STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	CASE NO. 11,724
APPLICATION OF GILLESPIE-CROW, INC., FOR UNIT EXPANSION, STATUTORY UNITIZATION AND QUALIFICATION OF THE EXPANDED UNIT AREA FOR THE RECOVERED OIL TAX RATE AND CERTIFICATION OF A POSITIVE PRODUCTION RESPONSE PURSUANT TO THE "NEW MEXICO ENHANCED OIL RECOVERY ACT", LEA COUNTY, NEW MEXICO	

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS (Volume I)

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

May 15th, 1997

Santa Fe, New Mexico

This matter (Volume I) came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, May 15th, 1997, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

May 15th, 1997
Examiner Hearing
CASE NO. 11,724 (Volume I)

* * *

E X H I B I T S (Volume I)

Applicant's/Enserch	Identified	Admitted
Exhibit 1 (GCI)	12	24
Exhibit 2 (GCI)	12	24
Exhibit 3A (Enserch)	13	24
Exhibit 3B (Enserch)	14	24
Exhibit 4A (Enserch)	14	24
Exhibit 4B (Enserch)	15	24
Exhibit 4C (Enserch)	15	24
Exhibit 4D (Enserch)	16	24
Exhibit 5A (Enserch)	17	24
Exhibit 5B (Enserch)	17	24
Exhibit 6 (GCI)	64	92
Exhibit 7A (GCI)	66	92
Exhibit 7B (GCI)	66	92
Exhibit 8A (GCI)	67	92
Exhibit 8B (GCI)	69	92
Exhibit 9 (GCI)	71	92
Exhibit 10 (GCI)	72	92
Exhibit 11 (GCI)	73, 75	92
Exhibit 12 (GCI)	74	92
Exhibit 13 (GCI)	75	92
Exhibit 14 (GCI)	76	92
Exhibit 15 (GCI)	77	92
Exhibit 16 (GCI)	77	92
Exhibit 17 (GCI)	81	92
Exhibit 18 (GCI)	89	92
Exhibit 19 (GCI)	120	123
Exhibit 20 (GCI)	120	123
Exhibit 21 (GCI)	120	123
Exhibit 22 (GCI)	121	123

(Continued...)

E X H I B I T S (Continued)

Applicant's/Enserch	Identified	Admitted
Exhibit 23 (GCI)	121	123
Exhibit 24 (GCI)	122	123
Exhibit 25 (GCI)	122	123
Exhibit 26 (GCI)	122	123
Exhibit 27 (GCI)	123	123

* * *

Yates/Hanley	Identified	Admitted
Exhibit 22	24	-

* * *

A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

JAMES G. BRUCE, Attorney at Law
612 Old Santa Fe Trail, Suite B
Santa Fe, New Mexico 87501
P.O. Box 1056
Santa Fe, New Mexico 87504

FOR ENSERCH EXPLORATION, INC.:

MILLER, STRATVERT and TORGERSON, P.A.
150 Washington
Suite 300
Santa Fe, New Mexico 87501
By: J. SCOTT HALL

FOR HANLEY PETROLEUM, INC., YATES PETROLEUM CORPORATION and DAVID PETROLEUM CORPORATION:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

FOR SNYDER RANCHES and LARRY SQUIRES:

KELLAHIN & KELLAHIN
117 N. Guadalupe
P.O. Box 2265
Santa Fe, New Mexico 87504-2265
By: W. THOMAS KELLAHIN

* * *

WHEREUPON, the following proceedings were had on Thursday, May 15th, 1997, at 1:34 p.m.:

EXAMINER CATANACH: Okay, at this time we'll call Case 11,724.

MR. CARROLL: Application of Gillespie-Crow, Inc., for unit expansion, statutory unitization and qualification of the expanded unit area for the recovered oil tax rate and certification of a positive production response pursuant to the "New Mexico Enhanced Oil Recovery Act", Lea County, New Mexico.

EXAMINER CATANACH: Call for appearances in this case.

MR. BRUCE: Jim Bruce representing the Applicant, Mr. Examiner. I do have three witnesses in this case.

MR. HALL: Mr. Examiner, Scott Hall from Miller, Stratvert, Torgerson law firm, Santa Fe, on behalf of Enserch Exploration, presenting witnesses in conjunction with Gillespie-Crow. I'll be presenting one witness this afternoon.

EXAMINER CATANACH: Okay.

MR. CARR: May it please the Examiner, my name is William F. Carr with the Santa Fe law firm Campbell, Carr, Berge and Sheridan. In this matter we represent Hanley Petroleum, Inc. and Yates Petroleum Corporation, and I have three witnesses. I'd also like to enter an appearance in

the case for David Petroleum Corporation.

EXAMINER CATANACH: Additional appearances?

Okay, let's get all the witnesses to stand and be sworn in at this time.

(Thereupon, the witnesses were sworn.)

EXAMINER CATANACH: I guess what we'll do in this case, we're not -- I'm sure we're not going to finish it this afternoon. We'll try and reach a point this afternoon where we can stop and resume probably in the morning, around 8:00 sometime.

Mr. Bruce?

MR. BRUCE: I defer to Mr. Hall. He's going to present the first witness.

MR. CARR: I have an opening statement.

EXAMINER CATANACH: Okay, Mr. Carr?

MR. CARR: May it please the Examiner, Yates Petroleum Corporation and Hanley Petroleum, Inc., are here today because they believe their correlative rights are being impaired by the way the West Lovington-Strawn Unit is being operated.

We submit to you that parties to a statutory unitization case and, I submit also, the Oil Conservation Division, should be able to expect that when an Applicant or an operator come before you, that they're acting in good faith and that, in fact, what they're doing is proposing a

unit based on geology and not on surface ownership conditions.

We submit to you that the original boundaries of this unit were not based on an honest interpretation of geological data but on surface ownership. And that's why the reservoir was initially mapped so as it conveniently made right-angle turns in a corner section.

Because of this geological interpretation, Gillespie and the interest owners in the unit were able to exclude from the negotiations that resulted in this unit parties who are affected by unit operations. Yates was excluded, Hanley was excluded, others were excluded.

But in the 1995 unitization hearing, Snyder Ranches appeared. They advanced what some might characterize as a *de facto* Application, but they proposed a different unit vertical boundary, and they were right. And you agreed and accepted their interpretation of the geological data.

But because Yates and Hanley were not involved in the original negotiations, they were not involved in the original hearing. The horizontal boundaries of the unit have never really been challenged, not until today. And now we're here to review that part of this interpretation.

Whether or not they have a valid pressure-maintenance project does not excuse this Division or the

operator of the unit from acting to protect the correlative rights of other interest owners in the pool. And when other interest owners believe their rights are being abused and that the statutes are not being properly honored and followed, they have a right to come to you and seek protection, and that's why we're here.

And we're going to show you what they've done in the past and in this case is wrong. We're going to show you how this unit should be formed and how it should be done right, and then we're going to ask you to act in a fashion consistent with the statutory directive to this agency. We're going to ask you to do what is reasonably necessary to protect our correlative rights.

EXAMINER CATANACH: Mr. Bruce?

MR. BRUCE: Mr. Examiner, we're here today because Charles Gillespie and Enserch instituted a highly successful pressure-maintenance project. There's no question about that.

Yates and Hanley have asserted a number of things with their motions and everything else. Number one was that these unit boundaries were originally designated to benefit Charles Gillespie and Enserch at the expense of their neighbors. The second witness today will testify about that. Most of the offsetting acreage was owned by Charles Gillespie or Enserch. There was no plot to exclude

the neighbors; they did what they thought was right at the time.

They were slightly off -- and we will have our first witness testify about that -- slightly off on the geology. It happens. Why do you think the statutes and the unit agreements provide for expansion? Sometimes additional tracts need to be added.

Yates and Hanley will also get up and say that they're being harmed. That's baloney. They've benefitted from the pressure-maintenance project for over a year now. The cost to the unit for the pressure-maintenance project to date, for supporting the withdrawals by the Yates well, the State "S" Well Number 1, and the Hanley well, have been a million dollars. They didn't have to pay a penny for that pressure maintenance.

Their wells have not declined in production. What does that tell you? It tells you that they have been receiving an unfair benefit from the unit.

Gillespie-Crow is here today requesting a reasonable expansion of the unit's boundaries, adding acreage proven reasonably productive. This complies with the statute. Our testimony today will prove that Gillespie-Crow's proposal is fair and reasonable and it should be approved.

The only interest owners having their rights,

their correlative rights, adversely affected right now are the interest owners in the unit, not Hanley, not Yates. We'll prove that today.

Thank you.

MR. HALL: No opening statement.

We'll call Mr. Nelson at this time.

RALPH NELSON,

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

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, would you please state your name?

A. Ralph Nelson.

Q. Mr. Nelson, would you give the Examiner a brief summary of your background and qualifications?

A. I'm a geologist for Enserch Exploration. My primary areas of responsibility are southeast New Mexico and West Texas.

Q. And you're familiar with the West Lovington-Strawn Unit?

A. I am.

Q. And you've previously testified before the Examiner, the Division, and had your credentials made a matter of record; is that correct?

A. Yes, I have.

Q. You're familiar with the lands that are the subject of the expansion Application, are you not?

A. Yes.

MR. HALL: Mr. Examiner, at this time we'd tender Mr. Nelson as a qualified expert geologist.

EXAMINER CATANACH: Any objection?

MR. CARR: No objection.

EXAMINER CATANACH: Mr. Nelson is so qualified.

Q. (By Mr. Hall) Mr. Nelson, briefly explain what it is that Gillespie-Crow seeks by their Application.

A. Gillespie-Crow seeks the expansion of the unit into two 80-acre tracts in Section 28 and 34, and certification of a positive production response under the Enhanced Oil Recovery Act.

Q. Now, is the expansion acreage identified on Exhibits 1 and 2?

A. Yes, it is.

Q. Would you briefly those out to the Hearing Examiner?

A. Exhibit 1 is the revised Exhibit A to the unit agreement for the West Lovington-Strawn Unit, showing the expanded area highlighted. The three tracts, the three new tracts, Numbers 12, 13 and 14, are highlighted. The total acreage of the expanded unit is 1618.95 acres.

Q. All right. Now, you've undertaken a study of the

geology of the West Lovington-Strawn Unit area, have you not?

A. Yes, I have.

Q. Why don't you at this time give the Examiner a brief overview, a refresher, if you will, of the geology of the area?

A. As has been stated before, the West Lovington-Strawn field is a Pennsylvanian-Strawn-age phylloid algal mound. The maximum thickness is 129 net feet, with a known oil column of 203 feet above the oil-water contact.

Q. Would you take Exhibit 3A before you and explain what that exhibit is intended to reflect?

A. Exhibit 3A is a structure map on the top of the Strawn limestone. It is a revised map, taking into account the additional well control that we have received on wells nearby and offsetting the unit.

Previous structure maps have shown just positive structural nosings surroun- -- or in the vicinity of the pool now, because the Gillespie State "D" well, located in Section 1, there appears to be a closed structure just south of the West Lovington-Strawn Unit Wells Number 7 and 5.

Q. All right, let's look at Exhibit 3B. That's your isopach, is it not?

A. Yes, it is.

Q. If you'd explain to the Examiner what that exhibit reflects.

A. Exhibit 3B is the Strawn lime net pay isopach map, showing a thick in the northern part of Section 1, with the highest value occurring in the West Lovington-Strawn Unit Well Number 7 of 129 feet.

Also shown on this map are the lines of Section A-A' through D-D'.

Q. And both Exhibits 3A and 3B show the expansion acreage boundaries?

A. Yes, they do.

Q. All right, anything further with respect to those two exhibits?

A. No.

Q. Let's look at your cross-sections, if you would, please, sir, Exhibit 4A.

A. Cross-Section 4A to A' is an east-west cross-section that runs from the Julia Culp well on the east side to the Hamilton Number 3 well, which is West Lovington-Strawn Unit Well Number 3.

The purpose of this section is to give -- show how the Strawn reservoir pinches out to the east, not present in the Julia Culp well, how the reservoir quality is deteriorating rapidly in the State "S" well, and also to point out the oil-water contact, as had been noted in the

Wiley Number 1 and the Hamilton Number 3, which are West Lovington-Strawn Unit wells, the Wiley being Number 10, Hamilton 3 being Number 3.

Q. All right, let's refer to Exhibit 4B now. Explain that cross-section.

A. I have cross-section B-B' again, is another east-west cross-section. In this cross-section on the west side, the Amerind West State Well is present, again showing how the reservoir is gone on the west side, and how rapidly the reservoir does terminate to the west side.

Q. All right. Now let's take Exhibit 4C, please, sir. Would you locate that cross-section for us on the map, please?

A. Exhibit 4C, again, is an east-west cross-section. The importance of this cross-section, it shows the relative position of the Gillespie Snyder "EC" Com, establishing the approximate southeast boundary of the reservoir. And again on this cross-section is the Amerind West State well, again, that is dry in the Strawn lime.

Q. Anything further with respect to 4C?

A. Well, 4C also shows the Speight Number 1, which is West Lovington-Strawn Well Number 7, the thickest well in the reservoir. That's also the gas injection point for the project.

Q. All right, let's look at 4D quickly, please, sir.

A. 4D --

Q. What does 4D show?

A. 4D is a north-south cross-section that runs from the Speight Number 1, which is West Lovington-Strawn Unit Well Number 7, to the Hanley Number 1 Chandler well.

In this cross-section we show the reservoir thinning to the north, the quality deteriorating to the north, and the presence of the oil-water contact in the Hamilton Number 3, the Wiley Number 1, the Klein Number 1 and the Chandler Number 1.

Q. Now, Mr. Nelson, of all the wells in the pool, how many wells are in the pool total?

A. There are 14 wells in the pool.

Q. How many in the unit?

A. Eleven are in the unit. Two are being proposed to be brought into the unit. There's one completed in the Strawn but not included in the unit. That well is the Gillespie-Snyder "EC" Com Number 1.

Q. Why isn't that well being proposed for inclusion?

A. That well is a very poor producer and has very low permeability. It pumps about 40 barrels a day; it's on a timer. It's on a timer because the well pumps off.

Because of the low perm and the thin net pay, it's receiving very little benefit from the pressure-maintenance project. Yates, et al., has objected to

including this well in the unit.

Q. All right. Now, can you explain to the Examiner how acreage to be included in the unit was identified, for the unit expansion, specifically?

