CASE 6429: ZIA ENERGY, INC. FOR APPROVAL OF INFILL DRILLING, LEA COUNTY, NEW MEXICO

CASE NO.

6429

APPlication,
Transcripts,
Small Exhibits,

ETC.



ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION

JERRY APODACA
GOVERNOR

NICK FRANKLIN BECRETARY

March 6, 1979

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

Federal Energy Regulatory Commission 825 North Capitol Street, N.E. Washington, D.C. 20426

Re: Finding pursuant to Section 271.305, NGPA regulations

Gentlemen:

Attached is a copy of an order entered by the New Mexico Oil Conservation Division containing a finding that the drilling of the subject well is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by any existing well.

Section 34, To	ownship 20 Se	outh, Ra	nge 36 Ea	st		
Operator: Zi	ia Energy, I	nc.				
List of Parti	cipants:	Zia Ener	gy. Inc.	······································		
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Attachments: application and exhibits



STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

JERRY APCDACA

NICK FRANKLIN SECRETARY

March 6, 1979

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

Mr. Tom Kellahin Kellahin & Kellahin	CASE NO. ORDER NO.	6429 K=5938	
Attorneys at Law Post Office Box 1769 Santa Fe, New Mexico	Applicant:		
	Zia E	nergy, I	nc.
Dear Sir:			
Enclosed herewith are two	copies of the	above-r	eferenced
Division order recently ent	ered in the	subject	case.
Yours very truly,			
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JOE D. RAMEY			
Director			
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Copy of order also sent to:			
Copy of order also sent to: Hobbs OCCx			

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. 6429 Order No. R-5938

APPLICATION OF ZIA ENERGY, INC., FOR APPROVAL OF INFILL DRILLING, LEA COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 31, 1979, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 28th day of February, 1979, 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, Zia Energy, Inc. seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.
- (3) That the applicant further seeks approval of a waiver of existing well-spacing requirements.
- (4) That the standard spacing unit in the Eumont Gas Pool is 640 acres.
- (5) That Zia Energy, Inc. is the operator of an 80-acre tract consisting of the N/2 NE/4 of said Section 34 in said Eumont Gas Pool.

-2-Case No. 6429 Order No. R-5938

- (6) That applicant's 80-acre tract is communitized with the S/2 NE/4 of said Section 34 forming an approved 160-acre non-standard proration unit for said pool.
- (7) That said 160-acre non-standard proration unit is dedicated to the Warrior Inc. State "WEG" Well No. 1 located in Unit H of said Section 34.
- (8) That production from said State "WEG" Well No. 1 declined from an average monthly rate of 10,506 MCF in 1956 to 970 MCF in 1973.
- (9) That during 1974 said State "WEG" Well No. 1 was extensively worked over, being cleaned out, having additional zones perforated, and being acid fraced.
- (10) That said workover was unsuccessful and in fact production declined to an average rate of 125 MCF per month or a figure equal to about 13 percent of its preworkover rate.
- (11) That the evidence presented demonstrated that said State "WEG" Well No. 1 is no longer effectively and efficiently draining said dedicated 160-acre non-standard provation unit.
- (12) That the evidence presented further demonstrated that the drilling and completion of applicant's said Elliott State Well No. 2 should result in the production of an additional 350,000 MCF of gas from applicant's acreage which would not otherwise be recovered from the proration unit.
- (13) That such additional recovery from the non-standard proration unit will result in such unit being more efficiently and economically drained.
- (14) That said Elliott State Well No. 2 is to be drilled as an "infill" well on the existing 160-acre non-standard proration unit.
- (15) That in order to permit the drainage of a portion of the reservoir covered by said 160-acre non-standard proration unit which cannot be effectively and efficiently drained by the existing well thereon, the subject application for infill drilling should be approved as an exception to the standard well spacing requirements for said Eumont Gas Pool.

IT IS THEREFORE ORDERED:

(1) That the applicant, Zia Energy, Inc., is hereby authorized to drill its Elliott State Well No. 2 to be located in Unit B of

-3-Case No. 6429 Order No. R-5938

Section 34, Township 20 South, Range 36 East, as an infill well on an existing 160-acre non-standard proration unit being the NE/4 of said Section 34, Eumont Gas Pool, Lea County, New Mexico. The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by the existing 160-acre non-standard proration unit which cannot efficiently and economically be drained by any existing well thereon.

(2) 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 herein-

STATE OF NEW MEXICO
QIL CONSERVATION DIVISION

JOE D. RAMEY

Director

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION State Land Office Building Santa Fe, New Mexico 31 January 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Zia Energy, Inc.) for approval of infill drilling, Lea County, New Mexico.

CASE 6429

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

APPEARANCES

For the Division:

Lynn Teschendorf, Esq. Legal Counsel for the Division State Land Office Building Santa Fe, New Mexico 87501

For the Applicant:

W. Thomas Kellahin, Esq. KELLAHIN & KELLAHIN 500 Don Gaspar St. Santa Fe, New Mexico 87501

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FARRIS NELSON

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MR. STAMETS: We'll call next Case 6429.

MS. TESCHENDORF: Case 6429. Application of Zia Energy, Inc. for approval of infill drilling, Lea County, New Mexico.

MR. STAMETS: Call for appearances.

MR. KELLAHIN: Tom Kellahin of Kellahin and Kellahin, Santa Fe, New Mexico, appearing on behalf of the Applicant, and I have one witness.

(Witness sworn.)

FARRIS NELSON

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

- Q Would you please your name and occupation?
- A. I'm Farris Nelson. I am employed by Zia Energy as a petroleum engineer.
- Q. Mr. Nelson, have you previously testified before the Oil Conservation Division and had your qualifications
 as a petroleum engineer accepted and made a matter of record?
 - A. Yes, I have.
- Q Have you made a study of and prepared some exhibits with regards to this particular application?

LY WALTOIN BOYD ED SHORTHAND REPORTER AND BRIDGE (1915) 471-2442 A.Po. New Mexico 87501

A. Yes, I have.

MR. KELLAHIN: We tender Mr. Nelson as an expert witness.

MR. STAMETS: The witness is qualified.

Q (Mr. Kellahin continuing.) Mr. Nelson, would you please refer to what I have marked as Zia Energy Exhibit A and identify that exhibit?

A. Yes. Exhibit A is a plat of the area of the proposed Elliott State No. 2. This plat proposes to show the State lease 11298 boundaries, which is the northeast quarter section of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico.

This quarter section is divided into two 80-acre tracts consisting of the north half, operated by Zia Energy Incorporated, and the south half, operated by Warrior Incorporated.

This lease was originally owned and operated by, the north half, Frank Elliott Oil Company, the south half by Amerada Oil Company.

Included in this plat are several Eumont gas wells, showing their initial potentials and their cumulative production figures.

Q. With regards to this particular proration unit there is an existing Eumont gas well on that proration unit.

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- Q And that is the Elliott State No. 1.
- A. No.
- 0 What is the name of the well?
- A. That is the Warrior State WEG No. 1. This well is owned and operated by Warrior, Incorporated.
 - Q. What is the current status of that well?
- A. That well is currently being produced. There is a later exhibit to be submitted concerning the history on this well.
- Q The proposed Elliott State No. 2 Well will be the second well on this proration unit that's producing from the Fumont was zone.
- A. Ves that's correct. There is one additional plugged and abandoned well, which is the Elliott State No. 1 in unit letter A, but this well is plugged and abandoned.
 - Q And that was an oil well.
 - A. Yes, that's correct.
- Q. Okay. What are you seeking to accomplish by this application, Mr. Nelson?
- A. Zia Energy is seeking a finding from the Oil Commission that their Elliott State No. 2, to be located in unit letter B, Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is a necessary is necessary to effectively and efficiently drain that por-

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tion of the proration unit which cannot be so drained by the existing well. We further seek approval of a waiver of existing well-spacing requirements.

- Okay. Would you please refer to what is marked as Exhibit B and identify that?
- Exhibit B is a structure map of the area of the proposed Elliott State No. 2 with contours on the top of the Queen formation.

You will note that from these contours that there are gas wells both to the east and south and west, which means that Eumont gas wells have produced in all directions surrounding the Elliott State lease.

- Would you identify Exhibit C?
- Exhibit C is a tabulation for production, annual rates of production, from 1965 through 1977, as well as annual 72-hour shut-in pressures for six Eumont gas wells in the vicinity of the Elliott State Well.

You'll be able to see from this that most of these wells have produced in excess of what the cumulative production is from the Warrior State "WG" No. 1.

- All right, sir, would you identify Exhibit D?
- Exhibit D is an annual production tabulation for the State WEG No. 1 from the drilling of the well through 1977. This shows their annual gas production and their 72hour shut-in pressures on an annual basis.

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SALLY WALTON BOY CENTRIED SHOWTHAND REPORT 1951 Plans Blanca (1961) 471-54 Banta Fe, New Monton 1759

to in this exhibit is there are several years during this span of time when the bottom hole pressures actually are greater than they were in preceding years. This is an indication that we're dealing with a relatively low permeable formation and there's only one thing that would probably explain this anomaly in bottom hole pressures. We could have a variation in the 72-hour shut-in pressure; if the well were left shut-in for more than 72 hours, the bottom hole pressure could be expected to increase, which would give you a higher bottom hole pressure than preceding years.

Q. What conclusions, then, do you draw from this exhibit?

A. We're drawing the conclusion from this exhibit that we are dealing with a low permeable formation and that due to that low permeability the one well, the State WEG No. 1, will not adequately drain the entire quarter section.

- Q Please refer to Exhibit E and identify it.
- A. Exhibit E is just a decline curve for the State WEG No. 1. You will note that in the early years of its production, either from the tabulation or from the decline curve, that the production decline was very rapid in the first four years of its producing history.
 - Q All right, sir. Would you identify Exhibit F?

	A.	Exhibit F	l is a	well da	ta sheet	for Sou	thland
Royalty	Eumont	gas well.	It's	their S	tate E-3	3 Well N	lo. 2.
The fol	lowing	exhibits,	Fl thro	ough F8,	are a 1	ine of c	ross
section	, which	will be p	resente	ed later	, and th	ese data	sheets
will sh	ow the	producing	history	of gas	wells a	long the	cross
section	•						

Q In summary, Mr. Nelson, how does the Warrior
No. 1 Well compare to the other Eumont gas wells in this
area?

A. Actually the production on the Warrior No. 1
Well is about the same as some to the south, which would be
the Warrior "CO" Federal, the Gulf White No. 5. These
wells have all had from 7 to 800,000 cumulative production.

Wells to the east, I should point out, have had considerably higher cumulative recoveries and we believe that this is an indication that as you move to the west the formation becomes tighter and less permeable.

- Q. Would you identify Exhibit G for us?
- A. Yes. Exhibit G -- Tom, may we go back to Exhibit F3, please?
 - a Sure.
- A. Exhibit F3 is the Warrior State WEG No. 1 and this well was subjected to a rather extensive workover in 1974. Information concerning this workover is included in that well data sheet and at that point in time, in 1974,

SALEY WALTON BOY ENTINE SHORTMAND REPORT 11 Plans Black (168) 471-24 Senta Fe, New Montoo 1750

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additional zones were perforated and the formation was treated to a fracture treatment of 148,000 gallons of jelled brine with a 1-1/2 pounds of sand per gallon.

Referring either to the production tabulation or to the decline curve, you'll see that this workover was a complete failure, that actually the production since that time has been less than it was prior to the workover.

We feel like that this is also an indication that the low bottom hole pressure that you're dealing with in the Eumont formation at this point in time was just completely overwhelmed by the volume of water pumped into it at that time, and we'll offer a proposed technique later.

Q. All right, sir. Please refer to what we have marked as Exhibit I. It's found in the pocket part in the back of your pamphlet.

east spanning seven wells from the Southland Royalty State
E-33 No. 2, including a couple of wells that were not actually Eumont gas wells, but were produced as Eumont oil
wells. That would be the Charm Oil SPX No. 2, the Gulf Oil
Bell No. 1, and I believe the rest of these -- no, Bates (sice
which is now Tenneco Federal No. 3. These were oil wells
in the Eumont. The remaining wells here were produced as
Eumont gas wells.

We propose to show by this that as you move

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from the east in Section 26, west or slightly southwest, that the formation is rapidly falling off to the west but that the proposed Elliott State No. 2 well is still well within the structural limits that we can expect to produce gas.

- Would you refer to Exhibit J and identify it?
- Exhibit J is a section of an electric log from the Zia Energy Elliott Federal No. 1. This well was recompleted by Zia Energy in February of 1978, completing in the Yates-Seven Rivers, top of the Queen section, as we propose in the Elliott State No. 2.

I'd like to have you refer back to Exhibit F7 in connection with this. This Elliott Federal No. 1 had been shut in from 1961 until February of 1978. We cleaned out and added additional perforations to this well and recompleted in the upper part of the Yates and Seven Rivers formation.

The well has produced since that time a cumulative of 114,000 Mcf of gas. It's producing at an average of approximately 600 Mcf a day.

This Exhibit J has a porosity line drawn on it to indicate the zones, the porous zones that are being produced in this Elliott Federal No. 1, and if we may go into the Exhibit K, which is an electric log of the Elliott State No. 1 Well, this is an offset to the east for the pro-

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posed location.

MR. STAMETS: Before you do that, I'd like to orient myself on the map, Exhibit B.

The Zia Elliott Well No. 1, which was just worked over, is -- or not just worked over, it was worked over -- lies to the northeast in Section 26, is that correct?

> Yes, that is correct. A.

> > MR. STAMETS: Is that shown on Exhibit B?

Thelieve you're correct that it does not show

Yes, I believe it is, Mr. Examiner. A.

MR. STAMETS: I see No. 2 -- okay, I see it, here it is.

All right, now is that well now a Eumont gas we11?

Yes, it is. The Elliott Federal No. 1 is now a gas well.

yes, it does. It appears in Section 26 on Exhibit B. MR. STAMETS: Okay, and then you have identified that also on Exhibit A as a Eumont gas well with pro-

duction. Okay.

Yes.

By comparison of Exhibit J and K, we purport that there are zones existing in the proposed Elliott State No. 2 40-acre tract that we can reasonably expect to produce gas reserves from.

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(Mr. Kellahin continuing.) Mr. Nelson, have you made any calculations as to what can reasonably be expected to recover from the Elliott State No. 2 Well?

Yes. Using the reservoir information that we have, we have calculated that the 80-acres composed of the north half of the northeast quarter of Section 34 can reasonably be expected to produce a million Mcf of gas. We have estimated that 350,000 -- I stated that wrong.

There is at this present time a million Mcf of gas in the reservoir and we can reasonably expect to recover 350,000 Mcf of this.

In your opinion would that be Eumont gas that cannot effectively and efficiently be produced from the Warrior State No. 1 Well?

Yes, very definitely. The current producing rate of the Warrior State WEG No. 1 is approximately 125 Mcf per month. This well will certainly not produce any significant reserves in the future, and due to the extensive workover that was performed in 1974, we feel that it would be unadviseable to contemplate any additional workover on the State WEG No. 1.

In your opinion, Mr. Nelson, if the Elliott State No. 2 Well is not drilled and completed in the Eumont gas zone, will there be Eumont gas reserves left unrecovered?

We feel like that there'll be 350,000 Mcf of

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recoverable reserves left in the Eumont, that the operator will not have an opportunity to produce and that consumers will not have an opportunity to utilize.

In your opinion, Mr. Nelson, will the Elliott State No. 2 Well be necessary to effectively and efficiently drain the proration unit, that portion of the reservoir covered by the proration unit, which cannot more effectively and efficiently be drained by the existing well?

- Yes, this is our conclusion.
- Were Exhibits A through K prepared by you or compiled under your direction and supervision?
 - Yes, they were.
- And in your opinion, Mr. Nelson, will approval of this application prevent waste, protect correlative rights. and be in the best interest of conservation?
 - Yes. it will.

MR. KELLAHIN: We move the introduction of Exhibits A through K.

MR. STAMETS: These exhibits will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Mr. Nelson, if I understand this correctly, you currently have a 160-acre proration unit, consisting of the northeast quarter of Section 34, in the Eumont gas pool?

SALLY WALTON BOYD	CERTIFIED SHORTHAND REPORTER	3024 Plaza Blanca (595) 471-246	Santa Fo. New Mexico 87501	

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Λ.	169		16.3	

Q. And that is dedicated to the Warrior WEG Well No. 1.

A. Yes.

Q All right. Now, what acreage will be dedicated to the well which you propose to drill and complete in the northeast quarter of the section?

A. We propose to dedicate only the north half of the northeast quarter section.

Q Okay, and Warrior, then, will continue to operate the well in the south half?

A. Yes, that is correct.

Q. Now, the 350,000 Mcf which you expect to recover is from the 80-acre proration unit?

A. Yes, that's right.

Q So there may be some more down there that Warrior is not going to get with their well?

A. That's possible.

Q. But that's Warrior's problem?

A. That's Warrior's problem.

Q. Okay.

A. We might refer to Exhibits G and H, which you have there, but we didn't discuss them. That's simply the gas pooling agreement as it was executed between Elliott Oil Company and Amerada.

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Q.	Now, Exhibit E	has some rath	ner startling
a rather start	ling thing on it	. In mid-197	73 well, you
have a nice dec	cline curve star	ting back abo	out 1960 running
through the mid	ddle of '73 and	then it dropp	ed like a rock
to I guess t	hat's not a zer	o line but wh	at is that, 100
what?			

- A At 1975?
- Q. Right.
- A. That would represent 125 Mcf per day -- excuse me, per month.
- Q Production did not decline in this straight line fashion, did it?
- A. Well, the decline occurred following the workover in 1974.
- Q. Was that decline between the middle of -perhaps I'm looking at this thing wrong. What have you
 plotted here, the production for the year?
- A. We have plotted the average monthly production per year.
 - Q. And that's been plotted at --
 - A. We took the twelve months --
 - Q -- the center point of each year.
 - A. Right, that's correct.
 - Q. Okay.
 - A. So that your entire 1973 production was a

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unit and that they also waive applicable well spacing requirements.

MR. KELLAHIN: I have nothing further.

MR. STAMETS: Any other questions of the witness? He may be excused.

Oh, before he gets off, let me make sure we got everything.

RECROSS EXAMINATION

BY MR. STAMETS:

This is a standard location for an 80-acre gas spacing unit in the Eumont pool?

Yes, it is.

This is an application for infill drilling. What you're going to wind up with, though, is actually not an infill well. Why was the application for infill drilling;

As it presently stands, this will be a second well within an existing proration unit. That's as it stands today. It will only become the first well in a proration unit at some later date after the well has been completed and the reasoning for this is set forth in that Exhibit G, if you care to check that. That's Exhibit G, page two. paragraph number four.

Once our well is drilled then the present gas proration unit is terminated.

single point in the midpoint of the year, and your '74, and so on.

Q All right. Okay, that's much better. I thought this was monthly production.

MR. STAMETS: Any other questions of this witness?

MR. KELLAHIN: Yes, I have another question, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q. You indicated in your opening remarks, Mr.

Nelson, that there was also a need for a waiver of existing well spacing requirements.

Would you summarize for the Examiner what those requirements are and why it's necessary for you to obtain a waiver?

of steps leading to a price determination under the new
Federal Energy Regulation Commission Natural Gas Act of 1978.

One of the requirements under Section 103, sub-paragraph 275:
you caught me. I don't remember that last right off the top
of my head, but it is one of the requirements by this regulation that the Commission grant a finding that the well is
necessary to efficiently and effectively drain the proration

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the witness? He may be excused.

> Anything further in this case? We'll take the case under advisement. (Hearing concluded.)

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Q At what point?

A. Upon the completion of a gas well above 4300 feet in the north half of the northeast quarter of Section 34.

Q And what determines the completion in this case?

