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March 16, 1998

Mr. Lori Wrotenbery
Oil Conservation Commission
2040 South Pacheco
Santa Fe, New Mexico 87505

HAND DELIVERED

Ms. Jamie Bailey
Office of Commissioner of Public Lands
State Land Office Building
310 Old Santa Fe Trail
Santa Fe, New Mexico 87501

HAND DELIVERED

Mr. William J. LeMay
Oil Conservation Commission
2040 South Pacheco
Santa Fe, New Mexico 87505

HAND DELIVERED

Re: ***NMOCD Case No. 11514-A (DeNovo)***
Application of Read & Stevens, Inc.
for an unorthodox infill gas well location
and for simultaneous dedication,
Chaves County, New Mexico.

Dear Members of the Commission:

On behalf of Read & Stevens, Inc., please find enclosed our Application for Rehearing of the Commission decision entered as of February 26, 1998.

Very truly yours,

W. Thomas Kellahin

cc: James Bruce, Esq.
Attorney for UMC Petroleum Corporation
Read & Stevens, Inc.
Charlie Read

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

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

CASE NO. 11514 (DeNovo)
ORDER NO. R-10622-A

APPLICATION OF READ & STEVENS, INC. FOR AN UNORTHODOX INFILL GAS WELL LOCATION AND SIMULTANEOUS DEDICATION, CHAVES COUNTY, NEW MEXICO.

APPLICATION FOR REHEARING
BY
READ & STEVENS, INC.

This Application for Re-Hearing is submitted by W. Thomas Kellahin, Esq. of Kellahin and Kellahin on behalf of READ & STEVENS, INC. (Read & Stevens").

In accordance with the provisions of Section 70-2-25 NMSA (1978), Read & Stevens requests the New Mexico Oil Conservation Commission grant this Application for ReHearing in Case 11514 (DeNovo) to correct erroneous findings and conclusions set forth in Order R-10622-A, attached as Exhibit "A" and to substitute Read & Stevens' proposed Commission Order attached as Exhibit "B" hereto, and

IN SUPPORT READ & STEVENS STATES:

INTRODUCTION

On December 29, 1997, the District Court for the Fifth Judicial District, Chaves County, New Mexico ("Court") entered an order reversing and remanding this case to the Commission for the entry of additional findings because the New Mexico Oil Conservation Commission ("Commission") had failed to explain the reasoning behind the imposition of the 50% production penalty in its Order R-10622 issued on December 12, 1996. The Court concluded that "(W)ithout further findings on this issue, it is impossible to determine whether there is substantial evidence to support the production penalty, or whether the imposition of the production penalty was arbitrary and capricious decision by the Commission"

On February 26, 1998, the Commission, in a closed meeting, adopted additional findings in an effort to explain why it had imposed a 50% production penalty.

On March 12, 1998, the Commission released Order R-10622-A, dated February 26, 1998 which contains in "**bold**" font those findings which were not contained in Order R-10622 dated December 26, 1996. However, in doing so, the Commission continues to make errors of fact and of law which require that another hearing be held.

On March 16, 1998, Read & Stevens filed this Application for Rehearing so that he Commission can enter an order which corrects these mistakes and which protects Read & Stevens correlative rights.

GROUNDS FOR REHEARING

POINT I:

THE COMMISSION FAILED TO COMPLY WITH SECTION 70-2-33(H) NMSA-1978 AND IN DOING SO VIOLATED PETITIONERS' CORRELATIVE RIGHTS

Commission Order R-10622-A contains the following explanation in an effort to justify the 50% production penalty:

> *"The standard penalty is based on the distance from the common boundary; or in a case such as this where two sections have differed set-back requirements, the penalty is based on the relative distance each well is from the lease line. Having a standard formula for a penalty for crowding a common boundary has provided predictability and consistency for industry and is an important tool in protecting correlative rights"*

The Commission attempts to excuse this arbitrary 50% production penalty by calling it a "standard penalty" adopted to provide "predictability and consistency..." There is simply no such thing as a "standard penalty". There is no such concept as "standard penalty" contained in the General Rules of the New Mexico Oil Conservation Division nor in the special rules and regulations for either of these pools. The Commission uses a "distance encroachment penalty" when there is no evidence from which to determine how to allocate remaining recoverable gas. Excusing the 50% production penalty as a "standard penalty" is nothing more than an admission by the Commission that it has ignored Read & Steven's technical report which proved that there is sufficient remaining recoverable gas underlying Section 26 to allow the Read & Stevens Harris 11 Well to be produced **without a production penalty**.

Unbelievably, the Commission's explanation totally disregards its fundamental statutory obligation to protect correlative rights. The Commission has the duty to "prevent waste prohibited by this act (Oil & Gas Act) and to **protect correlative rights**..." (emphasis added). Section 70-2-11 NMSA (1978).

> " 'Correlative rights' means the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas or both in the pool, being an amount, so far as can be practicably determined and so far as can be practicably obtained without waste, substantially in the **proportion that the quantify of recoverable oil or gas or both under the property bears to the total recoverable oil or gas or both in the pool**, and, for such purposes, to use his just and equitable share of the reservoir energy;" Section 70-2-33.H. NMSA (1978).

