STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:	)	
APPLICATION OF EDGE PETROLEUM EXPLORATION COMPANY TO RESTRICT THE EFFECT OF THE SPECIAL RULES AND REGULATIONS FOR THE DOS HERMANOS-MORROW GAS POOL, EDDY COUNTY, NEW MEXICO	)	CASE NO. 13,351

REPORTER'S TRANSCRIPT OF PROCEEDINGS
COMMISSION HEARING

2005 MAR 21 PM 2 23

BEFORE: MARK E. FESMIRE, CHAIRMAN
JAMI BAILEY, COMMISSIONER
FRANK T. CHAVEZ, COMMISSIONER

March 8th, 2005
Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, MARK E. FESMIRE, Chairman, on Tuesday, March 8th, 2005, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

March 8th, 2005
Commission Hearing
CASE NO. 13,351

(Continued...)

V-F WITNESSES (Continued):

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	7, 19	42
Exhibit 2	20	42
Exhibit 3	20, 25	42
Exhibit 4	29	42
Exhibit 5	31	42
Exhibit 6	31	42
Exhibit 7	68	80
Exhibit 8	49	-
Exhibit 9	75	80
Exhibit 10	77	80

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V-F Petroleum	Identified	Admitted
Exhibit 1	14, 95	101
Exhibit 2	97	101
Exhibit 3	123	137
Exhibit 4	127	137
Exhibit 5	127	137
Exhibit 6	129	137

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A P P E A R A N C E S

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* * *

WHEREUPON, the following proceedings were had at 9:05 a.m.:

CHAIRMAN FESMIRE: The second order of business today is Cause Number 13,351, continued from February 10th, 2005. It's the *de novo* Application of Edge Petroleum Exploration Company to restrict the effect of the special rules and regulations for the Dos Hermanos-Morrow Gas Pool in Eddy County, New Mexico.

At this time I would ask for appearances of the attorneys involved.

MR. BRUCE: May it please the Commission, Jim Bruce of Santa Fe, representing the Applicant. I have two witnesses.

CHAIRMAN FESMIRE: Has anything changed since your pretrial?

MR. BRUCE: No, sir.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe office of Holland and Hart, L.L.P. I represent V-F Petroleum, Inc., in opposition to the Application, and I have two witnesses.

CHAIRMAN FESMIRE: Since I've guessed wrong in just about every case before, I'm assuming that the Applicant will go first. Is there any objection?

MR. BRUCE: I'm assuming that, unless Mr. Carr would --

MR. CARR: No, I think the Applicant ought to go first.

CHAIRMAN FESMIRE: Mr. Bruce, do you have an opening statement?

MR. BRUCE: Yes, I do, Mr. Chairman.

If you have the exhibits I submitted in front of you, if I could refer you just to the top exhibit, which is the land plat, we're here today regarding the Dos Hermanos-Morrow Gas Pool, which encompasses Sections 21, 22, 27 and 28 of Township 20 North, 30 West.

The pool has special rules which provide for 640-acre spacing, one well per unit, and wells to be located no closer than 1650 feet to the outer boundary of a section. That's highlighted in green on the plat.

The Applicant, Edge Petroleum Exploration Company, owns a working interest in the State of New Mexico oil and gas lease covering 240 acres in the north half of Section 29, and desires to drill a well with a north-half dedication to it, 320 acres.

As you know, there are a few Morrow gas pools in the state still spaced on 640 acres, although the overwhelming majority of acreage is just governed by the statewide rules, 320 acres and wells to be no closer than 660 feet to the outer boundary of a quarter section.

Edge applied to the Division for an order

limiting the effect of the special rules, so that 640-acre spacing and the special well-location requirements would not apply outside of the boundary highlighted in green.

I'm handing out a portion of the Order entered by the Division, along with a copy of the Application I filed.

If you look at the Order, on page 6 in finding 17, the Division found that the wells in the Dos Hermanos-Morrow Gas Pool are not capable of draining 640 acres, and therefore 320-acre well units were proper.

In finding 20 on page 7 it said that as to the adjoining 12 sections, they should be developed on 320-acre spacing, in other words, statewide spacing rules.

It then went on, on page 8, to grant the Application to limit the 640-acre spacing in ordering paragraph 1 to the four sections currently within the pool.

But then it went on to have two other findings.

It said that in the 12 sections adjoining the pool, space them on 320 acres. But if you're closer than 1650 feet to the four sections, you have to give notice to the operator. And in essence, it would be a typical unorthodox location application, the way I read the rules.

It then went further, and if you turn to the final page of the Order, finding paragraph 3 -- actually there are two finding paragraphs 3, but I'm looking at the second finding paragraph 3 -- it says, Applicant's request

to drill a well 660 feet from the north and east lines is hereby denied.

Well, there's one problem with that -- there's a couple of problems, but one problem is, we never applied for a 660-foot location. And if you look at the Application, it's simply to limit the effect of the rules to the current four sections.

Mr. Chairman, just last week you heard Mr. Carr say the Division or the Commission can only grant an Application that's been filed. First and foremost, this finding 3 is improper. We never filed for a 660-foot location. Furthermore, it then goes on to say that Edge Petroleum must -- it says shall be required to drill its well with the setback requirements for the Dos Hermanos-Morrow Gas Pool.

So what you have here is three or four sets of rules. You have those within the four sections, and then you have -- for 11 1/2 sections adjoining the pool, you can't be closer than 1650 unless no one objects.

And then you have special rules for the north half of Section 29, and that just makes no sense, especially considering the findings that this is just a typical statewide Morrow pool. And in effect, what you're saying, 640-acre spacing -- that's one set of rules -- 320-acre spacing with 660-foot setbacks if an operator doesn't

object; 320-acre spacing with 1650-foot setbacks if the operator does object; and then just for Edge, in the north half of Section 29 you've got to have 1650 feet by 1650 feet. It just makes no sense, especially considering the findings of the Division.

Now, Edge has no problem with retaining 640-acre spacing in those four sections. Generally, that's been done in the past to protect the equities of existing wells in a pool that's half of 640-acre spacing. Problem is, there's only one section with production, and that's Section 21.

So what you have here is, everything is being done to protect one well in Section 21, and again, we don't think that's proper, especially considering the testimony we will present today about drainage in this pool.

Now, we don't have any problem with -- if the people want to retain 640-acre spacing, that's fine. We also think that there should be 660-foot setbacks in those four sections. That's what the Division has done in the past.

For instance, in the McMillan-Morrow Pool with Order R-2917-C, it allowed one well per quarter section with 660-foot setbacks. It did the same thing in the Indian Basin-Morrow Gas Pool under Order R-2441-B. It did the same thing in the Cinta Roja-Morrow Gas Pool, R-3161-A,

and it did the same thing in the Catclaw Draw-Morrow Gas Pool with Order R-8170-R.

We think that's the proper thing to do in case those interest owners are concerned about their correlative rights, but we don't think it's necessary to penalize all the offsetting acreage when the evidence will show these are just typical Morrow wells with typical Morrow drainage.

CHAIRMAN FESMIRE: Mr. Bruce --

MR. BRUCE: Yes, sir?

CHAIRMAN FESMIRE: -- can I clarify one thing? The Dos Hermanos is one field -- I mean one well now, in Section 21?

MR. BRUCE: It might be two wells, but they're both in Section 21. I know one is producing. I'm not sure of the second well. And one of the witnesses, I'm sure, could answer that.

CHAIRMAN FESMIRE: Okay.

MR. BRUCE: There are two wells. I know both of them -- one of them was producing at one time. I don't know if it's shut in. They're only about 1000 feet apart.

Based on what I've said, and considering again that the Division found that the Morrow formation in this township is no different from other Morrow pools in southeast New Mexico, we think the Division's Order should be amended by deleting ordering paragraphs 2 and the second

ordering paragraph 3.

You will see evidence today about a location that Edge would like to drill. Again, we're not here today applying for a specific well location. We don't think that's within the scope of this Application, but we will present evidence just to rebut what we believe will be presented by V-F Petroleum in this regard.

But again, we would ask you to amend this Order to strictly limit the effect of the 640-acre spacing to the existing four sections within the pool.

And, if necessary, loosen up the well-location requirements. Nobody has any problem with that. That way the equities can be maintained and the parties can drill at their preferred locations.

And I would note -- and we will go into this briefly in the testimony -- this is in the oil-potash area, and locations are difficult to obtain out there.

Thank you.

CHAIRMAN FESMIRE: Mr. Carr, would you like to make a statement, or would you reserve it until --

MR. CARR: No, I think I'd like to make a statement.

May it please the Commission, we're here today because Edge has come before you seeking an order limiting the special pool rules to the Dos Hermanos Pool, to the

four sections that are included within that field.

As you hear the evidence, I think it's important to realize that while Edge's Application seeks a change in pool rules that will affect literally thousands of acres in the buffer zone around this pool, they have one objective: They want a location, one well location, on the lease they've recently acquired, offsetting the pool.

They could seek an unorthodox well location from you, they could create a nonstandard spacing unit out of the acreage they would like to dedicate, but they do not.

They want to change the spacing in literally thousands of acres, and by so doing they convert an unorthodox location to a standard location. By so doing, they can drill at that location without giving notice required by your Rules to affected offset parties. They can do this on a nonstandard unit without under existing Rules notifying the mineral owners in the south half of the section that would be excluded if they sought an unorthodox well location.

It's an interesting Application. We're going to change the rules for over 7000 acres because we have 240 and we don't like the rules, rules that have been in existence since the mid-1960s, rules that have governed the development of this area.

But they don't like the buffer zone. There's a

reason for this extraterritorial buffer zone. It is to protect those inside the pool and to provide for orderly development outside the pool. This is a modified copy of our Exhibit 1 that you're looking at, that I have here on the easel.

The red area shows the four sections, it shows the four Morrow wells that have produced from this pool. The initial well was in Section 28. This well in 28, as the evidence will show -- it's back 1980 from the north and the west lines of that section -- has cum'd approximately 9 1/2 BCF of gas, a very good well, the discovery well, and the reason these pool rules were adopted.

V-F Petroleum operates wells in this pool, and it has operated wells in this pool under the rules.

Last year V-F directionally drilled a well to a standard bottomhole location in the southwest of Section 21, and the evidence will show that that is a good Morrow-producing well. We drilled in accordance with the rules.

Last year Edge acquired interest in the north half of Section 29. It doesn't want to abide by the existing rules, it wants to limit them so there can be one set of rules for the Edge acreage and one set of rules for the offsetting property interests.

We oppose one reservoir and two sets of rules, because what we're doing here is, we're just talking about

changing the rules for one well.

Now, Mr. Bruce indicated a few minutes ago that the had not requested a 660 location, and they did not in their Application. But their exhibits at the Examiner level, everything they filed, had this 660 location. And underneath it, it said "PROP LOC", which I thought meant proposed location.

And we found out yesterday they have an alternative location, but you will see in our exhibits we work off the 660 location because as Mr. Bruce said here today, they're not asking you to propose a location, they're asking you to propose a rule change that would allow these locations.

You know, by talking about pool rules over hundreds and thousands of acres instead of their spacing unit, we're not just looking at the north half of Section 29, because what they propose sets up additional locations offsetting the well we recently drilled in accordance with the rules. There now could be a well in the southeast of 20, 660 off our line. There could be a well in the northeast of 20, 660 off our line. There could be a well in the southeast of 17, diagonally 933 feet off our line.

The evidence that you're going to hear today is going to say that V-F, wherever -- I mean that Edge, wherever they want to drill in the north half of 29, hopes

to get a well comparable to the well in 28. The drainage radius for that well is 2090 feet.

They would like to create a situation under the rules where there could be four locations offsetting us that potentially could have a drainage radius in excess of 2000 feet. They want to be 660 feet from our lease line, when we have drilled a well that we will show you we believe effectively is going to drain the reserves under our land.

We believe under the Statutes we have a guarantee that we will be allowed to exercise our opportunity to recover the reserves under our acreage. We believe that our correlative rights will be protected. They're protected by law, and we believe you're directed to do that.

It's an interesting case, because while we have lived with the rules, they now do not want to that, and they want to change it in a way that violates correlative rights.

And you're going to hear a lot of stuff about other Morrow pools and what the effective drainage pattern could be. And maybe the drainage pattern should be reduced, maybe there should be greater density in the Dos Hermanos. But when you look at other pools, they've been developed under one set of rules. Some operators on their

acreage didn't play under one set of rules while operators offsetting them require now to play on another, and the result being drainage.

At the end, we're going to ask you to evaluate the evidence and address whatever needs to be done in terms of the waste issue, but we're going to ask you to do it in a way that doesn't impair correlative rights, that doesn't penalize those who have lived under the rules and played by the rules.

We're going to ask you to tell Edge to go back, to seek an unorthodox location, to tell us what they're seeking. Not just maybe a new location we have to date, but where you want to drill.

And do what the Examiner was trying to do: Say, You can go to a greater density, but because of these rule changes, you're going to start draining somebody else in a situation where reasonably they can't afford to drill an additional well to offset drainage with counter-drainage. One, it's expensive. And two, the well we recently drilled drains that acreage.

And we're going to ask you to do what has to be done in a way that meets your statutory duty that will not impair the correlative rights of V-F Petroleum.

CHAIRMAN FESMIRE: Mr. Bruce?

(Thereupon, the witnesses were sworn.)

HOWARD CREASEY,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?

A. My name is Howard Creasey.

Q. Spell your last name for the court reporter, please.

A. C-r-e-a-s-e-y.

Q. Where do you reside?

A. I live in Houston, Texas.

Q. Who do you work for and in what capacity?

A. I'm a chief explorationist for Edge Petroleum.

Q. Have you ever testified before this Commission?

A. No, I have not.

Q. Would you summarize your educational and employment background, please?

A. I received a bachelor degree in science from Stephen F. Austin State University, postgraduate work at University of Houston, and have worked over 30 years in the oil and gas business.

Q. Has part of your responsibility for your various work at various companies been with respect to southeast New Mexico?

A. Yes, it has.

Q. And how many years of experience do you have in southeast New Mexico?

A. Close to 10 years.

Q. And at Edge does your area of responsibility include the Permian Basin and southeast New Mexico?

A. It does.

Q. And are you familiar with the geology involved in this Application?

A. Yes, sir, I am.

MR. BRUCE: Mr. Chairman, I'd submit Mr. Creasey as an expert petroleum geologist.

CHAIRMAN FESMIRE: Mr. Creasey, are you a certified petroleum geologist?

THE WITNESS: I am in the State of Texas.

CHAIRMAN FESMIRE: I think his credentials are acceptable as an expert in geology.

Q. (By Mr. Bruce) Mr. Creasey, we've already gone over Exhibit 1 a little bit, but just looking at Exhibit 1, the land plat, does Edge own a working interest in the north half of Section 29?

A. Yes, we do, 240 acres in the north half of Section 29.

Q. And you would desire to drill a well in the north half of Section 29?

A. Yes, we would.

Q. Today we're here on the Morrow. Is there a secondary zone in this area that other operators drill for?

A. Yes, there is, the Strawn reef is a secondary objective, and it's probably close to a second primary objective.

Q. Okay. Is the Strawn in this area spaced on statewide rules?

A. Yes, it is.

Q. 320 acres and 660-foot setbacks?

A. Correct.

Q. Let's discuss the Morrow zone we're here for today. Could you maybe get out your Exhibits 2 and 3 together -- 2 is the cross-section, 3 is the production map -- and discuss the Morrow in this area in a little more detail.

A. Exhibit 2 is a stratigraphic cross-section hung on the top of the middle Morrow shale. The critical wells on the cross-section that I would like to draw your attention to are wells number 5, 6 and 7.

Well number 5 is the discovery well for the Dos Hermanos-Morrow field. The lower Morrow and also the middle Morrow, the "C" zone, were completed in this well, as well as an upper Morrow zone.

That well made 9.4 BCF and 52,000 barrels of oil.

And as you can see from the red perforations on the log, a gross interval was shot.

When we saw the bottomhole pressures in this well, when there were two DSTs run, the lowest DST, the lower Morrow, had a bottomhole shut-in pressure of 5038. And we compared that to the bottomhole pressure in well number 7, which is the McRae and Henry Federal Com Number 1, which is in Section 21, in the southeast quarter. You see that the bottomhole shut-in pressure on that well is 5153.

So it looked like from 1965 in the discovery well, to 1974, there was no pressure depletion between those two wells in that middle Morrow "C" interval.

MR. BRUCE: Okay, what's the date, then, 3-27-82 on well 5?

THE WITNESS: That is the recompletion date, when they recompleted that well for the Strawn.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: I apologize. In our Petra database, it posts the latest recompletion date.

Q. (By Mr. Bruce) So that was a 1965 Morrow completion?

A. That's correct, that well was completed in April of 1965 and cum'd 9.4 BCF and 52,000 barrels of oil.

CHAIRMAN FESMIRE: And that's just the Strawn

prod- -- I mean just the Morrow production, that's no Strawn?

THE WITNESS: That's correct, it's just Morrow production in the lower Morrow sand and the middle Morrow "C" sand.

Well number 6 is the recent V-F Petroleum well, the Budge Federal Com Number 1, which is 1800 feet away from the Federal Gas Com Number 1, which was again completed in March of 1974.

Based on shut-in tubing pressures and extrapolating those pressures to a bottomhole position, we had an estimated bottomhole pressure on the V-F Petroleum well of 5069 pounds.

Q. (By Mr. Bruce) Essentially virgin pressure?

A. Essentially virgin pressure, so there was no pressure depletion visible between the discovery well in 1965 and the subsequent well drilled in 1974, 1800 feet away.

When I saw the shut-in tubing pressures and our engineer extrapolated to the bottomhole pressure, we were surprised to see the pressures as high as they were.

It also made me take a second look at the well in Section 28, the McRae and Henry Emperor Oil well that was the discovery well. We initially gave this well 50 foot of pay. And you'll see on the cross-section, just to the

right of the DST sign, there was 64 foot of net sand and 36 foot of sand which I thought had sufficient porosity to be productive.

I combined that with the middle Morrow "C" zone which had 18 foot of sand, and 14 foot of sand which I thought had porosity sufficient to produce. Keep in mind, we're working off an old e-log and a suppressed SP curve.

I now strongly am convinced that there's additional pay in the Emperor Oil Company well that was the discovery well for the Dos Hermanos field. I think that if that well drained the 318 acres that we initially thought, or the 400 acres that V-F Petroleum contends it did, you would have seen some sort of pressure depletion in those wells to the north. It may not have been sufficient to cause them to make a commercial well, but you would have seen some sort of drawdown in those wells.

And I'll refer back to this cross-section, but those are the three wells that, to me, are the crux of the drainage issues in this Dos Hermanos field.

CHAIRMAN FESMIRE: Mr. Creasey, we're going back a long way in my memory, but if I remember correctly the Morrow out there is a channelized -- pretty much shale-sealed channels, aren't they?