A. Well, it was -- Acreage to be included was on the basis of the hydrocarbon pore volume map --

Q. All right.

A. -- that being Exhibit 5A.

Q. All right, take that in front of you, please, sir.

A. Exhibit 5A is a copy of the hydrocarbon pore volume map submitted in Case Number 11,194 and 11,195 at the original unitization hearing by Snyder Ranches.

Q. And who prepared Exhibit 5A in that case?

A. A geologist named -- I believe it was Mark Clemenson with Platt, Sparks and Associates.

Q. And in that case did the Division accept Exhibit 5A as a starting point for allocating the --

A. Yes --

Q. -- pore volume?

A. -- they did.

Q. Let's look at Exhibit 5B now. What is that?

A. Exhibit 5B is a -- shows the new drilling of the Hanley well and the Gillespie-Crow State "S" Number 1 well, reflecting the same shape as the Snyder Ranches map in the

unit and just altered to reflect the new drilling.

Q. All right. So the only difference between BA and 5B is that you took into consideration new well control data; is that --

A. That's correct.

Q. Now, for the distribution of hydrocarbon pore volume as it's demonstrated on Exhibit 5B, was it confirmed by the new well log data?

A. Can you repeat that, please?

Q. The distribution of pore volume as reflected on Exhibit 5B, how was that distribution confirmed? Did you use the new well control data to do that?

A. Yes, I did, strictly the new well control.

Q. Was the distribution dependent on seismic data at all?

A. No, it was not.

Q. With respect to Exhibit 5A, was the Platt Sparks map used by the Division in determining tract participation for the unit in the 1995 hearing?

A. Yes, it was.

Q. And did Exhibit 5A, that map, define the boundaries of the unit as they were known at that time?

A. Yes, it did.

Q. Would you briefly explain how you calculated hydrocarbon pore volume?

A. The two new wells, we took the digital log data from the wells, loaded it into the QLA2 log analysis program.

Water saturations were calculated every half foot, using the standard Permian Basin equation, water saturation equals the square root of one over porosity squared, times R_w divided by R_t.

Porosity values were derived from a crossplot of the density and neutron curves. The HPV values were the product of the crossplot porosity times one minus water saturation times .5. These values were summed to yield the hydrocarbon pore-foot value for each well.

Q. All right. And again, seismic was not used for 5B, correct?

A. No, it was not.

Q. And to your knowledge, did Platt Sparks use seismic in the preparation of Exhibit 5A?

A. I don't believe it was, no.

Q. All right. And seismic data is incorporated in what's shown on either 5A or 5B before the Examiner now; is that correct?

A. Repeat that, please.

Q. Seismic information was not incorporated and is not reflected anywhere on 5A or 5B?

A. That's correct.

Q. Now, at the time of the original unitization hearing in 1995, did it appear that the unit boundaries had been appropriately established at that time?

A. At the original hearing, we thought we had included all of the productive reservoir in the unit. If you look at the Snyder Ranches Exhibit 7, which is our Exhibit 5A, even their geologic interpretation was similar, and it essentially covered the entire reservoir.

Q. All right. Now, what's the geologic basis for the expansion of the unit into the two 80-acre tracts that Gillespie-Crow proposes?

A. The northeast boundary is defined by the Yates Number 1 Chambers well in Section 27, which I understand is tight and has no reservoir rock in it.

The west boundary is defined by the Amerind West State, which you can see on cross-section 4C. It is tight, and the well was dry in the Strawn.

The southern boundary is defined by the Gillespie State "D" Well Number 8 in Lot 12 of Section 1. Based on pressure data, the State "D" well is in the South Big Dog-Strawn Pool and not in the unit reservoir.

On the southeast border, the Snyder "EC" Com well defines that southeast edge in which it only had four feet of pay, and that also can be seen on Exhibit 4C.

The eastern boundary is defined by the Bridge Oil

Julia Culp well, which was dry in the southeast and the northeast of Section 34. You can see that on cross-section 4A.

And also on that cross-section 4A you can see the reservoir pinches out between the State "S" well and the Julia Culp well. Therefore we placed the zero porosity line between the two wells.

Finally, the northern boundary of the reservoir is defined by the Chandler Number 1, which, as on cross- -- Exhibit 4D, you can see the reservoir quality deteriorates, and there is an oil-water contact in that well.

Q. All right, now, Exhibit 5B shows an oil-water contact to the north. Is that contact at the same subsea depth as shown by the Platt Sparks map, Exhibit 5A?

A. Yes, it is. The Chandler Number 1, however, was tight across that same subsea depth, but the first porosity encountered below calculates wet, confirming the presence of the oil-water contact.

Q. And how do you know that the State "S" 1 well is in the same reservoir from a geological standpoint?

A. Well, from subsurface correlations. The zone occurs at the top of the Strawn interval, and from log correlations it looks very similar.

Q. And how do you know the Chandler Number 1 is in the same reservoir?

A. Well, that well was tight, held tight for six months, and we didn't have any data on that till June of 1996. Again, the logs show the Chandler appears to be in the same geologic interval, that being the top of the Strawn. It has the same -- It has similar log characteristics to the Number 1 Klein well, which is the West Lovington-Strawn Unit Number 11 well, immediately to the south.

Q. The operator that held those logs tight for so long, was that Hanley?

A. Yes, it was.

Q. Mr. Nelson, in your opinion do you believe it is appropriate to expand the unit into the 160 acres of Section 34 and Section 28?

A. Yes.

Q. And why is that?

A. First, the two new wells drilled outside of the unit essentially confirms the original geology. There is very little reservoir outside the original unit boundaries. The State "S" well moved the zero line less than a quarter mile east, and the Chandler well moved it less than an eighth of a mile north.

Q. In your opinion, Mr. Nelson, do Exhibits 3A, 3B and 5B establish appropriate distribution of the hydrocarbon pore volume and reservoir thickness

attributable to all the tracts within the present unit boundaries and the proposed expansion tracts?

A. Yes.

Q. In allocating pore volume for purposes of expansion into the two 80-acre tracts, did you utilize the same methodology that was utilized in the original unitization case?

A. I did.

Q. And was that methodology accepted by the Division then?

A. Yes.

Q. In your opinion, Mr. Nelson, is granting this Application in the interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes.

Q. Now, with the exception of Exhibit 5A, the Platt-Sparks map, were Exhibits 1, 2, 3A through 5B prepared by you or at your direction and control?

A. Yes, or I agree with their interpretation.

Q. Exhibits 1 and 2 were not prepared by you, but you agree with their geographical description?

A. Correct.

Q. And in your view, Exhibit 5A -- that was the Platt Sparks map -- it's your understanding that was

previously accepted and admitted into evidence?

A. Yes.

MR. HALL: We move the admission of Exhibits 1 through 5B, Mr. Examiner.

That concludes our direct.

EXAMINER CATANACH: Exhibits 1 through 5B will be admitted as evidence.

Mr. Carr?

MR. CARR: I still object.

EXAMINER CATANACH: Okay.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Nelson, you've studied this reservoir for a number of years, have you not?

A. Yes.

Q. Previously mapped it on various occasions, have you not?

A. Yes.

Q. Back in 1994 you, in fact, prepared an isopach map on the reservoir?

A. Yes.

Q. And I'd like to show that to you, and I've marked it as Hanley/Yates Exhibit Number 22.

Now, as I look at the legend on this, Mr. Nelson, it indicates that this, in fact, is your work?

A. In part, yes.

Q. Did you work with a geophysicist on this -- on constructing this map? Is that who Mr. Scolman is, or is he another geologist?

A. He's a geophysicist.

Q. And so in 1994 you were preparing an isopach of this reservoir, and is it fair to say in this interpretation geophysical information was integrated?

MR. HALL: I'm going to object to the form of the question. Integrated into what?

Q. (By Mr. Carr) Did you --

MR. HALL: Vague question.

Q. (By Mr. Carr) You worked with a geophysicist, correct?

A. Yes.

Q. And did the geophysicist help you prepare this map?

A. There was some geophysical interpretation, which helped form line these contours.

Q. And that's why his name's on this exhibit; isn't that right?

A. That's correct.

Q. And it was with the use of the geophysical information that you selected what then were believed to be the reservoir boundaries; is that right?

A. That's correct.

Q. And so what we have is a map you helped prepare in 1994 in which geophysical information was utilized, correct?

A. In part, yes.

Q. Now, if we look at the map you've prepared today, marked Exhibit 5B --

A. Yes.

Q. -- I believe it was your testimony that you didn't integrate seismic information into this interpretation; is that right?

A. That is correct.

Q. And so what we have here is a map prepared by you, correct?

A. Yes.

Q. But you haven't integrated any seismic information into this map?

A. That's correct.

Q. Can you tell me what data point you used to draw your zero contour to the extreme northwest corner of Section 33?

A. Again, as I believe I stated, I used the Platt Sparks map as a starting point, as that map was accepted by the OCD, and only changed that map to reflect the new well control.

Q. So you aren't able to point to a data point you used to pull that contour out that far; is that right?

A. Would you repeat that, please?

Q. You've looked at someone else's work. I'm asking you if you as a geologist can tell me what data point shows the zero contour line running through the extreme northwest corner of Section 33.

A. Again, I did not change the map that Platt Sparks had generated and presented in a previous hearing relative to inside the unit.

Q. Do you know if Platt Sparks used or had access to any seismic information on the reservoir?

A. They did.

Q. And so if they had access to seismic information on the reservoir, do you know that the person who drew the Platt Sparks map didn't use that information?

A. I know that because he testified --

Q. -- that he did not use seismic?

A. -- that he did not use the seismic.

Q. So what we have here is a situation, is, although everyone -- You've reviewed seismic information on the reservoir, correct?

A. I have reviewed interpretation.

Q. And yet what we have here is an interpretation with no data point that justifies pulling the contour as

far northwest as it goes, right? There is not data point you can give me?

A. There is no data point. Again, I'm using the map that Platt Sparks had submitted and was accepted to the OCD.

Q. I guess we've all forgotten the seismic information; is that the testimony?

MR. HALL: I'll object to the question.

Q. (By Mr. Carr) I will -- I'll withdraw the question and simply ask you if it is not my understanding of your testimony that you cannot show me one data point that would tie zero contour to the northwest corner of Section 33; is that right?

A. There is no data point in the northwest quarter.

Q. Now, let's look at the northeast corner of your unit. We have a zero contour that goes to the virtual midpoint of Section 34 on the north boundary of that section. Do you see where I'm talking about? It's at the northeast corner of the unit.

A. Yes.

Q. Can you show me any data point that you used to map to that -- pull the zero contour out that far?

A. Again, I'm using -- The Platt Sparks map is a beginning point. The Yates Chambers well in 27 has no wreath in it, as I understand. And a halfway point, I

guess, between West Lovington-Strawn Unit Well Number 8 and the Chambers well is about where that zero point is.

Q. So you've kind of gone midway over an area of slightly over a mile and just put your zero contour there?

A. Again, the zero is based on the Platt Sparks map.

Q. Now, this Platt Sparks map was offered in a case for Snyder Ranches; isn't that right?

A. Yes.

Q. And when Snyder Ranches appeared in that case, they weren't challenging the horizontal boundary of this unit, were they?

A. I'm not sure what -- that I understand what you mean by horizontal boundary.

Q. Did Snyder ask that one additional acre be added to the unit on any side of this unit?

A. No, I don't believe so.

Q. They were challenging a vertical interval, were they not?

A. I believe so, yes.

Q. And this map was then accepted by the Oil Conservation Division, and their vertical interpretation was accepted by the Division --

A. Yes.

Q. -- isn't that right?

You've reviewed the order that resulted in that

hearing, have you not?

A. I have in part, yes.

Q. Are you aware of anything where the Division has accepted the outer boundary as having been established?

A. I'm not sure of that.

Q. Are you -- Was there any challenge to the outer boundary at the time of that prior hearing?

A. I'm not sure.

Q. Now, you've drawn isopachs for numerous reservoirs in your career as a geologist, have you not?

A. Yes.

Q. When you map reservoirs, is it unusual to have a geological structure sort of fit comfortably within a square like this one does, or is a kind of a typical result when you go out and map?

MR. HALL: I'm going to object to the form of the question; it's compound.

Q. (By Mr. Carr) Is this a typical geological interpretation, in your opinion?

A. Yes.

Q. And is it common, when you map reservoirs, to find a zero contour making right-angle turns in corner sections? Is that a typical thing you find?

A. The acreage to the south is owned 100 percent by Gillespie, the acreage to the east was owned a significant

part by Gillespie, the acreage to the west, a significant part by Gillespie. This was our interpretation.

Q. You've talked about what was owned by Mr. Gillespie. Did that have any role whatsoever in how you mapped this reservoir?

A. No.

Q. Now, when you mapped the reservoir on the eastern boundary, we have a zero line coming down right north-south through the center of Section 34 at this time, and I'm looking now -- I'm looking at the Platt Sparks map.

A. Repeat that again, please?

Q. If we look at the map, we -- the Platt Sparks map, we find a zero contour running basically north-south through the center of 34; do you agree with me on that?

A. Just east of the center, yes.

Q. If we look at your original map back in 1994, it runs right down the center of Section 34; do you agree on that?

A. Yes.

Q. And yet there is no well control point within 40 acres of that boundary any place on this entire duration; isn't that right?

A. Repeat, please?

Q. Can you point to any data point within 40 acres of that line that goes exactly on the unit boundary north-

south on your 1994 map?

A. I cannot.

Q. Now, if I look at your 1994 map and I look at the unit boundary, does not the unit boundary, in essence, include the entire reservoir?

A. I'm confused. I see the date on the map is 1995.

Q. All right, I'm sorry. It says revision date, 5-9-95, I think, on mine; is that --

A. And the date says 3-30-95.

Q. Okay, that's the same --

A. But we're --

Q. -- on that map?

A. Yes.

Q. And that shows the unit boundary as initially adopted, correct?

A. Yes.

Q. And it includes the entire reservoir, does it not, as you have mapped it?

A. As our interpretation, yes.

Q. Did you participate in that original hearing?

A. I did.

Q. And at that hearing Mr. Crow testified that they thought the unit plan was fair and reasonable and equitable. Do you remember that testimony?

A. Not for sure.

Q. Do you work with other units as a geologist?

A. Not typically.

Q. When you -- have you -- Do you have an opinion as to whether or not including the entire reservoir within the unit would be fair, reasonable and equitable?

