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CASE 7200: ESTORIL PRODUCING CORPORATION FOR A DUAL COMPLETION, LEA COUNTY, NEW MEXICO

CASE NO.

7200

APPlication, Transcripts, Small Exhibits,

ETC.

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1 2 3 4 5	STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION STATE LAND OFFICE BLDG. SANTA FE, NEW MEXICO 25 March 1981 EXAMINER HEARING
6 7 8 9	IN THE MATTER OF: Application of Estoril Producing Corporation for a dual completion, CASE Lea County, New Mexico.
10 11 12 13	BEFORE: Daniel S. Nutter TRANSCRIPT OF HEARING
14 15 16	APPEARANCES
17 18 79	For the Oil Conservation Division: Ernest L. Padilla, Esq. Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
20 21 22	For the Applicant: HUNKER, FEDRIC P.A. P. O. Box 1837 Roswell, New Mexico 88201
23 24 25	

1		2
2	INDEX	
3		
4	MAX E. CURRY	
5	Direct Examineration by Mr. Hunker	3
6	Cross Examination by Mr. Nutter	11
7		
8	J. C. WILLIAMSON	
9	Direct Examination by Mr. Hunker	12
10		
11		
12		
13		
14	EXHIBITS	
15		
16	Applicant Exhibit One, Log	7
17	Applicant Exhibit Two, Cross Section	18
18		
19		
20		
21		
22		
23		
24		
25		<u></u>

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2	MR. NUTTER: We'll call next Case Number
3	7200, the application of Estoril Producing Corporation for
4	a dual completion Lea County, New Mexico.
5	MR. HUNKER: Mr. Examiner, I'm George
6	Hunker, Hunker, Fedric, P. A., Roswell, New Mexico, repre-
7	senting Estoril Producing Corporation.
8	I have two witnesses and I'd like to
9	introduce Mr. Bruce Monroe, the Drilling Superintendent for
10	Estoril, who will be available in case the Examiner has any
11	questions. Would you gentlemen stand?
12	
13	(Witnesses sworn.)
14	
15	MAX E. CURRY
16	being called as a witness and being duly sworn upon his oath,
17	testified as follows, to-wit
18	
19	DIRECT EXAMINATION
20	BY MR. HUNKER:
21	Q. Mr. Curry would you state your name,
22	address, and occupation?
23	A. My name is Max E. Curry. I live in
24	Midland. I'm a consulting engineer with Curry Engineering.
25	Q. Did you supervise the drilling and com-

4 1 2 pletion from an engineering standpoint of the Belco Federal 3 No. 1? 4 I did. A. 5 And you did this for Estoril? Q. 6 Yes. A. 7 Are you familiar with the application Q. 8 that's on file in this matter, made by Estoril? 9 I am. A. 10 Are you a petroleum engineer? 0. 11 A. Yes. 12 Have you previously testified before Q. 13 the Commission? 14 A. Yes. 15 Have your qualifications as a petroleum Q. 16 engineer been demonstrated and made a matter of record and 17 found to be acceptable? 18 A. Yes, sir. 19 MR. HUNKER: Are Mr. Curry's qualifi-20 cations acceptable? 21 MR. NUTTER: Yes, they are. 22 Q. What is the applicant seeking in this 23 particular case? 24 A. They are seeking to -- an order for 25 approving a dual completion in the Antelope Ridge Morrow Pool

5 2 with an undesignated Morrow -- I mean Strawn gas zone. This has been -- the approval is requested for a parallel string, 3 conventional -- parallel tubing string, conventional applica-5 tion. Mr. Curry, where is the well located? Q. 7 A. The well is located in Section 15, R Township 23 South, Range 34 East, in Lea County, New Mexico. Q Is it 760 feet from the south line and Q. 10 1980 feet from the east line? 11 It is. A. 12 Is this a standard, orthodox location? Q. 13 A. It is. 14 Has a nomenclature hearing been had by Q. 15 the Division defining the Antelope Ridge Strawn Pool? 16 It has not at this time. A. 17 What separate sources of supply does Q. 18 the applicant propose to produce? Will you tell us that? 19 Yes. The -- one of the Morrow sands Δ. 20 within the vertical limits prescribed by the Commission in 21 the Antelope Ridge Morrow Field is open production and open 22 hole in the subject well, and some -- this is 300 or 400 feet 23 below the top of the Morrow Clastics, and the Strawn section 24 is separated by some 700 feet of the Atoka formation, which 25 lies in between the STrawn and the Morrow.

2 How was the separation of these two Q. 3 zones accomplished, Mr. Curry? 4 Well, in this particular well we drilled A. 5 to the top of the Wolfcamp at a depth of 11,776 feet, and 6 set 7-5/8ths inch casing. This was cemented back to approxi-7 mately 5000 feet and was later tied in and cemented back to 8 the surface, so essentially the 7-5/8ths inch casing is 9 cemented from 11,776 feet all the way back to the surface. 10 The well was drilled to a total depth 11 of 13,239 feet and a liner was cemented from the depth of 12 13,178 feet and set back up several hundred feet, back up 13 into the 7-5/8ths inch casing where cement was circulated 14 from the bottom of that casing back to the top of the liner. 15 The liner was hung at that point by a Brown Gil Tool hanger, 16 which is used very frequently in the -- in the field, and 17 included at the top of this a polished bore receptacle, which 18 is what we call a PBR in the field. This is set at 11,354 19 fcct. 20 The top of the liner was then drilled

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out, tested, squeezed and retested and this polished bore was then dressed out for use later on as the separating interval in the - in the well.

Q. Mr. Curry referring to what's been marked Applicant's Exhibit Number One, would you explain the 2 the coloring depiction on that --- on the graph on the right-3 hand side of that exhibit?

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A. This is a sketch of the downhole equipment and the casing in the well, and it's related by depth to the log which is shown on the lefthand side of this sketch, or this plat.

The dashed lines represent the casing in the well and the liner. The orange represents the cementing with was circulated behind these casings and the Morrow formation is designated over here on the left, and the open hole section at the bottom of this sketch is done in pink. The tubing string, the interior part of it is colored pink where the Morrow gas is flowed to the surface.

15 The yellow coloring represents those
16 areas in which there are connected to the Strawn through
17 perforations that are shown in red over on the lefthand log,
18 within the Strawn section.

19 So the Strawn gas fills the interval
20 colored yellow and is produced to the surface through a
21 string of 2-3/8ths inch tubing which is connected to the top
22 of the PBR.

The blue section represents packer
fluid that is placed in the well for purposes of well control
as well as inhibition of corrosion or other detrimental mech-

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2	anical well	problems.		
3		Q.	Has a packer leakage test been	taken of
4	the well?			
5		А.	Yes, sir, they have.	
6		Q.	When were they taken?	
7		A.	I believe, let's see, I believe	e you
8	have the exl	hibit ther	e.	
9			A packer leakage test was taken	n o n
10	March 18th,	1981, as	prescribed by the Commission and	1 they
11	have been s	ubmitted t	hrough the normal channels to the	ne Commis-
12	sion.			
13		Q.	Has your entire casing program	been
14	tested and	reported t	o the Commission office in HObb	s?
15		А.	Yes, it has.	
16		Q.	Is the well partially completed	d at this
17	time?			
18		А.	Yes. Mechanically it is, it is	s com-
19	pleted enti	rely. The	surface equipment is now being	placed
20	on the loca	tion for t	he Morrow formation. The Straw	n formation
21	is producin	g at this	point. The Morrow is not comple	etely
22	completed i	nsofar as	it has not been fractured. We'	re
23	waiting on	a pulling	unit to perform that operation a	and then
24	the well			
25		Q.	Do you have a preliminary pote	ntial,

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2	though, on the Morrow	formation?
3	Α.	Yes, sir we do.
4	Q.	What is that?
5	Α.	The Morrow in its present condition is
6	able to deliver approx	ximately half a million cubic feet of gas
7	per day.	
8	Q.	And is the Strawn formation on the line
9	at the present time?	
10	Α.	Yes, it is.
11	Q.	And what does it produce?
12	Â.	It's producing about 7.2 million a day
13	against 4200 pounds f	lowing tubing pressure.
14	Q	When do those reports show the well was
15	completed?	
16	Α.	The well was completed 3/7/81.
17	Q.	And why did you wait more than seven
18	days to make the pack	er leakage test?
19	λ.	Well, these this particular well was
20	extraordinarily proli	fic and produced a lot of distillate
21	with the with the	gas, and to perform the test it would
22	we would be dealing w	ith or cause physical and economic
23	waste to vent the gas	. We've just been tied into the pipeline
24	and tests were made d	irectly into the pipeline.
25	Q.	In your opinion, Mr. Curry, has the sub-

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2	ject well been completed in accordance with good conservation
3	practices?
4	A. Yes, it has. And each stage of this, I
5	might add, has been tested at approximately 10,000 pounds to
6	assure the containment and physical properties that the design
7	was made for for this well, and it has been acceptable tests
8	on every phase of it.
9	Q. Will the approval of the application,
10	in your opinion, prevent waste and protect correlative rights?
11	A. It will very definitely prevent waste
12	and protect correlative rights.
13	Q. Will Estoril comply with all the Division
14	and Commission orders, rules, and directives, including the
15	taking of essential tests?
16	A. Yes, sir.
17	Q. There will be no commingling of the pro-
18	duction from the from the well as dually completed, is that
19	CORRECT?
20	A. That is correct.
21	Q. Do you have anything else to add, Mr.
22	Curry, to your testimony?
23	A. Well, I might add that the as shown
24	in this well, we do have a second packer that's placed down
25	in the well. It serves absolutely no purpose at all at this

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2	time but it's put there only for future remedial work, and
3	I just thought I'd mention that. It might be a little confusing
4	as to what it
5	9. That's the packer that is set at 13,110
6	feet?
7	A. That's true.
8	MR. HUNKER: I have no further questions
9	of Mr. Curry.
10	
11	CROSS EXAMINATION
12	BY MR. NUTTER:
13	Q. Mr. Curry, you mentioned that distillate
14	the well produces. How much condensate does the well make and
15	from which zone?
16	A. It the distillate in the Strawn has
17	been checked out pretty closely with the production we have
18	right now. It will average right at 30 barrels per million.
19	Q. And it's making about 7 million a day
20	into the pipeline?
21	A. Yes, sir.
22	Q. How about that Morrow down there, you
23	mentioned that it's going to be treated.
24	A. Yes, sir.
25	Q. It hasn't been stimulated any way yet?

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2		A.	We have cleaned the perforations out
3	with acid.	Let's see	, there have been 3000 gallons of 7-1/2
4	percent aci	d put in.	
5		Q.	And you do propose another frac job at
6	some point?		
7		A.	Yes, sir, it will be fraced with a
8	fairly larg	e	
9		Q	And right now it's delivering only half
10	a million a	day?	
11		Α.	Yes, sir.
12		Q.	Is it dry gas?
13		А.	At a half a million it is pretty dry
14	right now.	It is dry	right now; however, we've not really
15	produced it	at a long	period of time and it does have some
16	distillate,	we know t	hat, but we're not haven't gotten
17	very much a	t the surf	ace at this point.
18			MR. NUTTER: Are there any further
19	questions o	f Mr. Curr	y? He may be excused.
20			Your next witness, Mr. Hunker?
21			
22			J. C. WILLIAMSON
23	being calle	d as a wit	ness and being duly sworn upon his oath,
24	testified a	s follows:	
25			

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3		DIRECT EXAMINATION
4	BY MR. HUNKER:	
5	Q.	Mr. Williamson, will you state your
6	name, address, and oc	cupation?
7	А.	J. C. Williamson, geologist, Midland,
8	Texas.	
9	Q.	Are you familiar with the application
10	that's been filed by	Estoril in connection with this matter?
11	Α.	Yes, sir.
12	Q.	Have you made a study of the logs and
13	of the samples obtain	ed in connection with the drilling of
14	the Belco Federal No.	1 Well?
15	Α.	Yes, sir.
16	Q.	And you said you are a consulting
17	geologist, is that co	prrect?
18	А.	Yes.
19	Q.	And you were a consulting geologist with
20	regard to this well?	
21	А.	And part owner.
22	Q.	And part owner.
23		Have you testified previously before
24	the Commission?	
25	А.	Yes, sir.