THE WITNESS: The lower Morrow is a fluvial-deltaic channelized sand. The middle Morrow can be a

shoreline marginal marine environment. Lower Morrow generally, I think, is widely accepted to be channelized, and the source being from the northwest to the southeast, and so these channels or fluvial systems are being dumped from the northwest or the northwest shelf into the southeast part of the Delaware Basin.

CHAIRMAN FESMIRE: So it would be possible to get the drainage that they're calculating along the channel and still not affect the offset, pressurewise?

THE WITNESS: I don't know that -- if you -- I think in one of their exhibits they're using some elliptical drainage areas and not a radial drainage area. If you were to use an elliptical drainage area of 320 or 400 acres, I think you would see severe pressure depletion in the V-F Petroleum Budge Federal Com Number 1.

If you used a radial drainage, you may not see anything initially. But I also think that the offset well to the east, the Federal Gas Com Number 1, well number 7 on the cross-section, would have shown some -- would have depleted -- pressure-depleted to some extent the V-F Petroleum well. It's only 1850 feet away. And I think Mr. Keisling will address some of the drainage issue with that well.

So we felt between the three wells, all three wells having virgin pressures, that at least the sands are

not draining as big an area as we first thought. And the effects of us drilling the well in Section 29 would be nonexistent or very minimal to the correlative rights in Section 21.

Q. (By Mr. Bruce) Mr. Creasey, looking at Exhibit 3, you have put an Edge location on this plat, have you not?

A. Correct.

Q. And could you describe the footage and why the surface location has to be in Section 28?

A. I guess we were quite naive when we first took this state lease, and we thought we could drill a 660 location out of that corner.

The potash limitations in the BLM are requiring us to drill a surface location, or they say there is a favorable -- they would look favorably on a surface location in Section 28, 1130 feet from the west line and 2520 feet from the north line.

That is a 3000-foot kick, and in order for us to intersect the Strawn reef at a location that would be legal 660 feet off the lease line of Section 29, we had to engineer this bottomhole location which is 1260 feet from the east line and 710 feet from the north line.

Q. Also looking at this plat, look at well 3 on the cross-section. That was a Morrow completion, was it not?

A. It was. It was an upper Morrow completion. It was not a good producer. They tested the lower Morrow and the middle Morrow "C". It actually produced from a zone up the hole around 11,800 feet.

Q. So the middle Morrow and lower Morrow were not present, or at least were not productive in the southeast quarter of Section 29; is that correct?

A. Correct, the lower Morrow tested water in well number 3, and I have a structure map on the lower Morrow that has the highest known water on that structure map, and you'll notice to the right of well number 3 I have tested saltwater, HKW, highest known water, at a subsea of 9015. Certainly the lower Morrow does have a water leg in this area.

We're not sure where the gas-water contact is, but we do know the highest known water contact is in that Bennett well, so it could conceivably be further north.

Q. Just looking at that, because the lower Morrow and the middle Morrow -- which are the main productive zones, are they not?

A. Correct.

Q. Because they're not present there or productive there, if you move the well further to the south like the Division's Order required, does that put the merits of this well at risk?

A. It does. We would -- and I'll show on the lower Morrow structure map, moving to the south, we're losing 75 to 100 foot of structural position on the lower Morrow, and we know the middle Morrow is tight in the Bennett Hudson well, well number 3, and so we'd be moving towards a reservoir that is noncommercial.

Q. Okay. Now, off to the southwest on Exhibit 3, there's some Morrow wells -- On the cross-section you have wells 1 and 2, and then there's some to the west of that. Those were Morrow wells, were they not?

A. Correct, well number 1 was in the Golden Lane-Morrow field, a 320-acre unit, and the spacing was 660 off of lease lines. They drilled that location 760. It was not the 1650 setbacks in the Dos Hermanos field.

Q. And well 4 was also placed in the Golden Lane-Morrow field, was it not?

A. That's correct.

Q. And so it did not -- it was -- for whatever reason, it was not placed in that pool and did not have to use the 1650-foot setbacks; is that correct?

A. That's correct. And also well number 8 is a V-F Petroleum well that was permitted with a bottomhole location of 760 feet from the west line on an unorthodox location.

Q. Okay. So you heard Mr. Carr say that V-F prefers

to live by the pool rules for the Dos Hermanos-Morrow Pool, but the fact of the matter is, V-F went out and got an unorthodox location when it wanted one; is that correct?

A. That is correct.

Q. Now, that well has not been drilled yet, to the best of your knowledge?

A. To the best of my knowledge, it has not.

Q. But V-F also sought simultaneous dedication, did it not? Two producing wells in that section?

A. The well that is in the northeast of the southwest of 22, well number 9 on the cross-section, is a V-F Petroleum well, and that well is still, to the best of my knowledge, producing out of the Morrow.

Q. Okay.

A. My *Dwight's Production* is six months old, but that well is still producing.

CHAIRMAN FESMIRE: What rate is well number 9 producing at now?

THE WITNESS: It's a very minimal rate. I think it was 20 to 30 MCF a day.

Q. (By Mr. Bruce) Okay. So in Section 22 when V-F went out and got the unorthodox location, it was also seeking permission to produce two wells at one time, which is contrary to the pool rules?

A. Correct.

Q. And the same thing in Section 21 with respect to producing two wells at the same time, that is different than the pool rules?

A. Well, it's very interesting because the statewide field rules are 320-acre spacing for the Morrow, and we're aware that you can downspace to 160s, and it certainly looks like --

Q. Infill drilling?

A. Infill drilling, correct. And it certainly looks like in Section 21 that that could be the case.

And again, we feel that the pressures, being what they are, in wells 5, 6 and 7 on the cross-section are very indicative of reservoirs that are not capable of draining significant areas. I think we can elaborate on that a little bit on some of these other exhibits.

Q. Let's move on to your first isopach, the Exhibit 4, and discuss the middle Morrow sand in this area.

A. The middle Morrow is not a channelized deltaic fluvial sand. In some areas it certainly has that capability, but in general you've got a sand that is a marginal shoreline sand that has a lot of diagenetic problems associated with it, a lot of different facies associated with the middle Morrow. Generally speaking, the middle Morrow "C" zone and the middle Morrow "A" and "B" that I map in this area are not as high quality a reservoir

as the lower Morrow.

This map is a map of the net sand next to each well, such as in well number 7, the Federal Com Number 1 had 32 foot of net sand and 19 foot of porosity greater than 8 percent. And I tried to do a porosity cutoff on these. Obviously some of the older wells, it was difficult to do. But this is a net sand mapped for the middle Morrow "C". I do think it is showing an indication that you do have a sand buildup that is oriented in a northwest-to-southeast fashion, which would be more of a dip fashion, as opposed to maybe a strike-oriented sand along the shoreline.

The wells that are in red are wells that actually produced from the middle Morrow "C" zone. Most of the -- in fact, all four wells except -- well, the four past wells were perf'd in the middle Morrow "C" zone as well as the lower Morrow "C" zone.

The V-F Petroleum well, based on the perforations that they reported in the Budge Federal Com Number 1, is producing out of the lower Morrow sand, based on what was reported in my correlations. All the other wells were commingled in both of those zones.

And you can see the production. By far the best production is in the Emperor Oil well, which is the well number 5 on the cross-section.

Q. Before we move off of Exhibit 4, when you look at the 12 sections around the four-section pool area, there is not a current Morrow producer in those 12 sections at this time; is that right?

A. No, there is not.

Q. Let's move on to the middle Morrow and your Exhibit 5. And I don't know if you want to go together with Exhibit 6, which is the structure on top of the lower Morrow, and discuss.

A. The next exhibit, 5, is an isopach map of the lower Morrow. The structure map is Exhibit Number 6, on top of the lower Morrow sand.

It certainly appears that, based on the net sand map -- and again, the numbers next to the wells are net sand over net porous sand. The Emperor Oil well, well number 5 in Section 28, would have 80 foot of net sand and 36 foot of porosity sand. I again think that the 36 foot of net porous sand should probably closely approach that 80 foot of net sand, based on the kind of cums and the fact that we do not see pressure depletion from the wells to the north.

But you'll notice that the net sand seems to be oriented more in a northwest-southeast fashion, and there is a thick, as denoted by the Emperor Oil well in Section 28, well number 5, and the 78 foot of sand in the well in

the southeast of Section 21, the Federal Com Number 1, well number 7 on the cross-section. And it does thin somewhat to the east northeast into the southwest.

CHAIRMAN FESMIRE: What's well number 7 making right now?

THE WITNESS: That well has been recompleted in the Strawn, and I do not know what it is currently making. I don't think it's a big producer.

CHAIRMAN FESMIRE: Okay, so the 1.94 is the cumulative in the middle and lower Morrow?

THE WITNESS: That's correct. And underneath those numbers, I put the MMRW, middle Morrow and lower Morrow, so it denotes that production came out of both zones in each one of those four wells.

CHAIRMAN FESMIRE: Why wouldn't that well be comparable to the number 5 well? I mean, everything you've shown us --

THE WITNESS: I think the number 5 well, you know, if you look at the cross-section, Mr. Chairman, if I had a more recent log with a gamma-ray curve, with a neutron density porosity curve, I think it would show that the number 5 well is significantly better on log analysis than the number 7 well.

If you'll look at the calculated absolute open flows on the original Morrow perfs on the well number 5,

the first one was 13.6 million a day, the second one was -- let's see, I guess that was the -- They've re-perf'd the Morrow. Well, the calculated absolute open flow was for both zones. That's 13.6 million a day. And if you compare that to well number 7, it's 8.3 million a day.

Now, that's the calculated absolute open flow. I don't have the four-point test information with me, but it certainly looks like that that would be a better well, based on initial flow rates.

And I have to think that when I went through there and picked the initial perfs as the net porous sand for that lower zone, that I was being extremely conservative. And if you were to use that whole sand package as a net pay, you would probably see something more like a 160- to 200-acre drainage on that particular well.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: Back to the lower Morrow maps, Exhibit Number 6 is the structure map on the top of the lower Morrow. And again, the highest known water from the lower Morrow is denoted in blue. We don't know how high that water might actually be. Moving the location another thousand feet to the south would certainly increase the risk of us not making a commercial lower Morrow well or, if we did, prematurely watering out.

Q. (By Mr. Bruce) And therefore you desire to be

more like six hundred and -- well, your proposed bottomhole location is 710 feet from the north line. You'd rather be closer to the northern line of Section 29 than closer to the existing -- or the well in the southeast quarter?

A. Correct. I think that's it. The wells again in red are the wells that did produce in the lower Morrow. I did not put a red circle around the V-F Petroleum well. I don't know for absolute certainty that that well is producing out of the lower Morrow, but based on the deviation survey and the perforations and converting to a TVD log, the perforations are almost identical to the well to the east.

Q. And again, not only are there no middle Morrow producers in the 12 sections around the pool, there are no lower Morrow producers at this time?

A. No, there are not.

Q. In looking at the structure, besides wanting to move higher on the structure to avoid any possible water production -- and water production can be a problem in the lower Morrow; is that correct?

A. Yes, it can.

Q. Have you reviewed any papers regarding the depositional strike in this area?

A. We have a tremendous database that we've mapped by hand and also with computers, and it certainly

substantiates regional dip to the southeast and lower Morrow channels oriented in a northwest-to-southwest fashion.

And last night I did a little research on a website in the AAPG bulletins, and there were two articles that substantiate this, one in the Carlsbad field, which is several miles to the west, but it is an article written for specifically the lower Morrow, and it states that, the paleoenvironmental reconstruction and petrographic analysis characterized the lower half of the Morrow as an overall prograding fluvial-deltaic sequence of channels, point bars and channel-mouth bars sourced from the northwest. This sequence trends towards the southeast normal to that depositional strike.

And there's another article, much closer, in the Parkway-Empire field, that was written in the 1980s.

Q. And that's in 19 South, 29 East, isn't it?

A. Correct, and it states, lower Morrow sandstones occur at a depth of 11,400 feet. They're interpreted to be a prograding fluvial-deltaic sequence of channels and point bars sourced from the northwest, and they trend toward the southeast, normal to depositional strike.

So it's almost verbatim, word for word. But it's been a very well accepted fact -- or accepted that the lower Morrow is a channelized fluvial-deltaic system that

is sourced from the northwest, trending towards the southeast.

Q. If that's the case, if drainage is not going to be radial, which direction will drainage occur in?

A. You would think that the radial drainage would be associated with the thicks within the channels, and in that respect these radial drainage patterns would be northwest to southeast.

Q. If that's the case, would there be more of an effect on V-F's new well in the southwest quarter of Section 21 from the existing McRae and Henry well than from the well in Section 28?

A. You would think it would be.

Q. But it had virgin pressures?

A. It had virgin pressures, correct.

CHAIRMAN FESMIRE: Can I ask a quick question? How close is the bottomhole location on that well number 6 to the bottomhole location on well number 7?

THE WITNESS: It's 1850 feet from the V-F Petroleum Budge Com to the Federal Gas Com Number 1, between 6 and 7, that's 1850 feet.

CHAIRMAN FESMIRE: And your contention is that they encountered virgin pressure in number 6?

THE WITNESS: That's correct.

CHAIRMAN FESMIRE: And that it was not affected

by the nearly 2 BCF that were produced out of 7?

THE WITNESS: That's correct. And the location that we have on this plat, which, you know, we hope to get approval for, is 3700 feet away from the bottomhole location of the V-F Petroleum Budge Federal Number 1.

CHAIRMAN FESMIRE: That's the number 5 on the --

THE WITNESS: That's -- Our location in Section 29 that we have shown on that plat is 3700 feet away from well number 6.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: So we're twice as far away as the distance between wells 6 and 7, and there's no pressure depletion between those two wells. And we don't think there will be any pressure depletion or drainage issues between our location and the V-F Petroleum well, which is well number 6.

And I have the API series numbers above each one of these wells, and they're again referenced on the cross-section.

MR. BRUCE: Mr. Chairman, the completion report filed with the Division shows that the bottomhole location of well number 6 is 1688 feet from the south line and 1744 from the west line.

THE WITNESS: That's a typo on my part.

MR. BRUCE: I think the 1650-1650 was the actual

proposed location in their APD, Mr. Chairman.

Q. (By Mr. Bruce) So that would place the well even further away from your proposed well, would it not, Mr. Creasey?

A. Yes, it would.

CHAIRMAN FESMIRE: And even closer to well number 7?

THE WITNESS: Even closer, yes.

Q. (By Mr. Bruce) Just a couple of final questions, Mr. Creasey. The Chairman asked you a question about wells 5 and 7. Are there permeability and other differences in the reservoir out here?

A. The reservoir complexity in the Strawn is very tough to figure out, analyze from logs, especially these old logs. The zones appear to be much more compartmentalized.

Q. You mean in the Morrow formation?

A. Yes, did I say Strawn? I'm sorry, I meant the Morrow. It's much more compartmentalized in the Morrow than I think ever though of in the past. Certainly when they were granting 640-acre spacing back in the mid-1960s, I don't think the engineers and geologists realized that these wells weren't capable of draining those areas.

The sands may appear to be correlative, but the porosity and permeability is not continuous through the

sandbodies. I have -- In fact, last night when I was doing my research I did come across a couple articles published and written by Mr. Mazzullo that addressed that very issue.

CHAIRMAN FESMIRE: Sal Mazzullo?

THE WITNESS: This is Lou Mazzullo. This is 1991, AAPG: The Morrow formation of southeastern New Mexico is comprised of facies that were deposited in a complex of mixed siliclastic and carbonate depositional environments. Reservoir geometries in gas-bearing sandstones are highly variable and identify a number of different depositional environments.

Here's another in March of 2001, again an *AAPG Bulletin*-published article. It says: The Morrow reservoirs are difficult to economically explore due to structural, stratigraphic and diagenetic complexity of individual reservoirs. And it goes on to state that there are many one-well Morrow reservoirs in southeast New Mexico.

So it supports my belief that these wells certainly are not capable of draining 640 acres. We know, based on downspacing, that they're not capable of draining 320-acre spacing, and it's probably closer to 160 or less. And based on the pressures that we see between the US Emperor Oil, number 1, in Section 28, and the V-F Petroleum well and the McRae and Henry Federal Gas Com well, both in

Section 21, there's no pressure depletion shown at all between those three wells, and you would expect there to be some.

Q. (By Mr. Bruce) Mr. Creasey, in the Division's Order it said the Morrow in this area was a common source of supply. And the Morrow does extend across this area, not only within these four sections but to large areas outside of this pool?

A. It does.

Q. Do you see any reason to differentiate the Morrow within these four sections from other Morrow pools in this area which are spaced on statewide rules?

A. I think this is a very typical lower and middle Morrow reservoir that you see from central Lea and southern Lea County to northern Eddy County and southern Eddy County. They're very typical of what you would see porositywise, permeability and thicknesses. You will find wells that have significantly higher porosity and higher perm, and they will produce the 9 BCF and you'll have a cluster of wells around them that will do less than 2 BCF. And that's just a typical Morrow reservoir.

To have several lower or middle Morrow wells that will produce 9 BCF per well in a field is extremely rare, and I don't know that there's too many instances of that in southeast New Mexico. So I would say that this is a

typical Morrow reservoir.

Q. In your opinion, is the granting of the Application to limit the effect of the special rules for the Dos Hermanos Pool in the interests of conservation and the prevention of waste?

A. Say that again, Jim? Want to be sure to answer correctly.

Q. In your opinion, is the granting of Edge's Application to limit the effect of the 640-acre spacing to these four sections in the interests of conservation and the prevention of waste?

A. Yes, I do. I think that there could potentially be leaseholded acreage and reservoir that is not drained by 1650 setbacks on sections. I think that we've proven that these wells are draining less than 160 acres, and by and large, they're probably closer to 80 to 100 acres, and on 1650 setbacks there would be a lot of reservoir that would not be drained.

Q. And even within these four sections, you think it would be reasonable to allow one well per quarter section?

A. Yes.

Q. And loosen up the setback standards to the statewide 660 feet from a quarter-section line?

A. I do, yes, I do.

Q. Not only for geologic reasons, but because of the

potash difficulties in this area?

A. Yes, correct.

Q. Were Exhibits 1 through 6 prepared by you or under your supervision?

A. They were.

MR. BRUCE: Mr. Chairman, I'd move the admission of Edge Exhibits 1 through 6.

CHAIRMAN FESMIRE: Exhibits 1 through 6 are admitted.

MR. BRUCE: And I pass the witness.

CHAIRMAN FESMIRE: Mr. Carr?

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Creasey, if I understand your testimony, Edge last year acquired a 240-acre lease in the north half of Section 29; is that correct?

A. Yes, sir, it is.

Q. How much additional acreage does Edge own in the current buffer zone around the Dos Hermanos-Morrow Gas Pool?

A. At this point, none.

Q. You're proposing to drill a well on the leasehold interest that you've acquired, correct?

A. Yes, sir.

Q. And that's a north-half spacing unit that also

includes a lease owned by OXY?

A. That is correct.

Q. Has OXY joined with you in this proposal? Have they committed their interest to your well?

A. We have verbally talked to OXY.

Q. You don't -- What did they say? Did they agree at this time?

A. We have a verbal comment from OXY that when we get a permit and an application approved, that they would give us either a farmout, or they would participate.

