

- CASE 5776: Application of Continental Oil Company for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its James Ranch Unit Well No. 9 to be drilled at a point 1980 feet from the North line and 660 feet from the West line of Section 31, Township 22 South, Range 31 East, Los Medanos-Morrow Gas Pool, Eddy County, New Mexico, the N/2 of said Section 31 to be dedicated to the well.
- CASE 5777: Application of Gifford & Mitchell and M. B. Wisenbaker for pool creation, pool rules, and a non-standard gas spacing unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new gas pool for Atoka production for its Horseback Well No. 1 located 1000 feet from the South line and 1980 feet from the East line of Section 33, Township 26 South, Range 36 East, Lea County, New Mexico, the promulgation of pool rules therefor, including a provision for 640-acre spacing and approval for a 589.52-acre non-standard gas spacing unit comprising all of partial Sections 33 and 34 of the aforesaid Township.
- CASE 5778: Application of Gas Company of New Mexico for underground gas storage findings, Eddy County, New Mexico. Applicant, in the above-styled cause, pursuant to Section 65-9-5 NMSA 1953 Comp., seeks a decision from the Commission containing findings as to the propriety of utilization for underground gas storage of the sub-surface strata from the top of the Morrow elastic stratum to the top of the Barnett stratum underlying Sections 15, 16, 17, 20, 21, 22, 27, 28, and 29, Township 16 South, Range 27 East, Eddy County, New Mexico.
- CASE 5779: Application of Agua, Inc. for an extension of time and amendment of Order No. R-4495-A, as amended by R-4495-D, Lea County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Order No. R-4495-A, as amended by Order No. R-4495-D to permit disposal, after the current October 1, 1976, deadline, of produced salt water through perforations from 4230 feet to 4320 feet in its SWD Well No. C-2, located in Unit C of Section 2, Township 22 South, Range 32 East, Lea County, New Mexico. Applicant seeks the amendment of said order to permit such disposal for an additional 30-day period or until it is able to get electrical power to its Blinebry-Drinkard SWD System Well No. A-22, located in Unit A of Section 22, Township 22 South, Range 37 East, Lea County, New Mexico, whichever comes later.
- CASE 5262: (Reopened) (Continued from September 1, 1976, Examiner Hearing)
- In the matter of Case 5262 being reopened pursuant to the provisions of Order No. R-4822-B, which order extended the special pool rules for Southwest Media-Entrada Oil Pool, Sandoval County, New Mexico, including a provision for 160-acre spacing and proration units and a special depth bracket allowable of 750 barrels of oil per day. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing and why the special depth bracket allowable should not be rescinded.
- CASE 5736: (Continued from September 1, 1976, Examiner Hearing)
- Application of BCO Inc. for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Basin Dakota Gas Pool and Lybrook-Gallup Oil Pool and undesignated Greenhorn and Mancos production in the wellbore of its Dunn Well No. 2, located in Unit F of Section 10, Township 23 North, Range 7 West, Rio Arriba County, New Mexico.





STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

July 2, 1980

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

Mr. Frank T. Chavez  
Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, New Mexico 87410

Re: Water Cut and Fluid Level Reports,  
Certain Entrada Pools

Dear Frank:

We have reviewed the statistics relating to oil and water production in the Media-Entrada, Southwest Media-Entrada, and Eagle Mesa-Entrada Oil Pools and concur with your opinion that the producing characteristics in these reservoirs have been well enough established that continuation of the monthly fluid level tests and water cut reports is unnecessary.

These tests were required when the operators in said pools were granted a special 750-BOPD allowable in order to lift large volumes of water to keep the oil moving in the reservoir. At the time there was some apprehension that water coning and subsequent loss of oil would result.

It now appears that the tests have served their purpose and may be discontinued, and you may so notify the operators in the subject pools.

Very truly yours,

JOE D. RAMEY,  
Director

JDR/DSN/dr

cc: Case File 5574  
Case File 5262  
Case File 5152



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT

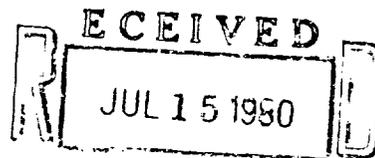
OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

July 11, 1980

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

BRUCE KING  
GOVERNOR  
LARRY KEHOE  
SECRETARY

*R-4822*  
*Case 5262*



OIL CONSERVATION DIVISION  
SANTA FE

Mr. J.R. Harrison  
Petro-Lewis Corporation  
P.O. Box 507  
Levelland, Texas 79336

Re: Water Cut and Fluid Level Reports, Certain Entrada Pools

Dear Mr. Harrison:

Orders R-4713, R-4822, and R-5118, directed that you submit water cut and/or fluid level reports on wells which you operate in certain Entrada pools. It now appears that these tests have served their purpose and may be discontinued.