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1 14 2 Have your qualifications been made a Q. 3 matter of record and found to be acceptable by the Commission? 4 As far as I know. A. 5 MR. NUTTER: Yes, sir, Mr. Williamson 6 is qualified. 7 Has Estoril drilled another well in this Q. 8 same area? 9 Yes. At the present time we have four A. 10 wells down. 11 In connection with the tract in Section Q. 12 15, Township 23 South, 34 East, has Estoril drilled what's 13 referred to as the Adobe Federal? 14 Yes, sir. A. 15 And what's the status of that well at Q. 16 this time? 17 It's waiting on a workover unit for A. 18 completion, and probably a dual completion. 19 You have heard Mr. Curry's testimony Q. 20 with regard to this Exhibit Number One, and you have seen the 21 Exhibit One. Did you pick the tops of the formations that 22 are shown on that exhibit? 23 Yes, sir. Yes, sir. A. 24 And do you concur that the top of the Q. 25 Strawn is at 11,990 feet?

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2	A. Yes, sir.
3	Q. And the top of the Morrow Clastics is
4	12,880 feet?
5	A. Yes.
6	Q. Does the log that appears on this ex-
7	hibit agree with the log that you have shown on your large
. 8	cross section that includes the Adobe Federal Well?
9	A. Yes, we used the Adobe Federal instead
10	of this one simply by just there's no reason, we just used
11	it. They're both almost identical. The Adobe Federal is
12	probably 30 feet lower in the section but it's the same
13	Q. Mr. Williamson
14	A lithographic section.
15	Q you have taught geology and lived
16	geology and drilled a lot of Morrow test wells and Strawn
17	test wells throughout the State of New Mexico and elsewhere.
18	Describe to the Examiner, if you will, the characteristics
19	of the Strawn rocks that you see in these areas.
20	A. Well, the Strawn in this area the
21	Strawn varies a good deal, but in this case it is a biohermal
22	reef, being a reef that goes out; instead of up, it goes more
23	just out, and in this case we have the Antelope Ridge
24	structure and the Strawn around this is much like an atoll
25	reef in the Pacific at the present time, where there's a

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central part and the reefs are going around it.

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3 We have a well right offsetting the, or to the south a half a mile, the Adobe Federal -- I mean the Belco 5 Federal is half a mile, drilled by Shell. It does not quite ĥ have the same character as -- it's more or less a lithographic --7 very distinct top and very distinct area, same thickness and 2 everything, but not quite the same as when you hit these more 9 reefy (sic) deals around this thing.

16

10 Now, if you will for the Examiner, ex-Q. 11 plain what you see in the Atoka samples that you recovered 12 from the well.

A. Well, the Strawn here is a very light tan, almost a dolomite, in these wells that we're concerned with here, the Belco Federal and the Adobe Federal. It's almost a dolomite. It's crystalline, and it is quite -- very, the porosity, permeability, you can even see a kind of -.. in the Belco Federal to the north a kind of a playing out of the upper part of the reef, detrital falling off the front, still good porosity.

Now, the Atoka at the base of the Strawn there is a black shale and there is a few streaks, of course, a black shale in the Strawn but not anything like it is in the Atoka; a very black shale, and that ends the Strawn. From there on you get the various colors of limestone, mostly

17 1 2 dark, black oolites in it, and occasionally -- now all these 3 things are Pennsylvanian and all of them are receiving a big shot of detrital going in from -- the Strawn didn't receive 4 5 much of this but the Atoka did and the Morrow and the Wolfcamp 6 stuff coming in from the east of this central uplift area, 7 around where Hobbs is and all down through there. R And the Strawn represented a displaced 9 more or less a distinct hesitation in the deposition and below 10 that you do not -- the Atoka is different, and it's a differ-11 ent kind of limestone; some of them are pretty lithographic, 12 with chert in them, fractured; they do have gas in them; they 13 do not quite have the reservoir characteristics of this -- of 14 the Strawn formation. Later on down you get a little more 15 sands coming in and it's very hard to tell where the base 16 of the Atoka and the top of the Morrow is. Now you get limes 17 and sands and then a little farther up, that's called the 18 Morrow Clastics. From there on down there's mostly a shale 19 and sand, and it's an easier point to identify than the Morrow 20 carbonates. That's kind of a point we use but we're not very 21 definite in defining the Morrow carbonates as against the 22 limestones and the Atoka. 23 There's definitely a shale up there

24 There's definitely a shale up there
24 that gets thicker towards the northwest and it's thin in this
25 area because it's predominantly an old high area.

18 1 2 Q. Mr. Williamson, you have prepared or 3 caused to be prepared an exhibit which has been marked Appli-4 cant's Exhibit Number Two, a larger version of which is on the 5 wall behind the Examiner. Would you explain the purpose of 6 that exhibit and demonstrate what it shows? You may stand, 7 if you wish. 8 A. Thank you, yes, I would like to. 9 In the first place, we have rather a 10 large map here which we have placed the wells we have used. 11 There are seven of them -- the Natomas Well 23, the Belco --12 I mean the Adobe Federal 15; we go right up around catching 13 these things, this group in here. 14 Now here's the way it goes from right --15 no, from your left starting up here. This is the Natomas 16 Well in here. 17 That's the one on the far right? Q. 18 A. Yes. 19 And where is that well located as re-Q. 20 lated to the Estoril wells? 21 Oh, it's approximately three-quarters A. 22 of a mile, a mile southeast. 23 Q. Okay, and --24 And here is the Strawn top in it and A. 25 here is the Strawn in the Estoril well.

Q Will you identify approximately at what
depth that -- those Strawn tops are?
A Now, this is at 12,000 -- on the Estoril
well it's at 12,010. This is more of a demonstrative cross
section.

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7 Q. Explain the colors that you've shown
8 there and what they show, Mr. Williamson.

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9 All right, the orange represents the A. 10 Strawn across this country. The blue and the pink or purple, 11 whatever it is, here is the Wolfcamp; the yellow being the 12 third Bone Springs Sand. Below that is the black shale of 13 the Atoka, and this, I think it's orange, is the true Atoka 14 where there is some production, gas production. Below that 15 is the Morrow limestones and some shales and below that is 16 the clastics. This yellow is not all sand at all but is sand 17 and shales.

18 This Wolfcamp situation that we have here 19 is thick beds of chert conglomerate, lime conglomerate sands 20 with -- through the shales, is the case in this Antelope --21 northern part of the Antelope Ridge and over the Antelope 22 Ridge. Largely that debris came in at the end of Pennsylvanian 23 times from the uplift to the east of there and it derived 24 its cherts, conglomerate mostly (unintelligible). But they 25 didn't wear themselves out, they just traveled over there and

1 20 2 formed conglomerate, sands. 3 MR. NUTTER: Mr. Hunker, this is all 4 very interesting but the relevancy to a dual completion, we're 5 studying regional goology now for the entire Permian Basin. ĥ MR. HUNKER: Well --7 MR. NUTTER: I think we've got a long 8 docket here and we'd better proceed with our docket. 9 MR. HUNKER: I agree with you. I agree 10 with you. 11 Mr. Williamson, you may come back over 12 here, if you will, please. 13 A. All right. 14 In your opinion has the completion of Q. 15 the Belco Federal No. 1 been in accordance with good oilfield 16 practices? 17 A. Yes. 18 In your opinion will the approval of Q. 19 Estoril's application prevent waste and protect correlative 20 rights? 21 Well, sure, it will prevent having to A. 22 drill two or three wells, you know, boreholes to this, which 23 are very expensive over here. 24 MR. HUNKER: I'd like at this time, Mr. 25 Examiner, to offer into evidence Exhibits Numbers One and Two

21 1 2 MR. NUTTER: Exhibits Numbers One and 3 Two will be admitted in evidence. 4 MR. HUNKER: I have no further questions 5 of Mr. --6 MR. WILLIAMSON; Well, Mr. Nutter, let 7 me make one little statement here. 8 The idea here is to define the nomen-9 clature. This is a bit mixed up in the area. 10 MR. NUTTER: Yes, sir, I appreciate 11 that. 12 MR. WILLIAMSON: And we're talking about 13 the Strawn, we will be coming back soon again to ask for the 14 Belco -- I mean the Adobe Federal to be dualled and we'll be 15 using Strawn and Atoka, Wolfcamp and Morrow, and there will 16 be many, many times that we will appear before you. The idea 17 is to get the nomenclature straight when we come back to get 18 these duals and that is the reason for all of this color and 19 paper on the wall. 20 MR. NUTTER: Yes, sir, I appreciate 21 these formations are present in this area and the geology is 22 complex. 23 MR. WILLIAMSON: Yes, sir, and that's 24 the reason we're giving all this. 25 MR. NUTTER: Yes, sir. Well, thank you.

Are there any questions of Mr. William-son? He may be excused. Do you have anything further Mr. Hunker? MR. HUNKER: Nothing further, thank ó you. MR. NUTTER: Does anyone have anything they wish to offer in Case Number 7200? We'll take the case under advisement. (Hearing concluded.)

CERTIFICATE

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.

Sally W. Boyd C.J.E.

I do hereby certify that the foregoing is d comans in the £ heard z, Examinar Conservation Division OII

SALLY W. BC/YD, C.S. ki. I Box 197.6 Santa Fc, New Mexico 07301 Phone (503) 455-7409 1

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17	For the Oil ConservationErnest L. Padilla, Esq.Division:Legal Counsel to the Division
18	State Land Office Bldg. Santa Fe, New Mexico 87501
19	
20	For the Applicant: George H. Hunker, Jr., Esq.
21	HUNKER, FEDRIC P.A. P. O. Box 1837
22	Roswell, New Mexico 88201
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INDEX MAX E. CURRY Direct Examineration by Mr. Hunker ő Cross Examination by Mr. Nuttor J. C. WILLIAMSON Direct Examination by Mr. Hunker EXHIBITS Applicant Exhibit One, Log Applicant Exhibit Two Cross Section

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1 5 2 with an undesignated Morrow - I mean Strawn gas zone. This 3 has been -- the approval is requested for a parallel string, 4 conventional -- parallel tubing string, conventional applica-5 tion. 6 Mr. Curry, where is the well located? a 7 The well is located in Section 15, A. 8 Township 23 South, Range 34 East, in Lea County, New Mexico. 9 Is it 760 feet from the south line and 0 10 1980 feet from the east line? 11 A. It is. 12 Is this a standard, orthodox location? Q. 13 λ. It is. 14 Q. Has a nomenclature hearing been had by 15 the Division defining the Antelope Ridge Strawn Pool? 16 A. It has not at this time. 17 Ç. What separate sources of supply does 18 the applicant propose to produce? Will you tell us that? 19 A. Yes. The ... one of the Morrow sands 20 within the vertical limits prescribed by the Commission in 21 the Antelope Ridge Morrow Field is open production and open 22 hole in the subject well, and some - this is 300 or 400 feet 23 below the top of the Morrow Clastics, and the Strawn section 24 is separated by some 700 feet of the Atoka formation, which 25 lies in between the STrawn and the Morrow.

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2 0 How was the separation of these two 3 zones accomplished, Mr. Curry? 4 A. Well, in this particular well we drilled 5 to the top of the Wolfcamp at a depth of 11,776 feet, and 6 set 7-5/8ths inch casing. This was cemented back to approxi-7 mately 5000 feet and was later tied in and cemented back to 8 the surface, so essentially the 7-5/8ths inch casing is 9 cemented from 11,776 feet all the way back to the surface. 10 The well was drilled to a total depth 11 of 13,239 feet and a liner was cemented from the depth of 12 13,178 feet and set back up several hundred feet, back up 13 into the 7-5/8ths inch casing where cement was circulated 14 from the bottom of that casing back to the top of the liner. 15 The liner was hung at that point by a Brown Oil Tool hanger. 16 which is used very frequently in the -- in the field, and 17 included at the top of this a polished bore receptacle, which 18 is what we call a PER in the field. This is set at 11 354 19 feet. 20 The top of the liner was then drilled 21

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out, tested, squeezed and retested and this polished bore was then dressed out for use later on as the separating interval in the - in the well.

24 Q. Mr. Curry referring to what's been
25 marked Applicant's Exhibit Number One, would you explain the

2 the coloring depiction on that a on the graph on the right-3 hand side of that exhibit?