MR. HALL: Mr. Examiner, I'm going to object. I think that's far beyond the scope of this Application. We're talking about two 80-acre tracts. If Mr. Carr wants to confine his questioning to the inclusion acreage as properly submitted, advertised and the notice in this case, that's fine.

MR. CARR: May it please the Examiner, when an applicant comes in and is redrawing or adding acreage to a unit in which we own an interest, the applicant may not deny to the Oil Conservation Division the right to have a full presentation of all relevant evidence, and if they have drawn the boundaries so as to again exclude interest ownership they know it, because if not, what you've done is tendered to an Applicant your ability and your authority to protect the correlative rights of other interest owners in the pool.

This is nothing more than an attempt to play further games with the boundary of the unit, to now not just exclude interest owners but to prevent testimony from those interest owners which is relevant and will show you

what the reservoir really should look like.

EXAMINER CATANACH: I'm going to allow the question.

THE WITNESS: Can you repeat the question, please?

Q. (By Mr. Carr) I think we're making more of the question than was intended. The boundary includes the unit at the reservoir as mapped, correct?

A. Yes, on this map.

Q. On the 1994 map, or 1995 map?

A. 1995 map.

Q. Your map, my Exhibit 22?

A. Correct.

Q. And yet when we look at the way you're mapping the reservoir in your Exhibit 5A and proposing to expand, you've excluded some land within your zero contour. You're not expanding your unit to take in all that acreage; isn't -- I'm sorry 5B. So today we're mapping it so that the reservoir actually extends beyond the unit boundary, based on your interpretation, correct?

A. Please start over again.

Q. We have, on this exhibit the unit boundary and a dark hached line or a gray line, correct?

A. Yes.

Q. At this time -- And you've also put your

expansions tracts on the unit?

A. That's correct.

Q. And your zero line showing the limits of the reservoir as mapped on this exhibit extends beyond the unit as you're now proposing to expand it, correct?

A. Yes, it does.

Q. Now --

A. In part, however, this does reflect the Platt Sparks map.

Q. But now you're here testifying as a geologist, and I'm going to ask you to testify about what you know, and not just what Platt Sparks wants presented, because we don't have those people here to examine.

And even -- No matter what you base this map on, this is your interpretation today, is it not, Mr. Nelson?

A. Again, as to the expansion of the Chandler well, the State "S" well, the new control with the Snyder "EC" Com well, yes, it is.

Q. Okay. If I look at this, there's hydrocarbon pore volume in the northeast quarter of Section 34 that is not being included in the unit; isn't that right?

A. That is correct. Again, with the Platt Sparks map, as I've said, this was taken at the starting point, because the OCD recognized the unit participations within the unit. Not wanting to confuse that, we used the

contouring as Platt Sparks had done it and expanded it to reflect the new well control.

Q. Now, is this map 5A with the green-shaded area -- Is this your work?

A. Map 5A --

Q. 5B.

A. 5B? Yes, it is.

Q. And is the zero line, as shown on this map, your interpretation of the limits of the reservoir?

A. I thought that I've answered that. Again, relative to the new wells, that is my new work.

Q. And so it is your testimony that what is shaded in green is the reservoir as it now stands with hydrocarbon pore volume in the acreage shaded in green; is that right?

A. Yes.

Q. And if we look at the northeast of Section 34, we find a substantial amount of acreage shaded green, correct?

A. There is acreage shaded green. I'm not sure that's substantial.

Q. Well, that acreage is, one, shaded green and, two, outside the unit, is it not?

A. That's correct.

Q. And is it not true that Gillespie-Crow is now proposing to drill a well 330 feet north of the track dated -- dedicated to the State "S" Number 1 well?

A. Gillespie-Crow has sent out an AFE to drill that well, which we are evaluating.

Q. And if that well is drilled and you're evaluating, you've obviously concluded there is a potential for making a Strawn producer there; isn't that right?

A. No, I said we're evaluating their proposal.

Q. Okay, you're sending out the AFE, but you haven't decided whether or not that is a drillable location?

MR. HALL: Let me object to the characterization. The AFE has gone out from Gillespie-Crow, not from Enserch.

THE WITNESS: As a working interest owner in that acreage, we are evaluating the proposal. We do not --

Q. (By Mr. Carr) And this testimony -- If I understand, to follow up on Mr. Hall's -- you're not testifying for Gillespie-Crow. What we say here is Enserch's interpretation, not Gillespie-Crow's?

A. This map is my interpretation as I have restricted it.

Q. If that well is drilled, the well that has been proposed in the northeast of Section 34, and if it is a commercial Strawn well, will we again be trying to expand this unit?

A. If it is a commercial well, and if it is connected to the reservoir, yes.

Q. Now, you say if it is a well that is connected to

the reservoir. When I look at this map, the green is interpretive -- it's your interpretation of the reservoir; isn't that correct?

A. Again, in part, yes, sir, that is my interpretation.

Q. And if you drill a well and you get a good well, then you have hard data on what that tract can actually produce; isn't that fair to say?

A. You have hard data as to whether it is connected to the reservoir and what the -- you could calculate, then, the hydrocarbon pore volume in that wellbore.

Q. And you'd know what you could produce off that tract once you drilled a well, correct?

A. You could make a calculation of that. I think that's more an engineering question than a geologic question.

Q. Well, geology, the green-shaded area, is interpretive, that's what I'm -- Do you agree with me on that?

A. Yes.

Q. And that the well data, the actual or production figures or whatever you -- other than maybe just the feet of pay that you see in your -- that's an engineering consideration. But that's hard data. I mean, you know -- under these conditions. Those are hard facts on one hand,

correct?

A. When we have drilled and logged the well, we will have some hard data.

Q. And what we have in terms of just this pore-volume map is interpretive; it has to be, correct?

A. Yes.

Q. All right. Now, when we go to the State "S" Number 1, were you involved in the decision to drill that well?

A. I was.

Q. Isn't it fair to say that you thought it was going to be in a separate reservoir?

A. That is fair to say.

Q. And isn't it fair to say that you were not happy when you discovered there were other people who had interests in the well, other than just Gillespie and unit owners? That was a surprise, wasn't it?

A. That was a surprise, that we did not have a hundred percent interest in that well.

Q. When you drilled that well you had some hard data, though, on what could -- on -- you had some -- you had an additional data point from a geological point of view, correct?

A. Yes, we had another log.

Q. And so there's value to having a well over there.

It gives you some hard information, correct?

A. It gives us more information, yes.

Q. You know how many feet you've -- pay -- or you've got, and you can measure the formation in that wellbore, correct?

A. Through wireline logs, yes.

Q. And so that's a hard fact that you don't have when you're just interpreting the reservoir, say, off to the northwest corner?

A. That's correct.

Q. And so there's value to having these additional wellbores in the reservoir, correct?

A. In terms of giving hard data, in terms of draining the reservoir, that's an engineering question.

Q. But you would agree that those aren't interpretive, like it is just trying to sit down and from well points analyzing, from points a mile apart, where the reservoir actually pinches out? You've got --

A. Those are hard data points, yes.

Q. Okay. In your early work on the reservoir you have used seismic information, have you not?

A. Not me personally. The company has, yes.

Q. And when you prepare your -- you start trying to develop a structure map, do you consult your geophysicist on that?

A. Yes.

Q. When you're doing an isopach, would you consult a geophysicist on that?

A. Potentially, in part, yes.

Q. When you -- And admittedly, it's only one of various kinds of information that you use, but is it information that you would consider in trying to define the limits of a reservoir?

A. What kind of information is that?

Q. Would you look at -- Would you consider 3-D seismic if you were trying to determine how far out this Strawn pod happened -- or reservoir happened to extend?

MR. HALL: Mr. Examiner, I'm going to object. It's calling for speculations. It's not clear that the question is directed to the Application before you. It sounds like it's a completely speculative question about his methodology for evaluating any reservoir anywhere. If we could get back on track and focus on this Application, I think we need to do that.

Q. (By Mr. Carr) Mr. Nelson, did you use seismic at any level in mapping this reservoir at any time?

A. Early on, yes.

Q. Did you have any seismic data to analyze or consider north of the northern boundary of this reservoir?

A. No 3-D seismic data, no.

Q. Did you use 2-D seismic?

A. We have 2100 line miles, I believe, of seismic data in this area. I believe -- I'm pretty sure we have data north of this; I'm not sure.

Q. You personally didn't get a geophysicist in your office and look at seismic information in terms of trying to define the northern boundary of the reservoir as you have mapped it; is that fair?

A. We had oil-water contacts in the wells, we were clearly going downdip in the wells, with new wells to the north. We're quite low to the reservoir. I'm not sure if I can say that we've used 2-D seismic data north of the unit. I don't recall.

Q. When you look at the oil-water contacts in the northern portion of the reservoir, are you seeing a uniform oil-water contact in this reservoir?

A. Essentially so, yes.

Q. Have you looked at the oil-water contact in the Klein well in the northwest of the northeast of 33?

A. Yes, I believe so.

Q. And have you compared that to the oil-water contact in the Wiley well due south?

A. I'm sure that I have.

Q. Isn't -- Do you know whether or not they're the same?

A. It's been a long time since I actually looked at those.

Q. But based on the way you have mapped this, you have used a uniform oil-water contact in the reservoir?

A. That was the oil-water contact accepted by the OCD, based on the Platt Sparks work.

Q. And the OCD might be wrong; isn't that true?

MR. HALL: I'll object.

Q. (By Mr. Carr) Even if they were, you're using that number, right?

MR. HALL: That's the wildest assumption he could make.

THE WITNESS: We are using the subsea as minus 7617.

Q. (By Mr. Carr) Is it my understanding that before any additional acreage, any additional tracts can be included in this reservoir, that they must have a well on it?

MR. HALL: I'll object. Is the question asking for Mr. Carr's understanding of the procedure here?

Q. (By Mr. Carr) I would ask Mr. Nelson's understanding. Did you understand my question, and the question was, do you have to have a -- Do you the criteria that is used by your company for extending the unit, expanding --

A. Typically, we have tried to use wellbore data to expand the unit. I'm not sure if the unit agreement -- what that calls for exactly.

Q. Would someone else, do you think, be a better witness to pursue that with?

A. Perhaps.

Q. And that's speculation on your part?

A. (Laughter)

Q. One second here, and I may be able to wrap this up.

Were you involved in the decisions that resulted in the adoption of the unitization formula based on the hydrocarbon pore volumes?

A. Repeat that again, please.

Q. Were you involved in any of the negotiations which resulted in the development of the allocation formula for this unit?

A. I thought the allocation formula was one submitted by Platt Sparks.

Q. Were you involved in negotiations concerning the use of one factor, that being hydrocarbon pore volume?

A. Negotiations with -- ?

Q. Phillips?

A. Yes, we had discussions with Phillips, yes.

Q. And when you were developing the unit, were you

involved in discussions where you were determining what kind of an allocation formula should, in fact, be utilized?

A. I believe -- I was involved in what we recommended, yes.

Q. Did you recommend the formula that is actually in the unit agreement finally approved?

A. I'm not sure.

Q. You are aware that unit participation is based on the hydrocarbon pore volume under each tract; isn't that fair to say?

A. Yes.

Q. And in the negotiations, in the formation of this unit, was the use of that one factor, hydrocarbon pore volume factor, was that discussed among the parties?

A. The use of that factor?

Q. Yes.

A. I believe we had -- we thought that that was the fairest way to allocate tract participation.

Q. And didn't you have to have lengthy meeting with Phillips to get them to agree to use that formula?

A. I believe we had several discussions with them.

Q. And didn't you agree to increase the hydrocarbon pore volume under their tracts before they would agree to go with the hydrocarbon pore volume approach?

A. I believe part of that was based on -- again, we

have, as you have asked me repeatedly, used and did use seismic initially. Phillips also reviewed the seismic in their interpretation, ended up with us in part changing that, yes.

Q. And as part of the initial negotiations with Phillips, in fact, didn't you agree to increase the hydrocarbon pore volume on their acreage?

MR. HALL: Mr. Examiner, I want to state an objection at this point. Mr. Carr's questions are revisiting the negotiations for the original unitization. I think they're far beyond the point of this Application. They're simply not relevant at this point.

MR. CARR: Mr. Examiner, the unit has expanded and these two tracts are added. Hanley, Yates and others will be served their lunch, and it will be a formula one factor, hydrocarbon pore volume.

The original negotiations involved adjustment of the hydrocarbon pore volume by tract so that they could reach an agreement that met all their objectives, not ours. And I think it's relevant to show that the formula they're asking you to impose on us was a result of negotiations, and we were not involved with those negotiations. And to that extent, it is relevant.

And again, they're trying to put blinders on everyone in this room so that you can't get the whole

picture, because for some reason they're worried about what that picture will show.

MR. HALL: Let me briefly respond to that, Mr. Examiner. It's easy to say anything is relevant. The question is whether, again, it's admissible within the context of this Application. It's a revisitation of an earlier case. We don't need to go over it again.

EXAMINER CATANACH: Well, with your expansion of this unit, you're going to propose to revise this allocation formula; is that correct, Mr. Carr, Mr. Hall?

MR. HALL: That's correct, but we're talking about negotiations for the determination of that participation, which has already been accepted. There's an order to that effect dealing with that issue in the earlier cases. It's no longer relevant here.

EXAMINER CATANACH: Mr. --

MR. CARR: Mr. Catanach --

MR. BRUCE: Go ahead, Bill.

MR. CARR: -- you entered an order based on a record made in another hearing. And we see Enserch and Gillespie trying to hide behind that to prevent us from presenting data that has a direct impact on the order you're going to enter as a result of this hearing.

And we're going to challenge the formula, because we didn't -- weren't able to play around with the pore

volume and simplify the ownership to get to a point where we could fly with a one-factor formula.

It is something that was done before, yes. It was the subject of another hearing, yes, and we are revisiting it today because we're going to ask you to change it, because we're going to show you it is not fair.

MR. BRUCE: Mr. Examiner, just a point of clarification.

Gillespie-Crow and their partner Enserch are not asking to change the participation formula. The participation formula that was in the original unit agreement was based on hydrocarbon pore volume under each tract, less production to date. That formula remains the one that is being used here in this hearing by Gillespie-Crow.

We are just stating that we found approximately 5-percent more reservoir volume outside the existing unit, and we're asking to include that in and, of course, reduce the existing tracts proportionately.

