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

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

APPLICATION OF BACK NINE PROPERTIES, LLC FOR A NONSTANDARD OIL SPACING AND PRORATION UNIT AND COMPULSORY POOLING, CHAVES COUNTY, NEW MEXICO. CASE NO. 15714

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

June 8, 2017

Santa Fe, New Mexico

BEFORE: MICHAEL McMILLAN, CHIEF EXAMINER
WILLIAM V. JONES, TECHNICAL EXAMINER
DAVID K. BROOKS, LEGAL EXAMINER

This matter came on for hearing before the New Mexico Oil Conservation Division, Michael McMillan, Chief Examiner, William V. Jones, Technical Examiner, and David K. Brooks, Legal Examiner, on Thursday, June 8, 2017, 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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(9:52 a.m.)

EXAMINER McMILLAN: I'd like to call the hearing back to order.

I'd like to call Case Number 15714, application of Back Nine Properties, LLC for a nonstandard oil spacing and proration unit and compulsory pooling, Chaves County, New Mexico.

Call for appearances.

MR. LARSON: Good morning, Mr. Examiner. Gary Larson, of the Santa Fe office of Hinkle Shanor, for the Applicant, Back Nine Properties. I have three witnesses.

EXAMINER McMILLAN: Are there any other appearances?

If the witnesses, at this time, would please stand up and be sworn in.

(Mr. Cherry, Mr. Bahlburg and Mr. Maxey sworn.)

DAVID L. CHERRY, JR.,

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

DIRECT EXAMINATION

BY MR. LARSON:

Q. Good morning, Mr. Cherry. Would you state your full name for the record?

A. David Louis Cherry, Jr.

Q. Where do you reside?

A. Dallas, Texas.

Q. And what is your position with Back Nine Properties?

A. I'm a manager, and I, specifically, handle the land activities.

Q. And do your land responsibilities include matters pertaining to Back Nine's acreage in southeast New Mexico?

A. Yes. That is correct.

Q. And are you familiar with the land matters that pertain to Back Nine's application in this case?

A. Yes.

Q. Have you previously testified at a Division hearing?

A. I have not.

Q. And given that, would you summarize for the Examiners your educational background and professional experience in the oil and gas industry?

A. I graduated from the University of Oklahoma in 2008 with a Business-Energy Management degree, with a minor in finance, then, thereafter, worked in Oklahoma City for a company called LINN Energy from 2008 to 2012.

Then I moved to Dallas, back home, worked

for a company called Petro Vend from 2012 to present, and then I also became manager of Back Nine Properties in 2016.

Q. And are you a member of any professional organizations?

A. I am. I'm the president of the Dallas Association of Petroleum Landmen. I'm also a member of the OCAPO, Permian Basin Land Association and the Dallas YPE.

Q. Are you a registered professional landman?

A. I am.

MR. LARSON: Mr. Examiner, I tender Mr. Cherry as an expert in petroleum land matters.

EXAMINER McMILLAN: So qualified.

Q. (BY MR. LARSON) Mr. Cherry, I'd direct your attention to the document marked as Exhibit 1 and ask you to identify that.

A. It's the form C-102 for the Bandon Dunes 2H well.

Q. And is Exhibit 1 a true and correct copy of the C-102?

A. Yes, it is.

Q. And what formation is Back Nine seeking to pool?

A. The San Andres Formation.

Q. And is the pool name the Racetrack San Andres?

A. Yes, it is.

Q. And is the pool code 506070?

A. It is.

Q. And are there any depth exceptions in the San Andres in the proposed project area?

A. No.

Q. And is the project area to be dedicated to the Bandon Dunes #2H well?

A. Yes.

Q. And will Back Nine be drilling and operating the Bandon Dunes #2H?

A. No. We've actually made a deal with a contract operator. Hadaway Consulting & Engineering, LLC will contract and operate the well for us.

Q. And where is Hadaway based?

A. Hadaway is actually in Canadian, Texas.

Q. And is Hadaway a Division-approved operator?

A. Yes.

Q. Would you next identify the document marked as Exhibit 2?

A. Exhibit 2 is a location map of our project area for the Bandon Dunes 2H well.

Q. And did you prepare this exhibit?

A. I did.

Q. And does it depict the proposed 320-acre project area --

A. It does.

Q. -- the location of the Bandon Dunes 2H well.

A. Yes.

Q. And is the acreage in the project area all fee land?

A. Yes.

Q. Does Exhibit 2 include a breakdown of the interest of the project area?

A. It does. 81-and-a-quarter is leased to Back Nine Properties. We have 12-and-a-half percent currently unleased, and we have a participating partner for 6-and-a-quarter.

Q. And have you received any affirmative nonconsents in the well?

A. We have. One partner -- or not partner. But one mineral owner decided to go nonconsent, Black Shale Minerals, for 6-and-a-quarter for this well.

Q. And they did put the nonconsent in writing to you?

A. They did.

Q. And does Back Nine hold an interest in each of the 40 acres within the proposed project area?

A. Yes. Our leasehold is undivided.

Q. Would you next identify the document marked as Exhibit 3?

A. Exhibit 3 is our well proposal and our green cards.

Q. And was this letter prepared and sent under your direction?

A. It was.

Q. And is it a true and correct copy of an example of the well proposal?

A. It is.

Q. And was the well-proposal letter sent to all uncommitted interest owners in the proposed project area?

A. Yes.

Q. And did all of those interest owners receive the letter?

A. No.

Q. The well proposals?

A. Oh, the well proposal -- sorry -- yes. I'm getting ahead of myself.

Q. And after you -- after Back Nine sent the well-proposal letters, did you communicate with any of the interest owners?

A. I did.

Q. And what was the result of those

communications?

A. We got one party to lease to us. We're currently negotiating with another party, and another party elected to be force pooled.

Q. So how many of the uncommitted interests is Back Nine seeking to pool at this point?

A. One to two. We're currently in negotiations with one party to lease. We don't have them under lease yet, but -- so maximum, two; minimum, one.