These test requirements may be reinstated at any time that the Division feels that they are necessary.

If you have any questions, please contact this office.

Yours truly,

Frank Chavez  
District Supervisor

FC/lr

Xc: OCD Santa Fe  
Reading File  
U.S.G.S. Farmington

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BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
September 29, 1976

EXAMINER HEARING

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IN THE MATTER OF: )  
 )  
Case 5262 being reopened pursuant to ) CASE  
the provisions of Order R-4822-B, which ) 5262  
order extended the special pool rules ) (Reopened)  
for Southwest Media-Entrada Oil Pool, )  
Sandoval County, New Mexico. )  
 )  
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BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission: William F. Carr, Esq.  
Legal Counsel for the Commission  
State Land Office Building  
Santa Fe, New Mexico

For the Applicant: Jason W. Kellahin, Esq.  
KELLAHIN & FOX  
Attorneys at Law  
500 Don Gaspar  
Santa Fe, New Mexico

sid morrish reporting service

General Court Reporting Service  
825 Calle Mejia, No. 122, Santa Fe, New Mexico 87501  
Phone (505) 982-9212

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I N D E X

Page

J. D. LANG

Direct Examination by Mr. Kellahin 3

Cross Examination by Mr. Nutter 13

EXHIBIT INDEX

Offered      Admitted

Applicant's Exhibit One, Structure Map      5      13

Applicant's Exhibit Two, Tabulation      6      13

Applicant's Exhibit Three, Plot      9      13

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1 MR. NUTTER: We will call Case Number 5262.

2 MR. CARR: Case 5262 in the matter of Case 5262  
3 being reopened pursuant to the provisions of Order No. R-4822-B,  
4 which order extended the special pool rules for the Southwest  
5 Media-Entrada Oil Pool, Sandoval County, New Mexico, including  
6 a provision for one hundred and sixty acre spacing and  
7 proration units and a special depth bracket allowable of  
8 seven hundred and fifty barrels of oil per day.

9 MR. KELLAHIN: If the Examiner please, Jason Kellahin,  
10 Kellahin and Fox, appearing on behalf of Petro-Lewis Corporation,  
11 the operator of the Southwest Media-Entrada Pool. We have one  
12 witness to be sworn.

13 (THEREUPON, the witness was duly sworn.)

14  
15 J. D. LANG  
16 called as a witness, having been first duly sworn, was  
17 examined and testified as follows:

18  
19 DIRECT EXAMINATION

20 BY MR. KELLAHIN:

21 Q Would you state your name, please?

22 A I'm J. D. Lang.

23 Q By whom are you employed and in what position,  
24 Mr. Lang?

25 A I'm employed by Petro-Lewis Corporation in Denver.

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1 I'm the project engineer handling their West Texas and New  
2 Mexico production.

3 Q Are you a petroleum engineer?

4 A Yes, sir.

5 Q Have you ever testified before the Oil Conservation  
6 Commission of New Mexico?

7 A No, I haven't.

8 Q For the benefit of the Examiner would you briefly  
9 outline your education and your experience as a petroleum  
10 engineer?

11 A All right. I was graduated from the University of  
12 Wyoming in May of 1973. I was employed by Amoco Production  
13 Company from June of 1973 to May of 1976 as a production and  
14 reservoir engineer. In June of 1976 I went to work for Petro-  
15 Lewis Corporation and as I said, I'm a project engineer.

16 Q And you went to work for them in June?

17 A In June of this year.

18 Q Now, since you have been working for Petro-Lewis  
19 have you made a study of the operations in the Southwest Media-  
20 Entrada Pool?

21 A Yes, I have.

22 Q Have you reviewed the previous cases before the  
23 Commission involved in this Pool?

24 A Yes, I have.

25 Q Are you familiar with the background of the existing

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1 order which is before the Commission here today?

2 A. Yes, sir.

3 MR. KELLAHIN: Are the witness' qualifications  
4 acceptable?

5 MR. NUTTER: Yes, they are.

6 Q (Mr. Kellahin continuing.) Mr. Lang, referring  
7 to what has been marked as Petro-Lewis Exhibit Number One,  
8 would you identify that exhibit, please?

