

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. 12,112

APPLICATION OF GP II ENERGY, INC., FOR )  
APPROVAL OF A WATERFLOOD PROJECT AND )  
QUALIFICATION OF THE PROJECT FOR THE )  
RECOVERED OIL TAX RATE PURSUANT TO THE )  
ENHANCED OIL RECOVERY ACT, EDDY COUNTY, )  
NEW MEXICO )

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MARK ASHLEY, Hearing Examiner

June 1st, 2000

Santa Fe, New Mexico

00 JUN 15 AM 5:01  
0100 PM 01 01

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK ASHLEY, Hearing Examiner, on Thursday, June 1st, 2000, 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

June 1st, 2000  
 Examiner Hearing  
 CASE NO. 12,112

	PAGE
APPEARANCES	4
APPLICANT'S WITNESS:	
<u>MANNY SIRGO</u> (Engineer)	
Direct Examination by Mr. Carr	6
Examination by Examiner Ashley	44
REPORTER'S CERTIFICATE	67

\* \* \*

## E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	7	43
Project Overview	8, 25	43
Figures 1, 1a, 1b	18	43
Figure 2	22, 24	43
Exhibit A	8	43
Exhibit B	19	43
Exhibit C	21	43
Exhibit D	21	43
Exhibit E	21	43
Exhibit F	21	43

(Continued...)

## E X H I B I T S (Continued)

Applicant's	Identified	Admitted
Exhibit G	22	43
Exhibit H	23	43
Exhibit I	23	43
Exhibit J	10, 24	43
Exhibit K	25	43
Exhibit L	26	43
Exhibit M	20	43
Exhibit N	8	43
C-108 Applications	30	43
Section III	30	43
West Patterns	31	43
East Patterns	32	43
Section V	33	43
West Patterns	33	43
East Patterns	35	43
Section VI	35	43
East Patterns	35	43
Sections VII-XII	41	43
Cross-Section D-D'	19	43
Exhibit 3	43	43

\* \* \*

## A P P E A R A N C E S

## FOR THE DIVISION:

LYN S. HEBERT  
Attorney at Law  
Legal Counsel to the Division  
2040 South Pacheco  
Santa Fe, New Mexico 87505

## FOR THE APPLICANT:

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 DEVON ENERGY PRODUCTION COMPANY, L.P.:

JAMES G. BRUCE, Attorney at Law  
3304 Camino Lisa  
Santa Fe, New Mexico 87501  
P.O. Box 1056  
Santa Fe, New Mexico 87504

\* \* \*

1 WHEREUPON, the following proceedings were had at  
2 10:05 a.m.:

3 EXAMINER ASHLEY: This hearing will now come back  
4 to order, and the Division calls Case 12,112.

5 MS. HEBERT: Application of GP II Energy, Inc.,  
6 for approval of a waterflood project and qualification of  
7 the project for the recovered oil tax rate pursuant to the  
8 Enhanced Oil Recovery Act, Eddy County, New Mexico.

9 EXAMINER ASHLEY: Call for appearances.

10 MR. CARR: May it please the Examiner, my name is  
11 William F. Carr with the Santa Fe law firm Campbell, Carr,  
12 Berge and Sheridan. We represent GP II Energy, Inc., and I  
13 have one witness.

14 EXAMINER ASHLEY: Additional appearances?

15 MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,  
16 representing Devon Energy Production Company, L.P. I do  
17 not have any witnesses.

18 EXAMINER ASHLEY: Any additional appearances?  
19 Will the witnesses please rise to be sworn in?  
20 (Thereupon, the witnesses were sworn.)

21 MR. CARR: May it please the Examiner, the  
22 portion of the Application which relates to qualification  
23 of the project area for the recovered tax rate will be  
24 handled by a separate Application and can be dismissed from  
25 this hearing.

1 EXAMINER ASHLEY: Okay, that portion of the  
2 Application dealing with the enhanced oil recovery tax rate  
3 will be dismissed at this time.

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

7 DIRECT EXAMINATION

8 BY MR. CARR:

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

10 A. Manny Sirgo.

11 Q. Mr. Sirgo, where do you reside?

12 A. In Midland, Texas.

13 Q. By whom are you employed?

14 A. Kenson Operating.

15 Q. Could you explain your relationship with GP II  
16 Energy, Inc.?

17 A. With regard to this Application, I'm serving as  
18 the agent. GP II Energy is an operating company owned by  
19 George Mitchell. George Mitchell and I are partners in  
20 several entities, one of which is Square Lake Partners,  
21 which owns the majority of the working interest in the  
22 North Square Lake Unit.

23 Q. Have you previously testified before this  
24 Division?

25 A. Yes.

1 Q. At the time of that testimony, were your  
2 credentials as an expert in petroleum engineering accepted  
3 and made a matter of record?

4 A. Yes.

5 Q. Are you familiar with the Application filed in  
6 this case?

7 A. Yes, I am.

8 Q. Are you familiar with the efforts to implement a  
9 waterflood project in the North Square Lake Unit area, in  
10 the Square Lake-Grayburg-San Andres Pool?

11 A. Yes.

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

14 A. Yes, I have.

15 Q. And are you prepared to share the results of your  
16 work with Mr. Ashley?

17 A. Yes.

18 MR. CARR: Are the witness's qualifications  
19 acceptable?

20 EXAMINER ASHLEY: They are.

21 Q. (By Mr. Carr) Mr. Sirgo, would you initially  
22 identify what has been marked GP, Inc., Exhibit Number 1?

23 A. Which is this white binder. This is the C-108  
24 Application for the North Square Lake Unit, covering an  
25 area which we have designated as Phase I.

1           Q.    And does it also include some general background  
2 exhibits concerning your plans to develop the North Square  
3 Lake Unit area?

4           A.    That's correct, it's covered in the section under  
5 "Project Overview".

6           Q.    If you would go in the book to the second tab,  
7 marked "Exhibits", and go to what is Exhibit A behind that  
8 tab, would you just identify what this shows for Mr.  
9 Ashley?

10          A.    The area shaded in dark and light yellow  
11 represents the North Square Lake Unit unit boundaries.  
12 Each of the individual unit tracts have been identified by  
13 their tract number. The color designation, light yellow  
14 versus dark yellow, represents state leases versus federal  
15 leases.

16          Q.    All right. Let's go back in the exhibits to the  
17 last exhibit in this section, Exhibit Number N, and I would  
18 ask you to refer to that and then briefly summarize for Mr  
19 Ashley what it is that GP is seeking with this Application  
20 today.

21          A.    Exhibit N is a map of the unit area, and on the  
22 map we've identified three phases for the unit. Phase I  
23 West, which is located in the southwest part of the unit,  
24 with the red dashed line around it, and Phase I East, which  
25 is basically the east third of the unit, also with a red



1 dashed line around it.

2 Inside each of those Phase I areas are shaded  
3 blue patterns, which represent the injection wells,  
4 proposed injection wells, to be used for injection in this  
5 Phase I C-108 Application.

6 Q. Subsequent phases will be brought to the Division  
7 by separate application; is that correct?

8 A. That's correct.

9 Q. What is the current status of the North Square  
10 Lake Unit?

11 A. The unit was approved on June 17th of 1999.

12 Q. And that was by Division Order Number R-11,207?

13 A. That's correct.

14 Q. And I think before we get into the particulars of  
15 this Application, it would be helpful if you would review  
16 for Mr. Ashley the history of GP II, Inc.'s, efforts to  
17 implement this project.

18 Could you tell us when GP first undertook this  
19 effort?

20 A. We looked at the area in the spring of 1997.  
21 Devon Energy, which has a very large project offsetting the  
22 unit to the south -- actually a project that originally had  
23 been initiated by Hondo, had completed a pretty substantial  
24 amount of infill drilling to redevelop that acreage.

25 So at that time we felt like the merits of this

1 acreage were very similar, and we determined it was  
2 something we wanted to acquire.

3 Q. Now, the Devon project to the south that adjoins  
4 the North Square Lake Unit, has Devon unitized that  
5 acreage?

6 A. No, they have not.

7 Q. They're operating it as a cooperative waterflood?

8 A. That's correct.

9 Q. Let's go to Exhibit J in the exhibit book. Would  
10 you identify this and then review the exhibit for the  
11 Examiner?

12 A. Exhibit J, on the north half of the exhibit is  
13 the North Square Lake Unit, which are the areas shaded in  
14 yellow. On the south half of the exhibit the four sections  
15 shaded in gray are the Devon acreage.

16 You'll notice a grid pattern with blue bubbles,  
17 so to speak. This pattern represents the original  
18 waterflood pattern, cooperative waterflood pattern, that  
19 both the Devon acreage and the area which is now the North  
20 Square Lake Unit operated under during the 1960s.

21 Additionally, on the Devon acreage you'll notice  
22 the small red dashed lines. These are the new reduced  
23 density patterns that have since been formed as a result of  
24 Devon's infill drilling on their acreage.