Q. Would you next identify the document marked as Exhibit 4?

A. Exhibit 4 is our notice letter to the uncommitted interest owners and the green cards.

Q. And was this letter sent under your direction and supervision?

A. Yes, it was.

Q. And is it a true and correct copy of one of those letters?

A. Yes.

Q. Would you next identify the document marked as Exhibit 5?

A. Exhibit 5 is a list of the offset interests and green cards.

Q. Does it also include a sample notice letter?

A. Yes.

Q. And was this notice letter also sent at your direction and supervision?

A. It was.

Q. And did you have good addresses for all the offset interests?

A. No.

Q. Did you make a good-faith effort to locate addresses for all the offsets?

A. Yes.

Q. What are those efforts?

A. Internet searches, brokers, talking to the various mineral owners. We actually believe that some of the addresses are correct. They just did not actually get the notice or were not in the office whenever the letters were sent. So --

Q. And given that, did Back Nine publish notice in the "Roswell Daily Record" --

A. We did.

Q. -- that identifies each of the uncommitted and offset interests?

A. We did.

Q. Would you identify the document marked as Exhibit 6?

A. Exhibit 6 is the publication and affidavit of our notice.

Q. Is it a true and correct copy of the Affidavit of Publication?

A. Yes.

Q. And what does it indicate was the date of the publication?

A. May 17th, 2017.

Q. Would you next identify the document marked as Exhibit 7?

A. It's our AFE for the Bandon Dunes 2H well.

Q. Did Hadaway Consulting prepare the AFE?

A. They did.

Q. And is Exhibit 7 a true and correct copy of Hadaway's AFE?

A. It is.

Q. And what is the total of estimated well costs indicated on the AFE?

A. $1,644,156.

Q. Is that cost similar to the costs incurred by Hadaway for other wells drilled in the San Andres?

A. Yes, it is.

Q. Has Hadaway drilled those wells across the state line, in Texas?

A. They have, in Yoakum County.

Q. And do you have a recommendation for the amounts Back Nine should be paid for supervision and

administrative expenses?

A. Yes. We believe $8,000 a month for drilling and 800 for producing, and that's what we've seen in our other project areas, in the San Andres projects that we are currently in.

Q. And were those expenses computed by Hadaway?

A. They were.

Q. And you are of the opinion they're consistent with the costs for Back Nine's wells?

A. That's correct.

Q. And those are the San Andres wells in Yoakum County?

A. That's currently what we're being charged at this time.

Q. So you can say these amounts are consistent with and similar to those charged by Hadaway for other San Andres horizontals?

A. I can say that, yes.

Q. And do you also recommended at that time that the rates for supervision and administrative expenses be adjusted periodically pursuant to the COPAS accounting procedures?

A. Yes.

Q. And is Back Nine requesting a 200 percent charge for the risk of drilling and completing the

Bandon Dunes 2H?

A. Yes, we are.

Q. And is Back Nine further requesting that Hadaway Consulting & Engineering be designated as the operator of the well?

A. We are.

Q. In your opinion, will the granting of Back Nine's application avoid the drilling of unnecessary wells, protect correlative rights and serve the interest of conservation and the prevention of waste?

A. Yes.

MR. LARSON: Mr. Examiner, I move the admission of Exhibits 1 through 7.

EXAMINER McMILLAN: Exhibits 1 through 7 may now be accepted as part of the record.

(Back Nine Properties, LLC Exhibit Numbers 1 through 7 are offered and admitted into evidence.)

MR. LARSON: Pass the witness.

CROSS-EXAMINATION

BY EXAMINER McMILLAN:

Q. Are there any depth severances?

A. No.

Q. Okay. Here's the -- okay. Here's the real question now, looking at Exhibit 1. There's a real

concern about your surface location, 50 from the south and 1,320 from the east. That's right on the quarter-quarter line. Generally, what the OCD likes you to do is move 10 feet off the line because that way the district geologist knows exactly where to place the well. With 1,320, there is really -- there is really -- you can't really define that. So, I mean, that's the first thing I'm saying, is that the OCD would require you to move it 10 feet off the unit boundaries.

A. We could probably do that.

Q. Okay. And I realize you're dealing with lots, and we're looking at the same thing at the bottom hole.

A. Uh-huh. I'm just the land guy, and I stake it where the geologist tells me to.

Q. I understand. I'm not sure you're familiar, but that's been the standard practice for years. It's how they like to do things.

There is no API number?

A. Not yet.

Q. So you're going to have to move the surface location -- TD corresponding -- you'll have to change the C-102.

A. Again, if that's what needs to be done, I'm sure we can make that happen.

Q. Okay.

EXAMINER McMILLAN: Mr. Brooks?

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. What's the standard spacing unit in the Bandon Dunes pool? No. That's the property name. What's the pool? Is this a wildcat or --

A. There has not been any horizontal wells drilled in this specific area. So --

Q. Well, is there a pool designation?

A. Yes, 320 acres.

Q. What is the pool?

EXAMINER McMILLAN: It's the Racetrack San Andres.

THE WITNESS: Oh, you're asking for the pool name?

EXAMINER BROOKS: Yeah. That's what I asked for.

THE WITNESS: Sorry. Yeah. So the pool name is the Racetrack San Andres.

Q. (BY EXAMINER BROOKS) What is the standard oil spacing unit?

A. It's all been on vertical. So --

MR. LARSON: Mr. Brooks, I think Mr. Bahlburg, the geologist, can address that.

MR. BAHLBURG: It's 10-acre spacing.

EXAMINER McMILLAN: No. I think he's asking for the unit. Is it 40 acres or 80 acres, is what he's asking. If there is a pool designation, we can figure that out.

EXAMINER BROOKS: Indeed. But I'll ask the geologist.

THE WITNESS: Right. I mean, we're trying to drill a 5,000-foot horizontal well. So --

EXAMINER BROOKS: Well, I won't say anything more until I know what the spacing is.

Go ahead.

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. Is it close to Roswell?

A. It is.

Q. Okay. So that's why "Racetrack"?

A. I guess so.

Q. So it's out of Artesia District; is that right? Chaves County is split, you know, between Hobbs and Artesia. So --

THE WITNESS: Gary, is that the Artesia District?

MR. LARSON: I don't know the answer.

EXAMINER McMILLAN: It's seemingly difficult --

THE WITNESS: I'm not sure.

EXAMINER McMILLAN: I'll look at the map to figure it out.

EXAMINER JONES: I always look in the well file to see who is addressing it. We do have a map.

