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:

APPLICATION OF MESQUITE SWD, INC. FOR APPROVAL OF A SALT WATER DISPOSAL WELL, LEA COUNTY, NEW MEXICO.

CASE 15262

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

April 16, 2015

Santa Fe, New Mexico

BEFORE: WILLIAM JONES, CHIEF EXAMINER
PHILLIP GOETZE, TECHNICAL EXAMINER
ALLISON MARKS, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, William V. Jones, Chief Examiner, Phillip Goetze, Technical Examiner, and Allison Marks, Legal Examiner, on Thursday, April 16, 2015, at the New Mexico Energy, Minerals, and Natural Resources Department, Wendell Chino Building, 1220 South St. Francis Drive, Porter Hall, Room 102, Santa Fe, New Mexico.

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I N D E X

I N D E X OF E X H I B I T S

(APPLICANT'S EXHIBITS)

		IDENTIFIED	ADMITTED
1	Mesquite SWD	6	14
2	Mesquite SWD	11	14
3	Mesquite SWD	11	14
4	Mesquite SWD	12	14
5	Mesquite SWD	82	--

(FULFER OIL and CATTLE AND DRIFTWOOD'S EXHIBITS)

		IDENTIFIED	ADMITTED
1	Fulfer Oil and Cattle and Driftwood Oil, LLC	36	61
2	Fulfer Oil and Cattle and Driftwood Oil, LLC	38	61
3	Fulfer Oil and Cattle and Driftwood Oil, LLC	38	61
4	Fulfer Oil and Cattle and Driftwood Oil, LLC	42	61
5	Fulfer Oil and Cattle and Driftwood Oil, LLC	45	61
6	Fulfer Oil and Cattle and Driftwood Oil, LLC	50	61
7	Fulfer Oil and Cattle and Driftwood Oil, LLC	51	61
8	Fulfer Oil and Cattle and Driftwood Oil, LLC	53	61
9	Fulfer Oil and Cattle and Driftwood Oil, LLC	53	61
10	Fulfer Oil and Cattle and Driftwood Oil, LLC	54	61
11	Fulfer Oil and Cattle and Driftwood Oil, LLC	55	61
12	Fulfer Oil and Cattle and Driftwood Oil, LLC	56	61
13	Fulfer Oil and Cattle and Driftwood Oil, LLC	57	61

(Time noted 9:38 a.m.)

EXAMINER JONES: Let's go back on the record this morning. And I call the last case on the docket, Case 15262, application of Mesquite SWD, Inc., for approval of a saltwater disposal well, Lea County, New Mexico.

Call for appearances.

MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe representing the applicant, and I have one witness.

MR. HALL: Scott Hall, Montgomery and Andrews Law Firm, Santa Fe, appearing on behalf of Fulfer Oil and Cattle and Driftwood Oil, LLC. I have one primary witness. I'll swear in two, one I may bring on for rebuttal.

EXAMINER JONES: Will everyone who is going to testify please stand.

(Two Gentlemen Stand.)

EXAMINER JONES: Will the Court Reporter please swear the two witnesses.

(Whereupon the Court Reporter administered the oath to the two witnesses.)

EXAMINER JONES: Do you two want to have any opening statements at the hearing this morning?

MR. BRUCE: I don't think so.

EXAMINER JONES: I usually know the answer

for you.

MR. HALL: I have nothing to add to that.

EXAMINER JONES: We'll do closing arguments at the end.

KAY HAVENOR

having been first duly sworn, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Will you please state your name for the record.

A. Kay Havenor.

Q. And where do you reside?

A. Roswell, New Mexico.

Q. And what is your occupation?

A. Consulting geologist.

Q. And are you consulting for Mesquite SWD, Inc., in this case?

A. Yes, I am.

Q. Have you previously testified before the Division?

A. Yes, I have.

Q. And have your credentials as an expert geologist been accepted as a matter of record?

A. Yes, they have.

Q. And are you familiar with the matters related to

the application in this case?

A. Yes, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Havenor as an expert geologist.

MR. HALL: No objection.

EXAMINER JONES: No objection?

MR. HALL: Correct.

EXAMINER JONES: Dr. Havenor is qualified as an expert geologist.

BY MR. BRUCE (cont'd):

Q. Dr. Havenor, let's -- fortunately, this isn't one of the C-108s that's 80 or 100 pages long, so it's fairly short to run through.

First of all, in looking at Exhibit 1 to the C-108 -- did you prepare Exhibit 1?

(Mesquite SWD, Inc.'s Exhibit 1 introduced and identified.)

A. Yes, I prepared it.

Q. Could you turn to the third page and identify the well, give the well name and its location for the examiner.

A. The well name is the Johnny East SWD 1. And the location is Unit N, Section 11, Township 25, South Range, 36 East, Lea County.

Q. And what is the -- is this an existing well or

will this be a new drill?

A. This will be a new drill.

Q. And what is your proposed injection interval?

A. The proposed injection interval is the very basal-most part of the Yates Formation and the uppermost Seven Rivers.

Q. And what are the depths?

A. This was prepared so long ago, I have to look. Approximately 3,500 feet -- excuse me -- for the total depth of the well.

Q. For the total depth of the well?

A. Yes.

Q. On that page 3, it says 3378 to 3388?

A. Correct. That is the proposed approximate depths.

Q. Will this be a commercial saltwater disposal --

A. Yes, it will be.

Q. Let's turn to page 7 of the C-108. Let's run through this a little bit. First, are there any wells within the half-mile area of review?

A. There are no known wells within the half mile areas of review.

Q. I notice you mention one Driftwood well. But is that outside of the half mile area?

A. Yes, it is outside the half-mile area of review.

Q. What are the proposed injection volumes?
A. The proposed injection volumes are a maximum of 10,000 barrels of water per day.
Q. And insofar as the injection pressure, will it comply with the Division's .2 psi per foot of depth?
A. Yes, it will.
Q. And what formations would you anticipate the injected water will be produced from?
A. The injected water will be primarily into the upper Seven Rivers with possibly a foot or two of the basal-most Yates.
Q. But the produced water that will be injected, what are the primary sources of that?
A. That's often hard to say. But it will probably be Bone Springs type water.
Q. Are there any compatibility issues between Bone Spring water and the water in the injection formation?
A. No problems of compatibility.
Q. Let's turn to page 8 and 9. Could you discuss, a little bit, about the Capitan and what you inspected or what you reviewed to determine that this is not part of the Capitan?
A. The primary evidence that it is not part of the Capitan Reef is because of the recognizable and identifiable presence of Yates through Seven Rivers

Formation present, which are formations that are only found in the back reef area of the Capitan complex area.

Q. And is that what you are trying to show on pages 8, 9, and 10 of this C-108?

A. Yes, it is.

Q. Are there any fresh water sources within two miles of the proposed injection well?

A. None that can be identified.

Q. And you checked with the State Engineer Office regarding that?

A. That is correct.

Q. And on page 10, what does that plat reflect?

A. This plat was part of a Roswell Geological Society symposium publication in 1956. And this map was prepared by one of the participants which was and is a small part of the mapping of the Yates Formation on the Central Basin Platform itself.

And the interesting thing about this data, for the well data itself, there's often much more information available than is even available through OCD records. As I recall it was a geologist for Union Oil that prepared this for the symposium in -- 1956 symposium.

And it is remarkably accurate to information that has been developed since 1956 in the adjacent areas,

particularly those farther to the west, which are still behind the Capitan Reef Complex itself and in the back reef faces carrying Yates through Seven Rivers deposits.

Q. Let's move on to page 11. Could you briefly discuss how the well will be drilled and completed.

A. It will be drilled by conventional rotary tools, vertical hole. And the entire drilled interval will be cased and -- would be logged, mud logged and electric logged and then cased and perforated for the basal couple of feet for the Yates and the Seven Rivers zone.

Q. Will the well be drilled and completed in such a fashion as to prevent any movement of injected fluids to any producing zone or would it allow -- let's just say, for a producing zone?

A. Yes, any potential zone would be protected.

Q. And you said there was no water within two miles, but does the casing program ensure that if there was shallow water it would be protected?

A. Yes. It will be protected by the first strain, 9-5/8ths casing.

Q. Is the unit 12 simply to show the well site on the Johnny East Well?

A. Yes, it is.

Q. And did you check the records regarding offsets

and surface owner for this application?

A. Yes, I have.

Q. And are they reflected on page 13?

A. Yes, they are.

Q. You said the minerals owner; so it's federal land?

A. Yes.

Q. Federal minerals and federal surface?

A. For the well site area, yes, it is surface.

Q. Okay.

MR. BRUCE: And, Mr. Examiner, Exhibit 2 is simply an affidavit of notice to all of the parties. I notified Driftwood Oil via Mr. Hall. Mr. Hall called me on it. I don't think he got this letter until 12 days after it was mailed or something like that.

(Mesquite SWD, Inc.'s Exhibit 2 introduced and identified.)

BY MR. BRUCE (cont'd):

Q. Mr. Havenor, what is Exhibit 3?

(Mesquite SWD, Inc.'s Exhibit 3 introduced and identified.)

A. Exhibit 3 is what I refer to as a stick diagram. It is based on the -- it is an attempt to show the formation tops that will be involved in the drilling and completion of this well and their vertical relationship

to zero subsurface.

