CASE 7165: EL PASO EXPLORATION COMPANY FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY, NEW MEXICO

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Case No.

7185

Application

Transcripts

Small Exhibits

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

POST OFFICE BOX 2000 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 (305) \$27-9434

April 8, 1981

Hr. Dave Burleson, Attorney El Paso Natural Gas Company P. O. Box 1492 El Paso, Texas 79978

Re: CASE NO. 7185 ORDER NO. R-6634

Applicant:

El-Paso Exploration Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Pours very truly; JOE D. RAMEY Director

JDR/fd

Copy of order also sent to:

Hobbs OCD	
Artesia OCD	
Aztec OCD	

Other

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING Called by the Oil Conservation Division for the purpose of Considering:

CASE NO. 7185 Order No. R-6634

APPLICATION OF EL PASO EXPLORATION Company for downhole commingling, San Juan County, New Mexico.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on Harch 11, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this <u>7th</u> day of April, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant requested that the application be amended for purposes of this hearing from El Paso Exploration Company to El Paso Natural Gas Company.

(3) That such amendment should be approved.

(4) That El Paso Natural Gas Company is the owner and operator of the Turner Hughes Well No. 17, located in Unit H of Section 10, Township 27 North, Range 9 West, NMPN, San Juan County, New Mexico.

(5) That the applicant seeks authority to commingle Blanco Mesaverds and Basin-Dakota production within the wellbore of the above-described well.

(6) That from the Blanco Mesaverde zone, the subject well is capable of low rates of production only. -2-Case No. 7185 Order No. R-6634

(7) That from the Basin-Dakota zone, the subject well is capable of low rates of production only.

(8) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(9) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(10) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(11) That in order to allocate the commingled production to each of the commingled <u>zones in the subject well</u>, 73 percent and 64 percent of the commingled gas and oil production, respectively, should be allocated to the Blanco Meseverde zone, and 27 percent and 36 percent of the commingled gas and oil production, respectively, to the Basin-Daketa zone.

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IT IS THEREFORE ORDERED:

(1) That the applicant, El Paso Natural Gas Company, is hereby authorized to commingle Blanco Mesaverde and Basin-Daketa production within the wellbore of the Turner Hughes Well No. 17, located in Unit H of Section 10, Township 27 North, Range 9 West, NHPM, San Juan County, New Mexico.

(2) That 73 percent and 64 percent of the commingled gas and oil production, respectively, shall be allocated to the Blanco Mesaverde zone and 27 percent and 36 percent of the commingled gas and oil production, respectively, shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Artec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may down necessary.



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1 2 3 4	ENERGY ANI OIL CONS STATE I SANTA 11 I	D MINERALS DEPARTMENT SERVATION DIVISION LAND OFFICE BLDG. FE, NEW MEXICO March 1981	Γ.
6 7 8	Application of El Company for downh	ole commingling,)	CASE 7185
10 11 12	BEFORE: Richard L. Stamets	, , , , , , , , , , , , , , , , , , ,	
13 14 15			
16 17 18	For the Oil Conservation Division:	Ernest L. Padilla Legal Counsel to State Land Office Santa Fe, New Mex	the Division Bldg.
19 20 21	For the Applicant:	David T. Burleson Principal Counsel El Paso Natural (
22 23 24		El Paso, Texas 79	978
25			
	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 21 22 23 24	ENERGY AND OIL CONS STATE 1 SANTA 11 1 EXA EXA EXA EXA EXA EXA EXA EXA EXA EXA	STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO 11 March 1981 EXAMINER HEARING IN THE MATTER OF: Application of El Paso Exploration Company for downhole commingling, San Juan County, New Mexico. BEFORE: Richard L. Stamets BEFORE: Richard L. Stamets For the Oil Conservation Division: For the Applicant: For the Applicant: For the Applicant: For the Applicant: For the State Land Office Santa Fe, New Mexico For the Applicant: For the Applicant: For the Applicant: For the Applicant: For the Applicant: Company for the Applicant for the Applican

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2	MR. STAMETS: We'll call next Case 7185,
3	application of El Paso Exploration Company for downhile com-
4	mingling, San Juan County, New Mexico.
5	MR. BURLESON: David Burleson, and we
Ó	have one witness.
7	
8	(Witness sworn.)
9	
10	PAUL W. BURCHELL
11	being called as a witness and being duly sworn upon his oath,
12	testified as follows, to-wit:
13	
14	DIRECT EXAMINATION
15	BY MR. BURLESON:
16	Q. Please state your name and where you
17	reside.
18	A. My name is Paul W. Burchell and I reside
19	in El Paso, Texas.
20	0. By whom are you employed and in what
21	capacity?
22	A. I'm employed by the El Paso Natural Gas
23	Company and I'm a Senior Engineer in the Production Control
24	Department.
25	MR. BURLESON: Mr. Examiner I'd like

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4 1 2 to call to your attention at this time that although we asked 3 that this hearing be set in the name of El Paso Exploration 4 Company, which is a wholly owned subsidiary of El Paso Natural 5 Gas Company, El Paso Natural Gas Company itself should be the 6 applicant in this case. We would like the order to so reflect. 7 MR. STAMETS: Okay, I don't anticipate 8 that there's any -- I don't see any problem with that, and 9 we just simply want the order to reflect that El Paso Natural 10 Gas Company will be the operator. 11 MR. BURLESON: Yes, and we amend our 12 application in that respect. 13 MR. STAMETS: Okay. 14 MR. BURLESON: To indicate El Paso 15 Natural Gas Company rather than El Paso Exploration Company 16 is the operator, or the applicant. 17 MP. STAMETS: Okay, we'll accept that 18 amendment and make that change. 19 As an engineer have you previously Q. 20 testified before this Division or one of its examiners? 21 A. Yes, I have. 22 And were your qualifications accepted Q. 23 by the Division at those times? 24 They were, sir. A. 25 Are you familiar with this case, Number Ŷ.