25 Q. Mr. Sirgo, in September of 1997, GP II Energy,

1 Inc., first undertook -- commenced its effort to unitize --  
2 or to develop the area; isn't that correct?

3 A. That's correct. We filed 11 permits, drilling  
4 permits, within what is now the Square Lake Unit area, with  
5 the BLM.

6 Q. And what did the BLM do with those Applications?

7 A. The BLM approved them pending OCD approval.

8 Q. And they required OCD approval because the  
9 locations were unorthodox?

10 A. That's correct.

11 Q. And why were they unorthodox locations?

12 A. Because they in essence represented 20-acre  
13 downspace locations. And additionally, since most of these  
14 are unorthodox on lease lines, even though we were owners  
15 of both sides of the lease line, that there were varying  
16 overriding royalty interest owners that would have caused  
17 us to have to form a pooled unit for that location.

18 Q. What you were proposing to do, really, was  
19 propose infill locations similar to those that were being  
20 proposed and developed by Devon on the acreage to the  
21 south; is that correct?

22 A. That's correct.

23 Q. Now, at the BLM's request, you brought the matter  
24 to the Oil Conservation Division, did you not?

25 A. I did.

1 Q. And what was the response of the Oil Conservation  
2 Division?

3 A. Well, their opinion was that as a result of the  
4 number of overriding royalty owners that we had, even  
5 though we owned the working interest -- and in most cases  
6 we owned 100 percent of the working interest on both sides  
7 of what would be a pooled lease-line unit -- that the best  
8 remedy for the area was to form a unit for the entire area.

9 Q. And they declined to approve the location at that  
10 time; is that correct?

11 A. That's correct.

12 Q. What efforts were required to adjust your plans  
13 and form the North Square Lake Unit?

14 A. Well, after we initially could not get these  
15 locations approved and the request to unitize was brought  
16 to us, we then attempted to first unitize our acreage only.

17 The current is about 6145 acres, of which we had  
18 about 4500 contiguous acres originally. We went to the BLM  
19 in an attempt initially to just unitize our 4500 contiguous  
20 acres. And in that process, which is, you know, part of  
21 the BLM stewardship, they identified additional areas on  
22 the boundaries of our acreage that they felt like needed to  
23 be included in this project.

24 So our initial efforts to unitize our acreage  
25 only were unsuccessful. The BLM expanded the unit

1 boundary, which as a result brought in about, oh, six more  
2 operators, other than ourselves, and probably another 20  
3 working interest owners. And as we already had a fairly  
4 large overriding royalty base, it just expanded that to --  
5 I think our final number was 165 or 167 overriding royalty  
6 owners.

7 Q. With these additional owners, then, you attempted  
8 to form the larger unit; is that correct?

9 A. That's correct.

10 Q. And what period of time was involved in trying to  
11 propose and obtain the participation of these other  
12 interest owners in the 6125-acre unit area?

13 A. It took basically all of 1998 to put that effort  
14 together.

15 Q. And then in 1999 we came to hearing?

16 A. In February of 1999 we came to hearing here.

17 Q. And about what percent of the working interest  
18 was voluntarily committed at the time we went to hearing?

19 A. It was in excess of 80 percent.

20 Q. And at that hearing we were seeking both approval  
21 of the unit --

22 A. That's correct.

23 Q. -- and also a waterflood project?

24 A. That's correct.

25 Q. At that time was the data that you had been able

1 to accumulate in support of both portions of this  
2 application process, was all that data presented to the  
3 Division?

4 A. That's correct.

5 Q. When we look at this area, is it fair to  
6 characterize it as a very old area?

7 A. Absolutely. The vintage of this area dates back  
8 to the late 1940s.

9 Q. And in trying to get a handle on all the data  
10 that would be necessary to come forward and present the  
11 entire project at one time, what did you do?

12 A. Well, obviously there's the OCD records, which we  
13 hire people to research. The well file data that had been  
14 accumulated from the various operators in the past, there  
15 were numerous operators that the well files had kind of  
16 passed down through time, as well as some private scout  
17 libraries that had older well vintage data. Basically  
18 everything that was available, either privately or  
19 publicly, that we could locate within the time period we  
20 had to work on.

21 Q. And there has been a problem with getting  
22 complete information on numerous wells within the entire  
23 unit area; is that correct?

24 A. There had been originally. Our efforts over the  
25 last year have reduced that to a very small number of

1 wells.

2 Q. What action did the Division take on the GP II  
3 applications?

4 A. The unit was approved, the C-108 application to  
5 inject -- The request was to go back, and because of the  
6 size of the unit, because of the number of vintage  
7 wellbores, let's take this thing in smaller pieces and come  
8 back to the Commission with a -- not a revised, *per se*, in  
9 terms of the area, but a reduced number of wells to be  
10 included in the initial C-108 application, which is what  
11 this Application is.

12 Q. And so what you're proposing to do now is come  
13 forward and obtain approval of the waterflood application  
14 on a phase-by-phase basis?

15 A. That's correct.

16 Q. And by doing this, you believe you'll be able to  
17 manage the wellbore integrity issue by cutting it down into  
18 more manageable pieces, if you're addressing them one at a  
19 time?

20 A. That's correct.

21 Q. What is the status of the statutory unit?

22 A. The unit was approved, ratification was obtained,  
23 I think, in November of 1999, the BLM and both Public Lands  
24 approved it in November and December, and the unit became  
25 effective on January 1st of this year.

1 Q. Now, during this process, certain interest owners  
2 in the unit area raised questions with the Division  
3 concerning the unit and waterflood plan; is that correct?

4 A. That's correct.

5 Q. And who were those interest owners?

6 A. Mack Chase from Chase Energy; Vicki Osborne  
7 representing Oklahoma Exploration, which is really the  
8 interests of Staples and Jones; Fi-Ro, which is represented  
9 by Beth McDonald and Tommy McDonald; Rodney Webb, which is  
10 Webb Oil.

11 Q. And how have you responded to the questions  
12 raised by these people?

13 A. Well, we've been discussing with all these people  
14 from the inception of the idea to form the unit. In fact,  
15 Staples and Jones had been a non-op owner under the  
16 original plan to unitize just our acreage, so they've been  
17 part of the process for a long time.

18 Mack Chase, we bought his interest out of the  
19 unit. Rodney Webb, we bought his interest out of the unit.  
20 We've made an offer previously to Fi-Ro, Beth McDonald and  
21 Tommy McDonald. They were under some impression that we  
22 were interested in buying all of their assets in Eddy  
23 County, New Mexico, and our interest only lies in their  
24 share of the unit leases. We've since resubmitted another  
25 offer to them, but once again only covering their interest



1 in the unit.

2 Q. What is the status of the negotiations with  
3 Staples and Jones?

4 A. Staples and Jones, last week I spoke with their  
5 counsel, and they have verbally accepted our offer. They  
6 have some old matters with GP II that they're trying to  
7 resolve prior to the unit's formation, but they verbally  
8 have accepted an offer to be bought out of the unit.

9 Q. Mr. Sirgo, now I'd like to go and look for a few  
10 minutes at the effort that GP II, Inc., has made to analyze  
11 the reservoir and develop this project.

12 Would you just in a general way review for Mr.  
13 Ashley how you went about analyzing the reservoir and the  
14 methods used to determine expected recoveries in the unit  
15 area?

16 A. Well, back in 1998, really, was our probably most  
17 formal report that was assembled on what we expected to  
18 recover from redevelopment of a waterflood in this lease.  
19 And because it is a fairly old lease the wellbore data is  
20 vintage, but we were able to locate seven cores within the  
21 unit that had core data within each of the four productive  
22 intervals that we consider the main targets in the unitized  
23 interval.

24 We had about 105 logs to work with, even though  
25 they were very old logs. But between the core data and the

1 log data, we were able to construct pretty a accurate  
2 volumetric model. And we basically built the model by  
3 intervals, the Loco Hills, the Metex, the Premier and the  
4 Lovington, which are the main pay components.

5 And then once we had a fieldwide volumetric  
6 model, we broke the unit up into the 115 patterns that  
7 would be formed from the reduced density and evaluated each  
8 pattern as to its prior recovery versus prior injectivity  
9 and basically identified remaining reserves for each of the  
10 115 patterns.

11 Q. If we go to the exhibit book, the second tab is  
12 entitled "Figures". Would you just identify what is set  
13 forth on Figures 1, 1a and 1b?

14 A. Figure 1 is just a small summary table of the  
15 seven wells that we were able to locate core data in.  
16 Figure 1a is the actual core data obtained from each of  
17 those wells covering the intervals.

18 Q. And you have core data on which intervals in the  
19 unitized formation?

20 A. We have core data on the Loco Hills, the Metex,  
21 the Premier and the Lovington.

22 Q. How many logs were evaluated by GP II in  
23 analyzing the reservoir?

24 A. Approximately 105.

25 Q. And in doing that, you said you've had cores on

1 four intervals. Are there basically four productive  
2 intervals in the unit area?

