STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

ORIGINAL

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE: 14752

APPLICATION OF CIMAREX ENERGY COMPANY OF COLORADO FOR APPROVAL OF A WATER DISPOSAL WELL, EDDY COUNTY, NEW MEXICO.

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING
October 27, 2011
Santa Fe, New Mexico

BEFORE: RICHARD EZEANYIM, Technical Examiner

This matter came on for hearing before the New Mexico Oil Conservation Division, RICHARD EZEANYIM, Technical Examiner, on October 27, 2011, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis, Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Irene Delgado, NM CCR 253
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A P P E A R A N C E S

FOR THE APPLICANT:
KELLAHIN AND KELLAHIN
W. THOMAS KELLAHIN
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I N D E X

EXHIBITS

EXAMINER EZEANYIM: Now, I would like to take a about ten-minute break, but before I do, I want to make a statement here. The next case we are going to have is -- let's see if I have it here -- we are going to have the next case, 14752. My question is, are there any opposition to that case? This case -- this case I can rule because we approve them administratively if there are no objections. Are there any objections, because, if there are, we hear them today. So if there are no objections, the case may be dismissed and I will remand this to the administrative process.

So, however, if there are objections, then we can take a break and come back and deal with them. Are there still any objections?

MR. HALL: Mr. Examiner, Scott Hall from the Montgomery and Andrews Law Firm, Santa Fe. I have entered an appearance and filed pre-hearing statements in this case for COG Operating and for Nearburg Producing Company. COG has asked me to inform you that it is withdrawing its objection to the proposed disposal well. Nearburg is not withdrawing its opposition.

EXAMINER EZEANYIM: Very good. So we go ahead. Let's take 10, 15-minute break and then come back and deal with it.

(Recess taken.)

EXAMINER EZEANYIM: Let's go back on the record and then continue with Case Number 14752. This is the application of Cimarex Energy Company of Colorado for approval of a water disposal well, Eddy County, New Mexico. Call for appearances.

MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of the Santa Fe law firm of Kellahin and Kellahin, appearing this morning on behalf of Cimarex Energy Corporation of Colorado. I have one witness to be sworn.

EXAMINER EZEANYIM: Thank you. Any other appearances?

MR. HALL: Mr. Examiner, Scott Hall, Montgomery and Andrews Law Firm, Santa Fe, appearing on behalf of COG Operating and Nearburg Producing Company, and as I have explained, COG has asked me to inform you that it is withdrawing its objection to the Cimarex application in this case.

EXAMINER EZEANYIM: Okay.

MR. HALL: Nearburg is not withdrawing, and I have no witnesses this morning.

EXAMINER EZEANYIM: No witnesses?

MR. HALL: No, sir.

EXAMINER EZEANYIM: Very good. May the witness stand up, state your name and be sworn.

MR. HAVENOR: Yes, I'm prepared.

EXAMINER EZEANYIM: State your name for the record.

MR. HAVENOR: Kay Havenor, H-a-v-e-n-o-r.

(Witness sworn.)

EXAMINER EZEANYIM: Mr. Kellahin?

MR. KELLAHIN: Thank you, Mr. Examiner.

KAY HAVENOR

(Sworn, testified as follows:)

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Dr. Havenor, would you please state your name and occupation for the record, please?

A. Kay K-a-y, Havenor H-a-v-e-n-o-r. I'm a geologist, consulting geologist and appearing for Cimarex.

Q. In what city do you reside, sir?

A. Roswell, New Mexico.

Q. On prior occasions have you testified as an expert petroleum geologist before the Division?

A. Yes, I have.

Q. For purposes of this application, were you retained by Cimarex to make an analysis of the data and then reach conclusions and actually complete and file the Division Form C-108 for this disposal well?

A. Yes, sir.

Q. So the products that we are about to look at contained in this exhibit set represent your work product?

A. Yes, they do.

MR. KELLAHIN: We tender Dr. Havenor as an expert petroleum geologist.

EXAMINER EZEANYIM: So qualified.

Q. Dr. Havenor, let's turn to what I have marked as Exhibit Number 1, and let me ask you some preliminary questions about Exhibit Number 1. When you look at Exhibit 1, does this package, as we presented it to the Examiner this morning, contain the information that was originally filed by you with the Division as an administrative application?

