STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ORIGINAL

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

CASE NO. 14421

APPLICATION OF CONOCOPHILLIPS COMPANY FOR AMENDMENT OF DIVISION ORDER NO. R-2403, AS AMENDED, TO INCREASE THE AUTHORIZATION INJECTION PRESSURE IN ITS MCA UNIT AREA, LEA COUNTY, NEW MEXICO.



REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

April 1, 2010
Santa Fe, New Mexico

BEFORE: WILLIAM B. JONES: Hearing Examiner
DAVID BROOKS: Legal Adviser

This matter came for hearing before the New Mexico Oil Conservation Division, William B. Jones, Hearing Examiner, on April 1, 2010, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South St. Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: Peggy A. Sedillo, NM CCR No. 88
Paul Baca Court Reporters
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E X H I B I T S



A P P E A R A N C E S

FOR THE APPLICANT: WILLIAM F. CARR, ESQ.
Holland and Hart
110 North Guadalupe, Suite 1
Santa Fe, NM 87504

HEARING EXAMINER: Let's call the Case 14421, Application of ConocoPhillips Company for Amendment of Division Order No. R2403, as Amended, to Increased the Authorized Injection Pressure in its MCA Unit Area, Lea County, New Mexico. Call for appearances.

MR. CARR: May it please the Examiners, my name is William F. Carr with the Santa Fe office of Holland and Hart. We represent ConocoPhillips in this matter. And I have one witness.

HEARING EXAMINER: Okay. Let the record show this case was heard a month ago but not taken under advisement, it was continued to this date.

MR. CARR: And as you'll recall, at the hearing there was a statement presented to Conoco from the Bureau of Land Management, and the case was continued to enable Conoco to talk to the BLM. And we're here to report to you today on that meeting.

HEARING EXAMINER: Any other appearances? Okay. Proceed.

GRANT BUTKUS,

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

DIRECT EXAMINATION

BY MR. CARR:

Q. Would you state your name for the record,

please?

A. Grant Butkus.

Q. Mr. Butkus, where do you reside?

A. In Houston, Texas.

Q. And by whom are you employed?

A. ConocoPhillips.

Q. Are you the reservoir engineer who testified at the original Oil Conservation Division case on this application?

A. I am.

Q. And were the Examiners at that time Examiners Brooks and Jones?

A. They were.

Q. Were your qualifications as an expert in reservoir engineering accepted and made a matter of record at that time?

A. Yes.

Q. Since that time, have you contacted the Bureau of Land Management concerning a statement that was offered on their behalf at that hearing?

A. I have, yes.

Q. Have you prepared additional exhibits that respond to BLM's concerns?

A. I have.

Q. And are you prepared to review this work with

the Examiners?

A. Yes.

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

HEARING EXAMINER: They are.

Q. Mr. Butkus, let's go to what has been marked ConocoPhillips Exhibit A, and would you identify that and summarize the concerns of the Bureau of Land Management?

A. ConocoPhillips Exhibit A is the statement that was submitted to the OCD by the BLM before our last hearing. And the concerns of the BLM are really twofold.

It was that they had not had the chance to analyze the step-rate tests that we presented into evidence. And then the second one was that they had some issues with possible casing integrity problems in older wells that were completed open hole and stimulated with nitroglycerin.

Q. Have you reviewed your application with representatives of the Bureau of Land Management?

A. I have spoken with Roger Hall -- he's an engineer out of the Carlsbad office, I believe -- regarding the step-rate test and the potential for cement integrity issues.

Q. Where does the issue concerning the step-rate test stand at this time?

A. The data from the step-rate test was given to the BLM, and they analyzed it and they agreed with our findings that at the pressures that we were attempting to have the Division Order amended to, there's no possibility of new fractures being initiated in the formation.

Q. We actually requested a statement from the BLM, did we not?

A. That is correct.

Q. And we were unable to get from them a letter that is either signed or on letterhead; isn't that right?

A. That is also correct.

Q. Let's talk about the issue concerning the adequacy of the cement in MCA unit injection wells. Could you just review the status of that issue for the Examiners?

A. I spoke with the BLM concerning that. The main point that was made was that the injection wells that we're attempting to add in the unit from this point forward are wells that were drilled in the last couple of years. So they're cased to depth and then cemented to surface.

So there's very limited possibility of there being the behind-pipe channeling that they're worried about, unlike in older wells where the completion methods aren't as -- don't address that possible problem as well.

Q. Would you refer to what has been marked ConocoPhillips Exhibits B and C and explain first what those are and then review for the Examiners what these exhibits show.