A. That would be the completion as a gas well above 4300 feet.

Q Is there any definition of what a completion means? Is that when you install the wellhead or when you test the well?

A. I would assume that that definition would be at the point in time when you can test the well and vou can determine by test that you have a commercial well producing in the Eumont gas above 4300 feet.

O Okay. Let's make sure I've got everything. We're talking -- the well you're talking about drilling is to be the Elliott State No. 2 and what's the location of that, 660 north, 1980 east?

A. No, it would be 1980 from the east and 660 from the north.

That's what you said, isn't it?

- Q That's right. It depends on where you start.
- A. Right.

MR. STAMETS: Okay. Any other questions of

SALLY WALTON BOYD CENTRED SHORTHAND REPORTED

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, skill, and knowledge, from my notes taken at the time of the hearing.

Sally W. Boyd CSR)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No.6428

earth by me on 1-3/ 19.79

Examiner

Oil Conservation Division

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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT OIL CONSERVATION DIVISION State Land Office Building Santa Fe, New Mexico 31 January 1979

EXAMINER HEARING

IN THE MATTER OF:

Application of Zia Energy, Inc. for approval of infill drilling,) Lea County, New Mexico.

CASE 6429

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

APPEARANCES

For the Division:

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For the Applicant:

W. Thomas Kellahin, Esq. KELLAHIN & KELLAHIN 500 Don Gaspar St. Santa Fe, New Mexico 87501

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MR. STAMETS: We'll call next Case 6429.

MS. TESCHENDORF: Case 6429. Application of Zia Energy, Inc. for approval of infill drilling, Lea County, New Mexico.

MR. STAMETS: Call for appearances.

MR. KELLAHIN: Tom Kellahin of Kellahin and Kellahin, Santa Fe, New Mexico, appearing on behalf of the Applicant, and I have one witness.

(Witness sworn.)

FARRIS NELSON

being called as a witness and having been duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. KELLAHIN:

- Q Would you please your name and occupation?
- A. I'm Farris Nelson. I am employed by Zia Energy as a petroleum engineer.
- Mr. Nelson, have you previously testified before the Oil Conservation Division and had your qualifications as a petroleum engineer accepted and made a matter of record?
 - A. Yes, I have.
- Q. Have you made a study of and prepared some exhibits with regards to this particular application?

Yes, I have.

MR. KELLAHIN: We tender Mr. Nelson as an expert witness.

MR. STAMETS: The witness is qualified.

(Mr. Kellahin continuing.) Mr. Nelson, would you please refer to what I have marked as Zia Energy Exhibit A and identify that exhibit?

Yes. Exhibit A is a plat of the area of the proposed Elliott State No. 2. This plat proposes to show the State lease 11298 boundaries, which is the northeast quarter section of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico.

This quarter section is divided into two 80acre tracts consisting of the north half, operated by Zia Energy Incorporated, and the south half, operated by Warrior Incorporated.

This lease was originally owned and operated by, the north half, Frank Elliott Oil Company, the south half by Amerada Oil Company.

Included in this plat are several Eumont gas wells, showing their initial potentials and their cumulative production figures.

With regards to this particular proration unit there is an existing Eumont gas well on that proration unit.

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- And that is the Elliott State No. 1.
- A. No.
- Q. What is the name of the well?
- A. That is the Warrior State WEG No. 1. This well is owned and operated by Warrior, Incorporated.
 - Q What is the current status of that well?
- A That well is currently being produced. There is a later exhibit to be submitted concerning the history on this well.
- Q. The proposed Elliott State No. 2 Well will be the second well on this proration unit that's producing from the Eumont gas zone.
- A. Yes, that's correct. There is one additional plugged and abandoned well, which is the Elliott State No. 1 in unit letter A, but this well is plugged and abandoned.
 - And that was an oil well.
 - A. Yes, that's correct.
- Q. Okay. What are you seeking to accomplish by this application, Mr. Nelson?
- Commission that their Elliott State No. 2, to be located in unit letter B, Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is a necessary -- is necessary to effectively and efficiently drain that por-

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tion of the proration unit which cannot be so drained by the existing well. We further seek approval of a waiver of existing well-spacing requirements.

- Q Okay. Would you please refer to what is marked as Exhibit B and identify that?
- A Exhibit B is a structure map of the area of the proposed Elliott State No. 2 with contours on the top of the Queen formation.

You will note that from these contours that there are gas wells both to the east and south and west, which means that Eumont gas wells have produced in all directions surrounding the Elliott State lease.

- Q. Would you identify Exhibit C?
- A. Exhibit C is a tabulation for production, annual rates of production, from 1965 through 1977, as well as annual 72-hour shut-in pressures for six Eumont gas wells in the vicinity of the Elliott State Well.

You'll be able to see from this that most of these wells have produced in excess of what the cumulative production is from the Warrior State "WG" No. 1.

- All right, sir, would you identify Exhibit D?
- A. Exhibit D is an annual production tabulation for the State WEG No. 1 from the drilling of the well through 1977. This shows their annual gas production and their 72-hour shut-in pressures on an annual basis.

J.C.

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The thing that I want to call your attention to in this exhibit is there are several years during this span of time when the bottom hole pressures actually are greater than they were in preceding years. This is an indication that we're dealing with a relatively low permeable formation and there's only one thing that would probably explain this anomaly in bottom hole pressures. We could have a variation in the 72-hour shut-in pressure; if the well were left shut-in for more than 72 hours, the bottom hole pressure could be expected to increase, which would give you a higher bottom hole pressure than preceding years.

Q What conclusions, then, do you draw from this exhibit?

A We're drawing the conclusion from this exhibit that we are dealing with a low permeable formation and that due to that low permeability the one well, the State WEG No. 1, will not adequately drain the entire quarter section.

Q Please refer to Exhibit E and identify it.

A Exhibit E is just a decline curve for the State WEG No. 1. You will note that in the early years of its production, either from the tabulation or from the decline curve, that the production decline was very rapid in the first four years of its producing history.

Q All right, sir. Would you identify Exhibit F?

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	A.	Exhibit Fl	is a	well	data	sheet	for S	outh1	and
Royalty	Eumont	gas well.	It's	thei	r Stat	e E-33	Well	No.	2.
The fol	lowing	exhibits, F	1 thr	ough	F8, ar	e a li	ne of	cros	s
section	, which	will be pr	esente	ed la	ter, a	nd the	se da	ta sh	eets
will sho	ow the	producing h	istor	of	gas w e	lls al	ong t	he cr	088
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In summary, Mr. Nelson, how does the Warrier No. 1 Well compare to the other Eumont gas wells in this area?

Actually the production on the Warrior No. 1 Well is about the same as some to the south, which would be the Warrior "CO" Federal, the Gulf White No. 5. These wells have all had from 7 to 800,000 cumulative production.

Wells to the east, I should point out, have had considerably higher cumulative recoveries and we believe that this is an indication that as you move to the west the formation becomes tighter and less permeable.

Would you identify Exhibit G for us?

Yes. Exhibit G -- Tom, may we go back to Exhibit F3, please?

Exhibit F3 is the Warrior State WEG No. 1 and this well was subjected to a rather extensive workover in 1974. Information concerning this workover is included in that well data sheet and at that point in time, in 1974,

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additional zones were perforated and the formation was treated to a fracture treatment of 148,000 gallons of jelled brine with a 1-1/2 pounds of sand per gallon.

Referring either to the production tabulation or to the decline curve, you'll see that this workover was a complete failure, that actually the production since that time has been less than it was prior to the workover.

We feel like that this is also an indication that the low bottom hole pressure that you're dealing with in the Eumont formation at this point in time was just completely overwhelmed by the volume of water pumped into it at that time, and we'll offer a proposed technique later.

All right, sir. Please refer to what we have marked as Exhibit I. It's found in the pocket part in the back of your pamphlet.

Exhibit I is a cross section from west to east spanning seven wells from the Southland Royalty State E-33 No. 2, including a couple of wells that were not actually Eumont gas wells, but were produced as Eumont oil wells. That would be the Charm Oil SPX No. 2, the Gulf Oil Bell No. 1, and I believe the rest of these -- no, Bates (sid) which is now Tenneco Federal No. 3. These were oil wells in the Eumont. The remaining wells here were produced as Eumont gas wells.

We propose to show by this that as you move

from the east in Section 26, west or slightly southwest, that the formation is rapidly falling off to the west but that the proposed Elliott State No. 2 well is still well within the structural limits that we can expect to produce gas.

- Q. Would you refer to Exhibit J and identify it?
- A. Exhibit J is a section of an electric log from the Zia Energy Elliott Federal No. 1. This well was recompleted by Zia Energy in February of 1978, completing in the Yates-Seven Rivers, top of the Queen section, as we propose in the Elliott State No. 2.

I'd like to have you refer back to Exhibit
F7 in connection with this. This Elliott Federal No. 1 had
been shut in from 1961 until February of 1978. We cleaned
out and added additional perforations to this well and recompleted in the upper part of the Yates and Seven Rivers
formation.

The well has produced since that time a cumulative of 114,000 Mcf of gas. It's producing at an average of approximately 600 Mcf a day.

This Exhibit J has a porosity line drawn on it to indicate the zones, the porous zones that are being produced in this Elliott Federal No. 1, and if we may go into the Exhibit K, which is an electric log of the Elliott State No. 1 Well, this is an offset to the east for the pro-

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posed location.

MR. STAMETS: Before you do that, I'd like to orient myself on the map, Exhibit B.

The Zia Elliott Well No. 1, which was just worked over, is -- or not just worked over, it was worked over -- lies to the northeast in Section 26, is that correct?

A. Yes, that is correct.

MR. STAMETS: Is that shown on Exhibit B?

A. Yes, I believe it is, Mr. Examiner.

MR. STAMETS: I see No. 2 -- okay, I see it,

here it is.

All right, now is that well now a Eumont gas well?

A. Yes, it is. The Elliott Federal No. 1 is now a gas well.

I believe you're correct that it does not show yes, it does. It appears in Section 26 on Exhibit B.

MR. STAMETS: Okay, and then you have identified that also on Exhibit A as a Eumont gas well with production. Okay.

A. Yes.

By comparison of Exhibit J and K, we purport that there are zones existing in the proposed Elliott State No. 2 40-acre tract that we can reasonably expect to produce gas reserves from.

SALLY WALTON BOY SERVICES SHORTHAND REPORT STATE BLADE (645) 471-8 SHARE P. MORE STATES SALLY WALTON BOY!
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Q (Mr. Kellahin continuing.) Mr. Nelson, have you made any calculations as to what can reasonably be expected to recover from the Elliott State No. 2 Well?

A. Yes. Using the reservoir information that we have, we have calculated that the 80-acres composed of the north half of the northeast quarter of Section 34 can reasonably be expected to produce a million Mcf of gas. We have estimated that 350,000 -- I stated that wrong.

There is at this present time a million Mcf of gas in the reservoir and we can reasonably expect to recover 350,000 Mcf of this.

Q In your opinion would that be Eumont gas that cannot effectively and efficiently be produced from the Warrior State No. 1 Well?

A. Yes, very definitely. The current producing rate of the Warrior State WEG No. 1 is approximately 125 Mcf per month. This well will certainly not produce any significant reserves in the future, and due to the extensive workover that was performed in 1974, we feel that it would be unadviseable to contemplate any additional workover on the State WEG No. 1.

Q. In your opinion, Mr. Nelson, if the Elliott
State No. 2 Well is not drilled and completed in the Eumont
gas zone, will there be Eumont gas reserves left unrecovered?

A. We feel like that there'll be 350,000 Mcf of

recoverable reserves left in the Eumont, that the operator will not have an opportunity to produce and that consumers will not have an opportunity to utilize.

- In your opinion, Mr. Nelson, will the Elliott State No. 2 Well be necessary to effectively and efficiently drain the proration unit, that portion of the reservoir covered by the proration unit, which cannot more effectively and efficiently be drained by the existing well?
 - Yes, this is our conclusion.
- Were Exhibits A through K prepared by you or compiled under your direction and supervision?
 - Yes, they were.
- And in your opinion, Mr. Nelson, will approval of this application prevent waste, protect correlative rights and be in the best interest of conservation?
 - Yes, it will.

MR. KELLAHIN: We move the introduction of Exhibits A through K.

MR. STAMETS: These exhibits will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Mr. Nelson, if I understand this correctly, you currently have a 160-acre proration unit, consisting of the northeast quarter of Section 34, in the Eumont gas pool?

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A.	Yes.	that	13	right.
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- And that is dedicated to the Warrior WEG Well Q. No. 1.
 - Yes.
- All right. Now, what acreage will be dedicated to the well which you propose to drill and complete in the northeast quarter of the section?
- We propose to dedicate only the north half of the northeast quarter section.
- Okay, and Warrior, then, will continue to operate the well in the south half?
 - Yes, that is correct.
- Now, the 350,000 Mcf which you expect to recover is from the 80-acre proration unit?
 - Yes, that's right.
- So there may be some more down there that Warrior is not going to get with their well?
 - That's possible.
 - But that's Warrior's problem?
 - That's Warrior's problem.
 - Okay.
- We might refer to Exhibits G and H, which you have there, but we didn't discuss them. That's simply the gas pooling agreement as it was executed between Elliott 011 Company and Amerada.

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Now, Exhibit E has some rather startling
a rather startling thing on it. In mid-1973 well, you
have a nice decline curve starting back about 1960 running
through the middle of '73 and then it dropped like a rock
to I guess that's not a zero line but what is that, 100
what?

- A. At 1975?
- Q Right.
- A. That would represent 125 Mcf per day -- excuse me, per month.
- Q Production did not decline in this straight line fashion, did it?
- A. Well, the decline occurred following the workover in 1974.
- Q Was that decline between the middle of -perhaps I'm looking at this thing wrong. What have you
 plotted here, the production for the year?
- A. We have plotted the average monthly production per year.
 - Q And that's been plotted at --
 - A. We took the twelve months --
 - Q -- the center point of each year.
 - A. Right, that's correct.
 - Q. Okay.
 - A. So that your entire 1973 production was a

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single point in the midpoint of the year, and your '74, and so on.

All right. Okay, that's much better. thought this was monthly production.

MR. STAMETS: Any other questions of this witness?

MR. KELLAMIN: Yes, I have another question, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q You indicated in your opening remarks, Mr. Nelson, that there was also a need for a waiver of existing well spacing requirements.

Would you summarize for the Examiner what those requirements are and why it's necessary for you to obtain a waiver?

This application is the first step in a series of steps leading to a price determination under the new Federal Energy Regulation Commission Natural Gas Act of 1978. One of the requirements under Section 103, sub-paragraph 275. you caught me, I don't remember that last right off the top of my head, but it is one of the requirements by this regulation that the Commission grant a finding that the well is necessary to efficiently and effectively drain the proration

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unit and that they also waive applicable well spacing requirements.

MR. KELLAHIN: I have nothing further.

MR. STAMETS: Any other questions of the witness? He may be excused.

Oh, before he gets off, let me make sure we got everything.

RECROSS EXAMINATION

BY MR. STAMETS:

Q This is a standard location for an 80-acre gas spacing unit in the Eumont pool?

A Yes, it is.

This is an application for infill drilling.

What you're going to wind up with, though, is actually not an infill well. Why was the application for infill drilling?

A As it presently stands, this will be a second well within an existing proration unit. That's as it stands today. It will only become the first well in a proration unit at some later date after the well has been completed and the reasoning for this is set forth in that Exhibit G, if you care to check that. That's Exhibit G, page two, paragraph number four.

Once our well is drilled then the present gas proration unit is terminated.

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Upon the completion of a gas well above 4300 feet in the north half of the northeast quarter of Section 34.

And what determines the completion in this case?

That would be the completion as a gas well abova 4300 feet.

Is there any definition of what a completion means? Is that when you install the wellhead or when you test the well?

A I would assume that that definition would be at the point in time when you can test the well and you can determine by test that you have a commercial well producing in the Eumont gas above 4300 feet.

Okay. Let's make sure I've got everything. We're talking -- the well you're talking about drilling is to be the Elliott State No. 2 and what's the location of that, 660 north, 1980 east?

No, it would be 1980 from the east and 660 from the north.

That's what you said, isn't it?

That's right. It depends on where you start.

Right.

MR. STAMETS: Okay. Any other questions of

the witness? He may be excused.

Anything further in this case? We'll take the case under advisement. (Hearing concluded.)

REPORTER'S CERTIFICATE

I, SALLY W. BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, skill, and knowledge, from my notes taken at the time of the hearing.

> I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6429 , Examiner

Oil Conservation Division

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

CASE 6429

Application of Zia Energy, Inc., for approval of Infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a walver of existing well-spacing requirements.

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ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

January 30, 1979

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Re: Case No. 6429

Gentlemen:

You are asked to consider evidence that will be presented to prove that the proposed infill drilled well, Elliott State No. 2, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by any existing well.

This proration unit consists of the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico. It is State of New Mexico lease No. B-11298.

Two wells have been drilled on this proration unit. One well, the Elliott State No. 1, In unit letter A, is plugged and abandoned. A well data sheet is included which gives this well history. It produced a cumulative of 26,531 barrels of oil and 114,478 MCF of gas before being plugged. A The second well on this proration unit is the Warrior, Inc. State "WEG" No. 1, unit letter H. It was drilled and completed as a Eumont gas well. A well data sheet gives the history for this well. The N/2 NE/4 and the S/2 NE/4 of Section 34 was pooled together and dedicated to this Eumont gas well. A copy of the Gas Pooling Agreement is included for information. This well has produced a cumulative of 691,325 MCF of gas. The initial decline in productivity from this well was very sharp, as you will note from the tabulation of production for this well. This sharp decline and electric log information both indicate a tight formation. In 1974 an extensive workover was a complete failure. Actually, production was less after the workover than before. This workover failure makes it imprudent to attempt any further recompletion. This proration unit is left without an adequate well to produce the remaining reserves.

Exhibits will be presented to show the probability of remaining reserves in this proration unit. It will also be shown that offsetting wells are continuing to produce and have produced cumulative oil and gas in excess of the production from this proration unit.

Oll Conservation Division Page 2 January 30, 1979

An exhibit showing an east-west cross-section is presented. This cross-section crosses four leases that have had producing Eumont gas wells. A well data sheet is included for each of the four wells on these leases. This cross-section shows the structural relationship between the four leases. It will be noted that two Eumont gas wells are west (down dip) of the proposed location.

A structure map is presented of the area. Information represented here confirms and enlarges on the information included on the cross-section. It presents in more detail the structural relationship between the Elliott State No. 2 and wells surrounding it.

An exhibit consisting of a map of the area is prepared to show initial potentials and cumulative production from Eumont gas wells. This exhibit indicates the probability that Elliott State No. 2 will produce a cumulative of approximately 500 MCF of gas.

A tabulation of six Eumont gas wells is presented to show recent annual production rates and annual 72 hour shut-in well head pressures. From this tabulation it will be noted that the Phillips New #2, Zia Energy Elliott Fed. #2 and Exxon Fopeano #1 all have cumulative production figures much higher than the wells to the west. This is an indication that the permeability and probably the porosity is tighter as you move to the west in this area.

Two additional exhibits were prepared from data from the production history of Warrior, Inc. State "WEG" No. 1. An annual production and annual calculation of bottom hole pressure tabulation is presented. Then a production decline curve is presented. Two things will be noted from these exhibits. First, the annual production declined very rapidly from the first full year of production in 1956. Secondly, an erratic BHP is noted. In 1959, 1963, 1965, 1968 and 1971 you will note that the BHP indicated a higher value than previous years. This pressure variation can be explained by shut-in times greater than 72 hours. The indication here is a tight formation and the rapid production decline substantiates this conclusion.

Several well data sheets are presented for wells referred to on the crosssection, structure map, map of the Elliott State No. 2 area or one of the tabulations.