3 A. That's correct. By nomenclature purposes, within  
4 each of those intervals -- the Loco Hills is actually two  
5 members, the Metex is actually three separate members, the  
6 Premiere is two, and the Lovington is one to two intervals.

7 Q. Could you identify the cross-section D-D', which  
8 is on the wall, and then review basically for Mr. Ashley  
9 what that shows?

10 EXAMINER ASHLEY: Mr. Carr, is this cross-section  
11 in this exhibit book?

12 MR. CARR: Yes, there's a copy of it in the back  
13 of the exhibit book. The one that is color-coded is on the  
14 wall, and we will leave that with you.

15 THE WITNESS: If you'll look at Exhibit B in your  
16 book, there's a cross-section key of all the cross-sections  
17 available for the unit. Then if you look on the west side  
18 of the unit, there's D-D', a north-south section which runs  
19 from the unit down through the Devon acreage. That's the  
20 cross-section that's on this wall.

21 And mainly what I wanted to show you was the top  
22 of the unitized intervals, which is the Grayburg, the four  
23 intervals that we consider the targets, the Loco Hills  
24 which are two sands, the Metex which are three sands, the  
25 Premier which has two sands, the Lovington which generally

1 has one main sand and often has a small sand associated  
2 with it.

3 But this section runs from the north end of our  
4 unit -- This is the south end of the North Square Lake  
5 Unit, in essence our unit boundary. This then goes through  
6 Devon's acreage.

7 And basically what I wanted to give you a feel  
8 for here is that this is in essence one field, Devon's  
9 acreage and our acreage is in essence the same field, it's  
10 the same intervals, occurs basically at the same subsea  
11 depth. We're basically involved in the same cooperative  
12 flood.

13 So at this point in time they've in essence  
14 redeveloped the south half of the field, and what we want  
15 to do is redevelop the north half of the field.

16 Q. (By Mr. Carr) Now, Mr. Sirgo, let's go to  
17 Exhibit M in the exhibit book. This is your structure map.  
18 What does this show?

19 A. This is a structure map on top of the San Andres.  
20 And basically what this shows is that our acreage and the  
21 Devon acreage are strike, in that there is no structural  
22 difference between our acreage and their acreage.  
23 Basically, you know, when I say structural strike, for  
24 every contour on my acreage they have a similar contour on  
25 their acreage.

1           Q.    So again this shows we're dealing with one  
2   reservoir, Devon redeveloping the southern portion, and  
3   you're proposing to redevelop that?

4           A.    Northern portion, that's correct.

5           Q.    Now, when we look at the cross-section, you've  
6   identified four basic intervals within the unitized  
7   formation.  Would you go to Exhibits C, D, E and F in the  
8   exhibit book and identify those for Mr. Ashley?

9           A.    Exhibits C, D, E and F are isopachs on each of  
10  the four members.

11                   Exhibit C is the Loco Hills interval, so this  
12   isopach would actually represent the net feet of pay we  
13   identified in the Loco Hills "A" as well as the Loco Hills  
14   "B" sand.

15                   D is the net-pay isopach on the Metex, so that  
16   isopach is actually the total of the three intervals of the  
17   Metex.

18                   The Premier, same thing.  We have two intervals  
19   there, so that isopach represents the composite total net  
20   feet of pay for those two intervals.

21                   And then the fourth and final one is the  
22   Lovington sand.  That isopach represents it.

23                   These four intervals, then, these four isopachs  
24   were added together, in essence, to create a total net  
25   isopach for the unit, for what we considered to be the

1 productive unit.

2 Q. And is that what has been marked in this book as  
3 Exhibit G?

4 A. That's correct.

5 Q. And then you took the information from this  
6 mapping, and you used that in your volumetric model that  
7 you were building by individual zone; is that accurate?

8 A. That is correct.

9 Q. Now, you took this data and you built your model.  
10 Then you went from that and started developing or did  
11 develop reservoir estimates; is that correct?

12 A. That's correct.

13 Q. And would you refer to Figure 2 in the exhibit  
14 book, behind the second tab, and explain how you did your  
15 reservoir evaluation?

16 A. Figure 2 is a table, and on the left-hand side of  
17 the table is a pattern number, and you have an exhibit that  
18 also references those pattern numbers so you know which  
19 pattern we're talking about.

20 But for each pattern we, as a result of our  
21 isopach work or our volumetric work, we identified an  
22 original oil in place for each pattern, we looked at the  
23 prior recovery for each pattern, and as a result generated  
24 a remaining recoverable reserve for each of those patterns.

25 And it's the summation of the 115 patterns and

1 the by-pattern reserve estimates that we used to generate  
2 the total ultimate recovery for the unit in total.

3 Q. And when you were doing this work, trying to  
4 determine the ultimate recovery from the unit area, when  
5 was this done? Was this done after you were aware there  
6 would be a hearing or prior to that time?

7 A. Well, this was done in 1998, so this was prior to  
8 our hearing.

9 Q. And basically, this is information you prepared  
10 to make decisions about developing the reservoir, not to  
11 bring the matter to the OCD?

12 A. That is correct.

13 Q. If we look at the exhibit book -- and we don't  
14 have to go into detail on these, but it might be helpful  
15 just to identify what has been marked as Exhibits H, I and  
16 J in the exhibit book.

17 A. Exhibit H is simply a pattern key, which will --  
18 you know, the table we just looked at on Figure 2, when we  
19 reference a particular pattern number, we have so many feet  
20 of pay assigned to it and of remaining reserves assigned to  
21 it. This is the pattern numbers that we're referring to.

22 Exhibit I is a cumulative-recovery bubble map for  
23 our acreage of oil production, for our acreage as well as  
24 Devon's acreage. And these recoveries would be from prior  
25 development.

1           Exhibit J, we've looked at previously. This is  
2 also a bubble map. This bubble map reflects cumulative  
3 injection for both the Devon and the North Square Lake Unit  
4 areas. This would have been injection from the original  
5 cooperative flood.

6           Q. And all of these are components of the reserve  
7 analysis?

8           A. That is correct.

9           Q. And I believe you testified that every pattern  
10 has a different reserve assignment, based on your study of  
11 the area?

12          A. That's correct.

13          Q. And we have looked at Figure 2, and again, this  
14 is a table summarizing the reserve analysis for each of the  
15 fivespot patterns?

16          A. That is correct.

17          Q. How does this reserve analysis, the GP II  
18 analysis, compare to actual results achieved by Devon in  
19 its portion of this reservoir?

20          A. For our 115 patterns, we generated an expected  
21 recoverable reserve remaining of about 8.8 million barrels.  
22 For 106 patterns on the Devon acreage, our estimates of  
23 their projected EURs for the wells that they've already  
24 drilled with downspaced patterns that they've already  
25 created is approximately 8.6 million barrels, about 82,000



1 barrels per well.

2 So, you know, our volumetric model appears to  
3 support their actual results on what they've already done.

4 Q. What is Exhibit K?

5 A. Exhibit K is simply a bubble map form of the  
6 remaining recoverable reserves by pattern. Obviously, the  
7 larger the bubble the more reserves associated with that  
8 particular pattern.

9 Q. If we go back to the initial portion of the  
10 exhibit book, behind the tab "Project Overview", the last  
11 document in that section is a production graph, and that's  
12 right ahead of the tab that's marked "Figures" in the front  
13 of the book.

14 Could you explain to Mr. Ashley what this  
15 production graph actually shows?

16 A. Yeah, one of the questions with all this regards  
17 are these new reserves. And they're absolutely new  
18 reserves, they're reserves that could not be recovered  
19 under the wells or with the wells that previously existed.

20 And what this plot is, this is Devon's daily oil  
21 production as a result of their infill drilling. And like  
22 I said previously, Hondo started the initial effort in  
23 1988, and Devon completed it in about 1995 and 1996. And  
24 this unit went from approximately 150 barrels a day to  
25 approximately 2500 barrels a day.

1           And during this time, there were no new  
2       downspaced patterns formed in terms of injection. So this  
3       production response was totally as a result of drilling the  
4       downspaced infill well in the reduced pattern.

5           And the point here is simply to support that  
6       these reserves are not recoverable without downspacing  
7       these fields.

8           Q.    Now, Mr. Sirgo, a few minutes ago you compared  
9       your projections for the North Square Lake Unit area with  
10      the results you estimate that will be obtained on the Devon  
11      acreage and showed how they were similar. I think it would  
12      be helpful if you would refer to Exhibit L and explain how  
13      the area in the GP II project area differs from the Devon  
14      project.

15          A.    Well, what Exhibit L is, is, you know, we talked  
16      about the four principal productive intervals, being the  
17      Loco Hills, the Metex, the Premier and the Lovington.