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This is a shetch of the downhole equip 5 mont and the casing in the well, and it's related by depth to 6 the log which is shown on the lefthand side of this sketch, or this plat.

The dashed lines represent the casing in the well and the liner. The orange represents the cementing with was circulated behind these casings and the Morrow formation is designated over here on the left, and the open hole section at the bottom of this sketch is done in pink. The tubing string, the interior part of it is colored pink where the Morrow gas is flowed to the surface.

The yellow coloring represents those areas in which there are connected to the Strawn through perforations that are shown in red over on the lefthand log, within the Strawn section.

So the Strawn gas fills the interval colored yellow and is produced to the surface through a string of 2-3/8ths inch tubing which is connected to the top of the PBR.

The blue section represents packer fluid that is placed in the well for purposes of well control 25 as well as inhibition of corrosion or other detrimental mech-

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1 8 2 anical well problems. 3 Has a pacher leakage test been taken of 0 4 the well? 5 Nee, cir, they have. 2. 6 When were they taken? С. 7 J believe, let's see, I believe you A. 8 have the exhibit there. 9 A packer leakage test was taken on 10 March 18th, 1981, as prescribed by the Commission and they 11 have been submitted through the normal channels to the Commis-12 sion. 13 Has your entire casing program been 0 14 tested and reported to the Commission office in HObbs? 15 Yes, it has. Λ. 16 Is the well partially completed at this 0 17 time? 18 Yes. Mechanically it is, it is comδ. 19 pleted entirely. The surface equipment is now being placed 20 on the location for the Morrow formation. The Strawn formation 21 is producing at this point. The Morrow is not completely 22 completed insofar as it has not been fractured. We're 23 waiting on a pulling unit to perform that operation and then 24 the well ---25 Do you have a preliminary potential, Q

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2	though, on the	Morrow formation?	
3	ρ.	Yes, sir we do.	
4	<u>0</u>	What is that?	
5	Ì.	the Morrow in its present condition is	
6	able to deliver approximately half a million cubic feet of gas		
7	per day.		
8	Q	And is the Strawn formation on the line	
9	at the present time?		
10	А.	Yes, it is.	
11	<u>C</u>	And what does it produce?	
12	<u>A.</u>	It's producing about 7.2 million a day	
13	against 4200 pounds flowing tubing pressure.		
14	0	When do those reports show the well was	
15	completed?		
16	λ.	The well was completed 3/7/81.	
17	0	And why did you wait more than seven	
18	days to make the packer leakage test?		
19	р.	Well, these this particular well was	
20	extraordinarily prolific and produced a lot of distillate		
21	with the wi	th the gas, and to perform the test it would -	
22	we would be de	aling with or cause physical and economic	
23	vaste to vent	the gas. We've just been tied into the pipeline	
24	and tests were	made directly into the pipeline.	
25	<u>Ç.</u>	In your opinion, Mr. Curry, has the sub-	

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2	ject well been completed in accordance with good conserva	tion	
3	practices?		
4	A. Yes, it has. And each stage of thi	.s. 1	
5	night add, has been tested at approximately 10,000 pounds	to	
6	assure the containment and obysical properties that the design		
7	was made for for this well, and it has been acceptable tests		
8	on every phase of it.		
9	0 Will the approval of the application	n l	
10	in your opinion, prevent waste and protect correlative ri	.ghts?	
11	A. It will very definitely prevent was	te	
12	and protect correlative rights.		
13	Q Will Estoril comply with all the Di	vision	
14	and Commission orders, rules, and directives, including the		
15	taking of essential tests?		
16	A. Yes, sir.		
17	Q. There will be no commingling of the	pro-	
18	duction from the from the well as dually completed, is	that	
19	correct?		
20	A That is correct.		
21	0 Do you have anything else to add, M	ar.	
22	Curry, to your testimony?		
23	A. NEIL, I HIGHE aut that the as s.	nown	
24	in this well, we do have a second packer that's placed do	own	
25	in the well. It serves absolutely no purpose at all at t	chis	

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1 11 2 time but it's put there only for future remedial work, and 3 I just thought 1'd mention that. It might be a little confusing 4 as to what it --5 That's the packer that is set at 13,110 0 6 feet? 7 Ν., That's true. 8 MR. HUNEER: I have no further questions 9 of Mr. Curry. 10 11 CROSS EXAMINATION 12 BY MR. NUTTER: 13 <u>0</u>. Mr. Curry, you mentioned that distillate 14 the well produces. How much condensate does the well make and 15 from which zone? 16 It --- the distillate in the Strawn has А. 17 been checked out pretty closely with the production we have 18 right now. It will average right at 30 barrels per million. 19 And it's making about 7 million a day 0 20 into the pipeline? 21 Yes, sir. A. 22 Now about that Morrow down there, you Q 23 mentioned that it's going to be treated. 24 Yes, sir. Â. 25 It hasn't been stimulated any way yet? 2

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2		λ.	We have cleaned the perforations out
3	with acid.	Let's see	, there have been 3000 gallons of 7-1/2
4	percent aci	d put in.	
5		fi	And you do propose another frac job at
6	some point?		
7		A.	Yos, sir, it will be fraced with a
8	fairly larg	e ~-	
9		Ũ.	And right now it's delivering only half
10	a million a	day?	
11		А.	Yes, sir.
12		ç.	Is it dry gas?
13		λ.	At a half a million it is pretty dry
14	right now.	It is dry	right now; however, we've not really
15	produced it	at a long	period of time and it does have some
16	distillate,	we know ti	hat, but we're not haven't gotten
17	very much a	t the surfa	ace at this point.
18			MR. NUTTER: Are there any further
19	guestions o	f Mr. Curr	y? He may be excused.
20			Your next witness, Mr. Hunker?
21			
22			J. C. WILLIAMSON
23	being calle	ad as a wit:	ness and being duly sworn upon his oath
24	testified a	s follows:	
25	1		

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1 13 2 3 DIRECT EXAMINATION 4 EY MR. HUMKER: 5 Ō, Mr. Williamson, will you state your 6 name, address, and occupation? 7 J. C. Williamson, geologist, Midland, à. 8 Texas. 9 Are you familiar with the application Q 10 that's been filed by Estoril in connection with this matter? 11 Δ. Yes, sir. 12 Have you made a study of the logs and Q. 13 of the samples obtained in connection with the drilling of 14 the Belco Federal No. 1 Well? 15 Yes, sir. A. 16 And you said you are a consulting Q. 17 geologist, is that correct? 18 Α. Yes. 19 And you were a consulting geologist with Ω. 20 regard to this well? 21 And part owner. A. 22 And part owner. Q. 23 Have you testified previously before <u>24</u> the Commission? 25 A. Yes, sir.

1 14 2 Ŷ. Have your qualifications been made a 3 matter of record and found to be acceptable by the Commission? 4 As far as I know. <u>Þ.</u> 5 MR. NUTTER: Yes, sir, Mr. Williamson 6 is qualified. 7 Has Estoril drilled another well in this Q. 8 same area? 9 Yes. At the present time we have four A. 10 wells down. 11 0 In connection with the tract in Section 12 15, Township 23 South, 34 East, has Estoril drilled what's 13 referred to as the Adobe Federal? 14 Yes, sir. Α. 15 And what's the status of that well at 0 16 this time? 17 A It's waiting on a workover unit for 18 completion, and probably a dual completion. 19 You have heard Mr. Curry's testimony 0. 20 with regard to this Exhibit Number One. and you have seen the 21 Exhibit One. Did you pick the tops of the formations that 22 are shown on that exhibit? 23 A. Yes, sir. Yes, sir. <u>24</u> And do you concur that the top of the Q. 25 Strawn is at 11,990 feet?

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2	δ. Σ	ics, sir.
3	Q Z	And the top of the Morrow Clastics is
4	12,590 foet?	
5	λ. 5	(UG.
6	C- I	Does the log that appears on this ex-
7	hibit agree with the lo	og that you have shown on your large
8	cross section that incl	ludes the Adobe Federal Well?
9	5. 5	Yes, we used the Adobe Federal instead
10	of this one simply by	just - there's no reason, we just used
11	it. They're both almos	st identical. The Adobe Federal is
12	probably 30 feet lower	in the section but it's the same
13	0. 2	Mr. Williamson
14	λ	lithographic section.
15	Ω.	you have taught geology and lived
16	geology and drilled a J	lot of Morrow test wells and Strawn
17	test wells throughout t	the State of New Mexico and elsewhere.
18	Describe to the Examine	er, if you will, the characteristics
19	of the Strawn rocks that	at you see in these areas.
20	λ. ι	Well, the Strawn in this area the
21	Strawn varies a good de	eal, but in this case it is a biohermal
22	reef, being a reef that	t goes out; instead of up, it goes more
23	just out, and in this o	case we have the Antelope Ridge
24	structure and the Stray	wn around this is much like an atoll
25	reef in the Pacific at	the present time, where there's a

2 central part and the reefs are going around it.

We have a well right offsetting the, or to the south a half a mile, the Adobe Federal -- I mean the Belco Federal is half a mile, drilled by Shell. It does not quite have the same character as - it's more or less a lithographic --very distinct top and very distinct area, same thickness and everything, but not quite the same as when you hit these more reefy (sic) deals around this thing.

9. Now, if you will for the Examiner, explain what you see in the Atoka samples that you recovered from the well.

N Well, the Strawn here is a very light tan, almost a dolomite, in these wells that we're concerned with here, the Belco Federal and the Adobe Federal. It's almost a dolomite. It's crystalline, and it is quite -- very. the porosity, permeability, you can even see a kind of - in the Belco Federal to the north a kind of a playing out of the upper part of the reef, dotrital falling off the front, still good porosity.

Now, the Atoka at the base of the Strawn there is a black shale and there is a few streaks, of course, a black shale in the Strawn but not anything like it is in the Atoka; a very black shale, and that ends the Strawn. From there on you get the various colors of limestone, mostly

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dark, black collites in it, and occasionally - now all these things are Pennsylvanian and all of them are receiving a big shot of detrital going in from -- the Strawn didn't receive much of this but the Atoka did and the Monrow and the Wolfcamp stuff coming in from the east of this central uplift area. around where Hobbs is and all down through there.

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8 And the Strawn represented a displaced -9 more or less a distinct besitation in the deposition and below 10 that you do not -- the Atoka is different, and it's a differ-11 ent kind of limestone: some of them are pretty lithographic, ĺŹ with chert in them, fractured; they do have gas in them; they 13 do not quite have the reservoir characteristics of this -- of 14 the Strawn formation. Later on down you get a little more 15 sands coming in and it's very hard to tell where the base 16 of the Atoka and the top of the Morrow is. Now you get limes 17 and sands and then a little farther up, that's called the 18 Morrow Clastics. From there on down there's mostly a shale 19 and sand, and it's an easier point to identify than the Morrow 20 carbonates. That's kind of a point we use but we're not very 21 definite in defining the Morrow carbonates as against the 22 limestones and the Atoka.

23 There's definitely a shale up there
24 that gets thicker towards the northwest and it's thin in this
25 area because it's predominantly an old high area.

2 Ô. Mr. Milliamson, you have prepared or 3 caused to be prepared an exhibit which has been marked Appli 4 cant's Exhibit Number Two, a larger version of which is on the 5 wall behind the Examiner. Would you explain the purpose of 6 that exhibit and demonstrate what it shows? You may stand. 7 if you wish. 8 Thank you, yes, I would like to. A. 9 In the first place, we have rather a 10 large map here which we have placed the wells we have used. 11 There are seven of them --- the Natomas Well 23, the Belco ---12 I mean the Adobe Federal 15; we go right up around catching 13 these things, this group in here. 14 Now here's the way it goes from right --15 no, from your left starting up here. This is the Natomas 16 Well in here. 17 That's the one on the far right? Q 18 Yes. Α. 19 And where is that well located as re-Q. 20 lated to the Estoril wells? 21 Oh, it's approximately three-quarters A. 22 of a mile, a mile southeast. 23 Okay, and ---Q, 24 Λ. And here is the Strawn top in it and **25** here is the Strawn in the Estoril well.