I don't really -- I don't really have any questions.

Q. (BY EXAMINER JONES) This spacing unit that you're combining here, it looks like you're combining eight spacing units -- eight 40-acre spacing units?

A. Right. Right. 320 --

EXAMINER BROOKS: That's what I was trying to figure out.

THE WITNESS: Okay. Yeah. 320-acre project area.

Q. (BY EXAMINER JONES) Okay. And you'll have drainage testimony on that later.

Okay. So you're just putting together this 320 acres. Is it exactly 320?

A. It is.

Q. Okay. Okay. So tell me your main difficulty putting it together.

A. You know, the title's common. It's not been too difficult. We have some majors [sic] in there that we have had a hard time leasing with, so we're trying to

negotiate. But we haven't had too difficult of a time.

Q. Okay. So you're actually proposing it right on the line, but actually the unit letter says "O." So I assume it's going to be on the west half -- west side of the line?

A. No. It's going to be the center of the east half of the section.

Q. Okay. You want to drill it right over the center?

A. Uh-huh. We're setting these up -- and our geologist and engineer will get into it in a little bit, but we're predicting, you know, a six-well spacing for a 640.

Q. Okay. We usually have somebody move -- you know, they move maybe five, ten feet off, and then that -- it's hard to develop, under our current Horizontal Well Rules, all eight of these with a wellbore that's this big a round (indicating).

A. I understand.

Q. So it's going to be kind of a -- the well, I'm sure, will weave in and out of all of these probably. But normally we -- we have it on one side, and then we notice people on the other side for what we call a nonstandard location. What you're doing is putting it together as a -- you don't have that as part of the

application here. All it is is a nonstandard proration unit. Are you calling it a proration unit or a project area?

A. Project area.

MR. LARSON: Project area.

EXAMINER BROOKS: Well, assuming we -- assuming that the spacing is other than 320 for this pool -- and we haven't found out what the spacing for this pool is yet -- the order will have to create a nonstandard spacing and proration unit.

EXAMINER JONES: If you're compulsory pooling.

MR. LARSON: Yes. Yes.

EXAMINER BROOKS: Or if it's not in a prorated pool, but it's oil, it is a prorated pool because oil pools are prorated.

EXAMINER JONES: Okay. I don't have any questions.

THE WITNESS: All of our leases allow for it, if that's what you're trying to get at. Yeah.

EXAMINER JONES: Okay.

RECROSS EXAMINATION

BY EXAMINER BROOKS:

Q. Okay. Who are you pooling in this case?

A. We are pooling Black Shale Mineral Partners.

They're the only party that has elected to go nonconsent. And we're currently, like I said, negotiating another lease with another company, Samedan. So they have indicated that they would rather lease than be pooled.

EXAMINER JONES: Did you say Samedan?

EXAMINER BROOKS: Samedan.

EXAMINER JONES: I haven't heard that name in decades.

THE WITNESS: I know. They're located on Melbo [phonetic] Parkway.

EXAMINER JONES: It's like going back to the old days.

Q. (BY EXAMINER BROOKS) So you're pooling Samedan and Black Shale, and they're a lease -- owners of leases?

A. Yeah. They're mineral owners, not owners of leases.

Q. Oh, they're unleased mineral owners?

A. Correct.

Q. Okay. What about the Bank of America trustee for the Selma E. Andrews Trust?

A. We leased them.

EXAMINER JONES: You leased them?

THE WITNESS: Yeah. In the process of the

hearing, timing and everything, we have --

Q. (BY EXAMINER BROOKS) Chisos, Limited? Did you lease them?

A. Chisos is going to participate.

Q. Okay. So are they also an unleased mineral owner?

A. They are. They're going to participate with their minerals.

Q. That's all the people you have involved?

A. That's it.

Q. And that's everybody that owns an interest of record or that you have personal knowledge of?

A. That's it.

RECROSS EXAMINATION

BY EXAMINER JONES:

Q. So the ownership mix between the 160 to the east and 160 to the west --

A. Exactly.

Q. -- it's exactly the same owners?

A. The 320-acre proposed project area is exactly the same.

Q. Undivided --

A. Undivided mineral interests.

Q. Mineral interests. Okay.

But the actual --

A. The leases are the same. The leasehold interest is the same from what we have leased.

Q. Okay. It's balance between both sides?

A. Yeah. It's exactly the same.

RECROSS EXAMINATION

BY EXAMINER McMILLAN:

Q. It's identical?

A. Yes, if you're talking about the 160 for the east half of the east half and the 160 of the west half of east half.

EXAMINER JONES: Yes.

THE WITNESS: Exactly identical.

EXAMINER JONES: So Chisos is both in both sides?

THE WITNESS: Uh-huh.

RECROSS EXAMINATION

BY EXAMINER McMILLAN:

Q. I just need some clarity. Black Shale is not subject to a JOA, right?

A. They are not.

EXAMINER BROOKS: I have nothing further of this witness.

EXAMINER McMILLAN: Thank you very much.

WILLIAM C. BAHLBURG,

after having been previously sworn under oath, was

questioned and testified as follows:

DIRECT EXAMINATION

BY MR. LARSON:

Q. Good morning, Mr. Bahlburg. Good morning, sir.

A. Oh. Good morning.

Q. State your full name for the record.

A. William C. Bahlburg.

Q. And where do you reside?

A. Frisco, Texas.

Q. And what is your position with Back Nine Properties?

A. I'm a company manager and exploration geologist.

Q. And do your responsibilities include Back Nine's interest in southeast New Mexico?

A. Correct. Yes.

Q. And you've previously testified at numerous Division hearings; is that correct?

A. I have.

Q. And at each of those, were you qualified as an expert in petroleum geology?

A. I was.

MR. LARSON: Mr. Examiner, I tender Mr. Bahlburg as an expert in petroleum geology.

EXAMINER McMILLAN: So qualified.

Q. (BY MR. LARSON) I'm going to direct your attention to Exhibit Number 2. Will the completed interval of the Bandon Dunes 2H comply with the Division setback requirements?

A. Yes.

Q. And have you, personally, had experience with drilling San Andres horizontal wells?

A. I've been involved in -- directly involved in over 25 San Andres horizontal wells and over 50, directly or indirectly, within the last three years.

