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May 7, 1997

Received
5-9-97
MS.

VIA FACSIMILE AND FIRST CLASS MAIL

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87504

Re: Application of Bass Enterprises Production Co. and Santa Fe Energy for Rescission of Administrative Order NSL-3745, Eddy County, New Mexico, Case No. 11713;

Application of Bass Enterprises Production Co. to Drill and for Simultaneous Dedication, or in the Alternative, Simultaneous Dedication, and for Unorthodox Gas Well Location, Eddy County, New Mexico, Case No. 11758

Dear Mr. LeMay:

I am enclosing herewith for your consideration Bass Enterprises Production Co's Proposed Order pursuant to the February 20, 1997, and April 3, 1997, hearings for the above cases.

If I can provide you with anything further, please advise.

Very truly yours,

LOSEE, CARSON, HAAS & CARROLL, P.A.

Ernest L. Carroll

ELC:kth
Encl.
xc w/encl: Mr. David R. Catanach, Hearing Examiner
Mr. Michael E. Stogner, Hearing Examiner
Mr. William F. Carr
Mr. J. Wayne Bailey, Bass Enterprises Production Co.

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:

APPLICATION OF BASS ENTERPRISES PRODUCTION CO. AND SANTA FE ENERGY COMPANY FOR RESCISSION OF ORDER NSL-3745, EDDY COUNTY, NEW MEXICO

CASE NO. 11713
ORDER NO. R-____

APPLICATION OF BASS ENTERPRISES PRODUCTION CO. TO DRILL AND FOR SIMULTANEOUS DEDICATION OR, IN THE ALTERNATIVE, SIMULTANEOUS DEDICATION AND FOR UNORTHODOX GAS WELL LOCATION, EDDY COUNTY, NEW MEXICO

CASE NO. 11758
ORDER NO. R-____

BASS ENTERPRISES PRODUCTION CO.'S
PROPOSED ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 o'clock a.m. on February 20, and April 3, 1997, at Santa Fe, New Mexico, before Examiners David R. Catanach and Michael E. Stogner.

NOW, on this ___ day of May, 1997, the Division Director, having considered the testimony, the record, and the recommendations of the Examiners, 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 these causes and the subject matters thereof.

(2) The applicants in Case 11713, Bass Enterprises Production Co. ("Bass") and Santa Fe Energy Company ("Santa Fe") seek the rescission of Division Administrative Order No. NSL-3745 which was entered on December 27, 1996, approving an unorthodox gas well location in the Morrow formation for the Mewbourne Oil Company ("Mewbourne") Scanlon Draw "35" State Well No. 1

("Scanlon Well") to be drilled 660 feet from the South line and 1980 feet from the West line of Section 35, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico to test the Turkey Track-Morrow Gas Pool within a standard 320-acre gas spacing unit comprising the W/2 of said Section 35.

(3) In Case 11758, Bass and Santa Fe seek to drill its Turkey Track "2" State Well No. 2 at an orthodox location to be simultaneously dedicated with the Turkey Track "2" State Well No. 1 to the standard 320-acre proration unit comprised of the E/2 of Section 2, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico. In the alternative, if Administrative Order No. NSL-3745 approving Mewbourne's Scanlon Draw "35" State No. 1 Well at an unorthodox location 660 feet FSL and 1980 feet FWL of Section 35, Township 18 South, Range 28 East, N.M.P.M., Eddy County, New Mexico, is upheld by order in pending Case No. 11713, Bass seeks the corresponding unorthodox location for its Turkey Track "2" No. 2 Well in the E/2 of Section 2, Township 19 South, Range 28 East, N.M.P.M., Eddy County, New Mexico, and the simultaneous dedication of said well to the E/2 of the Section 2 proration unit.

(4) Since the disposition of Case 11713 will affect the decision in Case 11758, at the time of hearing the cases were consolidated.

(5) On December 5, 1996, Mewbourne filed an Administrative Application pursuant to the provisions of Division Rule 104F(2) for approval of an unorthodox location for its Scanlon Well, 660 feet from the South line and 1980 feet from the West line of Section 35, Township 18 South, Range 28 East. Mewbourne's chosen unorthodox location is unorthodox to the south line of the dedicated acreage. Mewbourne provided notice of this application to Bass and Santa Fe in compliance with Division Rules.

(6) Bass and Santa Fe objected to the Mewbourne location by letter dated December 20, 1996, which was received by the Division on December 27, 1997. The deadline for receipt of the objection was Christmas Day, December 25, 1997. On December 31, 1996, Bass and Santa Fe filed their application in case 11713 seeking rescission of Order No. NSL-3745.