1	5
2	7185?
3	A. Yes, I am.
4	MR. BURLESON: Mr. Examiner, we ask that
5	the witness' qualifications be accepted.
6	MR. STAMETS: The witness is considered
7	qualified.
8	Q. Who is the operator of this well in this
9	case?
10	A. The El Paso Natural Gas Company is the
11	operator.
12	Q. What is El Paso Natural Gas Company
13	seeking in its application?
14	A. We are seeking permission to downhole
15	commingle production of the Blanco Mesaverde Gas Pool with
16	production of the Basin Dakota Gas Pool and to produce this
17	gas through one meter in the Turner Hughes No. 17 Well.
18	This well is located in Unit H of Section
19	10, Township 27 North, Range 9 West, San Juan County, New
20	Mexico. This well presently produces from both of these
21	formations as a dual completed well, and El Paso proposes
22	that the allocation of gas to each formation be divided in
23	a manner that will be explained later on in my testimony.
24	Q. Has it been determined that there is
25	communication between the two formations which are producing

1 2 in the well that you just mentioned? 3 Yes, the 1980 annual packer leakage test Ā. 4 indicated communication between the two producing zones in 5 the dually completed well. 6 Is there any indication from any tests Ω 7 which have been run as to where this leak may exist? R A. In the -- yes, in a way. The temperature 9 survey was run in the well and it showed a possible leak on 10 the Dakota 2-3/8ths inch tubing. 11 It could also be a packer leak, as well, Q. 12 is that --13 A. And it could --14 --- correct? a 15 It could be where it's very, very close A. 16 to one or the other, or both. 17 But the indication is that the leak Q. 18 occurred at a depth which would embrace --19 λ. Both. 20 -- the tubing and the packer, so you're Q. 21 not sure which one, but you think it's one or the other? 22 Yes, sir, it will be shown on an exhibit A. 23 here. 24 Why is El Paso asking to commingle the Q 25 production from these two zones?

1 7 Α. Downhole commingling is considered by 2 El Paso to be the most conservative and economic method to 3 undertake, mainly due to the very low productivity of both zones, and of course, the high cost of repairing the suspected 5 leak in the well. 6 0. Do you have an exhibit which indicates 7 the equipment that is presently in the well? 8 Q A. Yes, sir. Would you please explain what the ex-10 Q. hibit shows? 11 The exhibit is a diagrammatic sketch of 12 A. 13 the equipment, which has been marked as El Paso Natural Gas Company's Exhibit Number One. 14 15 The exhibit shows our two strings of 16 tubing installed in the Turner Hughes No. 17 Well. It also 17 shows that there's a Baker Model "F" production packer, and 18 it's set at 4665 feet and the well is perforated in the Mesa-19 verde from 4441 feet to 4608 feet. These are total gross perfs, and that's above the packer. And the Dakota is per--20 forated from 6568 feet to 6734 feet, gross, and that's per-21 forated below the packer. 22 23 The Mesaverde side of the well produces 24 through a 1-1/4 inch tubing and that tubing is set at 4620

feet, while the Dakota is produced through 2-3/8ths tubing.

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2	And that tubing is set at6707 feet. As noted on the lefthand
3	side of the schematic diagram, a temperature survey indicated
4	cooling, it started cooling at 4500 feet and it showed this
5	anomaly all the way down to 5000 feet.
6	So we really don't know if there is a
7	leak in the packer or a leak in the Dakota 2-3/8ths inch
8	tubing, or maybe if they're both at fault.
9	Q. Have you prepared an exhibit which indi-
10	cates some production history from this well?
11	A. Yes, I have.
12	Q And that would be Exhibit Number Two?
13	A. Yes, sir.
14	Q. Would you please explain what that
15	exhibit indicates?
16	A. The El Paso Natural Gas Company's Exhibit
17	Number Two shows the Basin Dakota and the Blanco Mesaverde
18	production decline curves from 1970 to 1980. The curves are,
19	the plots on the curves are based on yearly daily average.
20	which is in Mcf of gas per day, and that side of the graph
21	is shown on the lefthand side with the yearly daily average
22	production.
23	And the three curves that are shown can
24	be distinguished, first they're noted as such, the Basin
25	Dakota curve on the bottom has circular or excuse me,

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square points, plot points. The, more or less, the middle curve which is shown as the Blanco Mesaverde, has circular points on the -- on the curve, and the top graph, or plot, is in triangles, and it shows the percent Mesaverde, and the percent Mesaverde can be read on the top righthand side of the plot.

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Have you prepared another exhibit indicating the monthly production figures for the two zones for the period April, 1979, through December, 1980?

Α. Yes. , I'd like to point out one thing to the Examiner before going to Exhibit Number Three. I'm sorry but first of all, both the Mesaverde and the Dakota side of the well were declining at a normal rate until the year 1979, 14 and as you can see, their curves drastically went in different directions, which indicated that sometime after 1979, or sometime during 1980, the leak had occurred in the well.

The percent of the Mesaverde that has been producing from 1970 to 1979, so from 1970 through 1979, the Mesaverde averaged approximately 73 percent of that well' total production.

And in colling the Examiner's attention to Exhibit Number Three, it is the same type of information only on a more detailed manner. I've shown it, the time period, in months rather than years to help point out the --

10 1 2 that leak which occurred in the well. The -- seemed like the 3 well was producing under normal conditions in January of 1980 and then sometime during February the leak occurred and the well characteristic as some Mesaverde gas being theived by the Dakota side of the well. El Paso then ran a packer leakage test in March of 1980 and it certainly verified the erratic behavior of the well, that a leak had taken place. 10 Q. Indicated there was communication between 11 the Mesaverde --12 There was communication. A. 13 -- and the Dakota? 0. 14 A. Definitely. 15 The twelve months -- the twelve -- the 16 months that were prior to -- the twelve months for all of 17 1979, which is prior to the leak, the Mesaverde averaged 18 162 Mcf of gas per day and the Dakota made 69 Mcf of gas per 19 day, and this was a combined average volume of 231 Mcf of gas 20 per day being produced from the well. 21 There's one other thing that we might Q. 22 mention here. Was there any differential in the line pressure 23 against which these two zones were producing during the period 24 covered by Exhibit Number Three? 25 Yeah, I might point out to the Division A.