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1 19 2 \mathbf{O} Will you identify approximately at what 3 depth that --- those Strawn tops are? λ. Now, this is at 12,000 - on the Estoril well it's at 12,010. This is more of a demonstrative cross 5 6 section. 7 Ç, Explain the colors that you've shown 8 there and what they show, Mr. Williamson. 0 λ. All right, the orange represents the 10 Strawn accoss this country. The blue and the pink or purple, 11 whatever it is, here is the Wolfcamp; the yellow being the 12 third Bone Springs Sand. Below that is the black shale of 13 the Atoka, and this, I think it's orange, is the true Atoka 14 where there is some production, gas production. Below that 15 is the Morrow limestones and some shales and below that is 16 the clastics. This yellow is not all sand at all but is sand 17 and shales. 18 This Wolfcamp situation that we have here 19 is thick beds of chert conglomerate, lime conglomerate sands 20 with -- through the shales, is the case in this Antelope --21 northern part of the Antelope Ridge and over the Antelope 22 Ridge. Largely that debris came in at the end of Pennsylvanian 23 times from the uplift to the east of there and it derived 24 its cherts, conglomerate mostly (unintelligible). But they 25 didn't wear themselves out, they just traveled over there and

1 20 2 formed conglomerate, sands. 3 MR. HUPPER: Mr. Munker, this is all 4 very interesting but the relevancy to a dual completion we're 5 studying regional geology now for the entire Permian Basin. 6 MR. HUNKER: Vell ---7 MR. NUTTER: I think we've got a long 8 docket here and we'd better proceed with our docket. 9 MR. HUHRER I agree with you. I agree 10 with you. 11 Mr. Williamson, you may come back over 12 here, if you will, please. 13 All right. Α. 14 In your opinion has the completion of Q. 15 the Belco Federal No. 1 been in accordance with good oilfield 16 practices? 17 Yes. <u>P</u>., 18 In your opinion will the approval of Q. 19 Estoril's application prevent waste and protect correlative 20 rights? 21 Well, sure, it will prevent having to Α. 22 drill two or three wells, you know, boreholes to this, which 23 are very expensive over here. 24 MR. HUNKER: I'd like at this time, Mr. Ż5 Examiner, to offer into evidence Exhibits Numbers One and Two.

21 1 2 MR. MUTTER: Exhibits Numbers One and 3 Two will be admitted in evidence. 4 MR. HUMBUR: I have no further questions 5 of Mr. 6 MR. WILLIAMSON: Well, Mr Nutter, let 7 me make one little statement here. 8 The idea here is to define the nomen-9 clature. This is a bit mixed up in the area. 10 MR. HUTTER Yes, sir, I appreciate 11 that. 12 MR. WILLIAMSON: And we're talking about 13 the Strawn, we will be coming back soon again to ask for the 14 Belco -- I mean the Adobe Federal to be dualled and we'll be 15 using Strawn and Atoka, Wolfcamp and Morrow, and there will 16 be many, many times that we will appear before you. The idea 17 is to get the nomenclature straight when we come back to get 18 these duals and that is the reason for all of this color and 19 paper on the wall. 20 MR. NUTTER: Yes, sir, I appreciate 21 these formations are present in this area and the geology is 22 complex. 23 MR. WILLIAMSON: Yes, sir, and that's 24 the reason we're giving all this. 25 MR. NUTTER: Yes, sir. Well, thank you.

1	22
2	Fre there any guestions of Mr. William-
3	son? He may be excused.
4	Do you have anything further Mr. Hunker
5	DR. HUBWER: Nothing further, thank
6	you.
7	NR. NUTTIR: Does anyone have anything
8	they wish to offer in Case Number 7200?
9	We'll take the case under advisement.
10	
11 12	(Hearing concluded.)
12	
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CERTIFICATE

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.

Sally W. Boyd C.S.R.

t do hereby certify that the foreasing is a complete 11:0 heard exami**no** 1. Ca

SALLY W. EIOYD, C.S. Ku. 1 Bur 193-B Santa Fe, Nev Mexico 1790 Phone (303) 455-7409 1

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

GOVERNOR

POST OFFICE BOX 2008 STATE LAND OFFICE BUILDING BANTA FE, NEW MEXICO 87501 (505) 827-8434

April 9, 198)

Re: CASE NO.

Mr. George Hunker Hunker-Fedric Attorneys at Law Post Office Box 1837 Roswell, New Mexico 88201

ORDER NO. -8-6641

Applicant:

Estoril Producing Corporation

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

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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 CONSIDERING:

CASE NO. 7200 Order No. R-6641

APPLICATION OF ESTORIL PRODUCING CORPORATION FOR A DUAL COMPLETION, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on March 25, 1981, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

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 premisee,

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, Estoril Producing Corporation, seeks authority to complete its Belco Federal Well No. 1; located in Unit 0 of Section 15, Township 23 South, Range 34 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce gas and gas liquids from the Strawn and Morrow formations, Antelope Ridge Field, through parallel strings of tubing.

(3) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.

(4) That the tubing string for the Strawn zone is set some 648 feet above the uppermost Strawn perforstion and the Morrow tubing string is set some 308 feet above the top of the Morrow open hole pay section.

(5) That an exception to the tubing depth requirements of Rule 107(d) should not cause waste nor impair correlative rights and should be approved.

-2-Case No. 7200 Order No. R-6641

(6) That approval of the subject dual completion will prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Estoril Producing Corporation, is hereby authorized to complete its Belco Federal Well No. 1, located in Unit O of Section 15, Township 23 South, Range 34 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce gas and gas liquids from the Strawn and Morrow formations, Antelope Ridge Field, through parallel strings of tubing, with separation of the zones to be achieved by means of a packer set at approximately 12,870 feet.

PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Division Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take packer leakage tests upon completion and annually thereafter during the Annual Gas Well Shut-In Pressure Test Period for Southeast New Mexico.

(2) That an exception to the tubing setting requirements of Rule 107(d) of the Division Rules and Regulations is hereby approved, provided however, such approval is subject to rescission if it appears waste is resulting therefrom.

(3) That jurisdiction of this cuase 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.



STATE OF NEW MEXICO BIL CONSERVATION DIVISION UlM 30E D. RAMEY Director

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Page 2 of 4 Examiner Hearing - Wednesday - March 25, 1981

•		Application of Estoril Producing Corporation for <u>a dual complction</u> , Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion of its Belco Fed. Well - No. 1 located in Unit 0 of Section 15, Township 23 South, Range 34 East, to produce gas and gas liquids from the Straum and Morrow formations, Antelope Ridge Field, thru parallel strings of tubing.
	CASE 7201:	Application of Layton Enterprises, Inc. for a unit agr eeme nt, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Todd Lower San Andres Unit Area, com- prising 3256 acres, more or less, of Federal and State lands in Tourship 7 South, Pongee 35 and 36 East.
	CASE 7202:	Application of Layton Enterprises, Inc. for a waterflood project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the San Andres formation thru 4 injection wells located in Sections 30, 31 and 32 of its Todd Lower San Andres Unit in Township 7 South, Range 36 East.
	CASE 7203:	Application of Southern Union Exploration Co. of Texas for a unit agreement. Les County, New Mexico.

- <u>Application of Southern Union Exploration Co. of lexas for a unit agreement, Lea County, New Mexico.</u> Applicant, in the above-styled cause, seeks approval for the Susco Bough "C" Unit Area, comprising 2560 acres, more or less, of State lands in Township 10 South, Range 33 East.
- <u>CASE 7204</u>: Application of Bass Enterprises Production Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation in the interval from 3820 feet to 3915 feet in its Federal Legg Well No. 1 in Unit B of Section 27, Township 22 South, Range 30 East, Quahada Ridge Field.
- CASE 7205: Application of Supron Energy Corporation for a non-standard gas proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard Blanco Mesaverde gas provation unit comprising the NE/4 of Section 35, Township 31 North, Range 12 West, to be dedicated to a well to be drilled at a standard location thereon.
- CASE 7183: (Continued from March 11, 1981, Examiner Hearing)

Application of Flag-Redfern Oil Company for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Osudo St. Com Well No. 2 at an unorthodox location 990 feet from the North and East lines of Section 18, Township 20 South, Range 36 East, North Osudo-Morrow Gas Poel.

- CASE 7206: Application of Mobil Producing Inc. 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 through perforations from 12,212 feet to 12,218 feet and the open hole interval from 12,240 feet to 12,555 feet in its Santa Fe Pacific Well No. 3 in Unit M of Section 26, Township 9 South, Range 36 East, Crossroads Field.
- CASE 7207: Application of Nobil Producing Inc. for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the commingling of Vacuum Grayburg-San Andres production from the State J and State II leases in Section 22, Township 17 South, Range 34 East.
- CASE 7208: Application of Gulf Oil Corporation for the amendment of pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the White City-Pennsylvanian Gas Pool Rules to provide for 320-acre spacing rather than 640 acres with well locations specified as being at least 1650 feet from the end boundary and 660 feet from the side boundary of the proration unit.
- CASE 7129: (Continued from February 25, 1981, Examiner Hearing)

Application of Koch Exploration Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the N/2 of Section 28, Township 28 North, Range 8 West, 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 7169: (Continued from February 25, 1981, Examiner Hearing)

Application of Koch Exploration Company for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Dakota formation underlying the S/2 of Section 22, Township 28 North, Eange 8 West, 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.

LAW OFFICES OF HUNKER-FEDRIC, P. A. suite 210, hinkle building post office box 1837 ROSWELL, NEW MEXICO 66201

OIL CONSTRUCT N DEVISION SANTA FE TRI PPHONE ADD. 9700 AREA CODE 505

GEORGE H. HUNKER, JR. DON M. FEDRIC

March 12, 1981

Mr. Joe D. Ramey, Secretary-Director New Mexico Oil Conservation Division P.O. Box 2088 Santa Fe, New Mexico 87501

Case >200

Re: Estoril Producing Corp. Application for Dual Completion

Attention: Mr. D.S. Nutter

Gentlemen:

On behalf of Estoril Producing Corporation, we hand you herewith in triplicate, an Application which would permit the operator to dually complete its Belco Federal #1 located in Unit O of Section 15, T. 23S, R. 34E, N.M.P.M., Lea County, New Mexico, so as to produce gas and gas distillate from the Antelope Ridge-Morrow and the Antelope Ridge-Strawn pools. We would appreciate it if you would file this Application and set the matter down for hearing on March 25, 1981.

Sincerely yours,

HUNKER-FEDRIC, P.A í) Î.I.A

George H. Hunker, Jr.

GHH:dd Enc.

xc: Mr. Max E. Curry P.O. Box 5596 Midland, Texas 79701, w/enc.

xc: Mr. Flynt Chancellor Estoril Producing Corp. 11th Floor Vaughn Bldg. Midland, Texas 79701, w/enc.

SANTA FE ISION

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

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

CASE NO. 7200

APPLICATION OF ESTORIL PRODUCING CORPORATION FOR A DUAL COMPLETION, LEA COUNTY, NEW MEXICO.

Estoril Producing Corporation, 11th Floor Vaughn Building, Midland, Texas 79701, respectfully requests that it be permitted to dually complete its Belco Federal #1, located in Unit 0 of Section 15, Township 23 South, Range 34 East, N.M.P.M., Lea County. New Mexico, to produce gas and gas distillate from the Antelope Ridge-Morrow and the Antelope Ridge-Strawn Pools through parallel strings of tubing, and in support thereof, shows:

1. Applicant has drilled and completed its Belco Federal #1 located 760' FSL and 1,980' FEL of Section 15, T. 23S, R. 34E, N.M.P.M., Lea County, New Mexico, and by this Application seeks authority to complete said well as a dual completion (conventional) to produce gas and gas distillate from the Antelope Ridge-Morrow and from the Antelope Ridge-Strawn Formations, with a separation of the zones to be achieved by means of packers set at 11,354 (P.B.R.) feet and 12,870 (B.D.I.) feet respectively. The packer set at 13,100 (B.D.I.) feet is not effective and will be used only if remedial work is required in the well.

2. That the mechanics of the proposed dual completion are feasible and are in accord with good conservation practices.

3. That the approval of the application will prevent waste and protect correlative rights.

4. Applicant agrees to take packer leakage tests upon completion and annually thereafter during the annual gas well shut-in pressure test period for southeast New Mexico.