I would point out that in the original tract participation formula production was subtracted from each tract. We're not asking to do that here. They've produced 70,000 and 140,000 from these new tracts. We're just asking to use hydrocarbon pore volume.

EXAMINER CATANACH: Mr. Carr, are you challenging

the -- are you going to challenge the formula itself for the --

MR. CARR: Yes.

EXAMINER CATANACH: -- hydrocarbon pore volume?

MR. CARR: I mean, they're one and the same. They are one and the same. And to sit here and complain about what's been produced outside the unit when they've not expanded it is as great a straw man as I've ever seen raised in one of these proceedings.

The issue before you right now is whether or not I can ask this witness if, in fact, it didn't engage in negotiations with Phillips and change the hydrocarbon pore volume to reach an agreement among themselves, and I think that's relevant to the fact that now they are asking you to impose that same formula on us, and we don't have a chance to negotiate anything.

MR. HALL: And that's the problem we've pointed out in our motions, Mr. Catanach. This is the first time we've been aware of this. They spring it on us here today. We can't respond to it. It is revisitation of the earlier hearing.

We're not arguing -- We're not here to revisit the formula or the methodology. It's just the presence of pore volume under the expansion acreage, period. That's why we think we ought to bring this proceeding under

control and limit the question to that issue.

MR. CARR: I feel sorry for them, but they could have subpoenaed whatever they wanted, and they did not.

EXAMINER CATANACH: Mr. Carr, what do you hope to accomplish with this line of questioning?

MR. CARR: Later I'll present evidence that will show that it's unique to have a one-factor allocation formula in the unit.

And I can wrap this up by asking Mr. Nelson, perhaps, if they're going to try and use the same formula with us that's already been adopted. And then at the end I'm going to be able, I believe, to show you from the transcript of prior proceedings that they adjusted this to accommodate their interest, but what they're now trying to lop wholesale outside the existing unit to us is unfair.

And that is one of the reasons we're going to ask you to change it.

EXAMINER CATANACH: Well, Yates and Hanley are going to propose a different method of allocation within the unit.

MR. CARR: Yes, sir, we are. But to get to that point under the statute, we need to show what they've done is unfair. That's what it says. You have to decide that first.

MR. HALL: And that's my point, Mr. Catanach.

That's a separate Application. Yates and Hanley are free to abide by the procedures under the unitization act and do that. They have the evidence to back it up. They can present it in a second -- a separate properly advertised and noticed case.

Not in this case. This is a simple expansion case into two 80-acre tracts. Really, the only question on the table is the distribution of pore volume into the expansion acreage. That's all.

MR. CARR: It is not a separate proceeding, Mr. Catanach.

I quote to you from Section 70-6-7 in the Statutory Unitization Act, which provides in Subpart (b), If the Division -- that's you -- determines that the participation formula contained in the unitization agreement does not allocate unitized hydrocarbons on a fair, reasonable and equitable basis, the Division shall determine the relative values. And it goes on and passes it to you.

So it isn't a separate proceeding. Mr. Hall ought to read the Act. It's this proceeding.

MR. HALL: Well, you know, I've read the Act, Mr. Catanach. Before Mr. Carr can come in here and expand beyond the scope of this Application, he has to show that he's complied with the Act as well. And I don't think the

basis of counsel letter to interest owners sent in the blind -- the Division didn't know of, opposing counsel was not made aware of -- simply advising them of the pendency of this expansion hearing, complies.

What he has to do is go out and show that he has consent of 100-percent of the interest owners he proposes to bring in if that's, in fact, what he's doing, and tell them about his new participation formula and explain it to them and get them to consent to that.

I doubt he's done that.

MR. CARR: Mr. Catanach, I will do one thing I think may be helpful. I'll withdraw my question and ask you to take administrative notice of pages 50 through 53 of the transcript of the June 16, 1995, hearing in the case called on the application of Gillespie-Crow to create this unit, and it is Case 11,194.

If you'll take administrative notice of those, I'll stop my cross-examination, because I thought you've ruled on our prehearing motions and I -- we'll never get anywhere if we sit here and re-argue them all afternoon.

EXAMINER CATANACH: Any objection, Mr. Hall?

MR. HALL: No, sir.

EXAMINER CATANACH: We'll adopt that.

MR. CARR: And that concludes my direct exam- -- my cross-examination of this witness.

EXAMINER CATANACH: Cite those to me again, Mr. Carr.

MR. CARR: It is in the transcript of Case 11,094 [*sic*], and it's pages 51 through 53, the testimony of William Crow concerning the negotiations with Phillips who did -- who agreed to participation.

EXAMINER CATANACH: Case Number?

MR. CARR: 11,194.

EXAMINER CATANACH: 11,194.

MR. CARR: Yes.

MR. CARROLL: Can we see that right now? Mr. Carr, can we look at those pages?

EXAMINER CATANACH: Any redirect, Mr. Hall?

MR. HALL: Briefly.

REDIRECT EXAMINATION

BY MR. HALL:

Q. Mr. Nelson, now that the mystery acreage and the mystery formula is off the table, let's refocus on the purpose of this Application. Isn't it true that really what we're talking about here is the proper distribution of hydrocarbon pore volume under the two expansion tracts?

A. That's correct.

Q. And what is the most accurate basis for determining distribution to those tracts? What's the best data you can use to do that?

A. From the well control hydrocarbon pore volume.

Q. And that's from the well data?

A. That's correct.

Q. And that's what you've done?

A. Yes.

MR. HALL: That's all I have.

MR. BRUCE: Mr. Examiner, could I just say one thing? I do want to affirm that Gillespie-Crow, Inc., the Applicant, does adopt Mr. Nelson's geology in this case.

EXAMINER CATANACH: Okay.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Nelson, what areas of your mapped reservoir do you feel the least comfortable with, as far as the boundaries go?

A. You're looking at Exhibit 5 --

Q. I'm looking at 5B.

A. Well, to the south, I really don't believe the zero line goes south of the unit in Section 1. Again, that was based from the Platt Sparks map.

Placing the zero line between the Culp well and the State "S" could be subject to interpretation. I had placed it more than halfway toward the Culp well.

The Culp well was drill stem tested in the Strawn interval. The drill stem test result basically was a very

tight interval with low pressures. It recovered some gas in pipe; it actually had a little gas to the surface, too small to measure, as I recall. It had no oil recovered in the test, and to me that suggests the well is not close to an oil reservoir. However, we do know that there is oil at the State "S".

So where you put that zero point could be debated. But I believe where I have it is a reasonable interpretation.

Exactly how the zero line is in the northeast quarter, relative to the proposed Gillespie-Crow Culp well, again, that is a Platt Sparks interpretation. And as I said, we are reviewing that. There has been discussions within our company as to the risk involved in drilling that well.

This reservoir is unusual in its size and in the sense that it's one reservoir for this area, where most of these reservoirs are two- and three-well, maybe four-well fields. I guess the Big Dog-Strawn is probably five wells. That's a little unusual, that's getting in the upper end. And to continue drawing these contour lines out and out and out, well, there's no match for it in this area. There's no reservoir of that kind of areal extent here, from my knowledge, that is Strawn in the Lovington area.

I guess those are the areas that I'm not sure of,

to answer your question.

Q. Okay. You've really knocked out a lot of well control in between the State "D" and the Snyder "EC" Com. Do you feel comfortable in that area in the southeast portion of the unit?

A. I believe from drill stem test data, and I guess our next witness may testify as to the pressures in the "EC" Com, that well is connected to the reservoir; it has four feet of net pay in it.

As I recall, I believe we show the Hanley well -- and the map will reflect whatever the value is -- and the Chandler well, that there were 17 feet of net porosity in that well. Well, the difference between the two wells is not a great deal in thickness, but obviously a great deal in permeability. The "EC" Com pumps 40 barrels a day, and it pumps off.

So we're getting everything we can get, apparently -- Excuse me, Gillespie is getting everything they can get out of that well. Where that zero -- Where the effective permeability line may be, I'm not sure. I don't think that there is much reservoir nearby the Snyder "EC" Com.

And again, we had -- Enserch, I don't believe, really wants the "EC" Com in the reservoir, as I don't believe it really is materially benefitting from the

pressure maintenance, and I believe Yates has also objected to that inclusion. And Gillespie has never pushed to include that well. They had asked the parties, but when we objected, when I believe Yates objected, they quit pushing on them.

Q. How about the western boundary of this unit? there's not a lot of well control between the West State and the Hanley State Number 1.

A. Well, the Gillespie Baer 2 well is in that Big Dog-Strawn Pool. It has a different reservoir pressure within the unit. It is clearly separated. The Amerind State well is dry in the Strawn, it's a dry hole. So there are two points of control. Actually, there's -- I'm not sure in the northwest of 32.

Q. Unless you drill additional wells within this pool, do you think it's possible to change this map, the way it is, to further redefine the reservoir?

A. I believe this map reflects the well control, the known well control at the time. Additional wells may change this map.

Q. We may be back here expanding the unit again; is that correct?

A. Maybe. Again, this is an unusual reservoir in its areal extent.

Originally -- I was not involved with the

predecessor company, the Dalen, the PG&E who was a partner with Gillespie at the time the first drilled, but I do know from conversations that Gillespie never thought this reservoir was this large to begin with, or they wouldn't have drilled the initial six wells or so, so close together.

Q. You don't know at this point whether or not the Culp Number 1 is going to be drilled?

A. We have not approved an AFE. We have not agreed among -- technically among ourselves if we're going to participate in the well.

Q. Who -- Is the ultimate decision to drill that well, is that the decision of the -- of Gillespie?

A. Yes, that is the decision of the operator.

As I understand -- and I have not read the operating agreements -- if we don't participate then we go nonconsent, and then they can, even with a signed a operating agreement -- a signed AFE, don't have to drill the well.

Q. It's your opinion that the Chandler well and the State "S" well are definitely in this reservoir, and that acreage should be included in the unit?

A. It is my opinion from the log correlations. I believe that the next witness will testify to the engineering facts concerning that.

EXAMINER CATANACH: Okay, I have nothing further of this witness.

Anything further?

MR. HALL: We have nothing further.

EXAMINER CATANACH: Okay, this witness may be excused.

MARK MLADENKA,

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

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Will you please state your name and city of residence for the record?

A. My name is Mark Mladenka. I live in Midland, Texas.

Q. And who do you work for and in what capacity?

A. I work for Charles B. Gillespie and Gillespie-Crow, Inc. I'm the production manager.

Q. By education and experience are you a petroleum engineer?

A. I was educated at the University of Texas, Austin, graduated with a mechanical engineering degree in 1976 and been employed by Union in California for three years and Mabee Petroleum for another nine, and have been employed as a -- in the capacity of an operations

manager/engineer since that time, since 1989.

Q. And are you familiar with the engineering matters pertaining to the West Lovington-Strawn unit?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Mladenka as an expert petroleum engineer.

EXAMINER CATANACH: Any objection?

MR. CARR: No objection.

EXAMINER CATANACH: Mr. Mladenka is so qualified.

Q. (By Mr. Bruce) Let's start with a little bit of the history, sir. When was the West Lovington-Strawn Unit formed?

A. The unit was officially formed in October 1st of 1995.

Q. And what has happened since the unitization hearing, since the unitization order became effective, to cause Gillespie-Crow to seek unit expansion?

A. The Chandler Well Number 1 in the south half of the southeast quarter of Section 28 was completed in March, 1996, and the State "S" Well Number 1 in the west half of the southeast quarter of Section 34 was completed late in October, 1995, which extended the boundaries of the unit reservoir, the West Lovington-Strawn Pool.

Q. And why are you seeking to include these -- there's actually three new tracts, but these two wells and

the three new tracts in the West Lovington-Strawn Unit?

A. The two new wells are in pressure communication with the unit's reservoir, and thus should be brought into the unit.

Q. Are the unit's interest owners bearing the costs of the pressure-maintenance project?

A. Yes, and we are bearing the entire cost of the pressure-maintenance project and have at times restricted production from the unit wells to accommodate the production from the two subject wells. Therefore, if we don't bring the wells inside the unit, they are benefitting from the pressure maintenance project without having to pay for its share of it.

Q. Okay. Now, let's just talk about the pool, not just the unit but the pool. When -- Could you just describe briefly the history of the pool?

A. The West Lovington-Strawn Pool was discovered in June, 1992, by the Hamilton Federal Number 1, now the WLSU Well Number 1. It's located in the southwest quarter of the southeast quarter of Section 33, Township 15 South, Range 35 East.

Ten additional wells were drilled in the pool within the next three years. As early as April, 1993, Enserch and Charles Gillespie, the largest working interest owners in the pool, began considering a pressure-

maintenance project, due to the rapid pressure depletion of the reservoir.

In June of 1995 a hearing was held before the Division resulting in orders approving statutory unitization and a gas-injection pressure-maintenance project for the unit.

The unit became effective October 1, 1995.

Q. What is the drive mechanism of this pool?

A. It is a solution gas drive.

Q. And what is the depth bracket allowable for wells in the pool?

A. The original depth bracket allowable was 445 barrels of oil per day. Order Number R-9722-C reduced the allowable to 250 barrels a day.

Q. Now, were these wells in the pool ever produced at top allowable, at the 445 barrels a day?

A. Yes, early in the life of the pool. However, due to pressure decline we voluntarily curtailed production to 100 barrels of oil per day per well in May of 1994, about a year and a half before the pressure-maintenance project began.

Q. Why was the production curtailed?

A. At the time production was restricted, the working interest owners knew they were going to initiate a secondary recovery project but that it would take some time

putting it into place. The reservoir was approaching critical gas saturation, and depletion of the reservoir's bottomhole pressure had to be slowed down.

If we had continued to produce the wells at top allowable, critical gas saturation would have been reached before the pool was unitized. Had that occurred, free gas within the reservoir would have become mobile, and the producing GOR would have increased rapidly, depleting the reservoir of its main energy drive.

Q. How would that have affected production from this pool?

A. Oil production would have declined very rapidly, and a significant volume of original oil in place would not have been recovered.

Q. Was the pressure-maintenance project for the unit proposed as a method to prevent the loss of reserves?

A. Yes.

Q. When did injection of gas begin into the unitized formation?

A. We began injection in October of 1995. Since then, we've been injecting about 4 to 7 million a day, for a total of 2.4 BCF as of April 1 of 1997.

