

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 Nos. 10714 and 10715
Order No. R-9902*

**APPLICATION OF THE GARY-WILLIAMS COMPANY FOR A UNIT AGREEMENT
AND FOR SPECIAL OPERATING RULES FOR DRILLING AND PRODUCING
HORIZONTAL/ HIGH ANGLE WELLBORES IN THE RIO PUERCO-MANCOS OIL
POOL WITHIN SAID UNIT AREA, SANDOVAL COUNTY, NEW MEXICO.**

**APPLICATION OF THE GARY-WILLIAMS COMPANY FOR TWO NON-STANDARD
OIL PRORATION UNITS, AN UNORTHODOX OIL WELL LOCATION, A
HORIZONTAL/HIGH ANGLE DIRECTIONAL DRILLING PILOT PROJECT,
SPECIAL OPERATING RULES THEREFOR, AND A SPECIAL TEMPORARY OIL
ALLOWABLE, SANDOVAL COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 22, 1993, and on May 6 and 20, 1993, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 23rd day of June, 1993, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) At the time of the hearing, Case Nos. 10714 and 10715 were consolidated for the purpose of testimony.

(3) The applicant in Case No. 10715, The Gary-Williams Company, seeks authority to institute a horizontal directional drilling pilot project in the SE/4 of Section 21, W/2 SW/4 of Section 22, NW/4 NW/4 of Section 27, and NE/4 NE/4 of Section 28, in Township 21 North, Range 3 West, NMPM, Sandoval County, New Mexico, forming a non-standard 320-acre oil spacing and proration unit in the Rio Puerco-Mancos Oil Pool. The applicant proposes to drill its Ceja Pelon 27-4H Well from a surface location 460 feet from the North line and 125 feet from the West line (Unit D) of Section 27, in the following unconventional manner:

A pilot hole will be drilled vertically to a depth of 5,285 feet subsurface. The applicant will then come up-hole to a depth of approximately 4,100 feet subsurface, at which point it will kick-off in a north-northwesterly direction, build angle to approximately 90°, and drill horizontally in the Mancos formation. The end of the bore hole will be 1,915 feet from the South line and 935 feet from the East line of Section 21.

(4) The applicant further requests that special operating provisions be established for the project area, including the designation of a prescribed area limiting the horizontal extent of the wellbore such that it can be no closer than 660 feet from the outer boundary of the proration unit or project area, and a provision authorizing an oil allowable of 19,200 barrels while drilling and completing the subject well.

(5) In Case No. 10714, The Gary-Williams Company seeks approval of the Ceja Pelon Unit Agreement and Area for all oil and gas in any and all formations underlying 24,335.43 acres, more or less, of federal and fee lands as further described in Exhibit "A" attached hereto and made a part hereof. Further, the applicant seeks the promulgation of the following operating rules and procedures for wells drilled in the Rio Puerco-Mancos Oil Pool within the proposed unit boundary:

- (a) That the horizontal portion of the wellbore be no closer than 660 feet to the outer boundary of a well unit.
- (b) That wells completed on any well unit on the exterior of the Unit be no closer than 1,800 feet to any other well outside said Unit completed or drilling in the Pool.
- (c) That the operator be permitted to dedicate 320 acres or more to a well, comprised of contiguous governmental quarter-quarter sections, and further allowing units containing quarter-quarter sections from one or more governmental sections.

- (d) That each horizontal well have an allowable of 19,200 barrels of oil while drilling and completing, limited to a 60-day period.
- (e) That, after expiration of the above 60-day period, each will have an allowable of 320 barrels of oil per day for a 320-acre unit, and for well units in excess of 320 acres, an oil allowable of 320 barrels times the ratio of spacing unit acreage to 320 acres.
- (f) That an administrative procedure be authorized to approve horizontal wells in the Unit, including unorthodox surface locations.

(6) A proposed horizontal pilot well and a portion of the proposed unit are located within the boundaries of the Rio Puerco-Mancos Oil Pool and, as such, would be subject to the special rules and regulations for said Pool, which require 320-acre spacing and proration units with wells to be located no closer than 660 feet from the outer boundary of the proration unit, nor closer than 330 feet from any quarter-quarter section line, nor closer than 1,800 feet to any other well completed or drilling within the Pool. The allowable for a well completed in said Pool is 320 barrels of oil per day and the limiting gas-oil ratio is 500 to 1. Pool rules also provide for no more than one well on a 320-acre unit.