18               Exhibit L is a map that identifies which of those  
19      intervals were open in the original wellbores, which are  
20      now included in the North Square Lake Unit.

21               You know, this effort, and the reason we went to  
22      unitization, was basically created by the fact that we had  
23      so many leases, small leases, that made up this acreage  
24      block. And historically what that means is that you didn't  
25      have a continuity of operators in the area. You know, an

1 operator may open one or two of the productive intervals,  
2 and another operator may open, you know, three or one.

3 So, you know, part of the history of this part of  
4 the field, the north half of the field, is basically a  
5 result of the fact that -- different than the Devon  
6 acreage. You know, we probably had 20 or 25 different  
7 operators in the past that have managed these wellbores.  
8 So there was not, in essence, a group plan in terms of, you  
9 know, making sure all the intervals were open and  
10 compatible.

11 Q. Let's now review recent efforts to commence  
12 waterflood operations. How many wells have you recently  
13 staked in the unit area?

14 A. Well, the patterns covered in the C-108  
15 Application represent ten new downspaced, reduced-density  
16 patterns. The associated producers in those patterns were  
17 permitted in March. Five of those permits were approved by  
18 the BLM. Three of the five have just recently completed  
19 arc studies. And the last two, roads have to be re-arc'd  
20 because they were moved by the BLM. All ten permits are  
21 going to be prairie-chicken stamped, though.

22 Q. And because of that, you can't go out there and  
23 do anything until when?

24 A. After June 15th.

25 Q. All right, we've got these two areas. One area

1 covers -- Well, how many of the fivespot patterns are in  
2 each of the areas?

3 A. Well, the west area has four and the east area  
4 has six.

5 Q. And basically what you're doing is following the  
6 same approach that Devon has utilized to the south?

7 A. That is correct.

8 Q. Could you explain generally how you propose to  
9 proceed with the implementation of the proposed waterflood  
10 project?

11 A. Well, you know, water itself is always an issue  
12 in terms of makeup water, sources of water used for  
13 injection. There was a concern that -- Public lands was  
14 one of the issues they asked us to address. It was  
15 obviously one of the things that Devon focused on, because  
16 initially all other drilling activity was to drill new  
17 producers. You know, and additional oil production, you  
18 also get a very large increase in water production in the  
19 field, which in essence becomes a source for injection.

20 So, you know, our plan is no different. We're  
21 going to come in and drill these first ten patterns and use  
22 that produced water to supplement the current produced  
23 water in the field, to fill up our needs in terms of  
24 injection of water for these ten patterns.

25 Q. And by doing that you will be minimizing the

1 amount of offlease or makeup water that you need --

2 A. That is correct.

3 Q. -- and meeting the request of the Commissioner of  
4 Public Lands?

5 A. That is correct.

6 Q. Now, as you go about this project, you intend to  
7 proceed one area at a time; is that correct?

8 A. That is correct. This C-108, versus when our  
9 original effort came in, which basically covered the entire  
10 unit, and when you looked all the wellbores in the unit and  
11 then, in essence, in an area of review when you had to step  
12 out, outside the unit boundary, you were looking at an area  
13 of review that had in excess of 300-plus wells. The area  
14 of review for this Application is about 95 wells.

15 But also understanding, as you file additional  
16 patterns you will have, in essence, with this first 95  
17 wells, probably covered half of the next C-108  
18 application's area-of-review wells with this first part.  
19 So, you know, the first one is kind of the biggest, so to  
20 speak. You'll have smaller pieces with less wells that  
21 haven't been reviewed previously each time you file a  
22 subsequent C-108.

23 Q. At the time the unit was approved, the Oil  
24 Conservation Division directed that no new injection would  
25 occur until injection, new injection wells, were approved.

1 A. That is correct.

2 Q. Has any additional or new injection occurred  
3 during this time period?

4 A. No.

5 Q. And when do you anticipate first injection to  
6 occur in the unit area?

7 A. Well, we can't commence drilling till after June  
8 15th, and we wouldn't initiate any injection till after the  
9 ten wells were produced, so I'd say the fall of 2000.

10 Q. Let's go to the portion of the exhibit book which  
11 contains the C-108 Application. Would you identify just  
12 the first document behind that tab?

13 A. This is the actual Form C-108, the Application  
14 for the authority to inject for GP II.

15 Q. If we move back in the exhibit book, the next tab  
16 is marked "Section III". First of all, is this an  
17 expansion of an existing project?

18 A. No.

19 Q. This is a new waterflood plan for the area?

20 A. This is correct.

21 Q. And behind it, a tab marked III. What do we  
22 have?

23 A. Tab III covers the actual wells that are in this  
24 C-108 Application that we're proposing to use as injection  
25 wells, and in that area it covers data related to those

1 wells, the type of mechanical completion we propose, the  
2 current status of those wellbores.

3 Q. If we go to the tab that says "West Patterns"  
4 behind the "Section III" tab, what are the first documents  
5 behind this tab?

6 A. These are wellbore diagrams for the wells in the  
7 west area that we're proposing to use as injection wells in  
8 this C-108 Application, and this diagram is, in essence,  
9 what the proposed completion would look like for this  
10 wellbore.

11 Q. Okay, and we've got a number of those at the  
12 beginning of this section of the exhibit book, and behind  
13 that is a table. What is set forth on this table?

14 A. On the table we have the tabular data for each of  
15 these wells, location, API numbers, casing, cement, top of  
16 cement data, completion intervals, prior stimulation.

17 Q. All information required by C-108?

18 A. Correct.

19 Q. And behind that we have some diagrammatic  
20 sketches and well data sheets. They're entitled  
21 "Conversion Diagrams". What are these?

22 A. These are similar to the wellbore sketches prior  
23 to the table. In some cases, you know, if we're using an  
24 existing producer and going to convert it to an injection  
25 well, in essence, we call that a conversion. So we prepare

1 a separate diagram, and in some respects it may be  
2 redundant to the diagram that's prior to the table.

3 Q. Then we have a tab that's marked "East Patterns".  
4 What is behind that tab in the exhibit book?

5 A. This is the same information we just described  
6 for the west area, except for now the six patterns on the  
7 east side of the unit in the Phase I area. This covers the  
8 injection wells in those patterns that we're seeking  
9 approval for as injection wells in this C-108.

10 Q. With this Application we're going to be seeking  
11 authorization for 23 injection wells; is that right?

12 A. That's correct.

13 Q. In ten patterns?

14 A. That's correct.

15 Q. How will these injection wells be completed?  
16 Will you be injecting through internally blind plastic-  
17 coated tubing?

18 A. That's correct.

19 Q. Will the annular space be filled with an inert  
20 fluid and equipped with a pressure gauge so that they can  
21 be monitored in accordance with the requirements of the  
22 Federal Underground Injection Control Program?

23 A. That is correct.

24 Q. Will a packer be set within 100 feet of the top  
25 perforation or the top of the open-hole section in each of



1 these wells?

2 A. That is correct.

3 Q. Let's go now to the portion of the exhibit book  
4 marked "Section V". Would you identify what is behind that  
5 tab?

6 A. This is a map that shows the unit boundaries.  
7 You know, one of the questions in the Application is that  
8 you show any and all wellbores within two miles of the unit  
9 area, which is what this map represents.

10 Behind that we have two tabs, one for west and  
11 one for east. Once again, we're talking about the two  
12 Phase I areas, the one on the west side of the unit and the  
13 one on the east side of the unit.

14 Q. And what we have here are area of review  
15 information for each of the proposed injection wells; is  
16 that correct?

17 A. That is correct.

18 Q. The first few pages behind the tab marked "West  
19 Patterns" shows what?

20 A. The first two, first three pages, are really a  
21 key just to assist you.

22 On the left side of that -- On the left-hand  
23 column it says "Unit Well and Former Name". This is  
24 actually the wells that are included in the area of review  
25 in the west Phase I area.

1           On the right side of that page are the list of  
2     the injection wells that we're proposing to be injection  
3     wells for the west area, that the area of review well would  
4     be included for that particular injection well. It's  
5     simply a key to assist you when looking at any particular  
6     well, to know which injection wells it would affect.

7           Q.    And we have in the area-of-review wells --  
8     Various wells will appear in numerous areas of review  
9     because --

10          A.    That's correct.

11          Q.    -- they all fall within a half mile of the  
12     proposed injector.

13          A.    That's --

14          Q.    What is the fourth page behind this tab?

15          A.    Okay, the fourth page actually starts the plats  
16     for each of the proposed injection wells for the west area,  
17     and the first is a page that lists all the wells that are  
18     in the area of review. It says "Phase I - West Patterns,  
19     North Square Lake Unit Well Number 101". That's the first  
20     well that we're proposing to be an injection well in the  
21     west area.

22                On that page in the left-hand column are all the  
23     wells that would be in that well's area of review.

24          Q.    And behind that you have a plat?

25          A.    Behind that is a plat with the half-a-mile circle

1 drawn around Well Number 101.