Pursuant to these statutory provisions, it was essential for the Commission to make findings concerning the remaining recoverable gas in this area of the pool and to apportion that volume between Read & Stevens' Section 26 and UMC's Section 35 in order to afford Read & Stevens and UMC an opportunity to produce their relative share of the remaining recoverable gas.

While the Commission made findings concerning the "estimated ultimate recovery" and the "original gas in place"[1] it still refuses to make the essential findings allocating the remaining recoverable gas between Sections 26 and 35.

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[1] See Finding (10) Order R-10622

The Commission found[2] that "the Read and Stevens analysis had better scientific validity being derived from their 'Reservoir Simulation Study', validated by history matching gas production as compared to the UMC study which resulted from planimetered gas in place derived from their "Net Sand Thickness Isopach Map".'

The Read & Steven's study[3] concluded that:

(a) there is 8.4 BCF of gas now remaining to be recovered between Sections 26 and 35;

(b) of the 8.4 BCF of gas remaining to be recovered, Read & Stevens' Section 26 is entitled to 5 BCF and UMC's Section 35 is entitled to 3.4 BCF.

(c) **without** the proposed Read & Stevens' Harris Federal Well No. 11 being drilled at its proposed unorthodox location of 990 feet from the south line, then Section 26 will recover only 2.5 BCF while Section 35 will recover 6.4 BCF.

(d) **with** the proposed Read & Stevens' Harris Federal Well No. 11 being drilled **without a penalty** at its proposed unorthodox location of 990 feet from the south line, then Section 26 will recover 4.9 BCF while Section 35 will recover 6.1 BCF[4]

(e) **With** the proposed Read & Stevens' Harris Federal Well No. 11 being drilled **without a penalty** at its proposed unorthodox location of 990 feet from the south line, then Section 26 will recover an additional 2.4 BCF of gas which otherwise would not be recovered thereby preventing waste or would be confiscated by other wells in the area.

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[2] See Finding (10) of Order R-10622.

[3] See Read & Stevens Exhibit 1, tab 14

[4] The addition of the Harris Federal 11 Well to Section 26 allows the total recovery for Section 26 and 35 to increase from 8.9 BCF to 11.BCF which is a function of increasing recovery efficiency thereby preventing waste.

Having found the Read & Stevens' study "had better scientific validity" , then without explanation, the Commission illogically disregarded the Read & Stevens' conclusion contained in its study. Instead, The Commission applied the same 50% distance penalty as adopted by the Division Examiner who had entered his decision without having the benefit of considering the Read & Stevens' petroleum engineering study.

A Rehearing is essential so the Commission can correct its statutory violation and enter an order which protects Read & Stevens' correlative rights.

POINT II:

SUPPLEMENTAL FINDINGS (12)(d) IS INCONSISTENT WITH THE COMMISSION'S ADOPTION OF A 50% PRODUCTION PENALTY

The Court found that because the Commission did not explicitly adopt either Read & Stevens 18.6 BCF of gas in place or UMC's 11.89 BCF of gas in place, "it is difficult to determine the reasoning behind the production penalty."

Despite the Court's desire that the Commission make such a determination, the Commission "declines to adopt either...." However, the Commission does find that "even so, the original gas-in-place is probably a figure closer to 18.6 BCF than 11.8 BCF". The only logical inference to be drawn from such a finding is that the Read & Stevens' Harris 11 Well will produce only the gas under its tract and not the gas under UMC's tract. This supplemental finding is inconsistent with the Commission's adoption of the 50% production penalty.

Read & Stevens requests that the Court set aside the production penalty as arbitrary and not supported by the supplemental findings made by the Commission.

POINT III:

SUPPLEMENTAL FINDING (12)(e) and (12(j) ARE CONTRARY TO UNDISPUTED FACTS IN THIS CASE AND MUST BE SET ASIDE

UMC contended that the wells in Section 26 and Section 35 were both producing approximately 1 million MCF per day and that production from the Harris 11, unless penalized, would upset this equilibrium. This argument might mean something if **(a)** the remaining recoverable gas underlying Section 35 is the same amount as that remaining to be recovered under Section 26 and **(b)** if the wells in Section 26 are allowed to produce at the same rate as the wells in Section 35.

The remaining recoverable gas is not the same:

UMC chose not to present any evidence of the remaining gas in place under either Section but if they had done so, UMC would have used a method similar to that utilized by Read & Stevens expert petroleum engineer. **See TR-p. 108.**

Read & Stevens petroleum engineering expert submitted his report in evidence to the Commission which demonstrated that of the 8.4 BCF of remaining recoverable gas, Read & Stevens' Section 26 was entitled to 5.0 BCF and UMC's Section 35 was entitled to 3.4 BCF. Thus the two section are not equal and UMC's contention is wrong. Unfortunately, the Commission ignores this undisputed fact and in doing so has imposed a penalty which is arbitrary and capricious.

Read & Steven's wells are already subject to production limits:

A production penalty cannot be justified based upon a concern about "upsetting the equilibrium in production. Despite the fact that the UMC wells and the Read & Stevens wells are located in the same common reservoir, the Commission has adopted two different sets of rules such that the UMC wells can produce at capacity while the Read & Stevens wells are subject to a maximum daily gas rate of not more than 1.1 million cubic feet of gas per day. The Commission's supplemental findings ignore this undisputed fact and impose a 50% production penalty on the Read & Steven well which is unnecessary.