Q. And which is the injection well?

A. We're injecting into the top of the Strawn porosity in the WLSU Number 7, formerly the Speight Fee

Number 1, which structurally has the highest drilled porosity in the unit's reservoir.

The perforations from each producing well in the unit are at the bottom of the Strawn porosity, or the bottom 10 to 15 feet of perforations isolated mechanically.

Q. Okay. Now, let's move to your exhibits. Could you identify Exhibit 6 for the Examiner and discuss the effect of gas injection on pressures in the unitized formation?

A. Exhibit 6 is a plot of bottomhole pressure versus cumulative production, both calculated and measured, measured being oil in the tank and pressure actually recorded. Calculations, I'll get into that later.

As you can see, the original bottomhole pressure was 4392 p.s.i. By April, 1994, the bottomhole pressure had declined to 3450. At that time, production was curtailed to 100 barrels of oil per day. By October of 1995, when injection began, the bottomhole pressure had further declined to 3261 p.s.i.

As a result of gas injection the bottomhole pressure actually increased to 3310 p.s.i. in March of 1996, even though over 240,000 barrels of oil were produced from the unit and the two wells outside the unit since the pressure-maintenance project began.

Since March, 1996, the bottomhole pressure in the

unit has decreased 48 pounds to 3262 p.s.i., after producing 790,000 barrels of oil since injection began.

Q. So let's stop on that for a minute. When you began injection, pressures were 3261 p.s.i.?

A. That's correct.

Q. And in March, 19- -- currently, they're virtually the same thing; is that correct?

A. That is correct.

Q. Even after producing 790,000 barrels?

A. Right. Actually, it shows the average has increased 1 p.s.i., so...

Q. Now, looking at this chart, how do the actual bottomhole pressure figures compare with the calculated and extrapolated figures?

A. The calculated points on Exhibit 6 were generated using our latest available pressure data. The calculated points compared to actual measured points indicate how accurate our predictions have been. This confirms our prediction that the reservoir would have depleted very rapidly had we not instituted the pressure-maintenance project.

Q. Did the gas injection program successfully prevent additional gas from breaking out of solution, in your opinion?

A. Yes, it has prevented waste and enabled the

recovery of additional reserves from the reservoir.

Q. Now, let's move to your Exhibits -- Let's go to 7A and 7B together. Could you go to 7A, identify that, and then discuss what that shows for the Examiner?

A. Exhibit 7A is a rough material balance of the West Lovington-Strawn Unit, and these are unit wells only. It takes the oil produced at the time -- well, since injection began, October, 1995, being the first month of injection with the oil produced. We account for that oil produced as reservoir withdrawal and the gas injection and then a resulting monthly balance with a cumulative reservoir barrel balance.

Page 2 of 7A is the graphical representation of that data from October through March of 1997. It shows that we've maintained at least a 300,000-barrel reservoir positive balance over injection --

Q. Over withdrawals?

A. Over withdrawals.

Q. So as far as just looking at the unit wells only, you're ahead of the game?

A. That is correct.

Q. Now, is Exhibit 7B, is that just simply --

A. That -- Exhibit 7B is simply the tabular monthly production since the discovery well, the Hamilton 1 or the WLSU Well Number 1 came on, through March of 1997, with

oil, gas, GOR, cum oil, gas, gas injection. These are tabular monthly data input.

Q. Am I correct that just for the unit approximately 2.4 million barrels of oil have been produced?

A. That is correct. We've produced -- correct, 2.4 million barrels of oil, as of April 1, 1997.

Q. Now, if I can digress for a moment, that's beyond what was projected for primary recovery from the entire pool?

A. That is correct.

Q. Okay, let's move on to your Exhibit 8A. Could you identify that?

A. 8A is simply -- are identical to the 7A presentation; however, this incorporates the entire pool, meaning the State "S" and the Hanley "EC" -- I'm sorry, the Hanley well, and even the "EC", the Snyder "EC" Com well. It shows that we are now at a monthly imbalance of 264,000 barrels, due to the production of those -- mainly those two -- the State "S" and the Hanley well.

The -- Page 2 of that exhibit is the graphical representation showing the negative balance currently seen by the pool.

I'd like to point out on page 3 of that Exhibit 8B [*sic*], I have transposed the bottomhole pressure data for the pool below the reservoir balance graph representation.

October, 1995 -- These are the same pressure points that we'll go into later. October, 1995, the pressure is 3294. We show an imbalance at that point, 3261 in November, 3310 in March.

Q. So you had increased at that point?

A. We had increased that, and our predictions and our modeling shows that we're on the right tract.

Q. Then what's happened since that, you reached that maximum pressure of 3310?

A. Right, and we showed a reservoir -- These are just calculations showing the material balance, and the pressure just confirms our calculations. And then we decline down to 3262, which was essentially the same pressure, in October-November, 1995.

Q. And since you've reached imbalance -- or when you reach that imbalance point, you've had these two new wells producing?

A. That is correct. If we put this same pressure plot on there, the correlation on the unit curve, for the material balance for the unit curve, you could tell that the reservoir pressure is declining. However, material balance shows a positive.

Q. And Exhibit A again, could you identify that --

A. Yeah.

Q. -- or Exhibit --

A. Exhibit 8B is the graph- -- the tabular production data with page 3 as being the graphical presentation of that data for the West Lovington-Strawn Pool.

Q. For all wells in the pool?

A. For all wells in the pool.

Q. At this point the pool has produced 2.6 million barrels?

A. That is correct.

Q. Okay. Now, are the rates at which unit wells have been producing greater than the rates you could have produced the wells without the pressure-maintenance project?

A. Yes. Without the project, we would have had to continue the strict production to 100 barrels, to minimize depletion of reservoir energy and loss of reserves. But that would also have required extremely good cooperation from all interest owners and would not have -- and also would have required, probably, the shut-in of the State well and other structurally high wells to -- due to gas breakthrough or the gas cap expansion to the upper porosity and depleting the reservoir pressure.

Q. Okay. In your opinion, was the pressure-maintenance project approved in time to prevent harm to the reservoir?

A. Yes, it was.

Q. Now, looking at the unit wells, at one time they were producing approximately 100 barrels a day, and then they -- I believe there's previous testimony they went up to about 200 barrels a day. Were they always held constant in production rates?

A. No, the production from the Chandler Number 1 and the State "S" Number 1, which are the two wells we're seeking to add to the unit, required production from the unit wells to be reduced to 150 barrels of oil per day in mid-1996, in order to prevent a further decrease in reservoir pressures.

At that time, production from the State "S" Number 1 was increased to 445 barrels of oil per day, as demanded by Yates.

Q. At that time, why didn't you just increase the gas injection rates to make up for production from these two new wells?

A. Originally, we were limited by our compressor capacity. At the unit's cost we installed a larger compressor in late September of 1996. This took time because of the environmental permits involved. After the new compressor was installed, we are able to increase injection rates and increase producing rates on the unit wells.

Q. Now, you mentioned that in March, 1996, pressures reached 3310 p.s.i., and since then they've dropped about 50 p.s.i. In your opinion, what is the cause of that pressure decrease?

A. In my opinion, the drop in pressure is a result of production from the State "S" and the Chandler Well Number 1. Since then, the State "S" Number 1 has produced 98,000 barrels of oil and the Chandler Number 1 has produced 68,000 barrels of oil.

Q. That's since March, 1996?

A. That is correct.

Q. Let's talk about the State "S" Number 1 first. What is Exhibit 9?

A. Once again, the State "S" is the tabular production data associated with the State "S" Number 1 operated by Gillespie-Crow.

Page 2 of that is the State "S" production graph, representing that tabular data.

Q. Okay. So it goes -- it was fairly -- Looking at page 2 of that exhibit, production was flat from August for a number of months; is that correct?

A. That is correct.

Q. Now, in February, that's when the allowable was reduced; is that correct?

A. I believe it was March. January we had some

cold-weather shut-ins, and February we also had cold weather in the shut-in period for the bottomhole pressure test period. And it's a short month.

Q. Okay. Is it still at this -- currently producing at a flat rate?

A. 250 barrels a day, the current --

Q. No decline?

A. No decline.

Q. And the current production to date from the State "S" Number 1 is 140,000 barrels of oil?

A. That is correct.

Q. Okay. Now, this lack of decline in production, what does that indicate to you?

A. It clearly shows that the well is receiving pressure support from the unit.

Q. Now, what about the Chandler Well Number 1? When was that completed?

A. It was completed in March of 1996. It initially produced 138 barrels of oil per day and 280 barrels of water per day.

Q. Okay, let's go to Exhibit 10. What is the production data from the Chandler?

A. Exhibit 10 is again the tabular monthly production from that particular well, indicating a cumulative production of over 68,000 barrels as of April 1,

1997. This also shows the amount of water production that particular well has made.

Q. Now at page 2, looking at the production graph, from its completion date for the next nine months, the production -- oil production from that well actually inclined, didn't it?

A. That is correct. It continually increased to September of 1996, and at least through December of 1996 it has maintained that higher producing rate.

The last two to three months, I'm not sure exactly why the production has dropped on that. Perhaps due to higher water cut.

Q. Again, what does this flat or inclining oil production rate suggest to you?

A. It's in direct communication with the reservoir and receiving pressure support.

Q. Now, let me refer you -- Once again, talking about the unit and these two new wells, referring to your Exhibits 11 and 12, what other data do you have that these -- the Chandler well and the State "S" Number 1 are in communication with the unit's reservoir?

A. Exhibit Number 11 is a tabular presentation of the West Lovington-Strawn pressure data compared to the State "S" and the Chandler 1 well.

We have a few more points on the State "S" since

we operate that well. We received the Chandler bottomhole pressure information. It appears that it was taken -- well, March 11th, just very shortly after initial completion of that well. It shows bottomhole pressure 3260.

But you can see the chronological order of the pressure and how it -- at the beginning of injection, October, 1995, how that reservoir pressure has been maintained, and that the State "S" compares very favorable to the field average of the unit wells.

Q. Okay, and Exhibit 12, that's on the State "S" Number 1. What in particular does that graph represent?

A. I'd like to talk about this. This is the State "S" well bottomhole pressure buildup we performed in July of 1996. Our general procedure of obtaining field bottomhole pressures have been to shut the entire unit down, shut the injection well down, shut the wells in for a 72-hour period.

This particular case, the bombs did not record for the first 72 hours, and a replacement set of bombs were run in essence, 72 hours in the unit. The main shut-in for another -- it appears, another 45, something like that, I guess, 50 hours.

At approximately 141 hours into the shut-in period of the State "S" Well Number 1, we turned all the

wells back on and also started back our injection well.

Within six hours of this production from the unit, with the State "S" well shut in, we saw the slope changing, the pressure flatten out, and within 25 hours actually see a decrease in reservoir pressure, indicating excellent communication with the reservoir.

Q. Okay. Now, as to the Chandler well, why don't you, you know, use Exhibits 11 and 13? What do you see there?

A. Right. Once again, back to Exhibit 11, it's the tabular comparison of the reservoir pressures of the Chandler well. It shows 3260 on March 11th of 1996, compared to the field average of 3310, within 50 pounds of the reservoir -- the field average.

Exhibit Number 13 is the subpoenaed bottomhole pressure data that we acquired, which shows that the well was shut in at 1:30 p.m. on March the 6th of 1996. The reservoir -- The pressure declines at this point.

At this time the unit was still producing. Whether -- I wasn't around at this particular time, but -- It might have been pure coincidence. We were doing our monthly -- six-month bottomhole pressure field test.

This coincided -- We shut in the unit -- you can see there, at 1:30 p.m., March 8th of 1996 -- we shut it in within about three hours after that particular point at 52

hours into their shut-in buildup.

Within 20 hours, the rate of increase in the bottomhole pressure actually increased during that period of time. We discontinued our bottomhole pressure several hours -- well, you can see there, it says 1:30 p.m., 3-12-96. They pulled their bombs, I believe, at least 24 hours prior to that point.

The increase in pressure is awful coincidental and suggests that it is in pressure communication with the unit.

Q. Okay, let's move on to gas injection. How much gas does the unit need to inject to the reservoir to replace each barrel of produced oil and still maintain pressures?

A. We determined that to be 2 MCF per barrel of oil produced.

Q. Okay. Let's go to your Exhibit 14 and discuss that. What have been the injection amounts and costs, et cetera, to the unit to date?

A. Okay, Exhibit 14 is a tabular presentation of our gas-injection cost for the West Lovington-Strawn Unit.

We have what we call our available gas. It is gas returned to the unit in the form of residue gas. We also purchase the gas, and the purchased gas is at the gas price noted. Therefore, you have a gas cost per month.

We also have a transportation cost associated with that gas. You can see there that we have -- our total cost is a little over -- about $3.3 million as of April 1, 1997.

Q. Okay. Now, that's the total cost of injected gas for the unit?

A. That is correct.

Q. Okay. Now, referring to Exhibits 15 and 16, what portion of that cost or those costs have been attributable to production from the State "S" Number 1 and the Chandler Number 1?

A. If we look at Exhibit 15, the tabular presentation of the cost required to match those reservoir withdrawals, and we neglect water production, that cumulative cost for the Hanley well has amounted to $337,000, and for the State "S" well it has amounted to $646,000.

For the first three months of this year, the average cost for those two wells are $84,000 a month, it is costing the unit to maintain reservoir pressure to those reservoir barrel withdrawals.

Q. The total cost to date for both wells is approximately a million dollars to the unit; is that correct?

A. That is correct.

Q. And these two wells, they're not paying part of the pressure-maintenance costs?

A. No, they're -- No.

Q. Okay. Now, you have to make up for production from all the wells; is that correct?

A. That is correct.

Q. What if you don't do that? What could happen?

A. Well, if we don't match the injected volume and the withdrawal, the reservoir pressure would decline, which would substantially shorten the life of the unit and lead to loss of reserves.

Q. Okay. Now, Mr. Mladenka, if I could refer you back to your first exhibit, Exhibit 6, I think you've previously testified that total pool production to date is about 2.6 million barrels of oil.

Now, if the pressure-maintenance project had not been instituted, you know, first, what would have been the approximate total amount of primary recovery from this pool?

A. Based on our updated pressure information, primary production was projected at 2.1 million barrels.

Q. Okay. Now, if the pressure-maintenance project had not been instituted but the State "S" Number 1 and the Chandler Number 1 had been drilled, can you give us a rough estimate of what they each would have produced?