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that the well's total combined production of 231 Mcf of gas per day for all of 1979, the total volume decreased after the well experienced its communication between the two zones, and it is felt that this total decrease in production results from the fact that coincidentally the line pressure had gone from 225 - 30 pounds and around March it went up -- March or April it went up to approximately 255. So that would account for some decrease, and I believe that the fact that the well is leaking fluids from probably the deeper zone, in adding to 11 the annular side of its -- of the well, and probably there 12 is not enough gas energy on the Mesaverde side to unload the 13 liquids as efficiently.

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14 So because of these two reasons I think 15 the well has decreased in volume.

Now would the ability of the well to Q. unload the liquids in the Mesaverde, which you mentioned a moment ago, be improved by what we're proposing in this cause?

Yes, this is one of the main -- main 21 reasons that we are looking toward commingling that would 22 have a more efficient method of production. We would have 23 a larger volume of gas going through one tubing instead of 24 two tubings and thus the velocity would help increase the 25 production, as we now see it.

1		12
2	Q	The velocity would be greater and con-
3	sequently	
4	A.	Right.
5	Ç	the well's ability to remove liquids
6	would be enhanced	
7	λ.	Right.
8	Q.	is that correct?
<u>9</u>	A .	Yes, sir.
10	Q.	What conclusions do you draw from an
11	examination of your e	exhibits Two and Three?
12	Δ.	In my opinion the flow rates for the
13	Dakota and the Mesave	erde are small and I should point out
14	that both the Mesave	rde and the Dakota formations are classi-
15	fied and prorated as	marginal.
16	Q.	Do you have any information regarding
17	pressures and fluid	characteristics with respect to the two
18	zones that are compl	eted in this well?
19	A.	Yes, sir.
20	õ	The well produces about ten barrels of
21	water per month from	both sides of the well. That's ten
22	barrels of water per	month.
23	· · · · · · · · · · · · · · · · · · ·	And with regards to the oil, during
24	1979 the Mesaverde a	veraged 21,7 barrels of oil per month
25	and the Dakota avera	ged 12.3 barrels of oil per month. Thus

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ΞĴ 1 2 the Mesaverde made 64 percent of the total oil production 3 during 1979. Now with regard to pressures, based on 5 the extrapolation of State tests, the Mesaverde side of the 6 well has a shut-in tubing pressure of 358 psia as of October 7 the 1st, 1980. The corresponding bottom hole pressure is 8 estimated to be 430 psia. 9 Now also based on extrapolation of State 10 tests the Dakota shut-in tubing pressure was 520 psia with a 11 corresponding bottom hole pressure estimated at 659 pounds 12 per square inch absolute. 13 Now you mentioned that you have extrapo-Ω 14 lated State pressure tests for past periods to arrive at the 15 inferred pressures at the present time. 16 Yes, sir. A. 17 At what times did you have -- what was Ç. 18 the last period during which you had actual measured pressures <u>19</u> from which you could make your extraploation for these two 20 zones? 21 A. Well, prior to the leak we had it on 22 the -- we test the well every other year in the formations; 23 one formation one year and then the next formation, and so 24 on, and I think it was in 1978 the Mesaverde side of the 25 well was tested and in 1979 the Dakota side of the well was

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2	tested, and then in 1	1980 we also had a test on the Mesaverde
3	side again.	
4	Ď	But that may not have been
5	A	It was the last.
6	Q.	representative
7	Α.	No.
8	<u></u>	since there was communication at that
9	time.	
10	A.	No. Coincidentally, it did fit the
11	extrapolation on the	plot. That was just we wouldn't have
12	used it if it didn't	fit.
13	¢	And then I assume that you had measured
14	pressures for each t	wo-year period for each of the individual
15	zones prior to these	
16	A.	All the way to
17	Q.	two periods that you mentioned.
18	А.	Yes, sir.
<u>19</u>	Q.	In other words, during 1977 you had a
20	pressure test for th	e Dakota.
21	A.	Dakota, yes, sir, and so forth.
22	۵,	And so on? '76 for the Mesaverde and
23	so forth?	
24	A	Right.
25	<u>Q</u> .	Do you believe that the fluid and pres-

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sure characteristics would be compatible should commingling be approved in this application today?

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A Yes, sir, because of a small pressure differential and the presence of small amounts of liquids, I do not expect any migration of fluids or gas and particularly if the well is continuously produced. I'd point out here that the ratio of bottom hole pressures is 1.5 to 1.

Q. What advantages would inhere in permitting commingling?

A. There are really two main advantages. First it is believed that by commingling this volume of gas, which I indicated was 231 Mcf per day total, it will aid in lifting the liquids and neither formation would have to be prematurely abandoned.

As of October the 1st, 1980, it is estimated that the Mesaverde has around 1,366 MMCF of remaining gas reserves, and the Dakota has around 492 MMCF of remaining reserves.

And I believe these reserves can be recovered through commingling. It should be noted that the Mesaverde reserves present 73 percent of the well's total remaining gas reserves.

Q. Excuse me, now you're talking about gas? Yeah, you're speaking of gas reserves and not -- not oil re-

serves at this point?

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3 No, this is just gas, based on these A. remaining reserves. So 73 percent of the well's total remaining gas reserves belongs to the Mesaverde, and this is, by the way, coincidental with the well's physical production per-7 centage, which I indicated earlier, 73 percent for the years 1970 through 1979.

And then, of course, besides the efficiency and the production, the savings in the -- in not repairing the indicated leak would be considerable. To repair and dually complete the existing well would cost \$33,000; however, it will only cost about \$20,000 to downhole commingle the Mesaverde and the Dakota.

And I would like to point out that even if El Paso were to spend the money, the additional monies and repair the well and dually complete it, that there is really no guarantee that somewhere down -- down in the road or in the near future, that it wouldn't start leaking again. We'd still have the same problem.

In other words, our experience has been Q. that given a fairly lengthly period of time it could be anticipated that there could be a packer leak or another leak.

Right.