The Read & Stevens Harris Well No. 11 is located in dedicated to a 320-acre gas spacing and proration unit consisting of the S/2 of Section 26 which also contains the Harris Federal Well No. 8. This spacing unit is subject to a current maximum daily gas allowable of 1.1 million cubic feet of gas per day in accordance with the General Rules for the Prated Gas Pools of New Mexico/Special Rules and Regulations for the Buffalo Valley-Pennsylvanian Gas Pool (Order R-8170) **See Division Order R-10622.**

Inexplicably, the Commission justifies the 50% penalty upon its mistaken belief that the Harris 11 and 8 wells are permitted to produce "over two times as much" has as the UMC wells are allowed to produce and "Thus the equilibrium that formerly existed between the two sections will be changed."

The truth is that regardless of a penalty, Read & Stevens' two wells in the S/2 of Section 26 are limited by current Division rules so that the total gas producing form both well cannot exceed a maximum daily rate of 1 million cubic feet of gas per day. Even without a penalty these wells not allowed to produce the 2 million cubic feet of gas per day rate which the Commission justifies the penalty.

POINT IV:

SUPPLEMENTAL FINDINGS (12)(h) AND (12(i) ARE INCONSISTENT WITH ORIGINAL FINDINGS (12)(a)(b) AND (c)

The Commission selective applies the Read & Steven's technical report to justify the "off-pattern" location for Read & Steven's Harris 11 Well but then rejects that report and continues to insist that a 50 % production penalty is necessary despite the fact that the Read & Steven's report concluded otherwise. **See Supplemental Findings (12)(i) and (j).**

The Commission continues to fails to explain how it can accept the Read & Stevens' analysis as having the "better scientific validity," but then chose to ignore the conclusions in that study and, instead, affirm a 50 % production penalty which is contrary to and inconsistent with that study. Such a conclusion is contrary to Finding (12)(b) of Order R-10622.

In Finding (12)(b), the Commission finds "drainage of the SW/4 of Section 26 from the White State No. 2 Well is likely occurring." This implies that the Commission rejected UMC's comparable 1,000 MCFPD rate argument. Thus, the only remaining

evidence upon which the Commission could have relied for determining the proper producing rate to protect correlative rights is the Read & Stevens' study which showed that **an unpenalized rate** of 1,500 MCFPD[5] for the Harris Federal 11 Well was necessary to protect the SW/4 of Section 23 from being drained by UMC's well.

A rehearing is required, if for no other reason than to afford an opportunity to the Commission to reconcile this contradiction and adopt an adequate order which complies with state law.

POINT V:

SUPPLEMENTAL FINDINGS (12)(h)(i) AND (j) ARE WRONG, INCONSISTENT WITH ORIGINAL FINDING (10), ARE NOT SUPPORTED BY SUBSTANTIAL EVIDENCE AND ARE ARBITRARY AND CAPRICIOUS.

There is no substantial evidence to support Findings (12)(h), (12)(i) and (12)(j) as reasonable basis upon which to adopt a penalty. Finding (12)(h) (12)(i) and (12)(j) adopt arbitrary and capricious reasons to support a penalty.

If the goal of the Commission is to protect correlative rights, then that implies there is a "no-flow boundary" at the common lease line between UMC and Read & Stevens. But the 50% penalty will not allow a no-flow boundary to be established at the lease line.

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[5] The UMC's well in Section 35 will drain the SW/4 of Section 26 because the Division's proration rules limit gas production from the Harris 11 Well to only 1.1 MMCFGPD which assumes that the Harris 8 Well will not be produced.

For example, if two wells are placed an equal distance from the common lease line and if their producing rates are equal and ***if all other reservoir properties are identical***, then a no-flow boundary is established at the lease line and correlative rights are protected.

But, if the Read & Stevens' well is located one-half the distance from the common lease line as the UMC well, and if its rate is 50% of the rate of the UMC well, and ***if all other reservoir properties are identical***, then a no-flow boundary will be established at the common lease line and correlative rights are protected.

However, the Commission has ignored the uncontested evidence in this case which demonstrated that the reservoir properties are **not identical.** The Read & Stevens' petroleum engineering study, supported by detailed geologic and petroleum engineering evidence, showed that:

> (1) because the reservoir is thicker around the Read & Steven's location than at the UMC well and because the reservoir pressure near the Read & Stevens' well is higher than at the UMC well, and if Read & Stevens' well is located one-half the distance from the common lease line as the UMC well, then Read & Stevens' well must be produced at a **rate greater than** 50% of the rate of UMC's well in order to establish a no-flow boundary at the common lease line.
>
> (2) if the Read & Stevens' well is limited to 50% of the rate of the UMC well, then the no-flow boundary will **not be** established at the common lease line **but** rather will be established within the Read & Steven's section and at a point **closer** to the Read & Stevens' well than required.
>
> (3) the only way to quantify the proper rate is to use a reservoir simulation model that honors all the wells in the area. That is exactly what the Read & Stevens' study did and it demonstrated that the Read & Stevens' well could be produced at its proposed 990 foot location at a rate of

approximately 1,500 MCFPD and not impact the UMC acreage in Section 35.