(7) It is anticipated that the initial unit well, the Ceja Pelon 27-4H Well, a horizontal well, will be commenced by the end of May 1993. If the initial well is successful, the applicant proposes drilling additional horizontal wells to the Mancos formation within the Unit.

(8) Through its evidence and testimony, the applicant demonstrated that the proposed horizontal wellbore is being drilled to approach a "maximum flexure" zone in the Mancos formation, identified by seismic testing, and thus should encounter a substantially greater number of natural fractures within the Mancos formation than would a conventional wellbore, which may ultimately result in the recovery of a greater amount of oil from the proposed project area, thereby preventing waste.

(9) Further, a unit map was submitted showing these "maximum flexure" zones in the Mancos formation within the Unit. In some cases the flexure zones are very near to section lines. The applicant testified that horizontal wells drilled near or across the flexure zones and across quarter section lines and/or section lines should encounter conditions favorable for good producing rates and high ultimate oil recovery.

(10) The applicant presented evidence that in order to properly drill certain wells, and in order to allow greater flexibility while drilling the wells, the horizontal wellbores may need to have spacing and proration units in excess of 320 acres.

(11) The applicant is an interest owner in the San Isidro (Shallow) Unit, adjoining the proposed Unit to the south. The Special Operating Rules and Regulations for the San Isidro (Shallow) Unit, Sandoval County, New Mexico, as promulgated by Division Order No. R-9330, as amended, have provided the flexibility necessary to conduct horizontal drilling operations in the Mancos formation within the San Isidro (Shallow) Unit. To date, five horizontal wells have been drilled in the San Isidro (Shallow) Unit, and additional wells are planned by the unit operator.

(12) No offset operator and/or interest owner appeared in opposition to the proposed horizontal directional drilling pilot project.

(13) Because the proposed Unit is "exploratory", participation by all mineral interests will not be "one-hundred percent" throughout the area. To protect correlative rights and to assure orderly development, proration/spacing units in New Mexico have generally been based on areas that follow closest to the prescribed lands survey and to the assigned spacing for a pool, thus squares of 40, 160 and 640 acres and rectangles of 80 and 320 acres are the established rule. In this instance the formation of proration/spacing units of 320 to 640 acres formed with no other limitation other than the Unit boundary is not in the best interest to assure the protection of correlative rights and orderly development within this area. Therefore, Williams' request for the development of this area with proration units comprising contiguous governmental quarter-quarter Sections in the Unit Area should be denied.

(14) However the Unit Operator should be permitted to dedicate either 320, 480 or 640 acres to a horizontal well, comprising contiguous governmental quarter Sections within said Unit Area with no limitation on the crossing of Section lines.

(15) The applicant submitted evidence that the horizontal wells will be drilled in an underbalanced state, and that production during drilling and completing is necessary to prevent formation damage and to permit testing to evaluate producing capacity. Such production will provide data which will be useful in promulgating permanent rules for wells in the Unit. An oil allowable of 19,200 barrels (based on a top daily allowable of 320 barrels for a 320-acre proration unit) for a 60-day period should be adequate. However, a provision should be included to authorize the Division Director to assign additional allowable if warranted during the 60-day period.

(16) The applicant further presented evidence that, in order to angle in better on the Mancos formation, certain wells may have non-standard surface locations.

(17) The special operating rules should be subject to certain bottomhole considerations:

- (a) The bottomhole location of a well should not be located closer than 660 feet to the outer boundary of each spacing unit.
- (b) Horizontal wells on the exterior spacing units of the Unit should not be closer than 1,800 feet to an existing or drilling well within the Pool but outside of the Unit.
- (c) Notice should be given to offset operators outside of the Unit prior to commencement of a horizontal well on the exterior spacing and proration units.

(18) As to spacing units formed with existing Mancos wells located thereon, the applicant should be required to seek Division approval before simultaneously dedicating two or more wells to one spacing unit. One person should also be designated as operator of the proposed proration unit and all wells on the proration unit prior to the date of first production from the proposed additional well(s).

(19) The Gary-Williams Company should be required to submit an annual report to the Division summarizing activity within the Ceja Pelon Unit, including drilling and production operations.

(20) Further, all plans of development and operation, and operations, expansion or contractions of participating areas, or expansions or contractions of the unit area, should be submitted to the Director of the Division for approval.