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Between the two zones.
 A It could happen.
 Do you propose a formula by which the
 gas and condensate production would be apportioned to each of these two zones?
 A Yes, and based on my prior testimony

17.

related to the average production of oil and the well's remaining reserves, gas reserves, it is recommended that 73 percent of the well's gas production and 64 percent of the oil production be attributed to the Blanco Mesaverde Pool, and then of course, the remaining gas and oil production be allocated to the Basin Dakota side of the well.

Would you indicate what the ownership
 is as between these two zones, the Mesaverde and the Dakota?

 A. Yes, sir. El Paso Natural Gas Company
 owns 93.75 percent working interest in both formations and
 a Mr. Snyder Vogel owns 6.25 percent working interest in
 both formations. There is one Federal lease, USA-SFO 79937,
 which covers the entire 320 acres dedicated to this well.

 There is a 25 percent overriding royalty interest, which is common in both zones. We have contacted Mr. Vogel and all of the overriding royalty interest people and they have approved of our proposed commingling of this well.

So in other words, no matter to which

<u>19</u>

Q.

18 1 2 zone the production is attributed, it will be distributed the 3 same way as it's currently being distributed. Yes, sir, yeah, total money is right. 4 A. 5 In your opinion would the granting of Ŋ. 6 this application protect correlative rights and prevent wasted 7 Yes, sir. A. 8 Do you have anything further to add in a 9 this case? 10 No, I do not. A. 11 Were Exhibits One, Two, and Three pre-**Q**. 12 pared by you or under your supervision? 13 Yes, they were. A. 14 MR. BURLESON: Mr. Examiner, we ask that 15 Exhibits One, Two, and Three be accepted into evidence at 16 this time, and that concludes our direct examination. 17 MR. STAMETS: The exhibits will be ad-18 mitted. 10 20 CROSS EXAMINATION 21 BY MR. STAMETS: 22 Mr. Burchell, you've said that the Q. 23 water production was ten barrels per month from both sides. 24 Do you mean the total was twenty or the combined stream is 25 ten?

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1	19
2	A. The combined stream is ten. I'm sorry,
3	and that was per month.
4	Q All right. On Exhibit Number Three, the
5	general trend seems to show that the well is not able to
6	produce the commingled stream for whatever reason as well as
7	it was able to produce the zones separately, except for the
8	month of March, and during the month of March it was able
9	to achieve a production that was higher
10	A. Right.
11	Q than the average before. What condi-
12	tions led to that high rate of production in March?
13	A. Unless the well started I do remember
14	that, like during the month of February when it did occur,
15	and the well indicated that there was some liquids building
16	up enabling the well to flow, because from the number of
17	days during that month that the well was open, well open but
18	no flow, it was several more days than actually what we had
19	measured for gas flowing, so I assume during that particular
20	month that the liquids just prevented the well from unloading
21	and all of a sudden the next month they in the month of
22	March they did unload, and caused maybe a higher higher
23	percentage of gas being or a higher amount of gas being
24	produced, but then just at that time, starting in April, the
25	well both wells produced into a common pipeline, and like

1 I said, it went from 230 pounds per square inch and it ir creased, the pipeline increased about 255. That's why I it just tailed off at a lower rate. 5 0 When you recomplete this well what v you du, run a single string of tubing to the Dakota zone? 7 A We would propose to run a single 2-3 inch tubing down to the bottom of perfs of the Dakota for tion. 16 MR. STAMETS: Any other questions of the vitness? He may be excused. 11 Anything further in this case? 13 (Hearing concluded.) 14 17 15 (Hearing concluded.) 16 17 17 18 18 19 19 12 10 11	20
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	2	CERTIFICATE
	3	
	4	I, SALLY W. BOYD, C.S.R., DO HEREPY CERTIFY that
	5	the foregoing Transcript of Hearing before the Oil Conserva-
	8	tion Division was reported by me; that the said transcript
	7	is a full, true, and correct record of the hearing, prepared
	8	by me to the best of my ability.
	9	
· 8 . · · · · · · · · · · · · · · · · · · ·	10	Soely W. Boyd C.S.R.
VD, C 193-B 46100 F7 455-7409	11	
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		20 For	the Applicant:	David T. Burleson	ESG
		21		Principal Counsel	
				El P aso Natural G	as Company
		~		P. O. Box 1492	
		22		El Paso, Texas 79	978
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2	MR. STAMETS: We'll call next Case 7185,
3	application of El Paso Exploration Company for downhile com-
4	mingling, San Juan County, New Mexico.
5	MR. BURLESON: David Burleson, and we
6	have one witness.
7	
8	(Witness sworn.)
9	
10	PAUL W. BURCHELL
11	being called as a witness and being duly sworn upon his oath,
12	testified as follows, to-wit:
13	
14	DIRECT EXAMINATION
15	BY MR. BURLESON
16	Q Please state your name and where you
17	reside.
18	A. My name is Paul W. Burchell and I reside
19	in El Paso, Texas.
20	0. By whom are you employed and in what
21	capacity?
22	A. I'm employed by the El Paso Natural Gas
23	Company and I'm a Senior Engineer in the Production Control
24	Department.
25	MR. BURLESON: Mr. Examiner I'd like

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ĩ 2 to call to your attention at this time that although we asked 3 that this hearing be set in the name of El Paso Exploration 4 Company, which is a wholly owned subsidiary of El Paso Natural 5 Gas Company, El Paso Natural Gas Company itself should be the 6 applicant in this case. We would like the order to so reflect. 7 MR. STAMETS · Okay, I don't anticipate 8 that there's any -- I don't see any problem with that and 9 we just simply want the order to reflect that El Paso Natural 10 Gas Company will be the operator. 11 MR. BURLESON: Yes, and we amend our 12 application in that respect. 13 MR. STAMETS Okay. 14 MR. BURLESON: To indicate El Paso 15 Natural Gas Company rather than El Faso Exploration Company 16 is the operator, or the applicant. 17 MR. STAMETS: Okay, we'll accept that 18 amendment and make that change. 19 as an engineer have you previously Ω. 20 testified before this Division or one of its examiners? 21 A. Yes, I have. 22 And were your qualifications accepted 0. 23 by the Division at those times? 24 A. They were, sir. 25 Are you familiar with this case Number Q.