(7) Mewbourne opposed the application and asserted that rescission was only appropriate if it was shown that there were improprieties in the procedures by which Order No. NSL-3745 was obtained. By letter dated February 17, 1997, the Division accepted Bass' and Santa Fe's application for rescission of Administrative Order No. NSL-3745 and overruled Mewbourne's objections thereto. Order NSL-3745 was further stayed pending review of this matter by Division Examiner. Bass and Santa Fe were allowed to present its geologic and engineering evidence on February 20, 1997.

(8) Subsequent to the presentation of Bass' and Santa Fe's evidence, Mewbourne again sought reconsideration of the Division's decision to consider Bass' and Santa Fe's objection and the staying of Order NSL-3745 by Motion filed March 26, 1997. On April 3, 1997, the Division again

denied Mewbourne's objection to Bass' and Santa Fe's application, whereupon a hearing was held April 3, 1997, at which time Mewbourne presented its geologic and engineering evidence.

(9) On February 20, 1997, Bass and Santa Fe presented geologic evidence which showed:

(A) that the Morrow channel in Sections 35 and 2 does not trend West-East as mapped by Mewbourne for its administrative application but, instead, in a North-North West South South East direction providing Mewbourne a standard location in the West half of Section 35;

(B) That Mewbourne's ONLY mapping method presented for the lower Morrow/"orange" Sand is a "gross" sand isopach. This is a very inaccurate method of mapping the sand. Mewbourne's selection is based on an unnormalized, high gamma-ray cutoff which does not relate to a constant stratigraphic interval or the thickness of porosity development in the lower Morrow. The logs presented on Bass Exhibit No. 7 illustrate Mewbourne's selection for this thickness. Mewbourne's mapping results in defining three west/east trending sand bodies. This is in direct conflict with the regional trends recognized by the industry and in conflict with Bass' interpretation;

(C) That Mewbourne's map is contradicted by the reservoir pressure data presented by Bass; the data presented by Bass with the exception of the two Bass wells, Turkey Track "2" State No. 1 and Merchant State No. 2 clearly shows that the wells within the three separated sand bodies as depicted by Mewbourne are in fact in pressure communication;

(D) That a proper interpretation of Mewbourne's lower Morrow Sand map indicates that the northern one-third of its proposed proration unit has no sand present. Furthermore, its exhibits presented in the administrative proceeding contradicts that interpretation by showing that approximately 0.5 BCF has already been produced from the Lower Morrow Sand in the N/2 of the proration unit;

(E) That Mewbourne has two orthodox locations in the southern half of the proration unit which would encounter 28 to 31 feet of Lower Morrow Sand;

(F) That a well with 24.5 feet of sand, as indicated by Mewbourne's map, would recover 3.05 BCF plus 22.3 MBO, which would be an economic well;

(G) That Bass, in its mapping of the Morrow Sand, used two methods - a structure map of the Lower Morrow and an isopach of the Lower Morrow Barnett interval identifying the areas favorable for sand deposition. Secondly, utilizing a normalized gamma-ray Bass presented a net sand reservoir map and illustrated how this is in good relationship

to reservoir porosity thickness. Such analysis allows for an accurate engineering analysis of the main productive channels of the Morrow Sands;

(H) That the mapping presented by Bass reflects regional trends widely supported by industry and shows that Mewbourne has an orthodox location 1650 feet from the South line and 1980 feet from the West line available to access commercial reserves in the Lower Morrow. That location was shown to have essentially the same reservoir potential as Mewbourne's proposed unorthodox location;

(I) That the mapping employed by Bass clearly shows that only around one-half of Mewbourne's proposed proration unit is productive, and explains why Mewbourne is not seeking to drill its well at an orthodox location.

(J) That a barrier to production traverses Section 2, Township 19 South, Range 28 East, which makes a second well in Section 2 necessary to protect this tract from drainage if the Mewbourne well was drilled at the proposed unorthodox well location in Section 35. The barrier to production is due to fault displacement or slumping of the Morrow due to reactivation of deeper-seated faulting.

(K) That the production barrier traversing Section 2, Township 19 South, Range 28 East isolates the reserves on the west side from the Turkey Track "2" State No. 1 Well, thus leaving Bass without any means of producing those isolated reserves underlying the E/2 of Section 2. Those reserves are unproducible unless a second well is drilled on the E/2 of Section 2 proration unit presently dedicated to the Turkey Track "2" State Well No. 1.