(21) With the adoption of the proposed operating rules for the Ceja Pelon Unit as described above, the initial horizontal pilot project (Case No. 10714) should be approved; however, the applicant's request for a non-standard 320-acre oil spacing and proration unit comprising the SE/4 of Section 21, W/2 SW/4 of Section 22, NW/4 NW/4 of Section 27 and NE/4 NE/4 of Section 28 should be denied.

(22) Instead, a non-standard oil proration unit that conforms with the proposed rules should be authorized for this well. Therefore, the initial project area should be

limited to include the 640 acres comprising the SE/4 of Section 21, the SW/4 of Section 22, the NW/4 of Section 27 and the NE/4 of Section 28 of Township 21 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(23) Special provisions and/or operating procedures for the subject well including expansion of the project area, oil allowable during drilling or completion operations, and conductance of directional surveys on the vertical and lateral portions of the wellbore should be in accordance with the Special Operating Rules and Regulations for the Ceja Pelon Unit as described above.

(24) The Division Director should have the authority to authorize amendments to this order provided that the applicant applies for such amendments pursuant to the administrative procedures set forth in the proposed unit-wide rules.

(25) Approval of the proposed pilot project should result in the recovery of an additional amount of oil from the project area which may not otherwise be recovered, thereby preventing waste, and will not violate correlative rights.

(26) The applicant operates the Taylor "28" Well No. 4, located in Unit D of said Section 28. Said well is completed in the Mancos formation, and the N/2 of Section 28 is dedicated to the well. The well is a marginal producer, and is currently shut-in.

(27) A non-standard 160-acre oil proration unit comprising the NW/4 of said Section 28 should be approved to accommodate the pilot project.

IT IS THEREFORE ORDERED THAT:

(1) The Ceja Pelon Unit Agreement as proposed in Division Case No. 10714 is hereby approved for all oil and gas in any and all formations underlying 24,335.43 acres, more or less, of federal and fee lands in Sandoval County, New Mexico, as further described in Exhibit "A" attached hereto and made a part hereof.

(2) The plan contained in said unit agreement for the development and operation of the unit area is hereby approved in principle as a proper conservation measure; provided, however, notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty or obligation which is now, or may hereafter be, vested in the Division to supervise and control operations for the unit and production of oil and gas therefrom.

(3) The unit operator shall file with the Division an executed original or executed counterpart of the unit agreement within 30 days after the effective date thereof; in the event of subsequent joinder by any other party or expansion or contraction of the unit area, the unit operator shall file with the Division, within 30 days thereafter, counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(4) All plans of development and operation, all unit participating areas and expansions or contractions of the unit area, shall be submitted to the Director of the Oil Conservation Division for approval.

(5) This order shall become effective upon the approval of said unit agreement by the appropriate agency of the United States Department of Interior; this order shall terminate *ipso facto* upon the termination of said agreement; and the last unit operator shall notify the Division immediately in writing of such termination.

(6) The application of The Gary-Williams Company for special operating provisions for drilling horizontal/high angle wellbores in the Rio Puerco-Mancos Oil Pool within the Ceja Pelon Unit, Sandoval County, New Mexico, is hereby approved.

(7) Temporary special operating provisions for horizontal/high angle wellbores within the Ceja Pelon Unit (Rio Puerco-Mancos Oil Pool) are hereby promulgated as follows:

**SPECIAL OPERATING RULES AND REGULATIONS
FOR THE
CEJA PELON UNIT**

RULE 1. Each well completed or recompleted in the Rio Puerco-Mancos Oil Pool within the Ceja Pelon Unit shall be spaced, drilled, operated and produced in accordance with the Special Operating Rules and Regulations hereinafter set forth.

RULE 2. Spacing and proration units may contain 320 acres or more, with a maximum of 640 acres, as set out below:

- (a) One or more wells may be completed or recompleted on a standard unit containing 320 acres, more or less, consisting of the N/2, S/2, E/2 or W/2 of a governmental section.