9 A. Exhibit One is a structure map showing the Media-  
10 Entrada Unit Pool and the Southwest Media-Entrada Pool. I  
11 would like to point out the location of the three wells we  
12 have completed in the Southwest Media Pool, being the Bone  
13 Federal No. 5 and Bone Federal No. 6, both located in the  
14 northwest quarter of Section 22. The third well completed in  
15 the Media-Entrada is the Miller Federal No. 722 which is  
16 located in the northeast quarter of Section 22.

17 Q So there is presently three wells completed in that  
18 pool?

19 A. Yes, that's correct.

20 Q Two on one one-hundred-and-sixty-acre unit and one  
21 on the other?

22 A. Right, the Miller Federal 722 is on a hundred-and-  
23 forty-acre tract.

24 Q A hundred-and-forty-acre unit because that was cut  
25 out to be included in the Media-Entrada Pool, is that correct?

1 A Yes, sir.

2 Q Now, the two pools were separated on the basis of a  
3 geological separation, do you find any evidence that that is  
4 not still the case?

5 A No, I don't.

6 Q In your opinion they are two separate pools?

7 A That's right.

8 Q Now, referring to what has been marked as Exhibit  
9 Number Two, would you identify that exhibit and discuss the  
10 information shown on it?

11 A All right, Exhibit Number Two is a tabulation of  
12 production from the Bone Federal No. 6 Well completed in the  
13 Southwest Media-Entrada Pool. I might note here that I have  
14 only included production history from this well, although we  
15 have three wells. Our Bone Federal No. 5 Well has virtually  
16 been shut in all of this past year.

17 Q Now, for what reason has it been shut in?

18 A The No. 5 Well was originally perforated throughout  
19 almost the whole oil column. There was about thirty-five  
20 foot oil pay and they perforated thirty foot and I believe this  
21 is the reason it has always been a high water producer. We  
22 attempted to work over that well by squeezing with a soft  
23 sensitive cement we hoped to set up in the water zone there  
24 and eliminate a lot of the water production. What happened  
25 instead was it really restricted all fluid production. So we

1 have plans for that well to probably re-perforate and possibly  
2 an acid job to increase production but for the time being  
3 we haven't and it has been, as I said, shut in virtually all  
4 of this last year.

5 Q Go ahead and discuss your Exhibit Number Two.

6 A The Miller Federal 722 Well was the most recently  
7 drilled well. It was completed the first of this year. We  
8 didn't have it on production until March and then starting in  
9 June we have had some market problems so this well hasn't been  
10 produced that much and we don't feel like we have enough data  
11 on it to really present at this time so I have left it off this  
12 tabulation also.

13 Q Now, on the basis of the experience you have had with  
14 that well up-to-date, does it conform to the production from  
15 the other wells?

16 A Yes, it does.

17 Q That is a high water volume with increasing oil  
18 production as you increased the overall fluid production?

19 A That's right. That well was initially -- upon  
20 initial completion it was equipped with a submersible pump so  
21 we haven't been able to evaluate the effects of the increase  
22 in the fluid withdrawal rates but having the submersible in  
23 it the oil cut stayed up higher than we've seen in these other  
24 wells.

25 Q Now, what about the Bone No. 6, the production appears

1 to have dropped off, can you explain that?

2 A. The drop in production shown on the tabulation here  
3 beginning in June is the result of the market problems we have  
4 had there in the field. Up until that time we have had four  
5 crude purchasers trucking our oil there and in June one quit  
6 taking oil and the other three have cut back some which has  
7 resulted in a drastic -- we've had a drastically reduced  
8 production in the field there and this Bone Federal No. 6 Well  
9 has actually been shut in about half of the time.

10 Q Now, how is the oil production from this pool being  
11 handled? Do you have a pipeline there?

12 A. No, we do not have a pipeline. As I said, all of  
13 the oil in the past has been trucked from the field. We do  
14 feel like we've just about got this marketing problem solved  
15 and we are close to making a new agreement for crude purchasing  
16 and the new agreement will also be trucked but only as far,  
17 I believe, as the Texas-New Mexico Pipeline.

18 Q Does the quality of the oil involved have any  
19 effect on your available market?

20 A. Well, it's got a relatively high pour point of  
21 approximately fifty degrees, so it is important to keep the  
22 oil above that temperature. We have also been experimenting  
23 with a chemical, a pour point depressant, to help make the oil  
24 easier to handle.