Q. Okay. Will the Mesquite SWD well be down dipped from the nearest Driftwood wells?

A. Yes, significantly down dipped.

Q. And does this also show, in connection with the other matters you've discussed in the C-108, that this is not the Capitan Reef, that it's the back reef?

A. Yes. It illustrates that in the sense that if the Yates Formation is present and identifiable and the zones down through and into the Seven Rivers, that is back reef and not Capitan Reef.

Q. And was Exhibit 3 prepared by you?

A. Yes.

Q. What is Exhibit 4, Dr. Havenor?

(Mesquite SWD, Inc.'s Exhibit 4 introduced and identified.)

A. Informational -- I don't think I have a copy of that. (Pause.)

This was primarily intended for my information to Mr. Bruce. And it was in relation to Driftwood having filed a protest along with Mr. Fulfer.

Q. And, Dr. Havenor, in our prehearing statement, Fulfer and Driftwood stated that they opposed Mesquite's application because they have wells producing and capable of producing hydrocarbons in close proximity to

the proposed disposal well.

In looking at Exhibit 4, did you check Division records regarding production from the Driftwood wells?

A. Yes.

Q. And --

A. Yes, that is what Exhibit 4 is, and this was prepared yesterday.

Q. When was the last date that these wells produced, as far as you could tell?

A. It was in, as I recall, 2003.

Q. 2013?

A. Excuse me. 2013, correct.

Q. Were they marginal producers even.

A. A marginal producer would be in the eye of the beholder. In my opinion, it would be low production and potentially higher and increasing water. What I saw on the production records on file was that the small amounts of oil and -- smaller amounts of oil and decreasing volumes of gas and an almost immediate cut-off in a following month going to all water.

Q. And, again, Exhibit 4 was prepared by you?

A. Yes, it was.

Q. In your opinion, is the granting of this application in the interest of conservation and the prevention of waste?

A. Yes, it is.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 1 through 4.

EXAMINER JONES: Objection?

MR. HALL: No objection.

EXAMINER JONES: Exhibits 1 through 4 will be admitted.

(Mesquite SWD, Inc.'s Exhibits 1 through 4 were admitted into evidence.)

MR. BRUCE: I pass the witness.

CROSS-EXAMINATION

BY MR. HALL:

Q. Dr. Havenor, let me ask you, do you know if this well proposal has been presented to the Bureau of Land Management?

A. Yes, it has.

Q. And has it been approved by them?

A. It was not objected to.

Q. Do we have an approval, do you know?

MR. BRUCE: Excuse me. Are you asking for an approved APD?

MR. HALL: Yes.

A. You don't normally -- I don't normally submit an APD until after approval of the SWD.

Q. So an injection permit has been submitted to BLM;

is that right?

A. I'm sorry?

Q. What has been submitted to BLM?

A. A copy of the application.

Q. The C-108?

A. Yes.

Q. And they neither approve or disapprove of C-108s; isn't that correct?

A. I can only say they did not disapprove.

Q. Okay. Do you know Mr. Fulfer?

A. Yes, I do.

Q. Are you aware that this location for the Johnny East SWD well is within his federal raising allotment?

A. Yes, I do.

Q. And is there some reason that the location for the well is 300 feet off the south line of the section? Do you know why that location is chosen?

A. I selected it, and it was intended to not be able to or to not interfere with any normal spacing of oil and gas exploration, should any occur.

Q. Did you examine area well logs within the two-mile radius to determine the presence of the Yates, Seven Rivers in those well bores?

A. Yes, I did.

Q. And do I understand your testimony, where you

encounter Yates, Seven Rivers in the well bore, does that preclude the existence of the Capitan Reef?

A. Absolutely.

Q. You have referred to "the back side of the reef"; is that a particular geologic term?

A. It's a semi-generic term, "the back side of the reef." The reef is a very complex thing. And the physical body of the reef itself is greatly confined to the leading edge of the reef, the basin-ward side of the reef, meaning that is the area in which we know that water moves around the margin of the basin.

And the back reef is a description of the significant change in porosity that occurs in front of the reef as compared to very dense carbonates normally making up the back side of the reef, the reef body.

Q. If we have a location that is in the so-called back side, is it still considered to be within the capital [sic] reef complex itself?

A. I don't understand your question.

Q. Have you encountered the term "the capital reef complex"? Is that a term used in your business?

A. We have to go back in history. I don't really understand -- could you rephrase your question, please.

Q. Let me ask you this way.

Is "Capital reef complex" a term of art that's

used by geologists practicing in this area?

A. The Capitan Reef Complex is a generalized term that has developed over the last 75 years. Of course, we know much more about the construction or the nature of the reef and the formations in front of the reef, in the reef, and behind the reef now than we did 50 to 75 years ago.

Q. All right. If we turn to the C-108, numbered page 10, it is the structure map at the top of the Yates there.

A. Yes.

Q. Do you know if in the geological body of literature for the Capitan Reef whether there's an agreed on boundary to locate the outer limits of the Capitan Reef?

A. Of the reef itself?

Q. Yes, sir.

A. There is good delineation of the front of the reef. But due to the changing lithology within the reef body itself, from the very front, northward, and behind the reef, there is a significant area that many, many years ago the Bureau of Land Management had mapped and they presented a map at that time, and that was -- I can't remember exactly the year, but it was in the 1960s as I recall.

It presented a map that showed, fairly sharply, the front edge of the reef but left a very large area surrounding the curved reef. And the Bureau of Land Management, in the non-geological sense, sort of adopted that this was all part of the potential Capitan Reef, and so took control of the development and the progress of development throughout that broad zone.

Since that time, many hundreds or probably thousands of wells have been drilled, and we have much more information today than they had at that time. And we just understand a lot more about it geologically.

Q. The location of the reef has been more clearly defined over time?

A. It depends on what you wish to call "the reef."

Q. Right. Let's look back at your page --

A. I would comment on this page 10. This page 10 is the -- is not in the reef area. This is in the production zone along the eastern edge of the state.

Q. So if we were to overlay the locational boundaries of the reef that's been looked over the past years since 1960, it wouldn't show on the structure map at all?

A. Not on the map on page 10, no.

Q. Okay.

A. It would be many miles to the west.

Q. What is the proximity of this location to the Central Basin Platform?

A. It is on the western edge of the Central Basin Platform.

Q. Thank you, Dr. Havenor.

MR. HALL: No more questions.

EXAMINER JONES: Do you guys want to go first?

EXAMINER MARKS: Sure. I do have one question actually.

On these addresses here, I just pulled up one on -- and if you could just maybe educate me. For example, Chevron U.S.A., I was just looking on -- just because we were talking about notice this morning, on the Secretary of State's website, they have an agent in Hobbs and then they have a corporate address in San Ramon, California. Where do we get this Texas address from?

MR. BRUCE: That's just -- I have it in my file. That's Chevron's address. San Roman, I have mailed stuff there and nothing ever comes back. And I normally don't send it to the registered agent, because there's no telling what that is.

But Chevron's two main offices are at -- its main permanent office is at 15 Smith Road in Midland and

its other main office, for Texas and New Mexico, is at 1400 Smith Road in Houston.

I just have it in my files from years of sending mail to them. That's all.

EXAMINER MARKS: I was just wondering because everything on the Secretary of State website --

MR. BRUCE: Yeah, the overall corporate Chevron offices are in California still. And that's where that address comes in. It is from outside of San Francisco, I believe. But any geologist or engineer who is going to look at this application would be in either Midland or Houston.

EXAMINER MARKS: Okay.

EXAMINER GOETZ: Are you done?

EXAMINER MARKS: Yes.

CROSS-EXAMINATION BY EXAMINER GOETZ

EXAMINER GOETZ: Point of clarity on your C-108 application. Our completion diagram shows perforations from 3378 to 3428. And our application for up front is 3328 to 3388. 3378 to 3388, is that what we are really asking for?

THE WITNESS: No. We are asking for what is on the front page.

EXAMINER GOETZ: So it's a ten-foot interval?

THE WITNESS: Yes.

EXAMINER GOETZ: Thank you.

Are there any other saltwater disposals sharing a zone in the immediate area of this well, let's say within two miles?

THE WITNESS: Within two miles?

EXAMINER GOETZ: Roughly.

THE WITNESS: I have to look at the map to see where two miles is.

EXAMINER GOETZ: Well, a mile to two miles.

THE WITNESS: Not in a mile or two miles, no.

EXAMINER GOETZ: Okay.

THE WITNESS: Well, there is one Mesquite well to the northwest. It is in section 10, which would be about a mile and a half northwest of this proposed location.

EXAMINER GOETZ: Okay.

THE WITNESS: It's also in lithologies that are almost exactly what we expect in this well.

EXAMINER GOETZ: And the injection history of this well, have there been any problems with it? Have we requested an IPI?

THE WITNESS: No. Not to my knowledge.

EXAMINER GOETZ: So it is still operating

under its original administrative pressure.

THE WITNESS: Yes, it is.

EXAMINER GOETZ: The injection interval of 10 feet, we've defined somewhat what the confining layer above is. How are we to know that this injection fluid will stay within formation and will not travel vertically and migrate in depth?

THE WITNESS: Well, in general, the density of the formations overlying and underlying will contain it.

EXAMINER GOETZ: So we are basing this on an assumption of geology in the area?

THE WITNESS: That is in part why I have them drill deeper, so that we can confirm that those formations are there and we'll be able to log them.