It is impossible for the Commission to find that "Read and Stevens' analysis had better scientific validity" but to then reject the Read & Stevens' study as summarized above.

The Commission's order makes no sense and cannot be defended or explained. The result of Order R-10622 is to award UMC for failing to present to the Commission substantial evidence to support a 50% penalty. A Rehearing is required so that the Commission can correct its mistakes.

POINT VI:

THE COMMISSION ORDER R-10622-A FAILED TO PROVIDE FOR MINIMUM GAS ALLOWABLE

Contrary to past precedents,[6] the Commission order failed to adopt a minimum allowable for the Harris 11 Well No. 1. Without a minimum allowable, the penalty will continue to be applied to the well's producing rate ("deliverability") and as that rate declines, then the well will be limited to a gas volume which will make the well uneconomic. Such an order is punitive because it sets the producing volume for the well after Read & Stevens has invested the money to drill the well. A minimum allowable is necessary to protect Read & Stevens' correlative rights by affording a suitable rate of return on this investment.

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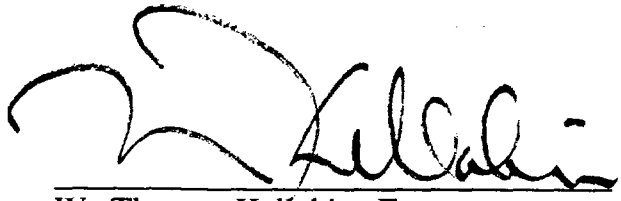
[6] For an example, See Order R-8804 issued December 8, 1988.

CONCLUSION

The substantial evidence in this case demonstrated that approval of the Read & Steven's application without a production penalty would afford it the opportunity to recover its share of the remaining gas without violating UMC's correlative rights. The Commission's order will not do what the Commission intended, but, instead, will cause waste and will impair Read & Stevens correlative rights. The Commission has entered an order which contains errors of fact and of law which require that another hearing be held. A Rehearing is essential so the Commission can enter an order which corrects these mistakes and which protects Read & Stevens' correlative rights.

Read & Stevens petitions the Commission to withdraw Order R-10622-A and substitute Read & Stevens' proposed order which is attached hereto as Exhibit "B" and incorporated herein by reference. In order to preserve Opponents' right to further appeals of this matter, all of the issues set forth in Read & Stevens' proposed Order R-10622-A are made a part of this Application for Rehearing.

Respectfully submitted,



W. Thomas Kellahin, Esq.
KELLAHIN & KELLAHIN

STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

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

DE NOVO
CASE NO. 11514
Order No. R-10622-A

APPLICATION OF READ & STEVENS INC. FOR AN UNORTHODOX INFILL GAS WELL LOCATION AND SIMULTANEOUS DEDICATION, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE DIVISION:

This cause came on before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission" from remand from District Court for additional findings. (New findings are in bold).

NOW, on this 26th day of February, 1998, the Commission, a quorum being present, having considered the testimony, the exhibits received at said hearing, 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) The applicant, Read & Stevens, Inc., seeks approval to drill its Harris Federal Well No. 11 at an unorthodox gas well location 990 feet from the South line and 1980 feet from the West line (Unit N) of Section 26, Township 15 South, Range 27 East, NMPM, to test the Pennsylvanian formation, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico.

(3) The applicant further proposes to simultaneously dedicate the proposed Harris Federal Well No. 11 and its existing Harris Federal Well No. 4, located at a standard gas well location 990 feet from the South and East lines (Unit P) of Section 26, to a standard 320-acre gas spacing and proration unit in the Buffalo Valley-Pennsylvanian Gas Pool comprising the S/2 of Section 26.

(4) Matador Petroleum Company, an offset operator, appeared at the hearing in support of Read & Stevens, Inc.'s application.

(5) UMC Petroleum Corporation (UMC), operator of the following described Diamond Mound-Morrow Gas Pool producing wells in Section 35, Township 15 South, Range 27 East, appeared at the hearing as an affected offset operator in opposition to the application:

> White State Well No. 1, located 660 feet from the South line and 1980 feet from the East line (Unit O), said well currently dedicated to the S/2 of Section 35; and,
>
> White State Well No. 2, located 1980 feet from the North and West lines (Unit F), said well currently dedicated to the N/2 of Section 35.

(6) The proposed Harris Federal Well No. 11 is located within the Buffalo Valley-Pennsylvanian Gas Pool which is a prorated gas pool currently governed by the General Rules for the Prorated Gas Pools of New Mexico/Special Rules and Regulations for the Buffalo Valley-Pennsylvanian Gas Pool as contained within Division Order No. R-8170, as amended, which require standard 320-acre gas spacing and proration units with wells to be located in the NW/4 or SE/4 of a standard section no closer than 990 feet from the outer boundary of the quarter section nor closer than 330 feet from any governmental quarter-quarter section line or subdivision inner boundary.

(7) The proposed Harris Federal Well No. 11 is standard with respect to the setback requirements, but is unorthodox with respect to the quarter section location requirement.