Q. When we were here at the Examiner Hearing last October, I at least was talking about a 660 location out of the northeast corner of 29. Today we're looking at a location, if I understand it right, 710 from the north line and 1260 from the east line; is that correct?

A. That is correct, we just -- we felt like we could drill a 660 location without --

Q. Have you internally selected that location, or is it still under review?

A. We think that the location on this particular map would be a good location. We have viewed and are in the process of purchasing seismic data in this area. There is a seismic line that went through that 660 location, and I thought it was a very positive piece of data for the Strawn.

And as Mr. Mazzullo testified in our last hearing, you all were initially looking at the Strawn in this area. We were also looking at the Strawn in this area, but the Morrow was certainly a second primary objective.

But we also think that based on this location, drilling a 3000-foot lateral from Section 28 would encounter the Strawn in the legal location, in a structurally favorable location, and would also put a Morrow penetration in a structurally favorable position.

Q. In this case you're not seeking approval of a particular well location; isn't that fair to say?

A. That is correct.

Q. And when you get the seismic, it's possible that could be moved?

A. It's a possibility. I don't foresee us moving that well certainly any further to the south.

Q. In trying to pick an effective location for the north half of 29, I believe you testified that if you had to go to a 1650 setback out of the northeast corner of 29, it would put the Edge location at risk; is that correct?

A. Yes, it would, in my opinion.

Q. And so here today, what you really need for that well is another location, a more favorable location for your well?

A. More favorable than the 1650 setback, that's correct.

Q. And that's really the purpose of today's hearing, isn't it?

A. Well, I think the purpose of today's hearing is to show that the statewide field rules of 320-acre units and 660 spacing will not harm the existing production or correlative rights in this area. I firmly believe that, but we cannot drill a 660 location, and so we're moving -- we're having to move even further west, which would have less impact on V-F Petroleum.

Q. And when you developed this proposal, you looked at the impact your proposed location would have on the V-F properties to the east?

A. We had that, yes, it was in the forefront of our mind.

Q. And when you were evaluating this, did you look at the impact that other 660 locations surrounding the V-F tract might have on their property?

A. We have evaluated the area, and we are talking to other operators that have leasehold in the area, and we are trying to acquire additional leasehold.

Q. But did you make a determination whether or not the other three locations offsetting Section 21 would have an impact on V-F's ability to produce reserves in that

acreage?

A. There are three more locations offsetting Section 21?

Q. If you change the rules, someone could drill in the southeast of 20, could they not?

A. They could.

Q. And they'd be 660 off that line?

A. That's correct.

Q. Did you try to determine what impact that well might have on the well --

A. We don't think that that location would ever be drilled. There is an active potash mine entry point in the southeast quarter of Section 20.

Q. You didn't think anyone would directionally drill there?

A. I think that it would be very difficult to hit that point right there.

Q. So you didn't try and determine what that location might do in terms of drainage to the --

A. We do not believe -- Again, we do not believe that 660 setbacks are adversely affecting the rights. We think that these Morrow wells are certainly not capable of draining the kind of area that V-F Petroleum obviously thinks can be drained.

Q. Now, you understand that there are special pool

rules for this pool that provide for 640-acre spacing and 1650-foot setbacks, correct?

A. Established in 1965?

Q. Correct.

A. Yes, I'm aware of that.

Q. And you're also aware that there are general rules of the OCD that would permit you to seek an unorthodox well location for a well in this area? Are you aware of that?

A. I am aware of that, that's correct.

Q. And do you understand that when V-F Petroleum sought and obtained approval of an unorthodox location in Section 22, it filed an application for that location under the general Rules of the OCD; did you know that?

A. Yes, we know that.

Q. Now, you could do that too for a well location in the north half of Section 29, could you not?

A. We could.

Q. And if you could establish that it wouldn't have any impact on the offsetting acreage operated by V-F Petroleum, then you could argue that that well should be allowed and no penalty imposed; isn't that correct?

A. We could, but we actually feel like that 660 setbacks off of section lines, the statewide field rules that are in place in 90 percent of the Morrow fields in

southeast New Mexico are valid.

Q. Have you evaluated the 7000 acres that are going to have the spacing changed that you're seeking here imposed on them? Have you looked at the entire buffer zone to see what problems it's going to create?

A. Are you asking me if I've mapped this area?

Q. Yes, and have you --

A. Yes, I have.

Q. And have you evaluated the impact that all the new 660 locations might have on the current operation of the pool?

A. I think that V-F Petroleum could drill a 660 location just as easily as anyone else could.

Q. Wouldn't that be -- Also, would there be some considerations for V-F if they'd already drilled a 1650 location?

A. We were told that you drilled that location based on your best geological information.

Q. And we drilled it under the rules, did we not?

A. We were told that you drilled that on your technical merits. We were not told that you drilled that based on 1650 setbacks.

Q. If you look at the setbacks, though, it is under the rules, is it not?

A. Well, it's actually exceeded the rules, so it's

not 1650.

Q. Isn't the bottomhole location in 21 1650 out of that corner?

A. Well, Jim Bruce -- James Bruce just said that it was not 1650 by 1650, it was something other than that. Is that --

Q. You're going to have someone who can testify to that?

MR. BRUCE: Mr. Chairman, I'm simply handing you a copy of a portion of the completion report that was filed by V-F Petroleum with the Division. I'll let Mr. Creasey testify on that.

Q. (By Mr. Carr) If we look at what has just been marked as Edge Exhibit 8, Mr. Creasey, it shows that at total depth, if I read this correctly, the well was 1688 from the south line; is that what you see?

A. That's correct.

Q. And that it was 1744 feet from the west line; is that what you see?

A. That is correct.

Q. And that would also be in compliance with rules that require wells be at least 1650 from the outer boundary; isn't that right?

A. It is. It is also where you stated that your most technically proficient location would be. So I --

Q. But the well was drilled in accordance with the rules; isn't that right? It didn't violate any rule that you're aware of?

A. No, I'm not aware of it violating any rules.

Q. Now, if you sought an unorthodox location for a well 710 feet from the north line of your tract and 1260 from the east line, do you know what you would have to do to get an unorthodox location approved?

A. No, I do not.

Q. Do you know who you would have to notify?

A. I'm not a landman, nor am I an attorney at the OCD.

Q. You don't know what rights the OCD -- or authority they would have to penalize that location?

A. I'm a petroleum geologist and a geoscientist with a geophysical background.

Q. All right, if we look at the location that's 710 off the north line of the section, have you notified the owners of the working interest in Section 20 to the north of your proposed location, the 710-foot location?

A. That permit, as far as I know, is being evaluated.

Q. By who?

A. That permit was, I believe, filed with the OCD.

Q. When you filed that permit, do you know --

A. I did not file that permit.

Q. Do you know if anyone in your company notified any of the interest owners in Section 20?

A. Our landman is not here today. I do not know if he has.

Q. Do you know if notice was provided to any of the interest owners in the south half of Section 29 of this hearing today?

A. No, I do not know that. I will reiterate that this is a location that we like. It is not a location that we are married to, it is not a location that we are demanding.

It is a location that we think, after talking to the BLM, we can get a surface permit for, and it's one of the few places we can get a surface permit for, and it is a bottomhole location which we think that we can penetrate the Strawn reef 660 feet from the east line and be a legal location, and also be in an optimum position for the Morrow.

Q. If the rules are changed. Today it's not a legal location?

A. I didn't say it was legal. That's one that we like.

Q. You were talking about the wells in the area, and I think you indicated that it was your understanding that

the Budge well, the new V-F well, was completed only in the lower Morrow; was that your testimony?

A. Based on information that V-F Petroleum released, that's what I said, that's correct.

Q. And I think you also said that other wells in the area were actually commingled?

A. That's correct.

Q. What zones are commingled?

A. In the well on the cross-section, wells number 9, 10, 5 and 7 produced out of the lower Morrow and the middle Morrow.

Q. In those commingled wells, were you aware of any kind of testing that was done so you could allocate production by zone, or are we just stuck with limited data because of the commingling?

A. That's correct.

Q. Are you aware that V-F Petroleum has staked a well location in 16 in the buffer zone?

A. I have heard that. I have not staked that location.

Q. And your location in the buffer zone is in the north half of 29, correct?

A. That's correct.

Q. And when you drill that well, what are your primary objectives in that well? Are you going to be

looking for principally lower Morrow production?

A. We will be looking for production that is in all the surrounding wells, which would be lower Morrow, middle Morrow and Strawn.

Q. So at the moment your well is projected to take a look at both of those zones in the buffer zone; is that right?

A. Correct.

Q. If I understand your testimony -- I know you'll correct me if I don't -- we're talking about, as I understand your testimony, the Morrow zone being continuous across the area; is that right?

A. The Morrow zone is continuous across most of the Delaware Basin, but --

Q. And you have --

A. -- the reservoir is very discontinuous.

Q. Because of permeability and porosity variation --

A. Correct.

Q. -- I think that's what you said?

A. Correct.

Q. If we look at your Exhibit 6 -- and it may be on others -- you do show a sort of a common water leg across the field; is that right?

A. That is a projected highest known water, and it is dashed in for a very good reason.

Q. But it would also suggest, wouldn't it, implying that there is a common reservoir across that area?

A. It would suggest that any well drilled below that lowest known water -- that highest known water, would be a very risky well to drill.

Q. In taking a look at the Morrow in this area, I think you testified you looked at some work by Louis Mazzullo?

A. Correct.

Q. You considered him, I guess, a good resource?

A. I think Louis Mazzullo has published a lot of articles on the lower Morrow --

Q. And from what you --

A. -- and middle Morrow.

Q. And from what you learned, is it fair to say that you have a very complex environment in the Morrow?

A. Yes, I was aware of that, I was just trying to find some information, published information, that would support my findings.

Q. You would anticipate a variable depositional environment, I think you said?

A. Correct.

Q. And that is what you would expect; is that not correct?

A. Correct.

Q. And so as you drill a well to the Morrow, is it fair to say you're really not going to know what you're drilling until you get there, until you take a look?

A. I would think that's fair to say.

Q. Now, if we look at your proposal in Section 29, internally, have you made some estimates of the kind of reserves you're expecting to encounter?

A. I think internally we've discussed the fact that that well potentially would drain 80 acres.

Q. And it was a 2.2-BCF projection you were using to get to that?

A. I think Mr. Keisling might be the better person to address that.

Q. Based on your geological expertise, would you agree with me that if you drill at the proposed location, that it's possible that you could get a well that is significantly better than a well that would drain 2.2 BCF?

A. Yes.

Q. Isn't Edge trying to get into the same channel or a similar type environment as the offsetting well in Section 28, the discovery well?

A. We would hope to get a very thick sand comparable to what was in the Emperor Oil well in Section 28.

Q. Did you say that looking at that well, the discovery well, there might be some remaining zones that

still could be productive in that well?

A. No, what I said was that based on the fact that there was no pressure depletion exhibited in wells number 6 and 7 in Section 21, that my initial net porous or pay count on that well was extremely conservative, and I think that that well probably has more like 75 to 80 foot of pay and would therefore drain something closer to 200 acres, as opposed to what we had as 318, and your --

Q. And that was a commingled zone; is that right? A commingled well?

A. They shot both the middle Morrow "C" and the lower Morrow zone based on information I had from the OCD, that's correct.

Q. And we don't know how much production came from either one of those zones, do we?

A. No, we don't.

Q. And that would affect how large the drainage area is in each one of those intervals, would it not? I mean, if it all comes from the lower Morrow, you'd have a larger drainage area?

A. No, you'd have a smaller drainage area.

Q. You'd have a smaller drainage -- You have two zones.

A. Oh, as opposed to commingling, that's correct, that's correct, but the middle Morrow "C" zone --

Q. And so what we're doing --

A. -- the middle Morrow "C" zone has only 14 foot of porosity, and that was from top to bottom. It couldn't be any thicker --

Q. But we're just --

A. -- correct.

Q. The drainage area is impacted by how much --

A. Correct.

Q. -- comes out of this zone?

A. Correct.

Q. When you drill your well in Section 29, it's possible you could get a well that's comparable to the well in 28, is it not?

A. Correct, we hope to do the same thing that you guys were hoping to do in 21.

Q. And if you did that, do you know how large a drainage radius you might anticipate? Would it be like the well in Section 28?

A. It certainly could.

Q. And it could extend 2090 feet like the well in 28, couldn't it?

A. No, I don't think so, because I don't think the radial drainage is 2098 feet, or whatever you said.

Q. You don't agree with the Examiner Order on that point?

A. I think that the pay -- and I'll say this again -- I think the pay, based in the Emperor Oil well, well number 5 on the cross-section, drilled by McRae and Henry, has a much thicker porosity section than first allocated on this suppressed SP and resistivity log. And I think the 318 acres that we had on our original documents, that we have on this document -- we didn't want to change it, but we're making the notation that if that were 318-acre radial drainage or elliptical drainage oriented in a northwest-southeast fashion, then you would have significant pressure depletion in your well, and there would have been pressure depletion shown in the well in the southeast of 21.

Q. Does that suggest that radial drainage patterns aren't appropriate?

A. Oh, I think they probably are, because when you work on an elliptical basis, how far do you extend it? How far is the channel? I mean, it's all conjecture and supposition.

Q. Isn't that unfortunately what we're stuck with here?

A. It is. But I'll tell you what is fact. The fact is that the pressures do not show any depletion between those three wells, and that is a fact.

Q. Another fact would be that you want to be significantly closer to V-F than V-F has drilled to you;

isn't that also a fact?

A. I think that we want to be in a structurally favorable position. We don't want to be close to you necessarily, we want to be structurally high, and unfortunately that structural position is on the north end of our lease.

Q. And it's closer to V-F than V-F is to you? That's just where it is?

A. Well, that's correct.

Q. And we're not going to know what we get till we drill it?

A. That's correct.

MR. CARR: That's all I have.

CHAIRMAN FESMIRE: Commissioner Bailey?

COMMISSIONER BAILEY: I don't have any questions.

CHAIRMAN FESMIRE: Commissioner Chavez?

THE WITNESS: I'm getting off light. Everyone is sick over there, they can't talk.

(Laughter)

COMMISSIONER CHAVEZ: I'll struggle through, if I can.

THE WITNESS: Please, please.

EXAMINATION

BY COMMISSIONER CHAVEZ:

Q. You mentioned -- made reference in your exhibits

to the Golden Lane-Morrow.

A. Correct.

Q. Is that an officially designated pool by the OCD?

A. Yes, it was.

Q. What is the pool boundary in relationship to your acreage in Section 29?

A. The pool boundary?

Q. Of the Golden Lane-Morrow? It appears that in your cross-section the wells in Section 31, 32 and --

A. -- 33?

Q. -- 33, so I would -- is it appropriate, then, perhaps, the north boundary of that pool is along the top of Section 32?

A. It could be. I don't know that for a fact, sir.

MR. BRUCE: Mr. Commissioner, I thought I had that in my file, but I don't know if it covers Section 32. I do know Section 33 and then some of the acreage, like Section 34.

THE WITNESS: If you'll give me just a second --

Q. (By Commissioner Chavez) Okay, then your Application, then, seems to overlap -- or what you've asked for in your Application for the spacing around the Dos Hermanos is already covering another pool that has other spacing; is that correct?

A. No, sir, I believe the well number 3 on the

cross-section, API 20834, was a well completed in the upper Morrow zone after testing numerous other Morrow zones, but that wasn't a Dos Hermanos-Morrow Pool. Is that --

Q. I didn't mean number 3, I was looking at well number 1 and well number 4 -- or was it 2?

MR. BRUCE: Mr. Commissioner, certainly well numbers 1 and 4 were placed in the Golden Lane-Morrow, which is on statewide rules. Yeah, there is an overlap. I mean, how that occurred, do not know.

But the witness was correct, well number 3 was initially placed in the Dos Hermanos Pool, but the Division never expanded the pool to include Section 29. That's what the Division's records show.

COMMISSIONER CHAVEZ: Well, if the well in -- number 3 was originally placed in that pool, was 640 acres dedicated to it?

MR. BRUCE: Originally, but it no longer produces from the Morrow.

Q. (By Commissioner Chavez) Okay, so that acreage that acreage that you're trying to dedicate, that 320 acres, has already been partially participating in Morrow production; is that correct?

A. That is correct. It only made .3 of a BCF, and I think that Mr. Keisling can address the drainage of that well, but it was a very minor amount that that well

drained. And it is not in a correlative middle Morrow or lower Morrow zone that produced in the four original wells in the Dos Hermanos field.

Q. Was that well number 3 -- when it was spaced on 640 acres, was it also located within the spacing -- or well-location requirements of the Dos Hermanos Pool?

A. It was.

Q. Next question I have is, you made a reference about the -- and I didn't quite understand what you meant by that, about the BLM preference for a location. But do you have anything to back that up, a letter from the BLM, anything that says that you don't have a surface access that would allow you a location 1650 from the --

A. Let me just address that in general, and I think Mr. Keisling has dealt with the BLM and the potash companies.

It was my understanding that through several personal and telephone conversations with the BLM and the potash individuals, they -- in order to get a surface location that they felt was favorable, he talked to them and discussed where they thought we could drill a well from, and this surface location was the location that they picked.

When we had talked to them prior to our last hearing, their comments were that we could use the original

pad of well number 3 and we could drill to the north, and they said that we could use this location that they gave us in Section 28.

Since then, the individuals at the potash mining company have changed, which seems to be a problem, and the new individual that we spoke to would not let us drill or get a surface -- or wouldn't allow us to have a surface location in Section 29, and he said that he thought that the most favorable location for us would be in Section 28. And again, Jim Keisling has talked to them intimately over the last couple of months and could probably better address that --

Q. Okay.

A. -- but that -- And I'm sure you're all aware of the problems in the potash mining area and with getting surface permits from the BLM in the potash, it's very much a moving target. And one day you talk to an individual and you seem to have a surface location that is okay, and a month later you talk to him and that has changed.

COMMISSIONER CHAVEZ: That's all I have.

THE WITNESS: I didn't mean to dodge the question. I think Mr. Keisling will...

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Creasey, your target, wherever the well

location, the bottomhole location ends up, is a new channel sand in the lower Morrow; is that correct?

A. It certainly could be, yes, sir.

Q. And how far uphole would you have to come to get to the Strawn pay?

A. The Strawn location -- to intersect the Strawn is a little over 660 feet off that lease line where it would intersect that diagonal. I do not have a scale with me. Mr. Keisling designed the wellbore diagram --

Q. So he would be able to answer --

A. -- he might be able to answer that better.

Q. Okay. And your contention is, essentially, that none of the lower Morrow production out here is in pressure communication with any other lower Morrow producing well; is that correct?

A. Not at this point, nor is the middle Morrow.

Q. The 9.4-BCF well, well number 5 -- again, Mr. Keisling may be the one to answer this question -- what would be the drainage area at the net reservoir thickness for that well? How many acres? Do you know?

A. Based on 50 foot of pay, we gave that well 318 acres drainage. That was prior to us having the shut-in tubing pressures and the projected bottomhole pressures on the V-F Petroleum well.