(L) That the middle Morrow horizon is of economic importance in this area. Bass' mapping shows that Mewbourne will encounter this reservoir at either their proposed unorthodox location and an orthodox location immediately to the north. Mewbourne's mapping totally ignores the possible reserves from this production interval.

(M) That Bass is currently unable to produce the middle Morrow from the Turkey Track "2" State Well No. 1 for the E/2 of Section 2 proration unit, and that an additional well is further required to protect Bass' proration unit from drainage by any well drilled by Mewbourne on its Section 35 acreage.

(10) On February 20, 1997, Bass and Santa Fe presented engineering evidence which showed:

(A) That, based on Mewbourne's own map, there is 4.6 BCF of Original Gas in Place under their tract with 3.1 BCF remaining recoverable;

(B) That Mewbourne can produce this gas with a well located at an orthodox location;

(C) That Mewbourne's map indicates 28' of pay at an orthodox location in the W/2 of Section 35. Their map also indicates an average of 24.5' of pay per well in 4 offsets. These 4 offsets have an average recovery of over 3 BCF and 22 MBO;

(D) That an "average well cost" will payout with 0.49 BCF of gas produced. Therefore, the 24.5' pay well with greater than 3 BCF and 22 MBO would be very attractive economically. Based on payout reserves of 1/2 BCF, it would pay out six times;

(E) That nine of the eleven wells in the Platt, Sparks & Associates (PSA) simulation area came in at consecutively reduced pressures indicating good reservoir communication. The PSA simulation was able to match these pressures indicating excellent agreement with the flow behavior in the Lower Morrow reservoir and the original gas in place;

(F) That PSA attempted to simulate the reservoir using Mewbourne's map. A meaningful history match could not be achieved using Mewbourne's data. The model pressures were much higher than the actual pressures indicating the volume from their map was too high;

(G) That the Bass-operated Turkey Track "2" State Com No. 1 and Merchant State No. 2 came in at virgin reservoir pressures, indicating separate isolated and smaller reservoirs;

(H) That the Bass-operated Turkey Track "2" State Com No. 1 is unable to drain the lower Morrow reservoir in its 320-acre proration unit. Based on the simulation, decline curve analysis and actual performance, this well will drain approximately 80 - 90 acres or 25% - 30% of the proration unit;

(I) That the Bass-operated Turkey Track "2" State Com No. 1 is unable to access over 2.2 BCF of recoverable Middle Morrow reserves under the proration unit. This zone would likely be drained by an unorthodox Mewbourne location in the W/2 of Section 35;

(J) That an unorthodox location on Mewbourne's tract would drain 1.6 BCF from the Bass tract in the E/2 of Section 2. This unorthodox location will drain at least 0.4 BCF more from Bass than an orthodox location. These figures are from the Lower Morrow alone;

(K) That orthodox locations do exist on the subject tract for Mewbourne to drill;

(L) That moving Mewbourne's proposed well to an unorthodox location will allow the confiscation of a significant quantity of reserves from the Bass-operated lease;

(M) That the imposition of a penalty allowable would be ineffective in preventing this confiscation of reserves;

(N) That the proposed well should be drilled at an orthodox location;

(O) That Mewbourne's engineer stated the Morrow is highly variable and not well communicated. In contradiction, actual production data clearly shows pressure communication and therefore interference and drainage between nine of the eleven wells studied. Mewbourne's engineer also admitted on the stand that these nine wells were in pressure communication;

(P) That Mewbourne's ONLY engineering exhibit incorrectly used 2.75 BCF as the estimated ultimate recovery (EUR) which is 25% - 40% higher than Bass' own reserve estimates for the well;

(Q) That Mewbourne's ONLY engineering exhibit incorrectly used 500 psi abandonment pressure which is rarely seen in the Morrow, especially at 11,000'. Nodal Analysis indicates these Morrow wells will more likely draw the reservoir down to a 1000 psi abandonment pressure;

(R) That if Mewbourne's engineer had used the correct porosity, thickness, abandonment pressure, and EUR in his calculation, he would have found a drainage area less than 90 acres as opposed to his number of 275 acres which is remarkably close to the proration unit size;

(S) That the Mewbourne engineer stated their maps indicated "much less net thickness" than their gross pay maps yet never produced a net pay map. When making this statement he claimed the 28' indicated pay thickness at an orthodox location on their section would have much less net pay. He also stated, however, that 12' of gross pay was equal to 12' of net pay in their new well (Scanlon Draw 34 #1) and their own map indicates 35' of gross pay in the Turkey Track "2" State Com No. 1 which is equal to the net pay. Mewbourne's testimony is inconsistent because if their net equals gross at the two critical points on the map, net should equal gross across their proration unit in question, which is right between the two points.