2 Q. And you have that for each of the wells you  
3 propose to convert to injection; is that correct?

4 A. That's correct.

5 Q. What is the present status of the well that  
6 you're proposing to convert? Do they vary?

7 A. There's a variety. Some are active, some are  
8 inactive, some are plugged.

9 Q. The next tab in the exhibit book is entitled  
10 "East Patterns". What do you have behind that tab in this  
11 book?

12 A. This is the same data we just discussed with  
13 regard to the west patterns, regarding the individual areas  
14 of reviews for each of the proposed injection wells in the  
15 east area of Phase I.

16 Q. Let's go to, then, Section VI. Behind that you  
17 have a tab that says "East Patterns". What does this  
18 contain?

19 A. This is the tabular data for all the wells in the  
20 area of review, for the patterns or the wells that are in  
21 the east Phase I area. And these tables are similar to the  
22 tables we prepared under Section III for the individual  
23 wells, where we have all the pertinent well data relative  
24 to each well in the area -- in all the areas of review for  
25 the east area.

1 Q. And then behind that you have wellbore  
2 diagrammatic sketches for plugged and abandoned wells  
3 within these areas?

4 A. That is correct.

5 Q. And we have, again, this information on all the  
6 wells in the east patterns, and then a tab that contains  
7 the same information for the west patterns --

8 A. That is correct.

9 Q. -- Phase I?

10 A. That is correct.

11 Q. Now, there are some wells in the area that you  
12 still do not have adequate information on; is that correct?

13 A. That's correct.

14 Q. Can you identify these problem wells?

15 A. Yes, in the west area there are two wells, the  
16 Grier Number 3 and the North Square Lake Unit Well Number  
17 161, which we do not have complete plug-and-abandonment  
18 data on. We know the wells have been P-and-A'd. We've yet  
19 to locate what the procedure was, i.e., where the plugs  
20 were set, how big the plugs were.

21 In the east area there's also two wells, actually  
22 three wells, the Sheldon Number 2, the North Square Lake  
23 Unit Number 132, North Square Lake Unit Number 169. These  
24 three wells have the same issues. We know they're plugged,  
25 we've just not been able to find the actual plugging

1 procedure that was used.

2           Some of this is a result of well files not having  
3 made it down the chain. A lot of times, if a well was  
4 plugged a long time ago, even though a property sale may  
5 have taken place and the property transferred, P-and-A'd  
6 wells were sent to a warehouse, and so it's a process of  
7 going back to old operators and getting them to agree to  
8 go, usually look in a storage area and find old plugged-  
9 well files. That's kind of the path we're on for these  
10 last few.

11           Q. If you're unable to get data for these wells, how  
12 do you intend to address them?

13           A. Well, I think something that gets lost in all  
14 this process is that all the wellbores, especially if you  
15 look at the pattern map, all the wellbores that exist  
16 today, whether plugged, currently producing, TA'd, they're  
17 wellbores that we hope to utilize.

18           So going into one of these wells to determine  
19 this information is, in essence, a reality anyway. So if  
20 we reach a point on a well -- Let's say the Grier Number 3,  
21 for whatever reason we can't identify how the well was  
22 plugged. Well, we're proposing to re-enter that well  
23 anyway. So we're, in essence, going to determine that in  
24 the course of what the project plan is.

25           There has been a substantial amount of money

1 in the AFE of this project for reworking all of these  
2 wells.

3 Q. In fact, you have funds for each of the wells,  
4 each of the 95 wells, in any of the areas of review that  
5 are the subject of this Application, you have those funds  
6 earmarked to go in and do additional work on those wells;  
7 isn't that fair to say?

8 A. That's correct. You know, AFEs on reworking the  
9 old wells, depending on whether or not it's a P-and-A  
10 that's being re-entered or it's a conversion that's being  
11 done, may range anywhere from \$70,000 to \$110,000 a well.

12 So, you know, the reality of knowing what a well  
13 is, is really part and parcel of what the project effort  
14 is.

15 Q. And by going in and taking this old area and  
16 doing this work on each of those wells, in fact, you'll  
17 have an area where you have much better information and  
18 much better control over what's happening than you would if  
19 this effort was not undertaken; is that not correct?

20 A. That's correct.

21 Q. And you've identified four wells in these two  
22 areas that --

23 A. Five wells.

24 Q. Five wells, that you have inadequate information  
25 on as of today?

1 A. That's correct.

2 Q. The tabular information provided in this exhibit  
3 under the casing and cement program column gives you  
4 information on what the status of those individual  
5 wellbores are as of this time; is that correct?

6 A. That's correct.

7 Q. And you're prepared to -- If the OCD, in  
8 reviewing this information, needs something done in  
9 addition to any of these wells, you're prepared to do that?

10 A. Absolutely.

11 Q. Now, you've indicated that you're intending to  
12 inject into -- Maybe you should tell me. What formations?

13 A. Well, the unitized interval is the top of the  
14 Grayburg to the base of the San Andres.

15 Q. Approximately how thick an interval are we  
16 talking about here?

17 A. The entire unitized interval is about 1200 feet  
18 thick.

19 Q. And when we talk about your plans for the area,  
20 the perforations in the existing wells are shown in the  
21 tables that you've presented, are they not?

22 A. That's correct.

23 Q. At this time, do you have intentions to perforate  
24 or add perforations to any of these wells?

25 A. Not initially.

1 Q. Are there any other oil- or gas-productive zones  
2 in this area?

3 A. Not above the unit.

4 Q. Now, you talked about developing the area and  
5 utilizing as much water as you produce, as possible. What  
6 other sources of water are there available to you for this  
7 waterflood project?

8 A. Well, the original water source for the  
9 cooperative floods still exists. It's the Double Eagle  
10 Water System that the City of Carlsbad owns, and --

11 Q. Have you talked with Devon about potentially  
12 acquiring the water from their effort?

13 A. Yeah, I spoke with the Devon engineer that  
14 basically ran their project, and he felt like they had some  
15 surplus water that they'd be willing to ship our way.

16 Q. What volumes are you proposing to inject in this  
17 project area?

18 A. Our expected average daily rates are about 150  
19 barrels a day per well, not to exceed about 300 barrels a  
20 day per well.

21 Q. And this will be a closed system?

22 A. That's correct.

23 Q. Will you be injecting by gravity or under  
24 pressure?

25 A. Under pressure.



1 Q. What would be the average injection pressure you  
2 propose to utilize?

3 A. About 500 pound, with a maximum of about 600  
4 pounds.

5 Q. At any time, would you need to exceed .2 pound  
6 per foot of depth to the top of the injection interval?

7 A. No.

8 Q. If a circumstance occurred where you did need to  
9 do that, you'd come back to the Division and establish that  
10 could safely be done with step-rate tests, would you not?

11 A. That is correct.

12 Q. Let's go to the tab in the exhibit that is marked  
13 "Sections VII through XII". This tab contains information  
14 on water analysis in the area, of wells in the area, does  
15 it not?

16 A. That's correct.

17 Q. And you've analyzed the Capitan Reef water in  
18 this section of the exhibit book?

19 A. That's correct, this is an analysis of what's the  
20 most common water used for injection in that area.

21 Q. When you look at reinjecting water and acquiring  
22 some, perhaps, from Double Eagle or Devon, is there any  
23 evidence that there is an incompatibility problem with the  
24 waters you propose to inject?

25 A. No.

1 Q. Are there freshwater zones underlying the  
2 proposed injection zone?

3 A. No.

4 Q. Are there freshwater wells in the area?

5 A. Well, there's three known freshwater wells within  
6 a mile of the unit.

7 Q. And are they identified on the first page behind  
8 the "Section VII-XII" tab?

9 A. That's correct.

10 Q. And it shows their locations, the depths, and  
11 we've also indicated the chlorides?

12 A. That's correct.

13 Q. And then backup data in that section for those  
14 figures; is that not --

15 A. That is correct.

16 Q. Have you examined the geologic data available and  
17 the engineering data available on the area which is the  
18 subject of this hearing? Have you analyzed that and looked  
19 at the data?

20 A. Yes.

21 Q. And as a result of that analysis, have you found  
22 any evidence of hydrologic connections between the  
23 injection interval and any underground source of drinking  
24 water?

25 A. No, there is not.

1           Q.    Is Exhibit Number 3, which is inside the pocket  
2   in the front of the exhibit book, an affidavit confirming  
3   that notice of this Application was provided in accordance  
4   with Division rules and regulations?

5           A.    Yes, it is.

6           Q.    And to whom was notice provided?

7           A.    The State Land Office, H. Cleo Thompson, Devon  
8   Energy and the BLM.

9           Q.    Does this include the owner of the surface of the  
10  land on which each injection well was located and each  
11  leasehold operator within a half a mile of any one of these  
12  23 proposed injection wells?