Q. Would you expect that to change, given the new

data.

A. Yes, I went back and looked at the Emperor Oil well drilled by McRae and Henry and compared it to some other wells regionally that had the same type of old e-log with suppressed SP's, and I would think that that well probably has more like 75 to 80 foot of pay. And if that's the case, you're looking at a drainage area of closer to 200 acres.

CHAIRMAN FESMIRE: I have no further questions.

Mr. Bruce, do you have some rebuttal?

MR. BRUCE: I have no further questions.

CHAIRMAN FESMIRE: Mr. Carr, did you --

MR. CARR: I have no further questions.

CHAIRMAN FESMIRE: At this time we'll dismiss Mr. Creasey with our thanks --

THE WITNESS: Thank you.

CHAIRMAN FESMIRE: -- and move on. And --

MR. BRUCE: Are we going to take a break?

CHAIRMAN FESMIRE: Yes, let's take a 10-minute break and reconvene at approximately 10:40.

(Thereupon, a recess was taken at 10:31 a.m.)

(The following proceedings had at 10:55 a.m.)

CHAIRMAN FESMIRE: Going back to Cause Number 13,351, the Application of Edge Petroleum Exploration Company to restrict the effect of the special rules and

regulations for the Dos Hermanos-Morrow Gas field, at this time I believe Mr. Bruce had a witness to present.

MR. BRUCE: One more witness.

CHAIRMAN FESMIRE: Let the record reflect that the witness has been sworn.

JAMES KEISLING,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Would you please state your name for the record?

A. James Keisling.

Q. How do you spell your last name?

A. K-e-i-s-l-i-n-g.

Q. Where do you reside?

A. Houston, Texas.

Q. Who do you work for and in what capacity?

A. Edge Petroleum Corporation, vice president of production.

Q. Have you previously testified before this Commission?

A. No.

Q. Could you summarize your educational and employment background for the Commissioners?

A. I received a bachelor of science degree in civil

engineering in 1970, went to work in the business then. I have over 35 years' experience and have worked for Edge Petroleum for the last five years.

Q. Does your area of responsibility at Edge include southeast New Mexico?

A. Yes, it does.

Q. And are you familiar with the land -- or -- "land matters" -- engineering matters involved in this case?

A. Yes, I am.

MR. BRUCE: Mr. Chairman, I'd submit Mr. Keisling as an expert petroleum engineer.

CHAIRMAN FESMIRE: Mr. Keisling, are you a licensed petroleum engineer?

THE WITNESS: Yes, I am, in the State of Texas.

CHAIRMAN FESMIRE: And you said you've got 35 years' experience. Just for the record, could you flesh that out a little bit?

THE WITNESS: Yes, I started out with Texaco in Midland, Texas, spent seven years there, and then I was transferred to Denver, Colorado, with Mitchell Energy Corporation and spent 11 years in Denver. The last five years I was with Pan-Canadian Petroleum in Denver.

I moved to Amarillo, Texas, in 1989 with Mesa Petroleum, and the Mesa properties were purchased by Sego Energy, and I went with that Sego Energy in 1991 and Sego

transferred me to Houston in 1995, and I stayed with them until 2000 when I went to work for Edge Petroleum.

CHAIRMAN FESMIRE: Okay, and all that time has been in petroleum engineering or petroleum engineering management functions?

THE WITNESS: Yes.

CHAIRMAN FESMIRE: Mr. Keisling is acceptable to the Commission as an expert in petroleum engineering.

Q. (By Mr. Bruce) Mr. Keisling, could you refer to -- a little out of order, but Edge Exhibit 7, and discuss the issues set forth on that exhibit?

A. Yes, this is an exhibit that shows the production and drainage area for the Dos Hermanos field and the surrounding wells. You can see the red box around the four sections that are classified as Dos Hermanos field, and there's wells number 5, 6, 7, 8, 9 and 10 inside that box. 8 was a permitted location, so it doesn't apply. Number 6 is the recent well that V-F Petroleum has drilled and completed late last year, the Budge Federal Com Number 1.

Just reviewing the production inside that box, well number 5, the Emperor Federal Gas Com Number 1, was drilled in 1965 and found bottomhole pressures in the range of 5038 pounds in April of 1965, which is a normal gradient, .41 p.s.i. per foot in this area, which is typical of the Morrow.

Based on the average pay thickness that was originally looked at on the logs, we had about 50 feet, which would -- based on the recovery factor of 603 MCF per acre-foot --

CHAIRMAN FESMIRE: Okay, you used the 50 foot, and not the nearly 80 foot that --

THE WITNESS: Well, I was going to address that, Mr. Commission Chairman.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: 50 feet, calculated 315 acres, and that would give a drainage radius of 2090 feet.

Looking at the logs closer, we feel like we could have as much as 70 feet of net pay, and that would give a 225-acre drainage area with a radius of 1766 feet.

The well cum'd 9.4 BCF, 53 --

COMMISSIONER CHAVEZ: I'm sorry, what was the radius again on that last one?

THE WITNESS: 1766 feet.

COMMISSIONER CHAVEZ: Thank you.

THE WITNESS: The well cum'd 9.4 BCF and 53,000 barrels of oil prior to going off production.

To the north of that is well number 7, to the northeast. That well is the Federal G Gas Com Number 1. Ten years, essentially nine years after the well number 5 was completed, this well was brought on line and was

drilled and found a bottomhole pressure of 5153 pounds, which definitely shows that there had been no depletion and these two reservoirs were not in communication. In over a 10-year period there was no pressure depletion at all.

Then 3700 feet to the east is well number 9. That was the Hale Federal Com Number 2, and their DST was March of 1972, found a bottomhole pressure of 5009 pounds with a shut-in of 3260 pounds at completion.

Based on that bottomhole pressure, it's very close to the original bottomhole pressure found in the well number 5, the Emperor Federal, and so it also showed no pressure depletion in that seven-year time frame.

That well has cum'd 1.2 BCF, well number 9. And based on 24 feet of pay, it's drained 80 acres at that location.

Q. (By Mr. Bruce) That's a thinner pay than in the other two wells?

A. Yes, that's correct, it's 24 feet, versus well number 7 had an average pay of 72 feet, and well number 5 had anywhere from 50 to 70 feet of pay.

The V-F Petroleum well was drilled and completed in August of '04 and reported a shut-in tubing pressure of 3250 pounds. I used a gas gradient of .146 p.s.i. per foot for gas and projected that downhole to the Morrow formation, and that calculated at a bottomhole pressure of

5069 pounds.

Q. So all of the four wells that were drilled in the pool had similar pressures?

A. Very similar pressures, and show no depletion. So that's telling me that these are not common reservoirs, and each individual well is producing out of an individual, separate reservoir.

Q. Now, you've put the drainage figures on there, and you've assumed radial drainage, have you not?

A. Yes, I have.

Q. And now if drainage is preferential, do you agree with Mr. Creasey that that preferential drainage would be more northwest-southeast?

A. Based on what Mr. Creasey has shown me in his geologic interpretation and the information received from the articles and kind of the history of the Morrow in this area, it does show that it could be in a northwest-southeast direction.

Q. Okay. And if that was the case, there would probably be more of an effect from the number 5 well on the north half of 29 than on, say, Section 21, or there could be?

A. Definitely there could be.

Q. And if the same held true for Edge's proposed well, wherever the bottomhole location may be, the effect

would not be on Section 21, would it?

A. As far as our location, no, if it was in a northwest-southeast orientation you wouldn't expect that it would affect Section 21 in the drainage pattern.

Q. Now, between wells 5 and 6, the first well and then the most recent well, what is the approximate distance between those two wells?

A. Number 6 well is approximately 3700 feet to the north, number 7 is approximately 3800 feet to the northeast. Our location that we're trying to get ready to drill is approximately 3600 feet to the northwest from the number 5 well.

Q. About the same distance as the number 5 and 7 wells, which have shown no effect on the number 6 well; is that correct?

A. Say that again?

Q. In other words, the distance from Edge's proposed well to the new V-F well, the number 6 well --

A. Right.

Q. -- is approximately the same as from the number 5 well to the number 6 well --

A. Yes, that's --

Q. -- and the number 7 well to the -- or, excuse me, the number 5 well to the number 7 well?

A. That's correct.

Q. And neither of those have shown any effect of pressure depletion from the number 5 well?

A. None of those have shown any pressure depletion, no.

Q. Now, when you draw a radial drainage like this, you draw the circle around the number 5 well, that's not a hard line, is it?

A. No, I mean, it's not a brick wall or a tank that that gas is coming out of. I mean, it is a reservoir, and that reservoir is -- based on our drainage calculations, could be anywhere from 225 acres to 315 acres.

As far as the pressure at the well, you know, abandonment pressure is less than 1000 pounds, anywhere from 500 to 1000 pounds bottomhole pressure at the time of abandonment. But there's a pressure gradient away from that wellbore that increases as it goes out, but --

Q. So if these wells are in communication, even though you might not be draining -- the number 5 well might not have drained, say, a portion of the area that is being drained by the number 7 well, you would still expect some type of pressure depletion, wouldn't you?

A. You definitely would. If this was all one reservoir and one tank and all of the wells, 5, 7 and 9, were producing out of a common reservoir, there would definitely be pressure depletion in this area.

Q. One question that came up is, with respect to your proposed well, based on your study of the area, what do you hope to recover and what do you think might be the drainage area of that well?

A. Based on our current mapping, we'd expect around 45 feet of pay. And with 45 feet of pay and an estimated drainage area of 80 acres, that would give us about 2.2 BCF. Based on that drainage area, the radius would be 1053 feet.

Q. Now, there were some questions of Mr. Creasey regarding if Edge eventually drills a well on the northern portion of its well unit, whether it's 710 feet or something like that, but the effect on Section 20 -- if you drill a successful well, what have you done to Section 20?

A. Well, that would prove up their acreage and allow them to attempt to get a well drilled in that southeast corner of Section 20.

Q. Besides these discontinuous reservoirs and the limited drainage from these wells, you're actually setting up the south half of Section 20 for another well, if you are successful?

A. Yes, we are, although like we're seeing here in Sections 21, 22 and 28, even though we essentially are setting up a location for them, there doesn't seem to be any pressure communication between all these wells that

have been drilled out here in this reservoir.

Q. And you know, other than the -- I'm looking at the dates of drilling out here. Other than the V-F well in Section 21, there's been nothing drilled out here in 20 years to the Morrow; is that correct?

A. Between the first discovery well and the Emperor Fed Com Number 1, number 5 well on the graph here, it was 40 years until the V-F Petroleum well was drilled, so over a 40-year period there's -- all the pressures are virgin pressures.

Q. And only a half a dozen wells drilled in this -- well, 16-section area in 40 years?

A. That's correct. Part of that reason is probably the potash area, you know, and the commodity prices. The fact -- I'll get into that in a few minutes on the cost, but the fact that we're in the potash area, it's much more expensive to drill.

Q. Okay. Let's move on to Exhibit 9. Just very briefly, what is Exhibit 9?

A. That was a listing of wells that were within a -- one mile of the original Dos Hermanos-Morrow field designation.

Q. So there are a few Morrow and Strawn wells, but the majority of them are inactive, are they not?

A. Yes, there are only two active wells in the

Morrow, that being the V-F Petroleum Federal Number 2 in Section 22 and the current V-F Petroleum Budge Federal Number 1 in Section 21.

Q. And there's a few active Strawn wells?

A. Yes.

Q. Now, let's move on to the final exhibit, Exhibit Number 10. And before we get into that, one of the questions from one of the Commissioners was about obtaining approval to drill since this was in the potash area. Could you comment on that?

A. Yes, I've had conversations with the BLM in Carlsbad, and what's required -- well, I'll tell you the process that we've gone through as far as trying to permit a well out here. We did originally attempt to get a well permitted 660 from the north and east line, and it was denied through the District -- Artesia District there, and it was denied because of -- it's in an active potash area, and we cannot drill a vertical well in that northeast quarter of Section 29, or even the north half of Section 29.

I went out and inspected the area on-site and looked at alternative locations and found that the well had been -- a directional well had been drilled from the southeast corner of Section 29 into the northwest corner of Section 29, and it was drilled as a Strawn test and was a

non-productive well, ended up being plugged and abandoned.

But then we also found that there is a location, well number 5, that has a good area to drill from, so I talked to the BLM, Craig Cranston with the BLM. I think he's no longer in that office, but that's who I had my initial talks with.

And he recommended we drill the location, based on his knowledge of the potash area and the knowledge that there's an existing road going into this location and an existing pipeline, so there would be very little surface disturbance other than the location itself, and he recommended this location at 1130 feet from the west line and 2520 feet from the north line as our surface location.

Q. Let's discuss the cost of a well. Assuming this is the location that is eventually drilled, what is Exhibit 10?

A. Exhibit 10 is an authority for expenditure for a directional well for this location that's spotted on our plats, and it would be a directional well to a measured depth of 13,000 feet to test the Strawn and the Morrow formations. It would be a 3000-foot horizontal kick.

And the reason I came up with the distances from the north and east lines was so that we could get both the Strawn and the Morrow in a legal location based on statewide spacing. It also gave me a 50-foot-radius

offset, off of the 660 foot from the north, and it gave me a 50-foot offset from the -- well, 60-foot offset from the 1320 quarter section line.

Q. And is page 2 of Exhibit 10 simply an AFE if this well was going to be vertically drilled?

A. Yes, and you can see the difference is about $666,000 difference for drilling a typical Morrow well in this area that's not in the potash and that's not directionally drilled. So there's a lot of additional cost to drill in this area. What's required is to set an additional intermediate casing string of 9-5/8 at 3980 feet that normally would not be set in a typical Morrow well outside the potash areas.

Q. So in -- pretty expensive well, so in drilling it, it's really necessary to pick a good geologic location?

A. It's very necessary because, like I mentioned earlier, you know, it's only because the commodity prices are high right now that we're even able to look at drilling these high-cost directional wells to justify the economics based on these additional costs.

Q. And in drilling the well, apparently not only geology but you're having to deal with the potash and even surface use?

A. Yes, before we can go forward with the permit -- it's kind of a multi-step process -- we have to have a

proposed bottomhole location, plus we have to get right-of-ways from the BLM to be able to use their surface and to be able to drill through their surface onto state lands where our state lease is located, because it's kind of a stranded asset for the State, you know, that we purchased here, is that, you know, it's -- you can't drill a vertical well here, so it's hard to drill directional wells with these kind of reaches.

And in fact, I think -- I'd heard that when V-F Petroleum drilled their well in Section 21, they had numerous drilling problems while drilling that.

Q. Which could increase the cost of the well?

A. Yes, sir.

Q. In your opinion, is the granting of Edge's Application in the interest of conservation and the prevention of waste?

A. Yes, it is.

Q. And were Exhibits 7, 9 and 10 prepared by you or under your supervision?

A. Yes, they were.

MR. BRUCE: Mr. Chairman, I'd move the admission of Exhibits 7, 9 and 10.

CHAIRMAN FESMIRE: Any objection?

COMMISSIONER CHAVEZ: No objection.

COMMISSIONER BAILEY: (Shakes head)

CHAIRMAN FESMIRE: Exhibits 7, 9 and 10 are admitted.

MR. BRUCE: And I pass the witness.

CHAIRMAN FESMIRE: Mr. Carr?

MR. CARR: Thank you, Mr. Chairman.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Keisling, if we look at your Exhibit Number 7, you have used radial drainage patterns for existing Morrow wells in the area; is that correct?

A. Yes, sir.

Q. Is it your testimony that radial drainage areas is the appropriate way to analyze this particular Morrow reservoir?

A. Well, it's my depiction here, and I think this is really just a depiction because I think, based on our knowledge of the Morrow formation, it's very unpredictable, un- -- how the drainage areas actually occur.

Q. And this basically would have to assume some sort of homogeneous reservoir in the area; isn't that right?

A. Exactly.

Q. If you were able to know the size and the orientation of those channels, it would change your interpretation of the areas effectively drained by these wells; isn't that true?

A. Yeah, if we were able to know that orientation. But based on the data that we have here, we're not able to --

Q. The drainage area for wells also impacted by areas that have perhaps been drained in that horizon by an offset well?

A. Say that again.

Q. I mean, when you're trying to figure out -- actually where drainage is going to occur, that could be affected by the drainage area in an offsetting well; isn't that true?

A. That's right, and that's what we had based our information on, was that the pressure data that we saw from those existing wells didn't show any kind of drainage interference with those other wells.

Q. And if you -- depending on the orientation of these drainage areas, that would also impact the impact a well would have on an offsetting well; isn't that also true?

A. Yes, it would.

Q. And so basically here what we're doing is, we're just using a tool which gives us a general idea of --

A. That's correct.

Q. -- what we anticipate these wells to be?

I think you testified that based on your review,

you didn't believe a well at the proposed location would adversely affect Section 21; is that right?

A. That's correct.

Q. If that's your belief, why didn't you just seek an unorthodox for your well?

A. Well, we felt like this is a typical Morrow reservoir and we should be able to drill the wells on statewide spacing.

Q. And if you're allowed to do that, the order wouldn't be approving a 710 location from the north line, 1260 from the east, it would approve anything? It could be drilled 660 off that line; isn't that right?

A. That's correct.

Q. If you were to seek an unorthodox location, you'd have to decide where you wanted to drill the well first; would you agree with me on that?

A. Yes.

Q. Have you made that decision now? I talked to your geological witness about that. I'm just trying to find out where you are in that process. Is 710-1260 a location that you believe is where you actually will drill?

A. If we're able to get approval to do that, yes, that's our best location that we can do, both mechanically and geologically.

Q. If the seismic -- But you're looking at some

additional seismic data that you're trying to acquire; is that right?

A. That's what I understand.

Q. And you'd be fine-tuning a location based on that?

A. Possibly.

Q. You estimated 2.2 BCF for your well and an 80-acre drainage area.

A. Yes, sir.

Q. That's a fairly conservative number; isn't that right?

A. Well, I don't believe it is, based on the other two wells in the reservoir. I think, you know, there's been three wells, now four wells, drilled in the middle Morrow, lower Morrow reservoir. We don't know exactly what the V-F ultimate recovery will be on the Budge Federal well, but based on the 1.9 in well number 7 that it recovered, 1.9 BCF, and then well number 9 on our exhibit recovered 1.2 BCF, I'm anticipating it will be in that range of cumulative production.

Q. But you do agree that it's possible you could get a well even comparable to the original well over in Section 28?

A. That would be wonderful if we do.

Q. It's possible?

A. That's right.

Q. It's possible, correct?

A. That's right.

Q. And if this Application is approved, you also could locate the well 660 off the common lease line?

A. Sir?

Q. If this Application is approved -- you're not looking for approval of the 710-1260 location --

A. Right.

Q. If this Application is approved, you could even drill a well, once the Application is approved, 660 off the --

A. Yes, that's correct.

MR. CARR: That's all I have, thank you.

CHAIRMAN FESMIRE: Commissioner Bailey?

COMMISSIONER BAILEY: Yes.