25 Q Is that one of the reasons, though, that the

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1 purchasers declined to take all of your production at this  
2 time?

3 A. There has been a problem. Also the nature of the oil  
4 is such that the refineries in the area, this New Mexico area,  
5 aren't equipped to get good products, the higher INTS, from  
6 the oil. It really takes a refinery that has hydro-crackers  
7 that can break out these lighter INTS. The oil would typically  
8 be better refined in a Gulf Coast type refinery.

9 Q But that's not available to you?

10 A. No, if we get into the Texas-New Mexico Pipeline  
11 they can reach the refinery.

12 Q And that would solve your problem?

13 A. Yes, sir.

14 Q Do you anticipate that you will have this contract  
15 in the near future?

16 A. Yes, it will be real soon.

17 Q Now, referring to what has been marked as Exhibit  
18 Number Three would you identify that exhibit?

19 A. Exhibit Three is a plot of the percent oil cut  
20 versus cumulative oil production for this Bone Federal No. 6  
21 Well of which I tabulated production on Exhibit Two. What  
22 this shows is the effect of our withdrawal rates on the percent  
23 oil cut that we see in the well. The graph like this  
24 has been shown you before and I merely up date it by showing  
25 another year's production and what we have seen. My review

1 of what this graph shows, as you can see at the top there,  
2 it was initially completed with a beam pump and produced an  
3 average of six hundred and fifty barrels a day. And you can  
4 see that we saw a drastic decrease in oil cut through this  
5 period. In June of 1975 after producing approximately forty-  
6 five thousand barrels of oil, we changed the two-and-a-half-  
7 inch tubing to three-inch tubing and put in a larger pump,  
8 increasing the fluid withdrawal rate to a thousand and fifty  
9 barrels a day on the average and the effect of this was to  
10 arrest the decline or slow down the decline of oil percentage.  
11 Then in March of this year, after producing a hundred thousand  
12 barrels of oil, we pulled the beam pump and we've equipped  
13 the well with a submersible pump and now it produces eighteen  
14 hundred barrels of fluid a day.

15 And here although we can see an increase in oil  
16 cut the oil has remained pretty stable.

17 I would like to explain the last three points on  
18 this graph which refer to the oil cuts calculated for June,  
19 July and August. As I said, these months are the ones we  
20 have had this marketing problem and this Bone Federal No. 6  
21 Well has been shut in roughly half of the time. The way these  
22 oil cuts are figured or calculated to be plotted on this  
23 graph, you look at the total oil and water production monthly  
24 for oil and water production and you calculate the percent  
25 oil cut from those numbers. What we found happening in the

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1 field when these wells were shut in for a few days and put  
2 back on production they will produce almost a hundred percent  
3 water maybe for a couple of days before the oil cut comes back  
4 up and we see the past performance so we produced a lot of  
5 extra water by having to shut this well in and having to bring  
6 it back on and this water is calculated here which reduces the  
7 oil cut.

8 MR. NUTTER: Is that the drastic increase or decrease  
9 in oil cut that is shown from about a hundred and thirty-nine  
10 thousand barrels up to a hundred and fifty thousand barrels?

11 A. Yes, it is.

12 MR. NUTTER: And that's the interval that you have  
13 shown here on Exhibit Number Two, three months of two to three  
14 thousand barrels per month?

15 A. Yes, these last three points on Exhibit Three  
16 correspond to the June, July and August calculations of oil  
17 cut and that is the three months that we have had drastically  
18 reduced production.

19 MR. NUTTER: Thank you.

20 Q (Mr. Kellahin continuing.) Mr. Lang, on the basis  
21 of your testimony in regard to this exhibit, does this reflect  
22 that the special depth bracket allowable is necessary for the  
23 successful operation of this pool?

24 A. I believe it shows that.

25 Q The depth bracket allowable is seven hundred and

1 fifty barrels per day at the present time, is that adequate?

2 A. Yes, it is.

3 Q. In your opinion should it be continued?

4 A. Yes, it should.

5 Q. What is the result if it is decreased?

6 A. Well, I believe we have seen from our analysis of this  
7 oil cut versus the withdrawal rates, with lower withdrawal  
8 rates you see a steeper decline in the oil cut which we feel  
9 will result in less reserves being recovered so in that manner  
10 I believe it is important.

11 Q. Now, the spacing in this pool is a hundred and sixty  
12 acre spacing proration units. In your opinion would it be  
13 economical to produce this pool on the basis of forty acre  
14 units?