EXAMINER GOETZ: Has there been any estimate as to the life of this well with regards to how much of a zone it will flood over its lifetime, a radius of influence?

THE WITNESS: "Radius"?

EXAMINER GOETZ: Yes.

THE WITNESS: That's always a questionable thing because of -- well, I can't answer the radius. I have no estimate on the life. It will be economic for Mesquite, but I have no estimate on its life.

EXAMINER GOETZ: I have no further questions of this witness.

CROSS-EXAMINATION BY EXAMINER JONES

EXAMINER JONES: First of all, Dr. Havenor, nice to see you again.

THE WITNESS: (Waved.)

EXAMINER JONES: On this business about -- you want to permit only a 10-foot thickness, that's what you advertised -- correct? -- you advertised 10-foot?

THE WITNESS: I believe that is correct. There is a copy of the advertisement in the report, on page 14, 3378 to -88.

EXAMINER JONES: Okay. What porosity would you have there, just roughly? Effective porosity?

THE WITNESS: It's pretty good.

EXAMINER JONES: Like 20 percent, 25 percent?

THE WITNESS: I wouldn't make an estimate. But based upon what has taken place in the same interval to the northwest and in other areas that I have looked at, it is pretty substantial. It will take a lot of water to fill up any zone that is 10-feet deep.

EXAMINER JONES: But you could calculate that --

THE WITNESS: Yes, if we said it is an open

hole and extended this far, we could calculate it.

EXAMINER JONES: We always try to do these permits specific to one location and specific to whatever you advertise in your interval.

THE WITNESS: Yes.

EXAMINER JONES: If you have a 10-foot thickness that you advertise, that is one thing. If you have 10-foot perforations and you expect water to go totally into the Yates, Seven Rivers, well, then, you would define that thickness and advertise that. And, that way, we could kind of back into your radius over how many, you know -- 10,000 barrels a day you said maximum, right?

THE WITNESS: Yes.

EXAMINER JONES: So we could kind of figure out -- you know, it doesn't ever go regularly, of course. You know that better than I do. But we could kind of figure out how many years, how far you expect it to go if it's going to stay in zone. So that's one thing that we would need to look at.

THE WITNESS: We could know better after we get the logs --

EXAMINER JONES: You bet, you bet.

Speaking of that, I noticed on this stick diagram the salt. They are kind of sensitive about the

salt on there too in this part of the country. And on the Ralph Lowe Well, the salt top shows at 2,830 and the hydride at 3,800 feet. That would mean that hydride is thicker than I've ever heard of, a hydride above the salt.

THE WITNESS: I was only able to take the figures that they reported.

EXAMINER JONES: Okay. So for argument, we can assume the hydride is 100, 150-foot thick, so you've got a salt section of, let's say, 1,400 feet down to 3,100 feet, and you are only proposing to put two strings of casing in this well, so you would be drilling through the salt, saltwater mud by the time you got all the way down to the bottom?

THE WITNESS: It would be pretty quick.

EXAMINER JONES: Would you be amenable to changing your casing design to protect -- to put another string through the salt to protect it?

THE WITNESS: To protect the salt? Normally -- well, we'll do what you want to have done. I don't see that that would be necessary to protect the salt here, because we will be sure that there is circulation and use DV tools, plural, if we feel that it is necessary. And we'll tell that in the drilling.

EXAMINER JONES: You have the application

ready to submit to BLM; you just haven't done it yet; is that correct?

THE WITNESS: I don't prepare it until you decide it is okay.

EXAMINER JONES: Okay. And you probably work with a drilling engineer to do that?

THE WITNESS: Yes.

EXAMINER JONES: Tell me about the lithology out here in the Seven Rivers and the Yates. Going from the top down, the Yates, what is the Yates?

THE WITNESS: Sand.

EXAMINER JONES: So it's sand intermixed with silt; is that what it is?

THE WITNESS: Well, some of the zones are silty, yes. They are not all clean sands -- interbedded with dolomites and hydroids.

EXAMINER JONES: Okay.

THE WITNESS: Typical back reef lithology.

EXAMINER JONES: Okay. And the Seven Rivers, what about it?

THE WITNESS: It is typical of the Seven Rivers Formation. It is -- only that there is a reduced thickness of the Seven Rivers type lithology in this area. It's just dense dolomites underneath it.

EXAMINER JONES: So it is dolomite?

THE WITNESS: Yes.
EXAMINER JONES: It is not limestone?
THE WITNESS: No.
EXAMINER JONES: So it was dolomitized after it was laid down sometime or --
THE WITNESS: I've never really understood how it becomes dolomitized, but it does.
EXAMINER JONES: Are you a hydrologist?
THE WITNESS: No, I am not a hydrologist per se. I am primarily a geologist.
EXAMINER JONES: I noticed that we qualified you as a geologist, and, obviously, you are a doctor in geology. But the Capitan Reef, we come up here and we argue over the delfs, these formation tops. But isn't it true that the aquifer, the Capitan Aquifer is a different animal than the Capitan Reef Formation?
THE WITNESS: No.
EXAMINER JONES: It's not true?
THE WITNESS: No. The Capitan Reef is a term that is very broad. The physical reef itself is fairly narrow, sharply defined on the basin side and not well defined on the back side. But it's pretty narrow, particularly the area that carries water.
EXAMINER JONES: So where you are proposing to drill is on the closest -- closest to the basin side?

THE WITNESS: No.

EXAMINER JONES: I thought you were drilling on the west side of -- the reef would be east of you; is that correct?

THE WITNESS: No. The main reef will be east of us -- excuse me. I'm sorry. The main reef will be west. We are drilling eastward.

EXAMINER JONES: Okay. So you are in the back reef area where you've got those inter-fingered formations that it's hard to tell really what you got when you drill there; is that correct?

THE WITNESS: If you have the formations immediately overlying the Yates, and the Yates and down through to the top or into the Seven Rivers, they are very clearly defined.

EXAMINER JONES: So it would be clearly defined in a well that you drill. But how do you know that it's clearly defined if you move to the west? How far after you move to the west would you know that you got exactly what you got in your well?

THE WITNESS: That's where the stick diagram can be utilized, because it shows wells that are considerably west of our proposed location that clearly show the top of the Yates Formation and Seven Rivers also.

EXAMINER JONES: But not the reef?

THE WITNESS: But not the reef.

EXAMINER JONES: So they don't show the reef because they weren't interested in drilling through the reef at that time; is that correct?

THE WITNESS: (No verbal response.)

EXAMINER JONES: So you can't tell if you go west exactly where the reef is because you don't have the well control?

THE WITNESS: No. We have plenty of well control to delineate the front of the reef. That is pretty well defined.

EXAMINER JONES: Through --

THE WITNESS: Through wells that have penetrated.

EXAMINER JONES: Are they drilling the Bone Spring right around this area at this time?

THE WITNESS: Not at this time, no.

EXAMINER JONES: So why would you pick this location if there is no close by disposal waters?

THE WITNESS: It's right on the highway. That's the truthful answer.

EXAMINER JONES: Okay. And how would you complete and how would you test this well? How would you know you are not into protectable waters once you

get down there?

THE WITNESS: Well, we will have mud logger on it, the base of the salt.

EXAMINER JONES: But you said you are going to drill with salt mud?

THE WITNESS: Yes.

EXAMINER JONES: And you said the formation is extremely high permeability and porosity, so --

THE WITNESS: In the zone itself, yes.

EXAMINER JONES: So how are we going to know whether it's protectable waters or not? You said it is not protect productive, so that means we need to look at the salinity part of it. It is less than 10,000 or not, how do we know that?

THE WITNESS: Well, I don't know of any wells in that environment around the back of the reef that have ever had protectable water.

EXAMINER JONES: Could you know if you cased off the salt and you drilled through it with freshwater mud and then you run an induction log and back into the salinity of it that way?

THE WITNESS: It wouldn't be my preference, but I suppose that you could.

EXAMINER JONES: How would you test your well? Just look at it on the mud log and your --

THE WITNESS: Well, we will have a mud logger on it and we will observe it all the way through it and we will run a suite of logs afterwards.

EXAMINER JONES: Did you see any windmills out there? You said there's no freshwater wells on the State Engineer's side, and that seems to go back to 1973. And there's a lot of old wells sometimes.

Just for the record, did you see any windmills out there from earlier --

THE WITNESS: No, I haven't. And I've also looked at about ten years of satellite imagery --

EXAMINER JONES: Okay.

THE WITNESS: -- and I haven't seen anything.

EXAMINER JONES: Okay. And no feedback from the BLM yet?

THE WITNESS: Their responses are very quick if they object. And I've had no response.

EXAMINER JONES: Wesley Ingram is not there anymore, though, is he?

THE WITNESS: He's in Amarillo.

EXAMINER JONES: So is John Simmons still in Roswell?

THE WITNESS: Yes.

EXAMINER JONES: Have you talked to him

about it?

THE WITNESS: No, I haven't talked to him about this.

EXAMINER JONES: Okay. The notice, I -- did you work with a landman on that or did you work with your attorney on that, on the notice, figuring out the parties to notice?

THE WITNESS: No. I did the digging myself.

EXAMINER JONES: So you'd go to the courthouse and pull it out?

THE WITNESS: The records that are available.

EXAMINER JONES: Okay. On page 13 of Exhibit 1, there's two northeast, northeast, section 15, and I guess that means COG and Oxy own half of those; is that correct?