A. Production would have declined rapidly within the field if the injection was not initiated, so you've got to base your recovery on the -- some percent, primary recovery factor.

Based on the hydrocarbon pore volumes associated with the State "S" and the Chandler well, the State "S" would probably recover 68,000 barrels, based on a 15-percent recovery factor. Or at a 20-percent recovery factor, it may be 90,000.

The Chandler well at 15-percent recovery factor would have been 4500, based on the 30,000 barrels of oil in place under the HPV that we projected for it, or given it. It's actually detailed on the map. At 20 percent, that number might have gone to 6000 barrels recovery.

Q. Actual production from these two wells has been substantially higher than that, hasn't it?

A. That is correct. Referring back to Exhibits 9 and 10, the State "S" produced 140,000 barrels to date -- or to April 1st of 1997 -- and the Chandler well has produced 68,000 barrels of oil to date. Thus, they definitely have benefitted from the pressure-maintenance project without having to pay any of its costs.

Q. In your opinion, is the addition of the three new tracts as proposed by Gillespie-Crow reasonably necessary for the purposes of the unit and the pressure-maintenance

project?

A. That is correct.

Q. In your opinion, is the unitized management, operation and further development, if necessary, of the Strawn reservoir underlying the expanded unit reasonably necessary in order to effectively carry on pressure-maintenance operations?

A. Yes.

Q. Has the institution of the pressure-maintenance project resulted in the recovery of substantially more oil from the pool than would otherwise have been recovered?

A. Yes.

Q. Now, will any additional costs of conducting pressure-maintenance operations for the expanded unit exceed the cost of the additional oil recovered, plus a reasonable profit?

A. No. However, at this time, if there were no more additional -- At this time, no more additional costs are anticipated.

However, if the tracts are not unitized, the unit's operating cost will be higher, which could lead to premature termination of the unit.

Q. In your opinion, will expansion of the unit benefit interest owners in the unit as expanded?

A. Yes.

Q. What is Exhibit 17?

A. Exhibit 17 is the revised Exhibit C to the unit agreement, containing the proposed tract participation factors.

Q. Once again, the -- You are using the exact same participation formula proposed in the unit back in 19- -- the unit agreement in 1995?

A. That is correct.

Q. You are not -- At that time production through, I think, May 1 of 1995 was subtracted; is that correct?

A. That is correct.

Q. And since these two new tracts don't have any production through that date, you're not subtracting --

A. No --

Q. -- any production?

A. -- that is correct.

Q. In your opinion, does this proposal as reflected in Exhibit -- Excuse me. In Exhibit C, what was this calculated from again?

A. It's calculated -- I believe it's Exhibit Number 5B, the hydrocarbon pore volume map.

Q. Okay. And does this proposal allocate produced and saved hydrocarbons to each tract on a fair, reasonable and equitable basis?

A. Yes.

Q. Okay. Moving on to a slightly different subject, is it true, Mr. Mladenka, that Gillespie-Crow is also seeking the expansion area of the unit be certified for the recovered oil tax rate and that these two wells be brought into the unit and be certified for a positive production response?

A. Yes.

Q. Are these new tracts, in your opinion, qualified for the recovered oil tax rate?

A. Yes, as I've discussed, they've recovered substantially more oil than if the pressure-maintenance project had not been instituted.

Q. In your opinion, have the State "S" Number 1 and the Chandler Number 1 shown a positive production response attributable to the pressure-maintenance project?

A. Yes. I think it's apparent from Exhibits 9 and 10, which showed no production decline, or even an incline in production.

Q. Okay, has the reservoir within the proposed expanded unit area been reasonably defined by the development?

A. Yes.

Q. From an engineering standpoint -- and you might want to look at that Exhibit 5B, Mr. Nelson's map -- would you discuss the basis for the unit boundaries, the expanded

boundaries?

A. All right, the -- We'll start on the west side. The Amerind West State Number 1 in Lot 1 of Section 2 was dry in the Strawn. However, it's only a few feet off the unit boundary.

Also, the State -- The same can be said for the Gillespie State "D" Well Number 8 in lot 12 of Section 1, also shown to be a few feet off the unit boundary.

We recently had that -- The well has died on us twice, and the last three months a shut-in period of three days failed to build up any reservoir pressure or tubing pressure, rigged up a swab unit, tagged fluid level at 7100 foot. That's roughly 1600, 1700 pounds of bottomhole pressure. So it's definitely not inside the West Lovington-Strawn Pool.

Q. And that's the State "D" 8 Number -- State "D" Number 8?

A. State "D" Well Number 8.

The Gillespie-Snyder "EC" Com, as we heard, was tight. It is part of the -- It is connected to the West Lovington-Strawn pool by pressure information, that being the DST data we obtained on -- when the well was drilled.

Also the Julia Culp Well Number 1 in the southeast quarter of the northeast quarter of Section 34, 15 South, 35 East, was DST'd in the Strawn interval and was

shown to be tight.

Q. Now, if Yates and Hanley have indicated that additional lands other than these three tracts that Gillespie-Crow proposes be brought into the unit, what's your response to that proposal?

A. Well, first off, the new wells just outside the unit essentially confirm the original geology. We believe there is very little reservoir outside the original unit boundaries.

Second, the unit agreement and the Statutory Unitization Act allow unitization of less than an entire pool if the new unit boundaries have been reasonably defined by development. The only area reasonably defined by development is the acreage Gillespie-Crow seeks to bring into the unit.

Third, we cannot determine if those tracts will have any Strawn under them outside the proposed two proration units.

What we propose is that if Yates or Hanley believe that additional offsetting acreage is in the reservoir, let them drill a well; if that well is productive, economical and in communication, then they can propose to bring it into the unit.

All the wells -- I believe there are provisions set up that all wells have brought into the unit on a paid-

out basis, whether the unit paid for any unpaid portion of it or the well has paid out on its own.

Adding undrilled, unproven acreage, could add noncontributing acreage, just like the Snyder "EC" Com Number 1. There's no question that the pressure-maintenance project is benefitting the tracts we seek to add to the unit, and delay in bringing them into the unit is unfair to the unit's interest owners as a whole.

Q. Now, Mr. Mladenka, you've already heard this morning Yates and Hanley state that the proposal to bring in only these three tracts is an effort to benefit solely Enserch and Charles Gillespie. In your opinion, is that true?

A. No, that's absolutely not true. A majority of the offsetting acreage owned by -- A majority of that offsetting acreage is owned by Enserch and Charles Gillespie.

Q. Let me lead you through this. Now, this gray area is, you know, Mr. Mladenka's area that Yates and Hanley have at least said they may bring into the unit. But let me crosshatch some of this for you.

This acreage down here, who owns that?

A. Charles Gillespie.

Q. A hundred percent?

A. One hundred percent.

Q. Now, that's 100-percent Charles Gillespie.

Let's look at the Snyder "EC" Com well unit. It's actually 100-percent Charles Gillespie's and not Bill Crow's; is that --

A. That is correct.

Q. What about this Snyder "EC" Com well unit? Who owns that?

A. Charles Gillespie.

Q. A hundred percent again?

A. A hundred percent.

Q. So that's 100-percent Charles Gillespie.

Now, there's Lot -- I believe this would be Lot 6, Section 6. I believe that's, to the best of your knowledge, 100 percent Snyder Ranches?

A. That is correct. That was under lease at one time by Charles Gillespie. However, after drilling the "EC" Com well, we let that lease expire.

Q. Okay. So at the time of the 1995 unitization hearing, this was 100-percent Charles Gillespie?

A. I believe that's correct.

Q. Now, let's move on to the well unit for the State "S" Number 1. At the time of the original unitization hearing and at the time that State "S" Number 1 was drilled, what did Charles Gillespie and Enserch think as to ownership of that 80 acres?

A. We believed we owned 100 percent of that well.

Q. So 100 percent Gillespie/Enserch. Now, as it turned out, there was a title problem there, right?

A. Correct.

Q. And the actual ownership through stipulation of the parties now is about two-thirds Gillespie and Enserch; is that correct?

A. I believe that's correct.

Q. Okay. Let's move to the west half, northeast quarter. What do combined Charles Gillespie and Enserch own in that acreage?

A. I believe it's over 50 percent of that acreage.

Q. Somewhere 50 percent to two-thirds?

A. Fifty-five, something like that.

Q. Fifty percent, two-thirds, Gillespie and Enserch. That's current?

A. Current.

Q. And that was also at the time of unitization?

A. That's correct.

Q. Okay. Now, let's move over to the western boundary of the unit. I don't think it really matters much, but let's -- Charles Gillespie own an interest over there?

A. He does.

Q. Is that roughly 50-, 60-, 55-percent also?

A. I believe that's correct also.

Q. And I do not know. Does Enserch own an interest there?

A. Yes, they do.

Q. Okay. So that's 50 percent plus Gillespie and Enserch. One final tract. Does Charles Gillespie own an interest in this acreage?

A. Correct, I believe it's 10 acres out of that 120.

Q. Okay, so -- Where are we? A tenth, an eighth, a twelfth?

A. A twelfth.

Q. So at the time of the original unitization hearing, Charles Gillespie, William Crow and Enserch owned the vast majority of acreage offsetting this unit?

A. That is correct.

Q. It would have only benefitted them to bring in their acreage, would it not?

A. That is correct.

Q. But Mr. Gillespie didn't think it was fair to bring in his acreage, did he?

MR. CARR: Objection, I think that's speculative, and he said he wasn't here when they did that.

Q. (By Mr. Bruce) Mr. Gillespie never asked -- Looking at the expanded unit, he has not -- Mr. Gillespie has not asked, while you've been employed by him, to bring

in his extra 100-percent owned the acreage, has he?

A. That is correct.

And we think that the only prudent way to bring in acreage is to drill it. You drill it, you get the hard data, you get the hydrocarbon pore volume associated with that data, and you can actually produce -- or you'll know exactly what oil in place is -- not exactly, whatever the contour shows. You'll have a more reasonable number to base the participation on.

Q. And again, I think Mr. Nelson has testified to that, originally Gillespie-Crow thought the State "S" Number 1 acreage was in another reservoir when that well was drilled?

A. That is my understanding.

Q. Let's skip along here, Mr. Mladenka, and move on to our final subject, and let's discuss the unitization process. To the best of your recollection, how long did it take to form the unit originally?

A. I believe about a year and a half.

Q. Now, regarding unit expansion, could you refer to your Exhibit 18 and first just identify it. What is it?

A. Exhibit 18 is a chronology of events for the West Lovington-Strawn unit.

Q. Now, I don't really want you go to through this in detail. This was prepared from company records, was it

not?

A. That is correct.

Q. Don't go through it in detail, but if you could give the Hearing Examiner a few highlights of the time frames involved, when the parties first discussed unitization and the procedures since then.

A. Correct. On January 8th, after the State "S" title problem was pointed out to us, we, in fact, requested them -- their election to join the unit. And however, they have consistently claimed it had not had enough time to prepare for this hearing.

Hanley has consistently requested giving unit owners any information and has opposed unitization. The unit owners had discussions for 15 months with Hanley and Yates.

Q. So there's been 15 months of discussion, and the parties just couldn't come to terms?

A. That is correct. We actually approached Hanley before they spudded a well to -- if they would trade information. We had the same agreement with Amerind to the west, and the South Big Dog-Strawn has turned out to trade information, however they wouldn't cooperate. And it wasn't until three weeks ago we received the bottomhole pressure information that we subpoenaed.

Q. Now, has Yates ever proposed any participation

percentages?

A. I believe Yates did not want the State "S" Number 1 to be added to the unit. However, it was the -- added the units, Yates wanted Tracts 12 and 13 to be treated as one tract and proposed a combined tract participation of 4.89 percent. Hanley has never proposed a tract participation.

Q. Okay. So for the State "S" Number 1 combined, Yates proposed 4.89 percent?

A. That is correct.

Q. What -- if you look at Tracts 12 and 13 together -- Well, first of all, why don't you treat them as one tract?

A. They're separate leases with different ownership, as -- and the BLM and the Commissioner require them to be listed as separate tracts.

Q. Okay. Now, what -- For your combined Tracts 12 and 13, what participation has Gillespie-Crow proposed?

A. The proposal was 4.3 percent, and it's not that much different than the Yates proposal at that time.

Q. Okay, so Yates proposed 4.89, and Gillespie-Crow has proposed 4.34?

A. Correct. And Yates owns approximately 12 percent of that State "S" well.

Q. Okay.

A. So we've been fighting over some fairly small percentages.

Q. In your opinion, has Gillespie-Crow made a good-faith effort to obtain the voluntary joinder of the interest owners in the unit?

A. Yes, we have.

Q. And in your opinion, is the granting of this Application, as proposed by Gillespie-Crow, in the interests of conservation and the prevention of waste?

A. Yes.

Q. And were Exhibits 6 through 18 prepared by you, under your direction or compiled from company business records?

A. That is correct.

MR. BRUCE: Mr. Examiner, I'd move the admission of Gillespie-Crow Exhibits 6 through 18.

MR. CARR: No objection.

EXAMINER CATANACH: Exhibits 6 through 18 will be admitted as evidence.

Let's take a short break here.

(Thereupon, a recess was taken at 3:45 p.m.)

(The following proceedings had at 4:03 p.m.)

EXAMINER CATANACH: Let's call the hearing back to order.

One piece of business before we move on. I'd

like to mention that Kellahin and Kellahin have filed an entry of appearance on behalf of Snyder Ranches and Larry Squires. I just wanted to make sure that got on the record, and we'll go from there.

Mr. Carr?

MR. CARR: Mr. Catanach.

CROSS-EXAMINATION

BY MR. CARR:

Q. How long have you actually worked on the West Lovington-Strawn Unit?

A. February 1st, I was employed by Charles Gillespie.

Q. So when you're giving us a history of the unit, you're really relying on the company records and data that you have available to you in those files?

A. That is correct.

Q. When we look at this map that Mr. Bruce has written all over -- he usually does those to my maps, not his own -- he has shown us where Mr. Gillespie has ownership surrounding the unit area.

A. Correct.

Q. My question to you is, does Yates own anything within the unit?

A. Within the unit boundaries at this time?

Q. As it currently stands?

A. No, not I know of.

Q. Does Hanley own anything within the unit?

A. No.

Q. Does David Petroleum?

A. I don't believe so.

Q. In your review of unit records, were you able to see who was involved in the original negotiations for the formation of this unit?

