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:

APPLICATION OF ENERGEN RESOURCES CORPORATION TO EXPAND THE LANGLIE-LYNN QUEEN UNIT WATERFLOOD PROJECT, LANGLIE MATTIX SEVEN RIVERS QUEEN GRAYBURG POOL, LEA COUNTY, NEW MEXICO

CASE NO. 13,170

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

December 4th, 2003

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, December 4th, 2003, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

December 4th, 2003
Examiner Hearing
CASE NO. 13,170

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A P P E A R A N C E S

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By: J. SCOTT HALL

* * *

WHEREUPON, the following proceedings were had at 8:25 a.m.:

EXAMINER STOGNER: At this time I will call Case Number 13,170. This is the Application of Energen Resources Corporation to expand the Langlie-Lynn Queen Unit Waterflood Project in Lea County, New Mexico.

At this time I'll call for appearances.

MR. HALL: Mr. Examiner, Scott Hall, Miller Stratvert, P.A., Santa Fe, on behalf of the Applicant, Energen Resources Corporation. I have two witnesses this morning.

EXAMINER STOGNER: Are there any other appearances in this matter?

Will the witnesses please stand to be sworn at this time?

(Thereupon, the witnesses were sworn.)

MR. HALL: Mr. Examiner, by way of explanation initially, this Application is the third time the unit operator has requested expansion of the waterflood project for the Langlie-Lynn Queen Unit. The last hearing on an Application to expand was brought by Energen in 2001. The two wells that are the subject of this hearing today were also included in that 2001 hearing application.

Those two wells specifically drew objections from two offset operators, and for that reason we elected to go

straight to hearing on this Application, rather than file for administrative approval, expecting again that those opponents would enter an appearance in this case. That's not happened, so -- but we are prepared to provide you with all the information you would receive on a C-108 Application form in as efficient manner as possible.

EXAMINER STOGNER: And this 2001 hearing, these two wells, were they dropped from that particular --

MR. HALL: They and an additional well were dropped. Three wells were dropped all together.

EXAMINER STOGNER: And let's see, today this Application is for two wells or three wells?

MR. HALL: Two.

EXAMINER STOGNER: Okay. Do you have the -- Now, you said this was the third time for -- request for expansion.

MR. HALL: The first was by Conoco in 1974.

EXAMINER STOGNER: Okay, was that done by hearing or administratively?

MR. HALL: I believe it was by hearing, and we're going to provide you with copies of all those WFX orders as an exhibit today.

EXAMINER STOGNER: Thank you, Mr. Hall. You may continue.

MR. HALL: At this time, Mr. Examiner, we would

call Dave Cromwell to the stand.

DAVID W. CROMWELL,

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

DIRECT EXAMINATION

BY MR. HALL:

Q. Mr. Cromwell, for the record please state your name.

A. David Cromwell.

Q. And where do you live and by whom are you employed?

A. I live in Birmingham, Alabama, and I'm employed by Energen Resources.

Q. What do you do for Energen?

A. I'm a district geologist, Permian Basin area.

Q. And you've previously testified before the Division and this Examiner in particular and had your credentials as an expert petroleum geologist accepted as a matter of record; is that not true?

A. Yes, sir.

Q. You're familiar with the Application that's filed in this case?

A. Yes, I am.

Q. And you're familiar with this particular unit?

A. Yes, sir.

MR. HALL: At this point, Mr. Examiner, we'd offer Mr. Cromwell as an expert petroleum geologist.

EXAMINER STOGNER: Mr. Cromwell is so qualified.

Q. (By Mr. Hall) Mr. Cromwell, if you would, please, briefly explain what Energen is seeking by this particular Application.

A. Energen is seeking to inject water into to two wells, the Langlie-Lynn Number 3 and the Langlie-Lynn Number 9 in our Langlie-Lynn Unit that was formed, like Scott mentioned, in the early 1970s by Conoco and approved, and we're just seeking to continue the expansion of that waterflood that we're doing in the Seven Rivers and Queen interval.

Q. If you would refer to Exhibit 1, Mr. Cromwell, is that a compilation of the previous orders authorizing waterflood operations for this unit?

A. Exhibit 1 is a copy of R-4417, issued in 1972, that authorized Conoco to put water in nine wells in the Langlie-Lynn Unit and to form that as a waterflood project.