Two electric log sections are presented for the Zia Energy, Inc. Elliott Federal No. 1 and the Elliott State No. 1. An 8% porosity line has been drawn on each log. Refer to the well data sheet for Elliott Federal No. 1 where you will note a recompletion in February 1978 in the zones from 3554' to 3656'. In the 8 months that this well produced in 1978, it produced 113,462 MCF.

Oll Conservation Division Page 3 January 30, 1979

These exhibits have been presented in an effort to prove that the Elliott State No. 2 has stringers in the Yates, Seven Rivers and Queen formations with adequate porosity to produce gas in commercial quantities. Electric logs present prove this. The exhibits are intended to show that these stringers will be tight, as indicated by production tabulations and shut-in pressure data. Once these two premises are accepted, then it is reasonable to assume that this gas can be produced from Elliott State No. 2 following adequate stimulation from a fracture treatment utilizing the recently developed carbon dioxide fracture treatment. This type of treatment has proven highly successful in tight, low pressure reservoirs in the Yates, Seven Rivers, Queen. Old wells have also responded very favorably to this new technique.

Using the reservoir data that is available, we have calculated that the Elliott State No. 1 can reasonably be expected to produce a cumulative in excess of 350,000 MCF of gas. This is substantiated by production from offsetting wells. Without the drilling of this infill well, these reserves will be left unrecovered. The operator will be denied an opportunity to produce recoverable reserves and consumers will be denied needed gas.

Respectfully,

ZIA ENERGY, INC.

Farris Melson

Farris Nelson

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ZIA ENERGY, INC.

ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico BEFORE EXAMINER STAMETS OIL CONTRIVATION DIVISION ZIA DESIGNATIONO. A 6429 Subjectived by Hearing Date

- State Lease No. 11298

- Zia Energy Elliott State

O Proposed Elliott State No. 2

• Eumont Oil Well

Eumont Gas Well

/00 Initial Potential - MCF

Cumulative Production - MMCF

DAT E	622 60 25	EXHIBIT "B" Conoco Andrews Reed	2
T - 20 South	Southland 28 2 Sohio 4 Roy. St. E-28 3 McGruder	Southland Elifort Yar -257 -157 Exxon -2 Forence Foren	5
	Southland, Wiser Wiser 2 % Roy. ** *3 E-33 State SPX SPX 33 Evans M. W. Coll	State Elliott St. Gulf Warrior 196 659 01 -639 02	6 2 LL
		R35E 23 -76 15 -76 15 -76 15 -76 15 -76 15 -76 15 -77 15 -	6

ZIA ENERGY, INC. HOBBS, NEW MEXICO 88240

BEFORE EMAYINER STAMETS
OIL CONTENANT NO. B 64 29 Continue to the first Hearing Dale

ELLIOTT STATE AREA EUMONT FIELD T20S, R36E Contours on top of Queen

TABULATION
72 Hour Shut-in Pressure & Annual Production

`₩° \$'	1/1/78 Cum	19//	1970	1976	1975	19/3	1972	1761	1970	2020	1060	3908	1967	1366	1065	Year	; ₹ }	
	185,760	ŭ	י ב	<u>.</u>	<u>. </u>	<u>.</u>	<u>.</u>	<u>v</u>	<u>. </u>	5,499	יי, ור ווי, פיי	0,024	6,352	0, 163		ăCT	•	Aztec St. E-33 #2D 33-20-36
										2	100	5 6	1 89	300	}	Press	<u>S</u>	#2D
9.3	691,325	2,157	419	904	3, 122	11,647	11,502	13,380	12,608	14,294	14,000	14,903	10,390	32,690	}	MCF	Prod.	Amerada St. WEG #1H 34-20-36
		Z Z	×	×	Ş								185	227		Press	SI	1da C #1H -36
	784,755	<u>S</u>	<u>S</u>	<u>s</u>	S	S	S	3,976	4,877	13,370	19,891	22,889	39,857	56,210		MCF	Prod.	Gulf White #5M 35-20-36
			र्ज -									215	333 333	402		Press	SI	f #5M 0-36
	2,955,32	105,278	122,211	131,861	155, 175	184,042	172,953	121,	129,511	123,785	122, 161	81,075	58,864	92,599		MCF	Prod.	Exxon Fopeano 35-20-3
	321			861 259		042 330	4.1				161 488		864 566	599 624		Press	S	Exxon Fopeano #1A 35-20-36
	2_386_396	.	.	ୂ 79,	100,121	122	154	121	143,		122,	65,	62,604	120, 761		MCF	Prod.	Zia Eiliott 26-
	396	8,304 238			121 250											Press	SI	Zia Energy Elliott Fed. #2J 26-20-36
	3 737 OOL	89	1 19	87	8 2 ;	125 ·	5 /4	∞	67	72	55	43	37	رب س	34 15	MCF	Prod	
	9	89,447 253			596 362							43,043 617		51,594 671		Press	IS	Phillips New #2H 26-20-36

EXHIBIT "C"

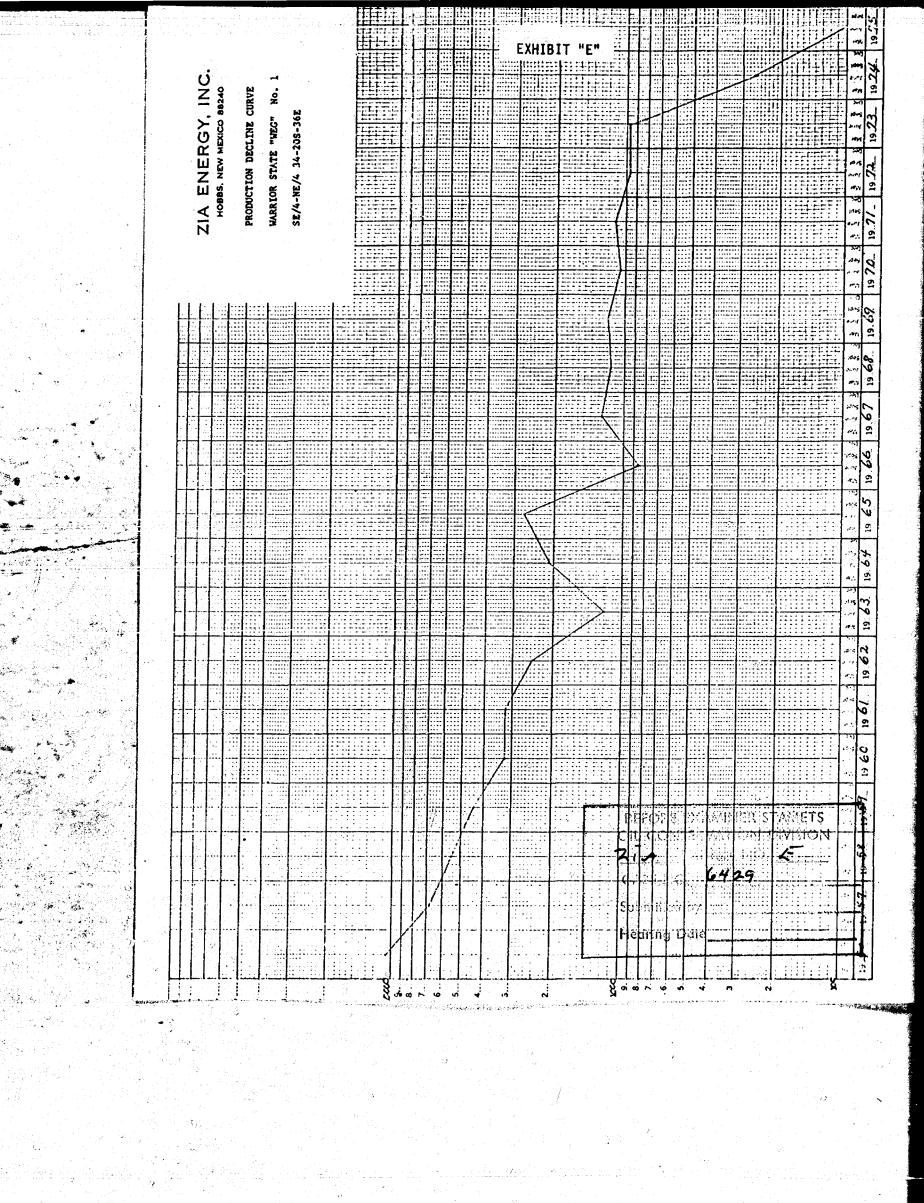
ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Lea County, New Mexico

	4.44	Shut-In Press.	BHP-psia
1955	85,123		
1956	126,078	686	851
1957	82,561	418	491
1958	65,880	365	426
1959	53,237	437	517
1960	39,139	350	407
1961	38,308	220	249
1962	29,001	230	260
1963	14,285	287	330
1964	25,150	178	199
1965	32,690	22 7	257
1966	10,390	185° 1	208
1967	14,903	138	154
1968	14,000	173	194
1969	14,294	146	164
1970	72,608	165	184
1971	13,380	215	243
1972	11,502	117	130
1973	11,647	103	114
1974	3,122		
1975	904		
1976	419		
1977	2,157		Test of the second

Cumulative Gas Production - 691,325 MCF

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	CIECONA VARION DIVISION	
	21A	
	6429	
	SUMMED IT may an adversary	٠,,,
ĺ	Hearing Daio	-



Company:	Southland Royalty
Lease:	State E-33 Well No. 2
Field:	Eumont
	Unit Letter D Sec. 33 , T 20 S , R 36 E
	Lea County, New Mexico
Date Comp	eted 4/18/55 Total Depth 3915' Elevation 3602'
Intermedia	te Casing: Size 8 5/8" Depth 323' Cement 280 sx
Production	Casing: Size 5 1/2" Depth 3915' Cement 500 sx
Perforation	n: <u>3878'-3888'</u> Open Hole:
Formation	Tops: TA 1812' TS 1972' BS 3344' TY 3654'
	T7R 3878' TQu TGb
Stimulatio	n: Fracture treat using 10,000 gallons of oil and 1# SPG.
Initial Po	tential: BOPD 50 BWPD MCF/D
Cumulative	Production to 1/1/78 : BO 33,460 MCF 185,759
Remarks:	9/10/58 plugged back to 3825'. Perforated 3778'-3816'.
	Fracture treated using 15,000 gallons of refined oil and
	15,000# sand. Production after recompletion 0 BO, 0 BW
	and 683 MCF. Well shut-in in 1971 and has not produced sinc
Aya .	that date.

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	TERCH TALL	een barbar Def DEVC	
		F.	1_/
	64	129	*** ***********************************
	Submitted by	and the second s	
	Hearing Dale		

Company: Lease:	- Seale Federa	1 .			Well No.	2	Serve S
ield:	Eumont				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	Unit Letter	K Se	ec. 34	, T_	20 S	, R 36	E
			· ·				
	Lea County, No	w mexico			egin ^{er} en atrologi	in The second	
ate Comp	eted 9/29/55	Tota	1 Depth	3900	Ele	vation_3	3586
ntermedia	te Casing: Siz	te <u>8 5/8</u>	Depth_	253 '	Cement	200 sx	
roduction	Casing: Size_	5 1/2"	_Depth_	3899 '	Cement	1550 sx	ζ
erforatio	n: 3749'-3776'		Open H	ole:			
ormation	Tops: TA_ 1640	o' TS		BS	3212'	TY 3428	ji
	• •						
	T70 270	001 70	1 4 20	TAL			
Vilono de Ciroli	T7R_ 378	30' TQu	in in en Vesal UK, adap	TGb			
timulatio	T7R <u>378</u> n: Fracture tr	14. 11. A. 4. A.				SPG	
reda i di.		reat using	10,000	gallon	s with 14		
nitial Po	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
nitial Po mulative	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
nitial Po	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
nitial Po mulative	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
nitial Po mulative	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
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itial Po mulative	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	
nitial Po mulative	n: Fracture tr	reat using O	10,000 BWPD	gallon O	s with 14	1200	

21A 6429

Company:	Warrior, Inc.	
Lease:	State "WEG"	Well No. 1
Field: Un	Eumont it Letter H	Sec. 34 , T 20 S , R 36 E
Le	a County, New Mexi	CO
Date Complete	d 2/24/54 Te	otal Depth 4300' Elevation 3581'
Intermediate (Casing: Size 9 5/	/8" Depth 307' Cement 300 sx
Froduction Cas	sing: Size <u>7"</u>	Depth 4300' Cement 800 sx
Perforation:	3150'-3600'	Open Hole:
Formation Tops	s: TA 1551' TS	S 1660' BS 2970' TY 3142'
	T7R <u>3520'</u> 1	rQu_NArGb_4280'
Stimulation:	Fracture treated	with 10,500 gallons of oil and 9300# san
Initial Potent	ial: BOPD <u>0</u>	BWPD 0 MCF/D 522
Cumulative Pro	duction to 1/1/7	8 : BO MCF 691,325
Remarks: 7/2	6/74 recomplete.	Clean out to 4285' and perforate
352	0'-4240'. Stimula	te with 7000 gallons of acid and
<u>fra</u>	c with 148,000 gal	lons of gelled water with 1½# SPG.
Rec	ompletion a comple	te failure, production approximately
1 B	OPD with 5 MCF/day	of gas.

21A 5-3.

Company:	Zia Energy, Inc.
Lease:	Elliott State Well No.]
Field:	Eumont
	Unit Letter A Sec. 34 , T 20 S , R 36 E
	Lea County, New Mexico
	A CONTROL OF THE PRESENCE OF THE PROPERTY OF T
Date Comple	eted 11/3/55 Total Depth 4009' Elevation 3575'
intermedia:	te Casing: Size 8 5/8" Depth 321' Cement 275 sx
Production	Casing: Size 5 1/2" Depth 4007' Cement 850 sx
Perforation	n: <u>3950'-3988'</u> Open Hole:
ة ندوه نسيده	TA NA TO NA DO 20501 TV 21151
rormation	Tops: TA NA TS NA BS 2958' TY 3115'
	T7R 3485' TQu 3918' TGb
Aleks Stranes Asis	
Stimulation	Fracture treated using 20,000 gallons of Petro-frac with 1# 5
nitial Dat	tential: BOPD 78 BWPD 78 MCF/D TSTM
inicial ruc	
umulative	Production to 1/1/78 : 80 26,531 MCF 114,478
Remarks: _	Well was plugged and abandoned 7/3/71.
*	
en jeden 🛶	

21A F-4 6429

Company:	Tenneco		<u>.</u>			·
Lease:	Bay Feder			We	ell No.	3
Field:	Eumont Unit Letter		ec. <u>34</u>	, T2	20 S	, R <u>36 E</u>
	Lea County, N	ew Mexico				
Date Compl	eted 12/30/54	Tota	al Depth_	4070'	_ Elev	ation <u>3565</u>
Intermedia	te Casing: Si	ze <u> </u>	Depth	351 '	Cement_	225 sx
Production	Casing: Size	5 1/2"	Depth_4	1070'	Cement_	400 sx
Perforatio	n: 3855'-3969		_ Open Ho	le:		
Formation	Tops: TA 151	0'TS	1615'	BS 287	5' T	y3055'
	T7R 31	25 ' TQu	3860	TGb		
Stimulatio	n: <u>none repo</u>	rted		i <u>1. jednak Miljari</u> s	ra d Niedl Tjäst († 17	
Initial Po	tential: BOPD_	257	BWPD_	9	MCF/D_	91
Cumulative	Production to_	1/1/78	_: BO	109,373	MCF_N	IA
Remarks:						
	**					

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	6429	. to the said
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	Propert Mass	212-000

Company: Lease:	Yarbrough Oil Con Elliott State Eumont	iipariy [le11 No. <u>1</u>
Field:	Unit Letter P	Sec27, T	20 S , R 36 E
	Lea County, New M	exico	
Date Compl	eted <u>8/1/55</u>	Total Depth4080'	Elevation 3589'
Intermedia	te Casing: Size	8 5/8" Depth 319'	Cement 250 sx
Production	Casing: Size 5	1/2" Depth 4080'	Cement 800 sx
Perforatio	n: 3964'-4005'	Open Hole:	
Formation	Tops: TA 1533'	TS 1650' BS 29	42' TY 3100'
ار والدور دوران الموقور ووقع	T7R 3360'	TQu 3935' TGb	
timulatio		using 10,000 gallons	Branca A a Billio en endido tito.
	tential: BOPD 1		
		1/78 : BU 69,191	-
Remarks:	2.25 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1		<u></u>
remarks.			
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WELL DAT	A SHEET	Hearing Data
	<u> </u>	

Company:	Zia Energy, Inc.
Lease: Field:	Elliott Federal Well No.]
i iciu.	Unit Letter I Sec 26 , T 20 S , R 36 E
	Lea County, New Mexico
Date Comp	leted 2/21/35 Total Depth 3780' Elevation 3558'
Intermedi	ate Casing: Size 8 5/8" Depth 1250' Cement 400 sx
Productio	n Casing: Size 7" Depth 3702' Cement 150 sx
Perforati	on:Open Hole: 3702'-3780'
Formation	Tops: TA 1215' TS 1350' BS 2640' TY 2800'
	T7R 3160' TQu 3544' TGb
Stimulati	on: Originally treated using 6000 gallons 15% HCL
Initial Po	otential: BOPD 588 BWPD 0 MCF/D 588
Cumulative	Production to 1/1/78 : BO 131,226 MCF NA
Remarks:	Well deepened in August 1940 to 3809'. Shut-in from 1961 to
	February 1978. In February 1978, the well was cleaned out to
	3809' and the open hole section, 3702' to 3809', was fracture
	treated using 36,000 gallons of gelled 9# brine and 45,000# of
	sand. Treatment at 20 BPM and 3000 psi max pressure through 3"
	tubing below a packer set/at 3680'. ISDP 2000 psi. 15 minute
	SI pressure 1350'. Pulled tubing and packer, perforated from
	3554' to 3656' with 23 0.5" holes. Reran tubing, bridge plug and
	packer. Set BP at 3674' and packer at 3423'. Broke down perforation
	with 1000 gallons of 15% HCL and 36 ball sealers at 5 BPM and a

max. pressure of 3300 psi. ISDP vac. Fracture treated using

30,000 gallons of gelled 9# brine and 42,500# sand. Treatment

(OVER)

at 20 BPM and 2500 psi. ISDP 1450 psi. Pulled 3" tubing and packer. Reran 2 3/8" tubing and set at 3600'. Ran sucker rods and pump. Put to pumping to recover load water. Test 3/8/78.

3 BOPD and 1 BWPD with 400 MCF of gas. Production since workover 195 BO and 0 BW with 113,462 MCF of gas.

Company:	Phillips Petroleum	Company	Well No2	
Lease: Field:	New "G"		Well No2_	
rieia:	Eumont Unit Letter H	Sec 26	Tone Ra	<u>c </u>
	UIII C LECCEI 11	ალ,	1	<u>D C</u>
i Mary ala ngayas	Lea County, New Mex		en e	
Date Comp	leted 4/3/38	Total Depth 3	810' Elevation	3552
Intermedia	ate Casing: Size 9	5/8" Depth 123	6' Cement 250 s	<u> </u>
Production	Casing: Size 7"	Depth 370	1' Cement 400 s	<u>x</u>
Perforation	on:	Open Hole:	3701'-3810'	
Formation	Tops: TA	TSBS	TY	
	T7R	TQu	TGb	
Stimulatio	n: Initial treatme			
	tential: BOPD 604			
	Production to 1/1/			
Remarks:	Recompleted as a Eur	mont gas well ly	/8/47. Set bridge p	ıl uğ
	in 7" casing. Perfe	orated with 4 JS	SPF from 3540' to 36	70'.
	Treated using 250 ga	allons of acid.	Initial potential	
	3838 MCF/day.	(S)		-
		Section Section (Section 1994)	The state of the s	
		PEFOR	UF EXAMINER STATES	C
1.5		•	AS STATION CHAIN	•

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GAS POOLING AGREEMENT

This Agreement made and entered into this 2 day of lectenlars 1956, by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC., hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M. Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agreement:

NOW. THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto that the pooled proration unit shall be developed and operated by Amerada, its successors or assigns, for the production therefrom of dry gas and associated liquid hydrocarbons as an entirety, with the understanding and agreement that the dry gas and associated liquid hydrocarbons produced therefrom shall be allocated among the leaseholds comprising said pooled proration unit in the proportion that the acreage interest of each leasehold bears to the entire acreage interest committed to this agreement. The royalties payable on the dry gas and associated liquid hydrocarbons so allocated to the individual leases comprising the pooled provation unit and the rentals provided for in said leases shall be determined and paid on the basis prescribed in each of the individual leases. Payment of rentals under the terms of the leases. subject to this agreement shall not be affected by this agreement except as provided for under the terms and provisions of said leases or as may herein be otherwise provided. Except as herein modified and changed, the oil and gas leases subject to this agreement shall remain in full force and effect as originally made and issued. There shall be no obligation on Amerada, or its successors or assigns, to offset any gas well or wells on separate component tracts into which such pooled proration unit is now or may heroufter be divided; nor shall Amerada, its successors or assigns be required to separately measure said dry gas or associated liquid hydrocarbons by reason of the diverse ownership of such production in and under said tract, but the lessee shull not be released from the obligation to protect said pooled tract from drainage by any gas well or wells which may be drilled offsetting the said tract.