(8) In addition to the Harris Federal Well No. 4, applicant currently operates the Harris Federal Well No. 8, located at a standard gas well location in Unit F of Section 26. The N/2 of Section 26 is currently dedicated to this well.

(9) Both the applicant and UMC presented geologic evidence and testimony in support of their respective positions. This geologic evidence and testimony is generally in agreement that:

> a) the Buffalo Valley-Pennsylvanian and Diamond Mound-Morrow Gas Pools, in the area of Sections 26 and 35, represent a single common source of supply in the Pennsylvanian formation;

b) the Lower Pennsylvanian interval being produced in the Harris Federal Well Nos. 4 and 8 and the White State Well Nos. 1 and 2 is a correlatable channel sand which traverses Sections 26 and 35 in a north-south direction;

c) the reservoir sand has its axis transversing and maximum buildup within both Sections 26 and 35;

d) applicant's Harris Federal Well No. 8, which encountered approximately 30 feet of net sand, and UMC's White State Well No. 2, which encountered approximately 22 feet of net sand within the reservoir, are the best producing wells within Sections 26 and 35, respectively;

e) applicant's Harris State Well No. 4 and UMC's White State Well No. 1 each encountered less than 10 feet of net pay sand, which places these wells on the flank of the main axis of sand buildup.

f) the Harris Federal Well No. 11, which will be completed in the Lower Pennsylvanian interval, is projected to encounter between 22-30 feet of net sand in the reservoir.

(10) Both parties presented engineering evidence and testimony with regards to calculated gas-in-place under Sections 26 and 35 and estimated ultimate recoveries for the wells in Sections 26 and 35. The engineering evidence is generally in agreement for estimated ultimate recoveries, but there is disagreement concerning the calculated gas-in-place under Section 26.

ESTIMATED ULTIMATE RECOVERY

UMC Petroleum Corporation		**Read and Stevens**
Well Name		
Harris Fed. No. 8	9.6 BCFG	8.0 BCFG
Harris Fed. No. 4	0.6 BCFG	0.7 BCFG
White State No. 1	5.1 BCFG	5.2 BCFG
White State No. 2	8.4 BCFG	9.0 BCFG

ORIGINAL GAS-IN-PLACE (BCF)

	UMC Petroleum Corporation	**Read and Stevens**
Section		
26	11.8	18.6
35	10.2	12.9

The significance of the variation in gas-in-place relates to the percentage of gas-in-place recovered by existing wells and projected to be recovered in the future and the inference that allowing Read and Stevens to drill their proposed well would allow them to drain gas reserves from under Section 35 (UMC's position).

Conversely Read and Stevens maintains that the only way for Read and Stevens to recover the gas-in-place under Section 26 is to drill their proposed Harris Federal Well No. 11. Accepting that 18.6 BCF is the gas-in-place under Section 26, the Read and Stevens proposed location would produce only the gas under their tract and not the gas under UMC's acreage in Section 35.

The Read and Stevens analysis had better scientific validity being derived from their "Reservoir Simulation Study", validated by history matching gas production as compared to the UMC study which resulted from planimetered gas-in-place derived from their "Net Sand Thickness Isopach Map".

(11) UMC proposed that the Harris Federal Well No. 11, if allowed to be drilled at the proposed unorthodox location, should be assessed a production penalty of 65 percent or, in the alternative, should be assigned an allowable of 350 MCF gas per day. UMC's proposed allowable is based upon the fact that the proposed Harris Federal Well No. 11 will be located 50 percent closer to the common lease line than its White State Well No. 2, and therefore, should be allowed to produce 50 percent of the White State Well No. 2's current rate of production of 700 MCFGD.

(12) The evidence and testimony presented in this case indicates that:

a) the Harris Federal Well No. 4, which will ultimately recover only 0.6 BCF of gas, will not adequately drain and develop the S/2 of Section 26;

b) drainage of the SW/4 of Section 26 from the White State Well No. 2 is likely occurring;

c) the correlative rights of the applicant may be impaired if it is not allowed to drill a well within the SW/4 of Section 26 to recover gas reserves which may ultimately not be recovered by its existing wells; and,

d) **The calculated original gas-in-place under Section 26 is probably more than 11.8 BCF but not as much as 18.6 BCF. Even though the Read & Steven's analysis had better scientific validity, the Commission declines to adopt either Read & Stevens' specific calculation or UMC's specific calculation. The evidence presented by UMC cannot be entirely disregarded, and it militates against determining the amount of the original gas-in-place to be as much as 18.6 BCF. Read & Stevens did not present any long-term pressure data to support their claims. Many of the net pay, or net thickness, numbers used by Read & Stevens changed between the time of the Oil Conservation Division examiner hearing (the record of which was incorporated into the Commission hearing) and the Commission hearing. These changes consistently resulted in higher figures for Read & Stevens and lower figures for UMC. Even so, the original gas-in-place is probably a figure closer to 18.6 BCF than 11.8 BCF.**

e) **The two existing wells in Section 26 are producing one million cubic feet of natural gas per day; the two existing wells in Section 35 are producing one million cubic feet of natural gas per day. The proposed Read & Stevens well is expected to produce over one million a day, so that Read & Stevens with the new well will be producing over two times as much in Section 26 as UMC is producing in Section 35. Thus, the equilibrium that formerly existed between the two sections will be changed.**

f) **The standard set back for the Buffalo Valley-Pennsylvanian Gas Pool, in which Section 26 is located, is 990 feet from the outer boundary. However, this set back figure is only for wells**

located in either the northwest or southeast quarter of a standard section. Read & Stevens' proposed location is in the southwest quarter, so that the proposed location is unorthodox irrespective of the set back.