WHEREFORE, Applicant prays that this matter be set down for hearing before an Examiner on March 25, 1981, or as soon thereafter as the same may practically be heard, and that authority be granted to Applicant for the completion of its Belco Federal #1 as a conventional dual completion.

-2-

DATED this 11th day of March, 1981.

Respectfully submitted,

ESTORIL PRODUCING CORPORATION

George H. Hunker, Jr. Attorney for Applicant P.O. Box 1837 Roswell, New Mexico 88201 (505) 622-2700 STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION OIL CONSE

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DATED this _____ day of March, 1981.

Respectfully submitted,

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George H. Hunker, Jr. Attorney for Applicant P.O. Box 1837 Roswell, New Mexico 88201 (505) 622-2700

OIL CONS' U DEVISION SANTA FE

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:

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-2-

DATED this _____ day of March, 1981.

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zuda George H. Hunker, Jr. Attorney for Applicant P.O. Box 1837 Roswell, New Mexico 88201 (505) 622-2700

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STATE OF NEW MEXICO ENERCY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

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DIV	ISIC	ON FOR	THE	PURI	POSE	OF
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CASE NO. 7200	
Order No. R- 1641	

APPLICATION OFESTORIL PRODUCING CORPORATIONFOR ADUALCOMPLETION,LEA

COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

Non

BY THE DIVISION:

This cause came on for hearing at 9 o'clock a.m. on March 25 , 19⁸¹, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter

NOW, on this ______ day of ______, 19_{81}_{100} , 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,	Estoril Producing Corporation
seeks authority to complete its	Belco Fedd Well No. 1
Nebdx Now XXX , located in Unit	
ship 23 South , Range 34	East , NMPM, Lea
County, New Mexico, as a dual	completion (conventional) to (combination) (tubingless)
xxix and gas liquids produce gas/ from the	Strawn and Morrow formations,
Antelope Ridge Field, through	parallel strings of tubing.

(3) That the mechanics of the proposed <u>dual</u> completion feasible and in accord with good conservation practices. (4)(5)Quel completion (6) That approval of the subject app will prevent waste and protect correlative rights. IT IS THEREFORE ORDERED: (1) That the applicant, Estoril Producing Corporation is hereby authorized to complete its Belco Ferencial Well No. 1, located in Unit 0 of Section 15 Township 23 South , Range 34 East Lea , NMPM, County, New Mexico, as a ______ completion(conventional) (combination) (tubingloss). **call**x and gas liquids the produce gas/ from the Strawn and Morrow formations, Antelope Ridge Field, through parallel strings of tubing, with seguration the zones to be achieved by means of a pucker set al 12,870 porounatel. PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Division Rules and Regulations insofar as said rule is not inconsistent with this order; PROVIDED FURTHER, that the applicant shall take poeter tests upon completion and leakage annually thereafter during the Annual Gas Well Shut-in Presence Southeast New Mexico Test Period for the Pool. (3) 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. - (2) That an exception to the tubing setting requirements of Rece 107(2) of the Division Areas and Regulations is hereby approved, perilal however, such approval is surgect to rescission if its teres appears wester is resulting therefrom.

Cose # 7200

	NEW MEXICO OI		IN COMMISSION	use sou	Form C-107
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			<i>P</i> ,	20.0.2 1931	
Estoril Producing Corport	ation	County Lea		Marich F23, TS	
Address Suite 1120, Vaughn Build	ing, Midland, TX 7	19701 Belco	> Federal	Well No.	
Location Unit S	Section 15	Township 23 S		Range 34 E	
of Well O I. Has the New Mexico Oil Conservat			drinla namelada - K	•	
zones within one mile of the subje-		NO_X			e poors or in the s
. If answer is yes, identify one such	instance: Order No		Operator Lease, and	Well No.:	
. The following facts are submitted:	Hanar				
	Zone		Intermediate Zone		Lower Zone
a. Name of Pool and Formation	Antelope Ridge ((Strawn)		Antelone	
b. Top and Bottom of	120021	·		13278'	SE pert
Pay Section (Perforations)	12178'			13279'	non holo)
c. Type of production (Oil or Gas)					open hole)
d. Method of Production	uas				
(Flowing or Artificial Lift)	Flowing			Flowing	
. The following are attached. (Pleas	e check YES or NO)				
of operators of all l X c. Waivers consenting tors have been fur X d. Electrical log of th	ocation of all wells on ap leases offsetting applican g to such multiple comple nished copies of the appl he well or other acceptable such log is not available se on which this well is 1	t's lease. tion from each offs ication.• Hear le log with tops an at the time applics	et operator, or in lieu ing set for 3/2 d bottoms of producin ution is filed it shall	thereof, evidence 25/81 ag zones and inter be submitted as pro-	that said offset op
Getty 011 Company, Box 1		-	n their correct mailing	; «dar€\$5.	<u></u>
BTA, 104 South Pecos St.	, Midland, TX 797	01			·····
Natomas North America, I	inc., 1010 Gibralt	ar Savings Ce	nter, Midland,	TX 79701	:
······································					
. Were all operators listed in Item 5	above partial and for t	had a norm of skin	application VEC		f answer is yes, j
date of such notification	above notified and furnis		orm is submitte	ed for inform	ation only.
Hearing set for 3/25/81	1.				······································
CERTIFICATE: I, the undersigned	d, state that I am the	Agent		<u>e Estoril Pro</u>	
Corporation	(company), and that I am	authorized by said	company to make this	report; and that th	is report was prep
nder my supervision and direction and	u mai ine facts stated the	\sim		UCSI UI MY KHOWIC	
	-	- // - !		$\lambda = 0$	•
-		Ward	L. ANI LL	les	••••
	-			Signature	
Should waivers from all offset operat sion will hold the application for a p day period, no protest nor request for	cors not accompany an app period of twenty (20) days r hearing is received by th	lication for admini from date of recei he Santa Fe office,	strative approval, the ot by the Commission the application will th	New Mexico Oil (s Santa Fe office. hen be processed.	Conservation Com If, after said twe
OTE: If the proposed multiple comp the producing zones, then set	letion will result in an un	orthodox well loca	tion and/or a non-stat	ndard proration uni	
and the second			should be filed simult		application.
4			should be filed simult		application.
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Operator County Date AT Wolve Estoril Producing Corporation Lea March 23, 1981 Address Lease Well No. Suite 1120, Vaughn Building, Midland, TX 79701 Belco Federal I Location Unit Section I of Well 0 15 23 S 34 E 1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in zones within one mile of the subject well? YES NO X NO X 2. If answer is yes, identify one such instance: Order No; Operator Lease, and Well No.:				් කියා පු		
Estoril Producing Corporation Lea March 23, 1981 Suite 1120, Vaughn Building, Midland, TX 79741 Belco Federal Name Suite 1120, Vaughn Building, Midland, TX 79741 Belco Federal Name Location O Section Township O Section Township Name 23 S 34 E 1. Has the New Mexico VOI Conservation Commission heretofore submirded the multiple completion of a well in these same pools of i zones within one mile of the subject well? No.X 2. If answer is yes, identify one such instance: Order No: Operator Lease, and Well No.:		·				
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Laction Unit 0 Unit 15 23 5 34 E 1. Has the New Mexico Oil Conservation Commission heretofore subtraized the multiple completion of a well in these same pools of i zones within one mile of the subject well? YES <u>NO X</u> 2. If answer is yes, identify one such instance: Order No. ; Operator Leese, and Well No.; 3. The following facts are submitted: Upper Zone Zone Zone Zone Zone (were zone in the subject of	Address		Lease			
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1. Hiss the New Mesice Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools of zones within one mile of the subject well? YES	Location		•			
zones within one mile of the subject well? YES; Operator Lease, and Well No.: 2. If answer is yes, identify one such instance: Order No; Operator Lease, and Well No.: 3. The following facts are submitted: Zone 2. Name of Pool and Formation Antelope Ridge (Strawn) Antelope Ridge (Strawn) Antelope Ridge (Strawn) Pay Section 12002' Pay Section 12178' (Performions) 12178' (Performions) Gas d. Method of Production (Oil er Gas) Gas d. Method of Production Flowing Yze of production (Oil er Gas) Gas Who: - C. Type of production (Oil er Gas) Gas d. Method of Production Flowing Yze of production (Oil er Gas) Gas Yze of production (Oil er Gas) Gas G. Type of production (Oil er Gas) Gas d. The following are star. bed. (Please check YES or NO) Yze Yze - Degrammatic Settch of the Multiple checker starts and side door checker, and starts and setting depreters and setting depreters and setting depreters. All offset wells on offset theread, and the same and of operators of all leases offsetting applicant's lease. Will -<					of a well in	these same pools or in
3. The following facts are submitted: Upper Intermediate Zone 2. Name of Pool and Formation Antelope Ridge (Strawn) Antelope Ridge (I b. Top and Bottom of Psy Section 12002' J 13278' (Performions) 12178' 13278' 13278' (Performions) Gas			NO_X	_		
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b. Top and Bottom of Pay Section (Performations) 12002' 13278' (a. Method of Production (Floring or Artificial Lift) Flowing Flowing c. Type of production (Oil or Gas) Gas	Name of Pool and Formation			Zone		
Pay Section 12178' 13279' (open holi (open holi (open holi c. Type of production (Oil or Gas) Gas (open holi d. Method of Production (Flowing cr. Antificial Lift) Flowing Flowing 4. The following set attached. (Please check YES or NO) Yes No Plantsmatric Steech of the Multiple Completion, showing all casing strings, including disancters and setting depth, location and type of packers and side door clokes, and such other information as may be interest and or the of perturbation of all wells on applicant's lease, all of operators of all leases offacting applicant's lease, all offact wells on offact leases, and the same and of operators of all leases offacting applicant's lease, all offact wells on offact leases, and the same and of operators of all leases offacting applicant's lease, and the same and of operators of all leases offacting applicant's lease, and the type of packers and bottoms of producing corest and intervals of pertited in the well or other acceptable log with tops and bottoms of producing corest and intervals of pertited is and the top is not available at the time application is filed it shall be submitted as provided by Ro 5. List all offset operators to the lease on which this well is located together with their correct mailing address. Getty 011 Company, Box 1231, Midland, TX 79702 BTA, 104 South Peccos St., Midland, TX 79701 Natomas North America, Inc., 1010 Gibraltar Savings Center, Midland, TX 79701 Cerretal operators in all offest operators not period of sust cast at there in a conc			rawii)	· ć		
(Performing in Antificial Life) [Cass (open hold c. Type of production (Oil or Gas) Gas (open hold (A the following are attached. (Please check YES or NO) Flowing Flowing are attached. (Please check YES or NO) Yet No Disgrammatic Sketch of the Multiple Completion, showing all easing strings, including diameters and string depth, location thereof, qualities and diadop of cement, performed intervals, taking strings and/or turbule consenting to an applicant's lease, all offects wells on offset leases, and string depth, location and type packets and side door clokes, and such other intervals on a spyle and the stress and side door clokes, and such other intervals on any be of operators of all leases offsecting applicant's lease, all offsets wells on offset leases, and of stress have been furnished copies of the application. There are and intervals of percenters and intervals of percenters of stress offsecting application for each offsect wells on offset leases, and of operators of all leases offsecting application for each offsect wells on other leases, and of operators of all leases offsecting application. There are any indication are and intervals of percenters and intervals of percenters in a stress of the application. X List all offset operators to the lease on which this well is located together with their correct mailing address. Getty Oil Company, Box 1231, Midland, TX 79702 BTA, 104 South Pecos St., Midland, TX 79701 Natomas North America, Inc., 1010 Gibraltar Savings Center, Midland, TX 79703 Certring set for 3/25/81. Certring set of 3/25	· · · · · · · · · · · · · · · · · · ·	•				132791
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 C. Waivers consenting to such multiple completion from each offset operator, or in lice thereof, evidence that said off tors have been furnished copies of the application." Hearing set for 3/25/81 L. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of performing set offset operators to the lease on which this well is located together with their correct mailing address. Getty 0il Company, Box 1231, Midland, TX 79702 BTA, 104 South Pecos St., Midland, TX 79701 Natomas North America, Inc., 1010 Gibraltar Savings Center, Midland, TX 79701 Natomas North America, Inc., 1010 Gibraltar Savings Center, Midland, TX 79701 C. ERTIFICATE: the undersigned, state that I am the <u>Agent</u> of the <u>Estoril Producing</u> Company; and that I am authorized by said company to make this report and that this report was under my supervision and direction and there is stated therein are true, correct and complete to the best of my knowledge. *Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation sion will hold the application for a period of the supervision and direction and the facts stated therein are true, correct and complete to the best of my knowledge. 	y b. Plat showing the loc of operators of all le			, all offset wells on	offset leases	s, and the names and a
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NEW MEXICO OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO APPLICATION FOR MULTIPLE COMPLETION Form C-107 5-1-61