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities; provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year herein first above written.

ATTEST:

Wiscon's

Secretary

AMERADA PETROLEUM CORPORATION

Vice President.

ATTEST:

ELLIOTT, INC

President

STATE OF OKLAHOMA)) SS COUNTY OF TULSA)
On this 2/14 day of September, 1956, before me appeare
AR DENISON , to me personally known, who being by me duly
sworn, did say that he is the Wee President of AMERADA PETROLEUM CORPORATI
and that the seal affixed to said instrument is the corporate seal of said
corporation and that said instrument was signed and sealed in behalf of said
corporation by authority of its Board of Directors, and said A. R. DENISON
acknowledged said instrument to be the free act and deed o
said corporation.
병원에 들었다. 그 사람은 한 경험하면서 있다. 하지만 그렇게 하는 사람은 사람이 되는 것이다. 그는 것이다.
Given under my hand and seal this alst day of September
Notary Public
My commission expires:
Q toles 25 1950
STATE OF NEW MEXICO
COUNTY OF CHAVES } SS
On this <u>lst</u> day of <u>October</u> , 1956, before me appeared
Frank O. Elliott , to me personally known, who being by me duly
sworn, did say that he is the Vice President of KLLIOTT, INC., and that the
seal affixed to said instrument is the corporate seal of said corporation and
that said instrument was signed and sealed in behalf of said corporation by
authority of its Board of Directors, and said Frank O. Elliott
acknowledged said instrument to be the free act and deed of said corporation.
Given under my hand and seal this lst day of October
1956.
Mina Crane Notary Public
My commission expires:

December 20.

CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO
Amerada's State WE "G" No. 1 Communitization

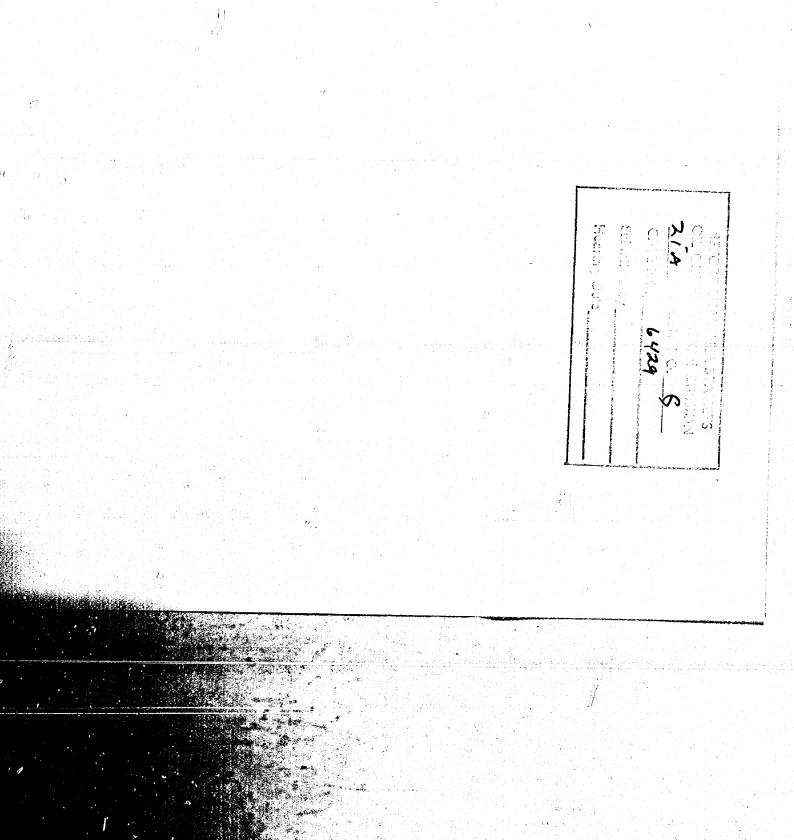
There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956 which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order NSP-86.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands
of the State of New Mexico



ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

CASE 6429

Application of Zia Energy, Inc., for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

January 30, 1979

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Re: Case No. 6429

Gentlemen:

You are asked to consider evidence that will be presented to prove that the proposed infill drilled well, Elliott State No. 2, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by any existing well.

This proration unit consists of the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico. It is State of New Mexico lease No. B-11298.

Two wells have been drilled on this proration unit. One well, the Elliott State No. 1, in unit letter A, is plugged and abandoned. A well data sheet is included which gives this well history. It produced a cumulative of 26,531 barrels of oil and 114,478 MCF of gas before being plugged. The second well on this proration unit is the Warrior, Inc. State "WEG" No. 1, unit letter H. It was drilled and completed as a Eumont gas well. A well data sheet gives the history for this well. The N/2 NE/4 and the S/2 NE/4 of Section 34 was pooled together and dedicated to this Eumont gas/well. A copy of the Gas Pooling Agreement is included for information. This well has produced a cumulative of 691,325 MCF of gas. The initial decline in productivity from this well was very sharp, as you will note from the tabulation of production for this well. This sharp decline and electric log information both indicate a tight formation. In 1974 an extensive workover was a complete failure. Actually, production was less after the workover than before. This workover failure makes it imprudent to attempt any further recompletion. This proration unit is left without an adequate well to produce the remaining reserves.

Exhibits will be presented to show the probability of remaining reserves in this proration unit. It will also be shown that offsetting wells are continuing to produce and have produced cumulative oil and gas in excess of the production from this proration unit.

OII Conservation Division Page 2 January 30, 1979

An exhibit showing an east-west cross-section is presented. This cross-section crosses four leases that have had producing Eumont gas wells. A well data sheet is included for each of the four wells on these leases. This cross-section shows the structural relationship between the four leases. It will be noted that two Eumont gas wells are west (down dip) of the proposed location.

A structure map is presented of the area. Information represented here confirms and enlarges on the information included on the cross-section. It presents in more detail the structural relationship between the Elliott State No. 2 and wells surrounding it.

An exhibit consisting of a map of the area is prepared to show initial potentials and cumulative production from Eumont gas wells. This exhibit indicates the probability that Elliott State No. 2 will produce a cumulative of approximately 500 MCF of gas.

A tabulation of six Eumont gas wells is presented to show recent annual production rates and annual 72 hour shut-in well head pressures. From this tabulation it will be noted that the Phillips New #2, Zia Energy Elliott Fed. #2 and Exxon Fopeano #1 all have cumulative production figures much higher than the wells to the west. This is an indication that the permeability and probably the porosity is tighter as you move to the west in this area.

Two additional exhibits were prepared from data from the production history of Warrior, Inc. State "WEG" No. 1. An annual production and annual calculation of bottom hole pressure tabulation is presented. Then a production decline curve is presented. Two things will be noted from these exhibits. First, the annual production declined very rapidly from the first full year of production in 1956. Secondly, an erratic BHP is noted. In 1959, 1963, 1965, 1968 and 1971 you will note that the BHP indicated a higher value than previous years. This pressure variation can be explained by shut-in times greater than 72 hours. The indication here is a tight formation and the rapid production decline substantiates this conclusion.

Several well data sheets are presented for wells referred to on the crosssection, structure map, map of the Elliott State No. 2 area or one of the tabulations.

Two electric log sections are presented for the Zia Energy, Inc. Elliott Federal No. 1 and the Elliott State No. 1. An 8% porosity line has been drawn on each log. Refer to the well data sheet for Elliott Federal No. 1 where you will note a recompletion in February 1978 in the zones from 3554' to 3656'. In the 8 months that this well produced in 1978, it produced 113,462 MCF.

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These exhibits have been presented in an effort to prove that the Elliott State No. 2 has stringers in the Yates, Seven Rivers and Queen formations with adequate porosity to produce gas in commercial quantities. Electric logs present prove this. The exhibits are intended to show that these stringers will be tight, as indicated by production tabulations and shut-in pressure data. Once these two premises are accepted, then it is reasonable to assume that this gas can be produced from Elliott State No. 2 following adequate stimulation from a fracture treatment utilizing the recently developed carbon dioxide fracture treatment. This type of treatment has proven highly successful in tight, low pressure reservoirs in the Yates, Seven Rivers, Queen. Old wells have also responded very favorably to this new technique.

Using the reservoir data that is available, we have calculated that the Elliott State No. 1 can reasonably be expected to produce a cumulative in excess of 350,000 MCF of gas. This is substantiated by production from offsetting wells. Without the drilling of this infill well, these reserves will be left unrecovered. The operator will be denied an opportunity to produce recoverable reserves and consumers will be denied needed gas.

Respectfully,

ZIA ENERGY, INC.

Jarris nelson

Farris Nelson

	T-20S	R-36E	g-1	
	Warrion	12	.4 .9	Zia Phillip Energy
•	Federa	al "D"	Warrior	Schafer 3735
Southland Roy. 2 Sohio	Evans	Warrior	Federal "D" 7	6 St 2 New 7 6 170010 400
3	Southland Roy.	State "WED" Elliott Yar all brough	3650 *5 650	Elliott Fed.
State E-28 McGruder	State E-27		63.	Fopeano
Southland Roy. Wiser Wiser	12	Zia Energy // O Elliott State	Tenneco	Exxon
3. 1	Gulf 2	Warrior	4.	. 7
State E-33 3 SPX SFX SFX	R.R. Bell 3 Warrior,200	State "WEG" Warrior	Bay Federal 3 Warrior	5 FOPEANO ARGO
M. W. Coll		2459 L. W. White'45		L Ida White ulf _31 White

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico

State Lease No. 11298

- Zia Energy Elliott State

O Proposed Elliott State No. 2

• Eumont Oil Well

Eumont Gas Well

/co Initial Potential - MCF

於 //o Cumulative Production - MMCF

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Fire for the	EXHIBIT "B" Conoco X 4	
7	2	Andrews 1	
20 Scuth	Southland 28 2 Sohio4	Federal "D" -306 -317 Zia Getty ARCO Energy Philip 727 168	7 ~
7 - 7	St. E-28 McGruder Southland Wiser Wiser	State WED Elliott Fed Gil ully Exxon -2 Fopeano Exxon -4 State E-27 Lirough Fopeano Fopeano Exxon -4	
	Roy. *1 *3 E-33 *1 *4 *2 SPX SPX SPX 33 Evans	State Ellioth St. Gulf Warrior 1996 -153 R.R. Bell state WEG Bay Fell Foreance Warrior 34 Warrior Warrior 1995 ARGO Ida White Ida White	+205
	M. W. Coll	Seale Ped. L. W. Willta W. W. White R. R. Rellione	
		RBSE -96 -76 /55 -96 -77 15 -	

ZIA ENERGY, INC. HOBBS, NEW MEXICO 88240

ELLIOTT STATE AREA EUMONT FIELD T20S, R36E Contours on top of Queen

TABULATION
72 Hour Shut-in Pressure & Annual Production

	3 306 306		2,955,321	784,755		691,325		185,760	/1/78 Cum
	8,304 238	240	105,278	<u>ע</u>	2	2,13/		<u>.</u>	
-	45,503 233	273	122,211	: <u>v</u>		3 161		<u>.</u>	1977
•		259	131,861	<u> </u>		7 10 1 10		∑ ડ	1976
		306	155, 175	<u>.</u> 7		, i d		Σ ;	1975
		330	184,042	<u>.</u>		2 122		ت <u>ہ</u>	1974
•	154, 185 288	375	172,953	ેડ! !	117	11,502		บ ก	1972
~		388	121,716			13,380		<u>. u</u>	1977
~		435	129,511			12,608		<u></u>	1971
•	118,590 440	644	123, 785	13,370 174		14,294		, 49 (4, 4, 6)	1970
		488	122, 161			14,000		, U	1960
		545	81,075			14,903		6,02	1967
Ο,	_	566	58,864	1225		10,390		6,35	1966
	120,761 530	624	92,599	56,210 402	• .	32,690	3 365	6, 163	1965
MCF	MCF Press	Press	MCF P	MCF Press	Press	MCT	Fress	Si Cr	1 607
Prod	Prod. SI	IS		•	<u>.</u>	Prod.	S	Prod.	< ?
in E	Zia Energy Elliott Fed. #2J 26-20-36	#1A	Fopeano #1A 35-20-36	White #5// 35-20-36	Amerada St. WEG #1H 34-20-36	St. WEG 34-20-36	33 #2D 0-36	St. E-33 #2D 33-20-36	

EXHIBIT "C"

ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Lea County, New Mexico

<u>Year</u>	Volume	72-hour Shut-In Press.	Calculated BHP-psia
1955	85,123		
1956	126,078	686	851
1957	82,561	418	491
1958	65,880	365	426
1959	53,237	437	517
1960	39,139	350	407
1961	38,308	220	249
1962	29,001	230	260
1963	14,285	287	330
1964	25,150	178	199
1965	32,690	227	257
1966	10,390	185	208
1967	14,903	138	154
1968	14,000	173	194
1969	14,294	146	164
1970	12,608	165	184
1971	13,380	215	243
1972	11,502	117	130
1973	11,647	103	114
1974	3,122		
1975	904		
1976	419		
1977	2,157		$\frac{H}{dt}$

Cumulative Gas Production - 691,325 MCF

ZIA ENERGY, INC. HOBBS, NEW MEXICO 88240 PRODUCTION DECLINE CURVE WARRIOR STATE "WEG" No. 1 SE/4-NE/4 34-205-36E 19 66 19 67 19 61 19 62 19 63 19 65 19.69

Company:	Southland Royalty
Lease:	State E-33 Well No. 2
Field:	in the Lumon t o the control of the
	Unit Letter D Sec. 33, T 20 S, R 36 E
	Lea County, New Mexico
Date Comp	eted 4/18/55 Total Depth 3915' Elevation 3602'
Intermedia	te Casing: Size 8 5/8" Depth 323' Cement 280'sx
Production	Casing: Size 5 1/2" Depth 3915' Cement 500 sx
Perforation	n: <u>3878'-3888'</u> Open Hole:
Formation	Tops: TA 1812' TS 1972' BS 3344' TY 3654'
	T7R 3878' TQu TGb
Stimulatio	n: Fracture treat using 10,000 gallons of oil and 1# SPG.
Initial Po	tential: BOPD 50 BWPD MCF/D
Cumulative	Production to 1/1/78 : BO 33,460 MCF 185,759
Remarks:	9/10/58 plugged back to 3825'. Perforated 3778'-3816'.
	Fracture treated using 15,000 gallons of refined oil and
	15,000# sand. Production after recompletion 0 BO, 0 BW
	and 683 MCF. Well shut-in in 1971 and has not produced since
	that date.

(g.)

Company:	Warrior, Inc.		
Lease:	Seale Federal	We	11 No. 2
Field:	Eumont Unit Letter K	Sec. 34 , I	20 S , Ř 36 E
	OHIT FECTER V	Sec34, 1	20 3 , N 30 E
	Lea County, New	Mexico	
Date Compl	eted 9/29/55	Total Depth3900'	Elevation_3586'
Intermedia	te Casing: Size_	8 5/8" Depth 253'	Cement 200 sx
Production	Casing: Size	5 1/2" Depth 3899'	Cement 1550 sx
Perforatio	n: 3749'-3776'	Open Hole:	
Formation	Tops: TA 1640'	TSBS32	12' TY 3428'
	T7R3780	TQu TGb	
Stimulation	n: Fracture trea	t using 10,000 gallons	with 1# SPG
Initial Po	tential: BOPD_	O BWPD O	MCF/D 1200
Cumulative	Production to 1	/1/78 : BO 2576	MCF 481,995
Remarks:			
			en e

State "WEG" Well No. 1	
Unit Letter H Sec. 34 , T 20 S , R Lea County, New Mexico Date Completed 2/24/54 Total Depth 4300' Elevation Intermediate Casing: Size 9 5/8" Depth 307' Cement 300 sx Production Casing: Size 7" Depth 4300' Cement 800 sx Perforation: 3150'-3600' Open Hole: Formation Tops: TA 1551' TS 1660' BS 2970' TY 3142	
Lea County, New Mexico Date Completed 2/24/54 Total Depth 4300¹ Elevation Intermediate Casing: Size 9 5/8" Depth 307¹ Cement 300 sx Production Casing: Size 7" Depth 4300¹ Cement 800 sx Perforation: 3150¹-3600¹ Open Hole: Formation Tops: TA 1551¹ TS 1660¹ BS 2970¹ TY 3142	
Date Completed 2/24/54 Total Depth 4300¹ Elevation Intermediate Casing: Size 9 5/8" Depth 307¹ Cement 300 sx Production Casing: Size 7" Depth 4300¹ Cement 800 sx Perforation: 3150¹-3600¹ Open Hole: Formation Tops: TA 1551¹ TS 1660¹ BS 2970¹ TY 3142	36 E
Intermediate Casing: Size 9 5/8" Depth 307! Cement 300 sx Production Casing: Size 7" Depth 4300! Cement 800 sx Perforation: 3150'-3600! Open Hole: Formation Tops: TA 1551! TS 1660! BS 2970! TY 3142	9. 3 9. 3
Production Casing: Size 7" Depth 4300' Cement 800 sx Perforation: 3150'-3600' Open Hole: Formation Tops: TA 1551' TS 1660' BS 2970' TY 3142	<u>3581 '</u>
Perforation: 3150'-3600' Open Hole: Formation Tops: TA 1551' TS 1660' BS 2970' TY 3142	
Formation Tops: TA 1551' TS 1660' BS 2970' TY 3142	
The second of th	
A - A - B - B - B - B - B - B - B - B -) P
T7R 3520' TQu NA TGb 4280'	
Stimulation: Fracture treated with 10,500 gallons of oil and 93	00# san
Initial Potential: BOPD 0 BWPD 0 MCF/D 522	
Cumulative Production to 1/1/78: BO MCF 691,325	
Remarks: 7/26/74 recomplete. Clean out to 4285' and perforate	Albibat, lieta e. Albibat, lieta
3520'-4240'. Stimulate with 7000 gallons of acid and	
frac with 148,000 gallons of gelled water with 11/2# SPG	• 1
Recompletion a complete failure, production approximate	el <i>y</i>
1 BOPD with 5 MCF/day of gas.	