15 A. I don't believe so, assuming reservoir characteristics  
16 which are good, we have good porosity ranging about a twenty-  
17 three percent average, good permeability in the order of  
18 three hundred millidarcy and an active water drive. I feel  
19 the hundred and sixty acre spacing is adequate to officially  
20 drain the reservoir. Also being an active water drive I'm  
21 afraid that the wells, if you were to develop on forty acre  
22 spacing, the wells drilled on the flank of the field there  
23 really wouldn't be economical.

24 Q. Would they go to water very quickly?

25 A. I believe they would.

1 Q Would drilling the pool on the basis of forty acre  
2 units result in the recovery of any additional oil?

3 A I don't believe so.

4 Q Were Exhibits One, Two and Three prepared by you  
5 or under your supervision?

6 A Yes, they were.

7 MR. KELLAHIN: At this time I offer into evidence  
8 Exhibits One, Two and Three.

9 MR. NUTTER: Applicant's Exhibits One through Three  
10 will be admitted into evidence.

11 (THEREUPON, Applicant's Exhibits One through  
12 Three were admitted into evidence.)

13 MR. KELLAHIN: That's all we have on direct examina-  
14 tion, Mr. Nutter.

15  
16 CROSS EXAMINATION

17 BY MR. NUTTER:

18 Q Mr. Lang, you mentioned that the 722 has not produced  
19 very much, what has been the nature of the problem with that  
20 well?

21 A I'm sorry, you misunderstood me. The 722 well is  
22 being produced only the reduction in production has been due  
23 to this marketing problem the last year. This well was just  
24 drilled in January of this year and they had it on production  
25 in March.

1 Q Well, now, March was a pretty good month as far as  
2 the No. 6 was concerned, was it a good month for the 722 also?

3 A Yes, it was. Our initial potential test on that well  
4 was nine hundred oil and two hundred water per day.

5 Q How did this do during April and May then, those  
6 were good months for the No. 6 also?

7 A Well, presently it produces about five hundred oil  
8 and seven hundred water and it has been a gradual decrease in  
9 oil, it was top allowable there for two or three months.

10 Q The number 722?

11 A The 722. Now, the water cut has increased to a  
12 point where we would need to put a bigger pump in it to make  
13 the total allowable.

14 Q It's time for one of these changes like you showed  
15 for the No. 6?

16 A Right. We want to be sure our market problem is  
17 resolved before we spend money on this equipment, though.

18 Q Well, now, it appears that for the last almost  
19 hundred thousand barrels of production from the No. 6 that  
20 the oil cut has leveled off at about twenty-five percent oil  
21 and seventy-five percent water, is that about what the 722  
22 makes?

23 A No, the oil cut on it is still up around thirty  
24 percent, so it is a little higher on this and it has produced  
25 to date about sixty thousand barrels of oil so if you compared

1 it it's running a little bit higher than this Bone Federal 6.

2 Q I see. And the No. 5 will be reworked some day?

3 A We plan to -- that hinges on our marketing problem  
4 also. Right now the No. 5 and No. 6 being in the same proration  
5 unit they share the same allowable and the No. 6 is the more  
6 capable well. Given a market we may well rework the No. 5  
7 Well.

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

10 (THEREUPON, the witness was excused.)

11 MR. NUTTER: Do you have anything further, Mr.  
12 Kellahin?

13 MR. KELLAHIN: Yes, Mr. Nutter, at this time I  
14 don't think it's really necessary to offer the record in the  
15 previous hearings, this being the same case, 5262. We have had  
16 three orders issued up to the present time, that is Order  
17 R-4822 and 4822-A and B and this is then the fourth time we  
18 have been before the Commission and I believe, although it's  
19 not advertised as such, I think it would be proper at this  
20 time to enter a permanent order with whatever provision might  
21 be indicated for filing any special reports that the Commission  
22 might want in order to keep track of this operation.

23 MR. NUTTER: I see. Thank you. Does anyone else have  
24 anything to offer in Case 5262? We will take the case under  
25 advisement.

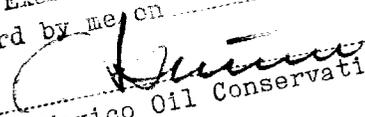
REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Certified Shorthand Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

  
Sidney F. Morrish, C.S.R.

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Phone (505) 982-9212

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5262, heard by me on 9/29, 19 76.  
  
New Mexico Oil Conservation Commission, Examiner

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