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Operator		County	De	
Estoril Producing Corport	ation	Lea		arch 23, 1981
Xddress Suite 1120, Vaughn Build	ing, Midland, TX 79	Teose 701 Belco Fea	Wel	No. FE SION
Location Unit S of Well ()	Section T	ownship 23 S	Ra	ng e 34 E
1. Has the New Mexico Oil Conservat			Completion of a	
zones within one mile of the subject 2. If answer is yes, identify one such 3. The following facts are submitted:	instance: Order No	NO_X; Opera	ator Lease, and We	ll No.:
	Zone		Zone	Zone
a. Name of Pool and Formation b. Top and Bottom of		trawn)		Antelope Ridge (M
b. 1 op and Bottom of Pay Section	12002'	تأثير،		13278'
(Perforations)	12178'			13279' (open hole
c. Type of production (Oil or Gas)	Gas			
d. Method of Production				
(Flowing or Artificial Lift)	Flowing			Flowing
 The following are attached. (Please Yes No 	CUCCK IES OL NO)			
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 C. Waivers consenting tors have been furce tors have been furce of a consent of the dicated thereon. (If a consent of the dicated thereon.) (If a consent of the dicated thereon of the dicated thereon.) (If a consent of the dicated thereon	to such multiple completion hished copies of the applic- me well or other acceptable such log is not available at se on which this well is loc 231, Midland, TX 79 , Midland, TX 79701 nc., 1010 Gibraltar above notified and furnishe	ation for administrative mation for administrative for	set for 3/25/ oms of producing z s filed it shall be s correct mailing add , Midland, TX ation? YES is submitted of the_E my to make this rep- complete to the bes Signe e approvai, the New be Commission's So plication will then it	81 cones and intervals of perfo submitted as provided by Ru dress. 79701 79701 NO X If answer is y for information on storil Producing ort; and that this report was st of my knowledge. Modeling out: and that this report was at of my knowledge. Modeling out: and that this report was at of my knowledge. Modeling out: a of fice. If, after said be processed. d promation unit in One orn

	OIL CONSER!	VATION DIVISION	Form C-104 Revised 10-1-71
C151 A18 UT 104		BOX 2088	
	SANTA FE, N	EW MEXICO 87501	
U. 8.U8,			
LAND OFFICE	REQUEST F	FOR ALLOWABLE	and the second sec
TRANIFORTER OAB		AND	
PERATOR PRONATION OFFICE		NSPORT OIL AND NATURAL (GAS
Estoril Producing C	Corporation		
11th Floor, Vaughn Resson(s) for filing (Check proper bo	Building, Midland, TEXAS	79701 Other (Please explan	
New Well	Change in Transporter of:		
Recompletion	c:: 🗍 🖙	🖙 🔟 🛛 Dual Compl	etion .
Change in Ownership	Casinghead Gas 🚺 Con	densate	
If change of ownership give narve and address of previous owner			
DESCRIPTION OF WELL AND Leave Norme	Vell No. Pool Name, Including	Formetter row Kind o	l Lease Lea
Belco Federal	# 1 Antelope Ridg	e - Strawn Gas stote,	Foderal or Foo Federal
Unit Letter 0 ;	760 Feet From The South	_trie andFect	From The East
Line of Section 15 T.	mahip 23 South Range 3	4 East , NMPM, Le	ac
DESIGNATION OF TRANSPOR			approved copy of this form is to be sen
Name of Authorized Transporter of Ca			approved copy of this form is to be sen
Gas Company of New Mex			ional Bldg, Dallas, TX 752
If well produces of or liquids,	Unit Sec. Twp. Rge.	Is gas octually connected?	When When
give location of tanks.	1 1 1 1 - 1	Yes	March 7, 1981
	ith that from any other lease or pool	l, give commingling order numbe	
COMPLETION DATA	¹ Oil Well ¹ Gas Well	New Well Workover Deep	en Plug Back Same Resty. Dill.
Designate Type of Completi			
Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
6/12/80	2/4/81	13239	13239
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
3410GL, 3427 DF	Strawn - Morrow	12,002'	12,870' Depth Casing Shoe
Performations Strawn 12,178 to 13,100)' Morrow - open hole 1	3.178 - 13239	Depth Casing Shoe 11776
		VD CEMENTING RECORD	
HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
174	16"	610'	400 Sax Class "C"
		5100'	
12-4	10-3/4"		7650 Sax Class "C"
124 8	7-5/8" 2-3/8"	11776' 11732'	
124 8 62 TEST DATA AND REQUEST F	7-5/8" 2-3/8" 5½" 2-7/8" OR ALLOWABLE (Test must be	11776' 11732' Liner 12870' after recovery of social volume of log	7650 Sax Class "C"
124 8 62	7-5/8" 2-3/8" 5½" 2-7/8" OR ALLOWABLE (Test must be	11776' 11732' Liner 12870'	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to
124 8 62 TEST DATA AND REQUEST F DIL WELL	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d	11776' 11732' Liner 12870' after recovery of social volume of loc depth or be for full 24 hours)	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to
124 8 62 TEST DATA AND REQUEST F DIL WELL Date First New Oll Run To Tanks Length of Test	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure	11776' 11732' Liner 12870' after recovery of total volume of loc depth or be for full 24 hows) Producing Method (Flow, pump, Casing Pressure	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size
124 8 62 TEST DATA AND REQUEST F DIL WELL Date First New Oil Run To Tanks	7-5/8" 2-3/8" 5 ¹ 2" 2-7/8" OR ALLOWABLE (Test must be able for this d	11776' 11732' Liner 12870' after recovery of solal volume of low depth or be for full 24 hours) Producing Mothod (Flow, pump,	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.)
124 8 62 TEST DATA AND REQUEST F DIL WELL Date First New Oil Run To Tanks Length of Test Actual Prod. During Test	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhie.	11776' 11732' Liner 12870' after recovery of total volume of loadepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure) Water-Bbis.	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.) Choke Size Gas-MCF
124 8 62 TEST DATA AND REQUEST F DIL WELL Date First New Oll Run To Tanks Length of Test Actual Prod. During Test GAS WELL Actual Prod. Test-MCF/D	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis.	11776' 11732' Liner 12870' after recovery of total valume of loadepth or be for full 24 hours) Producing Method (Flaw, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cravity of Condensate
124 8 6 ¹ / ₂ EST DATA AND REQUEST F DIL WELL Cate First New Oll Run To Tanks -ength of Test Length of Test Actual Prod. During Test Katual Prod. Test-MCF/D 3000	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhie.	11776' 11732' Liner 12870' after recovery of total valume of loadepth or be for full 24 hours) Producing Method (Flaw, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cravity of Condensate
1224 8 6 ¹ / ₂ EST DATA AND REQUEST F DIL WELL Cate First New Oll Run To Tanks -ength of Test -ength of Test Actual Prod. During Test Katual Prod. Test-MCF/D 3000	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours	11776' 11732' Liner 12870' after recovery of total volume of loadepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure) Water-Bbis.	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cravity of Condensate
124 8 6 ¹ / ₂ EST DATA AND REQUEST F DIL WELL Date First New Oll Run To Tanks Length of Test Actual Prod. During Test	7-5/8" 2-3/8" 5½" 2-7/8" OR ALLOWABLE (Test must be able for this de able for this	11776' 11732' Liner 12870' dfer recovery of social volume of local epith or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure) Water-Bbls. Bbls. Condensate/MACF 30.8/500 Casing Pressure (Ebut-in) 2000	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cravity of Condensate 570 API Choke Size
124 8 6 ¹ / ₂ TEST DATA AND REQUEST F DIL WELL Date First New Oll Run To Tanks Length of Test Length of Test Actual Prod. During Test Actual Prod. During Test Actual Prod. Test-MCF/D 3000 Testing Method (pilot, back pr.) ERTIFICATE OF COMPLIANCE	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE	11776' 11732' Liner 12870' after recovery of total volume of localepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF 30,8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cravity of Condensate 570 API Choke Size 7/14/64" RVATION DIVISION
124 8 6 ⁴ 2 EST DATA AND REQUEST F DIL WELL Date First New Oil Run To Tanks ength of Test Letual Prod. During Test AS WELL Actual Prod. Test-MCF/D 3000 Setting Method (pilot, back pr.) ERTIFICATE OF COMPLIANCE hereby certify that the rules and r	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation	11776' 11732' Liner 12870' after recovery of total volume of localepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF 30,8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to at exceed to gas lift, etc.) Choke Size Gas-MCF Cravity of Condensate 570 API Choke Size 7/14/64" RVATION DIVISION , 19
124 8 6 ³ 2 EST DATA AND REQUEST F FIL WELL cate First New Oil Run To Tanks ength of Test cate Prod. During Test AS WELL cate Prod. During Test AS WELL cate Prod. Test-MCF/D 3000 estrog Method (pilot, back pr.) ERTIFICATE OF COMPLIANC hereby certify that the rules and r vision have been complied with	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given	11776' 11732' Liner 12870' after recovery of total volume of localepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF 30,8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cravity of Condeneate 570 API Choke Size
124 8 6 ¹ / ₂ EST DATA AND REQUEST F IL WELL into First New Oil Run To Tanks ength of Test ctual Prod. During Test AS WELL ctual Prod. During Test AS WELL ctual Prod. Test-MCF/D 3000 esting Method (pilot, back pr.) ERTIFICATE OF COMPLIANC arreby certify that the rules and r vision have been complied with	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given	11776' 11732' Liner 12870' after recovery of total values of localepth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbis. Bbis. Condensate/MMCF 30.8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and must be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cas-MCF Choke Size 7/14/64" RVATION DIVISION
124 8 6 ⁴ 2 EST DATA AND REQUEST F IL WELL rate First New Oil Run To Tanks ength of Test crival Prod. During Test AS WELL scient Prod. During Test AS WELL scient Prod. During Test 3000 esting Method (pilot, back pr.) ERTIFICATE OF COMPLIANC mereby certify that the rules and r vision have been complied with ove is true and complete to the	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given best of my knowledge and belief. Multiple Mul	11776' 11732' Liner 12870' after recovery of total volume of local epth or be for full 24 hours) Producing Method (Flow, pump, Including Pressure) Water-Bbls. Water-Bbls. Bbls. Condensate/MACF 30.8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.) Choke Size Gas-MCF Choke Size Choke Size 70 API Choke Size 7/14/64" RVATION DIVISION
124 8 642 EST DATA AND REQUEST F IL WELL ate First New Oil Run To Tanks ength of Test ctual Prod. During Test AS WELL ctual Prod. During Test AS WELL ctual Prod. Test-MCF/D 3000 esting Method (pilot, back pr.) ERTIFICATE OF COMPLIANCE arereby certify that the rules end r vision have been complied with	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given best of my knowledge and belief. Multiple Mul	11776' 11732' Liner 12870' after recovery of total volume of load depth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbls. Bbls. Condensate/MACF 30.8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.) Choke Size Cas-MCF Cas-MCF Choke Size Choke Size 7/14/64" RVATION DIVISION
124 8 6 ¹ / ₂ EST DATA AND REQUEST F IL WELL cate First New Oil Run To Tanks ength of Test .ctual Prod. During Test AS WELL .ctual Prod. During Test AS WELL .ctual Prod. During Test Mathematical States .ctual Prod. During Test .ctual Prod. Durin	7-5/8" 2-3/8" 5 ¹ / ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given best of my knowledge and belief. Mun Mun Mun Mun Mun Mun Mun Mun	11776' 11732' Liner 12870' after recovery of total volume of load depth or be for full 24 hours) Producing Method (Flow, pump, Casing Pressure Water-Bbls. Bbls. Condensate/MACF 30.8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.) Choke Size Gas-MCF Choke Size Choke Size Job Size Choke Size Choke Size Job Size Size Size Size Size Size
124 8 6 ³ 2 EST DATA AND REQUEST F PIL WELL Cato First New Oil Run To Tanks ength of Test actual Prod. During Test AS WELL AS WELL AS WELL AS WELL AS WELL AS WELL Catal Prod. Test-MCF/D 3000 setting Method (pilot, back pr.) ERTIFICATE OF COMPLIANCE hereby certify that the rules and r vision have been complied with ove is true and complete to the Manual Manual (Signal Signal Signal	7-5/8" 2-3/8" 5 ¹ ₂ " 2-7/8" OR ALLOWABLE (Test must be able for this d Date of Test Tubing Pressure Oil-Bhis. Length of Test 4 hours Tubing Pressure (shut-is) 4808 flow CE regulations of the Oil Conservation and that the information given best of my knowledge and belief. Must	11776' 11732' Liner 12870' dfer recovery of social volume of local epth or be for full 24 hours) Producing Method (Flow, pamp, for the form full 24 hours) Producing Method (Flow, pamp, for the form, pamp, for the form, pamp, for the form, pamp, for the form, pamp, for the form full 24 hours) Bble. Condensate/MACF 30.8/500 Casing Pressure (Ebut-in) 2000 OIL CONSEF APPROVED	7650 Sax Class "C" 1500 "H" plus - 600 i ad oil and musi be equal to or exceed to gas lift, etc.) Choke Size Gas-MCF Choke Size Choke Size J I Choke Size J I Choke Size J J I Choke Size J I I I I I I I I I I I I I I