g) The standard set back for the Diamond Mound-Morrow Gas Pool, in which Section 35 is located, is 1980 feet from the outer boundary, and UMC's White State Well No. 2 is located 1980 feet from the outer boundary and is in the northwest quarter.

h) Read & Steven's proposed unorthodox location is 50% closer to the common boundary with UMC than is UMC's White State Well No. 2 and thus would gain an unfair advantage unless penalized.

i) While Read & Stevens presented sufficient evidence to prove that a third well located off-pattern in the southwest quarter is required to drain the gas in Section 26, Read & Stevens did not present sufficient evidence to prove that a well located at an equal distance from the common boundary with UMC as UMC's White State Well No. 2 would not drain the Section 26. Therefore, while Read & Stevens has justified a third well to be placed in the southwest quarter of Section 26 to prevent waste, it has not justified crowding its neighbor, UMC in Section 35, without the imposition of a penalty on production to protect UMC's correlative rights. Because Read & Stevens wants to crowd its neighbor by locating this third well 50% closer to the common boundary than UMC's well, Read & Stevens will gain an unfair competitive advantage and the imposition of a penalty is appropriate. Read & Steven's can drill its third well in the southwest quarter without any penalty if the well is at least 1980 feet from the common boundary with UMC.

j) **As there are between 11.8 BCF and 18.6 BCF of gas-in-place under Section 26 and the proposed well will increase production from Section 26 to over two million cubic feet per day, Read & Stevens' proposed location, 50% closer to the common boundary line than UMC's well, will lower daily production and drain some gas reserves from under Section 35 if the proposed well produces without penalty.**

k) by locating the Harris Federal Well No. 11, 990 feet off the common lease line, the applicant will be gaining an advantage over UMC, whose White State Well No. 2 is located 1980 feet off the common lease line.

(13) The applicant should be authorized to drill the Harris Federal Well No. 11 at a location no closer than 1830 feet from the South line (standard 1980 feet setback with 150 feet flexibility) without penalty. However, if Read and Stevens elects to drill their proposed unorthodox location, in order to protect the correlative rights of UMC, the well should be assessed a production penalty.

(14) Applicant testified that it expects the Harris Federal Well No. 11 to initially produce at a rate of approximately 1,500 MCF gas per day.

(15) A production penalty of 50 percent, which is based upon the well's distance from the common lease line relative to the White State Well No. 2's distance from the common lease line, is fair and reasonable and should be adopted in this case.

The standard penalty is based on the distance from the common boundary; or in a case such as this where two sections have different set-back requirements, the penalty is based on the relative distance each well is from the lease line. Having a standard formula for a penalty for crowding a common boundary has provided predictability and consistency for industry and is an important tool in protecting correlative rights.

(16) Approval of the subject application with a 50 percent production penalty will afford the applicant the opportunity to produce its just and equitable share of the gas in the affected pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

(17) The production penalty should be applied towards the Harris Federal Well No. 11's ability to produce into a pipeline as determined from a deliverability test to be conducted on the well on a semi-annual basis.

(18) The applicant should advise the supervisor of the Artesia district office of the Division of the date and time of conductance of the above-described production test(s) in order that they may be witnessed.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Read & Stevens, Inc., is hereby authorized to drill its Harris Federal Well No. 11 at an unorthodox gas well location at a minimum distance of 1830 feet from the South line without penalty or 990 feet from the South line and 1980 feet from the West line (Unit N) of Section 26, Township 15 South, Range 27 East, NMPM, to test the Pennsylvanian formation, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico with the assessment of a production penalty of 50 percent. The production penalty shall be applied towards the well's ability to produce into a pipeline as determined from a deliverability test to be conducted on the well on a semi-annual basis.

(2) The S/2 of Section 26 shall be simultaneously dedicated to the aforesaid Harris Federal Well No. 11 and to the existing Harris Federal Well No. 4, located at a standard gas well location 990 feet from the South and East lines (Unit P) of Section 26 in the Buffalo Valley-Pennsylvanian Gas Pool.

(3) The applicant shall advise the supervisor of the Artesia district office of the Division of the date and time of conductance of the above-described production test(s) in order that they may be witnessed if Read and Stevens drills the Harris Federal No. 11 at the penalized location.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM J. LEMAY, Member

LORI WROTENBERY, Chairman

Commissioner Wrotenberry was not on the Commission when this Case was heard on October 30, 1997, and did not participate in the adoption of additional findings on remand.

S E A L

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. 11514 (DeNovo)
Order No. R-10622-A

APPLICATION OF READ & STEVENS, INC.
FOR AN UNORTHODOX INFILL GAS WELL LOCATION
AND FOR SIMULTANEOUS DEDICATION,
CHAVES COUNTY, NEW MEXICO

READ & STEVENS, INC.'S
PROPOSED ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on October 29, 1996, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this ____day of November, 1996, the Commission, a quorum being present, having considered the testimony presented and exhibits received at said hearing, 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.