A. Yes, it does.

Q. In this particular copy, after you get past the cover pages, have you then numbered the rest of the pages?

A. Yes, sir. They are numbered at the bottom.

Q. Let's turn past the two cover sheets, and what I'm looking for then is to continue on, and we are going to look at Page Number 1. This is a plat, sir. I'm on a plat now that has a double circle on it. It's about the fourth page down, I believe, and it's numbered Page Number 1. What do the two circles represent, Dr. Havenor?

A. The two circles represent -- the outer circle represents the area of interest for the area of review, and the inner circle is the actual area of review, the half-mile circle.

Q. If we now turn to the next page, Page Number 2, identify for us what we are now seeing.

A. This is an enlargement of the previous page to show more clearly the detail within the half mile area of review.

Q. Let's start with the proposed disposal well. How does the Examiner find that disposal well depicted on Page Number 2 of Exhibit Number 1?

A. It's located in the center of the circle. It's the dry hole marker.

Q. Is there a name associated with this well?

A. Yes. It's the Dorchester Secrest et al Number 1.

Q. As part of your studies for utilizing this as a disposal well, have you studied all available Division records for this well?

A. Yes, sir, I have.

Q. What is the current status of the Dorchester Secrest Well?

A. It is currently plugged and abandoned.

Q. To what purpose does Cimarex intend to utilize this wellbore?

A. Cimarex intends to re-enter the well and -- and condition it as necessary in order to dispose of produced water into the Canyon Formation.

Q. What is the -- what is anticipated to be the source

of the water that's generated that would go into this disposal well?

A. The waters will be from newly-drilled wells within the general immediate area, and it will be Yeso production.

Q. In a structural relationship geologically in a vertical sense, where is the Yeso in relation to the disposal in the Canyon member of the Pennsylvanian?

A. Well, there is a couple thousand feet between the producing areas above and the top of the disposal interval.

Q. Within the half-mile radius of review, have you inventoried wellbores to determine if the Division requires you to analyze and report data on other wells?

A. Yes, I have.

Q. And how many other wells, other than the proposed disposal well, have you tabulated?

A. That's shown on Page 3 of the report at the top of the page, it has a listing of all current -- currently known wells that penetrate the proposed disposal interval.

Q. Okay. Well, let's flip back and forth between Pages 2 and 3, and starting with Page 3, then, the top well on the Column 4 is the Liggett Well that was operated by Nearburg?

A. Correct.

Q. When you flip back to the half-mile radius map, show us where the Nearburg Liggett Well is.

A. I have to refresh my memory and look at the footage.

1980 from the south and east of Section 7, so it would be directly north of the proposed re-entry right at the -- at the margin.

Q. That would put us up in Section 6, will it not?

A. Yes, in Section 6.

Q. You are just right on the edge of the half-mile radius line?

A. Yes. It was included for safety's sake.

EXAMINER EZEANYIM: I see two Liggetts. Which one are you talking about? If you look at the Dorchester in the middle of that circle, then I go into Section 6, I see a Liggett. Is that the one you are talking about, or the one on the boundary of the circle?

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: There is one Liggett on the boundary of the circle, and another Liggett just north of the Dorchester, that's the circle, so which one is which? Which one are we talking about? On that, if you go to Page 2, flipping up and down, I see Liggett over there by Nearburg, and then where is it located in reference to your half mile area of review on Page 2?

MR. KELLAHIN: If I may approach the witness I will have him mark it for you.

EXAMINER EZEANYIM: Sure.

Q. Is that right?

A. Yes.

MR. KELLAHIN: Mr. Examiner, it's the one at the very top of the circle.

EXAMINER EZEANYIM: That one, I have. What is this one?

MR. KELLAHIN: We'll come back to that one.

EXAMINER EZEANYIM: Okay. Very good.

Q. Let's identify each of these four wells that are on the tabulation. We've got the first one marked, and then we find, in Section 7, there is the Bermuda Well that was under Chi Operation. It's T and A well, in 7?

A. Yes, sir.

Q. Where do we find that wellbore?

A. That wellbore is located directly to the east of the proposed re-entry.

Q. It says "TA"?

A. Yes. It says "TA," yes.

Q. And then when we look at the tabulation, the third well is the Secrest Dorchester, and that's the target disposal well?

A. Yes, sir.

Q. And then the fourth well is the Glass, operated by Nearburg Well, and that's a plugged well in 7. Now, where is that well located?

