

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BLDG.
5 SANTA FE, NEW MEXICO

6 9 May 1984

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Mesa Grande Resources, CASE
10 Inc. for downhole commingling and 8176
11 dual completion, Rio Arriba County,
12 New Mexico.

13 BEFORE: Richard L. Stamets, Examiner

14 TRANSCRIPT OF HEARING

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17 A P P E A R A N C E S

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20 For the Oil Conservation
21 Division:

W. Perry Pearce
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

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23 For the Applicant:

James G. Bruce
Attorney at Law
HINKLE LAW FIRM
Santa Fe, New Mexico 87501

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I N D E X

DANIEL S. NUTTER

Direct Examination by Mr. Bruce	3
Cross Examination by Mr. Stamets	9

E X H I B I T S

Applicant Exhibit One-A, Plat	4
Applicant Exhibit One-B, List	5
Applicant Exhibit Two, Well Log	5
Applicant Exhibit Three, Diagram	6

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3 MR. STAMETS: We'll call next
4 Case 8176.

5 MR. PEARCE: That case is on
6 the application of Mesa Grande Resources, Inc. for downhole
7 commingling and dual completion, Rio Arriba County, New Mex-
8 ico.

9 MR. BRUCE: Mr. Examiner, my
10 name is Jim Bruce from the Hinkle Law Firm in Santa Fe, and
11 I have one witness to be sworn.

12 MR. PEARCE: Are there other
13 appearances in this matter?

14 (Witness sworn.)

15 DANIEL S. NUTTER,
16 being called as a witness and being duly sworn upon his
17 oath, testified as follows, to-wit:

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19 DIRECT EXAMINATION

20 BY MR. BRUCE:

21 Q Would you please state your name, city of
22 residence, occupation and employer?

23 A My name is Dan Nutter. I live in Santa
24 Fe, New Mexico. My occupation is Consulting Petroleum En-
25 gineer and I'm employed in this case by Mesa Grande Re-
sources, Inc.

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Q And have you previously testified before the OCD and had your credentials accepted as a matter of record?

A I have.

Q And are you familiar with Case 8176, the application of Mesa Grande Resources?

A Yes, sir, I am.

MR. BRUCE: Is the witness considered qualified?

MR. STAMETS: Yes.

Q Mr. Nutter, would you please briefly state what Mesa Grande Resources seeks by its application?

A Case Number 8176 is the application of Mesa Grande for the dual completion of its Gavilan Howard Well No. 1, located 1850 feet from the north line and 1650 feet from the west line of Section 23, Township 25 North, Range 2 West, Rio Arriba County, New Mexico.

The dual completion would be in the Gavilan Mancos Oil Pool and in Undesignated Greenhorn and Dakota formations.

Q Thank you. Would you --

A And also, we further seek the commingling of the Greenhorn and the Dakota formation in the lower portion of the dual completion.

Q All right, would you please turn to the exhibit marked as One-A and discuss that briefly?

A Exhibit One-A is a plat showing the -- in

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yellow, the outlined proration unit, being the west half of Section 23. Indicated by the pink arrow is the Gavilan Howard Well No. 1.

Offset operators are also shown and other production in the area is depicted on this exhibit.

Q Would you please turn to Exhibit One-B and describe what that is?

A Exhibit One-B is a list of all of the offset operators to the Gavilan Howard proration unit. You'll find all of these listed offset operators on the plat with the exception of Texaco and the Dome acreage, which lies west and north of the proration unit, has Texaco as a partner in that operation, so they are listed as an offset operator.

Q Thank you. Would you please now turn to Exhibit Number Two, the well log, and describe that?

A Exhibit Number Two is a well log of the Gavilan Howard Well No. 1. I've marked on here the top of the Gavilan Mancos Oil Pool at approximately 6420 feet. The Gallup Sandstone, or the Niobrara Sand, or the sand in the Niobrara shale, is indicated there as Gallup sandstone. Below that is the Tocito. The Lower Mancos perforations are present as are Sanostee perforations in the lower portion.

Then we have the bottom of the Gavilan Mancos Oil Pool depicted on the exhibit.

At 7390 is the packer that separates the Gavilan Mancos from the lower portion of the completion.

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2 We then have perforations in the upper
3 portion of the Greenhorn from 7531 to 7566 and in the lower
4 portion of the Greenhorn from 7587 to 7647.

5 Now there has been some contention by
6 some people that this -- these upper perforations are ac-
7 tually Carlisle; however, there is authority available to
8 show that those are not Carlisle. They're actually -- it's
9 a questionable area, whether it's Carlisle or Upper Green-
horn.