13          A.    That is correct.

14          Q.    In your opinion, will granting this Application  
15  be in the best interest of conservation, the prevention of  
16  waste and the protection of correlative rights?

17          A.    Yes.

18          Q.    Were Exhibits 1 through 3 either prepared by you  
19  or compiled at your direction and under your supervision?

20          A.    Yes.

21               MR. CARR:  At this time, Mr. Ashley, we would  
22  move the admission of GP Energy, Inc., Exhibits 1 through  
23  3.

24               EXAMINER ASHLEY:  Exhibits 1 through 3 will be  
25  admitted as evidence.

1 MR. CARR: And that concludes my direct  
2 examination of Mr. Sirgo.

3 EXAMINATION

4 BY EXAMINER ASHLEY:

5 Q. Okay, if I understand this right, you're  
6 proposing Phase 1 West and Phase I East?

7 A. That's correct.

8 Q. I'm looking at Exhibit N --

9 A. Right.

10 Q. -- by the way.

11 And within Phase 1 West you have ten injection  
12 wells?

13 A. That's correct.

14 Q. And are these -- These are existing wells that  
15 you're going to convert to injection?

16 A. All but one. That pattern 90, which is the  
17 southeast pattern where the center producer number is Well  
18 Number 178 --

19 Q. Uh-huh.

20 A. -- that well that's on the southeast corner of  
21 that pattern, that would be a new well.

22 Q. Southeast corner, okay. With the blue triangle?

23 A. Correct.

24 Q. Okay. And in Phase I East you have 13 wells, 13  
25 injection wells?

1 A. That's correct.

2 Q. And those are all existing wells?

3 A. All existing wells.

4 Q. Now, on the same exhibit it looks like, according  
5 to your legend there, you have the symbol -- the triangle  
6 with the circle in the middle of it, proposed new-drill  
7 injectors. It's the last symbol on the legend.

8 A. Correct.

9 Q. And in the Phase I West there's a new well  
10 injector in the southeast quarter of the southeast quarter?

11 A. For that pattern 104 and 105, correct.

12 Q. That's a part of this Application?

13 A. No.

14 Q. No. So these wells will be -- These haven't been  
15 drilled yet. You'll drill those when you pursue like Phase  
16 III, or is that what the --

17 A. Well, as we expand in the Phase I west area, we  
18 want to develop these four patterns.

19 Q. Okay.

20 A. And typically what we do next is, we bring in a  
21 C-108 that will expand the patterns that are contiguous  
22 with these four. So when we bring in those C-108s is when  
23 we'd cover like that proposed new well. And the other  
24 wells would be injection wells in those patterns, even  
25 though in all cases in that Phase I west area, for the most

1 part, all of those wells will have already been covered in  
2 this area of review in terms of the data having been  
3 submitted, except for, as you said, the new wells that  
4 haven't been drilled.

5 Q. Earlier you mentioned there were ten new wells in  
6 the -- Is that ten new wells in these first two phases?

7 A. Ten new producing wells.

8 Q. Ten new producing wells.

9 A. In the Phase I.

10 Q. And which phases are these located in?

11 A. Well, in the blue-shaded areas --

12 Q. Uh-huh.

13 A. -- the center well --

14 Q. Okay.

15 A. -- that's the new downspaced producer that needs  
16 to be drilled for that pattern. So for the ten shaded  
17 areas, patterns, those wells have all been permitted.

18 Q. All ten of these new producing wells have been  
19 permitted?

20 A. They've been permitted, five of them have been  
21 approved, I suspect the other five will be approved  
22 shortly.

23 Q. Under Section -- or Tab III, looking under the  
24 West Pattern, wellbore diagrams of all proposed injection  
25 wells.

1 A. Correct.

2 Q. Do all of these wells have adequate cementing in  
3 them? Or should I say which ones? You referenced five  
4 wells that --

5 A. Well, all of the injection wells, the actual  
6 wells being proposed on the C-108, all the wells had cement  
7 in their casing that was substantially higher than the top  
8 of the producing interval, as far as the top of cement.

9 The Well Number 63, Unit Well Number 63, which is  
10 in the west area -- covered this earlier -- that well we  
11 don't have information on the surface pipe in terms of how  
12 deep it was set or how it was cemented. And it is a well  
13 that's proposed to be used as an injection well.

14 Q. Now, I can't seem to find that one in here.

15 A. I can't either. Talking about the West --

16 Q. You're under the tab --

17 A. No, I'm sorry, I'm sorry. That's in the East,  
18 Well Number 63 is in the East. No, there are no -- None of  
19 the proposed wells are in the west. We don't lack any  
20 information on knowing where the cement is in those wells.

21 Q. Do you have information on all those?

22 A. Yeah.

23 Q. And all the cement is at least 500 feet above the  
24 proposed injection zone?

25 A. To be honest with you, I haven't actually

1 calculated that.

2 Q. But this table in here --

3 A. This table has the top of the cement and the top  
4 of the perfs.

5 Q. Excuse me, say that again? It has what?

6 A. The table has the top of the completed interval  
7 in the well --

8 Q. Uh-huh.

9 A. -- over there under "Completion Zone". Like if  
10 you look at the first well, the North Square Lake Unit  
11 Number 101, top of the cement is 2379, top of the  
12 perforation is 3166.

13 Q. Okay.

14 A. But it looks to me like most of those are in  
15 excess of 500 feet. The last one is approximately 600  
16 feet, 145.

17 Q. Okay. And then in the proposed -- the new well,  
18 you're going to circulate cement on the casing string?

19 A. Correct, and all the new infill wells will be  
20 circulated.

21 Q. Surface and intermediate?

22 A. Correct. Well, just the production string in  
23 surface.

24 Q. Right. And then after the tables in this same  
25 "West Pattern" tab, this is the conversion of all the



1 proposed injection wells?

2 A. Well, if the well has a current producer status,  
3 then to be an injection well it has to be converted. So  
4 it's almost a redundant wellbore sketch from what's prior  
5 to the table. And then additionally we included -- even  
6 though under Section VII -- I think it's VII -- no, Section  
7 V, where we're required to include the P-and-A diagrams --

8 Q. Yes.

9 A. -- you know, a lot of the proposed injection  
10 wells are in areas of review for other injection wells.

11 Q. Right.

12 A. So I've just gone ahead and included their  
13 P-and-A diagrams here, if they're P-and-A'd wells, even  
14 though that will re-appear in the other section as part of  
15 another well's area of review.

16 Q. Okay.

17 MR. CARR: If I could, Mr. Sirgo, there is not a  
18 conversion diagram for every single well? I mean, there  
19 are fewer of those than for all the wells in the front of  
20 each of those sections?

21 THE WITNESS: Oh, correct.

22 MR. CARR: Is that correct?

23 THE WITNESS: That's correct.

24 MR. CARR: So if you start looking at the ones  
25 that say "Conversion Diagram" --

1 THE WITNESS: Right.

2 MR. CARR: -- those are only producing wells that  
3 are being converted?

4 THE WITNESS: That's correct.

5 MR. CARR: If you want a diagram for all of the  
6 wells, you have to go to the wellbore sketches that are in  
7 the first -- immediately behind the tab?

8 Q. (By Examiner Ashley) Okay, like this first one,  
9 North Square Lake Unit Well Number 101 --

10 A. We're in Section III, correct?

11 Q. Section III, yeah --

12 A. Right.

13 Q. -- under "West Patterns".

14 A. Right. That would be the proposed configuration  
15 of that well as an injection well.

16 Q. Okay, and then I go just past the table, and  
17 there's the Grier Number 11. I'm kind of confused.

18 A. Well, if you look down at the bottom, that's the  
19 unit well number.

20 Q. Oh, okay, I see it.

21 A. Yeah.

22 Q. Great. That's the old well name?

23 A. Right.

24 Q. Okay.

25 A. Just because everything in your old records --

1 You know, you're not going to have a record of the North  
2 Square Lake Unit 101. All your records are going to be for  
3 the Grier 11.

4 Q. Okay, and that same -- This same format is  
5 following the East Pattern as well?

6 A. That's correct. And on the tables I've included  
7 all the old well names, versus what their new unit number  
8 designation is, because that's the only way you'll be able  
9 to find the data relative to these.

10 Q. Okay, under Section V, I'm in the West -- under  
11 the "West Pattern" --

12 A. Correct.

13 Q. -- can you tell me again what this first table  
14 is? It's got "Unit Well and Former Name" --

15 A. Okay --

16 Q. -- the "Area of Review..."

17 A. -- right, the very first three pages behind that  
18 tab --

19 Q. All right.

20 A. Okay, these are all -- and I'm talking -- when I  
21 say all the wells, the wells in the left-hand column, under  
22 "Unit Well and Former Name", those are all the wells that  
23 are in the area of reviews covered by the individual area  
24 of review for each of the injection wells we're requesting  
25 in this Application in the west area. So however many that

1 is, 40 or 45 wells.