EXHIBIT
B

(2) The applicant, Read & Stevens, Inc. ("Read & Stevens"), seeks approval to drill its Harris Federal Well No. 11 at a location of 990 feet from the South line and 1980 feet from the West line (Unit N) of Section 26, T15S, R27E, to test the Pennsylvanian formation, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, to be dedicated to a standard 320-acre gas spacing and proration unit consisting of the S/2 of said Section 26.

(3) Read & Stevens is the operator of the existing Harris Federal Well No. 4 (Unit P) and the Harris Federal Well No. 8 (Unit F) which are both lower Pennsylvanian interval gas wells in Section 26 in the Buffalo Valley-Pennsylvanian Gas Pool.

(4) The Buffalo Valley-Pennsylvanian Gas Pool is a prorated gas pool with the following special rules:

> Rule 2(a): a standard gas proration unit ("GPU") in the pool contains 320 acres
>
> Rule 2(b) wells shall be located in either the NW/4 or the SE/4 section and shall be no nearer than 990 feet to an outer boundary nor nearer than 330 feet to any interior quarter-quarter section line.

(5) The Read & Stevens' proposed Harris Federal Well No. 11 is at a standard footage location for this pool but because it is to be located in the SW/4 of Section 26 it will be "off-pattern" and will require an exception to Rule 2 of the special rules and regulations of the Buffalo Valley Pennsylvanian Gas Pool.

(6) Matador Petroleum Company, an offset operator, appeared at the hearing in support of Read & Steven's application.

(7) UMC Petroleum Corporation ("UMC") appeared at the hearing in opposition to the applicant.

(8) UMC is the operator of the existing White State Well No. 1 (Unit O) and the White State Well No. 2 (Unit F) both of which are lower Pennsylvanian interval gas wells in Section 35 in the Diamond Mound-Morrow Gas Pool which is not a prorated gas pool and is subject to the following general state-wide rules:

320-acre gas spacing units with wells located not closer than 1980 feet to the end boundary nor closer than 660 feet to the side boundary of its spacing unit.

(9) While Section 26 and Section 35 are in different pools subject to different rules, these four wells are in fact competing among each other for gas reserves from the same common Pennsylvanian volumetric gas drive reservoir.

(10) At the Examiner hearing, Read & Stevens presented geologic interpretations and petroleum engineering estimated drainage areas based upon decline curve analysis and volumetrics from which it contended that:

(a) the existing Harris Federal Well No. 4, located at a standard gas well location within the SE/4 of Section 26, encountered a thinner and less productive portion of the reservoir and as a result, will be unable to adequately drain and develop its proration unit

(b) a well located within the SW/4 of Section 26 should penetrate the Lower Pennsylvanian formation in a thicker and better producing portion of the reservoir; and

(c) applicant's engineering data indicates that there is an area of approximately 94 acres within the SW/4 of Section 26 which will ultimately not be drained by the existing Harris Federal Well Nos 4 and 8.

(11) At the Examiner Hearing, UMC presented geologic interpretations and petroleum engineering estimated drainage areas based upon decline curve analysis from which it contended that:

(a) there remained an estimated 8.42 BCF of gas to be recovered by the existing four wells in Sections 26 and 35;

(b) assuming that the Harris Federal Well No. 11 produced at a rate of 900 MCFGPD, it would affect only the White State Well No. 1 and 2 and would reduce the ultimate recovery of gas from the White State wells in Section 35 by approximately 1.39 BCF.

(c) the Harris Federal Well No. 11 should be restricted to a maximum allowable of 350 MCFGPD (a 65 % penalty) while allowing the White State Well No 2 to produce unrestricted at an estimated rate in excess of 1000 MCFGPD.

(12) At the time of the Examiner hearing, neither Read & Stevens nor UMC attempted to utilize petroleum engineering calculations in order to verify the accuracy of their respective geological interpretations of the size and shape of the reservoir presented to the Examiner

(13) Neither Read & Stevens nor UMC presented to the Examiner any estimates of original gas in place or current gas in place for Section 26 and for Section 35.

(14) Pursuant to Section 70-2-33.H. NMSA (1978) it is essential that estimates of original gas in place and current gas in place for Section 26 and for Section 35 be presented to the Division in order to afford each owner an opportunity to produce its share of recoverable gas by determining the percentage of recoverable gas underlying each tract in relation to the amount of recoverable gas remaining to be recovered from all affected tracts.

(15) In the absence of such evidence, the Division found that:

(a) the Harris Federal Well No. 4 will not adequately drain and develop the S/2 of Section 26:

(b) it is highly likely that the Harris Federal Well No. 8 has drained a portion of the SW/4 of Section 26, however, the engineering evidence presented is not sufficient to determine whether this well can ultimately recover all of the remaining gas reserves within this quarter section:

(c) drainage of the SW/4 of Section 26 from the White State Well No. 2 is likely occurring;

(d) the correlative rights of Read & Stevens may be impaired if it is not allowed to drill a well

within the SW/4 of Section 26 to recover gas reserves which may ultimately not be recovered by its existing wells.