10 The Greenhorn is a lime. This does not
11 look like a lime. It's probably a very dirty lime if it is
12 the Greenhorn, but at any rate, that's the upper portion of
13 the commingled section of the dual completion.

14 At the base of the Greenhorn formation
15 starts the Dakota producing interval as defined by the Com-
16 mission, which is from the base of the Greenhorn formation
to a point 400 feet below the base of the Greenhorn.

17 We then have perforations in the Graneros
18 Shale and in the Dakota Sandstone in this well.

19 Those are all indicated on the exhibit.

20 Q Thank you. Would you please now turn to
21 Exhibit Number Three and explain what the completion diagram
22 shows?

23 A Exhibit Number Three is a schematic
24 diagram of the well. It shows the 8-5/8ths surface casing
25 set at 290 feet, or at 202 feet cemented with 290 sacks.
Cement was circulated on that string.

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The 5-1/2 inch long string is set at 8011 feet. It was cemented in three stages with 1500 sacks of cement. The top of the cement is at 2300 feet.

There's a tubing string anchor at 6401 and in that tubing string anchor we've installed two strings of 2-1/16th inch interval joint tubing.

The Baker packer is set at 7400 or 7390 feet and has a tailpipe extending through it into the lowermost perforations.

The potential on the well was approximately 75 barrels of oil per day and 2712 Mcf of gas per day, no formation water, from the uppermost perforations in the Gavilan Mancos.

The potential in the lowermost perforations was 83 barrels of oil per day and 2465 Mcf per day and zero formation water.

The upper formation is producing gravity -- 42.8 gravity oil with a gas/oil ratio of 36,160.

The lower portion is producing 55 to 60 degree oil with a gas/oil ratio of 29,699. That was on a test taken on 4/1/84.

Q And could you comment briefly on the pressures?

A Yes. The pressure in the Gavilan Mancos is estimated at approximately 2000 pounds.

The pressure in the Greenhorn is 2500 pounds.

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The pressure in the Dakota is 2700 pounds. There's very little pressure differential between the two zones that are being commingled but some pressure differential between the upper portion of the dual completion and the lower portion of the dual completion.

Q Thank you, and what is your recommendation as to allocation of production?

A I'd recommend that the Greenhorn formation be allocated 76 percent of the oil and 72 percent of the gas that's produced from the well.

The Dakota would produce--would be allocated 24 percent of the oil and 28 percent of the gas.

Q And in your opinion will the granting of this application be in the interest of conservation, the prevention of waste and the protection of correlative rights?

A Yes. The correlative rights of no parties would be violated by the approval of this application and it is in the interest of prevention of waste in two respects. It would save the drilling of an additional well in the area to approve the dual completion and the granting of the downhole commingling would enable the two zones which may not be commercial, either one, by themselves, to be produced together and the life of the zones certainly would be extended by lower operating costs by being produced simultaneously in a commingled fashion.

So it is in the interest of conservation.

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It is in the interest of the prevention of waste, and it would not violate correlative rights.

Q Were Exhibits One through Three prepared by you or under your direction?

A Yes, they were.

MR. BRUCE: I move the admission of Exhibits One through Three, Mr. Examiner.

MR. STAMETS: The exhibits will be admitted.

MR. BRUCE: I have no further questions.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Nutter, what's the acreage dedication for the Greenhorn and the Dakota?

A Well, it's undesignated right now, so probably it's 40 acres.

Q For each of them.

A We have an application on file, by the way, for creation of an oil pool for the Greenhorn and Dakota Pools, for a Greenhorn-Dakota oil pool, which has not been set for hearing as of now.

But at the present time it's undesignated, so presumably it's on 40-acre spacing.

Q So if that is approved, then your down-hole commingling would no longer be needed.

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A That's correct.

Q The 76 percent, 24 percent, the allocation was based on initial potentials?

A That, no, it isn't really, because that was kind of an adjusted. By mathematics the allocation came out 80 percent of the oil to the Greenhorn and 20 percent to the Dakota, but knowledge of the formations themselves has caused that to be reduced somewhat for the Greenhorn from 80 percent to 76 percent, 4 percent adjustment based on experience here, and those are based on the--those were based on the tests that were taken while the well was being completed.

MR. STAMETS: Are there any other questions of the witness? He may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a correct and true copy of the proceedings in the Executive hearing of case No. 8176 heard by me on 5-9-84 1984.

Richard J. Stum, Examiner
Oil Conservation Division