Q. And does that exhibit also include Orders WFX-581 and WFX-780?

A. Yes, sir. WFX-581 was an order that allowed water to be put in the Langlie-Lynn Number 5 well in 1989.

Q. And WFX-780 is Energen's current authorization for injection operations; is that right?

A. Yes, sir, it is.

Q. Let's look at Exhibit 2 briefly. Would you identify that for the Examiner?

A. Exhibit 2 is a lease plat taken from Midland Map Company of the leases -- our lease, with our unit outline in there, the 760 acres that form our unit. As I mentioned, we are -- currently have authorization to inject into the upper -- the entire Queen interval, and also the lower 100 feet of the Seven Rivers section.

Q. And your two wells you're proposing to include in the project are identified on Exhibit 2?

A. Both those wells are identified with the small red circles around them, the Number 3 water injection well and the Number 9, and then the bigger circles are half-mile radiuses around each of those two wells.

Q. All right. What injection intervals is Energen proposing to utilize with these two wells?

A. The injection interval is defined as the unit authorization where we have authority to inject in the Queen interval and, like I mentioned, the lower 100 feet of the Seven Rivers.

Q. Specifically with respect to the Number 9 well, what's the footage depths of your injection interval?

A. The Number 9 would be injected from 3504 to 3776.

Q. And the Number 3 well?

A. From 3474 to 3750.

Q. All right. Would you provide the Hearing Examiner with a brief geologic overview of the Seven Rivers and Queen formations, the area?

A. Exhibit Number 3 is a structure map on the top of the Queen formation. The contour interval is 25 feet, the map scale is one inch equals 1000 feet. Our unit is highlighted in the yellow color. The two question -- wells, the Number 3 and the Number 9, are highlighted with a little brighter yellow color.

The wells that are to the east of that, that are injection wells, have a little arrow through them that shows that they are authorized to be injection wells and are current injection wells in the unit.

As you note, the structure is -- the high is on the east side of the field, and there's a homoclinal dip towards the west.

The environment of deposition of the Seven Rivers-Queen interval is in a very arid, shallow-water, sabkha-type environment with the lithology being sands, shales anhydrites and dolomites all interbedded, throughout the entire 300- to 400-foot section.

The porosity development is primarily secondary porosity in the carbonates and some primary porosity in those sands that interbed those carbonate units.

Q. Let's look at your cross-section exhibits now. Refer to Exhibit 4, if you would.

A. I have constructed two cross-sections. The first cross-section to look at is cross-section A-A', which would be Exhibit Number 4, I believe.

If the Examiner will look at the index map at the bottom of the cross-section, you can see that the line of cross-section is essentially from west to east, with east being on the right-hand side. The scale of the cross-section is annotated horizontally with the distance between the wells at the top of the cross-section. The vertical scale is 1 inch equals 40 feet. This is a structural cross-section. What I have done is, various logs are annotated. Basically these are sonic logs or porosity logs. The logs are annotated with the perforations, and any tests that were done are to the right of each individual log.

The unitized interval is highlighted in the gray color that you -- or brown color that you'll see across there. Our unitized interval is taken from the type log for the section in the Langlie-Lynn Number 7, the top being 3448 and the base being 3710. This is the unitized interval, as defined by the OCD order when the unit was formed.

The perforations are the dark interval in the

center of the log with the white circles around, and you can see that -- on this particular cross-section, that all the perforated intervals do not even come to the top of our unitized interval. They're all within 30 or 40 feet of it. But then you can see also that some of the wells have been hydraulically frac'd with lease crude and sand and used as a proppant for stimulation to increase the oil flow. At the bottom of the log is the date that the well was completed and the potential for that interval.

The Number 3 well is the second well from the right, and you can once again see the perforated interval, and it is not within -- It's within 40 or 50 feet of the top of the unitized interval. We have -- The top of the Queen in this cross-section is the dark line that's more or less in the center of the beige color in there, and we have, like I mentioned, 100 feet above the top of the Queen by definition. And using that correlation, I've constructed it from the type log, which is the well on the right, all the way across to the wells that are slightly downdip on the west. So there is a little bit of interpretation involved when you consider the top of the queen, because that is how the unitized interval is defined.

EXAMINER STOGNER: Mr. Hall, before we leave this one may I ask a question?

MR. HALL: Yes, sir.

EXAMINER STOGNER: On the Number 3 well I understood you to say that the proposed injection interval is to be 3474 to 3750. Does that represent these perfs, or will there be additional perfs?