THE WITNESS: Yes, that's correct.

EXAMINER JONES: But who owns the southeast, southeast of 10 and who owns the east half, northeast quarter of 14? I didn't see those.

MR. BRUCE: Mr. Examiner, I did actually double-check Dr. Havenor's. And that's Chevron.

EXAMINER JONES: Okay. Both of those are Chevron?

MR. BRUCE: Yes.

EXAMINER JONES: Okay.

THE WITNESS: I failed to include that on page 13.

EXAMINER JONES: The AOR map, the half mile and the two-mile radius, it's got the well spotted almost exactly on the section line, but you really meant that to be a little bit further north; is that correct?

THE WITNESS: I think it's 300 feet.

EXAMINER JONES: So it should have been moved a little bit. And I don't think that would change your notice at all.

I don't have any more questions.

MR. BRUCE: I was going to say, Mr. Examiner, actually I checked. I mean, the east half -- in looking at page 6, the area of review and the notice, section 10, that is Chevron. The east half, northeast of 15 is Driftwood.

EXAMINER JONES: Thank you.

Thank you, Dr. Havenor.

MR. BRUCE: I have nothing further in this matter.

MR. HALL: Are we ready?

EXAMINER JONES: Yes.

MR. HALL: Mr. Examiner, we call Steve Pattee to the stand.

STEPHEN L. PATTEE

having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

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

A. Stephen Pattee.

Q. And spell that for the court reporter.

A. Sure. It's P-a-t-t-e-e.

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

A. I live in Austin, Texas, and I'm employed by Lonquist & Co., LLC. We're a petroleum engineering consulting firm.

Q. All right. And have you previously testified before the Division or any of its examiners and had your credentials accepted as a matter of record?

A. No, sir.

Q. Would you please give the hearing examiner a brief summary of your educational background and work experience?

A. Sure. I have an under grad in -- a bachelor's in science and mining engineering from Penn State and a master's of engineering in petroleum engineering from Texas A&M. I have been working with Lonquist and Co.

for going on nine years, dealing in all matters of petroleum-related work.

Q. And have you appeared before well and gas regulatory agencies in other states as an expert witness?

A. Yes. The Texas Railroad Commission mainly as an expert witness.

Q. Have you reviewed the C-108 application that Mesquite has filed --

A. Yes.

Q. Are you familiar with the lands that are the subject of this application?

A. Yes.

Q. And what is your relationship to Fulfer Oil and Cattle and Driftwood Oil?

A. Lonquist and Co. is representing them as a consulting engineering and geology group in the matter of this hearing.

Q. Okay.

MR. HALL: We'd offer Mr. Pattee as a qualified expert in petroleum engineering.

MR. BRUCE: No objection.

EXAMINER JONES: Mr. Pattee is qualified as an expert in petroleum engineering.

BY MR. HALL (cont'd):

Q. Mr. Pattee, have you prepared a number of exhibits for your testimony.

A. I have or under my direction and supervision.

Q. All right. Let's start with what has been marked as Exhibit 1. And if you would identify that and tell us what that is intended to show.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 1 introduced and identified.)

A. All right. One of the first steps we took in preparation for this case was to evaluate nearby production to see if there's potential for impact of exploitation of natural resources, hydrocarbons in the area.

This map shows a summary of our findings. The black dot in the center is the Mesquite SWD well in question. You can see we populated oil production mainly to the east of the proposed location.

We are of the opinion -- this is basically geology driven -- that all of the production is to the east. There is one well identified here in a black diamond. This is the well that is referred to in the C-108.

It is Driftwood Koontz Well No. 1. It is ends in API 28127. Another well that is of interest to the

client I'm representing is just to the north and east of that, 09752. Those are the last five digits of the API. And that would be the -- I believe Mr. Hannigan -- yes. It's the Hannigan No. 3.

Q. So in the course of your investigation, did you determine whether there are recoverable hydrocarbon reserves in close proximity to the Mesquite well?

A. There appears to be so, yes.

Q. And what's the basis of your conclusions?

A. In looking at offset geology, we have some cross-sections coming up showing the producing intervals. And in a couple following exhibits, we've run a two decline curve analyses of the target wells for our client as an example of recoverable resources still available.

Q. All right. By the way, when we look at Exhibit Number 1, what do the orange lines depict on there?

A. We began our investigation in preparation for this in trying to research and identify the defined Capitan Reef Formation. And as I will demonstrate, this orange line indicates, based on published documents, the location of the Capitan Reef.

Q. Okay.

A. So it is showing that the SWD, according to published geologic papers and studies, falls on the

eastern edge of the Capitan Reef.

Q. And we will have more testimony on that in a moment.

A. Yes, sir.

Q. Let's turn to Exhibits 2 and 3, please.

(Fulfer Oil and Cattle and Driftwood? Oil, LLC's Exhibits 2 and 3 introduced and identified.)

A. (Witness complies.)

Q. Could you identify those for us and tell us about your conclusions from these.

A. Yes. Exhibit 2 is the J.A. Koontz, API ending in -28127. It is -- what we did was we took historical production. The well was off line for the better part of 2014, as we understand, for mechanical and well condition situations or conditions. It has since been brought back on line. It is my understanding it came back on line for production in the beginning of March.

We took the produced -- the production from the well as of its reinstatement, going back on line, and carried our decline curve analysis out.

The decline curve indicates that there is -- it is a stripper well. It is in the -- it is not going to, you know, be a major producer. But it does have capacity in combination with low operating costs to

extend the operational life of this well out.

We ran a reserves and economics model using two pricing indexes. The first one, the lower pricing index, you'll see about halfway across the spreadsheet, Average oil price per barrel. That is the current NYMEX price strip.

Q. You are looking at page 2?

A. Yes, page 2. I'm sorry. Yes, sir.

Q. All right.

A. And on page 3, this was done by the SEC price index, and you will see it is a much higher price per barrel. We threw it in to just -- as of the end of 2014, that is where people were reporting oil economics.

So page 2 is a more conservative look. It is what the current NYMEX pricing strip looks like.

We are showing a PV-10 life for this well, estimated, if production follows the decline curve of over 40 years. It's not going to produce an enormous amount of oil but it will continue to produce.

Q. If you look on page 1 for the J.A. Koontz well, the tabulated data for the oil production, does that show us remaining recoverable reserves?

A. Yes. Under the green dots, the oil barrels column, according to our Aries model run, it shows remaining oil reserves at 36,000 barrels recoverable.

Again, that's if the trend continues along this line, projected out.

Q. And what producing formation is this?

A. This is in the Yates; I believe, upper Yates.

Q. Okay. Turn to exhibit --

A. Sorry, the basal of the Yates. It's at the bottom. It's just above the Seven Rivers.

Q. Turn to Exhibit 3. If you would review that.

A. Yes. This is another one of Driftwood's wells, near by, identified in Exhibit 1, 09752; just over a mile away, I guess. It's less than two.

This well is producing -- has been producing for a considerable length of time and is producing greater than the first example. Currently anywhere from nine to 18 barrels a day is coming from this well.

This we ran again using Aries modeling, decline curve analysis on this well. It is indicating that there's approximately 124,000 barrels remaining at this well's location, recoverable reserves. And that is shown on page 1 of Exhibit 3.

Page 2 and page 3 of Exhibit 3, again we ran the economics based on the current NYMEX pricing strip as well as the year-end 2014 SEC pricing index.

Q. Thank you.

From your review of the Mesquite proposal, were

you able to determine whether there is adequate horizontal and vertical separation between the producing intervals for the W.F. Hannigan and the J.A. Koontz wells in the proposal injection interval?

A. We have an exhibit, a cross-section, a geologic cross-section that shows, according to our research, it shows that the -- the proposed injection interval for the SWD, for the Mesquite SWD well, will be a similar interval as the production from these wells here, with no vertical faulting, horizontal faulting or blocks or traps preventing migration to the well and no vertical separation that appears to exist.

Q. Do you conclude that there is a likelihood that otherwise recoverable hydrocarbon reserves will be rendered unrecoverable because of the Mesquite location?

A. It is possible, in our opinion, in my opinion that injected water into this well could impact future production from nearby hydrocarbon wells.

Q. And waste would result?

A. Waste would result if that happened, yes.

Q. Let's turn to the C-108 before you.

EXAMINER JONES: Is that your exhibit or is it the Applicant's.

MR. HALL: No. It's the Applicant's. That

is Applicant's Exhibit 1.

Q. If you turn to numbered page 8 --

A. Yes.

Q. -- of C-108, I will read you an entry from that first paragraph at the top of the page.

And it says, "The C-108 location is east of the Capitan, onto the uplifted western flank of the Central Basin Platform. The proposed location is geologically, structurally, hydrologically, and lithologically isolated and separated from the water bearing area of the reef."

Did I read that correctly?

A. Yes.

Q. Are you in agreement with that statement in the C-108?

A. Based on the following exhibits, I would have to say no.

Q. All right.

A. And I hope to demonstrate that answer.

Q. All right. Let's turn to Exhibit 4 then.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 4 introduced and identified.)

A. As part of our research, which involved reviewing, evaluating, and following up on as many

published papers on the Capitan Reef as we could find, we were able to identify multiple I want to say greater than nine or more sources.

One of the resources that we went to most frequently is Exhibit 4. It was a report done in September 2009 of the Capitan Reef Complex for the Texas Water Development Board.