A. It's -- it's located 1980 feet from the north and

660 from the west of that -- of that section, and it's pretty well buried in that -- that area of -- actually, it's -- it's down in the southwest corner of the northwest corner of Section 7.

MR. KELLAHIN: May I approach the witness and make sure I have marked it on the exhibit right?

EXAMINER EZEANYIM: Okay.

Q. Dr. Havenor, is it this one?

A. Yes, that one.

MR. KELLAHIN: Mr. Examiner, it's just outside the circle.

EXAMINER EZEANYIM: Outside the circle?

MR. KELLAHIN: This one.

EXAMINER EZEANYIM: I'm looking at -- you are coming back to that?

MR. KELLAHIN: Yes, so you look at this.

EXAMINER EZEANYIM: Yes, sure.

Q. Dr. Havenor, these Midland maps are sometimes a little hard to work with, but -- have we now accounted for all the wellbores that are in or near the half-mile radius that you have inventoried and analyzed?

A. Yes, that is correct.

Q. And if there is another well location or another point within the half-mile radius, it's extraneous to the discussion we are about to have?

A. That is correct.

Q. Now, let's go back to Page 3 now, and at the top of the page then, under Item 6, you have started tabulating wellbore data about these wells. And as we drop down to the typed area, there is some purported information on the Nearburg Liggett Well that's all typed out?

A. Yes, sir.

Q. Is there a correction to make in the size of the hole on that wellbore that's printed? Should that not be a different number than 8 and 5/8?

A. Yes. On the second line of the information for Well Number 1, that 8 and 5/8 inch hole is supposed to be 7 and 7/8 inches.

Q. All of your calculations and analysis have used the correct hole size of 7 and 7/8?

A. That is correct.

Q. This is just a typo that you have discovered?

A. Yes, sir.

Q. When you look at all four of the wellbores in or near the area of review, do you find any of them that you would characterize under Division rules as problem wells?

A. I found no wells of these four that would constitute any problem.

Q. And in making your analysis, you have looked at the volumes of cement and done the necessary calculations to

determine that all these are either adequately plugged or configured in such a way that the injection interval is clearly isolated from any uphole potential in any of these wellbores?

A. Yes, sir, that is correct. They are all isolated.

Q. Geologically, when you look at the Canyon portion of the Pennsylvanian, is there any natural fracture link or hydrologic connections that would allow injection fluids to move out of the Canyon into shallower formations?

A. No. There is no indications of geological activity such that it would create fractures or faults that influence a potential seal on top or below this projected or proposed injection interval.

Q. As you run through your various calculations and do your work, have you supplemented any of this information that you originally submitted with additional proposed exhibits?

A. Yes. Additional information has been, and that's listed as Exhibit 2.

Q. Let me turn your attention -- let's leave Exhibit 1 at this point. Turn your attention to what is marked as Exhibit 2, which would be found in the package, and it's an exhibit that's got some spreadsheet blocks on it, and they are highlighted in blue coloring.

EXAMINER EZEANYIM: This one?

MR. KELLAHIN: Yes, sir.

A. Yes.

Q. Before we talk to the Examiner about the details of what you are looking at in Exhibit 2, describe for us what it is that we are seeing.

A. It's a reorganization of much of the data that is shown on the C-108, Page 3, but it more clearly indicates or separates out hole size, casing size, and weight, grade of casing, where casing was set, and information as to the top of cement on each of the jobs. And beneath that then is shown any known past production from these wells.

Q. When you look at the past two Nearburg wells that were in or near the half-mile radius, those produced for some period of time from the -- what portion of the reservoirs did they produce from?

A. This was from Morrow Gas production beneath the proposed interval.

Q. Those wells have now been completed, produced, and have been abandoned?

A. Yes, sir, they have.

Q. In your analysis, do you find any potential for oil production in the Canyon Formation of the Pennsylvanian series in this vicinity?

A. No, sir. I see no reasonable productive capacity of the Canyon throughout the proposed injection interval.

EXAMINER EZEANYIM: Within two miles of that

proposed interval?

THE WITNESS: As demonstrated by testing on this specific well, yes, sir.

EXAMINER EZEANYIM: There is no production within two miles of this injection interval in the Canyon?

THE WITNESS: Yes, sir. That is correct.