Company:	Elliott State Well No. 1
Lease: Field:	Eumont well No. ;
	Unit Letter A Sec. 34 , T 20 S , R 36 E
	Lea County, New Mexico
Date Compi	eted 11/3/55 Total Depth 4009' Elevation 3575'
Intermedia	te Casing: Size 8 5/8" Depth 321' Cement 275 sx
Production	Casing: Size 5 1/2" Depth 4007' Cement 850 sx
Donfonatio	n: 3950'-3988' Open Hole:
retioracio	
Formation	Tops: TA NA TS NA BS 2958' TY 3115'
	T7R 3485' TQu 3918' TGb
Stimulatio	racture treated using 20,000 gallons of Petro-frac with 1# SF
Initial Po	tential: BOPD 78 BWPD 78 MCF/D TSTM
Cumulativa	Production to 1/1/78 : BO 26,531 MCF 114,478
Remarks:	Well was plugged and abandoned 7/3/71.
- -	
en de la companya de La companya de la co	

Company:	Tenneco	4 *	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Lease:	Bay Federal		Well No.	3
Field:	(i) Eumont			
	Unit Letter D	Sec. 34 ,	T 20 S	, R 36 E
Date Comp	Lea County, New Mexileted 12/30/54 To	co otal Depth <u>40</u>	<u>70'</u> Elev	ation <u>3565'</u>
Intermedia	ate Casing: Size 8 5	/8" Depth <u>351</u>	Cement_	225 sx
Production	n Casing: Size 5 1/2	" Depth_4070'	Cement_	400 sx
Perforation	on: 3855'-3969'	Open Hole:	<u>.</u> 21. 31 <u></u>	
Formation	Tops: TA 1510' TS	S1615'BS_	2875' T	y3055'
	T7R3125'	rQu <u>3860'</u> T	Gb	
Stimulatio	on: none reported			19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Initial Po	tential: BOPD 257	BWPD 0	MCF/D_	91
Cumulative	Production to 1/1/78	BO 109,	373 MCF N	iA .
Remarks:			i a	
			ar maka sa taka rasa Francisa.	The second of th

Company:	Yarbrough Oil	Company		<u> </u>	
Lease:	Elliott State		We	11 No. <u>1</u>	
Field:	Eumont		<u> </u>		
	Unit Letter	P Sec. <u>27</u>	,	20 S , R	36 E
	Lea County, Ne	w Mexico			10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Date Compl	eted 8/1/55	Total Dept	h 4080 '	_ Elevati	on <u>3589</u>
Intermedia	te Casing: Siz	e <u>8 5/8"</u> Depth	319'	Cement 2	50 sx
Production	Casing: Size_	5 1/2" Depth	4080'	Cement8	00 sx
Perforatio	n: 3964'-4005		Ho1e;		
Formation	Tops: TA 1533	3' TS 1650'	BS 294	2' TY_3	3100'
	T7R 336	50' TQu 393	5' TGb_		
Stimulatio	n: Fracture tr	eat using 10,00	0 gallons	of oil and	1# SPG
Initial Po	tential: BOPD_	140 BWPD	0	MCF/D	
Cumulative	Production to_	1/1/78 : BO	69,191	MCF NA	
Remarks:	judi se uskjektir stali				
egeneralis Vitalianis					
		<i>4</i> 0			V
					10 mm y 10 mm

Company: Lease:	Zia Energy, Inc. Elliott Federal Well No. 1				
Field:	Eumont Unit Letter I Sec. 26 , T 20 S , R 36 E				
	Lea County. New Mexico				
Date Compl	leted 2/21/35 Total Depth 3780' Elevation 3558'	-			
n de la companya de l	ate Casing: Size 8 5/8" Depth 1250' Cement 400 sx	ulti Ulti			
and the state of t	Casing: Size 7" Depth 3702' Cement 150 sx				
	on: Open Hole: 3702'-3780'				
	Tops: TA 1215' TS 1350' BS 2640' TY 2800'				
	T7R 3160' TQu 3544' TGb				
Stimulatio	n: Originally treated using 6000 gallons 15% HCL				
Initial Po	tential: BOPD 588 BWPD 0 MCF/D 588				
Cumulative	Production to 1/1/78 : BO 131,226 MCF NA	4			
Remarks:	Well deepened in August 1940 to 38001. Shut-in from 1961 to	ii.			
	February 1978. In February 1978, the well was cleaned out to				
	3809' and the open hole section, 3702' to 3809', was fracture				
	treated using 36,000 gallons of gelled 9# brine and 45,000# of				
	sand. Treatment at 20 BPM and 3000 psi max pressure through 3"				
	tubing below a packer set at 3680'. ISDP 2000 psi. 15 minute				
	SI pressure 1350'. Pulled tubing and packer, perforated from				
	3554' to 3656' with 23 0.5" holes. Reran tubing, bridge plug and				
	packer. Set BP at 3674' and packer at 3423'. Broke down perforation	ns			
	with 1000 gallons of 15% HCL and 36 ball sealers at 5 BPM and a				
	max. pressure of 3300 psi. ISDP vac. Fracture treated using	· ·			
en e	30,000 gallons of gelled 9# brine and 42,500# sand. Treatment				
	(OVER))			

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at 20 BPM and 2500 psi. ISDP 1450 psi. Pulled 3" tubing and packer. Reran 2 3/8" tubing and set at 3600'. Ran sucker rods and pump. Put to pumping to recover load water. Test 3/8/78.

3 BOPD and 1 BWPD with 400 MCF of gas. Production since workover 195 BO and 0 BW with 113.462 MCF of gas.

company:	Phillips Petroleum Company
Lease:	New "G" Well No. 2
Field:	Eumont
	Unit Letter H Sec. 26 , T 20 S , R 36 E
	Lea County, New Mexico
Date Compl	eted 4/3/38 Total Depth 3810' Elevation 3552'
Intermedia	te Casing: Size 9 5/8" Depth 1236' Cement 250 sx
Production	Casing: Size 7" Depth 3701' Cement 400 sx
Perforation	on:Open Hole:3701'-3810'
Formation	Tops: TA
	T7R TQu TGb
Stimulatio	n: Initial treatment 1000 gallons of acid.
Initial Po	tential: BOPD 604 BWPD 0 MCF/D 400
Cumulative	Production to 1/1/78 : BO MCF 3,536,904
Remarks:	Recompleted as a Eumont gas well 1/8/47. Set bridge plug
	in 7" casing. Perforated with 4 JSPF from 3540' to 3670'.
	Treated using 250 gallons of acid. Initial potential
	3838 MCF/day.

NIM 1836

GAS POOLING AGREEMENT

This Agreement made and entered into this 2/4 day of features 1956, by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC., hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M. Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agreement:

NOW, THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto that the pooled proration unit shall be developed and operated by Amerada, its successors or assigns, for the production therefrom of dry gas and associated liquid hydrocarbons as an entirety, with the understanding and agreement that the dry gas and associated liquid hydrocarbons produced therefrom shall be allocated among the leaseholds comprising said pooled proration unit in the proportion that the acreage interest of each leasehold bears to the entire acreage interest committed to this agreement. The royalties payable on the dry gas and associated liquid hydrocarbons so allocated to the individual leases comprising the pooled proration unit and the rentals provided for in said leases shall be determined and paid on the basis prescribed in each of the individual leases. Payment of rentals under the terms of the leases subject to this agreement shall not be affected by this agreement except as provided for under the terms and provisions of said leases or as may herein be otherwise provided. Except as herein modified and changed, the oil and gas leases subject to this agreement shall remain in full force and effect as originally made and issued. There shall be no obligation on Amerada, or its successo. or assigns, to offset any gas well or wells on separate component tracts into which such pooled proration unit is now or may hercufter be divided; nor shall Amerada, its successors or assigns be required to separately measure said dry gas or associated liquid hydrocarbons by reason of the diverse ownership of such production in and under said tract, but the lessee shull not be released from the obligation to protect said pooled tract from drainage by any gas well or wells which may be drilled offsetting the said tract.

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities; provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year herein first above written.

ATTEST:

Assistant Secretary

AMERADA PETROLEUM CORPORATION

Vice President.

P: ELLIOTT, INC

A.T. - Secretary.

Dynamidant

STATE OF OKLAHOMA) SS COUNTY OF TULSA)
On this 2/st day of September, 1956, before me appeare
A R DENISON , to me personally known, who being by me duly
sworn, did say that he is the Weight President of AMERADA PETROLEUM CORPORATI
and that the seal affixed to said instrument is the corporate seal of said
corporation and that said instrument was signed and sealed in behalf of said
corporation by authority of its Board of Directors, and said A.R. DENISCN
acknowledged said instrument to be the free act and deed o
said corporation.
Given under my hand and seal this 2/4 day of deptember
1956.
I. L. S. The Hilson
My commission expires:
Q-toler 25, 1956_
STATE OF NEW MEXICO) SS
COUNTY OFCHAVES)
On this <u>lst</u> day of <u>October</u> , 1956, before me appeared
Frank O. Elliott , to me personally known, who being by me duly
sworn, did say that he is the Vice President of KLLIOTT, INC., and that the
seal affixed to said instrument is the corporate seal of said corporation and
that said instrument was signed and sealed in behalf of said corporation by
authority of its Board of Directors, and said Frank O. Elliott
acknowledged said instrument to be the free act and deed of said corporation. Given under my hand and seal this lst day of October
1956.
70.
Notary Public
My commission expires:
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CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO Amerada's State WE "G" No. 7 Communitization

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956, which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order NSP-86.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands of the State of New Mexico

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

CASE 6429

Application of Zia Energy, Inc., for approval of infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

January 30, 1979

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Re: Case No. 6429

Gentlemen:

You are asked to consider evidence that will be presented to prove that the proposed infill drilled well, Elliott State No. 2, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by any existing well.

This proration unit consists of the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico. It is State of New Mexico lease No. B-11298.

Two wells have been drilled on this proration unit. One well, the Elliott State No. 1, in unit letter A, is plugged and abandoned. A well data sheet is included which gives this well history. It produced a cumulative of 26,531 barrels of oil and 114,478 MCF of gas before being plugged. The second well on this proration unit is the Warrior, Inc. State "WEG" No. 1, unit letter H. It was drilled and completed as a Eumont gas well. A well data sheet gives the history for this well. The N/2 NE/4 and the S/2 NE/4 of Section 34 was pooled together and dedicated to this Eumont gas well. A copy of the Gas Pooling Agreement is included for information. This well has produced a cumulative of 691,325 MCF of gas. The initial decline in productivity from this well was very sharp, as you will note from the tabulation of production for this well. This sharp decline and electric log information both indicate a tight formation. In 1974 an extensive workover was a complete failure. Actually, production was less after the workover than before. This workover failure makes it imprudent to attempt any further recompletion. This proration unit is left without an adequate well to produce the remaining reserves.

Exhibits will be presented to show the probability of remaining reserves in this proration unit. It will also be shown that offsetting wells are continuing to produce and have produced cumulative oil and gas in excess of the production from this proration unit.

Oll Conservation Division Page 2 January 30, 1979

An exhibit showing an east-west cross-section is presented. This cross-section crosses four leases that have had producing Eumont gas wells. A well data sheet is included for each of the four wells on these leases. This cross-section shows the structural relationship between the four leases. It will be noted that two Eumont gas wells are west (down dip) of the proposed location.

A structure map is presented of the area. Information represented here confirms and enlarges on the information included on the cross-section. It presents in more detail the structural relationship between the Elliott State No. 2 and wells surrounding it.

An exhibit consisting of a map of the area is prepared to show initial potentials and cumulative production from Eumont gas wells. This exhibit indicates the probability that Elliott State No. 2 will produce a cumulative of approximately 500 MCF of gas.

A tabulation of six Eumont gas wells is presented to show recent annual production rates and annual 72 hour shut in well head pressures. From this tabulation it will be noted that the Phillips New #2, Zia Energy Elliott Fed. #2 and Exxon Fopeano #1 all have cumulative production figures much higher than the wells to the west. This is an indication that the permeability and probably the porosity is tighter as you move to the west in this area.

Two additional exhibits were prepared from data from the production history of Warrior, Inc. State "WEG" No. 1. An annual production and annual calculation of bottom hole pressure tabulation is presented. Then a production decline curve is presented. Two things will be noted from these exhibits. First, the annual production declined very rapidly from the first full year of production in 1956. Secondly, an erratic BHP is noted. In 1959, 1963, 1965, 1968 and 1971 you will note that the BHP indicated a higher value than previous years. This pressure variation can be explained by shut-in times greater than 72 hours. The indication here is a tight formation and the rapid production decline substantiates this conclusion.

Several well data sheets are presented for wells referred to on the crosssection, structure map, map of the Elliott State No. 2 area or one of the tabulations.

Two electric log sections are presented for the Zia Energy, Inc. Elliott Federal No. 1 and the Elliott State No. 1. An 8% porosity line has been drawn on each log. Refer to the well data sheet for Elliott Federal No. 1 where you will note a recompletion in February 1978 in the zones from 3554 to 3656. In the 8 months that this well produced in 1978, it produced 113,462 MCF.

Oil Conservation Division Page 3 January 30, 1979

These exhibits have been presented in an effort to prove that the Elliott State No. 2 has stringers in the Yates, Seven Rivers and Queen formations with adequate porosity to produce gas in commercial quantities. Electric logs present prove this. The exhibits are intended to show that these stringers will be tight, as indicated by production tabulations and shut-in pressure data. Once these two premises are accepted, then it is reasonable to assume that this gas can be produced from Elliott State No. 2 following adequate stimulation from a fracture treatment utilizing the recently developed carbon dioxide fracture treatment. This type of treatment has proven highly successful in tight, low pressure reservoirs in the Yates, Seven Rivers, Queen. Old wells have also responded very favorably to this new technique.

Using the reservoir data that is available, we have calculated that the Elliott State No. 1 can reasonably be expected to produce a cumulative in excess of 350,000 MCF of gas. This is substantiated by production from offsetting wells. Without the drilling of this infill well, these reserves will be left unrecovered. The operator will be denied an opportunity to produce recoverable reserves and consumers will be denied needed gas.

Respectfully,

ZIA ENERGY, INC.

Farris Belson

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Farris Nelson

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State E-33 313 SPX SPX Evans	Warrior	Warrior ARCO
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State Lease No. 11298

- Zia Energy Elliott State

O Proposed Elliott State No. 2

• Eumont Oil Well

Eumont Gas Well

/co Initial Potential - MCF

Cumulative Production - MMCF

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

' ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico

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	Andrews (-13)	Conoco X-
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ZIA ENERGY, INC.

ELLIOTT STATE AREA EUMONT FIELD T20S, R36E Contours on top of Queen

TABULATION
72 Hour Shut-In Pressure & Annual Production

	Aztec St. E-33 #2D 33-20-36		Amerada St. WEG #1H 34-20-36		White	Gulf White #5M 35-20-36		n o #1A -36	Zia En Elliott Fe 26-20	ed. #2J	Philips New #2H 26-20-36		
Year	Prod. MCF	SI Press	Prod. MCF	SI Press	Prod. MCF	SI Press	Prod. MCF	SI Press	Prod. MCF	SI Press	Prod. MCF	SI Press	
1965	6,163	365	32,690	227	56,210	402	92,59	9 624	120,76	1 530	51,59	4 671	
1966	6,352		10,390	185	39,857	333	58,86		62,60	Control of the Contro	37,79		
1967	6,024		14,903	138	22,889	215	81,07		65,66		43,04		
1968	5,111		14,000	173	19,891	257	122,16		122,09	5 - 1 John 12 - 1	55,44		
1969	5,499		14,294	146	13,370	174	123,78		118,59		72,05	part	
1970	SI		12,608	165	4,877	185	129,51	na i na matematika da ina	143,54	£ 3.7 \$5.5 ×	67,84	1. P. 1. S. 1.	
1971	SI		13,380	['] 215	3,976	NA	121,71	27.7.2	121,93		81,08	DALES CONTRACTOR	
1972	SI		11,502	117	SI		172,95		154,18		64,34		
1973	SI		11,647	103	SI		184,04	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	122,58	44 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	125,92		
1974	SI		3,122	NA	SI		155,17	5 306	100,12		82,59		
1975	SI	ing yang be	904	NA	SI	2.17.12 ⁻¹ .4 4 3	131,86		79,09	1 229	87,83		
1976	SI		419	NA	SI		122,21	1 273	45,50	The second second	119,80	A CONTRACTOR OF STREET	
1977	SI		2,157	NA	SI		105,27	1.44	8,30	1. 1. 1. Nov. 1. 1	89,44		
1/1/78 Cum	185,760		691,325	ing the second	784,755	ger i estimblist	2,055,32		2,366,396	;	3,536,90	All mil selvenie.	

ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Lea County, New Mexico

Year	en de la companya de	Volume	72-hour Shut-In Press.	Calculated BHP-psia
1955		85,123		
1956		126,078	686	851
1957		82,561	418	491
1958		65,880	365	426
1959		53,237	437	517
1960		39,139	350 has a constant of the co	407
1961		38,308	220	249
1962		29,001	230	260
1963		14,285	287	330
1964		25,150	178	199
1965		32,690	227	257
1966		10,390	185	208
1967		14,903	138 - 44 - 44 - 44	i lalipallos (En lasti
1968		14,000	173	194
1969		14,294	146	164
1970		12,608	165	184
1971		13,380	215	243
1972		11,502	117	130
1973		11,647	103	114
1974		3,122		
1975		904		
1976		419		
1977		2.157		

Cumulative Gas Production - 691,325 MCF

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Company:	Southland Royalty										
Lease:	State E-33 Well No. 2										
Field:	Eumont										
	Unit Letter D Sec. 33 , T 20 S , R 36 E										
	Lea County, New Mexico										
Date Compl	eted 4/18/55 Total Depth 3915' Elevation 3602'										
Intermedia	te Casing: Size 8 5/8" Depth 323' Cement 280 sx										
Production	Casing: Size 5 1/2" Depth 3915' Cement 500 sx										
Perforatio	n: <u>3878'-3888'</u> Open Hole:										
Formation	Tops: TA 1812' TS 1972' BS 3344' TY 3654'										
g ikw ek	T7R 3878' TQu TGb										
i Arsa Nakasakan	그리는 아이들은 그들은 그는 것이 되었다. 그들은 그들은 그들은 그래 얼마나 얼마나 얼마나 되었다.										
Stimulatio	n: Fracture treat using 10,000 gallons of oil and 1# SPG.										
Initial Po	tential: BOPD 50 BWPD MCF/D										
Cumulative	Production to 1/1/78 : BO 33,460 MCF 185,759										
Remarks:	9/10/58 plugged back to 3825'. Perforated 3778'-3816'.										
	Fracture treated using 15,000 gallons of refined oil and										
	15,000# sand. Production after recompletion 0 BO, 0 BW										
	and 683 MCF. Well shut-in in 1971 and has not produced sinc										
	that date.										

company:	Warrior, Inc.		200	_== -
Lease:	Seale Federal		Well No.	2
Field:	Eumont			
	Unit Letter K	Sec. 34 ,	T 20 S	, R <u>36 E</u>
	Lea County, New Mexi	i co		
Date Compl	eted <u>9/29/55</u> 1	otal Depth <u>3</u>	900' Elev	ation <u>3586'</u>
Intermedia	te Casing: Size 8	5/8" Depth 25	3' Cement_	200 sx
Production	Casing: Size 5 1,	'2" Depth 389	9' Cement_	1550 sx
Perforatio	n: <u>3749'-3776'</u>	Open Hole:		
Formation	Tops: TA 1640' T	`S BS_	3212' T	γ 3428'
	T7R 3780'	TQu1	гбь	
Stimulatio	n: Fracture treat us	ing 10,000 gall	lons with 1#	SPG
Initial Po	tential: BOPD <u>0</u>	BWPD 0	MCF/D	1200
Cumulative	Production to 1/1/7	'8 : BO 2576	MCF	481,995
Remarks:				
		• • • • • • • • • • • • • • • • • • •		
	•			

Company:	Warrior, Inc.
Lease: Field:	State "WEG" Well No. 1
Liein.	Unit Letter H Sec. 34 , T 20 S , R 36 E Lea County, New Mexico
Date Compl	leted 2/24/54 Total Depth 4300' Elevation 3581'
Intermedia	te Casing: Size 9 5/8" Depth 307' Cement 300 sx
Production	Casing: Size 7" Depth 4300' Cement 800 sx
	n: 3150'-3600' Open Hole:
Formation	Tops: TA 1551' TS 1660' BS 2970' TY 3142'
	T7R 3520' TQu NA TGb 4280'
Stimulatio	n: Fracture treated with 10,500 gallons of oil and 9300# san
Initial Po	tential: BOPD 0 BWPD 0 MCF/D 522
Cumulative	Production to 1/1/78 : BO MCF 691,325
Remarks:	7/26/74 recomplete. Clean out to 4285' and perforate
	3520'-4240'. Stimulate with 7000 gallons of acid and
en e	frac with 148,000 gallons of gelled water with 1½# SPG.
	Recompletion a complete failure, production approximately
	1 BOPD with 5 MCF/day of gas.
T. T.	