THE WITNESS: The perfs are in that interval, and right now we have no plans to do any additional perf'ing.

EXAMINER STOGNER: Well, then your information is not -- is conflicting here. What will be the injection interval?

THE WITNESS: The injection interval is -- we've got the existing perfs in here, sir, and then we've got authority to inject water in the entire interval as defined by that interval that I presented to you.

EXAMINER STOGNER: Okay, maybe I misunderstood Mr. Hall's question. Whenever I understand he asked you what the injection interval was going to be, I understood that the perfs -- or this is what I assumed -- the perfs would be 3474 to 3750. But you're telling me that's the authorized injection interval in this well?

THE WITNESS: Yes, sir.

EXAMINER STOGNER: But the injection interval is going to be through these perfs, as shown in Exhibit Number 3; is that correct?

THE WITNESS: Yes, sir.

EXAMINER STOGNER: Okay.

THE WITNESS: I'm sorry about that.

EXAMINER STOGNER: No problem, thank you.

Mr. Hall?

Q. (By Mr. Hall) Anything further with respect to your A-A' cross-section?

A. No, sir.

Q. Let's look at Exhibit 5, your B-B' cross-section. Would you briefly identify this for the record, Exhibit 5?

A. Exhibit 5 is cross-section B-B'. Once again, it is a -- mostly a west-to-east cross-section with the Number 7 well, which is the type well for the communitization, on the right-hand side and going downdip to the Energen Number 20 well on the left-hand side.

The Number 9 well is annotated basically in the third well over from the right. This cross-section, as was the previous cross-section, has the horizontal scale annotated at the top. The vertical scale, again, is 1 inch equals 40 feet. The unitized interval is highlighted with the beige color. The perforated interval is highlighted and darkened in with black with circles inside it. The annotation to each particular well is on the right-hand side.

As you can see, the Number 9 well was originally perforated from 3588 to 3714 when it was completed in 1963.

In 1999 we added some perforations to that from 3512 to 3688 and acidized those perforations with 5000 gallons of acid.

So, Mr. Examiner, in answer to your question, in this particular instance, then, the unitized interval would be the current perforations that exist in this well. That's the area that we would be interested in putting water.

EXAMINER STOGNER: So this well, all of the perfs that you mentioned from 3512 down to 3714 are the open perfs?

THE WITNESS: Yes, sir. This is all I had on this particular cross-section.

Q. (By Mr. Hall) All right. Mr. Cromwell, what is the closest source of drinking water?

A. Excuse me?

Q. What is the closest formation containing drinking water in the area?

A. The closest formation that contains drinking water is in the Gatuña formation, and it is at a depth of from surface down to about 300 feet. All of our wells have casing that go beneath 300 feet to protect that interval. So there is roughly 3000 feet between where we'll be putting water and the surface water.

Q. Mr. Cromwell, in your opinion is there any

indication from the geologic material that you've reviewed in connection with the Application of any geologic connection between the injection intervals and any other producing zone or freshwater zone?

A. No, sir, there's not.

Q. Okay. Were Exhibits 1 through 5 prepared by you?

A. Yes, they were.

MR. HALL: That concludes our direct of Mr. Cromwell. We'd move the admission of Exhibits 1 through 5.

EXAMINER STOGNER: Exhibits 1 through 5 will be admitted into evidence at this time.

EXAMINATION

BY EXAMINER STOGNER:

Q. Let's see, Mr. Cromwell, you had mentioned, or you had testified, concerning the 300 foot water interval, being the Gatuña. Do you know if there's any water wells within this half-mile area of review, or will your other witness --

MR. HALL: We have another witness who will testify on that.

EXAMINER STOGNER: Okay, scratch that question for you.

Q. (By Examiner Stogner) As far as current operations out there, Mr. Cromwell, how many injection wells are currently in this lease?

A. That are active injection wells?

Q. Yes.

A. I believe there are nine.

Q. Nine? And I know you said they were all shown here, but I didn't know if all of them were currently injectors or only some of them. And let's see --

Q. Well, current -- Mr. Stogner, currently we've got a slight problem in that we're waiting to -- we're going to have to drill a water-supply well because Texaco, who was supplying water to these current injectors, is not doing that anymore. I don't know whether that's through the acquisition or whatever, but right now we're just putting in -- back in, produced water into these injector wells.

Q. Okay. Now, what will be the source of this new water that you're waiting for? Will it be fresh or will it be produced water?