(11) Bass testified that due to the characteristics of the Morrow formation in this area, penalties on wells due to unorthodox well locations are ineffective and, therefore, Bass did not recommend the imposition of a penalty on the proposed Mewbourne well but, instead, advised the

Examiner that, if the Mewbourne location was approved, it would seek approval of an offsetting well and simultaneous dedication of the wells in the E/2 of Section 2.

(12) At the conclusion of the February 20, 1997, hearing, the case was continued to enable the parties time to attempt to settle this dispute and, if settlement could not be reached, to continue the cases to a subsequent Examiner hearing for the presentation of the Mewbourne case. Also, counsel for Bass advised that they would be filing an application for the simultaneous dedication of its Turkey Track "2" No. 2 Well to the E/2 of Section 2, Township 19 South, Range 28 East, NMPM, Eddy County, New Mexico.

(13) On February 28, 1997, Bass filed its application to drill and for simultaneous dedication, or in the alternative, simultaneous dedication and an unorthodox location which was set for hearing as Case 11758.

(14) After the conclusion of the February 20, 1997, hearing, Mewbourne drilled and completed its well in Section 34 in the Morrow formation as a west offset to its proposed well location in Section 35.

(15) On April 3, 1997, Mewbourne presented the following geologic evidence, which showed:

(A) That their recent well in the SE/4 of Section 34, Township 18 South, Range 28 East, encountered 12' of the "gross" Morrow Sand. By Mewbourne's map, this well should have found around 33' of "gross" lower Morrow Sand. No revised map was presented;

(B) That the logs of the Section 34 Well were not presented by Mewbourne's witnesses;

(C) That under cross-examination, it was stated that the 12' of "gross" Sand encountered had a porosity of around 8%, water saturation in the 70% to 100% range and virgin reservoir pressure. Such data did not correlate with Mewbourne's geologic map;

(D) That the fact that virgin pressure was encountered demonstrates that the sand is not in the main reservoir system as would be expected by Mewbourne's mapping and rather confirms the mapping of Bass;

(E) That the fact that the water saturation is 70% to 100% yet up-dip from the proven reservoir with a water saturation of 25% shows that Mewbourne encountered a stray isolated sand whose potential productivity is questionable.

(16) On April 3, 1997, Mewbourne presented the following engineering evidence, which showed:

(A) That Mewbourne's newly drilled Scanlon Draw 34 #1 had shut in Drill Stem Test pressures of approximately 4400 psi or virgin pressure. This fact was discovered during cross examination and was obviously not mentioned in their direct testimony. This pressure indicates a separate reservoir from the one mapped in Mewbourne's Exhibit 1. In fact, Bass' structure map and isopach map can be easily interpreted to include this separate channel;

(B) That Mewbourne's only engineering exhibit incorrectly used 9% porosity when the actual log data indicates at least 11 1/2% porosity;

(C) That Mewbourne's only engineering exhibit incorrectly used 15' of net thickness when the net thickness from the log is actually 35'. Mewbourne's own map indicates an average thickness of at least 27' across the W/2 of Section 2 and Bass' map indicates at least 32' of net h across the proration unit.

(17) The data recently obtained from the Mewbourne well in Section 34, Township 18 South, Range 28 East does not confirm Mewbourne's geological interpretation of the Morrow formation in this area, and in fact is consistent with the geological interpretation of Bass.

(18) The proposed unorthodox location for the Mewbourne Scanlon Draw Section "35" State Well No. 1 at a point 660' from the South line and 1980' from the West line of Section 35, Township 18 South, Range 28 East, NMPM, Eddy County, is not necessary to effectively and efficiently produce the remaining reserves in the Morrow formation under the W/2 of said Section 35, and therefore the Application of Bass and Santa Fe to rescind Division Administrative Order No. NSL-3745 should be **approved**.

(19) Bass presented evidence which establishes its potential reserve loss if Mewbourne drills the above well and Bass is not allowed to drill a second well in the E/2 of Section 2. Bass' evidence establishes the existence of a fault in the Morrow formation in Section 2 and that the approval of a second well on the E/2 of Section 2 and the simultaneous dedication of the wells thereon are necessary to adequately produce the reserves of the Morrow reservoir underlying Bass' operated tract to prevent waste and protect correlative rights, and therefore the application of Bass to drill an additional well in the E/2 of Section 2 and for simultaneous dedication thereof should be **approved**.

IT IS THEREFORE ORDERED THAT: