andres gas spacing unit. One well is in the center of a possible 160-acre San Andres gas spacing unit. One well is in the NW/4 of Section 16, one is in the SW/4 of Section 9, and one is in the SE/4 of Section 9. Each of these wells is an infill location Grayburg well as well as standard location gas wells. If these had tested as gas wells in the San Andres, they would have been the only San Andres wells allowed within each of these 160-acre units.

(8) Implementation of the proposed gas pool contraction, oil pool expansion, and 5,000:1 gas-oil ratio limit for the oil pool, will allow the operators of wells completed in the San Andres formation in this area the opportunity to recover additional hydrocarbons, prevent waste, and will protect correlative rights.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of Apache Corporation for the following three items is hereby approved:

(a) The following acreage is deleted from the boundaries of the Hare-San Andres Gas Pool (78080):

Township 21 South, Range 37 East, NMPM  
Section 10: S/2



(b) The following acreage is added to the boundaries of the East Hare-San Andres Pool (96601):

Township 21 South, Range 37 East, NMPM

Section 9: S/2  
Section 10: SW/4  
Section 16: NW/4

(c) The "*Special Pool Rules for the East Hare-San Andres Pool*," are hereby established and shall read in their entirety as follows:

SPECIAL POOL RULES  
FOR THE  
EAST HARE-SAN ANDRES POOL

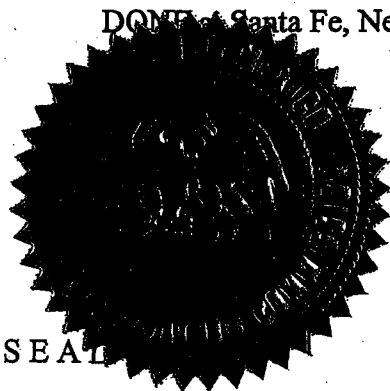
RULE 1. Each well completed in or recompleted in the East Hare-San Andres Pool, or in the San Andres formation within one mile thereof and not nearer to or within the limits of another designated San Andres pool, shall be spaced, drilled, operated, and produced in accordance with the special rules hereinafter set forth.

RULE 2. The limiting gas-oil ratio shall be 5,000 cubic feet of gas per barrel of oil.

RULE 3. Statewide rules shall govern this pool except as stated in RULE 2 above.

(2) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

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



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.  
Director