A. It will probably come from the Santa Rosa and Rustler interval at about 1500 feet. That's our current thinking on it right now. We're having some studies done right now by a water firm to see what the potential is for water sources, yes, sir.

Q. Offhand, do you roughly know what that salinity is in that water, or will your other witness present --

A. He will present -- We've got some water-analysis reports that he will be glad to go over with you.

Q. Okay, let me scratch that.

So other than the water-supply problem, all wells, all nine wells -- or you said there were nine currently injection wells --

A. That --

Q. -- that doesn't bring you up to 11, of course.

A. I think there are nine. I'm not sure of that.

MR. HALL: We'll give you a tabulation of all those injection/producing wells, Mr. Stogner.

EXAMINER STOGNER: Okay, I have no other questions of Mr. Cromwell. You may be excused. Thank you, sir.

Mr. Hall?

MR. HALL: At this time, Mr. Examiner, we would call Ken Smith to the stand.

KEN SMITH,

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, please state your name.

A. Ken Smith.

Q. Mr. Smith, where do you live and by whom are you employed?

A. I live in Birmingham, Alabama, and am employed by

Energen Resources.

Q. And what do you do for Energen?

A. I'm a reservoir engineer for Energen Resources.

Q. Now, I understand you've previously testified before the Division and its Examiners and had your credentials as a petroleum engineer --

A. Yes.

Q. -- established as a matter of record?

A. Yes, sir.

Q. It's been some time, though, has it not?

A. It has.

Q. Okay. Let me ask you, are you familiar with the Application that's filed in this case?

A. Yes.

Q. And are you familiar with the Langlie-Lynn Queen Unit?

A. Yes.

MR. HALL: At this point, Mr. Examiner, we'd offer Mr. Ken Smith as a qualified petroleum engineer.

EXAMINER STOGNER: Just for the record, let's discuss Mr. Smith's educational background.

Q. (By Mr. Hall) Would you provide us with a brief summary of your educational background and work experience?

A. I graduated from Texas Tech University in 1976 with a BS in petroleum engineering. After that I went to

work for ARCO for -- from 1976 to 1980. And then from 1980 to 1986 I worked for Mesa Petroleum as a reservoir engineer. And then from 1986 to 1998 I worked for Hunt Oil Company. And I've worked for Energen Resources as a reservoir engineer since 1999 to the present.

EXAMINER STOGNER: So you graduated Texas Tech in 1976?

THE WITNESS: Yes, sir.

EXAMINER STOGNER: Where did you go to high school?

THE WITNESS: I went to high school in Amarillo.

EXAMINER STOGNER: Oh, you're not the Ken Smith I knew. Okay. You're about two years older than him. I thought we might have crossed old paths here.

Thank you, Mr. Smith, you're so qualified.

Q. (By Mr. Hall) Where did you go to high school in Amarillo?

EXAMINER STOGNER: Now we've brought up some memories, huh?

THE WITNESS: I went to Palo Duro High School.

MR. HALL: Oh, okay. That school.

EXAMINER STOGNER: Yes.

MR. HALL: Are the witness's credentials acceptable?

EXAMINER STOGNER: Yes, this is not the Ken Smith

that owes me money, and evidently it's not the Ken Smith that owes you money, so -- So qualified.

MR. HALL: I'm not so sure.

Q. (By Mr. Hall) Mr. Smith, let's refer back to Exhibit 2 briefly, the area map. That's it.

Does this map show all wells and leases within two miles of the proposed injection well?

A. Yes, sir.

Q. Okay, and -- Excuse me, I picked up wrong map. And again, this shows the half-mile area of review around the Number 9 and Number 3 injection wells?

A. Yes, sir.

Q. Okay. Would you explain briefly the operations to the Hearing Examiner? Will these wells operate on an open or closed system?

A. It will be in a closed system.

Q. Okay. And what are the proposed average and maximum daily injection rates and volumes for these wells?

A. The proposed maximum rate will be 1000 barrels a day per well, and the average will be around 200 barrels a day. The maximum pressure will be 1000 p.s.i., average should be around 500 p.s.i.

Q. We've briefly discussed the sources of water for injection operations that you -- You're currently utilizing water from the Texaco Jal System; is that correct?

A. That's correct.

Q. And you expect that that will be discontinued sometime in the future?

A. That's correct.

Q. What other sources of water are you using at the current time?

A. We're reinjecting the produced water and we're looking at the Santa Rosa to provide makeup water at this point.

Q. Okay. For the water sources you're currently utilizing, have you analyzed them for compatibility with the injection formation?