Q. You have to get more than two miles away before you hit Dagger Draw and Indian Basin?

A. Yes.

Q. And those would be farther to the west and to the southwest?

A. Correct.

Q. Do you have additional test information from the proposed disposal well in terms of drill stem information?

A. Yes. We have included as Exhibit 3 the listing of three drill stem tests that were run by Dorchester in the -- in the drilling and production of the well. And Drill Stem Test Number 2 was run over the interval 7,770 to 7,828. And that completely covers the proposed interval of injection, and the results are shown.

Q. Can you characterize for us verbally as a geologist the nature and character of the Canyon member of the Pennsylvanian as we see it within Section 7? What is it that we're looking at?

A. Interbedded limestones and dolomites, the great

majority of them are -- have very low porosities and permeabilities. There are several smaller zones that do have good porosity and permeability, and they are the ones that were covered by this drill stem test which resulted in the production of recovery of primarily water.

Q. When you are looking for a suitable disposal well for Cimarex, what is the criteria that satisfies you that this proposed Secrest disposal well is a good candidate for disposal?

A. The primary concern that I have in -- in looking for a well such as this is that, number one, there be favorable formations to accept the water, and then hopefully production or test information such as the drill stem test that was run on this well to confirm the lack of reasonable productivity of oil and gas. And then I start looking at boundaries, what are going to be the upper boundaries to -- to prevent vertical migration up and down. And those are the primary criteria.

Q. Does this wellbore satisfy that criteria?

A. Yes, sir, every, one.

Q. As part of your studies and compliance with the C-108, do you make a search for and look at the compatibility of waters produced from -- I guess they were Yeso wells?

A. Yes.

Q. And to be disposed of in the disposal interval to

see if there is any kind of compatibility problems, did you do that?

A. Yes, not in a direct chemical analysis relationship other than knowing the -- the overall salinity content of the proposed injection fluids, and, in this particular case, there are a number of other saltwater disposal wells into this correlative section of the -- of the Canyon which are accepting waters of the -- of the Yeso, the San Andres, and the Artesia group in general, and there have been no adverse effects. Overall, chemically, it looks good to me.

Q. As part of your filing with the C-108, did you have a water analysis that you submitted that's associated with a saltwater disposal well over in Section 17?

A. Yes, sir.

Q. Would you turn to the C-1-0 -- C-108, and let's talk about the water analysis information. I think you find that over on Page 4.

A. Yes, sir.

Q. And drop down to Entry 5 under Item 7.

A. Yes, sir.

Q. What did you find in terms of water analysis information?

A. The -- the water analysis indicates to me that there were two different sampling periods, and it's -- it's difficult to say, really, which one was first and which one

was second, other than by the sample number itself. The original sample indicated that there was something well in the excess -- in excess of 150,000 milligrams per liter total dissolved solids again from the formation. And the second sample I just questioned where that was taken from at a later date.

Q. Let's turn to the topic of the surface injection limitation, numbers that the Division use. They use the limitation of 0.2 PSI per foot of depth to control your surface injection pressure. Is that correct?

A. Yes, sir. That is correct.

Q. Using that as your understanding, what is your estimate of the limit of your approval now for surface injection pressure?

A. Based upon the uppermost proposed perforation, it would be 1,556 PSI.

Q. The established protocol at the Division is to, at some appropriate time, to conduct step rate tests on the injection well if you need a pressure increase. Is that the concept here for this well?

A. It's the potential for this well, but it's not in the concept at the moment.

Q. What's the -- what's the estimated range of volumes of water that would be disposed of in this well?

A. We -- I indicated in here an average of 6,000

barrels of water per day, but in discussion with Cimarex people, that -- that appears to be somewhat higher than what they are currently anticipating.

Q. What is your understanding of their current anticipated needs in terms of the existing number of wells in the Yeso that produce water that requires disposal?

A. As I recall, I would say that 4,000 would be the top, at present.

Q. In order to dispose of the volume of water produced from Cimarex's Yeso wells, is there a corresponding benefit in terms of preventing waste by allowing the operator to recover additional oil that might otherwise be forfeited if its costs are not reduced by the disposal well concept?

A. Yes, there definitely is a relationship there. And it has been estimated by calculations from Cimarex that this would increase the economic recovery potential of barrels of oil equivalent by about 5,000 barrels per well that they drill, otherwise, it would be lost because of economic costs of disposal.

Q. Correspondingly, as part of your studies, have you analyzed any potential adverse consequences to Nearburg?

A. Yes, I have considered that, and there is excess stratigraphic boundaries protecting anything that -- that Nearburg would be producing.