Q. And have those wells been productive?

A. Yes, they have.

Q. And, generally speaking, where are those wells located?

A. All the way from Yoakum County through Lea, Roosevelt and into Chaves. I said that right.

Q. Chaves?

A. Chaves.

Q. Yeah. We know you're a Texan if you pronounce it that way.

A. Sorry.

Q. Looking at Exhibit 2 -- I think you heard Mr. McMillan's comment about the location of the proposed Bandon Dunes well. Why have you located that well where it shows on Exhibit 2?

A. Well, we've looked at the San Andres in a lot of different areas, you know, where it's deeper over to the east in Yoakum County. And, obviously, it gets shallower and shallower and shallower in the target zone and as you move over into New Mexico, to the west.

And there are a lot of different opinions about how many wells you're going to need to effectively drain the reservoir within, let's say, a 640-acre section. And there are people over on the Texas side who think it's seven. Of course, they have the latitude to just kind of move anywhere they want because they don't have the same kind of section and boundaries that we have over here. And then there are others that think they can drill four wells per section and put massive fracs on them, reach out and effectively drain the entire section with four wells.

Most people are of the opinion that that's not the case and that you need at least five. All right? And like I said, some people are going to seven.

We're out here, in this particular area, where it's quite a bit shallower. The reservoir pressure is significantly less, and so we've kind of reached what we think is an optimum drilling configuration to effectively drain the entire section, and that is six wells per section. So they'd be 440 off

the line on one side, and then 880, 880, 880 all the way through the section. And then we have six wells. And we think that that will adequately drain the reservoir. And, you know, that hasn't been proven, but that's just based on our experience and working in other areas. Because we've seen some interference, where people will put them too close, and they'll end up fracking into a well that they've already got produced. So you can see it.

And we've done a lot of microseismic, and we've seen fracture-length extents, or at least we think we see them, you know, with the data, that sometimes it'll reach out 400 feet. And so we just want to be a little bit careful that, you know, we're not kind of tying them all together and getting interference.

So that's the plan. And, of course, to do that, it just seemed logical -- at least in this sense, because of what DJ Cherry described, that we have uniform interests throughout the entire 320s in every instance out here. So we're lucky in that regard, you know. And so we thought, well, I know people like to designate things by 40-acre tracts and where the wells are and everything, but we were proposing to just send the first one down the middle and then, in kind of a trident shape, two more as development wells to fully

develop that 320-acre project area.

Q. And is that the reason you located the well --

A. In the center.

Q. -- as it's shown on the C-102?

A. Yes. Conceivably, it could be located a little bit off center. I don't think that's going to make any real difference, if it's 5 or 10 feet. But, theoretically, we'd like to have it in the center, even though it doesn't fit the current rules.

Q. Mr. Bahlburg, I direct your attention to the document marked as Exhibit 8. Do you have that in front of you?

A. I do have that in front of me. Okay. This is -- this is a map showing the location and proposed 320-acre project area for the Bandon Dunes 2H horizontal well -- San Andres horizontal well. The map also shows San Andres structures. It's just a gentle eastward-dipping structure at the San Andres. And I guess it also shows some producing wells in the area. These are kind of scattered. You can see them in green. And the numbers above the wells -- the identified wells are showing you cumulative oil production and gas. So you can see some of them are much better than others. One well makes 127 barrels of oil, and the one right next to it makes 38,894, up there in Section 6.

Q. And, sir, did you prepare the document marked as Exhibit 8?

A. Yes.

Q. And did you look at any other wells in the area besides those identified on Exhibit 8?

A. We looked at all the vertical wells in the area where we could get logs and data, every one of them.

Q. Were any of those San Andres horizontals?

A. No.

Q. I'll next ask you to identify the document marked as Exhibit 8 -- I'm sorry -- Exhibit 9.

A. 9?

Q. Exhibit 9.

A. Exhibit 9, this is a two-well cross section showing the log of a nearby well relative to the proposed Bandon Dunes 2H and the stratigraphic zonation in the San Andres. It also shows our target zone, which is a dolomitic reservoir interval at around 2,220, and we've identified that with a marker that says "SADP1," and that's the -- that's the typical P1 reservoir marker. And then, of course, above that, there is the pi marker that we use for mapping purposes and correlation and that kind of thing.

I might also add that -- I know you had asked some previous questions about the P2 and the P3.

The P2 and the P3 don't exist here. What does exist is 100-plus-foot thick section of dolomite carbonate, which is actually the lateral equivalent of both the P1 and P2. And the anhydrite that separates them up to the north, you know, up around the fields to the north of here has disappeared as you come south, so they, basically, just come together into one unit. And so our target interval is really -- we're calling it P1, but if you wanted to be a purist, you could say it was a combination of P1 and P2. But at this point, I can't tell the difference. Okay?

And then this also shows you where we're going to land our lateral. And we actually plan on landing our lateral in the middle of this zone.

Q. Are there any geologic impediments in the target interval?

A. None.

Q. And would you next identify Exhibit 10?

A. Exhibit 10 is a plat that is identifying our planned three-well development for this proposed project area. And it also identifies the 40-acre tracts that are in the 320.

Q. And you've previously discussed the reasoning behind doing this three-well pattern in the half section. In your opinion, is that drilling pattern the

most efficient and economical way to develop the San Andres on this acreage?

A. We believe it is.

Q. And in your opinion, will the production from the Bandon Dunes 2 well be relatively uniform across the interval.

A. Yes.

Q. Would you anticipate the same result from the other two wells --

A. Yes.

Q. -- indicated on 10?

And in your opinion, will the Bandon Dunes #2H well effect, develop and drain each of the 40-acre spacing units within the proposed project area?

A. Yes.

Q. And in your opinion, will the granting of Back Nine's application avoid the drilling of unnecessary wells, protect correlative rights and serve the interests of conservation and waste?

A. Yes.

Q. The prevention of waste. Excuse me. We don't want to preserve waste.

MR. LARSON: Mr. Examiner, I move the admission of Back Nine's Exhibit 8, 9 and 10.

EXAMINER McMILLAN: Exhibits 8, 9 and 10

may now be accepted as part of the record.

(Back Nine Properties, LLC Exhibit Numbers 8 through 10 are offered and admitted into evidence.)