4.02

GTATE OF NEW MEXICO			Form C-104 Rovised 10-1-78
		BOX 2088	
	SANTA FE, N	EW MEXICO 87501	
U 0.U.D.		· · ·	
LAND OFFICE	REQUEST F	OR ALLOWABLE	$\{ \varphi_i, \varphi_j \} \in \{ \varphi_i, \varphi_j \}$
	AUTHORIZATION TO TRA	AND VSPORT OIL AND NATURAL GA	C Stand And Other
I. PRONATION DEFICE			SANTA FE SION
Estoril Producing (Corporation		
	Building, Midland, TEXAS	79701 Other (Pirare explain)	
New Well	Change in Transporter of:	Vinet (Firese expland)	
Recompietion	oii 🗍 🖙	∝= 🕅 _ Dual Complet	ion .
Change in Ownership	Casingheod Ges Con	densate	·
If change of ownership give name and address of previous owner			
I. DESCRIPTION OF WELL AND			·
Lease Name	Well No. Pool Name, Including		tase
Belco Federal	# 1 Antelope Ridg	e - Strawn Gas Siote, Fe	deval or Foe Federal
Unit Letier;	760 Feel From The South	ine and 1980	om The East
Line of Section 15 T.	mahlp 23 South Ronge 3	4 East , NMPM, Lea	Cou
		· · ·	· · · · · · · · · · · · · · · · · · ·
I. DESIGNATION OF TRANSPOR			proved copy of this form is to be sent)
Name of Authorized Transporter of Co	asinghead Gas 📄 or Dry Gos	Address (Give address to which ap	proved copy of this form is to be sent)
Gas Company of New Mex		1600 First Internatio	nal Bldg,Dallas, TX 7527
If well produces oil or liquids, give location of tanks.	Unit Sec. Twp. Rge.	1s gas actually connected?	March 7, 1981
If this production is commingled w	ith that from any other lease or pool		
COMPLETION DATA	Oil Weil Gus Well	New Well Workover Deepen	[†] Plug Bock [†] Some Res'v. [†] Diff. R
Designate Type of Completi	x = (X)		
Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
6/12/80 Elevations (DF, RKB, RT, GR, etc.)	2/4/81 Name of Producing Formation	13239 Top Oll/Gas Pay	13239 Tubing Depth
3410GL, 3427 DF	Strawn - Morrow	12,002'	12,870'
Perforations Strawn 12,178 to 13,100	Morrow - open hole 1	3,178 - 13239	Depth Casing Shoe 11776
		D CEMENTING RECORD	
HOLE SIZE	CASING & TUBING SIZE	610'	SACKS CEMENT 400 Sax Class "C"
124	10-3/4"	5100'	7650 Sax Class "C"
<u> </u>	7-5/8" 2~3/8" 5 ¹ 2" 2~7/8"	11776' 11732' Liner 12870'	1500 "H" plus - 600 C
TEST DATA AND REQUEST F			il and must be equal to or exceed top a
OIL WELL	able for this d	epth or be for full 24 hours)	
Date First New Oll Run To Tanks	Date of Test	Producing Method (Flow, pump, gas	41/1, \$554 /
Length of Test	Tubing Pressure	Cosing Pressure	Choke Size
Actual Prod. During Test	Oll-Shie.	Water-Bble.	Gas-MCF
	l	· ·	
GAS WELL			•
Atival Prod. Teel-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
- 3000 Teeling Method (piror, beck pr.)	4 hours Tubing Pressure (shut-in)	30.8/500 Cosing Pressure (Sbut-in)	570 API
	4808 flow	2000	7/14/64"
CERTIFICATE OF COMPLIANCE		OIL CONSERVA	
		APPROVED	
I hereby certify that the rules and r Division have been complied with	and that the information given		
above is true and complete to the	best of my knowledge and belief.	.вү	
		TITLE	
() () () (.) (n)	PV.		compliance with MULE 1104.
- Delamant / Vil	met.	wall this form must be accomp	weble for a newly drilled or deeps enied by a tabulation of the devia
Agent for Eston	froducing lo.	tasts taken on the well in acc	ordance with RULE 111. wat be filled out completely for all
л (ти	4	able on new and recompleted v	vells.
much 19	<u>x</u> 170	Fill out only Sections I, well name or number, or transpo	II, III, and VI for changes of own rise, or other such change of condit
- 100	7	Separate Forma C-104 mu	

		VATION DIVISION	Form C-104 Revised 10-1-78
DISTAINUTION	P. O.	DOX 2008	
V. 6. U. 8.		\int +	
LAND OFFICE	REQUEST	FOR ALLOWABLE	
PERATOR		AND GL AND NATURAL GA	
TAONATION DEFICE			S.1
Estoril Producin	g Corporation		TA FE STON
11th Floor, Vaug	hn Building, Midland, TEXAS		
Reason(s) for filing / Check prop	er dok) Change in Transporter of;	Other {Please explain;	
Recompletion		, 😋 🔣 🛛 Dual Comple	tion .
Change in Ownership	Casingheod Ges Cor	ndensale	
If change of ownership give na and address of previous owner			
DESCRIPTION OF WELL A	IND LEASF. Well No. Pool Name, Including	Cormetines Courses Kind of	
Belco Federal	1. I		ederal or Fee Federal
Location		· · · · ·	
Unit Letter 0 ;	760 Feel From The South	Line and 1980 Feel F	rom The East
Line of Section 15	T. mahip 23 South Ronge 3	34 East , NMPM, Lea	c
	ORTER OF OIL AND NATURAL		
Name of Authorized Transporter of	TOUL OF CONGENSOLE VY	Address (Give address to which a	opproved copy of this form is to be sent
Name of Authorized Transporter a			pproved copy of this form is so be sens
Gas Company of New !	MCX1CO Unit Sec. Twp. Rge.	1500 First Internation	<u>onal Bldy,Dallas, TX 752</u> , ^{when}
If well produces off or liquida, give location of tanks.		Yes	March 7, 1981
If this production is commingle COMPLETION DATA	d with that from any other lease or poo	ol, give commingling order number:	
Designate Type of Comp	Oli Well Gas Well	New Well Workover Deeper	Plug Back Same Res'v. Diff.
Designate Type of Comp	Dr.e Compl. Ready to Prod.	Total Depth	P.B.T.D.
6/12/80	2/4/81	13239	13239
Elevations (DF. RKB. RT, GR, et	c.j Name of Producing Formation Strawn - Morrow	Top Oll/Gas Pay	Tubing Depth
Perforations	SCRAWIT - PIOLEOW	12,002'	12,870' Depth Casing Shoe
Strawn 12,178 to 13,		and the second	11776
HOLE SIZE	TUBING, CASING, AI	DEPTH SET	SACKS CEMENT
174	16"	610'	400 Sax Class "C"
124	10-3/4"	5100'	7650 Sax Class "C"
	<u>7-5/8" 2-3/8"</u> 5 ¹ 2" 2-7/8"	11776' 11732' Liner 12870'	1500 "H" plus - 600
TEST DATA AND REQUEST	F FOR ALLOWABLE (Test must be		oil and must be equal to or exceed top
OIL WELL Date First New Oil Run To Tanks		Producing Method (Flow, pump, ga	s lift, etc.)
Length of Test	Tubing Pressure	Cosing Pressure	Choke Size
Taudiu ol taar			
Actual Prod. During Test	Oli-Bbie.	Water-Bbis.	Gas - MCF
SAS WELL	······		ł
Actual Prod. Test-MCF/D	Length of Test	Bble. Condensate/MMCF	Gravity of Condensate
3000 Feeting Herhod (pilol, back pr.)	4 hours Tubing Presews (Shut-in)	30,8/500 Cooling Pressure (Ebut-10)	570 APT
	4808 flow	2000	7/14/64"
ERTIFICATE OF COMPLI		DIL CONSERV	ATION DIVISION
•		APPROVED	19
vision have been complied w	nd regulations of the Oll Conservation with and that the information given	ii	
ove is true and complete to	the best of my knowledge and belief.	·BY	
		TITLE	······
(), (), (), (), ()	. 00		in compliance with MULE 1104.
stamate 11	inaturat.	If this is a request for al well, this form must be account	iowable (or a nawly drilled or dee apanled by a tabulation of the dee
and for Esto	if Froducing Co.	All encline of this form	must be filled out completely for
O NO	(Tule)	able on new and recompleted	wells.
much	18, 176	Fill out only Sections I, well name or number, or transp	, 11, 111, and VI for changes of a outer, or other such change of cos
•	, <i>y</i> -		ust he filed for each pool in m

NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

C-116		
Revised	1.1	55

Operator Estoril Producing Co	rporat	ion	Po An		pe R	idge – Str	a	iwn-Mo	rrow		^{unty} Lea					-
Address Suite 1120, Vaughn B	uildin	g, M	idla	nd, '	TX 79			E O F F - {X}	i Sch	eduled 🚺		Comp	letion [<u> </u>	Spe	cial XX
	WELL		LOC	ATION		DATEOF	rus	CHOKE	TBG.	DAILY	CENGTH OF	· · · · · · · · · · · · · · · · · · ·		URING	1	GAS - OIL
	NŬ.	υ	s	т	R	TEST	9Т.		PRESS.	ALLOW-	TEST HOURS		GRAV.	01L 881.54	GAS M.C.F.	RATIO
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No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produr 1 at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged (take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 50° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules. I hereby certify that the above information is true and complete to the best of my knowledge and belief.