. . . .

1	2
2	7185?
3	A. Yes, I am.
4	MR. BURLESON: Mr. Examiner, we ask that
5	the witness' qualifications be accepted.
6	MR. STAMETS: The witness is considered
7	qualified.
8	Q. Who is the operator of this well in this
9	case?
10	A. The El Paso Natural Gas Company is the
11	operator.
12	Q. What is El Paso Natural Gas Company
13	seeking in its application?
14	A. We are seeking permission to downhole
15	commingle production of the Blanco Mesaverde Gas Pool with
16	production of the Basin Dakota Gas Pool and to produce this
17	gas through one meter in the Turner Hughes No. 17 Well.
18	This well is located in Unit H of Section
19	10, Tewnship 27 North, Range 9 West, San Juan County, New
20	Mexico. This well presently produces from both of these
21	formations as a dual completed well, and El Paso proposes
22 22	that the allocation of gas to each formation be divided in
23	a manner that will be explained later on in my testimony.
24	Q Has it been determined that there is
25	communication between the two formations which are producing

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6 1 2 in the well that you just mentioned? 3 A. Yes, the 1980 annual packer leakage test 4 indicated communication between the two producing zones in 5 the dually completed well. 6 Is there any indication from any tests Q. 7 which have been run as to where this leak may exist? 8 In the -- yes in a way. The temperature À. 9 survey was run in the well and it showed a possible leak on 10 the Dakota 2-3/8ths inch tubing. 11 It could also be a packer leak as well, Q. 12 is that --13 And it could ---A 14 -- correct? Q. 15 Γ. It could be where it's very, very close ĺÓ to one or the other, or both. 17 But the indication is that the leak 0. 18 occurred at a depth which would embrace --19 Â. Both. 20 -- the tubing and the packer, so you're Q. 21 not sure which one, but you think it's one or the other? 22 Yes, sir, it will be shown on an exhibit λ. 23 here. 24 Why is El Paso asking to commingle the 0 25 production from these two zones?

1 7 2 Α. Downhole commingling is considered by 3 El Paso to be the most conservative and economic method to undertake, mainly due to the very low productivity of both 4 zones, and of course, the high cost of repairing the suspected 5 leak in the well. 7 Q. Do you have an exhibit which indicates 8 the equipment that is presently in the well? A. Yes, sir. 10 Would you please explain what the ex-Q. 11 hibit shows? 12 The exhibit is a diagrammatic sketch of Α. 13 the equipment, which has been marked as El Paso Natural Gas 14 Company's Exhibit Number One. 15 The exhibit shows our two strings of 16 tubing installed in the Turner Hughes No. 17 Well. It also 17 shows that there's a Baker Model "F" production packer, and 18 it's set at 4665 feet and the well is perforated in the Mesa-钤 verde from 4441 feet to 4608 feet. These are total gross 20 perfs, and that's above the packer. And the Dakota is per-21 forated from 6568 feet to 6734 feet gross and that's per-22 forated below the packer. 23 The Mesaverde side of the well produces 24 through a 1-1/4 inch tubing and that tubing is set at 4620

25 feet, while the Dakota is produced through 2-3/8ths tubing.

3 1 2 And that tubing is set aL6707 feet. As noted on the lefthand 3 side of the schematic diagram, a temporature survey indicated 4 cooling, it started cooling at 4500 feet and it showed this 5 anomaly all the way down to 5000 feet. So we really don't know if there is a 7 leak in the packer or a leak in the Dakota 2-3/8ths inch 8 tubing, or maybe if they're both at fault. 9 0. Have you prepared an exhibit which indi-10 cates some production history from this well? 11 ħ. Yes, I have. 12 0 And that would be Exhibit Number Two? 13 A. Yes, sir. 14 Q. Would you please explain what that 15 exhibit indicates? 16 The El Paso Natural Gas Company's Exhibit A. 17 Number Two shows the Basin Dakota and the Blanco Mesaverde 18 production decline curves from 1970 to 1980. The curves are, 19 the plots on the curves are based on yearly daily average; 29 which is in Mcf of gas per day, and that side of the graph 21 is shown on the lefthand side with the yearly daily average 22 production. 23 And the three curves that are shown can 24 be distinguished, first they're noted as such, the Basin 25 Dakota curve on the bottom has circular -- or excuse me.

square points, plot points. The, more or less, the middle curve which is shown as the Blanco Mesaverde, has circular points on the -- on the curve, and the top graph, or plot, is in triangles, and it shows the percent Mesaverde, and the percent Mesaverde can be read on the top righthand side of the plot.

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Q. Have you prepared another exhibit indicating the monthly production figures for the two zones for the period April, 1979, through December, 1980?

A. Yes. I'd like to point out one thing to the Examiner before going to Exhibit Number Three. I'm sorry but first of all, both the Mesaverde and the Dakota side of the well were declining at a normal rate until the year 1979, and as you can see, their curves drastically went in different directions, which indicated that sometime after 1979, or sometime during 1980, the leak had occurred in the well.

The percent of the Mesaverde that has been producing from 1970 to 1979, so from 1970 through 1979. the Mesaverde averaged approximately 73 percent of that well's total production.

And in calling the Examiner's attention to Exhibit Number Three, it is the same type of information only on a more detailed manner. I've shown it, the time period, in months rather than years to help point out the --
10 1 2 that leak which occurred in the well. The -- seemed like the 3 well was producing under normal conditions in January of 1980 and then sometime during February the leak occurred and 5 the well characteristic as some Mesaverde gas being theived 6 by the Dakota side of the well. 7 El Paso then ran a packer leakage test 8 in March of 1980 and it cortainly verified the erratic 9 behavior of the well that a leak had taken place. 10 Q. Indicated there was communication between 11 the Mesaverde --12 A. There was communication. 13 --- and the Dakota? 0. 14 A. Definitely. 15 The twelve months -- the twelve -- the 16 months that were prior to -- the twelve months for all of 17 1979, which is prior to the leak, the Mesaverde averaged 18 162 Mcf of gas per day and the Dakota made 69 Mcf of gas per 19 day, and this was a combined average volume of 231 Mcf of gas 20 per day being produced from the well. 21 There's one other thing that we might Q. 22 mention here. Was there any differential in the line pressure 23 against which these two zones were producing during the period 24 covered by Exhibit Number Three? 25 Yeah, I might point out to the Division A.