MR. LARSON: I will pass the witness.

CROSS-EXAMINATION

BY EXAMINER McMILLAN:

Q. Okay. The first question is for clarity purposes. You're going to have a well on the east half-east half. And depending upon the depth of this well, you will have a well in the east half of the east half and the west half of the east half?

A. Absolutely. That is absolutely our intention. If we're successful --

Q. Yes.

A. -- we're going to go out, and we're -- what we really plan on doing, if you want to know the whole skinny --

Q. That's all we're asking right now.

A. Yes. Well, we will drill those two additional wells.

(Laughter.)

MR. LARSON: Slow your roll, Bill.

Q. (BY EXAMINER McMILLAN) The next question I've got is will your penetration point be 330 feet --

A. Yes.

Q. -- from the south boundary?

A. Yes.

Q. And will your final perforation be 330 feet from the north boundary?

A. Yes. The lateral hole will be within the limits -- the setback limits, where we perforated.

Q. The project area?

A. Sorry. The project area. Yeah. That's required.

Q. Okay. But that's -- because that could affect the NSL location and everything else. So we have to find that out.

And I want you to know I think you should be complimented for your cross section. It's great to see someone actually put the San Andres and the pi marker in. I haven't seen that. You should be complimented for that.

And do you expect all quarter sections -- okay. Actually --

Okay. I don't have any more questions.

EXAMINER BROOKS: I do have some.

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. The last witness indicated that you would be

able to tell me what the applicable spacing -- clause is for the spacing unit.

A. I believe it's statewide 40, but it's been drilled down to 10.

Q. Well, statewide 40-acre spacing authorizes up to four vertical wells per unit. So --

A. Yeah.

Q. -- it must be done. It's not always done.

A. Now, we -- we -- we -- this is the first time -- see, we've never been over in this shallow area. We kind of moved into it, and then we saw this 10-acre spacing, and it's unusual for us as well.

Q. Well, I think there are several places in the southeast -- in the very far southeast, down around Hobbs, where it's like that, but I don't know too much about it. I only check it out when I have to.

If it's on 40-acre spacing, there is an issue as to whether this is a proper project area or not because you're drilling on the line. If you took Examiner McMillan's advice and moved it over from the line, farther from the well diameter wellbore, which I don't know what it is, you would not be penetrating half of the spacing units included in your project area.

Now, the background on this is that the Commission, when we adopted the present Horizontal Well

Rule, introduced to the wording "which are developed" by the well, and there is no definition. And I have an oral assurance from the then director --

What's her name, Jami?

EXAMINER JONES: Jami Bailey.

EXAMINER BROOKS: -- Jami Bailey -- for some reason I always get her mixed up with Nancy Judy who used to be a commissioner of Dallas County, Texas. But that's neither here nor there.

Anyway, her view was that a well that was on the line did not penetrate either unit. I never figured that out exactly, but that's what she told me. However, the director does not have the power to make oral decisions about things like that and especially after she is no longer director. So I don't know whether that's the law now or not.

But you raise this question with this unit, and those of us who are involved in this order will have to tell his eminence. So I just warn you of that.

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. Our database -- we record, right now, the surface location and the bottom-hole location. So that's -- you know, if you can have the surface location and the bottom-hole location clearly in Unit Letter O

and Unit Letter B, you can weave through those however you want in the middle of the well, you know. And after the new Horizontal Well Rule is passed, we may even start recording, in our database, the penetration points, too, you know. So it's just a case of --

A. Yeah. So you need that marker.

Q. -- surface location and the bottom-hole location. The middle of the well, you can go whatever you want.

A. Yeah. I mean, that's easy to do.

Q. Yeah.

A. I mean, this is theoretical stuff.

EXAMINER McMILLAN: That's fine. We've already discussed that.

THE WITNESS: Yeah.

Q. (BY EXAMINER JONES) So what's the elevation of the surface here? You've got 1,700 feet vertically to the well subsea. So --

A. 1,700 feet, and I've got a 2,400-foot well.

Q. Okay. You've got --

A. 17 plus 24, so 4,100 feet, I guess.

Q. Well, it says "2,300" in this target zone on this one log you've got here.

A. Well, okay. It varies. I mean, I've got 2,200 and 2,300, 24-, depending where we are.

Q. Okay.

A. I mean, we've got a big project out there, and it varies from 2,200 to 2,800 in depth.

Q. But your cross section is subsea depths, right? You said that -- anyway -- anyway, that's not a big deal.

Quick question: Why are these vertical wells so much different on their production?

A. Because the reservoir has an inherent variability, lateral, that exists in it, and it always has. And that's the reason it works horizontally, is because we connect up that lateral variability over a mile-long lateral. And it's amazing. You know, I mean, the log that you look at isn't what's 300 feet away. Sometimes it is. Sometimes it isn't. I mean, it's very unpredictable.

Q. Okay.

A. And so we count on that variability to make the thing successful.

Q. Okay.

A. And we've seen a lot of it. I mean, we saw it in Yoakum County. We've seen it in Lea. We've seen it everywhere.

Q. Huh.

EXAMINER McMILLAN: Actually, I talked to a

geologist years ago, and that's what he said. He said the only way that he could figure out -- the porosity is a lost cause when you drill 10-acre spacing, and maybe one or two turn out okay.

EXAMINER JONES: It's going to be a great prospect.

THE WITNESS: Right.

And fractures -- you know, one well, we'll hit a fracture, flow for two years. We drill three around it and never see it again.

EXAMINER McMILLAN: Kind of --

Q. (BY EXAMINER JONES) So your log is nice in that you've got a porosity package that's isolated by low porosity on the top, and, it looks like, limestone on the bottom. It looks like a great prospect.

A. We like it.

Q. Yeah. And it's your testimony that -- I know there's an engineer who is going to come up, but your testimony is that geologically, if this well is placed where it is, it will -- from a pure geologic standpoint, it will drain on both sides?

A. Oh, yeah. Absolutely.

Q. How far out?

A. That's debatable. You know, if we go in and we fracture stimulate it and we assume that we're getting

300 feet out in either direction, all right, that's one thing. But the reservoir itself, the system, has inherent porosity and permeability that will drain even without the fracture stimulation. So the truth is, the fingers that reach out are beyond the fracturing. So that's why we've got to be really careful and balance it all so that we just don't, you know, overfracture and overstimulate and then connect all these wells up so they interfere with each other.