(Sign for Estoril Agent (Tide) 1981 March 23, (Date)

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NEW MEXICO OIL CONSERVATION COMMISSION

SOUTHEAST NEW MEXICO PACKER LEAKAGE TEST

Operator ESTORIL PRO	DUCING CORPORATIO)N	Lease B	ELCO FEDERA	AL.		No. 1
iocation Unit of Well -0-	Sec 15	Twp 2.3-S		Rge 34-E		County	LFA
Name of Rese	rvoir or Pool	Type of H (Oil or (d of Prod Art Lift	Prod. (Tbg of		Choke Size
Upper ANTELOPE RIDGE Compl DESIGNATED STR	FIELD AREA -UN- AWN GAS FIELD	GAS	FLOW		TBG		12/64"
Lower ANTELOPE RIDGE Compl MORROW GAS FIE	FIELD AREA -	GAS	FLOW	·	TBG		12/64"

FLOW TEST NO. $\mathbf{Q}_{0,0} = \left\{ \begin{array}{c} 0 & 2 & 0 \\ 0 & 0 & 1 \end{array} \right\}$

Both zones shut-in at (hour, date): 11:30 A.M. MARCH 18,1981		
Well opened at (hour, date):1:30 P.M. MARCH 18, 1981	Completion	Lower Completion
Indicate by (X) the zone producing	•	<u> </u>
Pressure at beginning of test	6200	1600
Stabilized? (Yes or No)	YES	NO
Maximum pressure during test	6200	1600
Minimum pressure during test	6200	1000
Pressure at conclusion of test	6200	1000
Pressure change during test (Maximum minus Minimum)	0	600
Was pressure change an increase or a decrease?		DECRFASE
Total Time On Well closed at (hour, date): 2:30 P.M. March 18, 1981 Production Oil Production Gas Production During Test:O bbls; Grav; During Test	one (1) h	

Remarks Morrow (LT) gas was measured by a 2" orifice well tester (see chart attached)

FLOW TEST NO. 2	**	T
Well opened at (hour, date): 4:00 P.M. March 18, 1981	Upper <u>Completion</u>	Completion
Indicate by (X) the zone producing	• <u> X </u>	<u></u>
Pressure at beginning of test	. 6200	1000
Stabilized? (Yes or No)	. YES	YES
Maximum pressure during test	. 6200	1000
Minimum pressure during test	4800	1000
Pressure at conclusion of test	. 4800	1000
Pressure change during test (Maximum minus Minimum)	1400	0
Was pressure change an increase or a decrease?	DECREASE	
Well closed at (hour, date) 5:00 P.M. March 18, 1981 Production	one (1) hou	r
Oil ProductionGas ProductionDuring Test: 4.5 bbls; Grav. 55°; During Test 245MCF	; GOR 54,4	44 : 1

Remarks Strawn (UT) gas was measured by a 2" orifice gas meter run, gas sold to

GAS COMPANY OF NEW MEXICO

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Approved			19	
New Mexico	011	Conservation	Commission	
By				

Operator_	ESTOR	L PRO	DUCING	CORPO	PATION	
By	20	\square			~	
D. R.	CURRY			Z		
Title	Agent					
Date	March	19, 19	981		2	

Title___

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3. 2012 34: 34 bours prior to the commencement of any packer leakage test, and provide shall notify the commission in writing of the exact time the moment to be observed. Offset operators shall also be no notified.

2. Figure leavage test shall commence when both zones of the dual control of classific for pressure substruction. Both zones shall remain shares with the well-bead pressure in each has stabilized and for a minior of the house thereafter, provided however, that they need not remain where it we then 24 hours.

4 For Flow West No. 1, one zone of the dual completion shall be produced at the rought rate of production while the other zone remains shut-in. Such to it don't be continued until the flowing wellbead pressure has become stabilities and for a minimum of two hours thereafter, provided however, that the flow test need not continue for more than 24 hours. 5. Following completion of Flow Test No. 1, the well shall again be notin, in accordance with Paragraph 3 above.

6. Five Test He. 2 shall be conducted even though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the tase as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the previously shut-in zone is produced.

7. All pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked with a deadweight tester at least twice.once at the beginning and once at the end, or each flow test.

beginning and once at the end, of each flow test. A The results of the incrediscribed ivers shall be filed e-to within 15 days after completion of the test. Tests shall be filed e-to the appropriate District Office of the Mos Menter Coll Courservation comission on Southeast New Mexico Packer Leakage Test Town Merimed 11-158, together with the original pressure recording gauge charts with all the deadweight pressures which were taken indicated thereon. In lieu of filing the aforeasid charts, the operator may construct a pressure versus the curve for each zone of each test, indicating thereon all pressure weight pressure readings which were taken. If the pressure curve is submitted, the original the permanently filed in the operator's office. Form C-116 shall also accompany the Packer Leakage Test Forswhen the test period colucides with a gas-oil ratio test period.

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NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

C-116 Revised 1-1-65 -

Operator			Poo	51 * 1							ounty					
Estoril Producing Cor	porati	on	An	telop	be Ri	dge – St	r a	wn-Mo	rrow	Gas	Lea) I
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No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

Gas volumes must be reported in MCF measured at a pressure base of 15.625 psis and a temperature of 60° F. Specific gravity base will be 0.60. Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

(Signature) Agent for Estoril (Tide) March 23, 1981 (Date)

This form is not to be used for reporting packer leavage tests in Northwest New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

	in Northwest Sev P	. SOUTHEAST	NEW MEXIC	O PACKER L	EAKAGE TES	Î Î	
Operato	OF ESTORIL PRO	DUCING CORPORATIO	אכ	Lease	BELCO FEDE		No. 1
Location of Well		Sec 15	Twp 23-S		Rge G 34-1	L OT A County SANTA FE	LFA
	Name of Rese	rvoir or Pool	Type of H (Oil or G		od of Prod Art Lift	I	Choke Size
	ANTELOPE RIDGE DESIGNATED STR	FIELD AREA -UN- AWN GAS FIELD	GAS	FLO	1	TBG	12/64"
Lower	ANTELOPE BIDGE MORROW GAS FIE		GAS	FLO	· · · · · · · · · · · · · · · · · · ·	TBG	12/64"

FLOW TEST NO. 1

Both zones shut-in at (hour, date): 11:30 A.M. MARCH 18,1981		
Well opened at (hour, date):1:30 P.M. MARCH 18, 1981	Upper Completion	Lower Completion
Indicate by (X) the zone producing		<u></u>
Pressure at beginning of test	6200	1600
Stabilized? (Yes or No)	YES	NO
Maximum pressure during test	6200	1600
Minimum pressure during test	6200	1000
Pressure at conclusion of test	6200	1000
Pressure change during test (Maximum minus Minimum)	0	600
Was pressure change an increase or a decrease?		DECREASE
Well closed at (hour, date): 2:30 P.M. March 18, 1981 Production Oil Production Gas Production During Test: -0- bbls; Grav ; During Test 24 M		

Remarks Morrow (LT) gas was measured by a 2" orifice well tester (see chart attached)

FLOW TEST NO. 2		-
Well opened at (hour, date): 4:00 P.M. March 18, 1981	Upper Completion	Lower Completion
Indicate by (X) the zone producing	, <u> </u>	
Pressure at beginning of test	6200	1000
Stabilized? (Yes or No)	, YES	YES
Maximum pressure during test	6200	1000
Minimum pressure during test	, 4800	1000
Pressure at conclusion of test	4800	1000
Pressure change during test (Maximum minus Minimum)	. 1400	0
Was pressure change an increase or a decrease?		r
Oil Production Gas Production During Test: 4.5 bbls; Grav. 55°; During Test 245 MCP	; GOR <u>54,4</u>	44:1
Remarks Strawn (UT) gas was measured by a 2" orifice gas meter run, gas	sold to	
GAS COMPANY OF NEW MEXICO		
I hereby certify that the information herein contained is true and complet knowledge. Operator ESTORIL PROD		
Approved 19 New Mexico Oil Conservation Commission By HMC 9		<u></u>
D. R. CURRY	\sim	

Title____

Date_

Agent

March 19, 1981

By	-

Title_



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- A Well flowing 5,400 Mcf/Day from Strawn, Morrow shut in
- B Both zones shut in 11:30 AM 18 Mar 81
- C Morrow zone opened to flow , Flow Test #1
- D Both zones shut in at 2:30 PM

- E Strawn zone opened to flow, Flow Test #2 started at 4:00 PM
- End of test at 5:00 PM, Strawn flowing at F -5,900 Mcf/Day, Morrow shut in





NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

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NO. U I T N TEST 5 SIZE SIZE ABLE Out Desite ALL.F. CU.FT/BBL Belco Federal (Strawn) 1 0 15 23S 34E 3/18/81 12/64*4800 1 0 55° 4.5 24S 54,444/1 Belco Federal (Morrow) 1 0 15 23S 34E 3/18/81 12/64*6200 1 0 -24 Infinite (Morrow) 1 0 15 23S 34E 3/18/81 12/64*6200 1 0 -24 1nfinite (Morrow) 1 0 15 23S 34E 3/18/81 12/64*6200 1 0 -24 1nfinite (Morrow) 1 1 1 1 0 24 1nfinite (Morrow) 1 1 1 0 15 0 1 0 24 1nfinite (Morrow) 1 1 1 0 15 0		WELL		LOC	ATION		DATEOF	12	CHOKE	TBG.		07		1					
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No well will be assigned an allowable greater than the amount of oil produced on the official test. During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Coperator is an encouraged to take advantage of this 25 percent tolerence in order that well can be assigned located by more than 25 percent to take advantage of this 25 percent tolerence in order that well can be assigned will be 6.66. Report casing pressure in lies of tubing pressure for any well producing through casing. Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Kuie 301 and appropriate pool rulos. March 23, 1981		1	0	15	235	34E	3/18/81		12/64	"6200		1	0			24	Infinite		
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March 23, 1981										Agent for Estoril									
(Date)										M	larch	23,	1981						
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This form is not to be used for reporting packer leakage tests

NEW MEXICO OIL CONSERVATION COMMISSION

SOUTHEAST NEW MEXICO PACKER LEAKAGE TEST

Operat	or	ESTORIL PROD	VUCING CORFORATIO	ON	Lease B	ELCO	FEDERAL		0.3 M		
Locati of Wel		Unit -0-	Sec 15	Twp 23-5	3	Rge	34-E	S-17A	County	AFA	
		Name of Rese	rvoir or Pool	Type of 1 (Oil or (d of Art			Medium O	Choke	Size
Upper Compl		TELOPE RIDGE SIGNATED STRA	FIELD AREA -UN- WN CAS FIELD	GAS	FLOW	r		TBG		12/64"	
Lower Compl		TELOPE RIDGE RROW GAS FIEL		GAS.	FLOW			TBG		.2/64"	

FLOW TEST NO. 1

Both zones shut-in at (hour, date): 11:30 A.M. MARCH 18,1981		
Well opened at (hour, date):1:30 P.M. MARCH 18, 1981	Upper Completion	Lower Completion
Indicate by (X) the zone producing		<u> </u>
Pressure at beginning of test	6200	1600
Stabilized? (Yes or No)		NO
Maximum pressure during test	6200	1600
Minimum pressure during test	6200	1000
Pressure at conclusion of test		1000
Pressure change during test (Maximum minus Minimum)	0	600
Was pressure change an increase or a decrease?		DECREASE
Well closed at (hour, date): 2:30 P.M. March 18, 1981 Production Oil Production Gas Production During Test: -0- bbls; Grav. ; During Test 24 MC	one (1) h	
Remarks Morrow (LT) gas was measured by a 2" orifice well tester (see char	t attached)	

FLOW TEST	NO. 2		_
Well opened at (hour, date): 4:00 P.M. March 18,	1981	Upper Completion	Lower Completion
Indicate by (X) the zone producing		<u> </u>	
Pressure at beginning of test		6200	1000
Stabilized? (Yes or No)	• • • • • • • • • • • • • • • • • • • •	YES	YES
Maximum pressure during test	• • • • • • • • • • • • • • • • • • • •	6200	1000
Minimum pressure during test	• • • • • • • • • • • • • • • • • • • •	4800	1000
Pressure at conclusion of test	• • • • • • • • • • • • • • • • • • • •	4800	1000
Pressure change during test (Maximum minus Minimum)		
Was pressure change an increase or a decrease? Well closed at (hour, date)5:00 P.M. March 18, 198 Oil Production Gas Proc During Test: 4.5 bbls; Grav. 55°; During 5	Total time on <u>1</u> Production duction	one (1) ho	
Remarks Strawn (UT) gas was measured by a 2" orif	ice gas meter run, gas	sold_to	
GAS COMPANY OF NEW MEXICO			
I hereby certify that the information herein conta: knowledge. Approved 19 New Mexico Oil Conservation Commission	ined is true and complet Operator_ESTORIL PROD By	/	-
B y	D. R. CURRY TitleAgent	<i>```</i>	·
Title	Date <u>March 19, 19</u>	81	



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3 P.M.

* P.M.



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11 A.M.

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- A Well flowing 5,400 Mcf/Day from Strawn, Morrow shut in
- B Both zones shut in 11:30 AM 18 Mar 81
- C Morrow zone opened to flow ,Flow Test #1
- D Both zones shut in at 2:30 PM
- E Strawn zone opened to flow, Flow Test #2 started at 4:00 PM
- OW WIND WIN I - End of test at 5:00 PM, Strawn flowing at F 5,900 Mcf/Day, Morrow shut in