And in Exhibit 4 -- we bring up here in this Exhibit 2 key facts that we took from this paper. The first is the location of the Capitan Reef. It is on page 2 of Exhibit 4. It is listed as figure 1.

And this gives an outline of the inner and outer edges of the reef. It is tied to a highway placement map. And it is this highway structure map that we use to geo-reference this outline onto the geology and mapping that we produced for this hearing.

So you can see all of the highways as they are located. And that was our points of geo-referencing for making sure we had the location from this paper correctly transposed.

This paper references several other papers. And we went back through and looked and data mined through those papers -- one of which is coming up I think on Exhibit 6.

Most of the papers we discovered or uncovered

reference this paper from 1959, I believe, which corresponds to previous testimony.

The third page of Exhibit 4, it is listed as figure 7. This is the well control as part of this paper that identified the Capitan Reef. And this is how they identified the leading and back edge of the reef.

You can see all of the red well spot locations used were the top of Capitan Reef where the reef formation was identified.

So this is the basis of accepting the outline of the reef as shown on page 2 of Exhibit 4. And we geo-referenced it and carried it forward.

Q. Let me ask you, just briefly, a foundational matter about Exhibit 4. Is Exhibit 4 an excerpt of the publication by the Texas Water Development Board?

A. Exhibit 4 is an excerpt. That's correct.

Q. Is it a publicly available document --

A. Yes.

Q. -- in the literature?

A. Yes, it is.

Q. It is a multi-hundred-page document?

A. It's several hundred pages. I think it's 270 pages with maps, cross-sections. It's a pretty extensive report.

MR. HALL: Mr. Examiner, we will be glad to

make the entire document available to you if you want it. We didn't want to burden the record with too much paper.

Q. Let's move forward. Let's look at Exhibit 4 --

A. Exhibit 5.

Q. Let's look at Exhibit 5.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 5 introduced and identified.)

A. Exhibit 5 is another report that we reviewed. This report was one of several. I think it is one of four or five reports.

As part of a feasibility study for I.C. Potash Corp., this is their Ochoa project in Lea County, New Mexico. This is also -- Exhibit 5 is also an excerpt of a much larger report. These reports were a couple of hundred pages each.

This one excerpt summarizes what we found commonly throughout the other four -- three or four reports. We pulled out the sections that spoke of geology and hydrology in this area, specifically pertaining to the Capitan Reef.

Part of this excerpt includes, on page 153 of the printed -- printed 153 of this exhibit, a stratigraphic column in this region, showing the Capitan Reef, a

complex structure surrounded by the Artesia Group, the Artesia Group consisting of Seven Rivers, the Yates, the Tansill and, farther to the east, the Queen Formation actually comes into play also. But they are all part of this Artesia Group surrounding and sandwiching this Capitan Reef structure.

It goes on to discuss, as you flip through the pages, each of the specific formations. It gives a little bit of background in them.

One point that I would -- that sort of raised a flag for us, which is on printed page 156 of Exhibit 5, in 25.9.2.6, where they describe the Capitan Aquifer, in the major paragraph, the lower third, you will see an area and I pulled out one section. There they talk about the Delaware Mountain Group acting as a barrier for groundwater movement into and out of the Capitan Reef.

But it goes on to say, "...however, groundwater interaction does occur with the outer arc deposits, particularly the Tansill and Yates Formations."

And throughout this paper and several other papers, Bjorklund and Motts, 1959, has been referenced; and we've included that as Exhibit Number 6.

Again, Exhibit 6 will be an excerpt of a much larger document that can be provided. But this was --

these statements and descriptions of the Capitan were viewed through reference to papers found to be complete and it maintains -- there's no differing of the thought process here.

Q. Exhibit 5, is it prepared for the Bureau of Land Management in conjunction with their evaluation of the Ochoa Potash Mine?

A. That is my understanding. That is correct.

Q. And is it a publicly available document online at the BLM's website?

A. Yes. And I think there are four feasibility studies and a final -- this one was done in this -- Exhibit 5 was 2011, January. The most recent was 2014.

Q. In the course of your investigation, did you determine whether or not waters from the Capitan Aquifer in the brackish leg of the Capitan Reef are being considered as a source of supply for the Ochoan mining project?

A. Yes. The primary purpose for this feasibility study for the inclusion of the Capitan sections within these reports, the common thread found through all of them is there is a potential for utilization of Capitan Reef Aquifer fluids in support of this project.

And I believe they're proposing to consider use of 6,500 to 10,500 gallons per minute from the Capitan

Reef, is the proposal to the Bureau of Land Management. This equates to up to at the maximum about 17,000 acre feet per year.

So in our opinion this demonstrates that the Capitan is a resource that, at a minimum, industry is definitely looking at utilizing.

Q. And you previously discussed the interaction of the aquifer groundwaters with the brackish waters in the Capitan Reef Complex.

In your opinion, would injection operations through Mesquite's proposed well in such proximity to the Capitan Reef impair the ability to put waters from the reef to such a beneficial use as is being proposed for the Ochoa project?

A. At the location -- and we will show the structure map here a little bit -- the current location of the Mesquite SWD proposed well, it appears to be potentially injecting the water into these areas of concern that have been identified in these reports, potentially allowing the migration of fluids into that formation and into that aquifer.

Q. Is there any question that the introduction of produced water of completion flow-back fluids into the Capitan Reef water would be incompatible with the use that is being contemplated for the mine?

A. Chemically speaking on incompatibility, I don't know if I could attest to that. However, projects of this nature, when they are looking to exploit or utilize a groundwater resource of varying salinities through reverse osmosis or maybe even directly into a frack fluid supply, if there's evidence of produced water being injected into that aquifer, there is a strong potential for contamination of other carry-over chemicals from the stripping operations that pick up everything that was produced, that was handled and then disposed of. So it's possible that it could contaminate, at least regionally, this aquifer, yes.

Q. Do you know if the quality of the brackish waters are such that they are amenable to treatment to be able to be used for commercial use or potentially domestic use?

A. Yes, in the report, they discuss the use of reverse osmosis to treat the water and then utilize it for their needs up to and including potable water for their office facility and plant at the mine.

It is discussed. They are planning on utilizing and treating this water for what they need.

Q. Let's turn to Exhibit 6. If you will identify that, please.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 6 introduced and identified.)

A. Exhibit 6, again this is an excerpt -- actually just a title page for reference purposes of the Bjorklund and Motts report that is found prevalently referenced in many of the papers and research that we conducted.

Q. All right.

A. It was a report -- this report, I believe, if I am not mistaken, was 700-pages long, 1959; submitted to the U.S.G.S. originally, I believe here in Albuquerque; but, then, later, off to Washington.

But it covers, in great detail, several features of the Capitan, its potentials and where it falls short.

Q. It is part of the literature that you relied on in the course of your investigation?

A. Yes.

Q. Again, it is a publicly available document?

A. Yes.

Q. Is there additional support for the location of the Capitan Reef within the AOR of Mesquite's proposed well?

A. I'm sorry?

Q. Is there additional support for your conclusion that the Capitan Reef exists within the AOR --

A. Yes.

Q. Let's look at some of the other exhibits you brought today. Let's turn to Exhibit 7. If you would identify that, please.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 7 introduced and identified.)

A. Exhibit 7 is a structure map. What we did here was we combined the structure map found in the C-108, at the top of Yates, with the Siluro-Devonian Structure, which is your deep geology forming, coming off the Central Basin and down into the Delaware Basin.

And what we have here is, the blue outline depicts the Capitan Reef structure. And the what I guess would be dark blue contour lines, you will see these represent the top of the Devonian Formation.

The red lines indicate the major faults in this area. The faults exist. They are deep faults. They are ancient faults. They have been buried by geologic time. But they show the Central Basin on the east of the map. And you can see where you have contours, 8,000, 9,000; and then you see some faulting, and also you're down into 15,000, 16,000, 17,000 in depth.

So to the east of the western-most red fault line, it is of our opinion that that is the western edge of the Central Basin platform.

Based on the structure map of the Siluro-Devonian map here, the Delaware Basin is to the west of this faulting system. The proposed Mesquite SWD well falls to the west, and, actually, in our opinion, is hovering over the top of the eastern fault of the Delaware Basin.

The structure map of the Yates somewhat correlates the faulting and the creation of the Delaware Basin. And you will see the Yates Formation structure map -- which I should identify are the black contour lines and are identical to in the C-108.

It is fairly flat, it appears to be fairly flat across the reference area. But, as you go to the west, corresponding to the western-most fault, you will see the contours, the structure starts to fall off. It starts to slope as if the Yates sort of rolled with the depression and into the depression. There is a cross-section reference indicated on here. This cross-section reference, there are five -- I'm sorry -- six wells identified. This cross-section will be shown in Exhibit 13 when we get to it.

Q. All right. So speaking of cross-sections, let's turn to Exhibit 8. If you will explain that.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 8 introduced and identified.)

A. Our geologist prepared multiple cross-sections, utilizing offset, open hole logs that could be not only uncovered through research but were presentable and usable and readable and gave the information we were looking for that we could correlate.

Exhibit 8 is a cross-section reference map of the first four cross-sections. And as I previously stated, the last cross-section is part of this structure map here. And, again, the orange outlines indicate what we have discovered to be and what's published as the Capitan Reef Formation.