2 that the well's total combined production of 231 Mcf of gas 3 per day for all of 1979, the total volume decreased after the well experienced its communication between the two zones, and 5 it is felt that this total decrease in production results from the fact that coincidentally the line pressure had gone from 7 225 - 30 pounds and around March it went up -- March or April it went up to approximately 255. So that would account for ŷ some decrease, and I believe that the fact that the well is 10 leaking fluids from probably the deeper zone, in adding to 11 the annular side of its -- of the well, and probably there 12 is not enough gas energy on the Mesaverde side to unload the 13 liquids as efficiently.

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So because of these two reasons I think the well has decreased in volume.

Q. Now would the ability of the well to unload the liquids in the Mesaverde, which you mentioned a moment ago, be improved by what we're proposing in this cause?

A Yes, this is one of the main -- main reasons that we are looking toward commingling that would have a more efficient method of production. We would have a larger volume of gas going through one tubing instead of two tubings and thus the velocity would help increase the production, as we now see it.

1		12
2	Q.	The velocity would be greater and con-
3	sequently	
4	λ.	Right.
5	Ũ	the well's ability to remove liquids
é	would be enhanced	
7	A	Right.
8	Ũ.	is that correct?
5	λ.	Yes, sir.
10	Q	What conclusions do you draw from an
11	examination of your	exhibits Two and Three?
12	а. А.	In my opinion the flow rates for the
13	Dakota and the Mesav	erde are small and I should point out
14	that both the Mesave	rde and the Dakota formations are classi-
15	fied and prorated as	marģinal.
16	Q.	Do you have any information regarding
17	pressures and fluid	characteristics with respect to the two
18	zones that are compl	eted in this well?
19	λ.	Yes, sir.
20	Ũ	The well produces about ten barrels of
21	water per month from	both sides of the well. That's ten
22	barrels of water per	month.
23		And with regards to the oil, during
24	1979 the Mesaverde a	veraged 21.7 barrels of oil per month
25	and the Dakota avera	iged 12.3 barrels of oil per month. Thus

13 1 2 the Mesaverde made 64 percent of the total oil production 3 during 1979. Now with regard to pressures, based on 5 the extrapolation of State tests, the Mesaverde side of the 6 well has a shut-in tubing pressure of 358 psia as of October 7 the 1st, 1980. The corresponding bottom hole pressure is 8 estimated to be 430 psia. Q Now also based on extrapolation of State 10 tests the Dakota shut-in tubing pressure was 520 psia with a 11 corresponding bottom hole pressure estimated at 659 pounds 12 per square inch absolute. 13 Now you mentioned that you have extrapo-Q. 14 lated State pressure tests for past periods to arrive at the 15 inferred pressures at the present time. ĺÓ Yes, sir. A. 17 At what times did you have -- what was Q. 18 the last period during which you had actual measured pressures 19 from which you could make your extraploation for these two 20 zones? 21 Well, prior to the leak we had it on A. 22 the -- we test the well every other year in the formations; 23 one formation one year and then the next formation, and so 24 on, and I think it was in 1978 the Mesaverde side of the

well was tested and in 1979 the Dakota side of the well was

14 1 2 tested, and then in 1980 we also had a test on the Mesaverde 3 side again. 0 But that may not have been +-5 Ъ. It was the last. 6 ~~ representative ---Ç. 7 No. A. 8 -- since there was communication at that 0. 9 time. 10 No. Coincidentally, it did fit the A. 11 extrapolation on the plot. That was just -- we wouldn't have 12 used it if it didn't fit. 13 And then I assume that you had measured Q. 14 pressures for each two-year period for each of the individual 15 zones prior to these ---ÌÓ All the way to ---Α. 17 --- two periods that you mentioned. Q. 18 Yes, sir. A. 19 In other words, during 1977 you had a Q 20 pressure test for the Dakota. 21 Dakota, yes, sir, and so forth. Α. 22 And so on? '76 for the Mesaverde and Q 23 so forth? 24 Right. A. 25 Do you believe that the fluid and pres-Õ

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15 2 sure characteristics would be compatible should commingling 3 be approved in this application today? Yes, sir, because of a small pressure A. differential and the presence of small amounts of liquids, I do not expect any migration of fluids or gas and particularly if the well is continuously produced. I'd point out here that the ratio of bottom hole pressures is 1.5 to 1. What advantages would inhere in permit-Q. 10 ting commingling? 11 There are really two main advantages. A. 12 First it is believed that by commingling this volume of gas,

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which I indicated was 231 Mcf per day total, it will aid in lifting the liquids and neither formation would have to be prematurely abandoned.

As of October the 1st, 1980, it is estimated that the Mesaverde has around 1,366 MMCF of remaining gas reserves, and the Dakota has around 492 MMCF of remaining reserves.

And I believe these reserves can be recovered through commingling. It should be noted that the Mesaverde reserves present 73 percent of the well's total remaining gas reserves.

C. Excuse me, now you're talking about gas? Yeah, you're speaking of gas reserves and not -- not oil reserves at this point?

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A No, this is just gas, based on these remaining reserves. So 73 percent of the well's total remaining gas reserves belongs to the Mesaverde, and this is, by the way, coincidental with the well's physical production percentage, which I indicated earlier, 73 percent for the years. 1970 through 1979.

And then, of course, besides the efficiency and the production, the savings in the -- in not repairing the indicated leak would be considerable. To repair and dually complete the existing well would cost \$33,000; however, it will only cost about \$20,000 to downhole commingle the Mesaverde and the Dakota.

And I would like to point out that even if El Paso were to spend the money. the additional monies and repair the well and dually complete it, that there is really no guarantee that somewhele down -- down in the road or in the near future, that it wouldn't start leaking again. We'd still have the same problem.