Q. If Nearburg were to drill horizontal wells in say

the Yeso or some shallower formation, is there sufficient reservoir distance between the two reservoirs, the disposal reservoir and any productive reservoir in the Cisco to give separation, and therefore, integrity in that separation?

A. Yes, there is abundant difference, a couple thousand feet.

Q. In examining the cementing work done on any of these wells, do you see that as a potential avenue by which injection waters could move up into shallower zones that Nearburg might be interested in producing horizontal?

A. No, I can't see reasonable communication upward.

Q. In compiling your C-108 and providing that information, did you also not send notice to the owner of the surface as well as interest owners within the area of review for notice purposes?

A. Yes, notice was sent to everyone.

Q. And does your exhibit set here, Exhibit 1, contain all of that information?

A. Yes, sir, it does.

Q. If we turn through the package, and we can commence with Page 11 and go all the way through Page 28, that represents your notifications to all the parties required to receive notice for this case, right?

A. Yes, sir. All parties of record have been -- have been notified, and from Page 11 on, I attempted to break out

those owners by leases or units.

Q. And except for the objection by Nearburg and the one from COG that's been withdrawn, is there any other party that you notified that expressed to you or that you're aware of that expressed an objection?

A. I have had numerous inquiries, but no objections other than those two.

Q. Okay. Turn with me now to Exhibit 1 to your C-108, and let's start with Exhibit Page Number 8. Do you have it, Dr. Havenor?

A. Yes.

Q. This is a wellbore schematic of the wellbore before it is altered for disposal?

A. Yes, it is.

Q. Describe for us what the current setup is on this wellbore schematic?

A. The setup shows that the total depth of the well is 9,415 feet, and that surface casing was run to 296 feet and circulated with cement, and then casing was run to 1,300 -- intermediate was run to 1315 feet, and it was circulated with cement, also. There was no casing run beneath that to TD, and the gray areas on the diagram show the placement of plugs in abandoning the well.

Q. Let's turn to Page 9 of Exhibit 1 and have you walk through the schematic to show how the proposed SWD Well will

be reconfigured for disposal if the Examiner approves your application.

A. The well would be re-entered down -- drill out cement plugs that are shown on the prior diagram on Page 8 and clean out to a depth of approximately 8,200 feet, run five-and-a-half-inch casing, and cement that back to the surface. And there would, of course, be a cement plug placed -- a 50-sack plug placed beneath the base of where that five-and-a-half casing would be landed.

Q. Dr. Havenor, are you aware of any reason why the Division should not approve this application?

A. No, sir.

Q. Let's turn to the summaries. If you will, turn to Exhibit 4 with me. I don't intend for you to read this, but you can paraphrase this as we move through the various topics in the summary. Were you able to conclude, Dr. Havenor, that this application satisfies all the requirements the Division has for approval of a disposal well?

A. Yes, sir.

Q. Are you satisfied that you investigated to make sure that all wells have been properly cased, cemented and plugged in such a way as not to be a problem?

A. Yes, sir, I have.

Q. And then in the half-mile radius, there is adequate cement and casing above and below the injection intervals

where necessary to isolate the injection fluid from any known producing area that has hydrocarbons?

A. Yes, sir, that is correct.

Q. And there is adequate distance between the Canyon of the Pennsylvanian and any shallower zones to keep from contaminating one from the other.

A. Yes, sir. They are protected.

Q. And, again, tell us what the benefits you seek to Cimarex are with the approval of this application.

A. The primary benefit will be the eventual increasing of life of the producing well and the recovery of additional oil and gas that would otherwise probably be economically not producing.

Q. Do you see any opportunity for waste to occur or for correlative rights to be damaged?

A. No, I do not.

Q. When we examine specifically the relationship of the injection well to any risk exposed to Nearburg, what's your conclusion about risk to Nearburg?

A. My conclusion is that there is no risk to Nearburg.

Q. Let's turn to Page 2 of the summary, then, and have you articulate for us the reasons that you think there is no risk to Nearburg.

A. Number 1, the casing program will isolate the

borehole so that no fluids will be able to migrate through the drilled borehole upwards and affect the shallower horizons in any way. And, Number 2, the important factor that once isolated in the borehole, the formations above and below are of such significant lack of transmissivity that the injection waters would not or could not migrate vertically up or down.

Q. Can you give us a verbal picture of how long it will take to put water into the disposal well before that disposal of water would hit the boundaries of the half-mile radius of review?