Q. Let's go through your cross-section --

A. All right. Exhibit 9.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 9 introduced and identified.)

A. Exhibit 9 references the A-A Prime cross-section. It is the red line on Exhibit 8.

So what we are trying to show here is correlation across this distance in the vicinity of the proposed SWD well. And corresponding to research uncovered primarily in the report, Exhibit 4, there were -- there

were cross-sections in that report that we used to correlate. There was one cross-section specifically that brought us right into this area around the Town of Jal.

And it shows that the Capitan Reef, moving from west to east, it pinches out, but the Artesian Group overlays on top of it. So you will find in the area of Jal, the Seven Rivers, the Yates, the Tansill.

And so based on drilling records, reports filed, with the OCD and open hole logs, we correlated our formation tops as indicated here.

The Capitan Reef, we identified where the limestone -- the lime of Seven Rivers becomes very dense, and that is where it rolls into and becomes the Capitan Reef Formation at that point.

So our cross-sections here, in our opinion, do correspond to the well control in the reports that identified the location of the Capitan Reef.

Q. Turn to cross-section Exhibit 10.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 10 introduced and identified.)

A. No. 10 is the B-B Prime. This one on our reference map, Exhibit 8, is the -- this is the green line. It is going southwest to northeast. And you can

see, as a matter of fact, on API ending -- it's the center log in this cross-section -- but API ending -21419. The geologist involved with the drilling of this well made his marks on this identifying certain tops. And our geologist looked at it and correlated it as such.

Again, you can see where the gamma clings right up into the reef formation. That's our selected interval. In this one, I don't remember -- yeah, in the first one, you do. As you go to the west -- sorry. As you go to the eastern edge, you will see evidence of the Queen coming back in.

MR. HALL: We have larger blown-up versions of these logs. If you would like to see them, just let us know.

Q. Let's turn to Exhibit 11.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 11 introduced and identified.)

A. Okay. Exhibit 11. So this is going to be the dark blue line on Exhibit 8. It's, for the most part, west to east in orientation. And, again, it's showing the same geology -- I mean, all of these cross-sections are going to show the same, and, like I said, not only did our geologists evaluate the logs but they also

referred back to other geologists' interpretations of formations in the area.

As I pointed out in the previous exhibit, you can see the notes from the previous geologists on there. So a multifaceted collaborative effort in creating these cross-sections.

Q. Do all these cross-sections together demonstrate that there is a lack of horizontal and vertical segregation between the injection interval in the Capitan Reef?

A. Yes. And the primary example is Exhibit 13 where we show the -- in 13, we are going to show the proposed injection interval, offset production intervals, perforated to zones and the geology. And it will demonstrate lateral as well as vertical lack of barrier.

Q. Okay. Let's work our way through the next one, Exhibit 12.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 12 introduced and identified.)

A. Yes. I need the roll.

(Pause.)

A. Okay. And the final of the first four cross-sections here, Exhibit 12, this is the yellow line on the reference map, Exhibit 8. And we pulled a

cross-section going from south to north along just to see if everything stayed true to what the previous evaluations had shown.

This one includes the Mesquite SWD. And at a proposed interval of 3378 and 3388, we are showing it in the lower portion of the Yates anticipated.

Q. Anything further with respect to the set of cross-sections?

A. No, sir.

Q. Okay. Let's move to Exhibit 13.

A. Thirteen are all rolls.

(Pause.)

Q. Let's look at Exhibit 13, and if you could explain that to the hearing examiners.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibit 13 introduced and identified.)

A. Okay. This cross-section is a west/east cross-section. This is Exhibit 13. It is referencing -- the path of this cross-section is referenced back in Exhibit No. 7 on a structure map.

This includes offset wells to the west as well as the east and includes the proposed SWD well, Mesquite SWD, as well as Driftwood's Koontz No. 1, API ending in -28127.

This cross-section corresponds to formation tops selected in the previous four cross-sections, but also includes where the proposed injection is as described in the C-108.

Now, when we did the perforations here, you will notice that in the Mesquite SWD we used the perforation depths as shown on the schematic, and not on the front page. And so it takes into account the larger growth or initial injection interval. I'll note that.

The current interval of ten feet will be shallower than that and will not cross over the Seven Rivers formation as shown here. But if the perforations become the maximum interval as indicated on the schematic in the C-108, then they would be injecting directly into the location that is being produced in the Koontz No. 1.

Q. Anything further with respect to Exhibit 13?

A. No.

Q. Let me refer you back to C --

A. Yes.

Q. Go ahead.

A. If I may. Well number 4, Legacy Reserves operating number 4, API ending -26403, we also included production perforations zones in that well.

And what this indicates, if you look at the

geology in that open hole log, there's no indication that injection, even into the reduced ten-foot interval at 3378, into that part of the Yates, there's no vertical separation, differentiating injection from production.

Now, it is approximately a mile and a quarter away. But you would be injecting into a production zone.

Q. If you would, please, in your consultation with Fulfer and Driftwood about their plans for future operations reentries, refer back to page 6 of the C-108 exhibit. It shows the area of review.

A. Okay, the area of review.

Q. So you testified previously you looked at the Koontz well and the Hannigan well --

A. Yes.

Q. And if we look to page 6 of the C-108, if we look at section 11, there is a lease there, in the southeast quarter of section 11, the Conditt lease; do you see that?

A. Yes.

Q. Is Mr. Fulfer identified to you as having any potential project wells on that lease for reentry?

A. In our discussions Mr. Fulfer identified possible future development of oil wells in the area, up to and

including new drills, as well as reentry to an existing well to recomplete it into a zone that his Hannigan Well was producing out of.

So, yes, I have been informed that there's potential future development in the works here and in a nearly half-mile vicinity of the proposed injection well.

Q. Right. Is it your opinion that potential future productions of hydrocarbon reserves could be potentially adversely affected by the disposal operation?

A. It could potentially be adversely affected, yes.

Q. Right. Mr. Pattee, in your opinion, can the examiner make a conclusion with absolute certainty that granting Mesquite's application is consistent with the interests of conservation and will result in the prevention of waste?

A. I am not convinced of that based on the data that we were able to research and review. The data indicates otherwise with specific reference to offset production and proximity to the Capitan Reef.

Q. Were Exhibits 1 through 13 prepared by you or at your direction and control?

A. Yes.

MR. HALL: At this time, Mr. Examiner, we move the admission of Exhibits 1 through 13 and pass the

witness.

MR. BRUCE: Just one question, Mr. Pattee, regarding the cross-sections and geologic exhibits. Is your geologist here with you today?

THE WITNESS: One of our geologists is here, yes.

MR. BRUCE: Then I have no objection.

MR. HALL: We would pass the witness.

EXAMINER JONES: Exhibits 1 through 13 will be admitted.

(Fulfer Oil and Cattle and Driftwood Oil, LLC's Exhibits 1 through 13 were admitted into evidence.)

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Pattee, have you ever -- is this your first experience in dealing with the Capitan Reef Complex in New Mexico?

A. At a hearing, yes. In permitting geology review well design, no.

Q. And I don't mean to put words in your mouth, but you indicated that Mr. Fulfer had told you that he had or Driftwood had plans to reenter additional wells in this area or possibly even drill new wells?

A. Yes.

Q. Was there any time frame put on that?
A. To my recollection, no. One part of the discussion was that the engineering of the wells was underway but they were not yet complete. But as to a final submittal to go forward, no.
Q. Do you have any idea why he would wait until oil was $50 a barrel to do that rather than do it a couple of years ago when prices were $100 a barrel?
A. No, I couldn't attest to that. No. Sorry.
Q. Looking at your Exhibit 2, which is Driftwood's Koontz No. 1 well, I believe --
A. That's correct.
Q. Looking over at the bottom left.
A. Yes.
Q. When was this well drilled, do you know?
A. I don't remember. I would have to look it up. We have pulled records back from the beginning of its production, so I would estimate in circa '95, because that's where our production starts.
Q. Would it surprise you if the well was drilled and completed in March of 1983? You don't need to answer that, Mr. Pattee.
MR. BRUCE: But, Mr. Examiner, I would ask the Division to take administrative notice of its file on that well. The well completion reports show it was

completed and ready for production March 1, 1983.

Q. But in looking in the lower left, I guess -- so that well produced for 30 years and you have cumulative production at 22,600 barrels; am I reading that right?

A. That is what this is showing, yes, correct.

Q. Why would this well then produce in the next 30-plus years 36,000 barrels when it could only produce 22,000 barrels when it had flush production?

A. Sure. The data strip that we were -- that our petroleum engineer was able to grab historical data from did not yield significant enough of a type curve by the well itself. So what he did was he evaluated the wells within a one-mile halo and from that was able to come up with a type curve for the production in the area.

Q. So --

A. And --

Q. Go ahead. I don't want to interrupt.

A. No. In and of itself, this one well, he was not convinced that it had sufficient data, so he ran the one-mile halo.

Q. So the long and short of it is this remaining reserves is not based on an analysis of this particular well?

A. It's a one-mile halo around this well, that's correct.

Q. And how many wells were in that one-mile halo, do you recall?

A. I do not recall.

Q. And do these wells also produce substantial water?

A. I do not know the answer.

Q. Now you said you understood that the number 1 well was recently put back on production?

A. Yes, sir.

Q. Do you know the rates?

A. At approximately three barrels a day.

Q. And you said this would be considered a stripper well?

A. Yes, sir.

Q. And your statement is that Mesquite's proposed well -- and again I am not putting words in your mouth but I think I quoted you as saying -- "could impact producing wells in this area"?