Company:	Zia Energy, Inc.
Lease:	Elliott State Well No. 1
Field:	Eumont Unit Lotton A Soc 34 T 20 S P 36 5
	Unit Letter A Sec. 34 , T 20 S , R 36 E
	Lea County, New Mexico
Date Comp	leted 11/3/55 Total Depth 4009' Elevation 3575'
Intermedia	ate Casing: Size 8 5/8" Depth 321' Cement 275 sx
and the arrangement of	
Production	n Casing: Size 5 1/2" Depth 4007' Cement 850 sx
Perforation	on: 3950'-3988'
Formation	Tops: TA NA TS NA BS 2958' TY 3115'
	T7R 3485' TQu 3918' TGb
Trimari di dalam d	till til til av dette for til til av skiller av værer i 1900 andre en til
Stimulation	on: Fracture treated using 20,000 gallons of Petro-frac with 1# S
Initial Po	otential: BOPD 78 BWPD 78 MCF/D TSTM
Cumulative	Production to 1/1/78 : 80 26,531 MCF 114,478
Remarks:	Well was plugged and abandoned 7/3/71.
•	

company:	renneco	 (4) (2) (2) (2) 	e early on the
Lease:	Bay Federal	We	11 No. 3
Field:	Eumont		
	Unit Letter D Sec	c. 34 , T 2	20 S , R 36 E
Date Compl	Lea County, New Mexico		
Intermedia	te Casing: Size 8 5/8"	Depth 351'	Cement 225 sx
Production	Casing: Size 5 1/2"	Depth 4070'	Cement 400 sx
Perforation	n: 3855'-3969'	Open Hole:	
Formation	Tops: TA 1510' TS	1615' BS 287	5' TY 3055'
	T7R 3125' TQu	3860' TGb_	
Stimulatio	n: none reported		
Initial Po	tential: BOPD 257	BWPD 0	MCF/D 91
Cumulative	Production to 1/1/78	: BO 109,373	MCF NA
Remarks:			

Company:	rarbrough U11				<u> </u>		
Lease:	Elliott State Eumont			We	11 No.	<u> </u>	
Field:	Unit Letter P	Se	c. 27	T 2	0.5	- R 36 F	
			· <u></u>		<u>~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ </u>	, . <u></u>	
	Lea County, New	/ Mexico					
Date Compl	eted 8/1/55	Tota	1 Depth	40801	_ Eleva	ation <u>35</u>	89 '
Intermedia	te Casing: Size	8 5/8'	Depth_	319'	Cement_	250 sx	· ·
Production	Casing: Size_	5 1/2"	_Depth	4080	Cement_	800 sx	
Perforatio	n: <u>3964'-4005'</u>		Open Ho	ole:			
Formation	Tops: TA 1533	<u>'</u> TS	1650'	BS 294	2! TY	7 3100'	
	T7R 3360	<u>)'</u> TQu	3935	' TGb	·	-	
Stimulatio	n: Fracture tre	at using	10,000	gallons o	of oil a	nd 1# SP	3
Initial Po	tential: BOPD_	140	BWPD_	0	MCF/D_		<u>.</u>
Cumu lative	Production to_	1/1/78	_: ;BO	69,191	MCF	NA	_
Remarks:							·
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at 20 BPM and 2500 psi. ISDP 1450 psi. Pulled 3" tubing and packer. Reran 2 3/8" tubing and set at 3600'. Ran sucker rods and pump. Put to pumping to recover load water. Test 3/8/78.

3 BOPD and 1 BWPD with 400 MCF of gas. Production since workover 195 BO and 0 BW with 113,462 MCF of gas.

Company: Lease:	Zia Energy, Inc. Elliott Federal Well No. 1
Field:	Eumont Unit Letter I Sec. 26 , T 20 S , R 36 E
- · · ·	Lea County, New Mexico
Date Comp	leted 2/21/35 Total Depth 3780' Elevation 3558'
Inter medi	ate Casing: Size 8 5/8" Depth 1250' Cement 400 sx
Production	n Casing: Size 7" Depth 3702' Cement 150 sx
Perforati	on:Open Hole: 3702'-3780'
Formation	Tops: TA 1215' TS 1350' BS 2640' TY 2800'
•	T7R 3160' TQu 3544' TGb
Stimulati	on: Originally treated using 6000 gallons 15% HCL
Initial P	otential: BOPD 588 BWPD 0 MCF/D 588
	e Production to 1/1/78 : BO 131,226 MCF NA
Remarks:	Well deepened in August 1940 to 3809'. Shut-in from 1961 to
	February 1978. In February 1978, the well was cleaned out to
	3809' and the open hole section, 3702' to 3809', was fracture
	treated using 36,000 gallons of gelled 9# brine and 45,000# of
	sand. Treatment at 20 BPM and 3000 psi max pressure through 3"
	tubing below a packer set at 3680'. ISDP 2000 psi. 15 minute
	SI pressure 1350'. Pulled tubing and packer, perforated from
	3554' to 3656' with 23 0.5" holes. Reran tubing, bridge plug and
	packer. Set BP at 3674' and packer at 3423'. Broke down perforations
•	with 1000 gallons of 15% HCL and 36 ball sealers at 5 BPM and a
	max. pressure of 3300 psi. ISDP vac. Fracture treated using
	30,000 gallons of gelled 9# brine and 42,500# sand. Treatment
	(OVER)
re rees and reserve	

Company:	Phillips Petroleum Company
Lease:	New "G" Well No. 2
Field:	Eumont Post Lotton II See See T 20 S B 26 5
	Unit Letter H Sec. 26 , T 20 S , R 36 E
	Lea County, New Mexico
Date Comp	leted 4/3/38 Total Depth 3810' Elevation 3552'
Intermedia	ate Casing: Size 9 5/8" Depth 1236' Cement 250 sx
Production	Casing: Size 7" Depth 3701' Cement 400 sx
Perforation	on:Open Hole:3701'-3810'
Formation	Tops: TA TS BS TY
	T7R TQu TGb
Stimulatio	n: Initial treatment 1000 gallons of acid.
Initial Po	tential: BOPD 604 BWPD 0 MCF/D 400
Cumulative	Production to 1/1/78 : BO MCF 3,536,904
Remarks:	Recompleted as a Eumont gas well 1/8/47. Set bridge plug
	in 7" casing. Perforated with 4 JSPF from 3540' to 3670'.
	Treated using 250 gallons of acid. Initial potential
	3838 MCF/day.

مادعا. المار

GAS POOLING AGREEMENT

This Agreement made and entered into this 2/ day of letterlard 1956, by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC., hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner or the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M. Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agreement:

NOW, THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto that the pooled proration unit shall be developed and operated by Amerada, its successors or assigns, for the production therefrom of dry gas and associated liquid hydrocarbons as an entirety, with the understanding and agreement that the dry gas and associated liquid hydrocarbons produced therefrom shall be allocated among the leaseholds comprising said pooled proration unit in the proportion that the acreage interest of each leasehold bears to the entire acroage interest committed to this agreement. The royalties payable on the dry gas and associated liquid hydrocarbons so allocated to the individual, leases comprising the pooled proration unit and the rentals provided for in said leases shall be determined and paid on the basis prescribed in each of the individual leases. Payment of rentals under the terms of the leases. subject to this agreement shall not be affected by this agreement except as provided for under the terms and provisions of said leases or as may herein be otherwise provided. Except as herein modified and changed, the oil and gas leases subject to this agreement shall remain in full force and effect as originally made and issued. There shall be no obligation on Amerada, or its successors or assigns, to offset any gas well or wells on separate component tracts into which such pooled proration unit is now or may hereafter be divided; nor shall Amerada, its successors or assigns be required to separatoly measure said dry gas or associated liquid hydrocarbons by reason of the diverse ownership of such production in and under said tract, but the lesses shull not be released from the obligation to protect said pooled tract from drainage by any gas well or wells which may be drilled offsetting the said tract.

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities: provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year herein first above written.

ATTEST:

Assistant Secretary

AMERADA PETROLEUM CORPORATION

Much

Yim President.

ATTEST:

ELLIOTT, INC.

Presiden

A.

STATE OF OKLAHOMA) SS COUNTY OF TULSA
On this 2/14 day of Sestimber, 1956, before me appeare
A. R. DENISON , to me personally known, who being by me duly
sworn, did say that he is the Wie President of AMERADA PETROLEUM CORPORATI
and that the seal affixed to said instrument is the corporate seal of said
corporation and that said instrument was signed and sealed in behalf of said
corporation by authority of its Board of Directors, and said A R. DENISCN
, acknowledged said instrument to be the free act and deed on
said corporation.
Given under my hand and seal this alat day of September
1956.
Motary Public
My commission expires:
O-toker 25, 1956
STATE OF NEW MEXICO
COUNTY OF CHAVES) SS
On this 1st day of October , 1956, before me appeared
Frank O. Elliott , to me personally known, who being by me duly
sworn, did say that he is the vice President of KLLIOTT, INC., and that the
seal affixed to said instrument is the corporate seal of said corporation and
that said instrument was signed and sealed in behalf of said corporation by
authority of its Board of Directors, and said Frank O. Elliott
acknowledged said instrument to be the free act and deed of said corporation.
Given under my hand and seal this lst day of October
1956.
Rua Crane Notary Public
My commission expires:
December 20, 1959

CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO Amerada's State WE "G" No. 1 Communitization

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956, which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order NSP-86.

IN WITNESS WHEREOF, this Certificate of Approval' is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands
of the State of New Mexico

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

CASE 6429

Application of Zia Energy, Inc., for approval of Infill drilling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well, and further seeks approval of a waiver of existing well-spacing requirements.

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

January 30, 1979

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Re: Case No. 6429

Gentlemen:

You are asked to consider evidence that will be presented to prove that the proposed infill drilled well, Elliott State No. 2, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by any existing well.

This proration unit consists of the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico. It is State of New Mexico lease No. B-11298.

Two wells have been drilled on this proration unit. One well, the Elliott State No. 1, In unit letter A, is plugged and abandoned. A well data sheet is included which gives this well history. It produced a cumulative of 26,531 barrels of oil and 114,478 MCF of gas before being plugged. The second well on this proration unit is the Warrior, Inc. State "WEG" No. 1, unit letter H. It was drilled and completed as a Eumont gas well. A well data sheet gives the history for this well. The N/2 NE/4 and the S/2 NE/4 of Section 34 was pooled together and dedicated to this Eumont gas well. A copy of the Gas Pooling Agreement is included for information. This well has produced a cumulative of 691,325 MCF of gas. The initial decline in productivity from this well was very sharp, as you will note from the tabulation of production for this well. This sharp decline and electric log Information both indicate a tight formation. In 1974 an extensive workover was a complete failure. Actually, production was less after the workover than before. This workover failure makes it imprudent to attempt any further recompletion. This proration unit is left without an adequate well to produce the remaining reserves.

Exhibits will be presented to show the probability of remaining reserves in this proration unit. It will also be shown that offsetting wells are continuing to produce and have produced cumulative oil and gas in excess of the production from this proration unit.

Oll Conservation Division Page 2 January 30, 1979

An exhibit showing an east-west cross-section is presented. This cross-section crosses four leases that have had producing Eumont gas wells. A well data sheet is included for each of the four wells on these leases. This cross-section shows the structural relationship between the four leases. It will be noted that two Eumont gas wells are west (down dip) of the proposed location.

A structure map is presented of the area. Information represented here confirms and enlarges on the information included on the cross-section. It presents in more detail the structural relationship between the Elliott State No. 2 and wells surrounding it.

An exhibit consisting of a map of the area is prepared to show initial potentials and cumulative production from Eumont gas wells. This exhibit indicates the probability that Elliott State No. 2 will produce a cumulative of approximately 500 MCF of gas.

A tabulation of six Eumont gas wells is presented to show recent annual production rates and annual 72 hour shut-in well head pressures. From this tabulation it will be noted that the Phillips New #2, Zia Energy Elliott Fed. #2 and Exxon Fopeano #1 all have cumulative production figures much higher than the wells to the west. This is an indication that the permeability and probably the porosity is tighter as you move to the west in this area.

Two additional exhibits were prepared from data from the production history of Warrior, Inc. State "WEG" No. 1. An annual production and annual calculation of bottom hole pressure tabulation is presented. Then a production decline curve is presented. Two things will be noted from these exhibits. First, the annual production declined very rapidly from the first full year of production in 1956. Secondly, an erratic BHP is noted. In 1959, 1963, 1965, 1968 and 1971 you will note that the BHP indicated a higher value than previous years. This pressure variation can be explained by shut-in times greater than 72 hours. The indication here is a tight formation and the rapid production decline substantiates this conclusion.

Several well data sheets are presented for wells referred to on the cross-section, structure map, map of the Elliott State No. 2 area or one of the tabulations.

Two electric log sections are presented for the Zia Energy, Inc. Elliott Federal No. 1 and the Elliott State No. 1. An 8% porosity line has been drawn on each log. Refer to the well data sheet for Elliott Federal No. 1 where you will note a recompletion in February 1978 in the zones from 3554' to 3656'. In the 8 months that this well produced in 1978, it produced 113,462 MCF.

Oil Conservation Division Page 3 January 30, 1979

These exhibits have been presented in an effort to prove that the Elliott State No. 2 has stringers in the Yates, Seven Rivers and Queen formations with adequate porosity to produce gas in commercial quantities. Electric logs present prove this. The exhibits are intended to show that these stringers will be tight, as indicated by production tabulations and shut-in pressure data. Once these two premises are accepted, then it is reasonable to assume that this gas can be produced from Elliott State No. 2 following adequate stimulation from a fracture treatment utilizing the recently developed carbon dioxide fracture treatment. This type of treatment has proven highly successful in tight, low pressure reservoirs in the Yates, Seven Rivers, Queen. Old wells have also responded very favorably to this new technique.

Using the reservoir data that is available, we have calculated that the Elliott State No. 1 can reasonably be expected to produce a cumulative in excess of 350,000 MCF of gas. This is substantiated by production from offsetting wells. Without the drilling of this infill well, these reserves will be left unrecovered. The operator will be denied an opportunity to produce recoverable reserves and consumers will be denied needed gas.

Respectfully,

ZIA ENERGY, INC.

Farris nelson

Farris Nelson

	T-20S	R-36E		
	Warrio	τ /2	.4 .9	Zia Phillip Energy
	Feder	al "D"	Warrior	Schafer 27
Southland Roy. 2 Sol	Evans l	Warrior State "WED"	Federal "D" 2	C+/ Nais
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Southland Roy. Wiser	Wiser Zfa Energy	Zia Energy // O Elliott State	Tenneco • 3	Exxon
State E-33 3/3 SPX	Gulf 2 PR Reli	Warrior /568 XF(7) State "WEG"	4. .2 Bay Federal	7 2 FOPEANO
Evans	Warrior,200	Warrior I	Warrior 2 Ida White	ARCO 2 / Ida White
M. W. Coll	• ? Seale Fed 3	L. W. White		

State Lease No. 11298 Zia Energy Elliott State O Proposed Elliott State No. 2 • Eumont Oil Well Eumont Gas Well /co Initial Potential - MCF

Cumulative Production - MMCF

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

ELLIOTT STATE AREA EUMONT FIELD - T20S, R36E Lea County, New Mexico

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ZIA ENERGY, INC.

ELLIOTT STATE AREA EUMONT FIELD T20S, R36E Contours on top of Queen

TABULATION
72 Hour Shut-In Pressure & Annual Production

	Azte St. E-3 33-20	3 #2D	Amer St. WE 34-20	EG #1H	Gul White 35-2	#5M	Exxon Fopeano 35-20-36		Zia Ener Elliott Fed 26-20-3	1. #2J	Phil New 26-20	#2H
Year	Prod. MCF	SI Press	Prod. MCF	SI Press	Prod. MCF	SI Press		SI ress		SI ress	Prod. MCF	SI Press
1965	6,163	365	32,690	227	56,210	402	92,599	624	120,761	530	51,59	4 671
1966	6,352	45.00	10,390	THE RESERVE OF THE PARTY OF THE	39,857	333	58,864	566	62,604	486	37,79	1.2
1967	6,024		14,903		22,889	215	81,075	545	65,660	450	43,04	
1968	5,111	168	14,000	173	19,891	257	122,161	488	122,096	430	55,44	化化二十二烷烷基二烷
1969	5,499	NA	14,294	146	13,370	174	123,785	449	118,590	440	72,05	
1970	○ SI		12,608	165	4,877	185	129,511	435	143,549	383	67,84	Wa
1971	SI		13,380	215	3,976	NA	121,716	388	121,938	322	81,08	0 469
1972	SI		11,502	117	SI		172,953	375	154,185	288	64,34	
1973	SI		11,647	103	SI		184,042	330	122,585	271	125,92	1.7.41.
1974	SI	6	3,122	NA	SI		155,175	306	100,121	250	82,59	 1 - 2 - 3 - 3 - 4 - 3
1975	SI		904	NA	SI		131,861	259	79,091	229	87,85	for the second section of
1976	√ SI		419	NA	SI		122,211	273	45,503	233	119,80	دی دوست د ک
1977	SI		2,157	NA	SI		105,278	240	8,304	238	89,44	to the second

ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Lea County, New Mexico

Year	Volume	72-hour Shut-In Press	Calculated BHP-psia
			\$4.7 × \$
1955	85,123		1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966 - 1966
1956	126,078	686	851
1957	82,561	418	491
1958	65,880	365	426
1959	53,237	437	517
1960	39,139	350	407
1961	38,308	14.50 Page 1 220 Page 1 4 (14. 17. 17.	249
1962	29,001	230	260
1963	14,285	287	330
1964	25,150	178	199
1965	32,690	227	257
1966	10,390	185	208
1967	14,903	138	154
1968	14,000		194
1969	14,294	146	164
1970	12,608	165	184
1971	13,380	215	243
1972	11,502	117	130
1973	11,647	103	114
1974	3,122		
	904		
1975	419		
1976	2,157		
1977	Z, 197		

Cumulative Gas Production - 691,325 MCF

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Company:	Southland Royalty		
Lease: Field:	State E-33	well No. 2	
	Unit Letter D Sec. 33	3 , T 20 S , R 36	E
	Lea County, New Mexico		
Date Comple	eted 4/18/55 Total Dept	th <u>3915'</u> Elevation <u>3</u>	602'
Intermedia	te Casing: Size 8 5/8" Depth	1 323' Cement 280 sx	
Production	Casing: Size 5 1/2" Depth	3915' Cement 500 sx	
Perforation	n: 3878'-3888' Open	Hole:	
Formation 1	Tops: TA 1812' TS 1972'	BS 3344' TY 3654	1
	17R 3878' TQu	TGb	
Stimulation	Fracture treat using 10,00	00 gallons of oil and 1# S	PG,
Initial Pot	ential: BOPD 50 BWPD	MCF/D	 :
Cumulative	Production to 1/1/78 : BO	33,460 MCF 185,759	er
Remarks: _	9/10/58 plugged back to 3825'	. Perforated 3778'-3816'	•
engan sebesah dari Penangan sebesah sebesa	Fracture treated using 15,000	gallons of refined oil a	nd
	15,000# sand. Production aft	er recompletion 0 BO, 0 BI	N
	and 683 MCF. Well shut-in in	1971 and has not produced	sinc
	that date.		· ·