A. We have.

Q. Let's look at Exhibit 6 briefly. Would you identify that, please, sir?

A. Exhibit 6 is a water analysis for a water sample taken from the Texaco Jalmat system and produced water from one of the Langlie-Lynn producers.

Q. Okay. And if we would turn to Exhibit 7, have you obtained a chemical analysis of fresh water from a freshwater well within one mile of the injection wells?

A. We did, we took a sample from two windmills that produce some fresh water in that area.

Q. Okay, that's what Exhibit 7 is?

A. That's correct.

Q. Is there any indication in Exhibit 7 or the analysis of the freshwater samples that injection fluids have shown up in those wells?

A. No, sir.

Q. Are you satisfied that Energen has examined all available geologic and engineering data to find evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water?

A. Yes, sir.

Q. And what do you conclude?

A. That there is no connection.

Q. Okay. Let's talk briefly about your injection operations for the unit. If you would refer to Exhibit 8, please, sir, would you identify that and explain that to the Hearing Examiner?

A. Exhibit 8 is a map that highlights the Langlie-Lynn Queen Unit. The small yellow circles are the Number 3 and the Number 9 wells. We also have half-mile radiuses drawn around those.

And one of the other things I want to point out is, on this map with our existing injectors we have a fivespot pattern in this unit in 9, extend that pattern on up into that portion of the unit.

Q. Okay. Let's talk about these two specific

injection wells. Are Exhibits 9 and 10 the well data sheets for the Number 9 and Number 3 wells, respectively?

A. They are.

Q. And let's review some of the specific information for each of those wells for the Hearing Examiner that are shown on the data sheets.

Just let me ask you, attached to the data sheets are completion reports, wellbore schematics and area locational maps; is that correct?

A. That is correct.

Q. Okay. Let's start with the Number 9 well, the Exhibit 9. Could you describe the casing string that's in place for this well?

A. Okay, the casing string for the Number 9, it was a 4-1/2-inch casing that was run to a depth of 3800 feet in a 6-3/4-inch hole, and then it was cemented with 200 sacks of Class C cement.

And on the injection well data sheet we have the top of cement was unknown. But if you look on the diagram, we went ahead and did some calculations, and according to our calculations the -- let's see. The top of the cement should be at 2931.

Q. Did we not indicate that on the wellbore schematic?

A. No, we didn't.

Q. Okay, but you did calculate that from the cement volumes?

A. We did.

EXAMINER STOGNER: I take it you might have calculated it somewhere, and you don't have that exhibit with you?

THE WITNESS: That's correct.

EXAMINER STOGNER: Could you provide that to me subsequent to today's hearing.

MR. HALL: We'll do that.

THE WITNESS: Okay.

Q. (By Mr. Hall) Okay, would you describe the tubing to be used with this well?

A. It has 2-3/8-inch tubing that is run to a depth of...

Q. It's shown on the well data sheet, is it not?

A. Oh, I'm sorry. Yes, it is. There's a packer at 3350, and it has 2-3/8-inch tubing run to that.

Q. Okay. And describe the packer -- type of packer being used in the other seal system.

A. It's a Baker Lok-Set packer, and it's set at 3350.

Q. Okay. Let's look at Exhibit 10, if you'd describe the same information for the Number 3 well, starting with the casing in use.

A. Okay, the Number 3 well has 4-1/2-inch casing that was run to 3790 in a 7-7/8-inch hole. It was cemented with 1000 sacks of 50-50 Pos Mix, plus 100 sacks of regular Class C. And we also did calculations on this well, and the cement should be -- top of cement should be at 761 feet.

MR. HALL: We'll give you those calculations too, Mr. Examiner.

EXAMINER STOGNER: Thank you.

Q. (By Mr. Hall) Al right, could you describe the tubing in use for the well?

A. This has 2-3/8-inch tubing with a Baker Lok-Set packer at 3458.

Q. Okay. Now, are these wells perforated or open hole at the injection interval?

A. They are perforated.

Q. Okay. Do you know whether these wells were originally drilled as producers or injectors?

A. They were originally drilled as producers.

Q. Okay. Were there perforations at any other intervals in these wells?

A. No, sir.

Q. Would you identify the next highest and lowest oil or gas zones in the area of these wells, and their depths?

A. Well, the next highest zone would be the Yates, and it runs from -- in our type well it runs from 3040 to 3200 feet.

Q. Okay, and the next closest zone, is that the Penrose-Grayburg?

A. Next lowest would be the Penrose-Grayburg, and it starts at 3710.

Q. Okay. Let's refer to Exhibit 11 now. Would you explain that to the Hearing Examiner? What is the cover page of Exhibit 11 intended to show?