A. No, I don't -- I haven't looked at it.

Q. Now, when we look at all the ownership information that's been depicted on this exhibit, you would agree with me that who owns what is really the improper way to approach formation of the unit; wouldn't you agree with me on that?

A. Not necessarily. The ownership generally starts the discussions, and then geology and the engineering proceed.

Q. Wouldn't you think the geology and the engineering data, though, ought to actually control what you unitize, not the --

A. That is correct.

Q. When you were testifying, you, I believe, testified that if the two tracts you're proposing to include in the unit were, in fact, added, that the same participation formula would exist in the present unit.

You're recommending it would apply to those tracts as well; is that not correct?

A. That is what we want.

Q. Now, when you look at the records on the unit, almost before the unit was formed, the State "S" well had been drilled; isn't that correct?

A. It was completed, actually, a few days -- well, the 26th, I believe. It was late October. The unit was effective October 1.

Q. Based on the data that's available on the -- was available on that well, wouldn't it be fair to assume that almost at the time the unit was formed, the unit owners had reason to know that they had a well in pressure communication with their unit?

A. Well, we can look and see what the bottomhole pressure data, what the actual dates were.

It shows September the 24th, 1995, there was a DST. I would assume that there was reason to suspect, due to the low bottomhole pressure, that it could be on communication. However, producing rates and -- well, the quality of rock may not have been clearly apparent at that time.

Q. Wouldn't you think it would have been in the best interests of unit operators to quickly expand the unit to bring this well in?

A. I would think so, that the -- what my understanding is, that payout is allowed, or before any well is brought in the unit, it is under a payout status, whether the unit pays for the remaining portion of the payout or the well is paid out on its own.

Q. But as soon as that State "S" well was out there, there was a problem; isn't that fair to say?

A. I'm sorry.

Q. As soon as the well was drilled and information was available on it, unit operators knew there was a problem; isn't that fair to say?

A. I wouldn't say it was a problem. I would say that they would have to consider it, bringing it into the unit.

Q. Now, you've looked at the records, and is it your opinion that the 15-month delay in bringing this forward was -- Did you have an opinion on that, or did you just --

A. Well, it appears that Yates was notified in January of the problem and that the unit -- or -- the first mention of bringing it into the unit, that was within three months, let's say, well within, probably, the payout period.

Q. There was a working interest owner meeting in June of 1996, was there not?

A. I believe that's correct.

Q. That was called by Yates, not Gillespie; isn't that right?

A. I'd have to review every single piece --

Q. And if you don't know, I'm not --

A. I don't know, I don't know exactly who called what. I'd have to refer to Exhibit 18.

Q. And do you know whether -- Are you familiar with the ballot that Gillespie sent out in mid-1996 to expand the unit?

A. I was aware that ballots were sent out.

Q. Do you know what result there was when that ballot was --

A. No, I don't have those numbers. It was unsuccessful.

Q. If I understand your testimony, there is a problem, in your opinion, for the unit having these non-unit wells sitting outside the unit boundary but in the reservoir?

A. That is correct.

Q. And because of that, you're having to purchase gas and inject it in the reservoir to try and equalize or offset the withdrawal --

A. Correct.

Q. The unit is producing gas, is it not?

A. That is correct.

Q. And you're selling that gas, or are you reinjecting that gas?

A. Combination of both. We recover the liquids, we get paid for the liquids. The residue gas is credited back to the sales line. It goes in one plant, comes out another, so it's credited in the Pipeline Balancing Act.

Q. And so when you -- you reinject some and then you buy some additional gas, and that's what you're using to inject?

A. Essentially.

Q. And what you're doing is because of this stripping and the -- or processing or whatever you do to the gas, it's really a lower-BTU gas that you're injecting than that which you're producing --

A. Exactly.

Q. -- isn't that right?

And whatever volume you have in that reservoir, because it sweeping your -- maintaining pressure in an oil reservoir, it's probably going to increase in BTU content?

A. I'm sorry?

Q. By putting this low-BTU gas into the reservoir, you ultimately will produce that gas; isn't that right?

A. Yes.

Q. And then you're going to sell that gas?

A. That is correct.

Q. So it's not just a -- You're not just throwing that money in the ground; there will eventually be recovery from that; isn't that --

A. True.

Q. And by sweeping it to an oil reservoir, you're going to improve the BTU content --

A. That is correct.

Q. -- of the gas as well?

A. That is correct.

Q. You talked about having restricted production within the unit.

A. Yes.

Q. Mr. Gillespie also restricted the production in the State "S" well, did he not?

A. That is correct.

Q. And in fact, most of the time it has been produced at a level fairly comparable to what unit wells have been produced at; isn't that fair to say?

A. During that -- from -- Well, I can't remember exactly. It was -- You can look at the curve there. It's over -- There's four or five months at 12,000 barrels a month. First three months there's 12,000 barrels. That's significantly higher at that time than the unit wells were.

Q. Now, if I understand, for a new tract to be added to the unit, it has to have a commercial well on it; isn't

that right?

A. I believe it has to be -- In my opinion, it would be a commercial well. It has to be communicated to the reservoir and contribute to the reservoir.

Q. And that decision would be made by the current owners in the --

A. Yes, the working interest owners, as I understand the unit agreement, must agree to that.

Q. Now, Gillespie right now is proposing the drilling of an additional well in the northeast quarter of Section 34?

A. That is correct.

Q. And if that well is drilled, that won't be a 100-percent Gillespie-owned well?

A. No, that won't.

Q. Yates will own part of that well?

A. That is correct.

Q. Enserch will own part of it?

A. Correct.

Q. That would be another well outside the unit; isn't that correct?

A. That is correct.

Q. And then those withdrawals are going to impact the amount of gas you have to reinject; isn't that a fair --

A. That is correct.

Q. Now, did you testify that you have been injecting at a rate which is enabling you to offset the withdrawals from the unit? Are you keeping the pressure up?

A. Yes, that exhibit shows clearly.

Q. Now, which exhibit was that?

A. Here it is, Exhibit 11.

Q. Okay. And that shows that -- Is this within just the unit or within the pool, where --

A. The pool.

Q. Now, if you're able to keep the pressure up -- and I don't read these things as well as you guys, but I look at Exhibit 8A --

A. Right.

Q. -- I see that you have a negative cumulative balance in terms of your -- when we look at your material balance work on the reservoir; is that not right?

A. That is correct.

Q. Isn't it inconsistent to have your pressures up and a negative cumulative balance?

A. The pressures are dropping. We've dropped 48 pounds. So we have seen a pressure decrease, and thus a negative reservoir injection barrels. We went from 3310 to 3262.

Q. Let me go to Exhibit 8A, okay?

A. Which one?

Q. 8A.

A. 8A, okay.

Q. Now, if I look at your reservoir barrel withdrawal line on this exhibit, the third one down, can you tell me what those factors are? It says OSTB with 1.- --

A. Oil stock barrels times 1.99.

Q. And what is the source of this information?

A. That is the B_o current generated by a reservoir engineer, based on PVT data, pressure cum plots, the like.

Q. And if I go across that column, I get to the end and I've got a PMCF. What is that?

A. That is the free gas produced.

Q. And then -- And the source of that number after .9028?

A. That is a standing correlation, specific gravity correction for the gas --

Q. If we go down to the --

A. -- B_g.

Q. I'm sorry?

A. B_g.

Q. Okay. If I go down to the last line it says "free gas production".

A. Right.

Q. It looks to me like you've only used the West Lovington-Strawn Unit wells 5 and 6, and why would that be?

A. Those two are structurally high. The 5 was the original one that exhibited an increase in GOR. The 6 is the second one. And currently, in April and May, we are seeing this occur in our West Lovington-Strawn Unit Number 2 and 4. It's all following a structurally high --

Q. And these two wells --

A. -- we're expanding the gas cap, and it's just coming down to those particular wells.

Q. If I look at your Exhibit Number 10 and the graph attached to that, that's the Chandler Well Number 1, and they're indicating that there is a -- What is this? An increase in production? Is that what we're seeing here?

A. Yes. I don't know why, but from June through September you saw the production increase, and -- actually through December and for some reason January, February, March. And it's just my speculation that the water-oil ratio is increasing in that well.

Q. Is that indicative to you of support from support from pressure maintenance?

A. Exactly.

Q. If I go back to 8A and I look at the last page of that exhibit, this again is showing, is it not, a pressure decline at the same time you're showing the pressure

support?

A. Which one?

Q. The last page on 8A, doesn't it show a decline in the reservoir pressure? Page 3 of 8A?

A. Let me get these organized again. Okay, here we go. Okay.

Repeat the question.

Q. If I look at the third page of 8A, that shows a decline in reservoir pressure, does it not?

A. On 8A, page 3?

Q. Yes, sir, it's on the "Material Balance - West Loving- --"

A. Right. I've plotted the reservoir pressure off of Exhibit Number 11 on this particular material balance plot.

Q. And so you're seeing, on one hand, a drop in pressure in the reservoir, and you're seeing at the same time an increase in production from the Chandler Well Number 1; is that what these two show?

A. Yes, during that period from -- whenever it is, the production actually increased from -- on the Chandler well.

The Chandler well came on in March of 1996. The State "S" was still producing. We see a pressure decrease and a material balance decrease in the pool. Those are

facts.

Q. If your well is successful that you're proposing in the northeast of 34, if you drill that well, would you produce at allowable rates, or are you going to be curtailing that?

A. We're restricted by the 250 a day.

Q. Would you go to that level? Are you going to be producing at a rate comparable to what you need to, to maintain pressure maintenance in the unit?

A. I would imagine that -- We have the capability right now, the capability to match with reservoir withdrawals we have. We have restricted production in these high-GOR wells where now 250 a day per well for the existing wells that do not exhibit high-GOR wells, we have more than enough capacity with our compression equipment to handle another well that comes into the unit or outside of the unit, restricted by the 250-barrel a day limitation.

Q. And would that be with 250 a day for the State "S" and the Chandler?

A. Yes.

Q. And that's injecting in the West Lovington-Strawn Unit Well Number 7?

A. That is correct.

Q. Do you have any plans to add, say, the F 1 well to your plans for injection?

A. That's another point there that we're in the process of evaluating. March -- you can look at the injection rates -- we had injection rates of 7 million a day. We never accomplished that.

However, our West Lovington-Strawn Units Number 1 and 4, the GORs have increased. There is some debate on exactly what's happening there, but due to the extremely large intervals that we're perforating in those wells and we're mechanically isolating the bottom set of perfs with a packer there's a possibility we're channeling or -- We're just seeing a high GOR, whether or not that's the gas cap or not.

Q. But you're going to be able to manage the injection --

A. Sure.

Q. -- without additional surface facilities --

A. Sure -- Well, a pipeline to another well.

Q. And using the Number 7 well? That's what --

A. Or --

Q. -- your plans are?

A. Or taking another well, like the West Lovington Unit Number 5.

Q. Okay. If, in fact, we have a successful well where you're proposing it in 34, are we looking at having to expand the unit again potentially?

A. I'm hoping that we'll bring these wells into the unit and the precedent will be set and we can get the job done quickly. If the well is valuable to the unit, the unit operators -- It's clearly evident this is a tremendous reservoir here, we're talking about. And it's very obvious whether or not you want to bring it in.

Q. As you look at the reservoir right now, there are hydrocarbon pore volumes under that tract?

A. It's mapped that way, correct.

Q. And are you willing -- You're not willing to make a call just on how you've mapped it; you actually want the well up there?

A. Let me point this out to you.

Originally, under the Platt and Sparks map, these contoured lines actually were closer into the unit bounding map. We did not bring that acreage into place. We drilled these -- the State "S" Well Number 1.

If we had brought that acreage into the unit under the hydrocarbon pore volume map, the allocation formula, it would not be receiving its actual oil in place allocated volume, based on the drill bit that drilled through that particular reservoir at that point.

Q. So you're talking about there's a definite value to having that wellbore there?

A. Yes.

Q. If we go inside the unit and we go up into the northwest quarter of Section 34, we see no wellbore in the northwest of 34. That's all just interpretive information; isn't that right?

A. I believe that's correct.

Q. And so aren't we applying a different standard to what we have in the unit now and what we're willing to bring in?

A. That is acreage that we considered -- or I believe we considered productive.

Q. Do you know on what basis?

A. From a geological standpoint. And it was a reasonable expectation of the unit to be there.

Q. Don't you have a reasonable expectation under the acreage where you're proposing to drill the new Strawn well?

A. We do, and I feel like it's in a downdip position. However, we -- the verdict is still out on the actual drilling of that well. One of the reasons Mr. Gillespie wanted that well staked at this time was to share the risk in that particular well, not prove up any additional offset, and basically share the risk.

And we know if it's going to come into the unit, it will be a valuable wellbore because of its structural position.

Q. What do you mean by "share the risk"?

A. Share the risk, as in drilling -- we don't know, from what I understand about the geology -- and Ralph had to honor the Platt and Sparks map originally -- the verdict is still -- this is essentially as -- You can see the Amerind well; it got as close a corner shot as to the -- one of the first ones, drilled a dry hole. This thing can disappear, four-well, five-well fields max, maybe, and here we've got this tremendous field.

Q. And when you say "share the risk", you mean share the risk of a successful well with Yates and with -- that also is one of the owners in that acreage, correct?

A. That is correct.

Q. And so if Yates pays its share of the well and it's a poor well, then it just stays outside the unit, isn't that fair to say?

A. If it is not in communication with the unit and the unit owners do not agree to bring it into the unit, that's correct.

Q. If it produces like the Snyder "EC" Com Number 1, it could just be left out?

A. I would say that's correct, because it's not hurting the unit interest owners, and -- It's just not hurting the unit interest owners.

Q. And if it turned out, conversely, to be a well

that could have produced 250 a day or 445 a day, then it could be brought into the unit if the unit owners decided to do that, correct?

A. If it's in pressure communication --

Q. They could then bring it in, could they not?

A. They would try to, I would imagine.

Q. And then they would -- that well would not -- what it -- the owners, Yates, wouldn't get what it owns under the dedicated acreage, but it would get its share of unit production; isn't that right?