Lease: Seale Federal Well No. 2	
Unit Letter K Sec. 34 , T 20 S , R 36 Lea County, New Mexico Date Completed 9/29/55 Total Depth 3900' Elevation 3 Intermediate Casing: Size 8 5/8" Depth 253' Cement 200 sy Production Casing: Size 5 1/2" Depth 3899' Cement 1550 sy Perforation: 3749'-3776' Open Hole: Formation Tops: TA 1640' TS BS 3212' TY 3428 T7R 3780' TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	
Lea County, New Mexico Date Completed 9/29/55 Total Depth 3900' Elevation Intermediate Casing: Size 8 5/8" Depth 253' Cement 200 sy Production Casing: Size 5 1/2" Depth 3899' Cement 1550 sy Perforation: 3749'-3776' Open Hole: Formation Tops: TA 1640' TS BS 3212' TY 3428 T7R 3780' TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	
Date Completed 9/29/55 Total Depth 3900¹ Elevation Intermediate Casing: Size 8 5/8" Depth 253¹ Cement 200 sy Production Casing: Size 5 1/2" Depth 3899¹ Cement 1550 sy Perforation: 3749¹-3776¹ Open Hole: Formation Tops: TA 1640¹ TS BS 3212¹ TY 3428 T7R 3780¹ TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	.=
Date Completed 9/29/55 Total Depth 3900¹ Elevation Intermediate Casing: Size 8 5/8" Depth 253¹ Cement 200 sy Production Casing: Size 5 1/2" Depth 3899¹ Cement 1550 sy Perforation: 3749¹-3776¹ Open Hole: Formation Tops: TA 1640¹ TS BS 3212¹ TY 3428 T7R 3780¹ TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	\ C
Intermediate Casing: Size 8 5/8" Depth 253' Cement 200 sy Production Casing: Size 5 1/2" Depth 3899' Cement 1550 sy Perforation: 3749'-3776' Open Hole: Formation Tops: TA 1640' TS 8S 3212' TY 3428 T7R 3780' TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	- A C I
Production Casing: Size 5 1/2" Depth 3899' Cement 1550 sx Perforation: 3749'-3776' Open Hole: Formation Tops: TA 1640' TS BS 3212' TY 3428 T7R 3780' TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	3586.
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Formation Tops: TA 1640¹ TS BS 3212¹ TY 3428 T7R 3780¹ TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	(
T7R 3780' TQu TGb Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	
Stimulation: Fracture treat using 10,000 gallons with 1# SPG Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	<u>}'</u>
Initial Potential: BOPD 0 BWPD 0 MCF/D 1200	
Cumulative Production to 1/1/78 : 80 2576 MCF 481,995	
	(*),
Remarks:	

Company:	Warrior, Inc.
Lease:	State "WEG" Well No. 1
Field:	Eumont
	Unit Letter H Sec. 34, T 20 S, R 36 E
	Lea County, New Mexico
Date Comp	leted 2/24/54 Total Depth 4300' Elevation 3581'
Intermedi	ate Casing: Size 9 5/8" Depth 307' Cement 300 sx
Productio	n Casing: Size 7" Depth 4300' Cement 800 sx
Perforati	on: 3150'-3600' Open Hole:
Formation	Tops: TA 1551' TS 1660' BS 2970' TY 3142'
ti, ki e eti. Al	T7R 3520' TQu NA TGb 4280'
Stimulation	on: Fracture treated with 10,500 gallons of oil and 9300# sand
Initial Po	otential: BOPD 0 BWPD 0 MCF/D 522
Cumulative	Production to 1/1/78 : B0 MCF 691,325
Remarks:	7/26/74 recomplete. Clean out to 4285' and perforate
	3520'-4240'. Stimulate with 7000 gallons of acid and
•	frac with 148,000 gallons of gelled water with 1½# SPG.
	Recompletion a complete failure, production approximately
	1 BOPD with 5 MCF/day of gas.

Company:	Zia Energy, Inc.		<u> </u>
Lease:	Elliott State	Well No1	
Field:	Eumont		
	Unit Letter A Sec.	34 , T 20 S , R 3	<u>6 E</u> .
	Lea County, New Mexico		
Date Compl	leted11/3/55Total D	epth <u>4009'</u> Elevation_	3 <u>575 '</u>
Intermedia	ate Casing: Size <u>8 5/8"</u> De	oth 321' Cement 275 s	<u> </u>
Production	n Casing: Size 5 1/2" De	oth 4007' Cement 850 s	()
Perforatio	on: 3950'-3988' Op	en Hole:	4
Formation	Tops: TA NA TS NA	BS 2958' TY 3118	<u>. ' </u>
	T7R 3485' TQu 3	918' TGb	
Stimulatio	n: Fracture treated using 2	0,000 gallons of Petro-frac	with 1# S
Initial Po	otential: BOPD 78 BI	NPD 78 MCF/D TSTM	
Cumulative	Production to 1/1/78 :	BO 26,531 MCF 114,478	
Remarks:	Well was plugged and abando	ned 7/3/71.	1
· · · · · · · · · · · · · · · · · · ·			41

company:	1eilleco	
Lease:	Bay Federal	Well No. 3
Field:	Eumont	and the Mills and Andrews
	Unit Letter D Sec. 34	, T 20 S , R 36 E
		· · · · · · · · · · · · · · · · · · ·
	Lea County, New Mexico	
Date Compl	eted 12/30/54 Total Depth	4070' Elevation 350
	The second secon	11 005
Intermedia	te Casing: Size 3 5/8" Depth 35	Cement 225 SX
	Casing: Size 5 1/2" Depth 407	0' Coment 400 sy
Production	casing: 51ze 5 1/2 Depch 40/	Cellette 400 3X
Donfonatio	n: 3855'-3969' Open Hole	•
Formation	Tops: TA 1510' TS 1615' BS	2875' TY 3055'
· OI IIM CI OII		
	T7R 3125' TQu 3860'	ŢĠb
Stimulatio	n: none reported	
The second second		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Initial Po	tential: BOPD 257 BWPD (MCF/D 91
odaje i	Production to 1/1/78 : 80 109	373 NOT NA
Cumujative	Production to 171770 : BU 10-	PILE IN
Remarks:		
Kellar KS.		
•		Property of the second
•		
		· · · · · · · · · · · · · · · · · · ·
•		

Field: E	Tilott State umont it Letter Pea County, New	Sec.		Well No.	
Ūi	nit Letter <u>P</u> ea County, New	Sec.			
	ea County, New	1.74	· <u>27</u>	, T <u>20 S</u>	, R 36 E
Le		Mexico			
					ington Talah San
Date Complete	ed 8/1/55	Tota 1	Depth 4	080' Elev	vation <u>3589'</u>
Intermediate	Casing: Size	8 5/8" [Depth	319' Cement	250 sx
Production Ca	sing: Size_	5 1/2"	epth 40	30' Cement	800 sx
Perforation:	3964'-4005'	C	pen Hole:		
Formation Top	s: TA 1533	' TS 16	550' BS	2942' 1	Y 3100'
	77R 3360) ' TQu	3935	TGb_	
Stimulation:	Fracture tre	eat using 1	0,000 gal	lons of oil	and 1# SPG
Initial Poten	tial: BOPD_	140	BWPD 0	MCF/D	
Cumulative Pr	oduction to	1/1/78 :	BO 69	,191 MCF_	NA
Remarks:				· · · · · · · · · · · · · · · · · · ·	
			0	•	
			=		

at 20 BPM and 2500 psi. ISDP 1450 psi. Pulled 3" tubing and packer. Reran 2 3/8" tubing and set at 3600'. Ran sucker rods and pump. Put to pumping to recover load water. Test 3/8/78.

3 BOPD and 1 BWPD with 400 MCF of gas. Production since workover 195 BO and 0 BW with 113,462 MCF of gas.

Company: Lease:	Zia Energy, Inc. Elliott Federal Well No. 1
Field:	Eumont
	Unit Letter I Sec. 26 , T 20 S , R 36 E
	Lea County, New Mexico
Date Comp	leted 2/21/35 Total Depth 3780' Elevation 3558'
Intermedi	ate Casing: Size 8 5/8" Depth 1250' Cement 400 sx
Productio	n Casing: Size 7" Depth 3702' Cement 150 sx
Perforati	on:Open Hole: 3702'-3780'
Formation	Tops: TA 1215' TS 1350' BS 2640' TY 2800'
	T7R 3160' TQu 3544' TGb
Stimulati	on: Originally treated using 6000 gallons 15% HCL
Initial P	otential: BOPD 588 BWPD 0 MCF/D 588
Cumulativ	e Production to 1/1/78 : 80 131,226 MCF NA
Remarks:	Well deepened in August 1940 to 3809'. Shût-in from 1961 to
	February 1978. In February 1978, the well was cleaned out to
	3809' and the open hole section, 3702' to 3809', was fracture
	treated using 36,000 gallons of gelled 9# brine and 45,000# of
	sand. Treatment at 20 BPM and 3000 psi max pressure through 3"
	tubing below a packer set at 3680'. ISDP 2000 psi. 15 minute
	SI pressure 1350'. Pulled tubing and packer, perforated from
	3554' to 3656' with 23 0.5" holes. Reran tubing, bridge plug and
	packer. Set BP at 3674' and packer at 3423'. Broke down perforations
	with 1000 gallons of 15% HCL and 36 ball sealers at 5 BPM and a
	max. pressure of 3300 psi. ISDP vac. Fracture treated using
	30,000 gallons of gelled 9# brine and 42,500# sand. Treatment
	The state of the s

Company:	Phillips Petroleum Company New "G" Well No. 2			
Lease: Field:	New "G" Well No. 2			
	Unit Letter H Sec. 26 , T 20 S , R 36 E			
	Lea County, New Mexico			
Date Comp	leted 4/3/38 Total Depth 3810' Elevation 3552'			
Intermedi	ate Casing: Size 9 5/8" Depth 1236' Cement 250 sx			
Production	n Casing: Size 7" Depth 3701' Cement 400 sx			
Perforation	on:Open Hole: 3701'-3810'			
Formation	Tops: TATSBSTY			
angalan en di Angalan	T7RTQuTGb			
Stimulation	on: Initial treatment 1000 gallons of acid.			
Initial Po	otential: BOPD 604 BWPD 0 MCF/D 400			
Cumulative	Production to 1/1/78 : BO MCF 3,536,904			
Remarks:	Recompleted as a Eumont gas well 1/8/47. Set bridge plug			
	in 7" casing. Perforated with 4 JSPF from 3540' to 3670'.			
en e	Treated using 250 gallons of acid. Initial potential			
	3838 MCF/day.			

1876

GAS POOLING AGREEMENT

This Agreement made and entered into this 2 day of fertiles 1956. by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC., hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M. Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agree-

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities; provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators,

COUNTY OF TULSA)	
On this 2/14 day of September, 1956, before me appear	e
AR DENISON , to me personally known, who being by me dul	•
sworn, did say that he is the Lie President of AMERADA PETROLEUM CORPORAT	I
and that the seal affixed to said instrument is the corporate seal of said	
corporation and that said instrument was signed and sealed in behalf of said	- :
corporation by authority of its Board of Directors, and said A.R. DENISCH	
, acknowledged said instrument to be the free act and deed	of
said corporation.	
Given under my hand and seal this alst day of September	, _,
1956.	•
& Leadette Hilson	
My commission expires: My commission expires:	
Q-t-lev 25, 1956_	•
STATE OFNEW MEXICO)	
COUNTY OFCHAVES } SS	
On this lst day of October , 1956, before me appeared	•
Frank O. Elliott , to me personally known, who being by me dul	y
sworn, did say that he is the Vice President of KLLIOTT, INC., and that the	e
seal affixed to said instrument is the corporate seal of said corporation and	
that said instrument was signed and sealed in behalf of said corporation by	•
authority of its Board of Directors, and said Frank O. Elliott	. : •
acknowledged said instrument to be the free act and deed of said corporation.	
Given under my hand and seal this lst day of October	
1956.	
n. C.	
Notary Public	
ly commission expires:	
Dogomboy 20 2000	

STATE OF OKLAHOMA

CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO Amerada's State WE "G" No. 1 Communitization

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956, which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order NSP-86.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands
of the State of New Mexico

ZIA ENERGY, INC.

HOBBS, NEW MEXICO 88240

January 3, 1979

L CONSELO ATION O Santa Fo

State of New Mexico **Energy and Minerals Department** Oil Conservation Division P. O. Box 2088 Santa Fe. NM 87501

Case 6429

Attention: Mr. Joe Ramey Director

> Request that the Oil Conservation Division find that the Elliott State No. 2 well is necessary to effectively and efficiently drain proration unit

as per 271.305(b)(2).

Dear Sir:

Reference is made to Federal Energy Regulatory Commission regulations in Subpart C - New, Onshore Production Well \$ 271.304 and 271.305. Paragraph 271.305 applies to a well spudded after December 31, 1978 and drilled within a proration unit in existence at the time that the drilling of the new well began. In 271.305(b) (2) the wording says that the jurisdictional agency must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be effectively and efficiently drained by any existing well within the proration unit.

This is an application to the Oil Conservation Division for the "Walver of wellspacing requirement" mentioned in § 271.304 and the "finding" which is called for in § 271.305(b) (2).

It is proposed that Zia Energy, Inc. will drill a New, Onshore Production Well at a standard location of 660' FNL and 1980' FEL of Sec. 34, T20S, R36E, Lea County, New Mexico. This will be on State of New Mexico Lease No. B-11298.

Lease No. B-11298 covers the NE/4 of Sec. 34, T20S, R36E. One well was drilled on this lease by Amerada. It was their State "WEG" No. 1, located in the SE/4 NE/4 of Sec. 34. It was completed in May 1954 as a Eumont gas well Oil Conservation Division Page 2 January 3, 1979

with the 160-acre proration unit consisting of the N/2 NE/4 being communitized with the S/2 NE/4. Gas from this proration unit was sold under contract to El Paso Natural Gas Co.

Production history for the Amerada "WEC" No. 1 is presented in a tabulation as Exhibit A and as a decline curve as Exhibit B. Production for 1978 is averaging approximately 125 MCF per month. This is the only well producing in the NE/4. Any further decline in productivity could possibly put this lease in jeopardy, due to non-production.

In an effort to stimulate production from this well, in 1974, additional perforations were made and then fracture treated with a massive gelled water treatment. The result of this workover was a complete failure.

Exhibit C is a structure map purporting to show that the potential for gas production exists in the NW/4 NE/4 as well as in the "WEG" No. 1 location.

Exhibits D-1 through D-5 are electrical log sections of other wells in the area of the proposed new well.

Exhibit E is a copy of a Gas Pooling Agreement between Amerada Petroleum Corporation and Elliott, inc. pooling the N/2 and the S/2 of the NE/4 of Sec. 34. Your attention is called to page 2, paragraph No. 4, of this agreement. You will notice that termination of this agreement is provided at (a) and (b) in this paragraph. With the completion of the Zia Energy, Inc. Elliott State No. 2 as a Eumont gas well, this pooling agreement will be terminated under the provision set forth in paragraph No. 4 (a). This will make it possible for the Oil Conservation Division to alter or grant a waiver of any applicable well spacing requirements as mentioned in your Rule 15, No. 6 (b) (2).

Exhibit F is simply a Certificate of Approval by the State Land Commissioner for the Gas Pooling Agreement.

It is our conclusion, after studying the Warrior, Inc. (formerly Amerada) State "WEG" No. 1 completion and workover history, the production decline curve, and the electrical log sections, that the Yates, Seven Rivers, and Queen formations are very tight and, therefore, the one well in the SE/4 NE/4 cannot effectively and efficiently drain the entire NE/4 of Sec. 34. We, therefore, request a certificate from the Oil Conservation Division that will fill the filling requirements of \$ 271.304 and \$ 271.305 (b) (2).

Only for information purposes, application for this well was filed with your

Oil Conservation Division Page 3 January 3, 1979

office on October 3, 1978, and subsequently a certificate was issued. A copy of this certificate is included.

All of the above and the attached information supports our contention that an additional well will be required to drain this portion of the proration unit, and that a price higher than the contract price must be approved for the well to be economically feasible.

Yours truly,

m - Melson

M. F. Nelson

ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Loa County, New Mexico

Year	Volume	72-hour Shut-In Press.	Calculated EHP-psia
1955	85,123		
1956	12€,078	686	851
1957	82,561	418	491
1958	65,380	365	426
1959	53,237	437	517
1960	39,139	350	407
1961	38,308	220	249
1962	29,601	230	260
1963	14,285	287	330
1964	25 156	178	199
1965	32,690	anest et 10 august 227 agus a sa leis e sa le	257
1966	10,390	185	208
1967	14,903	138	154
1968	14,000	173	194
	14, 294	146	164
1970	12,608	165	184
1971	13,380	2 15	243
1972	11,502	117	130
1973	11,647	103	114
1974	3,122		
1975	904		
1976			in As
1977	2,157		

Cumulative Gas Production - 691,325 MCF

	EXHIBIT "C"	
<u> </u>		na hammanitaja a nasastus
	1	13.50
	Andrews 1	4-
S	Warrior Endry Annips 159	6.5A
T-20-	Southland 28 Sonio 4 Evans 27 Weals 210 Energy Amaco 2 210 Energy Evans Ev	5
	Southland, Wiser Wiser Zial Energy OFNergy Topne Co. Exxon.c. Stole Warrior Stole Worrior 1971	• • • • • • • • • • • • • • • • • • •
	33 Warrier 24 Warrier Weirreff 5 ARCO Evens Seale Frid Liwi White W. W. White R. R. R. M. III	6,20
	R35E 100	• • • •
	2 • † • • • • • • • •	

ZIA ENERGY, INC.

ELLIOTT STATE AREA EUMONT FIELD - T205, R36E Contours on top of Queen

11/1: 1206

GAS POOLING AGREEMENT

This Agreement made and entered into this 2/of day of fectuality 1956, by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC., hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M. Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agreement:

NOW, THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto that the pooled provation unit shall be developed and operated by Amerada, its successors or assigns, for the production therefrom of dry gas and associated liquid hydrocarbons as an entirety, with the understanding and agreement that the dry gas and associated liquid hydrocarbons produced therefrom shall be allocated among the leaseholds comprising said pooled proration unit in the proportion that the acreage interest of each leasehold bears to the entire acreage interest committed to this agreement. The royalties payable on the dry gas and associated liquid hydrocarbons so allocated to the individual leases comprising the pooled proration unit and the rentals provided for in said leases shall be determined and paid on the basis prescribed in each, of the individual leases. Payment of rentals under the terms of the leases. subject to this agreement shall not be affected by this agreement except as provided for under the terms and provisions of said leases or as may herein be otherwise provided. Except as herein modified and changed, the oil and gas leases subject to this agreement shall remain in full force and effect as originally made and issued. There shall be no obligation on Ameraca, or its successors or assigns, to offset any gas well or wells on separate component tracts into which such pooled proration unit is now or may hercufter be divided; nor shell Amerada, its successors or assigns be required to separately measure said dry gas or associated liquid hydrocaroons by reason of the diverse ownership of such production in and under said tract, but the lease shall not be released from the obligation to protect suid pooled tract from drainage by any gas well or wells which may be drilled offsetting the said tract.

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities; provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year herein first above written.