EXAMINATION

BY COMMISSIONER BAILEY:

Q. I'm confused. If you could please help clarify some things for me.

A. Yes.

Q. Exhibit Number 9, I'm looking at Section 29 of 20 South, 30 East.

A. Section -- Excuse me, Section what?

Q. Section 29 of 20 South, 30 East.

A. Yes.

Q. The lease names and well names are federal?

A. Yes.

Q. Yet on the AFE in Section 29 it's the Golden Lane 29 State Number 1.

A. Yes.

Q. Is this state minerals or federal minerals?

A. The south half of the section is federal. The 240-acre lease that we picked up was a state lease --

Q. Okay.

A. -- and that's the lease that we feel like is --

Q. So why are you talking to the BLM instead of the OCD and the Land Office about --

A. That's a good question --

Q. -- drilling in the potash area?

A. -- but they have control over the potash area.

Q. Well, we'll have to talk about that later.

A. Yeah.

Q. You might want to take the Land Office and the OCD into consultation too.

A. Okay. Well, I have spoken to the OCD and the District Office, and they would not approve it at a 660 location because of the potash.

Q. That makes sense. Those are the agencies I believe should be consulted with state lands.

A. Yes, that's correct. But I've been -- After that I was told I need to get a location outside of the -- Out of the potash -- active potash area, and that only allowed me to go into Section 28 or the south half of 29, and both of those are federal surface locations.

Q. So obviously you deal with them.

I have another question. On your Exhibit Number 7, within the boundaries of the Dos Hermanos field, the pool, the drainage areas are -- range from 45 acres to 80 acres to 50 acres to 315 acres, yet this is spaced on 640-acre spacing.

A. Yes.

Q. Are reserves being left in the ground with 640- --

A. I believe there are, yes. We believe that it requires more than one well per 640-acre spacing, and that's what the Commission agreed also at our last hearing. They approved our going to 320-acre spacing, but they kept -- as Mr. Bruce testified earlier, that they kept the offsets to that at the 1650 feet.

Q. But within the Dos Hermanos, would you recommend that that spacing --

A. If I had --

Q. -- on a purely technical basis, not taking into account --

A. Based on the knowledge that we have of this area, we would be recommending more wells than currently are being drilled out there, yes.

Q. Infill drilling?

A. Yes.

COMMISSIONER BAILEY: That's the clarification I needed, thank you.

THE WITNESS: Okay.

CHAIRMAN FESMIRE: Commissioner Chavez?

EXAMINATION

BY COMMISSIONER CHAVEZ:

Q. Yes, Mr. Keisling, you said, if I understand you correctly, that -- you said you filed an APD with the Artesia of the OCD?

A. The original location we did, back in -- last fall, before the hearing that we had in October. And that was disapproved based on the potash area. That was proposed as a vertical well, 660 from the lease line.

Q. On that APD did you dedicate the 320 acres or 640 acres that was required for a pool extension for the Dos Hermanos?

A. Well, that was another issue that came up after we applied for that six hundred and -- We applied for a 320-acre pool, but it was disapproved because of the potash area.

Q. Okay. Regardless of whether that would have been a standard or nonstandard location either, there was no -- it was disapproved just on only one basis, then?

A. Right.

COMMISSIONER CHAVEZ: Okay, I don't have any other questions.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Keisling, cost to capital, what kind of reserves do you need to pay out one of these $2.5-million Morrow wells?

A. I think I have it. We've -- When we run our economic evaluation for the Morrow, we usually put a possibility of success at around 60 percent. And based on our drilling experience, it's probably a greater -- or a lesser -- than that, even, maybe 50 percent or less.

But based on a risk reserve number, to get an economic well we'd need somewhere in the neighborhood of 1.2 to 1.5 BCF.

Q. So it could actually pay out as little as .6, .7 BCF, right, if you actually --

A. No, that would be a risk number so, you know, if you got less than that it would be not a payout situation, economic situation.

Q. But if you've got a 50- or 60-percent risk in

this 1.2 calculation --

A. No, I guess I misquoted myself there, is that on a risk reserve basis we would need at least 1.2 to 1.5 BCF to give us an economic rate of return, as a 20-percent rate of return.

Q. Okay, but that's a risked number?

A. Yes.

Q. If you drilled a well and hit --

A. Then we would expect the 2.2 or 2.5, you know, divide 1.2 by .5, is 2.5 BCF.

Q. Okay, well, I'm not understanding. 1.2 BCF, if you drill and hit 1.2 BCF --

A. Right.

Q. -- will that pay out the $2.5-million -- at the decline --

A. Unrisked.

Q. -- the Morrow decline -- Yeah.

A. Unrisked, right.

Q. Okay, so that's the minimum reserves you would need to drill --

A. Yes, sir.

Q. -- an economic well?

A. That's correct.

Q. Okay. I've got a quick question. On the upper Morrow well number 3 here, you've got a DST of 6300 pounds,

which means you've got about a thousand pounds more in the upper Morrow than you've got virgin pressure in the lower Morrow. Is that a mistake, or is there something going on there that we need to know about?

A. It appears that this is a higher-pressure reservoir in the upper Morrow, and I don't believe it's a mistake. And if I remember correctly, I've got the completion data in here. This well actually AOF'd at a very high rate, like 10 million a day.

But the upper Morrow reservoir must have been very small, because it only produced .3 BCF.

Q. Well, why would you -- and this is more curiosity than anything else, but why would you have a thousand-pound differential above the lower Morrow?

A. Well, we've seen that in the Atoka zones in this area too, that Atoka can tend to be slightly higher pressures than the Morrow, so there must be some kind of a reservoir trap that causes the higher pressures.

Q. Okay. Now, we've heard geologic testimony from your firm that these sands trend northeast-southwest --

A. Yes.

Q. -- is that correct?

A. No, northwest-southeast.

Q. Northwest-southeast, okay. That's what I meant. Just in terms of your drainage-area analysis, what would

that do to your drainage areas? And wouldn't it sort of make them an oblong-type shape?

A. It could, sure could. And if it did, that could explain why none of these wells have been in communication. If they are in a northwest-southeast oblong orientation, then you could see why well number 9 was not communicating with well number 7, and that number 7 was not communicating with well number 5.

Q. Doesn't that give you a risk that well number 5 is depleted at the location that you're heading for?

A. Definitely, that is a possibility.

Q. And you all have evaluated that possibility and --

A. Well, again we have two targets that we're proposing this well for, is the Strawn and the middle and lower Morrows. So we have a backup zone that we would hope to be able to complete in if the lower Morrow is depleted.

CHAIRMAN FESMIRE: Okay, I don't have any further questions.

Mr. Bruce, do you have any rebuttal?

MR. BRUCE: I have no follow-up, Mr. Chairman.

MR. CARR: No further questions.

MR. BRUCE: That concludes my presentation, Mr. Chairman.

CHAIRMAN FESMIRE: Thank you, Mr. Bruce.

Mr. Carr?

MR. CARR: At this time, may it please the Commission, we would call Louis Mazzullo.

LOUIS J. MAZZULLO,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your full name for the record, please?

A. Louis J. Mazzullo.

Q. Spell your last name, please.

A. M-a-z-z-u-l-l-o.

Q. Mr. Mazzullo, where do you reside?

A. Albuquerque, New Mexico.

Q. And by whom are you employed in this matter?

A. I am an independent consultant under contract to V-F Petroleum, Incorporated.

Q. Have you previously testified before the New Mexico Oil Conservation Commission?

A. Yes, I have.

Q. At that time, were your credentials as an expert in petroleum geology accepted and made a matter of record?

A. Yes, they were.

Q. Would you review for the Commission your

educational background?

A. I have a bachelor's degree in geology from the City University of New York and master's degrees from the State University of New York at Stonybrook and the University of Chicago.

Q. And when were these degrees received?

A. 1973, 1975 and 1976, respectively.

Q. Following graduation, for whom have you worked?

A. I've worked as a subsurface exploration geologist for a number of companies since graduation. I've worked in southeastern Utah for uranium exploration in sedimentary rocks, which is similar to what we do here in oil and gas. I worked for a time at Phillips Petroleum's uranium division in Albuquerque, and then I went to Midland where I was briefly employed by Superior Oil Company, and then was for 11 years a consultant variously with my brother and on my own before moving back to Albuquerque.

When I moved back to Albuquerque I consulted for a while for an environmental and geological firm specializing in oil and gas matters, and since 1996 have been a geologic consultant in the petroleum industry.

Q. Are you a certified petroleum geologist?

A. Yes, I am.

Q. Are you familiar with the Morrow formation in the Permian Basin?

A. Yes, I've written a number of articles since 1981 on the Morrow formation.

Q. Are you familiar with the Application of Edge Petroleum in this case?

A. Yes, I am.

Q. Have you made a geological study of the area that is the subject of this Application?

A. Not only the area that's the subject of this Application, but the entire southeastern New Mexico basin.

Q. Are you prepared to share the results of your work with the Oil Conservation Commission?

A. Yes, I am.

MR. CARR: We tender Mr. Mazzullo as an expert in petroleum geology.

CHAIRMAN FESMIRE: Any objection?

MR. BRUCE: No, sir.

CHAIRMAN FESMIRE: Mr. Mazzullo is accepted as an expert in petroleum geology.

Q. (By Mr. Carr) Mr. Mazzullo, could you briefly summarize for the Commission what it is that V-F Petroleum seeks in this case?

A. V-F Petroleum seeks denial of Edge's Application for changing field rules along the buffer zone around the Dos Hermanos field.

Q. And what is the -- summarize for us the basis for

this position.

A. The basis of this position is that we contend that the subject Morrow formation is one common source of supply where sands that are mappable within the Morrow within Dos Hermanos field can be traced throughout the field and into the offset boundaries of the field as well.

Q. Is it V-F's position that approval of this Application would result in two sets of rules for one common source of supply?

A. Yes, there would be one set of rules for Edge Petroleum and one set of rules for everyone else.

Q. Is V-F concerned that if the rules are approved the net result will be impairment of its correlative rights?

A. Yes, we are.

Q. Let's go to what has been marked as V-F Petroleum Exhibit Number 1. Would you identify that and review it briefly for the Commission?

A. Exhibit Number 1 is a structure map drawn on the top of the lower Morrow formation, which may or may not exactly coincide with the map that was previously shown by Edge Petroleum, but -- in the same part of the section.

It shows a southeasterly dip on the top of the lower Morrow. It also shows a number of bounding faults that have been identified from subsurface data, as well as

from one seismic line that we have access to across the area.

Q. What does the red box indicate?

A. The red box indicates the present boundaries of the Dos Hermanos-Morrow Pool in which there are four -- there were four previous producing wells, and now with the V-F Petroleum Budge, there is now a fifth producing well in that field.

Q. Could you tell me -- and I direct your attention to Section 29, and review for the Commission the status of the well that is shown in the south half of that section.

A. The south half of Section 29 produced a little less than a third of a BCF of gas from the Morrow formation, various sands in the Morrow formation. To my knowledge, it was plugged and abandoned in the Morrow and an attempt was made to sidetrack that well in a northwesterly direction, as shown by the arrow, to a Strawn bottomhole location which was subsequently tested as a dry hole.

Q. When the well was completed in the Morrow, do you know what acreage was dedicated to that well?

A. To the best of my knowledge, and what I've heard today from Commissioner Chavez, that well was originally included in the Dos Hermanos field under the 640-acre dedication.

Q. Let's go to the Budge Federal Com well that V-F has just completed in the southwest of Section 21. When was that drilled?

A. That was drilled in the fall of 2004.

Q. And how good a well is that?

A. To my knowledge -- I haven't been keeping up with the daily production, but to my knowledge it has been a fairly good well.

Q. Is it a commercial well in the Morrow?

A. It appears like it may be. We won't know until we see what type of decline it will undergo.

Q. If we look at the structure map, is there a general strike to the structure across the area?

A. The structure in this area generally strikes from the southwest to the northeast and dips to the southeast.

Q. Let's go to what has been marked V-F Exhibit Number 2. Would you identify and review that, please?

A. Exhibit Number 2 is a structural cross-section of the Morrow through several wells that are annotated on the Exhibit Number 1, cross-section A-A', which goes through the well in the southeast quarter of Section 29, beginning at the west end.

It starts in Section 29, southeast quarter, proceeds to the east northeast into Section 28, the discovery well of Dos Hermanos field, up into the Federal

"G" Gas Com Number 1 in Section 21, southeast quarter, and finally ends up at the Federal Number 2 in Section 22. It encompasses three of the original four Dos Hermanos-Morrow wells.

The cross-section shows a number of sands that have been labeled arbitrarily, alphabetically, from top to bottom, and it shows also that these sands appear to be correlative across a wide area, including the area outside the Dos Hermanos Pool boundary in the well in Section 29.

Q. Now, can you generally provide the Commission with a description of the Morrow in this area. We've heard it described as northwest-southeast-trending channels. Do you agree with that?

A. Not entirely.

Q. And how not?

A. The Morrow is a very -- the Morrow section that includes the reservoir sands is relatively thick in this area, and subject to -- during deposition, subject to many changes in relative sea level. And as a result, you have a mixed bag of depositional environments that range from fluvial-deltaic to channel-mouth bars to offshore marine bars in a very arbitrary fashion.

So for example, the lower Morrow is not strictly a fluvial-deltaic system; the lower Morrow also includes some beach barrier sands as well as some possible channel

mouth bar sands or deltaic sands, as does the middle Morrow. This is not based on supposition, this is based on sample evidence. I've run samples of the Morrow and defined depositional environments over an area much larger than over Dos Hermanos field but including Dos Hermanos field.

So the interpretation of the lower Morrow is simply -- as a fluvial-deltaic system is rather simplistic in view of the overall regional perspective of the Morrow in this area.

Q. Following the Examiner Hearing, the Examiner described in the order entered in this case the formation as including fluvial northwest-to-southeast-trending channel sands, as well as southwest-northeast-trending marine deltaic sands. Do you agree with that interpretation?

A. Yes, I agree with that interpretation as acknowledged by the finding of Order R-13,352.

Q. Mr. Mazzullo, is it your opinion that the various middle and lower sand intervals present in the Dos Hermanos Pool are laterally continuous and would extend into Section 29?

A. Many of them would. Some of them may not, but many of them would, as I show on Exhibit 2, cross-section A-A'.

Q. Are you aware of any geologic barriers that would isolate the Morrow reservoir under Section 29 from the Dos Hermanos sand in section 21?

A. I don't see any evidence of any lateral barriers, because a lot of the sands are predominantly southwest-to-northeast-trending throughout the section, and I don't see any lateral barriers. The only barriers that I see are the faults that I show on Exhibit 1, but they are well beyond the boundaries of Dos Hermanos field and beyond the boundary of Section 29.

Q. In your opinion, would elliptical drainage patterns be a more reasonable way to interpret the drainage areas for wells in this pool?

A. Elliptical drainage patterns, variable drainage patterns, would be more realistic than radial drainage patterns in a complex depositional system like this.

Q. And if they were in the northwest -- or, I'm sorry, southwest-to-northeast-trending marine deltaic sands, those ellipses would actually trend southwest to northeast; is that right?

A. According to the correlations that I've made on those marine and southwest-northeast-trending sands, yes, they should be more elliptical in that direction.

Q. Based on just your geological interpretation --

A. Yes.

Q. -- is it fair to say that wells that offset one another in this pool may, in fact, be competing for the same reserves?

A. Yes.

Q. Were Exhibits 1 and 2 prepared by you?

A. They were prepared by me or under my supervision.

MR. CARR: At this time, may it please the Commission, we move the admission into evidence of V-F Petroleum Exhibits 1 and 2.

CHAIRMAN FESMIRE: Any objection?

MR. BRUCE: No objection.

CHAIRMAN FESMIRE: They'll be so admitted.

MR. CARR: That concludes my direct examination of Mr. Mazzullo.

CHAIRMAN FESMIRE: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. First, Mr. Mazzullo, I just want to understand what you're saying V-F Petroleum's position is in this case. Could you restate that for me?

A. V-F Petroleum's position is in this case is that granting the request to approve a location that is not within the rules of the offset location that Edge is proposing in Section 29 would not be in the interest of their correlative rights or the prevention of waste.

Q. Okay. Do you object to 320-acre spacing outside of the four sections within the pool?

A. Outside of -- as long as they abide by the current pool rules, which haven't been changed, of the Dos Hermanos field, which calls for 1650-foot offset from the pool boundaries.

Q. Well, that is a change in one respect because obviously if you have a half section of land, you can't be -- the rules aren't requiring -- Let's look over at Section 23, and you have a south-half well unit. What you're saying is, it has to be 1650 feet from Section 22, but it doesn't have to be 1650 feet from the south line of that section or --

A. The question here is not a question of, you know, what I think the field ought to be developed on. The question is how we go about an orderly development of the field within the current pool rules. I may or may not have objection -- I don't know until I do a more thorough study of whether I think we could drill 320-acre offsets in any one field, but -- in any one section, rather.

Q. Well --

A. The fact is, we -- V-F, not "we", but V-F had applied for a permitted location in Section 22, but they applied for it under the existing rules and the existing procedures of the Oil Commission.

Q. Well, what I'm getting at is, you have no objection, I take it, to 320-acre spacing outside the four sections of the pool?

A. Not, as such, no --

Q. Okay.

A. -- but I do have objection to the way the wells are proposed, if they're not proposed, you know, according to the rules.

Q. So in other words, outside these four sections, 320-acre spacing, that's just typical statewide spacing, is it not?

A. Typical?

Q. For the Morrow?

A. For the Morrow? Over a large area of it, it is, yes.

Q. And the Strawn in this area is spaced on 320 acres?

A. What does that have to do with the Morrow?

Q. I'm just asking you, is the Strawn spaced on 320 acres?

A. Yes, it is.

Q. Okay. The next question I have is, if you have no objection to 320-acre spacing outside these four sections, I don't understand your position that Edge gets one set of rules and everybody else has a different set of

rules. Won't those same rules apply to Sections 14, 15, 16, 17, 20, et cetera, around the pool?

A. There is a one-mile buffer zone around Dos Hermanos Pool that under the current field rules it is specified that wells offsetting that pool boundary should be 16- --

Q. And that applies to everyone, not just Edge?

A. That's right.

Q. So why are you saying Edge gets one set of rules and everybody else gets --

A. Well, they're the only ones that are making this Application. I don't see any other operator making such an application.

Q. One operator can make an application, can they not? Can they?

A. Sure.

Q. Really, just a couple more questions. You're saying this is one common source of supply. Is permeability and porosity the same from section to section or from half-section to half-section?

A. It depends upon the type of sand that you're looking at, and many of these sands appear to be uniformly -- well, fairly porous and permeable from section to section, as I show on the cross-section.

Q. And again, you're saying that this reservoir

trends northeast to southwest.