Q. Okay.

A. So, you know, it takes a while. When we go out there and do it, we're going to test the water several different ways to make sure that we get the right answer.

Q. We've seen people say six wells per section before, and then sometime -- and that would stay 440 from the leaseline, but then they come in and drill 330, you know, from the leaseline.

A. No. I've got it.

Q. They don't want to be drained by somebody on the other side.

A. Yeah. But we're on both sides. So --

Q. Okay. Okay. So, basically, your frac job is an extension of your wellbore, so the wellbore penetration is not the only -- only thing in this case?

A. Oh, yeah. Absolutely. And there are different ways to do it, too. I mean, you know, we may redesign fracs to fit this area as opposed to what we're doing over in Yoakum County or Lea County or someplace else.

I mean, we've been with operators with 8 million pounds of sand and operators with a million pounds of sand on the same one-mile lateral. I mean -- but there is a -- there is a whole group of operators that have come together and had little conferences to discuss all this. Because, you know, once in a while somebody gets a black eye and then somebody over here gets another black eye, and we're all trying to figure out what we need to do right to make it work. And so there is a lot of sharing of information.

Q. Okay. Where are you going to get rid of your water at?

A. We're going to drill disposal wells into the Devonian, which is around 6,700 feet.

Q. Real shallow Devonians --

A. Yeah.

Q. -- relatively speaking?

A. Yeah. And there are some existing saltwater disposal wells out there.

Q. Okay.

A. But we don't expect the water cuts that they

see over to the east.

Q. Oh. Yeah. It looks like a nice package there.

A. This is better. So yeah, our water -- our water production, we think, is going to be significantly less.

Q. Maybe more gas but less water?

A. The gas is difficult because it's been flaring and venting out there for years.

Q. Okay.

A. But we think there is significant gas. Yes. And we're already talking to a midstream company to come and capture that.

Q. Okay. Good.

A. But it's -- yeah. We love the project.

Q. Okay. Thank you.

EXAMINER BROOKS: I have some more questions --

THE WITNESS: Okay.

EXAMINER BROOKS: -- at least I think I do.

CROSS-EXAMINATION

BY EXAMINER BROOKS:

Q. This is a San Andres prospect?

A. I'm sorry?

Q. This is a San Andres prospect; did you say?

A. Yes.

Q. And this is a San Andres pool.

When you say -- you said six wells was -- the cross section was, in your opinion, the best --

A. That's what we believe.

Q. -- for this area?

A. That's what we believe. Yes.

Q. And now based on what you have studied in various areas in New Mexico, if you have, do you have an opinion as to whether or not that's often true, or is it --

A. I think six wells will work further to the east. Okay?

Q. Further to the east is Texas?

A. Further to the east where it gets deeper.

Q. And that's in Texas, right?

A. No, no. That's in New Mexico.

Q. Oh, okay.

A. Yeah. Just moving to the east, because we're involved in a number of projects over there in Roosevelt and Lea and all of that with other operators. But most people are of the opinion that four wells won't do it.

Q. In the San Andres --

A. Yeah, in the San Andres.

Q. -- in New Mexico?

A. Yeah. Right down the center of a 160, you know, with the standard stacked 40s won't drain -- adequately drain the reservoir.

Q. And I've heard that opinion expressed as to some other reservoirs in New Mexico, but I can't remember for sure which ones.

A. Yeah. But over in Texas, you know, where you just get freewheel through the section, right, you don't have any of these quarter-section boundaries to deal with, people are talking about seven wells, and, you know, doing this and doing that.

But we believe that four won't adequately drain, and five is probably a good case. But then, again, how do you put five in there and get it spaced properly and make it work? But we believe, because we're a little bit shallower and the pressures are lower and we understand the character of the reservoir, that if we do it with six and we space them evenly through there, that we're going to drain that entire section adequately and efficiently. That's what we believe.

Q. You'd fit our pattern better if you have a number that's equally divisible by four, but I guess you don't want to spend another $10 million to do it.

A. Yeah. Eight is a lot (laughter).

Q. Some people might call that economic waste

(laughter).

I guess that's all I have.

EXAMINER McMILLAN: Thank you very much.

THE WITNESS: Thank you.

JOHN C. MAXEY,

after having been previously sworn under oath, was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. LARSON:

Q. Mr. Maxey, could you state your name for the record?

A. John C. Maxey.

Q. And where do you reside?

A. Roswell, New Mexico.

Q. And what is the nature of your business?

A. I'm a consulting petroleum engineer.

Q. And what is your relationship with Back Nine Properties?

A. Back Nine retained me to look at the development of the San Andres on their acreage in southeast New Mexico.

Q. And are you familiar with horizontal well development in the San Andres?

A. Yes, I am.

Q. And you've previously testified in a number of

Division hearings; is that correct?

A. Yes, I have.

Q. In each of those, were you qualified as an expert petroleum engineer?

A. Yes.

MR. LARSON: Mr. Examiner, I tender Mr. Maxey as an expert reservoir engineer.

EXAMINER McMILLAN: So qualified.

EXAMINER BROOKS: Division and Commission?

Q. (BY MR. LARSON) You've also testified in front of the Commission; is that correct?

A. Yes.

Q. Would you identify the document marked as Exhibit 11?

A. Exhibit 11 is a map of the San Andres fields in southeast New Mexico.

Q. And did you prepare this document?

A. Yes. This base map is actually from various articles of case studies, but all the added commentary is mine. So in that regard, I've prepared the map.

Q. Okay. And referring to this map, can you briefly summarize the history of the San Andres horizontal development, as it pertains to the proposed project area?

A. Yes. What I wanted to call attention to first,

just to get you oriented, there are two green ellipsis on the left-hand side of the page. One is Roswell, and the other one circles the name "Artesia." So that gives you some idea of scale. These are townships on this square grid.

Basically, the San Andres develops in two benches that are exploitable in southeast New Mexico. The lower ones are labeled the "Artesia Fairway" on this particular map. The upper bench further north is labeled the "Roswell Fairway" and the "Slaughter Fairway," just combine those as a bench.