- (b) Two standard 320-acre units may be combined to form a unit containing 640 acres, more or less, consisting of an entire governmental section, when portions of a horizontal well penetrate the Mancos shale under both 320-acre units. The resulting 640-acre unit may be developed with one or more wells.
- (c) When the conditions of Rule 2(b) are not met, the Director shall have the authority to administratively approve the formation of units comprising 320, 480 or 640 acres, consisting of contiguous quarter sections from one or more governmental sections. Applications for such approval shall set out the reasons for the request and shall include geological evidence to show that the proposed unit and well are necessary and will result in additional recovery and/or improved Unit operations. Requests for such approval shall be submitted along with the Rule 7 application for administrative approval for the horizontal well to be drilled on the spacing and proration unit. Evidence of prior Bureau of Land Management approval shall also be submitted.

RULE 3. Each well shall be located no nearer than 660 feet to the outer boundary of the spacing or proration unit. Wells completed on any unit on the exterior of the Ceja Pelon Unit shall not be nearer than 1,800 feet to any other well outside said Unit completed or drilling in the Pool.

RULE 4: The Division Director may grant an exception to the requirements of Rule (3) without hearing when an application has been filed for an unorthodox surface location or the recompletion of a well previously drilled to the Mancos formation or a deeper horizon, provided said well was drilled at an orthodox or approved unorthodox location for such original horizon, provided that the bottomhole location of the well complies with Rule 3. For wells within the interior of the Ceja Pelon Unit, the Division Director may approve the application upon receipt. Such approval shall consist of acceptance of Division Form C-102 or the corresponding Bureau of Land Management form showing the proposed non-standard surface location. For wells on the exterior spacing units of said Unit, all operators of wells or owners of undrilled tracts offsetting the proposed location shall be notified of the application by registered or certified mail, and the applicant shall state that such notice has been furnished. The Director may approve the application upon receipt of written waivers from all parties described above, or if no objections to the unorthodox location have been entered, within 20 days after the Director has received the application.

RULE 5. Allowables shall be assigned in the following manner:

- (a) A standard 320-acre proration unit shall be subject to a 320-acre depth bracket allowable of 320 barrels per day.
- (b) A proration unit other than 320 acres in size shall be assigned an oil allowable based on the following formula:
$$\text{Allowable} = 320 \text{ barrels} \times (y/320),$$

where y = proration unit size

RULE 6. The Division Director may grant an exception to the requirements of Rules 2(a) through 2(c) when the unorthodox size or shape of the proration unit is necessitated by a variation in the legal subdivision of the United States Public Lands Survey and the non-standard proration unit is less than 75% or more than 125% of a standard proration unit (320 or 640 acres), or where the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists wholly of a governmental section or half section.
- (b) As to spacing units on the exterior of the Ceja Pelon Unit, the applicant presents written consent in the form of waivers from all offset operators or working interest owners of undrilled tracts outside said Unit.
- (c) In lieu of Paragraph (b) of this rule, the applicant may furnish proof of the fact that all of the aforesaid parties were notified by registered or certified mail of its intent to form such non-standard unit. The Division Director may approve the application if no such party has entered an objection to the formation of such non-standard unit within 20 days after the Division Director has received the application.

RULE 7. (A) The Division Director shall have the authority to administratively approve an intentionally deviated well in the Rio Puerco-Mancos Oil Pool, within the Ceja Pelon Unit, for the purpose of penetrating the Mancos shale by means of a wellbore drilled horizontally, provided the following conditions are complied with:

- (1) The surface location of the proposed well is a standard location or the applicant has obtained approval of an unorthodox surface location as provided for in Rule 4 above.
- (2) The bore hole shall not enter or exit the Mancos shale outside of a drilling window which is in accordance with the setback requirements of Rule 3.

(B) To obtain administrative approval to drill an intentionally deviated horizontal wellbore, the applicant shall file such application with the Santa Fe and Aztec offices of the Division.

As to spacing units on the exterior of the Ceja Pelon Unit, the applicant shall further provide a copy of such application to all operators of wells or owners of undrilled tracts offsetting the proposed proration unit for said well by registered or certified mail, and the application shall state that such notice has been furnished. The application shall further include the following information:

- (1) A copy of Division Form C-102, or the corresponding Bureau of Land Management form, identifying the proposed proration unit to be dedicated to the well.
- (2) Schematic drawings of the proposed well which fully describe the casing, tubing, perforated or open hole interval, kick-off point, and proposed trajectory of the drainhole section.

As to spacing units on the exterior of the Unit, the Director may approve the application upon receipt of written waivers from all parties described above, or if no objection to the intentionally deviated horizontal wellbore has been entered, within 20 days after the Director has received the application. If any objection to the proposed intentionally deviated horizontal well is received within the prescribed time limit as described above, the Director shall, at the objecting party's request, set said application for public hearing.