A. I didn't say all of it did, but a large portion of it does.

Q. Large --

A. Yes.

Q. Then how can you explain -- Let's just take the well in Section 28 and the first well drilled in Section 21.

A. Uh-huh.

Q. They're situated northeast-to-southwest from each other, and you're saying there's continuous reservoir, there's similar permeability and porosity. How do you explain --

A. You have to --

Q. How do you explain the --

A. Yes.

Q. -- same pressures ten years apart, if this is one continuous reservoir?

A. You have to understand that these sands, particularly as these marine sands go, they tend to shingle over one another. So they prograde over one another through time, and you will get sands in Section 21 that will prograde over sands in Section 28. They're still running southwest-to-northeast, and for example the sands that we have in the Budge Federal Number 1 would likely be

correlative, according to the way things line up in this area, to sands at the proposed location that Edge originally had, 660 or 710, whatever that -- whatever the new location is.

Q. So in other words, the sands are discontinuous?

A. No, they're not discontinuous, they are continuous, and they overlap one another.

Q. Okay, you still haven't answered my question. How come there is no -- How come when the well in Section 28 was drilled with a 5000-p.s.i. bottomhole pressure and 10 years later the well in Section 21 was drilled, it still had the same pressure?

A. I'll defer to Mr. Williamson for the answer to that question. I'm not a petroleum engineer.

Q. By the same token, how do you explain the same pressures in the two V-F wells, the same pressures -- same original bottomhole pressures in the two V-F wells in Section --

A. I don't know what the decline history of the other well in Section 21 was, whether it was prematurely abandoned or not. I'll let Mr. Williamson address questions of depletion and pressure information.

Q. Just -- The new well in Section 21, the Budge Federal --

A. Uh-huh.

Q. -- what is that producing at, do you know?

A. What is it -- Excuse me?

Q. What is it producing -- What is its producing rate?

A. Oh, currently? I don't know.

Q. Do you know what its bottomhole pressure is?

A. I don't know.

Q. Do you know its cumulative production?

A. No, I don't.

MR. BRUCE: Thank you, Mr. Chairman.

CHAIRMAN FESMIRE: Commissioner Chavez?

EXAMINATION

BY COMMISSIONER CHAVEZ:

Q. Yes, I wanted to get it clear about the 320 versus 640 acres. I thought at first you were saying that you had not opinion about the 320- versus 640-acre spacing, and then you say you have no objection to the 320.

A. I don't necessarily have an objection. I don't have an opinion yet, because I haven't really studied it in regards to doing close -- you know, infill drilling. I wasn't charged by V-F to do such a study. If they ever ask me to do it I might have a more definite opinion about it, but right now I'm not sure.

As it appears right now, I can't answer that question unless I do any further study on the field.

Q. Okay, what I was trying to get from your testimony and your exhibits here is, what supported -- what you're saying -- that you've said and your exhibits support your contention that the well in Section 29 should be located according to the 1650 rules --

A. Uh-huh.

Q. -- for distance from the outer edge of the Dos Hermanos Pool.

A. Right.

Q. Could you clarify that, because I don't get the relationship between your supporting that and what you've presented here in your testimony?

A. Well, just simply, if you look at the cross-section and you look at the high correlation factor among the sands from well to well, it has the appearance that there is a lot of lateral continuity in the direction southwest to northeast that Edge's proposed well is going to offset the Budge well. And there are sands in the lower Morrow as well as in the middle Morrow in the Budge well that in my mind, in my geologic experience, are going to be present in the Budge -- I'm sorry, in the Edge location, in the northeast quarter of Section 29.

The point here is that there are rules in place right now that haven't been -- that are trying to -- that are being circumvented by Edge's desire to drill a well in

the northeast quarter of Section 29. Whether or not I agree with 320-acre spacing, for purposes of this hearing in my mind is immaterial. We need to address the issue of the field rules and being within limits of the -- within the specified limits of the boundaries, as defined by the pool rules of Dos Hermanos.

COMMISSIONER CHAVEZ: Okay, thank you. That's all I have.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Mazzullo, I think I'm going to ask the same question that Mr. Bruce and Commissioner Chavez were trying to get to.

You testified that in your opinion the lower Morrow out here is a common source of supply among all the wells that we're looking at; is that correct?

A. Uh-huh.

Q. Yet the virgin-pressure question comes up. We drill offsets, relatively close offsets, and we end up with initial pressures that were the same as they were 10, 20 years before. How does that jibe with the idea that this is a common source of supply?

A. Well, again, I don't -- a lot of those wells were drilled within a couple of years of one another, so it's not unreasonable to expect the initial wells to have fairly

close bottomhole pressures, as far away as they were from one another. I don't know how they've declined, I'll let Mr. Williamson address the issue of what types of pressure decline we've seen on those wells. I don't know.

Q. Well, Mr. Mazzullo, I'm not asking for a technical evaluation of what little pressure differences -- what I'm talking about is, to me, there should have been -- if you produce what, 9.4 BCF out of one well --

A. Uh-huh.

Q. -- and this is a common source of supply, you're going to see some significant pressure difference in other wells in that same bottle.

A. Uh-huh.

Q. And I -- at least my impression now is that we did not see that decline. Should we just let Mr. Williamson --

A. Well, I'll give you one example and then we'll let Mr. Williamson do his thing, but you have a well in Section 29, in the southeast quarter of 29, that was drilled eight years after the discovery well. The discovery well cum'd 9.5 BCF of gas, and I don't know over what period of time that cum'd it, but the well in Section 29 was never commercially produced out of the middle or the lower Morrow.

Q. Right.

A. Was that depleted by that eight years of prior production from the well in 28? I don't know, it could have been. In my mind, the way these sands line up, there's a very good possibility that Section 29 well didn't produce from the Morrow simply because it was depleted by production from the discovery well, thereby making the radial drainage pattern that was specified by Edge possibly suspect. But I'll let Mr. Williamson address that question.

Q. Did we have a DST in the lower Morrow in that Section 29 well?

A. No, as far as I can see the only tests that they ran were production tests, and there was very -- I don't have any results available for what they recovered out of those wells.

Q. So we don't know what the bottomhole pressure was in the lower Morrow?

A. Not that I know of. You know, I don't have access to that data.

CHAIRMAN FESMIRE: Okay, I have no --

COMMISSIONER BAILEY: I have a question.

CHAIRMAN FESMIRE: Commissioner Bailey?

EXAMINATION

BY COMMISSIONER BAILEY:

Q. You kept saying that there was continuancy across

the pool.

A. Excuse me?

Q. You kept saying that there was continuancy --

A. There are some that are -- yes, that I show on the cross-section.

Q. Would you look at the cross-section, particularly lower Morrow "L" sand?

A. Lower Morrow --

Q. It appears as though the character of those sands changes dramatically across the field.

A. Uh-huh.

Q. Could you explain how we would have such a clean pair of sands, relatively speaking, in the McRae and Henry well, as compared to the V-F Federal Number 2 for the "L" sand?

A. On the "L" sand?

Q. Yes.

A. Okay, you're transecting that sand at a -- you're not really going across depositional strike on there, you're going transverse to depositional strike. That particular sand, I'm not sure if that's one of the marine sands or not. But the way the line of cross-sections line up, you may possibly be going from the core of a marine sand into the downdip or updip edge of it as you go across the area, along that line of cross-section.

So although the line of cross-section is kind of -- it's kind of southwest to northeast -- it might actually be cutting across that sandbody and going from the core of it to the edge of it as you go across.

Q. So you really wouldn't expect any communication?

A. Excuse me?

Q. You wouldn't expect any communication --

A. Well --

Q. -- those types of sands?

A. -- in the "L" sand, three of the four wells -- three of the four wells on this cross-section were perforated and produced out of the "L" sand, and an attempt was made to produce it in the downdip -- in the well in Section 29. So there was -- there were -- something that compelled the operators to perforate that sand in every one of those wells.

Q. But not necessarily a communication between the different -- within that sand itself?

A. We don't -- Yeah.

Q. Yeah. Now, I'm struck by the discontinuity of the characterization of the sands --

A. Yeah.

Q. -- throughout the lower and the middle Morrow.

A. Yeah. Well, again, you've got to consider that you've got northwest-southeast-trending fluvial sands, you

also have southwest-northeast-trending marine and deltaic sands, and you have channel mouth sands that are arcuate in shape, and so you're cutting across these things at different angles along this -- this isn't -- may not be the ideal line of cross-section to view the continuity, but there's a high degree of continuity suggested by the correlation shown on this cross-section, despite the fact that the line of cross-section may vary somewhat from depositional strike.

Q. But I'd just like to look at the specifics, rather than just the generalizations. When I look at the specifics, I see that maybe there isn't that much communication or common source of supply --

A. Uh-huh.

Q. -- within the different wells within the specific sands.

A. I have no reason to isolate any one of these sands, you know, pinch them out between wells, because they correlate very well, very favorably from wellbore to wellbore. I have no reason to cut them off anywhere, except in some instances like, for instance, the "G" sand.

Clearly the "G" sand in the lower part of the middle Morrow is not present in the two wells on the east side, and maybe that's because of the -- that could have been a channel sand; we cut across the channel, and we're

on the edge of the channel as you get up towards the eastern end of this cross-section.

But all the other -- most of the other sands, I can correlate. There are some that I do pinch out, but most of the ones I do correlate from one end to the other, and it does seem to be positive correlation.

COMMISSIONER BAILEY: That's all I have, thank you.

FURTHER EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Mazzullo, I'm going to go down the rabbit trail that you started a minute ago. Do you have any evidence to support your theory that the well in Section 29 was depleted in the lower Morrow?

A. No, I don't.

Q. Okay, that's speculation on your part?

A. Well, I'm throwing that up for speculation. Maybe Mr. Williamson has some information on that, but I don't.

Q. Okay. And your theory is that these wells are in pressure communication, yet wells drilled about the same time in that -- at about the same distance away -- and I'm talking specifically about the well in Section 21 -- have essentially virgin pressure.

A. Uh-huh.

Q. What does that tell us?

A. I don't know specifically what it tells us, because I don't know how those wells declined in time. They were drilled within a couple of years of one another. I don't know how they declined relative to one another, I don't know if any of them were prematurely plugged for one reason or another, like for instance maybe they had some clay damage in the sands that caused them to prematurely plug. I don't know any of that information.

Q. Well, that would be a valid argument if we were just comparing production, but we're comparing initial downhole pressures which --

A. Right.

Q. -- over a period of 20 years, essentially one 640-acre location away, we still have virgin pressure in a reservoir that you're telling us is in pressure communication, and I'm having a hard time accepting that argument, given what you -- I mean, I believed you about the well in Section 29, and then I got to thinking about what that meant --

A. Yeah.

Q. -- for wells in the other parts of the reservoir.

A. Right, right. Well, it depends upon what types of depositional environments are predominant in these wells and which area they are dominant. The way I have them

mapped would have a series of marine bar sands traversing the north part of Dos Hermanos field in a southwest-to-northeast orientation, punctuated in parts of the section by channel sands that flow, you know, perpendicular to them.

There is a very high probability, based on those predominant trends in that part of the field, that you're going to intersect the same types of sands in the proposed Edge location, and that's the possibility that I'm concerned about.

Q. Okay. I understand you've done a lot of research and a lot of writing on this. A 1000-pound pressure reversal between the upper and lower Morrows, is that common?

A. I've seen it happen -- you know, I agree, I've seen that happen before, particularly in the Atoka. You know, I've seen overpressured formation above normally pressured formation. I don't know how to explain it except that you have localized, confined reservoirs from place to place.

Q. It must be a real surprise to the driller when he comes across something like that.

A. Yeah, it must be, yeah, yeah. But it does happen.

CHAIRMAN FESMIRE: Okay, I have no further

questions.

Mr. Carr, do you have anything else?

MR. CARR: No, I don't.

MR. BROOKS: Mr. Chairman, if I may, I'd like to clarify one thing that everybody else may have caught but I'm a little confused about.

EXAMINATION

BY MR. BROOKS:

Q. As I understand, well number 5 was drilled in 1965; is that correct?

CHAIRMAN FESMIRE: Well number 5 in which --

MR. BROOKS: Well, it's the same numbers that are used on many of the exhibits. I'm right now looking at Edge's --

THE WITNESS: Yeah, '65.

MR. BROOKS: -- Exhibit Number 7.

CHAIRMAN FESMIRE: Yeah, May, 1965.

Q. (By Mr. Brooks) And when were wells 7 and 9 drilled?

A. Seven was --

MR. CREASEY: Seven was in March of 1974.

MR. BROOKS: And 9?

MR. CREASEY: And 9 was in April of 1972.

THE WITNESS: Completed in June.

Q. (By Mr. Brooks) And what about Number 3, then?

A. July of 1973, or thereabouts.

MR. BROOKS: Okay, thank you. Oh, I'm sorry, all these questions that I was asking are on this Exhibit Number 2 here, and I wasted some business time. My apologies.

THE WITNESS: Am I excused?

CHAIRMAN FESMIRE: Mr. Bruce, are we done?

MR. BRUCE: I have no additional questions of Mr. Mazzullo.

MR. CARR: Nor I.

THE WITNESS: Can I go now?

CHAIRMAN FESMIRE: Mr. Carr, your next witness? How are you doing? Would you rather --

COMMISSIONER BAILEY: How long do you expect?

MR. CARR: Oh, Mr. Williamson will be longer than Mr. Mazzullo, about an hour probably.

CHAIRMAN FESMIRE: Want to take a break or --

COMMISSIONER BAILEY: Sure, let's take a break.

CHAIRMAN FESMIRE: Okay. Why don't we take a lunch break and reconvene here at 1:15?

(Thereupon, a recess was taken at 12:07 p.m.)

(The following proceedings had at 1:16 p.m.)

CHAIRMAN FESMIRE: Now we will reconvene Cause Number 13,351, *de novo*, the Application of Edge Petroleum Exploration Company to restrict the effect of the special

rules and regulations for the Dos Hermanos-Morrow Gas Pool in Eddy County, New Mexico.

I believe, Mr. Carr, you had a new witness on the stand?

MR. CARR: Yes, Mr. Chairman, I do. At this time we call Roy Williamson.

CHAIRMAN FESMIRE: Mr. Williamson, you've been previously sworn?

MR. WILLIAMSON: Yes.

CHAIRMAN FESMIRE: Mr. Carr?

ROY C. WILLIAMSON, JR.,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your full name for the record, please?

A. Roy C. Williamson, Jr.

Q. Mr. Williamson, where do you reside?

A. Midland, Texas.

Q. By whom are you employed?

A. Williamson Petroleum Consultants, Inc.

Q. What is your current relationship with V-F Petroleum, Inc.?

A. As a consultant.

Q. Have you previously testified before the New Mexico Oil Conservation Commission and had your credentials as an expert witness in petroleum engineering accepted and made a matter of record?

A. Yes, I have.

Q. Could you review for the Commission your educational background?

A. Surely. I graduated from the University of Oklahoma in 1956 with dual degrees in geological engineering and petroleum engineering. After going into the Air Force for a couple years, I then went to work for Gulf Oil Corporation in Monahans, Odessa and Midland, and I remained with Gulf for about nine years.

And then in late 1967 I joined our predecessor consulting firm, which at that time was named Lybrock, Landreth, Campbell and Calloway. And I and two other partners bought that company a year later, and it was Bailey, Sipes and Williamson. And then we had Ed Runyon, we had several people that came in and joined the firm. But I run them all off and I'm the only one left, so it's Williamson Petroleum Consultants. And I've been consulting now since the late 1960s.

Q. Are you a registered petroleum engineer?

A. Yes, I am, in Texas and in Colorado.

Q. Are you familiar with the Morrow formation in

southeast New Mexico?

A. Yes, I am.

Q. Are you familiar with the Application of Edge Petroleum in this matter?

A. Yes, I am.

Q. Have you made an engineering study of the area that is the subject of this Application?

A. Yes.

Q. And are you prepared to share your work with the Oil Conservation Commission?

A. Yes.

MR. CARR: We tender Mr. Williamson as an expert witness in petroleum engineering.

CHAIRMAN FESMIRE: Any objection?

MR. BRUCE: No, sir.

CHAIRMAN FESMIRE: Mr. Williamson, you're so accepted.

THE WITNESS: Thank you.

Q. (By Mr. Carr) Initially, would you tell the Commission what you were asked to do?

A. I was asked to evaluate the technical presentation that Edge presented to the previous Examiner Hearing, and with the idea of trying to ascertain if that proposal would impair the correlative rights of V-F Petroleum.

Q. Mr. Williamson, let's go to what has been marked V-F Exhibit Number 3, and just identify this initially.

A. Okay, Exhibit 3 is an area that outlines the four sections.

Q. Before we do this, I think we need to orient the Commission as to what this exhibit shows.

A. Okay.

Q. The boundary, the dark hached line that goes across the bottom right of this exhibit that says "Dos Hermanos", that's not a pool boundary, is it?

A. That's not the pool boundary that we're dealing with, that's another boundary.

Q. The pool boundary is the four sections, 21, 22, 27 and 28, that are in the center of the plat; is that right?

A. That is correct.

Q. And then to the west of that, to the left, you have Sections 20 and 29, those are -- 29 being the section in which Edge is proposing to drill a well; is that correct?

A. That is correct.

Q. All right. Why don't you explain to the Commission what this exhibit is designed to show?

A. Okay, what -- I was kind of following on what Edge had said in the way of presenting radial drainage. I

wanted to see what a radial drainage pattern for various drainage areas would be at the two locations that have been discussed for the north half of Section 29, one being the 660 spacing and the other being a standard 1650 that is the standard for the Dos Hermanos field.

It's a little confusing, and I apologize for that. The next exhibit may explain it a little better. But if you look closely, you can see that there is a blue circle around both of those locations in Section 29. That's the first circle. And that encompasses 80 acres in area within that circle.

The next circle, which is a green circle, that incorporates 160 acres.

And then the red line or the outside line encompasses 320 acres.

On the Budge well in Section 21 I have just drawn the 80-acre and the 160-acre circle. We were getting too many circles here, so I did not draw another 320-acre circle there.

Q. What are the straight lines that run sort of northwest to southeast?

A. Okay, this is an assumed no-flow location. In other words, if we have two producing take-out points and we're dealing with a homogeneous, isotropic, totally equal reservoir and these wells are produced at the same rate,

there is some point that should be exactly halfway between them, where the pressure disturbance from the production from each well should meet. And what I have depicted here is a no-flow location, which is the -- you can see the no-flow was 660-foot location. That is basically halfway between the 660 location in Section 29 and the location of the V-F Budge well.

CHAIRMAN FESMIRE: Mr. Carr, may I ask a question on that?

THE WITNESS: Yes.

CHAIRMAN FESMIRE: That presentation, doesn't that assume equal flow rates and identical reservoir --

THE WITNESS: Yes, sir, it's purely hypothetical. It assumes the same thickness reservoir, same flow characteristics, same flow rates from the wells, et cetera.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: And then the lower line is the same no-flow boundary with the location in Section 29, being 1650 from the corner.

Q. (By Mr. Carr) Mr. Williamson, this basically is just a generic presentation that illustrates by moving closer to your neighbor than they are to you, you can gain an advantage if the reservoir characteristics are similar?

A. That is correct.

Q. In this Morrow formation we will not know what

the characteristics of the reservoir; is that right?