Q In other words, our experience has been that given a fairly lengthly period of time it could be anticipated that there could be a packer leak or another leak.

A.

Right.

Between the two zones.
 A It could happen.
 Do you propose a formula by which the
 gas and condensate production would be apportioned to each of these two zones?

ĩó

Q.

A Yes, and based on my prior testimony related to the average production of oil and the well's remaining reserves, gas reserves, it is recommended that 73 percent of the well's gas production and 64 percent of the oil production be attributed to the Blanco Mesaverde Pool, and then of course, the remaining gas and oil production be allocated to the Basin Dakota side of the well.

Would you indicate what the ownership
is as between these two zones, the Mesaverde and the Dakota?
A. Yes, sir. El Paso Natural Gas Company
owns 93.75 percent working interest in both formations and
a Mr. Snyder Vogel owns 6.25 percent working interest in
both formations. There is one Federal lease, USA-SFO 79937
which covers the entire 320 acres dedicated to this well.
There is a 25 percent overriding royalty interest. which is
common in both zones. We have contacted Mr. Vogel and all
of the overriding royalty interest people and they have approved of our proposed commingling of this well.

So in other words, no matter to which

1	10
2	zone the production is attributed, it will be distributed the
3	same way as it's currently being distributed.
4	A Yes, sir, yeah, total money is right.
5	Q. In your opinion would the granting of
6	this application protect correlative rights and prevent waste?
7	A. Yes, sir.
8	Q. Do you have anything further to add in
9	this case?
10	A. No, I do not.
11	Q. Were Exhibits One, Two, and Three pre-
12	pared by you or under your supervision?
13	A. Yes, they were.
14	MR. BURLESON: Mr. Examiner, we ask that
15	Exhibits One, Two, and Three be accepted into evidence at
16	this time, and that concludes our direct examination.
17	MR. STAMETS: The exhibits will be ad-
18	mitted.
19	
20	CROSS EXAMINATION
21	BY MR. STAMETS:
22	Q Mr. Burchell, you've said that the
23 24	water production was ten barrels per month from both sides.
24 25	Do you mean the total was twenty or the combined stream is
25	ten?

19 1 A. The combined stream is ten. I'm sorry, 2 and that was per month. 3 All right. On Exhibit Number Three, the n general trend seems to show that the well is not able to 5 produce the commingled stream for whatever reason as well as 6 it was able to produce the zones separately, except for the 7 month of March, and during the month of March it was able Â to achieve a production that was higher ---9 10 A. Right. - - than the average before. What condi-11 0. tions led to that high rate of production in Matth? 12 Unless the well started -- I do remember 13 A. that, like during the month of February when it did occur, 14 and the well indicated that there was some liquids building 15 up enabling the well to flow, because from the number of 16 days during that month that the well was open, well open but 17 no flow, it was several more days than actually what we had 18 measured for gas flowing, so I assume during that particular 1Ŷ month that the liquids just prevented the well from unloading 20 and all of a sudden the next month they -- in the month of 21 22 March they did unload, and caused maybe a higher -- higher percentage of gas being -- or a higher amount of gas being 23 24 produced, but then just at that time, starting in April, the 25 well -- both wells produced into a common pipeline, and like

20 Í I said, it went from 230 pounds per square inch and it in-2 creased, the pipeline increased about 255. That's why I think 3 it just tailed off at a lower rate. 5 Û. When you recomplete this well what will you do, run a single string of tubing to the Dakota zone? 7 A. We would propose to run a single 2-3/8ths 8 inch tubing down to the bottom of perfs of the Dakota forma-9 tion. 10 MR. STAMETS: Any other questions of 11 the witness? He may be excused. 12 Anything further in this case? 13 The case will be taken under advisement. 14 15 (Hearing concluded.) 16 17 18 19 20 21 22 23 24 25

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CERTIFICATE

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SALI.Y W. BOYD, C.S.R.

(505) 455-740

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I, SALLY W. BOYD, C.S.R., DO HEREPY 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.

Suchy W. Boyd C.S.R.

I do hereby contify that the foregoing is an an an an an an the fac. heard by the on

Oll Concervation Division



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J. O. SETH (1903-1963) FRANK ANDREWS (1914-1981)

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March 11, 1981

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New Mexico Energy and Minerals Department Oil Conservation Division Land Office Building Santa Fe, New Mexico 87503

> Re: N.M.O.C.D. Case No. 7185; Application of El Paso Exploration Company for Downhole Commingling, San Juan County, New Mexico

Gentlemen:

Please be advised that David T. Burleson of the office of General Counsel of El Paso Natural Gas Company, El Paso, Texas, is associated with our firm for the presentation of evidence and argument in the above-referenced case.

81 ncerely, Owen M. Lopez

OML:to

Page 2 of 6 Examiner Hearing - Wednesday - March 11, 1981

Docket No. 8-81

CASE 7185: Application of El Paso Exploration Company for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, weeks approval for the downhole commingling of Blanco Mesaverde and Basin-Dakota production in the wellbore of its Turner Hughes Well No. 17 located in Unit H of Section 10, Township 27 North, Range 9 West.

CASE 7161: (Continued from February 25, 1981, Examiner Hearing)

Application of John Yuronka for four compulsory poolings, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Langlie Mattix Pool underlying the four 40-acre proration units comprising the SW/4 of Section 31, Township 22 South, Range 37 East, to be dedicated to wells to be drilled at standard locations thereon. Also to be considered will be the cost of drilling and completing said wells and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the wells, and a charge for risk involved in drilling said wells.

CASE 7164: (Continued from February 25, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Devonian and Ellenburger formations, Custer Field, underlying the N/2 of Section 6, Township 25 South, Range 37 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7165: (Continued from February 25, 1981, Examiner Hearing)

Application of ARCO Oil and Gas Company for compulsory pooling, Lea County, New Mexico, Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Langley-Ellenburger Pool underlying the N/2 of Section 33, Township 22 South, Range 36 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7175: (Continued from February 25, 1981, Examiner Hearing)

Application of Conoco Inc. for compulsory pooling and a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp-Ellenburger formations underlying the S/2 of Section 19, Township 25 South, Range 37 East, to be dedicated to a well to be drilled at a standard location and dually completed in the Devonian and Ellenburger formations. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges supervision, designation of applicant as operator of the well, and a charge for risk involved in drilling said well.