A. Correct.

Q. Is that a fair statement?

A. Yes.

Q. Is it also possible it could have no impact on the wells?

A. There is that possibility, yes.

Q. You talked about that one of the reports talked

about brackish water. When the report talked about brackish water, what type of total dissolved solids were they looking at in that water?

A. They were looking at north of 10,000 parts per million. A water analysis of a well that was just drilled and evaluated into the Capitan to support this project indicates 18,000 parts per million. I believe it was 11,000 sodium and 7,000 chloride, for a total of 18,000 parts per million, so the chloride would dissolve.

Q. I am going to whittle down my questions here, Mr. Pattee. Give me a second.

(Pause.)

Q. The cross-sections -- and I don't think we need to look at all of them.

A. Sure.

Q. But pick out 12. I have 12 in front of me.

A. Okay.

Q. Don't Exhibit 12 and Exhibits 11, 10, and 9 show that the Mesquite Well would not be in the Capitan Reef?

A. Well, it is not in the Capitan Reef, but it would be injecting into the Yates Formation, which is part of the Artesian Group overlying the Capitan Reef with reported transmissivity between Yates, Tansill, and

Capitan Reef. That would be the concern.

You are correct, it is not in the Capitan, but it is in the Artesian Group above it, immediately above it.

Q. Where was that reported?

A. It was reported in several references, one that we included as an exhibit is Exhibit 5 in one of the feasibility study reports from IC Potash.

It was also identified -- it was also identified in the Bjorklund, Motts paper from 1959. It was specifically referenced.

Q. Aren't the Potash mines over in the Delaware Basin, though, quite a way east of here -- west of the proposed well?

A. This one here is -- this proposed operation, it is to the north and to the west. But, I believe, if I remember correctly, it was within two miles of this proposed SWD location, the outline of the entire project. So we felt this report was indicative of the area.

MR. BRUCE: I think those are the only questions I have, Mr. Examiner.

MR. HALL: I have no redirect.

CROSS-EXAMINATION BY EXAMINER MARKS

EXAMINER MARKS: I have just three questions. First, Exhibit 4 -- I am sure you talked

about this -- but this was commissioned by the Texas Water Development Board, correct?

THE WITNESS: Yes, that's correct.

EXAMINER MARKS: And that was commissioned to develop a groundwater availability model; is that correct?

THE WITNESS: Yes, I believe. That's right.

EXAMINER MARKS: And that board -- I'm not sure if you're familiar with it -- but it's a board of members appointed by the governor; it is a government board, correct?

THE WITNESS: Yes, ma'am.

EXAMINER MARKS: Is there any depth to which you feel the SWD could be drilled which would have a minimal impact to hydrocarbons or that you would feel comfortable with?

THE WITNESS: In my opinion, there would be two possible options, either going deeper or more shallow. The problem with going more shallow is you run right into the Salado Formation. And the Salado and Rustler are your primary barriers for injection to any freshwater that may exist in the shallow formations.

So going shallower does not appear to be an option, because you will end up somewhere in that Artesian Group in one of -- Tansill, Yates, Seven

Rivers, Queen. There's production there and you are in close proximity to the Capitan Reef.

Going deeper may be an option, but you'd definitely have to re-evaluate the entire well construction to get down there. But that's how I respond to that question.

EXAMINER MARKS: I believe Mr. Bruce asked to take administrative notice of the Koontz well beginning production around 1983, and I am not sure -- I just want to make sure you didn't have any objections with that.

MR. HALL: I don't object to taking administrative notice. I object to Mr. Bruce testifying. That's all.

MR. BRUCE: I will withdraw my testimony.

EXAMINER MARKS: Of the well log perhaps -- if we take administrative notice of the well log associated with that.

EXAMINER GOETZ: Okay, Counselor?

EXAMINER MARKS: Yes.

CROSS-EXAMINATION BY EXAMINER GOETZ

EXAMINER GOETZ: Discussion on the Yates, what drive mechanism do we have? Is this a solution gas drive or is this a combination solution gas and water?

THE WITNESS: I believe it would be -- at

this point, it would be a water drive at this point.

EXAMINER GOETZ: Okay. And with the conversations with Mr. Fulfer or Driftwood, was there any indication that there would be any type of secondary recovery interest or would this just be single well development that there would be no consolidation later, was there any indication of that?

THE WITNESS: No, there is no indication of that. His plans include, with the Conditt lease to the north and east, to try to get into recovering similar results that he is receiving out of his Hannigan well, which is just a little bit further north and east. But his typical operations are low production, but wells just keep going.

EXAMINER GOETZ: No further questions.

CROSS-EXAMINATION BY EXAMINER JONES

EXAMINER JONES: Okay. I guess I should ask you about the transmissibility. Can you see that in the well logs and the gamma rays, no protection between the Yates here and the reef, or are you basing that on the reports or -- are you talking about the Capitan Aquifer or are you talking about --

THE WITNESS: Well, there is the Capitan Reef structure and then there is the Capitan Reef Complex, which includes the Artesian Groups which lie

below it and above it.

So during depositional environment, it got settled around and covered. We are seeing no indication in this area along the eastern edge in porosity logs that we have reviewed that indicate a tombstone type rock in the Artesian Group.

Exhibit 1 would indicate that as you move to the west, your porosities and permeabilities close up considerably. Because it's demonstrated not only in literature, but just in the fact that there is no production west of here and wells that have been -- I believe Mesquite has an SWD well to the north and to the west. And I believe it is a 1,500 barrels-a-day injection rate.

So the rock tightens up as you go to the west. And that is indicated in log responses, documentation, and in my opinion demonstrated where everybody's producing.

So in the area we're at, the indications in log responses, for example, on the porosity curves, we are not seeing anything go to tombstone. It might as well be a mud stone because nothing's getting through. We are not seeing any of that.

EXAMINER JONES: Okay. What about the pressure sink formed by production over the years in the

wells to the east, I guess, do you think that's going to influence the way this water travels when you inject it or did you look at that at all or --

THE WITNESS: Well, the only thing we looked at in terms of that question would be we identified more than one water flood set up to the east. So over the years of production, it appears that the depletion of the reservoir has created a pressure sink and they are supplementing that with enhanced oil recovery through water flow. All of that is to the east however.

EXAMINER JONES: Okay. So the pressures expected to be -- be able to encounter normal pressures if they drill this well and complete it?

THE WITNESS: I didn't see any indication it would be an underpressured or overpressured zone. I did not see any evidence. We didn't review mud records, road records that would indicate that any of these formations would be either underpressured or overpressured. I couldn't attest to that.

EXAMINER JONES: You talk about all this water. I have heard that water is being planned on being removed from the reef to the frack jobs, for instance. But what's that going to do to the influx of water into the reef? I mean, is that -- are we talking about such a minuscule amount compared to the whole

water in the reef that it's not going to affect flow, the hydrodynamic flow?

THE WITNESS: We did not evaluate the hydrodynamics to that detail. However, we did review a report on the hydrology and the hydro geology of the Capitan Reef Formation. And it was an extensive report. It is public record.

And the report indicates flow patterns into and out of the reef. It names sources such as test wells which are being monitored within the reef, Carlsbad, which is utilizing the reef as freshwater.

And it goes through the entire hydrology of the reef complex and the aquifer in general. Again, the location of that reef structure and the descriptions surrounding it match and correlate to every other periodical that we have been able to uncover.

EXAMINER JONES: If this well goes in and the Driftwood and the other well end up with a big water influx -- I notice water already has gone up in, at least this first one I was looking at here, in Exhibit No. 2.

THE WITNESS: Yeah.

EXAMINER JONES: The water has gone up already, so how are you going to tell if -- basically, are you saying that once it happens, that's it, that

well will be gone, right?

THE WITNESS: It will most likely reduce -- either increase the water to oil ratio from production to a point where it is no longer economical or it will in an effect push the water away from this well -- or push the oil away from this well and decrease its production.

So you'll either see, potentially, a reduction in the amount of oil or an increase in the amount of water. Either condition could kill the well.

EXAMINER JONES: But no increase in oil for a while due to some swept oil?

THE WITNESS: We thought about that possibility. There is that possibility.

My opinion was more along the lines of, if any water drive mechanism is helping this particular well, the Koontz No. 1, it would be from the water flow from the east.

EXAMINER JONES: Oh.

THE WITNESS: And if we start injecting water from the west, then we are going to move the oil away from that well, and he'll either get too much water and the ratio will be uneconomical, or the oil recovered will be driven away, either way killing the well.

EXAMINER JONES: Okay. So more than likely he probably has a little pump unit out there that runs part time, like a 114 unit or something. So it's not going to have to -- in other words, did you build into these economics changing out the pumping system totally --

THE WITNESS: No.

EXAMINER JONES: -- to something -- no capital cost --

THE WITNESS: There is capital cost in here.

EXAMINER JONES: Okay.

THE WITNESS: Well, I don't know about capital cost. We included last years operating cost as a go forward. So there is no additional capital cost replacement of componentry out there.

EXAMINER JONES: Okay.

THE WITNESS: If necessary, we can provide a pretty accurate number to that and -- because he just got done revitalizing that well, working over the liner, new pump.

EXAMINER JONES: Oh, okay.

THE WITNESS: And that is why it was off line for so long.

EXAMINER JONES: Okay.