A. That is correct. I do not propose that I know that it's radial drainage or what the area that is drained is. This is just a graphical presentation of something that could be.

Q. Now, let me ask you something about the Budge well up in the southwest of Section 21. Questions were asked of Mr. Mazzullo today about that well. Do you have any information on that well?

A. Yes, I've seen some production rates on that well. It began production, I believe, on December the 4th of '04, and it's been producing somewhat in excess of 2 million cubic feet a day since then, other than one or two shutdown days where the gas buyer had some sort of a problem and the well was shut in for a day. But it's somewhere around 2000, 2200 MCF per day.

Q. In terms of calculating a drainage area for that well, can you do that now?

A. Not now, I don't know what the -- ultimate reserves are going to be for that well.

Q. Is it reasonable to think that it would drain 80 acres or more?

A. Oh, definitely. It appears to be a very good well.

Q. Let's go to Exhibit Number 4. What is this?

A. Okay, Exhibit Number 4 is an attempt to sort of clarify where all these circles go around the well. And again, the green circle in this case is the 80-acre drainage, the yellow circle is the 160 acres, and again for the location 660-660, the red line denotes an area of 320 acres. It's just a little bit of a blow-up of what we've been looking at on Exhibit 3.

Q. And again in this case, there's no attempt to anticipate or account for what may be the orientation or size of the individual sands in the Morrow formation?

A. That is correct, and the no-flow boundaries are again shown on here as described previously.

Q. Let's go to V-F Petroleum Exhibit Number 5. Would you identify and review that?

A. Okay, Exhibit Number 5 shows an elliptical drainage pattern which again, as I stated earlier, I cannot define for sure what the drainage pattern is. I do believe in looking at the way the field is oriented, the way the production has occurred, that these drainage patterns are going to be irregular and probably more elliptical than they would be radial. It would be almost impossible to consider this to be a perfectly radial drainage or, as far as that goes, a perfectly elliptical drainage.

But I think that this makes a lot of sense in that if you look at the field development, it's developed

in a northeast-southwest. And I know there's been a lot of discussion about whether these are channel sands or marine bars and how they were deposited, but I feel like this is a complicated enough reservoir that I don't think we can sit here on the top of the ground and define exactly what these drainage radiuses are going to be.

But again, if you'll look closely, you can see that there is a blue circle around each of the proposed locations -- or the identified locations, rather, in Section 29, and then there is a -- which is 80 acres, and then there's a green ellipsoid which is 160 acres, and again the red ellipsoid containing 320 acres is shown here.

Q. Is the orientation of these elliptical drainage areas consistent with the structure of this reservoir?

A. Yes.

Q. And it's consistent with the development of the reservoir?

A. That is correct.

Q. And it is -- is it, in your opinion, as logical as trying to map this northwest to southeast?

A. I think it's more logical, we have more evidence with the structure map that's been presented earlier by Edge, the oil-water contact that follows along the strike of northeast-southwest, and just looking generically at where the wells are developed, they're drilled in a

northeast-southwest direction.

Q. Mr. Williamson, let's go now to your next exhibit, Exhibit Number 6. Would you identify what that is?

A. Exhibit Number 6 is just, again, a blow-up of the elliptical drainage areas. And again, it's kind of hard to see what each of these colors mean, but we've basically got the 80-acre ellipsoid, the 160-acre and the 320-acre ellipsoid around the 660 locations and around the 1250 locations.

Q. And based on this interpretation, it is possible that wells drilled in the northeast of Section 29 could, in fact, drain significant reserves from the southwest of 21?

A. That is correct.

Q. What impact would this interpretation, if this is correct, have on the pressure data that's been discussed here today?

A. Well, the pressure data is somewhat of a question mark. I do believe, though, that the elliptical drainage pattern possibly can explain the fact that we don't have a depletion of pressure. If these ellipsoids are correct and that ellipsoid is also around the well in Section 28, if it's around the older well in Section 21, and even though this is a, quote, common source, we know it's that because we've got gas throughout the various

parts of the acreage and throughout the various intervals. So at some time in the past we do know that gas or hydrocarbons came into this area and were trapped.

So we know that they're a common source, but it's possible that with a defined elliptical drainage, that perhaps the pressure disturbance going at right angles to these ellipsoids is going to take a longer period of time than what we've seen. I can't guarantee that because I've not done any pressure pulse testing or anything like that in the reservoir. But the ellipsoid explains that better than a radial drainage pattern.

Q. Mr. Williamson, it's fair to say that no one in this room clearly knows what the drainage patterns that shape the drainage areas are in this formation?

A. That is correct.

Q. Because of the uncertainty, do you believe that a wholesale changing of the rules in the entire buffer zone, including Sections 20, 29 and 17 to the north, could pose a threat to the reserves that V-F has developed in the southwest of Section 21?

A. It certainly could. We have no way to really define what these drainage patterns are. We're looking at closeology. If someone wants to get into your drainage pattern, obviously they're going to want to get as close to it as they can, and it is my opinion that to change the

rules to as presented by Edge would present a significant risk to the correlative rights of V-F Petroleum.

Q. Mr. Williamson, today we're looking at what for us is a new location for the Edge well in Section 29, 710 from the north line, 1260 from the east line. The movement of that location, has that changed the position of V-F Petroleum in this case?

A. Not at all. The Application should still be denied, because the Application would allow for 660 drilling out of the corner. I think it's been presented earlier that there could be a couple of wells in Section 20 and another well in Section 17 that could drill a 660 out of the corner, so you could have four wells that are only 660 feet from Section 21 that could certainly create drainage.

Q. And our well is at 1650?

A. And our well is 1650, so there's no way to compete with that.

Q. Would it make any sense to drill an additional well?

A. I don't think so, because if my elliptical drainage pattern is correct, the Budge well will drain the southwest quarter, and I certainly would not recommend going, spending another -- whatever, $1.5 million, $1.6 million to try to match the 660 offsets in the adjacent

acreage.

Q. The testimony today is that Edge doesn't think its well is going to impact the interests of V-F in Section 21. You were present for that testimony?

A. Yes.

Q. Based on the character of this reservoir and the things that we don't know about it, can that be stated with any certainty?

A. No, it can't. There have been a lot of estimates, decisions and could be's that have been talked about this reservoir. One thing is that the drainage pattern was based upon the fact that the lower and middle Morrow each contributed equally to the production. Therefore the net pay would be something that you could determine from a radial -- to determine a radial drainage.

We don't know where the gas came from. We have an idea, but we have not had any selective testing, we've not had any selective pressure measurements, so we don't know which zones are really contributing, what -- some zones could be draining a much larger area than is depicted here, and some could be draining a smaller area.

Q. Mr. Williamson, if any of the wells that could be drilled, if this Application is granted, 660 off our line, those being the wells in 17, 20 and 29, any one of those wells, could any one of them create a drainage situation

where V-F couldn't effectively compete for the reserves?

A. That is right. They're pretty well committed to their $1.6-million well. They've got a hole in the ground and they can't move it, so they're committed.

Q. And if this Application is approved, V-F couldn't even object to those other locations, could they?

A. No.

Q. They're pre-approved by this Application?

A. That is correct.

Q. Edge is here today requesting permission or seeking authority for an alternative location in Section 29, correct?

A. Correct.

Q. Do we even know what that location is?

A. No.

Q. Is it possible in your opinion that a well at any one of these locations could, in fact, drain 314 acres, the number that was initially estimated by Edge for the discovery well in this pool?

A. I think it's possible, yes.

Q. And whether it's radial or elliptical or northwest-southeast or northeast-southwest, any of those patterns could extend significantly into Section 21, could they not?

A. That is correct, we're dealing with a black box,

and we don't know exactly where the drainage patterns are. And so the only way to protect correlative rights is to have everybody live by the same rules.

Q. Did you estimate the drainage radius for a well -- or for the well in Section 28 with the 315-acre drainage circle as originally interpreted by Edge?

A. Yes.

Q. And what was the distance of that drainage radius?

A. The radius of a circle containing 315 acres is 2090 feet.

Q. And if it's elliptical, it could extend much farther than that off to the northeast or the southeast; isn't that correct?

A. That is correct. And you can see that by looking back at Exhibit 6 and seeing what a 320-acre drainage area, even though that's five acres more than 315, but it shows -- if that is a correct representation of the drainage area, it shows where it can go into Section 21.

Q. If we use a radial drainage pattern, a 2090-foot drainage radius, and if Edge drills 12,060 feet [*sic*] from the line, as they've suggested today, how far would that drainage radius extend onto the offsetting property?

A. It would be the difference in 2080 and 1260, or 830 feet.

Q. If they were back a standard location, what would that drainage extension be?

A. That would be 2090 minus 1650 or 440 feet, about half as far.

CHAIRMAN FESMIRE: Aren't we going at a diagonal?

MR. CARR: No, this would be going --

THE WITNESS: No, this is just --

MR. CARR: -- this would be going straight into the Section --

Q. (By Mr. Carr) Let's look at it going on a diagonal. How far on a diagonal is our location in Section 21 from the Edge tract in 29?

A. It's 2428 feet.

Q. How close would Edge be to us at the new location 710 from the north, 1260 from the east?

A. They would be 1446 feet.

Q. Approximately 1000 feet closer?

A. Correct.

Q. Under the proposed rules, how close could they be to us if they were at a 660 location?

A. The diagonal would be 933 feet.

Q. So they could be 933 feet from us, and we would be 2428 feet from them?

A. That is correct.

Q. And we know that, we can look at the surface?

A. Right.

Q. And we can't determine exactly what's happening in a reservoir?

A. That's correct.

Q. We're here today looking at an Application to get one location approved for Edge, correct?

A. Correct.

Q. And yet the net fallout on that is four locations offsetting V-F?

A. That is correct.

Q. A well that we have drilled and spent $1,600,000 on?

A. Correct.

Q. A well that's going to drain more than 80 acres?

A. Correct.

Q. We're going to be potentially offset by substantial amounts of drainage?

A. Correct.

Q. If this Application is granted, we will not be allowed to object to those applications?

A. That is correct.

Q. And unlike what the Examiner tried to do, these other locations won't even be evaluated on a well-by-well basis?

A. That's right.

Q. And V-F will be penalized for playing by the rules?

A. That is right, they're --

Q. Were Exhibits 3 through 6 prepared by you?

A. Correct.

MR. CARR: I move the admission of Exhibits 3 through 6.

CHAIRMAN FESMIRE: Any objection?

MR. BRUCE: (Shakes head)

CHAIRMAN FESMIRE: Exhibits 3 through 6 will be admitted.

MR. CARR: That concludes my direct of this witness.

CHAIRMAN FESMIRE: Mr. Bruce?

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Williamson, are you aware that in the first hearing Mr. Mazzullo testified that the V-F Budge well was primarily a Strawn test, and that was the basis of the location selection?

A. I don't see how that has any factor. We're dealing with a Morrow location here, we're dealing with the rules that would command the location of a Morrow test.

Q. And V-F drilled on down to the Morrow, and you've just testified they're making a well at 2.2 million a day.

Are they complaining about that?

A. I don't think so.

Q. Have you been given any information on the bottomhole pressure of the Budge Federal well?

A. No, to my knowledge there has not been a pressure measurement taken.

Q. Now, the Budge well has been -- without looking at the maps, the Budge well has been producing now for going on four months?

A. Well, December, January, February -- a little over three months, three and a half months.

Q. Okay. And because of the potash and because of this hearing, it would probably be several months more before -- even if Edge got approval to drill at the location that it talked about today, V-F might well have been producing for six or eight months by the time a well was drilled and completed; is that correct?

A. You can make that assumption.

Q. What effect would that have on your various no-flow boundaries?

A. Well, if the Edge well and the Budge well are in the very same drainage pattern --

Q. With an homogeneous reservoir.

A. With what?

Q. With an homogeneous reservoir.

A. Right, it would remove the no-flow boundary toward the Edge well.

Q. In just taking your Exhibit 4, for example -- Let's just look at -- if I'm reading this right, the dark green is an 80-acre radial drainage, and the light green is 160 acres?

A. That's correct, or the yellow.

Q. Now, from the distances you just gave me, assuming Edge does get permission to drill at its location 710 feet from the north line and 1260 feet from the west line, assuming radial drainage, that would basically put the 160-acre drainage all the way into Section 29; is that correct?

A. It might. I haven't made that calculation.

Q. Well, you've said that 80-acre drainage is a radius of 1053 feet, 160-acre drainage is probably -- and 320 acres is 2090 feet, so I'm guessing drainage is about 1500 feet? I don't have a calculator with me.

A. I'll tell you in just a moment. 160-acre drainage area has a radius of 1489 feet.

Q. Okay, so 1489 feet. So if Edge is going to move its well another approximately 600 feet to the west, then all of a sudden that 160-acre drainage is completely within Section 29 and partly within Section 20, and none of it is on Section 21; is that correct?

A. That would be correct, if that is the drainage area of the well.

Q. And then further, like you just testified, if V-F is able to produce its well for six, eight, nine months without any countervailing production by Edge, what you're looking at is the actual no-flow boundary is on Section 29; wouldn't that be correct?

A. Oh, I couldn't say that without making a bunch of assumptions on the reservoir, rates --

Q. Well, that's what you've done with your entire testimony, you've said that this is -- in answer to a question by Mr. Carr, you've said all of these things are something that could be --

A. Well, I said if you assumed a homogeneous, isotropic reservoir with consistent rates between the two wells, then that no-flow boundary would be halfway between them.

Q. And you have -- other than the pressure data submitted by Edge, you have no basis on which to say that there's any communication between any of these wells, because all these reservoir pressures, all these bottomhole pressures, are uniform, even 40 years after the first discovery well; isn't that true?

A. That apparently is true. What I would say is, though, why speculate on what might be in the reservoir by

making two sets of rules for two operators in the same field?

Q. From an engineering standpoint, is this Morrow reservoir in this pool and the adjoining Golden Lane Pool any different from any other Morrow reservoir in Eddy County?

A. Well, that's a pretty broad statement but probably not, since the Morrow covers southeast New Mexico.

MR. BRUCE: No further questions.

CHAIRMAN FESMIRE: Commissioner Bailey?

COMMISSIONER BAILEY: (Shakes head)

CHAIRMAN FESMIRE: Commissioner Chavez?

COMMISSIONER CHAVEZ: I don't think I have any questions, thank you.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Williamson, the Section 29 well, the one that was completed and produced out of the upper Morrow --

A. Uh-huh.

Q. -- do you have any information as to what the original bottomhole pressure was in the lower Morrow?

A. As a matter of fact, I do. In *IHS*, which is a data service that records information of public record on the particular well, this has shown that the initial bottomhole pressure was 6162.

Q. In the lower Morrow?

A. Well, I don't know, I haven't looked at where it's completed. It just says Morrow.

Q. It was produced out of the upper Morrow.

A. Okay, I don't know where that pressure was measured. This doesn't tell me.

Q. Okay. One of the things that you and Mr. Mazzullo have testified to is that the formation is a common source of supply, and you mentioned that a couple of times in your testimony. To me, a common source of supply would indicate that there would be pressure relatively quick, pressure communication between the wells, but we don't see that out here.

A. That's not necessarily true, because -- we know it had to be a common source, because wherever the gas came from -- and I'm sure we could spend three days deciding where the gas came from that got trapped here, but it had to move through all parts of this reservoir to be over what has been developed so far, and we don't know how far that development is going to go.

Q. Right. And in terms of geologic terms, there's not a doubt in my mind that it's a common source of supply. But I think when we talk about a common source of supply, or the people in this room, for the purposes of what we're examining here, a common source of supply probably would

indicate pressure communication between the wells. That is, the Morrow reservoir here is for all practical purposes one reservoir. Yet we don't see the pressure depletion that we would expect.

A. Well, that is correct, and I think what you've got to say there is that we haven't got enough wells drilled in here to really understand what this reservoir looks like. It went for years before V-F drilled their well, so obviously nobody thought there was anything left.

So until we get additional development and get some pressure testing and get some other reservoir data that we don't have now, there's no way we can describe what's going on in the reservoir. It's just that -- my opinion is that if we feel like that we should have infill drilling, let's do that under a common set of rules that everybody can live with. Let's don't put two sets of rules out there which would allow somebody to drill closer to my well than I can drill to their well. And with the uncertainty that we've got, I think we would be very remiss to set a precedent here, not knowing what we've got in the reservoir.

Q. Okay, I think this case could conceivably be decided on one of two -- or perhaps more, but what I see it as, is, there are one of two questions: We either have to decide that geologically it's either a coastal parallel-

type deposit or a channel sand running perpendicular to the coast, or it has to be decided on some other issue.

Is there anything in your work that would indicate the depositional environment? And I know that you are basically committed to the northeast-southwest, one direction, and they're committed to the other.

A. Yeah, northeast-southwest --

Q. In making your decision, did you follow the geologist's recommendation, or did you do anything independent to determine the depositional environment?

A. I didn't do anything other than read some articles -- Mr. Mazzullo had published some -- and as I mentioned earlier, the structure map presented by Edge is -- described for that structure is northeast-southwest, the gas-water contact is northeast-southwest, the wells that have been drilled so far are generally in a northeast-southwest direction, so just from an intuitive standpoint it makes me believe that that's where the drainage direction is coming.

Q. Okay. The Budge well is making between 2 and 2.2 million a day. Do you happen to know what flowing pressure they've got on that well now?

A. No, I don't. I haven't studied the well, I haven't even seen the logs, so I don't know anything about the well other than the rate. I know that it's apparently

a pretty good well.

Q. You say apparently a pretty good well. Do you have any information that would indicate that the flowing tubing pressure is staying relatively constant or falling or anything?

A. No, I haven't studied that. I've just -- going on the rate, you know, and it's been pretty consistent since it was completed. So that's a pretty positive sign.

CHAIRMAN FESMIRE: Okay, I have no further questions.

Commissioner?

COMMISSIONER CHAVEZ: Yeah, I do.

EXAMINATION

BY COMMISSIONER CHAVEZ:

Q. By presuming for the purposes of the radial lines that you drew to come up with your no-flow boundaries --

A. Uh-huh.

Q. -- you assumed that these were a homogeneous reservoir, and the wells were identical in production capacity and these type of things, right?

A. Right, homogeneous, isotropic, same permeability, same porosity, same flow rates, et cetera.

Q. In this type of analysis, though, it doesn't really matter how far apart the wells are. It could be two miles or 20 miles apart, your no-flow line would still

be --

A. That's very true.

Q. -- halfway between?

A. Correct.

Q. In order to give those line meaning, though, wouldn't you really have to look at real data to see where there isn't any homogeneity, where there are differences, what actual pressures are?

A. Oh, absolutely.

Q. And isn't that what the Commission is asked to do now, to look at real circumstances, real pressures, real flow rates, to make a decision where things are not homogeneous?

A. Well, that is true. And I wish -- as a reservoir engineer there's a lot of things I'd like to have V-F do and spend thousands of dollars getting the data. But we don't have any pressure on their well, we don't have a well drilled in 29, we don't know what it's going to encounter. So all we can do is make an intuitive guess, based on the information we have. And maybe down the road when we get more wells drilled and get some testing done, we can come back and define more precisely what's happening.