A. The cover page of Exhibit 11 is a well-data sheet that we worked up for all the wells within a half-mile radius of the 3 and 9.

Q. Specifically, with respect to Exhibit Number 11, that's limited to wells within a half mile of Well Number 9; is that right?

A. That is correct, Number 11, yes.

Q. In Exhibit 11, do any of those wells penetrate the Yates formation, or are there Yates-formation completions on that list?

A. Yes, sir.

Q. Do you want to discuss those with the Hearing Examiner?

A. Okay, there are six wells within the half-mile radius that are completed in the Yates that are still

productive, and those are the Doyle Hartman New Mexico "AA" State Number 1, the El Paso State Number 1, the Shell State Number 3, the Sinclair A State Number 10, the Conoco Lynn B-1 Number 3 and the Conoco Lynn B-1 Number 7.

Q. Now, in addition to those Yates completions, for all of the other wells within a half mile, does Exhibit 11 consist of a compilation of well data sheets for each of those wells, and do each of those sheets show the information that the Hearing Examiner would need to review in connection with this Application? In other words, does it have a tabulation of data of all the wells, including the well type, its construction, date drilled, location, depth, record of completion, schematics of plugged wells?

A. They do.

Q. All of that information is contained here.

Let's refer to Exhibit 12 now. Is Exhibit 12 a compilation of well data sheets for each of the wells within a half mile of the Number 3 injection well?

A. Yes, it is.

Q. And again, do the attachments to the cover page of Exhibit 12 consist of a compilation of well data sheets for each one of those wells, showing all the information that the Hearing Examiner would need to review in connection with this Application?

A. Yes.

Q. In my review of these well data sheets in Exhibits 11 and 12, I notice in a number of cases there are indications, TOC unk., top of cement unknown. Is that addressed elsewhere in the materials?

A. In the wellbore schematics we've gone in and calculated top of cement for those where it was previously unknown and then changed it.

Q. And so that's reflected on each of the wellbore schematics?

A. Yes, sir.

Q. Where it's not shown on the data sheet itself? Okay.

Specifically with respect to the following wells, I notice that casing leaks were indicated. Those are the Unit Well Number 2, Unit Well Number 10, Unit Well Number 12 and Unit Well Number 11. Have those been addressed?

A. They have. The Number 10 has been P-and-A'd, and the other three wells the casing leaks have been squeezed.

Q. In each of those cases?

A. That's correct.

Q. All right. With respect to the Unit Well Number 23, it's not part of the Application. Now, what is the status of that well currently?

A. It's currently shut in.

Q. And it's not part of this expansion request; is

that correct?

A. That is correct.

Q. And not currently being utilized for injection operations?

A. That is correct.

Q. Mr. Smith, in your opinion will the expansion of the waterflood project result in the recovery of additional oil reserves that would otherwise go unrecovered?

A. Yes, sir.

Q. And in your opinion with the expansion of the waterflood project, can injection operations be conducted so that the escape of fluids from the injection interval is avoided?

A. Yes, sir.

Q. And in your opinion can injection operations be conducted so that the loss of reserves of other operators and interest owners can be avoided?

A. Yes.

Q. Were Exhibits 8 through 12 prepared by you or at your direction?

A. Yes, sir.

MR. HALL: Mr. Examiner, at this time that concludes our direct of Mr. Smith.

Move the admission of Exhibits 8 through 12.

Exhibit 13 is a well list that I compiled. For

your information, it's a list of all of the wells that were submitted in connection with the 2001 application that were reviewed by Mr. Catanach at that time. I thought that might be of some assistance to you.

Exhibit 14 is our notice affidavit. There is a problem with notice, Mr. Examiner, and the problem is that the surface owner was not notified. The surface owner is the State of New Mexico, and I spoke with the State Land Office yesterday. They indicated that they would provide a waiver letter, probably today, and if you'll hold the record open for a bit longer I will get that to you, possibly today.

With that, we'd move the admission of Exhibits 8 through 14.