The first thing I wanted to really focus on was that Vacuum Field in that larger green box. The reason I wanted to is because that is really some of the bona fide first efforts in horizontal well drilling in southeast New Mexico. The Vacuum Field was discovered in 1929. Just to give you an idea of scale, by 1941, there were 327 vertical wells. You know, it's been long recognized that there is very discontinuous pay in the San Andres, high frequency depositional cycles, very thin laminated pieces in a complex carbonate. So in this particular field, as early as the '70s, they were down-spacing to 20 acres. And then in the '90s -- actually, they started waterflooding in '78, and in the '90s, they went to 10-acre spacing.

In that particular field, in 1998, Texaco was the operator, and they chose to test with very good science the idea of some laterals out of existing vertical producing wells. They chose a pilot area. They initiated a 3D program -- 3D seismic program, where they could delineate on a fine scale some of the bypass -- to head on this continuous pay.

They also found in the San Andres -- I've seen this in other San Andres fields that I've reviewed. They had some very small throw faults, less than 25 feet, that actually shifted the pays on a very small scale, creating more discontinuous pay, discontinuity in the entire reservoir.

So what they did -- the particular well I singled out -- they had a couple. But the CVU, the central vacuum unit, broke the Vacuum Field into several larger sections. But the CVU was 110, located in Section 6, 18 South, 35 East, was producing 10 to 15 barrels of oil a day. They had an active waterflood. They had initiated a CO2 flood just to the north of this well. So, obviously, they were maintaining reservoir pressure. That's one thing you've got in this field. This well produced 358,000 barrels of oil, 1,500 barrels a day. They cut two different windows in the casing. They went 2,000 -- roughly 2,000 feet to the east on one

lateral, open hole, and 1,000 feet to the west on the other lateral. They stimulated open hole. They used coil tubing and foam disbursements.

But the thing I wanted to note, the initial potential pumping after that work was 273 barrels of oil per day. The well has currently cumed just over 1.1 million barrels of oil. So that was an incremental increase of 769,000 barrels of oil in that well.

So, I mean, that was a clear example -- with those wells in that section, being on 10-acre spacing, under active flood, a clear indication of how they connected with more reservoir.

So I think from there, what I want to do was progress to the Milnesand casing horizontal project. I was actually involved in that project. That's that small green box at the top of the page.

The operator -- I was retained in that particular situation more on an operational basis rather than any kind of reservoir basis. They had --

Q. Excuse me, Mr. Maxey. Would it help to refer the Examiners to Exhibit 12?

A. Yes, you're correct. Let me back up.

Q. Okay.

A. I'm going to bring up the Milnesand Unit in the next exhibit. So let's just go over to the Manzano

Field -- or excuse me -- the Manzano activity, around Bronco. That's the far eastern side. There's a red ellipse. That was actually what kicked off the horizontal drilling in the San Andres, the most recent activity in southeast New Mexico.

The thing I want to point out on Manzano is they started off in Texas. They came over just across the state line, drilled a one-mile lateral near Bronco, did very well. They have run whole cores and sidewall cores. And they recognized through -- not only historically but the work they did, that closer-spaced laterals was a better way to develop the San Andres. What they did was they developed their project on -- well, basically. They had some mile-and-a-half laterals, but, basically, on one-mile laterals, four in a section. However, they spaced their wells for the fifth and sixth laterals so they could be placed. They have sold that package, so there's a new operator. But they recognized that early on.

The only other thing I'm going to point out is, across the top, NEMO, Apache, they've drilled a couple of wells -- horizontal wells, horizontal San Andres, west of the West Sawyer Field. Those are being produced. Rockcliff has developed a couple of wells further to the west. Special Development Corp. is

getting active around the Gladiola Field.

And the last thing I'm going to point out is the Back Nine property is the furthest west red ellipse. And so you can see where their development is going to take place and why it's as shallow as it is.

Q. Would you identify the document marked as Exhibit 12?

A. Yeah. I'm getting ahead of myself.

Okay. Exhibit 12 is -- I want to just give a little more detail about the Milnesand Unit. The first thing I want to draw your attention to is the black box. It's not the dashed line. It's the solid line. If you'll notice the four red arrows, those -- the Milnesand Field was drilled up -- initiated in 1961, close to 200 wells in the field. Waterflood commenced there in '78. In that black box, back in 1983 -- the operator escapes me. But they drilled four infills, going to 20-acre verticals, and the red arrows exhibit those four verticals. Those were drilled in 1983, all of them. They made -- that black box has cumed 253,000 barrels of oil out of all wells. The infills have been responsible for 34 percent of that, 86,000 barrels of oil. So, again, just exhibiting the discontinuity in the pay and what infill drilling does.

Now, under a new operator in 2012, after

injection had been pretty much pulled off -- they were just, basically, injecting produced water to get rid of it -- the newer operator, in 2012 -- I was retained to help them drill two -- actually, three laterals, but the two that are marked that I wanted to discuss are in the dashed box. We drilled two laterals 2,500 feet long, approximately, 2,200 feet of treatable lateral.

This area inside the dashed box was making 5 barrels of oil a day of all the wells that were produced. We did those two wells back to back. We cut windows -- set whipstocks, cut windows, drilled 2,500 feet, got a good mud log, saw what we thought was some really good oil shows and some areas that were very swept by the waterflood -- there's been millions of barrels of water injected in this field -- ran 3-1/2 casing, treated with six stages of acid, and the rate on those two wells, actually, for that area, went to 90 barrels of oil a day, and those two wells have cumed 46,000 barrels of oil.

So, again, we are proving up the idea that -- you know, San Andres, it's a complex carbonate, like a lot of them, and we're connecting up discontinuous pay, and that, in a nutshell, is what the idea is on that Back Nine property.

Q. And would you identify the final exhibit, which

is Number 13?

A. Okay. The final exhibit is just a zoomed area of the earlier map that was presented. This is the Racetrack Field. Petrophysically, when you want to look at logs in the area, it's kind of tough because a lot of these wells are drilled -- some have no logs. Some are gamma ray neutron case cold [sic], just to get an idea where to perforate.