A. So the BLM had suggested possible radioactive tracer surveys on injection wells. And while this is not per se an injection radioactive tracer survey, these are radioactive tracer surveys that were done in new wells that we converted to injection during the initial completion.

So essentially what we've done, is during different stages of the fracturing process, we've added radioactive tracers to the fluid and then gone back through, and it's showing where that fluid is actually ending up.

So we are attempting to revise the Order to have a surface pressure of 2,150. And most of the initial stimulations go up to a pressure in excess of 4,000 pounds.

And so, if you look at the MCA 404, what you're seeing is, different colors represent different points in which the radioactive isotopes were added to the fluids. And so you can see where, I guess the perforations, those fluids are actually ending up.

The second tract from the left is a depth of

investigation, and this is really what we would look at if we were looking to see if there were any behind-pipe channeling through a micro annulus.

As you can see, it moves from left to right, from zero to 25 inches. And this is really just telling you where in the formation we're actually seeing that radioactive tracer when we go back in and log.

And so, as you can see on the 404, they vary in depth from about three or four inches to about 20, 22 inches. What you would see if you had behind-pipe channeling is actually a flat line of one or two colors that was about three inches away from the site of the well bore. And this would be the actual radioactive tracers in that micro annulus between the cement and the rock.

Q. And so what you're looking at are the blue lines in the column on the left; is that right?

A. Yeah, that's correct. It's this column right here, the second tract.

Q. Okay.

A. And so, the MCA 65 is similar. You can see that we've actually completed a fracture to a smaller zone in this one. And the differences that we're -- these were run in an attempt to optimize how we were perforating and fracturing.

But as you can see on this one, as well on that

second tract, that you're not seeing any flow behind cement. So we're not creating any micro annulus at a surface pressure in excess of 4,000 pounds.

Q. Now, ConocoPhillips isn't requesting an increase in pressure in any of the existing injection wells.

A. That is correct.

Q. And as to all new injection wells, will they be completed in a manner consistent as what you've shown for the MCA 404 and 465 wells?

A. That is also correct.

Q. In your opinion, will all water injected in the MCA unit at surface injection pressures of 2,150 psi stay within the injection area?

A. Yes.

Q. In your opinion, will granting this application otherwise be in the best interest of conservation and the prevention of waste and the protection of correlative rights?

A. Yes.

Q. Is Exhibit D a proposed Order in this case that would grant this application?

A. It is, yes.

Q. And it also summarizes the testimony that has been presented here today?

A. That is correct.

Q. Were Exhibit A through D either prepared by you or have you reviewed them and can you testify as to their accuracy?

A. Yes.

MR. CARR: At this time, we would move into evidence Conoco Exhibits A through D.

HEARING EXAMINER: Exhibits A through D will be admitted.

MR. CARR: That concludes my direct of Mr. Butkus.

HEARING EXAMINER: I was going to ask you about the injection withdrawal ratio on your unit.

THE WITNESS: Okay.

HEARING EXAMINER: Is it similar to a pressure maintenance, is it a one to one, or is it -- are you losing some fluid out of zone?

THE WITNESS: Right now, we've gone back and P and A'ed a number of the injection wells because we're redeveloping the unit on a new spacing that we think will be able to process the reservoir a lot faster.

So we're not injecting enough to keep up with the fluid that we have coming out of the ground. But if you look at a pattern-by-pattern basis in the areas where we are injecting an adequate amount of fluid, it's efficient enough.

HEARING EXAMINER: Okay. Well, is this unit going to compete with floods from the -- or what's your schedule for doing these conversions of the patterns?

THE WITNESS: Oh, for doing the conversions?

HEARING EXAMINER: Yes.

THE WITNESS: So, we're scheduled to do -- we have 12 that we've permitted that are at the 775 pounds. We have another at 13 that we're waiting on the conclusion of this hearing before we permit them. So that's 25 that we would do this year.

And then beyond that, it depends on the schedule of drilling, but we should be able to finish the redevelopment of the field over the next two or three years. And that would include the drilling of new injectors, and then conversion of those two injectors.

HEARING EXAMINER: So, two to three years. And your managers are okay with it? Have you already sold the project to them or --

THE WITNESS: Yeah. The hurdle we have now is selling the individual pieces to partners and working out cost issues and timing on that.

HEARING EXAMINER: Okay.

THE WITNESS: And we've been moving forward with this whole project for this redevelopment. For the last two years we've drilled 53 wells from the unit.

HEARING EXAMINER: I didn't know Schlumberger did these tracer surveys. Was this actual Schlumberger -- do they own the --

THE WITNESS: I'm not sure who --

HEARING EXAMINER: Or they just ran the log afterwards?