A. Yes. And it's -- it's one of those what-if type of things. If we consider the half mile area of review as a cylinder of -- of rock into which this well will be disposing, and based upon log analysis, make an assumption of, through the porosity zones, it's an average of, say, 5 percent porosity in those dolomites, and using the estimated disposal rates that we see to -- to fill up that column of rock, assuming there was a boundary at the half-mile margin, it would take approximately 45 years to fill that cylinder at the rates they are talking about.

Q. Do the conclusions and comments expressed for in Exhibit 4 represent your conclusions? Do you adopt these?

A. Yes, I do.

MR. KELLAHIN: Mr. Examiner, rather than reading

through all of these, we will introduce those, and at this point that concludes my examination of Dr. Havenor. Now we would move the introduction of his Exhibits 1 through 4?

EXAMINER EZEANYIM: Any objection?

MR. HALL: No objection.

EXAMINER EZEANYIM: Exhibits 1 through 4 will be admitted.

(Exhibits 1 through 4 admitted.)

EXAMINER EZEANYIM: Pass the witness.

CROSS-EXAMINATION

BY MR. HALL:

Q. Dr. Havenor, as I understood your direct testimony, you said you satisfied yourself that the clean interval in this section, there is no further potential based on your review of the OCD well file per the Dorchester Secrest well, is that right?

A. For the Secrest Well and the immediately surrounding area.

Q. Okay. Can you tell us what was contained in the OCD's well file, their logs that you reviewed?

A. There was a -- a density neutron log and a resistivity log.

Q. Okay. Were the mud logs available to you?

A. No, they were not.

Q. DST data?

A. Yes.

Q. Okay. Do you know what the original target was for Dorchester and their Secrest well?

A. Yes, sir. It was Morrow Gas production.

Q. What is the nearest production from the Canyon Interval to the Secrest well? Do you know?

A. It's outside the two-mile area.

Q. Okay. Are you familiar with the North Dagger Draw, Upper Penn Unit to the west of this section?

A. Yes, sir, I am.

Q. And can you tell us how the Secrest well fits structurally in relation to the unitized interval in the North Dagger Draw unit?

A. Yes. Structurally it's low.

Q. Okay. And do you know what unitized interval is in the North Dagger Draw? Is it roughly the same?

A. Yeah, approximately the same, yes.

Q. Okay. So you are satisfied that there is still no potential in the Canyon Formation in this immediate area then?

A. Yes, I am.

Q. Okay. For the Examiner's information, I wish to refer to the order identifying the unitized interval for the North Dagger Draw unit, and it's approximately one township to the west. Isn't that right, Dr. Havenor?

A. Yes, approximately that, maybe a little less.
Q. Okay. It's -- the order number is R-12251.
EXAMINER EZEANYIM: 122 --
MR. HALL: -- 51.
EXAMINER EZEANYIM: This is what unit?
MR. HALL: The North Dagger Draw Upper Penn Unit.
EXAMINER EZEANYIM: 12251?
MR. HALL: Yes, sir.
Q. Dr. Havenor, if you know, what is the basis of Cimarex's right to inject to the Secrest well?
A. The basis of their right would be that they have negotiated an arrangement with the fee land owner for surface and -- and depth, plus they like to apply for plugged and abandoned wells.
Q. Thank you, Dr. Havenor.
MR. HALL: No further questions.
EXAMINER EZEANYIM: Thank you. Are there any production from the shallower zones underlying -- overlying the Pennsylvania Canyon, do you know?
THE WITNESS: There is drilling activity that I know of that for horizontal wells in the -- in the Yeso.
EXAMINER EZEANYIM: In the Yeso?
THE WITNESS: But they are so far above the zone of interest that they were not included.
EXAMINER EZEANYIM: Is that why you say about 1,000,

2,000 feet?

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: Okay. On the -- about Four Mile Draw -- the Four Mile Draw West is producing from the Morrow, right?

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: That's about 9,000 feet?

THE WITNESS: Yes, that is correct.

EXAMINER EZEANYIM: If we go to your -- to Page 2 of that C-102, the wells, I don't know what page it is -- yeah, Page 3.

THE WITNESS: Page 3?

EXAMINER EZEANYIM: Yeah, Page 3, where you said that all wells in the area of review, there are some wells that I take it that are not drilled yet. Is that right?

THE WITNESS: Yes, sir. That is correct.