ATTEST:

Assistant Secretary

AMERADA PETROLEUM CORPORATION

ar Procions

ELLIOTT, INC

- Presider

STATE OF OKLAHOMA)
COUNTY OF TULSA)
On this 2/sk day of Lestender, 1956, before me appeared
A R DENISON , to me personally known, who being by me duly
sworn, did say that he is the Weel President of AMERADA PETROLEUM CORPORATION
and that the seal affixed to said instrument is the corporate seal of said
corporation and that said instrument was signed and sealed in behalf of said
corporation by authority of its Board of Directors, and said A R. DENISCN
, acknowledged said instrument to be the free act and deed of
said corporation.
Given under my hand and seal this alst day of September.
1956.
Q. P. a Potte I Hilland
My corrission expires:
My Commission expires.
Q-toler 25, 1956
STATE OF NEW MEXICO) SS
COUNTY OFCHAVES }
On this 1st day of October , 1956, before me appeared
Frank O. Elliott , to me personally known, who being by me duly
sworn, did say that he is the Vice President of MLLIOTT, INC., and that the
seal affixed to said instrument is the corporate seal of said corporation and .
that said instrument was signed and sealed in behalf of said corporation by
authority of its Board of Directors, and said Frank O. Elliott
acknowledged said instrument to be the free act and deed of said corporation.
Given under my hand and seal this lst day of October
1956.
n: Can
Notary Public
My commission expires:

CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO Amerada's State WE "G" No. 1 Communitization

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956, which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b) That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order ESP-86.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands of the State of New Mexico

CERTIFICATE

I, JOE D. RAMEY, Director of the Oil Conservation Division of the Energy and Minerals Department, hereby certify that the Oil Conservation Division is the state regulatory agency having jurisdiction over the drilling, spacing, completion and production of oil and gas wells, and over all matters relating to the conservation of oil and gas.

I further certify that I have examined the proposal of

Zia Energy, Inc. to drill the following

well for development of the Eumont Gas

pool:

Elliott Well No. 2, NW/4 NE/4, Section 34, Township 20 South, Range 36 East, Lea County, New Mexico

and find that this is a necessary additional well or completion operation into the subject reservoir.

JON D. RAMPY, pirector

Oil Conservation Division

Dated: October 12, 1978



	•		
		Warrior	12 A 9 Zia Phillips
The selection of the se	•	Fed "D"	12
	Southland Roy. Sohio	Evens 27 Warrior	Fed "D" 26 New 32 1
	3	Southland Elliott Tyor	
	State E-28 McGroder Southland Roy Wiser Wiser	State E-271 Zia Energy	Tenneco Exxon
All the second of the second o	186	State Elliatt St. Gulf Worriogg	4.
	3 4 2 3 5 PX 5 PX	R.R. Bell 3 "WEG" 69	35
	Sala Balling Frank (* 1872)	Worrior Warrior 473 1	Ida While Ido While_
,	M.W.Coll	Scole Fed E.W. White 74	

ZIA ENERGY, INC. HOBBS, NEW MEXICO 88240

ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico

State Lease No. -11298

Zia Energy Elliott State

Proposed Elliott State No. 2

Eumont Oil Well

Eumont Gas Well

Initial Potential-MCF

Cumulative Production-MMCF

		·			
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HOBBS. NEW MEXICO 88240

ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico

---- State Lease No.-11298

--- Zia Energy Elliott State

O Proposed Elliott State No. 2

Eumont Oil Well

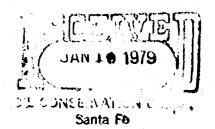
Eumont Gas Well

100 Initial Potential-MCF

Cumulative Production-MMCF

HOBBS, NEW MEXICO 88240

January 3, 1979



State of New Mexico
Energy and Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

Case 6429

Attention: Mr. Joe Ramey

Director

Re: Request that the Oil Conservation
Division find that the Elliott State
No. 2 well is necessary to effectively
and efficiently drain proration unit
as per 271.305(b) (2).

Dear Sir:

Reference is made to Federal Energy Regulatory Commission regulations in Subpart C - New, Onshore Production Well \$ 271.304 and 271.305. Paragraph 271.305 applies to a well spudded after December 31, 1978 and drilled within a proration unit in existence at the time that the drilling of the new well began. In 271.305(b) (2) the wording says that the jurisdictional agency must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be effectively and efficiently drained by any existing well within the proration unit.

This is an application to the Oil Conservation Division for the "Waiver of well-spacing requirement" mentioned in § 271.304 and the "finding" which is called for in § 271.305(b) (2).

It is proposed that Zia Energy, Inc. will drill a New, Onshore Production Well at a standard location of 660' FNL and 1980' FEL of Sec. 34, T20S, R36E, Lea County, New Mexico. This will be on State of New Mexico Lease No. B-11298.

Lease No. B-11298 covers the NE/4 of Sec. 34, T20S, R36E. One well was drilled on this lease by Amerada. It was their State "WEG" No. 1, located in the SE/4"NE/4 of Sec. 34. It was completed in May 1954 as a Eumont gas well

Oil Conservation Division Page 2 January 3, 1979

with the 160-acre proration unit consisting of the N/2 NE/4 being communitized with the S/2 NE/4. Gas from this proration unit was sold under contract to El Paso Natural Gas Co.

Production history for the Amerada "WEG" No. 1 is presented in a tabulation as Exhibit A and as a decline curve as Exhibit B. Production for 1978 is averaging approximately 125 MCF per month. This is the only well producing in the NE/4. Any further decline in productivity could possibly put this lease in jeopardy, due to non-production.

In an effort to stimulate production from this well, in 1974, additional perforations were made and then fracture treated with a massive gelled water treatment. The result of this workover was a complete failure.

Exhibit C is a structure map purporting to show that the potential for gas production exists in the NW/4 NE/4 as well as in the "WEG" No. 1 location.

Exhibits D-1 through D-5 are electrical log sections of other wells in the area of the proposed new well.

Exhibit E is a copy of a Gas Pooling Agreement between Amerada Petroleum Corporation and Elliott, Inc. pooling the N/2 and the S/2 of the NE/4 of Sec. 34. Your attention is called to page 2, paragraph No. 4, of this agreement. You will notice that termination of this agreement is provided at (a) and (b) in this paragraph. With the completion of the Zia Energy, Inc. Elliott State No. 2 as a Eumont gas well, this pooling agreement will be terminated under the provision set forth in paragraph No. 4 (a). This will make it possible for the Oil Conservation Division to alter or grant a waiver of any applicable well spacing requirements as mentioned in your Rule 15, No. 6 (b) (2).

Exhibit F is simply a Certificate of Approval by the State Land Commissioner for the Gas Pooling Agreement.

It is our conclusion, after studying the Warrior, Inc. (formerly Amerada) State "WEG" No. 1 completion and workover history, the production decline curve, and the electrical log sections, that the Yates, Seven Rivers, and Queen formations are very tight and, therefore, the one well in the SE/4 NE/4 cannot effectively and efficiently drain the entire NE/4 of Sec. 34. We, therefore, request a certificate from the OII Conservation Division that will fill the filling requirements of § 271.304 and § 271.305(b) (2).

Only for information purposes, application for this well was filed with your

OII Conservation Division Page 3 January 3, 1979

office on October 3, 1978, and subsequently a certificate was issued. A copy of this certificate is included.

All of the above and the attached information supports our contention that an additional well will be required to drain this portion of the proration unit, and that a price higher than the contract price must be approved for the well to be economically feasible.

Yours truly,

M. F. Nelson

m3 Delson

ANNUAL PRODUCTION

Warrior, Inc.
State "WEG" No. 1-H
Sec. 34, T20S, R36E,
Laa County, New Mexico

		72-hour	Colculated
<u>Year</u>	Volume	Shut-In Press.	EHP-psia
1955	85,123		$\frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right)$
1956	126,078	686	851
1957	82,561	418	491
	65,880	365	426
1958//	and the control of th	and the control of th	
1959	53,237	437	517
1960	39,139	350	407
1961	38,308	220	249
1962	29,601	230	260
1963	14,285	287	330
1964	25,156	178	199
1965	32,690	227	257
1966	10,390	185	208
1907	117,903		
1968	14,000	173	194
1969	14,294	146	164
1970	12,608	165	134
1971	13,380	215	243
1972	11,502	117	130
1973	11,647	103	114
1974	3,122		
1975	904		
1976	419		
1977	2,157		
137/	2,131		

Cumulative Gas Production - 691,325 MCF

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		EXHIBIT "C"	
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ELLIOTT STATE AREA EUMONT FIELD - T205, R36E

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11/11/12/16

GAS POOLING AGREEMENT

This Agreement made and entered into this 2/of day of featerland 1956, by and between AMERADA PETROLEUM CORPORATION and ELLIOTT, INC/, hereinafter called "AMERADA" and "ELLIOTT," respectively,

WITNESSETH: That

WHEREAS, Amerada is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E. M. Elliott, as Lessee, covering, among other lands, the S/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and

WHEREAS, Elliott is the record owner of the following State of New Mexico oil and gas lease:

Lease No. B-11298, dated June 10, 1944, from the State of New Mexico, as Lessor, to E.M.Elliott, as Lessee, covering, among other lands, the N/2 NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico; and,

WHEREAS, it is the desire of Amerada and Elliott that this agreement cover the NE/4 of Section 34, Township 20 South, Range 36 East, Lea County, New Mexico, as to the gas rights down to a depth of 4300 feet below the surface, said area being hereinafter referred to as the "Pooled Proration Unit;" and,

WHEREAS, in order to comply with existing rules and regulations governing gas well spacing and gas proration units, and to acquire a gas allowable for the above-described pooled proration unit, it is the desire of the parties hereto to pool all leasehold and royalty interests in order to form one tract or unit; and

WHEREAS, Amerada desires to operate the pooled proration unit as an entirety for the purpose of developing and producing dry gas and associated liquid hydrocarbons in accordance with the terms and provisions of this agreement:

NOW, THEREFORE, in consideration of the premises and the mutual advantages offered by this agreement, it is mutually covenanted and agreed by and between the parties hereto that the pooled provation unit shall be developed and operated by Amerada, its successors or assigns, for the production therefrom of dry gas and associated liquid hydrocarbons as an entirety, with the understanding and agreement that the dry gas and associated liquid hydrocarbons produced therefrom shall be allocated among the leaseholds comprising said pooled proration unit in the proportion that the acreage interest of each leasehold bears to the entire acreage interest committed to this agreement. The royalties paysile on the dry gas and associated liquid hydrocarbons so allocated to the individual leases comprising the pooled proration unit and the rentals provided for in said leases shall be determined and paid on the basis prescribed in each of the individual leases. Payment of rentals under the terms of the leases. subject to this agreement shall not be affected by this agreement except as provided for under the terms and provisions of said leases or as may herein be otherwise provided. Except as herein modified and changed, the oil and gas leases subject to this agreement shall remain in full force and effect as originally made and issued. There shall be no obligation on Amerada, or its successors or assigns, to offset any gas well or wells on separate component tracts into which such pooled proration unit is now or may hereafter be divided; nor shall Amerada, its successors or assigns be required to separately measure said dry gas or associated liquid hydrocarbons by reason of the diverse ownership of such production in and under said tract, but the leases shall not be released from the obligation to protect suid pooled tract from drainage by uny gas well or wells which may be drilled offsetting the said tract.

It is further agreed that the commencement, completion, continued operation or production of a well or wells for dry gas and associated liquid hydrocarbons on the pooled proration unit shall be construed and considered as the commencement, completion, continued operation or production from each and all of the lands within and comprising said pooled proration unit, and operations or production pursuant to this agreement shall be deemed to be operations or production as to each lease committed hereto.

It is the intention of the parties hereto that this agreement shall include and affect only dry gas and associated liquid hydrocarbons produced through a gas well or gas wells as defined by the New Mexico Oil Conservation Commission located on the pooled proration unit and shall not include or affect in any manner whatsoever any of the production of hydrocarbons from any oil well located on the pooled tracts or any of the production of hydrocarbons from other than the 4300 feet from the surface as above defined.

It is further agreed that all production of dry gas and associated liquid hydrocarbons and disposal thereof shall be in conformity with allocations made or fixed by any duly authorized person or regulatory body under applicable Federal or State statute. The provisions of this agreement shall be subject to all applicable Federal and State laws or executive orders, rules and regulations which affect the performance of any of the provisions of this agreement, and no party hereto shall suffer a forfeiture or be liable in damages for failure to comply with any of the provisions of this agreement if such compliance is prevented by, or if such failure results from compliance with any such law, order, rule or regulation.

This agreement shall be effective as of the date upon which the unit allowable established by the New Mexico Oil Conservation Commission first becomes effective and shall remain in force and effect for a period of one (1) year and so long thereafter as dry gas, with or without associated liquid hydrocaroons, is produced from any part of said pooled proration unit in paying quantities; provided that this agreement shall terminate in the event of and at such time that (a) Elliott shall complete a gas well above a depth of 4300 feet from the surface in the N/2 of the area hereby pooled, or (b) Amerada shall abandon the gas well that it has drilled and completed in the S/2 of the area hereby pooled.

This agreement shall be binding upon the parties hereto and shall extend to and be binding upon their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year herein first above written.

ATTEST:

tesistent Secretary

AMERADA PETROLEUM CORPORATION

Much

Ame Lierroeur.

ATTEST:

ELLIOTT, INC

2 Puggiant

STATE OF OKLAHOMA)) SS
COUNTY OF TULSA)
On this 2/14 day of September, 1956, before me appeared
A R DENISON , to me personally known, who being by me duly
sworn, did say that he is the Wic President of AMERADA PETROLEUM CORPORATION
and that the seal affixed to said instrument is the corporate seal of said
corporation and that said instrument was signed and sealed in behalf of said
corporation by authority of its Board of Directors, and said A R. DENISCA
, acknowledged said instrument to be the free act and deed of
said corporation.
Given under my hand and seal this alat day of deptember,
1956.
I But dette Hilson
My commission expires: Sundatte Stelland Notary Public
Q to her 27, 1956
STATE OF NEW MEXICO
COUNTY OF CHAVES) SS
On this 1st day of October , 1956, before me appeared
Frank O. Elliott , to me personally known, who being by me duly
sworn, did say that he is the Vice President of LLLIOTT, INC., and that the
seal affixed to said instrument is the corporate seal of said corporation and
that said instrument was signed and sealed in behalf of said corporation by
authority of its Board of Directors, and said Frank O. Elliott
acknowledged said instrument to be the free act and deed of said corporation.
Given under my hand and seal this lst day of October
1956.
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Notary Public
(y commission expires:
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CERTIFICATE OF APPROVAL

BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO Amerada's State WE "G" No. 7 Communitization

There having been presented to the undersigned Commissioner of Public Lands of the State of New Mexico for examination, the attached Agreement for the development and operation of acreage which is described within the attached Agreement, dated Sept. 21, 1956, which has been executed or is to be executed by parties owning and holding oil and gas leases and royalty interests in and under the property described, and upon examination of said Agreement, the Commissioner finds:

- (a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said area.
- (b). That under the proposed agreement the State of New Mexico will receive its fair share of the recoverable oil or gas in place under its lands in the area.
- (c) That each beneficiary Institution of the State of New Mexico will receive its fair and equitable share of the recoverable oil and gas under its lands within the area.
- (d) That such agreement is in other respects for the best interests of the state, with respect to state lands.

NOW, THEREFORE, by virtue of the authority conferred upon me under Sections 7-11-39, 7-11-40, 7-11-41, 7-11-47, 7-11-48, New Mexico Statutes Annotated 1953 Compilation, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the said Agreement, and any leases embracing lands of the State of New Mexico within the area shall be and the same are hereby amended to conform with the terms thereof, and shall remain in full force and effect according to the terms and conditions of said Agreement. This approval is subject to all of the provisions of the aforesaid statutes, and shall specifically cover Amerada's State W E "G" No. 1 Well in the Eumont Gas Pool as set forth by New Mexico Oil Conservation Commission Administrative Order NSP-86.

IN WITNESS WHEREOF, this Certificate of Approval is executed, with seal affixed, this 8 day of October 1956.

Commissioner of Public Lands
of the State of New Mexico

CERTIFICATE

I, JOE D. RAMEY, Director of the Oil Conservation Division of the Energy and Minerals Department, hereby certify that the Oil Conservation Division is the state regulatory agency having jurisdiction over the drilling, spacing, completion and production of oil and gas wells, and over all matters relating to the conservation of oil and gas.

I further certify that I have examined the proposal of to drill the following Zia Energy, Inc. well for development of the Eumont Gas pool:

Elliott Well No. 2, NW/4 NE/4, Section 34, Township 20 South, Range 36 East, Lea County, New Mexico

and find that this is a necessary additional well or completion operation into the subject reservoir.

director

Oil Conservation Division

October 12, 1978 Dated:



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HOBBS, NEW MEXICO 88240

ELLIOTT STATE AREA

EUMONT FIELD - T20S, R36E

Lea County, New Mexico

- State Lease No.-11298

- Zia Energy Elliott State

O Proposed Elliott State No. 2

Eumont Oil Well

Eumont Gas Well

100 Initial Potential-MCF

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Cumulative Production-MMCF

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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. 6429

Order No. R-5938

APPLICATION OF ZIA ENERGY, INC., FOR APPROVAL OF INFILL DRILLING, LEA COUNTY, NEW MEXICO.

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ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 31

19 79 , at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _______ day of February ______, 1979 _____, 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, Zia Energy, Inc. seeks a finding that the drilling of its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East,

Eumont Gas Pool, Lea County, New Mexico, is necessary to effectively and efficiently drain that portion of the proration unit which cannot be so drained by the existing well.

Applicant

- (3) That the applicant further seeks approval of a waiver of existing well-spacing requirements.
- (4) That the standard spacing unit in the Eumont Gas Pool is 640 acres.
- (5) That Zia Energy, Inc. is the operator of an 80-acre tract(in said Eumont Gas Pool consisting of the N/2 NE/4 of said Section 34.
- (6) That applicant's 80-acre tract is communitized with the S/2 NE/4 of said Section 34 forming an approved 160-acre non-standard proration unit for said pool.
- (7) That said 160-acre non-standard proration unit is dedicated to the Warrior Inc. State "WEG" Well No. 1 located in Unit H of said Section 34.
- (8) That production from said State WEG Well No. 1 declined from an average monthly rate of 10,506 MCF in 1956 to 970 MCF in 1973
- (9) That during 1974 said State WEG Well No. 1/extensively worked over being cleaned out, having additional zones perforated, and being acid fraced.
- (10) That said workover was unsuccessful and in fact production declined to an average rate of 125 MCF per month or a figure equal to about 13 percent of its preworkover rate.

- (11) That the evidence presented demonstrated that said State "WEG" Well No. 1 is no longer effectively and efficiently draining said dedicated 160-acre non-standard proration unit.
- (12) That the evidence presented further demonstrated that the drilling and completion of applicant's said Elliott State Well No. 2 should result in the production of an additional 350,000 MCF of gas from applicant's acreage which would not otherwise be recovered from the proration unit.
- (13) That such additional recovery from the nonstandard proration unit will result in such unit being more efficiently and economically drained.
- (14) That said Elliott State Well No. 2 is to be drilled as an "infill" well on the existing 160-acre non-standard proration unit.
- (15) That in order to permit the drainage of a portion of the reservoir covered by said 160-acre non-standard proration unit which cannot be effectively and efficiently drained by the existing well thereon, the subject application for infill drilling should be approved as an exception to the standard well spacing requirements for said Eumont Gas Pool.

IT IS THEREFORE ORDERED:

to drill its Elliott State Well No. 2 to be located in Unit B of Section 34, Township 20 South, Range 36 East, as an infill well on an existing 160-acre non-standard proration unit being the NE/4 of said Section 34, Eumont Gas Pool, Lea County, New Mexico. That The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by the existing 160-acre non-standard proration unit which cannot efficiently and economically be drained by any existing well thereon.

(2) Juris die tron