2 So in the west we have what? Ten injection wells  
3 that we were asking for in this Application, so if you  
4 looked at the area of review for each of those ten wells,  
5 the wells on the left-hand side of the column are the wells  
6 that would be within those areas of review. On the right-  
7 hand side are the individual injection wells that that well  
8 would be included in its area of review.

9 So you can, in essence, cross-reference. If you  
10 had a problem with the first well, Grier 17, then you know  
11 it would affect the Application for Well Number 102, 126  
12 and 127.

13 And then after those three pages you actually  
14 have the individual -- like the first well, North Square  
15 Lake Unit Number 101, which is one of the ten injection  
16 wells in the west area that we're asking for in this  
17 Application. All the wells listed on that page are the  
18 wells in its area of review.

19 Q. Okay, so if I look at North Square Lake Unit  
20 Number 101 on the left-hand column, then there's five wells  
21 listed under the area of review this well is included in?

22 A. Right.

23 Q. So for the area of review for like, say, 127,  
24 this North Square Lake Unit 101 is within the area of  
25 review for that well?

1 A. That's correct.

2 Q. Okay. So the left-hand column is...

3 A. The left-hand column is basically all the wells  
4 that have to pass through the area of review, to cover all  
5 ten of the injection wells proposed in the west area.

6 Q. Okay.

7 MR. CARR: So if you had a problem, Mr. Ashley,  
8 with the cement in the 101 --

9 EXAMINER ASHLEY: Uh-huh.

10 MR. CARR: -- the request to inject in the 101,  
11 102, 125, 126 and 127 are affected by that.

12 EXAMINER ASHLEY: Okay.

13 MR. CARR: And that was to sort this out so that  
14 when you look at 23 injection wells and all these 95 other  
15 wells, if you've got a problem with one, you don't have to  
16 sit down and figure out how many of these injection wells  
17 are going to be involved. It tells you right there how  
18 many of the applications are impacted by the integrity of,  
19 say, the 101 well.

20 THE WITNESS: Well, you know, the best example is  
21 in the west area, Well Number 161. This is on the second  
22 page, the Grier Number 4. You know, we have yet to find  
23 the completed plugging information on that well. So you  
24 know, I guess our interpretation would be, until you do  
25 that or remedy that either by going out in the field and

1 determining that it was plugged, 125, 143, 144 and 145 you  
2 could not inject into.

3 Q. (By Examiner Ashley) Where is the 161 on the  
4 map, the plat that you have at the back of this table?

5 A. Okay, if we just go to the area of review for  
6 125, which will have a map with 125 on the bottom of it --

7 Q. Okay.

8 A. -- and actually, I included 161 area of review,  
9 but if you look at the very southern well, just past the  
10 perimeter of the half-mile circle --

11 MR. CARR: In Section 31.

12 EXAMINER ASHLEY: I see it.

13 THE WITNESS: Correct, yeah. And likewise, if  
14 you went to the area of review, the map for 143, 144 and  
15 145, 161 would be included in its area of review.

16 Q. (By Examiner Ashley) Well, shouldn't 125 show up  
17 in the left-hand column, one of the left-hand column wells?

18 A. Yeah, it's back on page 1.

19 Q. It's on page 1.

20 A. Right. Every well is covered, including the  
21 wells that are being proposed to use for injection.

22 Q. Okay. And then, after the first three pages,  
23 there's that fourth page. Now, what is this page?

24 A. Actually, we probably should have tabbed that.  
25 Now you're looking -- Now, you just say I want to look at

1 the North Square Lake Unit Number 101, which is one of the  
2 ten wells in the Phase I are that we're proposing, west  
3 area. What are the wells in its area of review? Well,  
4 that's all the wells listed here.

5 Q. Okay.

6 A. And then it has its plat behind it. So you have  
7 that for each of the wells that are being proposed as  
8 injection wells.

9 Q. Okay. And then tab -- excuse me, Section VI, is  
10 just a tabulation of wells in the area of review?

11 A. It's all the wells in the area of review for  
12 either the west part of Phase I or the east part of Phase  
13 I.

14 Q. Now, is it in this section that you mentioned,  
15 the five wells that you had --

16 A. Correct.

17 Q. -- no information on?

18 A. Correct. Well, the only thing those five -- We  
19 have information on those wells in terms of -- Let's go to  
20 like on the East Patterns, Number 132 --

21 Q. NSL Unit 132?

22 A. Right, which is on the third page.

23 Q. Okay.

24 A. See, we have all the well information on that  
25 well. But that well is plugged, and what we don't have is

1 the exact plugging procedure that was used. We don't know  
2 how many plugs were set, how many sacks of cement they had  
3 in each plug.

4 But in terms of knowing what the well history was  
5 and knowing the data about the well, where pipe was set,  
6 where the original cement was, we have that information on  
7 every well.

8 The only well that we have no well information on  
9 is the Well Number 63, which is in the east area, and what  
10 we lack there is, we just don't know what size and what  
11 depth the surface pipe was set at. We know surface pipe  
12 was set, because you can see it on the surface; we just  
13 don't know how deep it is or how much cement was run.

14 But the five wells I mentioned, basically what we  
15 don't know about those wells is how they were plugged.

16 Q. Well Number 63, that's on the first page of this  
17 tab?

18 A. Right.

19 Q. Okay, you show 4-1/2 set at 3599 with 200 sacks?

20 A. Right. And see, above that we have no surface  
21 pipe information. You know, we should either have 8-5/8 or  
22 10-inch or -- You know, look at the well above it. You  
23 have 8-5/8 set at 700 feet, and then your production string  
24 was 5-1/2. On this well we just don't know, you know what  
25 size surface pipe was set and what depth it was set at.



1           That's basically the only well we don't have  
2           mechanical data on in terms of the original wellbore.

3           Q.    But the records did indicate the 4-1/2, you say?  
4           You did have that much --

5           A.    Right, right.  And, in fact, we had the plugging  
6           information on that well, and the plugging information  
7           didn't reference the surface pipe, even though it  
8           referenced the plugs, where they were set and how big the  
9           plugs were.  So, you know...

10          Q.    Have you compared top of cement on the production  
11          string with the top of the perforations to verify that  
12          there's enough cement?

13          A.    Well, in my mind there was.  You had indicated  
14          500 foot.  I don't know if that's a minimum requirement or,  
15          you know -- I guess I haven't sat down and said every one  
16          is definitely greater than 500 foot.  You know, in all  
17          cases they were, in my opinion, several hundred feet above  
18          the top of the perforated interval.  I just didn't sit down  
19          and make the calculation as to whether or not it was 500  
20          feet or less or greater.

21          Q.    I'm looking at Sections VII through XII.

22          A.    Okay.

23          Q.    Section VII, Number 4, "The proposed injection  
24          fluid is produced...Capitan Reef water." "...is  
25          produced..."  Yeah, and "...Capitan Reef Water."

1           Okay, where is Capitan Reef in relation to this  
2     waterflood?

3           A.    It's located east.  The Caprock starts about two  
4     and a half miles east of this unit boundary, and Devon's  
5     water supply are Capitan Reef wells, up on the Caprock.  
6     The Double Eagle Commercial Water System are Capitan Reef  
7     wells on top of the Caprock.  And that's where those wells  
8     are located.  In fact, I think that's also the Jalmat Water  
9     System that runs into Lea County, there are Capitan Reef  
10    wells on the cap that supply that system.

11          Q.    Approximately two and a half miles east of here?

12          A.    Correct.

13          Q.    And you say you have an analysis of that  
14    included?

15          A.    Yeah, this -- If you look, they actually ran just  
16    various ratios of produced versus makeup.

17          Q.    Are these then biochem --

18          A.    Right.

19          Q.    -- water-analysis reports?

20          A.    Yeah.

21          Q.    The first one is 25 percent produced water, 75  
22    percent fresh?

23          A.    Right, and then it went to 50-50.

24          Q.    Okay.

25          A.    So it really kind of depends on --

1 Q. Okay.

2 A. -- what portion of the injection stream is  
3 produced water versus makeup water.

4 Q. Can you summarize for me why we're here today as  
5 far as why this wasn't approved originally and why is this  
6 being reopened?

7 A. Well, I think that originally -- Well, to give  
8 you an honest answer, Mark, I think originally, I don't  
9 understand why it wasn't approved. I think originally,  
10 yeah, it was a fairly large effort that was going to have  
11 to be required to review all these wells, but that's the  
12 process. You know, whether I brought in a C-108 for each  
13 individual well, which could have easily been something  
14 that we were told to do originally, it would have been a  
15 solution.

16 But basically, it was left to go home and break  
17 this thing up into something that was smaller and more  
18 manageable. And in that process, we had Mack Chase and  
19 some other owners that were upset, I guess, with regard to  
20 their position in the unit. You know, I talked to Mack  
21 three years ago when we started this process. He said,  
22 Manny, I think it's a great idea, I don't want to be in  
23 your unit. You know, you wouldn't want to be in my unit as  
24 a small owner, and I don't want to be in your unit as a  
25 small owner.