CASE 7186: Application of Sun Texas Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the interval from 10,856 feet to 11,370 feet in its State C Account 1 Well No. 3 in Unit L of Section 2, Township 12 South, Range 33 East, Bagley Siluro-Devonian Pool.

Application of Blackwood & Nichols Co., Ltd. for four non-standard proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of the following four CASE 7187: Fruitland and Pictured Cliffs non-standard gas proration units: a 185.68-acre unit comprising the SW/4 of Section 1, Township 31 North, Range 7 West; a 181.4-acre unit comprising the SE/4 of said Section 1; a 176.68-acre unit comprising the SW/4 of Section 6, Township 31 North, Range 6 West; and a 175.21-acre unit comprising the SE/4 of said Section 6. All units are to be dedicated to wells drilled at standard locations thereon.

CASE 7188: Application of Blackwood & Nichols Co., Ltd. for directional drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to directionally drill its Northeast Blanco Unit Well No. 26-A, the surface location of which is 1160 feet from the North line and 60 feet from the West line of Section 8, Township 30 North, Range 7 West, and directionally drill said well in such a manner as to bottom it in the Mesaverde formation within 100 feet of a point 1190 feet from the North line and 790 feet from the West line of said Section 8, the W/2 of the section to be dedi-cated to the well; applicant further seeks authority to drill its Northeast Blanco Unit Well No. 32-A, the surface location of which is 1450 feet from the North line and 990 feet from the East line of Section 7, Township 30 North, Range 7 West, and directionally drill said well in such a manner as to bottom it in the Mesaverde formation within 100 feet of a point 1850 feet from the South line and 990 feet from the East line of said Section 7, the E/2 of the section to be dedicated to the well.





February 12, 1981

Case 7185

New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

Gentlemen:

El Paso Exploration Company respectfully requests a hearing be set before the Division or its designated examiner on March 11, 1981, if possible. El Paso seeks approval to downhole comingle production from the Blanco-Mesaverde Gas Pool with production from the Basin-Dakota Gas Pool in its Turner Hughes No. 17 Well. This Well is located in Unit Letter H of Section 10, T27N-R9W, San Juan County, New Mexico.

Very truly yours,

E. R. Manning

m

cc: Messrs. D. C. Adams - Farmington

D. E. Adams D. T. Burleson

D. N. Canfield

E. J. Coel

J. F. Eichelmann, Jr. C. E. Matthews

- D. R. Read
- L. G. Truby

EIPaso EXPLORATION COMPANY

P O BOX 1492 EL PASO, TEXAS 79978 PHONE: 915-543 2600

February 12, 1981

ECEIVED FEB 1 2 1981 CIL CONS 1 CATION DIVISION SANTA FE

New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501

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Cuse 7185

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF

1	DIVISION FOR THE PURPOSE OF CONSIDERING:
$\sqrt{2}$	CASE NO. 7185
X	Order No. <u><i>R</i>-6634</u>
	APPLICATION OFEL PASO EXPLORATION COMPANY
	FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY
	XXXXXXXXX, NEW MEXICO.
01	ORDER OF THE DIVISION
AP	BY THE DIVISION:
4	This cause came on for hearing at 9 a.m. on <u>March 11</u>
	19 <u>81</u> , at Santa Fe, New Mexico, before Examiner <u>Richard L.</u>
	Stamets
1	NOW, on thisday of, March, 19 <u>81</u> , the
	Division Director, having considered the testimony, the record,
	and the recommendations of the Examiner, and being fully
	advised in the premises,
-	FINDS:
	(1) That due public notice having been given as required
	by law, the Division has jurisdiction of this cause and the
	subject matter thereof.
(2) What the applicant requested the fator and
be	What the applicant requested What the the states
E	1 Para Endintar la an 4 El D Wet
E.	1030 Aprovation company vo ci 1038 Novem
	5 CAMPONO
(3)	That such amendment should be account
	(#) That the applicant, El Paso Concation Company is
	the owner and operator of the <u>Turner Hughes Well No. 17</u> ,
	located in Unit H of Section 10 , Township 27 North
ļ	Range 9 West , NMPM, <u>San Juan</u> County, New Mexico.
	(5) That the applicant seeks authority to commingle
	Blanco Mesaverde and Basin-Dakota production

within the wellbore of the above-described well.

d**r**/

11

(4) That from the Blanco Mesaverde zone, the subject well is capable of low marginal production only.

(5) That from the Basin-Dakota zone, the subject well is capable of low marginal production only.

 $(\stackrel{\circ}{\bigstar})$ That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(*) That the reservoir characteristics of each of the subject zones are such that <u>underground waste would not be caused</u> by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the <u>Aztec</u> district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in the subject well, 73 percent ond percent of the commingled gos and "' production should be allocated to the <u>Blanco Mesaverde</u> zone, and 27 percent on d percent of the commingled gas and of production it is production in the Basin-Dakota zone.

(ALTERNATE)

64

36

(9) That in order to allocate the commingled production to each of the commingled zones in the wells, applicant should consult with the supervisor of the <u>Aztec</u> district office of the Division and determine an allocation formula for each of the production zones. IT IS THEREFORE ORDERED:

(1) That the applicant, El Paso Exploration Company is hereby authorized to commingle Blanco Mesaverde and Basin-Dakota __production within the wellbore of the Turner Hughes Well No. 17 , located in Unit H of Section 10 , Township 27 North , Range 9 West NMPM, San Juan County, New Mexico.

(2) That the applicant shall consult/with the Supervisor district office of the Division and of the Artec determine an allocation formula for the allocation of production to each zone in each of the subject wells.

(ALTERNATE)

(2) That 73 percent ond 67 percent of the commingled gas and oil production shall be allocated to the <u>Blanco Mesaverde</u> zone and 27 percent and 36 percent of the commingled gas and of production shall be allocated to the Basin-Dakota zone.

(3) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

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