(16) The Division Examiner, without evidence from which to determine if the Read & Steven's Harris 11 would adversely affected UMC, imposed a 50% production penalty on the Harris 11 well.

(17) At the Commission hearing, Read & Stevens presented the testimony of a consulting petroleum engineer who had completed a reservoir study of an area of 9,600 acres including volumetric analysis of gas in place, decline curve analysis of estimated ultimate recovery, and a reservoir simulation of the expected performance of all existing wells, both with and without the proposed Harris 11 well, who concluded that:

(a) there was an estimated 86 BCF of gas originally in place within a study area containing 9,600 acres and covering some 22 wells including the four subject wells:

(b) UMC's geologic interpretation presented to the Examiner showed a reservoir which originally contained only 80 BCF of gas in place which was too small to contain the estimated 86 BCF of gas in place determined by petroleum engineering calculations:

(c) Read & Stevens' geologic interpretation submitted to the Examiner was too large:

(d) Read & Stevens introduced to the Commission its revised geologic interpretation which contains an estimated 86 BCF of gas originally in place and therefore "balances" with petroleum engineering estimates:

(e) based upon decline curve analysis, the estimated ultimate recovery for Section 26 and Section 35 will be 22.90 BCF of gas with individual well recoveries as follows:

Harris 8	8.0 BCF
Harris 4	0.7 BCF
White State 1	5.2 BCF
White State 2	9.0 BCF

(f) currently, there is 10.5 BCF of gas in place with 6.2 BCF allocated to Section 26 and 4.3 BCF allocated to Section 35;

(g) Section 26 currently has 6.2 BCF of gas in place of which 5.0 BCF is recoverable;

(h) Section 35 currently has 4.3 BCF of gas in place of which 3.4 BCF is recoverable;

(i) without the Harris Federal Well No. 11, the two existing Read & Stevens wells will only recovery 2.5 BCF from Section 26 resulting in a "loss" of 2.5 BCF of gas;

(j) without the Harris Federal Well No. 11, the two UMC wells will recover 6.4 BCF of gas or 3.0 BCF of gas **more** than the 3.4 BCF of gas currently recoverable from Section 35;

(k) **with** the Harris Well No. 11, Section 26 will recover only 4.9 BCF of its 5.0 BCF remaining recoverable gas attributed to Section 26 and **therefore no penalty is necessary**;

(l) **with** the Harris Well No. 11, Section 35 will still recover 6.1 BCF which is 2.7 BCF more than the 3.4 BCF remaining recoverable gas attributed to Section 35.

(18) At the Commission hearing, UMC presented the testimony of a petroleum engineer who had made volumetric estimates of gas in place, and prepared decline curves estimates of ultimate recovery and who concluded that:

(a) an ultimate recovery of 23.70 BCF of gas (compared to 22.90 BCF of gas calculated by Read & Stevens) for Section 26 and 35 based upon decline curve analysis as follows:

Harris 8	9.6 BCF
Harris 4	0.6 BCF
White State 1	5.1 BCF
White State 2	8.4 BCF

(b) volumetric estimates of original gas in place of 22.08 BCF for Sections 26 and 35 with 11.8 BCF for Section 26 and 10.2 BCF for Section 35;

(c) the White State wells are expected to recover 3.0 BCF of gas more than UMC had estimated were in place for Section 35;

(d) that UMC had not made any estimates of current gas in place for either Section 26 and 35 but if it had done so, UMC would have used a method similar to that utilized by Read & Stevens' expert petroleum engineer;

(e) the Commission should affirm the Examiner order and retain the 50% production penalty of the Harris Federal Well No. 11;

(19) Commission finds that Read & Stevens' reservoir study introduced at the Commission hearing has been adequately verified and validated by history matching and accurately forecasts performance and should be relied upon by the Commission in reaching a decision in this case.

(20) The Commission further finds that:

(a) Read & Stevens' reservoir engineering study which was not available to the Division Examiner, demonstrates the necessity for approving the proposed Read & Stevens' Harris Federal Well No. 11 at its proposed location, **without a penalty**, in order to afford Read & Stevens the opportunity to produce its just and equitable share of the remaining recoverable gas to which it is entitled and thereby protect correlative rights.

(b) Read & Stevens' reservoir engineering study which was not available to the Division Examiner, demonstrates the necessity for approving the proposed Read & Stevens' Harris Federal Well No. 11 at its proposed location, **without a penalty**, in order to recover an additional 500 MMCF of gas which would not otherwise be recovered thereby preventing waste.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Read & Stevens. Inc., is hereby authorized to drill its Harris Federal Well No. 11 at an unorthodox gas well location 990 feet from the South line and 1980 feet from the West line (Unit N) Section 26, Township 15 South, Range 27 East, NMPM, Chaves County, New Mexico.

(2) The S/2 of Section 26 shall be simultaneously dedicated to the aforesaid Harris Federal Well No. 11 and the existing Harris Federal Well No. 4, located at a standard gas well location 990 feet from the South and East lines (Unit P) of Section 26 in the Buffalo Valley-Pennsylvanian Gas Pool.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMIE BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman
and Secretary