But I just think it's important that we protect correlative rights with the same set of rules for the existing development and what might be future development.

COMMISSIONER CHAVEZ: Thank you, that's all I have.

CHAIRMAN FESMIRE: Mr. Bruce?

FURTHER EXAMINATION

BY MR. BRUCE:

Q. I did have one question, Mr. Williamson. You said it would follow along with the structure, the axis of drainage. Looking at the chart behind Mr. Carr there, in this immediate area it's really an east-west structure, it's not a northeast-southwest structure?

A. Well, not to throw stones at Mr. Mazzullo or to your exhibit, but you know, these lines are interpretive, and the general direction is northeast-southwest. So you need to pick one little leg where it's something different.

Q. Well, by the same token, on your radial drainage maps you use that to justify the lack of -- or the constant pressure among these wells, but the same could be true if you oriented these northwest-southeast. That way the well in Section 28 would have no effect on the Section 21 acreage; isn't that correct?

A. Say that again, please?

Q. Your testimony -- and I'm summarizing and you can correct me if you want, but you said that the northeast-southwest drainage, nonradial drainage, the nonradial --

A. Uh-huh.

Q. -- would support the fact that 20, 30 years after the fact there's no pressure differentials between these wells. But if you took your nonradial drainage, flipped them 180 degrees, the same thing could be said. Or excuse me, 90 degrees.

CHAIRMAN FESMIRE: I'm having the same problem, so I won't --

Q. (By Mr. Bruce) But if you flip that 90 degrees, then the well in Section 28 would show no effect on Section 21, the well in the southeast quarter of Section 21 would show no effect on the well in the southwest quarter of Section 21, and there would be no effect by any of those wells on the well in Section 22.

A. Well, that's entirely possible. But once you drill a well, you can't move it. Once you have a set of rules that allows somebody to corner-shoot you, then there's no way out of jail.

So we don't know where it is. We have some indication where it might be. And I don't think the rules should be changed to allow one operator to get close to the V-F lease.

MR. BRUCE: Thank you, Mr. Chairman.

FURTHER EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. Williamson, I finally put together the

thought I was trying to make a little while ago.

There are two ways we can decide this. We can decide it on the geologic evidence which is, you know, a parallel depositional environment as opposed to a perpendicular-to-the-coast depositional environment, or it seems like we have an issue of waste versus correlative rights. If we are draining sufficient reserves for it to be an issue, then we have to decide whether we -- which application will prevent waste and which application -- or which position will protect correlative rights.

When we talk about drainage, if V-F -- I mean, if Edge makes a well, a sufficient well, a good enough well to do it again and again and again, they can basically offset your client on -- what did we count up, 1, 2, 3, 4 -- at least four locations?

A. Well, if they acquire those other leases, and I understand that they are trying to do that. I don't know where, when or why, but that could be the case.

Q. On the other hand, you know, if that doesn't occur, it would appear under your scenario that at least for most of those wells we're going to be leaving some reserves in the ground; is that correct?

A. Well, I don't have any objection to looking at and studying an infill drilling program here, looking at what we see, which are great variances in these

hypothetical drainage areas, and I think it might be well that we do study that.

But what I'm saying is that that infill development should be under the same rules and regulations for everyone, not two sets of rules.

CHAIRMAN FESMIRE: Okay, that's all the questions I have.

Mr. Carr?

MR. CARR: No further questions.

CHAIRMAN FESMIRE: No further questions.

With that --

MR. CARR: Can you stand a closing argument? I know you're sick.

CHAIRMAN FESMIRE: I was hoping to bluff you out of it.

Yeah, I think we probably need one.

Mr. Bruce, would you like to give a closing --

MR. CARR: Well, Mr. Bruce wants to go last. He'll have a different spin on things.

CHAIRMAN FESMIRE: Okay, Mr. Carr?

MR. CARR: Mr. Chairman, closing argument is an opportunity for the lawyers to come before you again and argue both the facts and the law.

There are several things I think are important, at the end of this hearing, to call your attention to. And

I think you're correct, Mr. Chairman, I think you decide the case from the geologic evidence or you look at waste and correlative rights.

But I would suggest to you, it isn't an election. By law, you're allowed to make -- you're charged with preventing waste and protecting correlative rights.

Look at the geological presentation here. We have radial drainage from Edge. And they say, Well, if we knew the size and shape of the reservoir it might be different.

And then you have V-F, and they say, Well, if you look at radial drainage this is what it is, but you have to assume all kinds of things and assume and assume and assume. And we know, and we know, and we know, that's wrong, wrong, wrong. And we don't know the orientation, we don't know the shape. All we know is, there have been some wells out here that have been pretty darn good, and you drain some pretty large areas.

And I suspect that if you sit back and try and sort this geology out, at the end you're going to have what we've had all day, geology, and it is going to go every possible direction.

But by statute you're charged with preventing waste and protecting correlative rights. I think the waste issue that hangs over this dispute is, what is the

appropriate density in this area? V-F couldn't possibly stand here before you and argue for 640-acre development patterns in Section 21. They have two wells.

When the Examiner ruled that you should develop the offsetting acreage on 320-acre spacing unit, we had no objection with that, we had no objection to infill wells on 320-acre units, because basically what we do know is, there is not sufficient drainage to affect 640 acres.

And then we get to the correlative-rights issue. And I think it's important to go back to sort of step one and remember what correlative rights is. It's defined by statute. It isn't that you get to produce six months ahead of me so you got your rights, it isn't measured in volume, it isn't in MCF, it isn't a barrel. It's an opportunity. It's an opportunity to produce your just and fair share of the reserves in the pool.

Every day is a new world with correlative rights. You have an opportunity every day to be out there drilling and doing it. And if I'm there six months ahead of you, that does in no way change the fact that you still have your opportunity, the opportunity you've always had, to go out and develop the offsetting resource.

But it's more important than that, because by statute it tells you what you're allowed to do, what you're guaranteed the right to do. It says you -- Correlative

rights means the opportunity, so far as it is practicable to do so, to produce without waste, without waste, your just and reasonable share of the reserves in the pool, being -- and this is important -- being an amount that is under your tract, compared to the recoverable reserves. The recoverable amount under your tract, compared to the recoverable reserves in the pool.

Now, if I come before you as V-F, by statute I'm told the Oil Commission is going to give me the right to produce without waste what's under my tract. And I come to you and I drill a well consistent with the rules. And we're going to hear all sorts of stuff about, Well, maybe it was projected to the Strawn.

I'll tell you, the truth is, we drilled a well to the Morrow, spent $1.6 million on our acreage that we believe will produce the reserves under our acreage. And today we're asking you simply one thing, don't take that away.

We don't know if it drains north, south, east, west, whatever direction. We do know it drains.

And what we do know is, if you grant this Application as it stands before you, they're almost three times closer to us than we are to them. Ask yourself, would you be happy with that, if you had just spent $1.6 million to produce what's under your tract?

And any one of those wells might drain right on to me. It might be in the same ellipse, and it would take from me reserves that I have developed. And if you grant this Application, it changes all of these. It authorized locations in 17 and in 20. I don't even have a chance to object. It's done. And it's done not on any evidence that relates to a location in 20 or 17, it's based on generic evidence which at the core is completely confused.

So I would suggest to you that when you retire -- We think this is a correlative-rights case, and we think you could issue an order. We think it ought -- if you're going to go to greater density, you ought to authorize infill drilling in the pool as well, to keep the equities the same in there. You wouldn't be having two spacing units and somebody having shared in one and not in the other.

But that issue is pretty simple, and it's pretty clear on what we know. It's real sticky when it gets to correlative rights.

And you -- Mr. Chavez pointed out that the no-flow boundary can move all over the place, depending on the characteristics of the reservoir. Absolutely true.

But on this record, maybe radial, maybe north-south, east-west, whatever it is, I would suggest that some generic assumption might be almost as good as the data as

we know it.

But the case that we believe should be done is that when it comes to changing the spacing so that we, after we have lived with the rules, can be drained, that it ought to be on a well-by-well basis.

Now, Jim is going to get up here, and he's going to say, All these Morrow reservoirs look the same, Mr. Williamson admitted it, so we should just have a wholesale changing of the rules.

But -- The geology may be the same, but the way you have allowed people to develop this reservoir is not. And in those other pools, everybody has always been under 320. And everyone had the rules changed at the same time, and nobody went out and spent $1.6 million, only to have the game rules change.

And that takes us, I think, to another central question and that is, why are we here? Why are we looking at changing the rules in the buffer area around this pool, instead of looking at an exception location for their well? Why?

If their well isn't interfering with us, that's what the issue should be. If they need a nonstandard unit, that's what the issue should be. But they don't want to bring that to you. They apparently don't want to notify offsets, or they don't want a penalty because they're

closer. But for some reason, they have elected not to go within the rules.

You know, we got an unorthodox location up in 22, and we came in under the rules, we filed an application, and we got an NSL.

But they don't want to do that. For some reason, they want to change things in a much broader way.

And the bottom line is, the result of that change not only authorizes them to drill at a location not currently allowed by the rules, a location that would be unstandard -- nonstandard -- we don't even know where it is -- and then it would also open up locations around us, and you deny us the chance to come and even tell you, you know, that they -- that Edge, just out in the north half of 29, shows that these locations immediately offsetting us in Section 20 are going to drain from us, and we've got a well that we've drilled under the rules, and that no-flow boundary isn't going to be on the lease line but significantly on our acreage.

And when that happens, you haven't met your statutory duty to give us an opportunity to produce our fair share of what is under our tract. That's why we believe this is a correlative-rights case. Greater density, go for it. But look at these well locations, as the Examiner did, on a well-by-well basis. Don't change

the rules in 7000 acres because one person with 240 wants an unorthodox location but wants to put a sheepskin over it and send it in.

CHAIRMAN FESMIRE: Mr. Bruce?

MR. BRUCE: May it please the Commission, let's look at the map behind Mr. Carr there, and let's assume we're not here today on this pool rules case, that everything out here is statewide rules.

Under the statewide rules, you can drill 660 feet from a quarter-section line, so let's say V-F owned the -- whether you want to take the south half of Section 21 or the west half of Section 21. It could have picked its preferred geologic location.

And let's say it drilled at its preferred geologic location, 1650 feet from the south line and six hundred and -- I mean, 1650 feet from the south line and 1650 feet from the west line. It happens all the time, it happens very day in New Mexico. Does that give them a right to complain when somebody in Section 20 wants to drill 660 feet from their line? Of course it doesn't. That's what the statewide rules allow. What's wrong with it? Especially considering -- and the only thing I can fathom from this is, V-F is ticked off that it got a 2.2-million-a-day well. I just don't see this.

I won't rehash my opening argument, but I will

rebut some of Mr. Carr's comments and point out the critical facts.

V-F's position is that Edge is doing this wrong, it should seek an unorthodox location in the north half of Section 29.

But why do that? I would have to point out, as Mr. Carr alluded to, that I would have to seek a nonstandard unit as well as an unorthodox location. But since the south half of Section 29 has already been condemned by a noneconomic or a noncommercial Morrow well, why should we move forward along that line and if an NSP, nonstandard unit, isn't granted, share production with condemned acreage? That makes no sense.

More importantly, the evidence shows that the Morrow wells in this area drain substantially less than 320 acres, generally in the range of 40 to 80 acres.

V-F's geologist said that wells outside the four sections should be developed on 320 acres. In other words, statewide spacing. We think that's the end of the story.

But V-F then says, Well, 320-acre spacing is fine, but wells in the adjoining 12 sections must be set back 1650 feet from these four sections. They do this based purely on speculation.

As Mr. Williamson said, all of his testimony is based on something that could be. The speculation includes

that this Morrow reservoir is one big tank, one big homogeneous tank. Speculation on a northeast-southwest-trending reservoir. Even though Mr. Mazzullo did say that only a portion of the Morrow may have a northeast-southwest reservoir, what's the rest of it under? Speculation.

Speculation that the well in the southeast quarter of Section 29 was drained by the well in Section 28. With respect to that, if you just look at the cross-section that we've presented, if you look at the well logs you can see that the lower and middle Morrow are tight. That is the reason that well didn't produce from the lower and middle Morrow.

Speculation further that the wells in the southeast quarter of Section 21 and the southwest quarter of Section 2 [*sic*] may have been prematurely abandoned. Again, addressing that point, those wells produced for over 30 years. I don't think that's premature abandonment.

The hard facts, however, show that the initial well in this pool, drilled in 1965, had a bottomhole pressure of 5000 p.s.i. That's the only hard fact we have.

Nine years later, the first well in Section 21 had 5000 p.s.i., and that well is located directly northeast of the first well, so if there's a northeast-southwest-trending reservoir, it should have shown at least some pressure depletion.

The well in Section 22 drilled in 1972 had a bottomhole pressure of 5000 p.s.i.

And then in 2004, 40 years after the initial well was drilled, we have another well with a bottomhole pressure of 5000 p.s.i.

V-F ignores this data. Or more importantly, they don't even tell their witnesses what the data is. They're failing to provide the data that might support their case. But the fact of the matter is, the only hard data we have is the pressures out here from quarter section to quarter section to quarter section are all 5000 p.s.i., regardless of when the wells were drilled. The only conclusion you can draw is that the reservoir is not continuous, drainage is not northeast-southwest, and there is no pressure drawdown between wells as close as 1600 feet apart. Based on this, I think the calculated drainage shown on Edge's maps is proper, probably 40 to 80 acres out here.

I'd also point out that the wells Mr. Mazzullo said were prematurely abandoned, if you look at those wells they did produce 1.9 BCF, 1.2 BCF, they were not poor wells, and again there's no evidence in the record that they were prematurely abandoned.

V-F says that a 1650-foot setback is required because it complied with the pool rules. Well, to a certain extent yes. But those rules in the pool allow one

Morrow well per section. In both sections that they operate, they've attempted -- they've either applied for or have drilled two Morrow wells, and when necessary it applied for an unorthodox location in Section 22 based on geology. And that is in Case Number 12,746 by Order Number R-11,692, and I would ask that the Commission take administrative notice of that order.

Certainly when it suits their purposes, they're more than willing to fiddle with the pool rules to get extra wells on a section or to get unorthodox locations.

What Edge has done is come before the Commission to harmonize the rules in the area outside of these four sections with statewide rules.

My question is, who is harmed by these statewide deep gas rules? The answer is, no one. I mean, if someone is harmed by 320-acre spacing out here and the normal setbacks, then I think the Commission had better set another hearing to reconsider the pool rules it enacted four or five years ago allowing infill drilling and allowing 660-foot setbacks.

Both V-F's witnesses say this is a typical Morrow reservoir. Changing the rules outside of these four sections will benefit both the State and operators by allowing flexibility in well locations, especially considering the problems with potash in this area.

The fact of the matter is, V-F drilled its well in the southwest quarter of 21 at its preferred geologic location. And, good for it, it made a good well.

Now it's attempting to hold every other operator in this 7000 or 8000 acres hostage to antiquated pool rules in order to protect its one well.

The fact is, Edge's well at any standard location in the north half of Section 29 will harm V-F.

If the operators in the four sections want one well per quarter section and 660-foot setbacks, we have no objection. Actually, as I said in the opening, that's the proper thing to do. That's what was done in the McMillan Morrow and the Catclaw Draw Morrow and several other Morrow pools, leaving 640-acre spacing in effect as to certain limited sections to protect existing equities, but otherwise loosening up the pool rules so everybody can drill under more or less statewide conditions.

Edge requests that you limit the effect of the Dos Hermanos-Morrow Pool rules to the four sections and let everything outside it be developed on statewide rules. That's the only way to prevent waste and protect correlative rights.

CHAIRMAN FESMIRE: Thank you, Mr. Bruce.

At this time we're going to take Cause Number 13,351 under advisement. I intend, barring the health of

the other Commissioners, to deliberate on that this afternoon, but I think we need to take a few minutes and dispose of the other items on the agenda before we do the deliberations.

(Off the record at 2:17 p.m.)

(The following proceedings had at 2:19 p.m.)

CHAIRMAN FESMIRE: Okay. At this time we should go into closed session.

MR. BROOKS: Yes, we need a motion to go into executive session.

COMMISSIONER CHAVEZ: I move we go into executive session.

COMMISSIONER BAILEY: I second.

MR. BROOKS: We need to state the purpose for going into --

COMMISSIONER CHAVEZ: For the purpose of discussing Case 13,351.

COMMISSIONER BAILEY: I second.

CHAIRMAN FESMIRE: All those in favor?

COMMISSIONER BAILEY: Aye.

COMMISSIONER CHAVEZ: Aye.

CHAIRMAN FESMIRE: All those opposed? The ayes have it.

At this time we will go into executive session for the sole purpose of deliberating on Cause Number

13,351.

(Off the record at 2:20 p.m.)

(The following proceedings had at 2:53 p.m.)

CHAIRMAN FESMIRE: Okay, let's go back on the record. Let the record reflect that it's five minutes till 3:00 in the afternoon, and during the executive session --

MR. BROOKS: First I believe we have to have a motion to resume public session.

CHAIRMAN FESMIRE: Ah, okay.

COMMISSIONER CHAVEZ: I move we resume public session.

COMMISSIONER BAILEY: I second.

CHAIRMAN FESMIRE: Having --

MR. BROOKS: I'm not certain of that, but I'd rather risk doing it than risk not doing it.

CHAIRMAN FESMIRE: Having heard the motion and second, all those in favor?

COMMISSIONER BAILEY: Aye.

COMMISSIONER CHAVEZ: Aye.

CHAIRMAN FESMIRE: All those opposed? The motion carries, we're going back into public session.

During the executive session, the only thing that the Commission discussed was Cause Number 13,351. We've reached a decision. I'm going to ask Counselor Brooks, for the benefit of the record, to state his understanding of

the decision that we've reached.

MR. BROOKS: Okay, my understanding of the decision of the Commissioners was that the Application of Edge Petroleum would be granted to the extent of changing -- confining the pool rules, the special pool rules for the Dos Hermanos Morrow Gas Pool, to the area within the boundary of the Dos Hermanos Gas Pool, which is Sections 21, 22, 27 and 28 of Township 20 South, Range 30 East, with the exception that in the area within one mile of the pool boundaries no well can be drilled within 1650 feet of the outer boundary line of the Dos Hermanos Pool.

CHAIRMAN FESMIRE: And I'm going to ask Counsel Brooks to draft an order to that effect, to be acted upon at our next meeting. Is there --

COMMISSIONER BAILEY: Good.

COMMISSIONER CHAVEZ: Yeah.

MR. BROOKS: Very good.

(Thereupon, these proceedings were concluded at 2:56 p.m.)

* * *

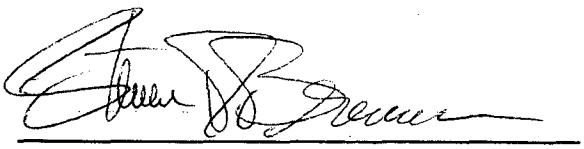
CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Commission was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL March 12th, 2005.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006