1           So I said, fine, you know, when we finally get  
2 this all resolved, you know, we'll be happy to take you out  
3 of the unit.

4           Well, we didn't have a unit till January 1st of  
5 1999. And you know -- or 2000. And then immediately after  
6 that, we have people coming in to the OCD wanting to, you  
7 know, have a show-cause hearing to disband the unit, you  
8 know, which is somewhat absurd to me at this point in the  
9 game, after how long it took to get here.

10           So, you know, in an effort to address all those  
11 concerns and all those issues, be it operators, be it the  
12 OCD -- You know, that's why we have a C-108 now, we think  
13 addressed if it was a legitimate concern. The original  
14 hearing addressed those issues, you know, it dealt with all  
15 the other owners and their issues, and we're just ready to  
16 get on with our business and get our property developed.

17           Q. Now, with the original application, did I hear  
18 you say that you submitted it as the whole unit?

19           A. Yeah, that's correct. And there would have been  
20 requirements in that Application, there would have been  
21 data that, as we have five wells today, there would have  
22 been wells in that Application that we hadn't yet been able  
23 to locate the data on.

24           But you know, as we discussed at that time, you  
25 know, we're required to go out there and go into those

1 wells anyway, as part of the project. So you know, we  
2 would have expected the OCD to say, No, you can't inject in  
3 that well until you determine these things. That's a  
4 normal course-of-business requirement. But you know, we  
5 didn't get to that decision. We got to go home and start  
6 this over.

7 MR. CARR: Mr. Ashley, if I could respond, I  
8 think what happened here is that while trying to do what  
9 Devon's been able to do to the south, we had an awful lot  
10 of overriding royalty interest owners, and there was a  
11 concern about that, and so that put us in the posture of  
12 having to first form a unit. Instead of being able to  
13 cooperatively waterflood, we lost a lot of time.

14 In doing that, the BLM required that a number of  
15 other interest owners be brought in, and the interest  
16 owners weren't any happier about being brought in, perhaps,  
17 than we were to bring them in. But it created a whole  
18 different dynamics for this thing.

19 And then when we came in to propose the  
20 waterflood, instead of doing it pattern by pattern, area by  
21 area, as a cooperative effort on a number of leases, we  
22 tried to do it on one -- one time on the whole unit. It  
23 made it a much more difficult project in terms of simply  
24 trying to marshal the data.

25 And there was concern at agency level, and

1     although we were prepared to do it pattern by pattern,  
2     injection well by injection well, what we have done is  
3     fallen back, developed this in a phased approach because  
4     we're in the unit, and now coming back with data, and the  
5     more you look, the more you find. And every time you think  
6     you've exhausted all possible sources, something else is  
7     discovered.

8             But we think we're in a position now where we do  
9     have data that would warrant an order approving this, and  
10    we're anxious to get on with it. Funding has been in place  
11    for literally years. Interest charges are substantial.  
12    And in a project where not only there are great benefits in  
13    terms of new recovery but also just benefits in terms of  
14    taking an old area and getting wellbores back up to, you  
15    know, current standards, there are tremendous benefits all  
16    over on this, and the delays have been -- I think, from my  
17    point of view, and I'm sure from GP II's -- mind-boggling.

18            Q.     (By Examiner Ashley) You mentioned that after  
19    you unitized the area there were some interests that raised  
20    questions about the unit. That was after the unitization?

21            A.     Well, I don't think their questions were after  
22    the unit was formed. You know, like I said, Mack Chase's  
23    position from the first day was that I don't want to be a  
24    small owner in a big unit, so take me out at some point.

25                 Well, you know, as I told Mack, I'll take you out

1     when there's a unit. I have no reason to own your interest  
2     if my acreage doesn't get unitized.

3             Rodney Webb, who is -- He was actually the second  
4     largest owner in the unit, besides us, who was totally  
5     brought in as a result of the BLM expanded unit boundary,  
6     Rodney wasn't hostile, Rodney was just frank about the fact  
7     that, you know, he didn't want to participate in that large  
8     project. So we bought him out. And we bought Mack out.

9             The Fi-Ro parties, Beth McDonald and Tommy  
10     McDonald, I'm still a little confused about their position.  
11     We have sent them an offer just in the course of making  
12     offers, and they, I understand, wrote back something with  
13     regard to we had previously agreed to buy all their  
14     interests in Eddy County, which I don't know anything  
15     about, because I spoke with Robert Lee who at that time was  
16     doing some work on that, and I told Robert, I said, you  
17     know, Did you represent that we wanted to buy all their  
18     stuff or make them an offer or whatever?

19             And he said, No, I haven't.

20             And I said, Well, they're obviously claiming I  
21     have, and we agreed to do something, but -- you know,  
22     something I don't know anything about.

23             But just as a matter of course, I sent them  
24     another offer here recently, so -- that I consider a pretty  
25     generous offer.

1           And then the Staples and Jones interest -- The  
2       Staples and Jones interest was a problem before this was  
3       ever a unit. Staples and Jones was a nonoperated working  
4       interest owner that was in our leases when we first  
5       acquired them. They had trouble paying bills, as a lot of  
6       owners have. When the oil went to eight dollars a barrel,  
7       they got behind, built up a fairly substantial balance to  
8       GP II. You know, it got unfriendly. And in the midst of  
9       all this, we're trying to go forward with our unit.

10           So I think a lot of their, you know, objections  
11       they made were just basically in the spirit of where the  
12       relationship was at that time, kind of independent of the  
13       unit being formed.

14           I've since talked to Vicki, and she's verbally  
15       agreed to accept the offers I've made her to buy their  
16       interest in the unit, and also as well to clean up their  
17       old business with GP II.

18           So I don't suspect Staples and Jones has any more  
19       issues.

20           Q.    Okay. Are the wells in your unit completed  
21       similar to the wells in the Devon Unit? Is there really  
22       that much difference in the type of well completion?

23           A.    Well, Devon's new wells, you know, the ones they  
24       drilled, they took them deeper. You know, we unitized to  
25       the base of the San Andres.



1           The typical field pays in the Grayburg Jackson  
2       were the Lovington, Metex, Premier and -- Loco Hills,  
3       Metex, Premier and Lovington.

4           Well, the Jackson, which is really -- It's still  
5       in the San Andres, it's just below the Lovington. Devon  
6       took a lot of their unit wells deeper to look at some of  
7       that stuff, and we will too. It's just in our core reserve  
8       base we don't consider that, you know, something we can  
9       assign value to.

10           But there are older wells with, you know, fairly  
11       similar type completions as we had. You know, there are  
12       new wells, you know, similar to what we're proposing. You  
13       circulate cement on your long string and circulate cement  
14       on your surface pipe.

15           But I would suspect that most of the wells they  
16       had that were in the original old cooperative, the  
17       completions were very similar to ours.

18           EXAMINER ASHLEY: Mr. Carr, can you provide a  
19       draft order?

20           MR. CARR: I can, it will be about a week.

21           EXAMINER ASHLEY: Okay, so can you give me a date  
22       that you --

23           MR. CARR: I will try and have it here a week  
24       from tomorrow, the 8th. If I start running behind, I will  
25       call you and --

1 EXAMINER ASHLEY: Okay.

2 MR. CARR: -- beg for an extension.

3 EXAMINER ASHLEY: By the -- You're saying  
4 tentatively the 8th or the 9th?

5 MR. CARR: Whatever a week from -- the 9th.

6 EXAMINER ASHLEY: Ninth, okay.

7 I have nothing further. Thank you.

8 THE WITNESS: Thank you.

9 MR. CARR: Thank you, that concludes our  
10 presentation. Thank you for taking my cases first today.

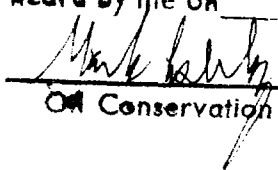
11 EXAMINER ASHLEY: You're welcome.

12 There being nothing further in this case, Case  
13 12,112 will be taken under advisement.

14 (Thereupon, these proceedings were concluded at  
15 11:43 a.m.)

16 \* \* \*

17  
18  
19 I hereby certify that the foregoing is  
20 a complete record of the proceedings in  
the Examiner hearing of Case 12112,  
heard by me on 6-1-2000.

21  
22   
Off Conservation Division  
23  
24  
25

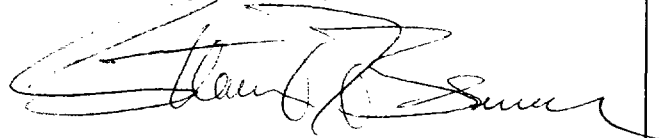
CERTIFICATE OF REPORTER

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 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 June 10th, 2000.



STEVEN T. BRENNER  
 CCR No. 7

My commission expires: October 14, 2002