EXAMINER EZEANYIM: You are just aware that they haven't been drilled, but you included them because they are within the half-mile area of review?

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: Okay. The well that they are trying to produce from the Morrow, do you know where they are trying to produce from? From the Morrow?

THE WITNESS: No.

EXAMINER EZEANYIM: From where?

THE WITNESS: The proposed wells?

EXAMINER EZEANYIM: Yes.

THE WITNESS: They will be shallow wells.

EXAMINER EZEANYIM: They will be the Yeso?

THE WITNESS: Yes.

EXAMINER EZEANYIM: I think I have all the diagrams of all plugged and abandoned wells including the TA, right? I think I have them in C-108.

THE WITNESS: Yes, sir.

EXAMINER EZEANYIM: It appears that the Pennsylvanian, this Canyon, is like a reef. Are you concerned about lost circulation?

THE WITNESS: Not in this area, no.

EXAMINER EZEANYIM: Because you are going to have to drill out those to go through that reef, I mean, are you concerned about any lost circulation?

THE WITNESS: No, sir. Previous wells did not indicate a problem in that area.

EXAMINER EZEANYIM: And you think that -- you think that it --

THE WITNESS: Yes, sir. In addition to that, the change in the -- in the formations, as we move away from the Dagger Draw area to the area of interest, we go into an entirely different stratigraphic relationship.

EXAMINER EZEANYIM: Okay.

THE WITNESS: Lithologic relationship, not stratigraphic.

EXAMINER EZEANYIM: Do you have any idea about the porosity or permeability of this Pennsylvanian here?

THE WITNESS: I think that the 5 percent figure is a good average for the proposed perforation zones.

EXAMINER EZEANYIM: Okay. Now, let's go back to -- let's go back to your calculation. With numbers, you know, you don't -- if you have that half-mile area, you are saying that you calculated 45 years. What model equation did you use to come up with that 45 years?

THE WITNESS: Volumetric.

EXAMINER EZEANYIM: Volumetric?

THE WITNESS: Volumetric.

EXAMINER EZEANYIM: Okay. And it's not shown here. You did this in your office?

THE WITNESS: Actually -- actually, the computations were suggested by me and made by Cimarex's engineers, and I reviewed them and felt that I had enough ownership to use them.

EXAMINER EZEANYIM: You came up with 45 years?

THE WITNESS: Yes.

EXAMINER EZEANYIM: Okay. I'm not doubting your calculation, but I just want to make sure.

THE WITNESS: I understand, sir.

EXAMINER EZEANYIM: Okay. Let me ask you, on this North Dagger Draw Unit, you know, 12251, did you ever visit that order number? Did you ever --

THE WITNESS: No.

EXAMINER EZEANYIM: You didn't, no, okay.

THE WITNESS: No, I have not visited the order number, but I have looked at the geology of the area.

EXAMINER EZEANYIM: Okay. The problem with this is that I have to ask you a question, but you are not a witness, so I have a question, but you are not presenting them. But, anyway, see if I have anything else I need to ask.

Okay. Now, your injection interval is two perforations, right? It's going to be two perforations in that case? It's not approval, it's disposal.

THE WITNESS: I'm sorry?

EXAMINER EZEANYIM: Okay. Now, what is your disposal interval?

THE WITNESS: Oh, the proposal --

EXAMINER EZEANYIM: The disposal interval.

THE WITNESS: The disposal interval overall will be from 7,780 to 8,010.

EXAMINER EZEANYIM: Okay. I'm -- I looked at that, but it seems to me that you said 7,740. 7,740 or 7,730. Let me see. I'm trying to find your diagram.

THE WITNESS: The diagram is --

MR. KELLAHIN: Page 7.
THE WITNESS: Page 7.
MR. KELLAHIN: No, Page 9.
THE WITNESS: Page 9.
EXAMINER EZEANYIM: Because that's really the diagram we are going to be looking at. Okay, 7,740, okay. That's about 250 feet from -- 40 feet from the top of perforation?
THE WITNESS: 230 feet, overall.
EXAMINER EZEANYIM: Yes, 230 feet overall. And the front half will be circulated from the surface?
THE WITNESS: Excuse me?
EXAMINER EZEANYIM: From the front half will be circulated from the surface?
THE WITNESS: Yes.
EXAMINER EZEANYIM: And there will be -- you are going to perforate two at five and a half, that's what we are asking.
THE WITNESS: Yes.
EXAMINER EZEANYIM: It's not an open-hole disposal?
THE WITNESS: Correct.
EXAMINER EZEANYIM: And then the rest of the perforation is blocked off by cement plugs?
THE WITNESS: Yes.
EXAMINER EZEANYIM: I'm not -- and my attorney is

not here. Can I ask you a question?