As to all other horizontal wells within said Unit, the Director may approve the application upon receipt.

(C) During or upon completion of drilling operations the operator shall further be required to conduct a directional survey on the vertical and lateral portions of the wellbore and shall submit a copy of said survey to the Santa Fe and Aztec offices of the Division.

(D) The Division Director, at his discretion, may set any application for intentionally deviated horizontal wellbores for public hearing.

RULE 8. A horizontal/high angle well in the Rio Puerco-Mancos Oil Pool within the Unit shall have an oil allowable of up to 19,200 barrels (60 x 320 bbls.) for a 60-day period while drilling and completing. The Division Director may administratively approve the assignment of additional allowable during this period.

RULE 9. If a well is drilled on a proration unit upon which there is located another well or wells completed in and capable of producing from the Rio Puerco-Mancos Oil Pool a single operator must be designated for all wells in the proration unit. Only one of said wells may be produced at any one time until the operator receives administrative approval from the Division Director for simultaneous dedication.

RULE 10. The limiting gas-oil ratio shall be 500 cubic feet of gas per barrel of oil.

The Special Operating Rules and Regulations for the Ceja Pelon Unit shall become effective July 1, 1993.

(8) This case shall be reopened at an examiner hearing in July, 1994, at which time the operator and interest owners in the Unit should be prepared to appear and show cause why the foregoing Special Operating Rules and Regulations should remain in effect.

(9) The Gary-Williams Company or the current operator of the Unit shall submit an annual report to the Division summarizing activity within the Ceja Pelon Unit, including drilling and production operations.

IT IS FURTHER ORDERED THAT:

(10) In Case No. 10715, The Gary Williams Company is hereby authorized to institute a horizontal directional drilling pilot project within its Ceja Pelon Unit Area in an area comprising 640 acres, forming a non-standard oil spacing and proration unit in

the Rio Puerco-Mancos Oil Pool, being the SE/4 of Section 21, SW/4 of Section 22, NW/4 of Section 27 and the NE/4 of Section 28, Township 21 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(11) The applicant is further authorized to drill its Ceja Pelon 27-4H Well from a surface location 460 feet from the North line and 125 feet from the West line (Unit D) of Section 27 substantially in accord with the drilling plan submitted by the applicant.

PROVIDED, HOWEVER, THAT the horizontal portion of the subject well shall be located no closer than 660 feet from the outer boundary of the project area.

(12) Expansion of the project area, oil allowable during drilling and completion operations, and conductance of directional surveys on the vertical and lateral portions of the wellbore shall be in accordance with the Special Operating Rules and Regulations for the Ceja Pelon Unit as promulgated herein.

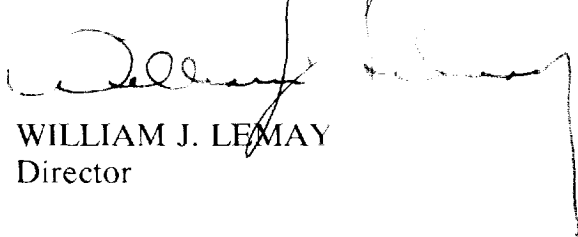
(13) The Division Director shall have the authority to authorize administrative amendments to this order provided that the applicant applies for such amendments pursuant to said administrative procedures.

(14) A non-standard oil proration unit in the Rio Puerco-Mancos Oil Pool, consisting of the NW/4 of said Section 28, is hereby approved for the existing Taylor "28" Well No. 4 located in Unit D of said Section 28.

(15) Jurisdiction of this cause is 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.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

S E A L

EXHIBIT "A"

**Case Nos. 10714 and 10715
Order No. R-9902
Ceja Pelon Unit Agreement
Sandoval County, New Mexico**

Township 20 North, Range 3 West, NMPM
Section 6: All

Township 20 North, Range 4 West, NMPM
Section 1: All

Township 21 North, Range 2 West, NMPM
Sections 7 through 10: All
Sections 15 through 18: All
Sections 19 through 22: All
Sections 27 through 30: All

Township 21 North, Range 3 West, NMPM
Sections 12 through 16: All
Sections 20 through 34: All

Township 21 North, Range 4 West, NMPM
Section 25: All