A. Correct, based on the hydrocarbon pore volume.

Q. And that could be substantially less than what it would get, perhaps, on a stand-alone basis?

A. I don't know. The drill bit would tell you. I mean, it could go either way.

Q. And the drill bit would give you some hard information?

A. Exactly.

Q. When you talked about the cost to the unit of having these two wells outside the unit, you were talking about how many thousands of dollars, or maybe a million dollars to date, and I guess what I was going at when I got sidetracked on the facilities and the Number 7 well, are you putting into those numbers any cost factor for additional facilities related to the State "S" or the

Chandler?

A. No.

Q. Is it just the gas cost?

A. Just the gas cost, just to replace that barrel that comes out of the ground.

Q. And then that gas is in the reservoir, and you can't produce it later, correct?

A. That is correct.

Q. And it will have a higher BTU content when it comes out of the ground?

A. It should, yes.

Q. Did Mr. Bruce do your title work for the State "S" Number 1?

A. I'm not sure he did.

MR. CARR: That's all I have.

(Laughter)

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. Just a couple of --

A. Okay.

Q. -- follow-ups. I want to clarify one thing that in your original, your direct testimony, was fairly long.

On the State "S" Number 1, that was commenced in late August, 1995, was it not?

A. That is correct.

Q. There was a lease expiring August 31st, 1995, within that well unit, was there not?

A. That is correct.

Q. Okay. So if that well hadn't been drilled, that lease would have expired?

A. Correct.

Q. And that is the lease Yates has an interest in?

A. That is correct.

Q. Now, regarding the timing of the negotiations, Exhibit 18, which was the chronology -- I don't think you have to get it out, but I think you said January, 1996, was the first notice to Yates of any proposal on unitization?

A. Correct, where you're going to -- it says -- The document says that it was mentioned to try to bring it into the unit.

Q. Okay. And then in July, 1996, a lot of PVT data, pressure data, things like that, were given to Yates?

A. That is correct.

Q. And so negotiations -- And there were also the title problems we've mentioned in the State "S" well?

A. That is correct.

Q. Now, that was -- that took from -- That took seven or eight months to resolve, did it not?

A. I believe that's correct.

Q. So overall -- Plus that you had to get the

approval of the BLM, the Land Commissioner, things like that? These are just normal course of events?

A. That is correct.

Q. Okay. Now, the first working interest owners' meeting, do you know, did Hanley attend the first working interest owners' meeting?

A. I couldn't answer that.

Q. Okay. But that well was still tight as of May, 1995 --

A. We hadn't got --

Q. -- May, 1996?

A. -- any information on that well.

Q. Okay. Then one final -- Mr. Carr asked you to look at Exhibit 8A, which is the copy I gave you?

A. Right.

Q. Okay. Are you saying there's a -- I forget how -- if there's an imbalance, how come pressures are constant? That's only -- That's looking at the unit. There's actually a positive for the unit itself?

A. Correct.

Q. So if you look at both Exhibits 8A and 7A together, they come out even, which is why the pressures have remained constant?

A. Exactly.

MR. BRUCE: Okay. That's all I have, Mr.

Examiner.

EXAMINER CATANACH: Okay, just a couple.

EXAMINATION

BY EXAMINER CATANACH:

Q. Did you participate in the generation of the percentages on Exhibit 17, the new allocation percentages?

A. To some degree.

Q. Okay. Do you have, by any chance, or do you know if they're available, the calculated hydrocarbon pore volumes for each of these tracts?

A. I believe that we have that somewhere, but it was not shown as an exhibit. We can get that for you, though.

Q. Okay. To your knowledge, that was based on the 5B map?

A. Yes, Exhibit -- What? 5B, I think.

Q. Okay. Can you guys provide that?

A. Yes.

Q. And this unit, as I recall, we've already approved a positive production response --

A. That is correct.

Q. -- for this unit?

So you're seeking to get that certified for this State "S" and the Chandler?

A. Correct.

Q. Do you have an estimate on when -- on what dates

should be approved for those responses, or recommendation?

A. They saw the production response when they were drilled , so -- in fact -- well, I say that -- I take that back.

We started the injection October of 1995. It probably was not apparent -- I would say the same date that we certified the unit at.

Q. Those wells were both producing at that time?

A. Yes, correct.

MR. BRUCE: Actually, Mr. Examiner, the -- I think we certified the unit as of January 1, 1996. The State "S" Number 1 was producing at that time. I believe the Chandler Well Number 1 started producing March, 1996.

THE WITNESS: 1996.

Q. (By Examiner Catanach) Has the ultimate gas -- or ultimate oil recovery number, estimated oil recovery number, been changed from the last hearing? Have you guys revised that number?

A. I'm not sure if we ever really determined what that ultimate recovery will be. We have asked -- requested the QLA2 calculations that this map was generated on from Snyder Ranches. We have not received that.

It was my intention to use that data on a subsea -- porosity above a certain subsea point to determine what recovery we have produced at that point, and

an areal extent. Then we could probably come up with a good ultimate recovery factor for the reservoir.

We have not received that information. We may have to proceed with Enserch's data.

Q. Did I understand your testimony to be that the original estimated recovery from primary was 2.1 million barrels?

A. Correct.

Q. Without any kind of pressure maintenance?

A. Correct. And based on producing those wells at near top-allowable rates.

Q. And that was calculated based on decline rates and --

A. I'd like to --

Q. Or how was that --

A. It's the -- the Exhibit 6 -- and I'm not extremely good at reservoir engineering, but it's based on the Horner method for primary recovery below the bubble point, and it's based on PVT data and relative perm data, and gas-oil ratios and so forth.

Q. So that was calculated by somebody at Gillespie?

A. Yes, or a consultant.

Q. Okay. And to date you've recovered 2.6 million?

A. Correct.

Q. That's from the start of production from all

these wells?

A. Yes.

Q. That's not just unit production?

A. That's the pool.

Q. That's from the start of production, okay.

Do you know what the remaining recovery is going to be, estimated?

A. No, until we get those numbers and find out exactly where the gas cap is.

Q. Is it your understanding that if the well is drilled outside the unit and it's determined that it is in pressure communication, then it still has to be approved by the unit operators to be included in the unit?

A. Correct. For example, the Snyder "EC" Com well, DST information showed it had a bottomhole pressure of less than original 33, 36, I can't remember exactly what it was. However, it was a poor producer. The interest owners, "huh-uh", and it was fine with Gillespie.

EXAMINER CATANACH: I think that's all I have.

Anything further of this witness?

MR. BRUCE: No, sir.

EXAMINER CATANACH: Okay, this witness may be excused.

(Off the record)

EXAMINER CATANACH: Okay, let's proceed.

PAUL S. CONNOR,

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

DIRECT EXAMINATION

BY MR. BRUCE:

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

A. Paul S. Connor.

Q. And who do you work for and in what capacity?

A. I'm President of Unit Source, Incorporated, Denver, Colorado.

Q. And what is the relationship between Unit Source and Gillespie-Crow in this Application?

A. Gillespie-Crow has asked my assistance in the expansion of the West Lovington-Strawn Unit area.

Q. What does Unit Source do?

A. Our expertise is specifically specializing in the formation of cooperative units such as enhanced recovery, waterfloods and gas injection.

Q. Preparing documentation and obtaining ratifications, et cetera?

A. Exactly.

Q. And did you testify at the initial unitization hearing in this matter as an expert in unitization?

A. Yes, sir. I did.

Q. And are you familiar with those matters related

to obtaining ratifications and the unitization of the West Lovington-Strawn Pool expansion?

A. Yes, sir.

MR. BRUCE: Mr. Examiner, I tender Mr. Connor as an expert in unitization.

MR. CARR: No objection.

EXAMINER CATANACH: Mr. Connor is so qualified.

Q. (By Mr. Bruce) First, Mr. Connor, the unit documents, the unit agreement and the unit operating agreement were previously approved by the Division, were they not?

A. That's correct.

MR. BRUCE: Mr. Examiner, if it's okay, rather than submitting the documents if we could just incorporate those documents from the prior case?

EXAMINER CATANACH: Let's do that.

Q. (By Mr. Bruce) How have the unit agreement and the unit operating agreement been revised for the unit expansion?

A. The revisions have been to Exhibits A, B, C and D to both agreements to accommodate the expansion in the new tracts.

Q. Okay, and Exhibit A to the unit agreement was previously introduced as Exhibit 1, I believe?

A. Yes, sir.

Q. And Exhibit C, the tract participations, was previously introduced as Exhibit 17?

A. That's correct.

Q. Okay. What are Exhibits 19 and 20?

A. Exhibit 19 is a revised Exhibit B to the initial or the existing West Lovington-Strawn Unit agreement, and Exhibit 20 is the Exhibit B to the unit agreement that reflects the ownership within the expansion.

Q. Okay. Exhibit 20 merely concerns the interest ownership of the three new tracts?

A. That's correct.

Q. And were these exhibits taken from current title files?

A. Yes, sir, they were.

Q. And when we get down to the -- oh, some of the later exhibits, the existing West Lovington-Strawn Unit was treated as one tract for allocation purposes, was it not?

A. That's correct, and the apportionment of production still remains as originally approved by the Commission.

Q. Now, what are Exhibits 21 and 22?

A. Exhibits 21 and 22, Exhibit 21 is a letter from the Oil and Gas -- or I'm sorry, the Commissioner of Public Lands, the State of New Mexico, that has granted a preliminary approval to the request for -- by Gillespie-

Crow to expand the unit.

And Exhibit 22 is also the same letter but on behalf of the Bureau of Land Management, responding to an application.

Q. And those entities won't finally approve a unit expansion until the Division hearing?

A. That's correct.

Q. Now, what correspondence have you had on behalf of the Applicant with the interest owners in the proposed expanded unit?

A. Once the BLM and the Commissioner of Public Lands preliminarily have granted approval of the expansion, we sent out letters to all the parties, which constituted notice of the hearing and also an invitation to ratify and commit their interest to both the -- or the expansion.

Q. And Exhibit 23 in particular contains correspondence just related to sending out notices requesting ratification, et cetera?

A. That's correct. There's various letters in there dating -- beginning with January 9th through the end of January that -- with the intent to request voluntary commitment of the parties to the unit -- exhibit.

Q. Have the royalty owners or others contacted you regarding this?

A. We've had some contacts, just some basic

questions, but we have not received to date any objections to the proposed expansion.

Q. Now, next, what is Exhibit 24?

A. Exhibit 24 is actually a compilation of the ratification of joinders that we've received back approving and adopting the expansion.

Q. These are from both royalty owners and working interest owners?

A. That's correct.

Q. Now, on a participation basis, what percentages of working interest owners and royalty interest owners have approved the unit expansion at this time?

A. To date, we have ratification of joinders from royalty parties that represent 74.365 percent on a royalty basis and, on a working-interest basis, 98.051 percent.

Q. Okay. At this point are you still slowly receiving ratifications?

A. Yes, sir, we are.

Q. Does Exhibit 25 reflect the current royalty owner commitment to the expansion?

A. Yes, sir, it does.

Q. And does 26 -- 26 is Exhibit D to the unit operating agreement, I believe?

A. Yes, sir.

Q. And does that reflect working interest owner

ratification?

A. Yes, sir, it does.

Q. Okay. And finally, were all interest owners within the unit as expanded notified of the Application for expansion?

A. Yes, sir, the exhibit contains copies of notice and letters and also an affidavit on my part, proving that mailing was deposited.

Q. And that's Exhibit 27?

A. Yes, sir.

Q. And were Exhibits 19 through 27 prepared by you or compiled from company records?

A. Yes, sir, they were.

MR. BRUCE: Mr. Examiner, at this time I'd move the admission of Gillespie-Crow Exhibits 19 through 27.

EXAMINER CATANACH: Exhibits 19 through 27 will be admitted as evidence.

MR. CARR: No objection.

CROSS-EXAMINATION

BY MR. CARR:

Q. Mr. Connor, the people whose ratifications you've shown on Exhibit Number 24, are those owners in the entire unit as expanded, or are they just in the two tracts --

A. Those are ratification of joinders from parties within the entire unit? There are a -- There is a

ratification of joinder from a royalty owner who is within the expanded unit area. But everybody --

Q. Just that one --

A. Yes, sir.

Q. -- expanded?

A. To date.

Q. You said you had received no opposition. Is that the only support you've received, other than the Applicant, the Applicants, for the expansion from owners in the expansion area?

A. Support?

Q. I mean the only ratification. You have one royalty owner in the expansion area?

A. That's correct.

Q. And you said you haven't received any opposition. That means you haven't received anything in the mail in opposition to the --

A. No, we haven't. In our letters to the parties, we requested that any written obligation -- or any written objections to the expansion be sent to us through -- or on behalf of Gillespie through us.

Q. You've been here today, have you not?

A. Yes, sir, I have.

Q. You know there's some objection to the expansion?

A. Yes, sir, I do.

MR. CARR: That's all I have.

MR. BRUCE: One follow-up question, Mr. Examiner.

REDIRECT EXAMINATION

BY MR. BRUCE:

Q. Tract 12, one of the new tracts, the State of New Mexico has preliminarily approved that also, has it --

A. Yes, sir, under their letter, Exhibit 21, I believe.

MR. BRUCE: That's all I have, Mr. Examiner.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Connor, according to the unit agreement, is there a minimum percentage needed to be able to expand?

A. I believe it's State statute, 75 percent.

Q. Okay, of the working interest, or both --

A. Both cost-bearing and non-cost-bearing.

Q. Okay. And do you anticipate having that 75-percent royalty?

A. Yes, sir, there's several royalty owners who have a substantial interest that we sug- -- or believe that we will get, yes.

EXAMINER CATANACH: Okay, that's all I have of the witness.

MR. BRUCE: Mr. Examiner, that's all I have at this time.

The one matter you were interested in, perhaps an ultimate recovery, we do have the reservoir engineer who has worked for Gillespie-Crow for sometime, consultant, and if we can have the night to review that matter, perhaps we can put him on very, very briefly in the morning and give you a number if you are so inclined.

EXAMINER CATANACH: Okay, we can do that.

MR. BRUCE: But I would propose to end right now.

EXAMINER CATANACH: Let's -- We'll adjourn for the time being and reconvene at 8:00, 8:15.

(Thereupon, evening recess was taken at 4:48 p.m.)

* * *

I do hereby certify that the foregoing is a compleie record of the proceedings in the Examiner hearing of Case No. 11124, heard by me on May 15 1997.

David R. Catanach, Examiner
Oil Conservation Division

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 Division (Volume I) 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 May 25th, 1997.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998