THE WITNESS: I believe that in these wells, Schlumberger completed them for us, but the company that actually comes out and does the tracers is called Protechniques.

HEARING EXAMINER: Protechniques, yeah. Did Schlumberger or yourself -- or Dowell, I guess, run any kind of frac modeling on these completions, do you have a model you use?

THE WITNESS: We have a completion engineer in-house that models all of the fracs or the -- if we change substantially from the standard fracture that we put in a reservoir, then we go back and remodel it. And these two were actually a series of four or five tracer surveys that we were using to verify our modeling in that area.

HEARING EXAMINER: Okay.

THE WITNESS: So we presented the two that would be converted to injection wells.

HEARING EXAMINER: Okay. The model that he

uses, is that Dowell's model, or do you guys have your own --

THE WITNESS: I believe that he used a third-party software. I do not know whose software it is that he uses.

HEARING EXAMINER: Do you think that you ran enough step-rate tests to be representative of the whole unit for justifying a pressure increase for the whole unit?

THE WITNESS: I think that the step-rate tests that we've run represent the variability in the new wells and in the area. Obviously, over time, we'll continue to run diagnostic tests on our wells in order to develop more data.

But I think for the question that we're trying to answer now, between those and just looking at the ISIPs on the initial fracs, I think we have enough data to confirm the assumptions.

HEARING EXAMINER: Okay. That well that's taken your C02, do you remember which well it is?

THE WITNESS: It's the 380.

HEARING EXAMINER: No. 380?

THE WITNESS: Yeah. I believe I told you it was the 338 last time, but I went back and double checked and it's the 380.

HEARING EXAMINER: Is that going to be the same well for a long time, or are you going to vary it around?

THE WITNESS: In the past there was a failed attempt to flood the unit with C02. And so it's contaminated a lot of the gas that we can't take to sales. So we just use that well to dispose of hydrocarbon gas that's been contaminated with C02.

HEARING EXAMINER: So you break out a little bit of the gas and you reinject it and you sell some of it?

THE WITNESS: We reinject all of the gas coming from the contaminated areas. We do have one battery where we go to sales because the CO2 contamination is not high enough to preclude us from doing that.

Right now we're looking at installing membrane units in order to separate the hydrocarbon stream and the C02 stream. And then we'll be using the C02 stream.

The original C02 tests in the area, the flood, was done in the upper zones, which we don't believe there is -- from that that there is the possibility of actually flooding that across the field.

There's some formations that perform very well, and there's some formations that perform very poorly. But we're also looking at going into the San Andres ninth, which is a residual oil zone that has a -- that we believe has better properties for possible C02 flooding.

So we're using that stream and recycling it for a -- potentially for a C02 TZROZ recovery pilot in the future.

HEARING EXAMINER: Okay.

THE WITNESS: But the membrane units would also generate a sales stream of gas for us.

HEARING EXAMINER: Okay. That would be pretty expensive, I guess, those membranes. Is that the Ryan Holmes process you're talking about?

THE WITNESS: I'm not very familiar with it. It's a project that we're working through our facilities group.

HEARING EXAMINER: Okay.

THE WITNESS: So we're just at the very beginning of that project.

HEARING EXAMINER: Okay. Well, I guess a couple comments. The packer setting depth has gotten to be a big issue with us and our district office in Hobbs. That's something that I actually spoke to one of your people, Donald Williams, last few days about that one.

THE WITNESS: Okay.

HEARING EXAMINER: And so that's a big issue. I didn't talk to BLM about this, obviously, but on another issue, I asked them to contact the attorneys of any cases that go through the attorneys, any cases, and they said

oh, they're surprised at the communication pattern. So they might do that, hopefully.

MR. CARR: We'd appreciate that.

HEARING EXAMINER: Okay.

MR. BROOKS: I have no questions.

HEARING EXAMINER: Okay. Thank you very much.

MR. CARR: Mr. Examiner that concludes our presentation.

HEARING EXAMINER: Okay. Thank you, Mr. Carr. We'll take Case No. 14421 under advisement.

MR. CARR: And I will send the proposed Order in Word format so Mr. Ezeanyiam doesn't have to call and...

HEARING EXAMINER: Okay.

(Whereupon, the proceedings concluded.)

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



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

REPORTER'S CERTIFICATE

I, PEGGY A. SEDILLO, Certified Court Reporter of the firm Paul Baca Professional Court Reporters do hereby certify that the foregoing transcript is a complete and accurate record of said proceedings as the same were recorded by me or under my supervision.

Dated at Albuquerque, New Mexico this 9th day of April, 2010.

Peggy Sedillo

PEGGY A. SEDILLO, CCR NO. 88
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