So what I've looked at in this area is -- I just want to see what this field has done vertically. The Racetrack has 37 wells associated with it. It's cumed 829,000 barrels of oil, 123 million cubic feet of gas. And as stated before, the gas figures are probably arrant because there is some flaring that went on early in the life of all these fields that are '60s vintage.

The average -- what I did was normalized that 10-acre spacing on an acreage basis so I could look at what 320 acres of vertical wells would do. The average is 22,400 barrels per well. And if you were to -- on a normalized basis, if you drilled 32 wells on a 320, you're looking at 716,000 barrels of oil. Okay?

Now, number one, we're going to get better exposure to the reservoir with a horizontal well. Number two, we're going to see -- with better exposure to the discontinuity in that formation in the flow

units, we're going to see -- my estimate, just based on experience -- at least 2 percent increase in the recovery factor. Some would estimate more than that. I'm trying to be a little bit conservative. And so when you -- I looked at three wells on a 320, the pattern that we've talked about developing, and based on an uplift in that production, you're looking at 860,000 barrels for the 320-acre spacing, and it's going to cost less money. So on a per-well basis, it's about 287,000 barrels of oil.

The last thing I wanted to mention on that, on average, if we look at 15 stages on a one-mile lateral, you're looking at more of an exposure of 7-acre spacing than vertical 10-acre, kind of based on where those clusters -- how they're spaced throughout.

Q. Do you agree with Mr. Bahlburg's view that drilling three horizontal wells across a half section is the optimal approach to producing from the San Andres in this area?

A. Yes. Yes, I do.

Q. And once the three wells, identified in Exhibit 10, are completed, will there be any possibility of stranded acreage in the proposed project area?

A. No.

Q. And in your opinion, is drilling three wells in

the proposed project area the most efficient and economic way to develop the San Andres on this acreage?

A. Yes.

Q. And in order to proceed with this drilling pattern, do you agree with Mr. Bahlburg? It's necessary for Back Nine to drill the 2H well very near the centerline of the proposed project area?

A. Yes.

Q. And in your opinion, will the Bandon Dunes 2H effect, develop and drain the portion of the lands in each quarter-quarter section included in the project area?

A. Yes, it will.

Q. And in your opinion, will production from the 2H be reasonably uniform across the entire length of the lateral?

A. Yes, it will.

Q. And will that hold true also for the infill 1H and 3H wells?

A. Yes.

Q. And in your opinion, will the granting of Back Nine's application avoid the drilling of unnecessary wells, protect correlative rights and serve the interests of conservation and prevent waste?

A. Yes, it will.

Q. And one last question: Did you prepare Exhibit Numbers 12 and 13?

A. Yes.

MR. LARSON: I move the admission of Exhibits 11, 12 and 13.

EXAMINER McMILLAN: Exhibits 11, 12 and 13 may now be accepted as part of the record.

(Back Nine Properties, LLC Exhibit Numbers 11 through 13 are offered and admitted into evidence.)

MR. LARSON: And I pass the witness.

EXAMINER McMILLAN: I really don't have any questions because the biggest point is that you said the horizontal well will drain portions of the different units within the project area. Is that a safe statement to make?

THE WITNESS: Yes.

EXAMINER McMILLAN: Okay. I don't have any questions.

EXAMINER BROOKS: I don't have any questions of this witness.

CROSS-EXAMINATION

BY EXAMINER JONES:

Q. So can you -- the 2 percent original-in-place recovery factor increase -- I mean, the 2 percent of

original oil in place, is that -- that was developed from areas that had already been waterflooded also, right?

A. No. These have not been flooded. These fields out here -- if you look at Chisum, Diablo -- Acme may have had a little bit -- Twin Lakes, you know, there are various little fields out here that have not been flooded. Twin Lakes has been flooded. There's an attempt made at Twin Lakes and Cato, but none of these further east have been flooded that I am aware of.

Q. Okay. But you're estimating 2 percent more original in place, but where did you come up with that?

A. Well, there's been -- Back Nine has had some studies done on oil -- on original oil in place. I've also been active in this area. I've reviewed several fields, done some of my own work, and I see, you know, anywhere from 7 to -- I know some of the work that Back Nine did, their engineers that they hired to just look, specifically, at oil in place, came up with 20 percent in one field. But, actually, there was some question as to how much of it was pay. So I really look at 7 percent to maybe 14 percent on the tops.

So when I look at this -- you know, we don't have real good data with these old wells. I think 10 percent in this area of original oil-in-place

recovery is a very good estimate for an average estimate. So you're looking at 10 percent initially from the verticals. The uplift I'm looking at is now 12 percent with laterals.

Q. Okay.

A. Okay?

Q. Okay.

A. And that's a primary. That's not secondary.

Q. Thanks.

The fracturing of a well, can you -- isn't it true that you can -- you can say that that is going to be approximated by having -- as if you have a bigger radius of your wellbore?

A. Yes. That's correct. Yes.

Q. Okay. So another --

A. That's one way you can look at it.

Q. Yeah, using the equations -- the transient flow equation.

A. You're looking at more of an ellipse on a lateral because it's horizontal. So you're looking at an ellipse around the stage.

Q. So you already said that, basically, this well, placed as it is, will develop -- along with the frac job, it will develop all eight of the 40s?

A. Yes.

Q. Okay. Thanks.

EXAMINER BROOKS: Let me say, because the way I said -- I don't have any questions for this witness. But I realized, on a tape-recording, it sounded somewhat contemptuous, and I don't mean that at all --

THE WITNESS: Okay.

EXAMINER BROOKS: -- or any implication of that at all.

THE WITNESS: Not taken that way.

EXAMINER McMILLAN: Thank you very much. 15714 shall be taken under advisement.

(Case Number 15714 concludes, 10:59 a.m.)

(Recess 10:50 a.m. to 11:08 a.m.)

STATE OF NEW MEXICO

COUNTY OF BERNALILLO

CERTIFICATE OF COURT REPORTER

I, MARY C. HANKINS, Certified Court Reporter, New Mexico Certified Court Reporter No. 20, and Registered Professional Reporter, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings that were reduced to printed form by me to the best of my ability.

I FURTHER CERTIFY that the Reporter's Record of the proceedings truly and accurately reflects the exhibits, if any, offered by the respective parties.

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

MARY C. HANKINS, CCR, RPR
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