THE WITNESS: All that work is done, so, if

necessary, we could probably provide a capital expense and then project that out if the Commission felt that we had to go that way.

EXAMINER JONES: And would it affect your economics at all if you got free water disposal back into that proposed well? You still have to get it over there, too, I guess.

THE WITNESS: Yeah. That's an economic question. We ran just the basics to prove that there was recoverable reserves remaining nearby.

EXAMINER JONES: Three barrels a day, though.

THE WITNESS: Three barrels a day.

EXAMINER JONES: Do you think that can last? That's a stretch, isn't it?

THE WITNESS: The production was -- it was approximately that before he did the work-over. So there's a possibility it is going to continue.

EXAMINER JONES: So basically it is one of these -- not a grand --

THE WITNESS: No.

EXAMINER JONES: You're expecting it to be pretty flat for a long time?

THE WITNESS: With low operating costs, it can continue. So if all of a sudden, he starts getting

additional water in there and he stays at three barrels, pretty soon his operating costs are going to exceed the value of the three barrels, assuming it stayed to perpetuity, and his operating costs are going to eat the well at that point.

EXAMINER JONES: Okay. This Exhibit 13, you said that injection into this well, even in that ten-foot zone, would be going over -- the perforations in that Jal, in that Yates well --

THE WITNESS: Yes.

EXAMINER JONES: -- those perforations are up hole quite a bit in the Yates, aren't they?

THE WITNESS: They are. But there is no indication of any type of significant shale, mud stone, you know, you have small beds but nothing of significance to protect upper migration of fluid.

EXAMINER JONES: That well is pretty deep. It's 3,500 meters, so -- but -- and then the -- as far as the Driftwood well, that J.A. No. 1 --

THE WITNESS: Sure.

EXAMINER JONES: -- that one is a lot closer, isn't it?

THE WITNESS: It is just over a --

EXAMINER JONES: -- closer vertically --

THE WITNESS: -- half mile --

EXAMINER JONES: -- two years --

THE WITNESS: Yes.

EXAMINER JONES: So more than likely you may have some communication there?

THE WITNESS: That's correct.

EXAMINER JONES: So it's a question of the effect it's going to have.

And as far as the reef goes, you're looking at -- I'm playing geologist here, so Phillip will speak up a little bit here -- but your looking at 300 feet above the reef; is that right?

THE WITNESS: That's correct.

EXAMINER JONES: And you are talking about basically going through the Seven Rivers if it's going to get to the reef. And we had some testimony earlier that the Seven Rivers is a dolomite. Do you think it's a dolomite or is it a limestone similar to the Capitan Reef?

THE WITNESS: The Seven Rivers is described by some -- and this is a reference from research we did of the Artesia Group -- it's a -- the formation laterally grades from evaporite to a carbonate bases as it grades into the Capitan Reef. So it densifies as it becomes the Capitan Reef.

EXAMINER JONES: Yes. So there could be --

since there has been H2S out there in the past, there could be wormholes all through all that, couldn't there?

THE WITNESS: There could be secondary porosore pormealus.

EXAMINER JONES: I can't get Phillip to react here, so I am going to be quiet.

RECROSS-EXAMINATION BY EXAMINER GOETZ

EXAMINER GOETZ: I have just one more question.

THE WITNESS: Okay.

EXAMINER GOETZ: On your Exhibit 13, we have an indication of "Colored lithology adopted from driller's log."

THE WITNESS: Yes.

EXAMINER GOETZ: What does that mean?

THE WITNESS: That means at the time we generated this, we did not have an open hole log for this, but we did have the drillers' logs when they encountered formations --

EXAMINER GOETZ: Okay.

THE WITNESS: -- and this correlates to what was reported to the OCD at the completion of this well.

EXAMINER GOETZ: Thank you.

RECROSS-EXAMINATION BY EXAMINER JONES

EXAMINER JONES: I guess I better ask this question. If this well did go in, would your client prefer a limit on rate or a limit on the life of the well, like some of the other states do? We don't do that in New Mexico very often. But have you got any recommendations for your client on that end for us?

THE WITNESS: With regard to rate, I would have to confer with my client to say if anything would be acceptable. But my only comment on rate is I've been -- just in the past nine months, I've been evaluating geology and doing well bore designs for injection wells in Lea County and Eddy County, approximately 12, 15 wells that are in permitting, in various stages of permitting or evaluation for project go or no-go.

And ten feet of injection interval -- when I do injectivity calculations to get 10,000 barrels a day, even in porous formations, I am looking at at least 80 feet. A really good well, to give me 10- to 15,000 barrels a day, would be 150 feet to 200 feet of perforated interval to meet the New Mexico mandate of .2 psi per foot.

In Texas you can get your .5 psi per foot; you have a higher pressure threshold to live with. New

Mexico is much more restrictive.

I haven't run an injectivity number on this particular well. I doubt very much that a ten-foot perforation interval is going to yield any significant amount of volume with the pressure thresholds, maybe 1,500 barrels per day. I don't know. That's a guess at this point. But I could run some numbers, and I could come back and tell you what I think it would -- simulate what it would be.

EXAMINER JONES: If they are ten-foot perforated and they do get, let's say, 5,000-barrels a day into that well, where's it going; where would you think it would be going?

THE WITNESS: Another recent experience that we have been involved with is plume migration. And the narrower the formation interval, the greater lateral extent of the plume migration.

So in a ten-foot section, assuming you stayed within that ten-foot porous section of the geology, it's going to migrate laterally a larger distance than if it was a larger in net pay perforated interval.

So a ten-foot interval if they got 5,000 barrels a day, in my opinion, would mostly likely push quite a distance away from the well, assuming it stayed

within the geology and you can get 5,000 barrels a day under the threshold limit. So a ten-foot window, in my opinion, would probably push it laterally.

EXAMINER JONES: Thank you very much. Anything further?

MR. HALL: Nothing further here.

EXAMINER JONES: Do you have another witness?

MR. HALL: I swore one in. I don't see the need to call him.

EXAMINER JONES: Do you folks want to say anything?

MR. HALL: I do not.

MR. BRUCE: I would like to say a couple things. First, it's probably unnecessary, but Mr. Hall mentioned something about Fulfer's grazing rights. I just want to point out that -- I've handed you what has been marked as Mesquite Exhibit 5, a letter from the BLM that says, basically, a grazing lessee cannot ask for or receive --

MR. HALL: At this point, I will object -- the case is closed as to his direct case -- to try to introduce a new exhibit that has zero relevance. No foundation at all.

MR. BRUCE: So as long as Fulfer withdraws

its objection to the application, because it has no basis, legal or otherwise.

MR. HALL: I'm not going to do that. So you're being asked to receive an exhibit after the close of evidence.

MR. BRUCE: There hasn't been a close of evidence yet. I was going to recall Dr. Havenor, but and I didn't. But certainly the evidence has not been closed.

EXAMINER MARKS: Well, obviously, the formal rules of evidence don't apply. But it would seem like it would be -- to redirect on an issue already presented -- I just don't want -- I mean I think that the earlier point on testimony from an attorney is relevant, so...

MR. BRUCE: Well, I'm not testifying. I am just presenting an official document from the Bureau of Land Management. And this is called Federal Surface and Minerals. And I'm just pointing out that Fulfer Oil and Cattle has no basis for objecting to this application.

(Mesquite SWD, Inc.'s Exhibit 5 introduced and identified.)

MR. HALL: And that's argumentative. I don't know what we are doing here. I think evidence is

closed. We are clearly making closing statements and argument of counsel and his conclusory statements about materials that were not admitted into evidence.

MR. BRUCE: You can make whatever ruling you want. The letter is obvious on its face. But I would just want to mention a couple of things. Even Driftwood's expert says that this is brackish water. It is not protected under the Division's rules.

Furthermore, all of his testimony regarding damage to Driftwood's wells is speculation. He says it may hurt the wells, it might do this, it might do that.

The fact of the matter is look at their own cross-sections and the Mesquite well is down dip from Driftwood's wells and there's no evidence that any harm will come to those wells.

And as of this point, there isn't any production data from the Driftwood wells to show that there is anything worth protecting on those wells. And we think they have not submitted sufficient evidence to show that the Mesquite application should be denied. And we would just simply ask that it be approved.

MR. HALL: Well, I will briefly respond --

EXAMINER JONES: Okay.

MR. HALL: -- since our standing to object has been challenged. Look, the only thing we need to

establish to give us standing is that the ownership of held rights and otherwise recoverable resources within the immediate vicinity of the proposed injection operation and evidence supporting that those recoverable reserves are threatened by the proposed operation. Perfect case for standing proof to object to this. And that's all I have.

EXAMINER JONES: Okay.

MR. BRUCE: It's noon.

EXAMINER JONES: Thank you very much, both of you. Thanks for coming. And thanks for coming from Austin.

And we'll take case 15262 under advisement. And this hearing is closed.

(Time noted 12:00 p.m.)

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

_____, Examiner
Oil Conservation Division

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

REPORTER'S CERTIFICATE

I, ELLEN H. ALLANIC, New Mexico Reporter CCR No. 100, DO HEREBY CERTIFY that on Thursday, April 16, 2015, the proceedings in the above-captioned matter were taken before me, 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 and control.

I FURTHER CERTIFY that I am neither employed by nor related to nor contracted with (unless excepted by the rules) 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.

ELLEN H. ALLANIC, CSR
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