EXAMINER STOGNER: Exhibits 8 through 14 will be admitted into evidence, and I will hold the record open pending the waiver letter from the New Mexico State Land Office.

EXAMINATION

BY EXAMINER STOGNER:

Q. Let's see, Mr. Smith, you had mentioned at the beginning of your testimony today that you were anticipating a maximum injection pressure of 1000 with an average of 500 p.s.i. What is the current maximum allowed injection pressure on any of these wells out there?

A. 1000.

Q. 1000?

A. On the existing injectors.

Q. Okay. Now, that is -- We have a rule of thumb, .2 p.s.i. per foot to the top of the injection interval, and this exceeds that by about 300 p.s.i. Do you know if it was grandfathered in, or was there any step-rate pressure test done to any of the previous wells to allow that higher injection pressure?

A. I don't know about that.

Q. What is the reservoir pressure out there?

A. Well, the current injection pressure on the current injectors is zero. They actually take it at a vacuum.

Q. Mr. Smith, were you involved in the previous request for these two injection wells that were withdrawn a few years ago?

A. Yes, sir.

Q. What was -- In a nutshell, why were they withdrawn? What was the objection, and who objected to it?

A. Well, the initial application had a request for all the wells, and there was -- I'm not sure all the parties that posed it, but Hartman was one of them, and El Paso -- they were afraid the El Paso State Number 1 would be adversely affected, which is the intermediate offset to

the Number 23 well.

And so in order to get injection into the ground in the unit, we withdrew the 23, the 3 and the 9 so that we could expedite the rest of the unit.

MR. HALL: Mr. Examiner, the other objection was received from Lanexco in Jal.

EXAMINER STOGNER: And they're the current operator of the El Paso State Number 1.

Q. (By Examiner Stogner) Now, the six wells that were identified as Yates producers, those are gas wells, are they not?

A. Yes, sir.

Q. Okay. And the Yates gas-bearing formation is right above your injection interval; is that correct?

A. That's correct.

Q. What is the break between the two formations? Is it an impermeable layer? What do we see out there between the Yates and your injection Queen interval?

A. There is no break between the top of our approved interval and the bottom of theirs.

Q. But at this time, with the renewal of these two wells, you've been in contact with either Hartman or Lanexco or any of the other Yates-produced -- gas producers concerning this injection?

A. Other than the notices, we have not.

Q. Okay. Now, there's quite a bit of information on Exhibits 11 and 12, but I was thumbing through Exhibit Number 11. Let's go over to -- near the bottom, the Shell State Number 3, Gruy Petroleum Management. I'm looking at the wellbore diagram. I believe it's the seventh page from the end of this stack. Do you have that?

A. Yes, sir.

Q. Okay, I just want to make sure I'm reading this right. Now, down in the bottom description of the production casing, ran in 1958, the 5-1/2 casing was run to 3425 --

A. Yes, sir.

Q. -- and then that was cemented back to 750; is that correct?

A. No, the production casing was -- it was cemented with 750 sacks back to -- from the temperature survey determined the top of cement was at 1090.

Q. At 1090, I'm sorry. Okay, at 1090. Now in looking at this, is the tubing also cemented in?

A. No, sir.

Q. Okay.

A. But that should be shaded in there.

Q. Okay, so that was what was confusing me. Actually -- These cemented intervals are actually shown with the hached lines, and that's either -- and the shaded

area, which is shown to be cement on other -- is actually nothing; is that correct?

A. That's correct.

Q. Okay. Now, this well in particular doesn't even penetrate your injection zone, does it?

A. No, sir.

Q. Okay. Just offhand, how many plugged and abandoned wells are in the area of review? I know they're in here, but just -- well, actually here, just how many you know that are plugged and abandoned?

A. Four.

EXAMINER STOGNER: Four? Mr. Hall, I don't believe I have any other questions for Mr. Smith.

MR. HALL: That concludes our case, Mr. Examiner.

EXAMINER STOGNER: Okay. Mr. Hall, I'll leave the record open pending the information from the State Land Office, and I believe you were going to provide me with the calculations for the tops of cement on these two wells?

MR. HALL: We'll do that.

EXAMINER STOGNER: So for those three items I'll leave the case open, and Case Number 13,170 -- with that, I believe we're concluded with this case.

(Thereupon, these proceedings were concluded at 9:11 a.m.)

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 13170, heard by me on December 4, 2003.

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 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 December 5th, 2003.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2006