MR. HALL: I may not know the answer.

EXAMINER EZEANYIM: You don't have to know the answer, maybe I'm concerned about it, you know, but it's not a technical question, actually. The reason I wanted to know is there were two objections, because, you know, we want to listen to everybody, so maybe if you have any witness to be able to testify, but I want to clarify, I don't want to operate in a vacuum.

So the question is that I wanted to understand exactly why Nearburg -- assuming they -- okay, I don't have to know why they objected. Can you give me why now?

MR. HALL: I think Nearburg wants you to be satisfied that the Canyon Interval has no future potential for production. They didn't want to entirely disregard that possibility, but they want you to be satisfied --

EXAMINER EZEANYIM: Okay.

MR. HALL: -- that there is no chance that producible reserves will be lost.

EXAMINER EZEANYIM: I'm sorry I'm asking the question, but I -- I don't know that whether Nearburg, they intend to drill to that formation, if they want to drill to that Canyon in the near future.

MR. HALL: I do not know.

EXAMINER EZEANYIM: Well, they wanted the Division

to understand there might be, so we have to look at whether that potential for production in that area in case anybody can go in there?

MR. HALL: I think that's the concern.

EXAMINER EZEANYIM: So if I might put this bluntly, then, we have to look at whether there is a future potential for the Canyon, and then if there is -- we have to weigh the consequences of approving this application and then producing hydrocarbons from the Canyon. That is really the point you are trying -- because I -- I know what I think, I know what I'm going to do. So what we are saying here is that hydrocarbons producing from the Canyon in this area that the water will be disposed of, so you will have to wait, I guess -- is some of the wells in the Yeso that can be disposal wells. Is that correct? Am I supposed to be saying what I'm saying?

MR. KELLAHIN: No, sir.

EXAMINER EZEANYIM: I'm not supposed to?

MR. KELLAHIN: It's an interesting thought, but you are going outside the record. If Nearburg wanted to care about the Canyon, they would have brought a technical expert to tell what you the problem was. At this point there is no evidence except from Dr. Havenor to tell you that there is not a problem.

EXAMINER EZEANYIM: Is it because my legal examiner

is there is an objection, because you can't object to me, anyway.

MR. KELLAHIN: I know it. I'm always happy to talk to you, but I think you are worrying about something that's not been presented.

EXAMINER EZEANYIM: Well, anyway, I'm not worried about it, but, you know, I'm trying to get some facts, because once I take it under advisement I have to write the order. And I don't want to start calling you in a conference to find information. That's why I'm asking.

MR. KELLAHIN: I'm still curious, too, and I haven't found out, so I don't know what their objection is. And we have come today to a hearing, and we only know what Dr. Havenor believes, which is there is no problem to the Canyon. So we don't know what Nearberg's technical people are going to tell you. They didn't come.

EXAMINER EZEANYIM: Anybody have the right to objection.

MR. KELLAHIN: That's why they got notice.

EXAMINER EZEANYIM: Okay. I think I will stop, because not being a legal somebody, I don't want to go beyond my scope -- but, you know, anyway, I know what to do in this case. So don't hold me to it, but I don't claim to be an attorney, anyway. Anything further?

MR. KELLAHIN: No, sir.

MR. HALL: No, sir.

EXAMINER EZEANYIM: At this point, Case Number 14572 will be taken under advisement, and that concludes our hearing today. Thank you very much.

* * * * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 14752 heard by me on 12/27/11.

Examiner
Oil Conservation Division

REPORTER'S CERTIFICATE

I, IRENE DELGADO, New Mexico CCR 253, DO HEREBY CERTIFY THAT ON October 27, 2011, proceedings in the above-captioned case was taken before me and that I did report in stenographic shorthand the proceedings set forth herein, and the foregoing pages are a true and correct transcription to the best of my ability.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with any of the parties or attorneys in this case and that I have no interest whatsoever in the final disposition of this case in any court.

WITNESS MY HAND this _____ day of November 2011.

Irene Delgado, CCR 253
Expires: 12-31-2011