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

IN THE MATTER OF THE HEARING

CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF LINN OPERATING, LLC, INC., TO AMEND COMMISSION ORDER NO. R-11980-A REGARDING THE EAST HOBBS SAN ANDRES UNIT, LEA COUNTY, NEW MEXICO

Case No. 15284

ORIGINAL

TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

BEFORE: DAVID CATANACH

July 16, 2015
9:02 a.m.
Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID CATANACH, Chairman, on Thursday, July 16, 2015, in Porter Hall, Wendell Chino Building, Santa Fe, New Mexico.

REPORTED BY: PAUL BACA, CCR #112
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A P P E A R A N C E S

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I N D E X

CHAIRMAN CATANACH: We'll call this meeting to order this morning.

This is a meeting of the New Mexico Oil Conservation Commission.

My name is David Catanach. I am the Director of the Oil Conservation Division and Chairman of the Oil Conservation Commission.

The time is a little bit after 9:00.

Today's date is July 16.

This meeting is conducted in Porter Hall, in the Wendell Chino State Building.

I will take roll at this time.

Would the commissioners please introduce themselves for the record?

COMMISSIONER BALCH: Dr. Robert Balch, designee of the Secretary of Energy and Minerals.

COMMISSIONER PADILLA: Patrick Padilla, designee of the New Mexico State Land Commissioner.

CHAIRMAN CATANACH: And also present is Mr. Bill Brancard, the commission attorney and general counsel of the Energy Rules and Natural Resources Department.

Commissioners, in your packet today you will see, first of all, an agenda for today's meeting.

You've had a chance to review it.

Do I hear a motion to pass today's agenda?

COMMISSIONER PADILLA: I would so move.

COMMISSIONER BALCH: I will second.

CHAIRMAN CATANACH: All in favor?

ALL MEMBERS: Aye.

CHAIRMAN CATANACH: Okay. The agenda is adopted for today's meeting.

Also in your packet are the minutes from the hearing held on June 4. If you -- if the commissioners have had a chance to review the minutes, do I hear any corrections or changes on these minutes?

COMMISSIONER BALCH: I've read the minutes and I move to approve them.

COMMISSIONER PADILLA: I would second that.

CHAIRMAN CATANACH: Okay. All in favor?

ALL MEMBERS: Aye.

CHAIRMAN CATANACH: Okay. The minutes from the June 4 meeting will be adopted.

I don't think we have anything else.

So at this time I will call Case 15284, which is the application of Linn Operating, Inc., to amend Commission Order Number R-11980-A regarding

the East Hobbs San Andres Unit, Lea County, New Mexico.

Call for appearances in this case.

MR. BRUCE: May it please the commissioners. Jim Bruce, of Santa Fe, representing the applicant.

I have one witness, who is Mr. Robert Sutherland, who testified at the hearing in May.

Also present with us are representatives of Linn Operating, the operator of the unit.

If you'll recall -- Mr. Padilla will not -- Mr. Sutherland is with Tabula Rasa Partners, who is a partner in this proposed project with Linn Operating.

CHAIRMAN CATANACH: Thank you, Mr. Bruce.

Are there any other additional appearances in this case?

Okay. We'll do a -- do you have one witness, Mr. Bruce?

MR. BRUCE: Just one.

(Witness sworn.)

MR. BRUCE: Preliminarily, Mr. Examiner, you will recall there was a hearing in May, and at the end of the hearing the meeting was continued to July 16. And the commissioners requested that we

locate and provide the unit agreement and -- unit operating agreement, which we have done in the exhibit package; also required that we give certified notice to the City of Hobbs and the State Land Office, which we have done; and then to discuss economics regarding produced water, other types of fresh water -- I forget if it was Glorietta or Santa Rosa -- and why using CO2 as a repressuring mechanism, how that could work; and finally, the issue of whether or not gray water was available for this project.

And we have submitted a number of exhibits. Two of them were late submitted yesterday, and I apologize for that, but they weren't available before I left for my vacation, to submit them early.

But with that I would like to proceed with Mr. Sutherland's testimony.

CHAIRMAN CATANACH: Okay. Go ahead.

ROBERT SUTHERLAND,

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

EXAMINATION

BY MR. BRUCE:

Q. Mr. Sutherland, please state your full

name for the record.

A. Robert Sutherland.

Q. And where do you reside?

A. I reside in Argyle, Texas.

Q. And who do you work for and in what capacity?

A. I work for Tabula Rasa Partners as a senior vice president of operations.

Q. Have you previously testified before the commission?

A. Yes, I have.

Q. And were your credentials as an expert petroleum engineer accepted as a matter of record?

A. Yes.

Q. Are you familiar with the engineering matters related to this project as well as the issues that I just identified which the commission wanted the applicant to address?

A. Yes.

MR. BRUCE: Mr. Chairman, I tender Mr. Sutherland as an expert petroleum engineer.

CHAIRMAN CATANACH: Mr. Sutherland is so qualified.

Q. (By Mr. Bruce) Mr. Sutherland, could you -- we have a conclusion at the end of this, a

couple of conclusory matters at the end of our exhibit package.

But let's start off with describing where the East Hobbs Unit is and what the applicant seeks in this case.

A. The East Hobbs Unit is located east of the city of Hobbs abutting the Texas border.

And what we seek is the ability to inject fresh water for a finite period of about two years to repressure the reservoir in order to develop a miscible CO2 injection -- CO2 flood.

Q. Now, the unit agreement and the commission's prior order in this matter restricted the use of fresh water for use in unit operations, did it not?

A. Yes.

Q. And have -- has Tabula Rasa and Linn made an effort to locate sources of water for repressuring the reservoir?

A. Yes.

Q. Your proposal is to use fresh water.

Now, is it simply because you just want to use fresh water?

A. It's due to availability and economics.

Q. Okay. In referring to Exhibit 1, could

you summarize what you looked at?

A. Exhibit 1 is a map with all saltwater disposal wells spotted on it, as identified in the State's database, with the current operator above the well symbol. And it's an average of the last three months in the database of rate in barrels of water per day.

We conducted a 600-square-mile-area search to start with around the East Hobbs Unit looking for produced water initially.

And we found four possible sources in that area, but only one within the 10-mile radius. And that would be the Knowles South property, located almost due north of the unit.

In looking at it, it was maybe around nine-point, nine-and-a-quarter-miles pipeline route, inasmuch as about 13 and three-quarter miles of a truck route to bring water.

The water is Devonian water in the fields operated by Resolute Energy.

An economic evaluation was done of this, and it was found to be -- it was found to be uneconomic to do that, so we did not pursue water sources outside of the further -- at a further radius from the field because it would be increased

pipeline costs by increased trucking cost.

Q. And will you -- do you have exhibits that discuss economics of the various water sources?

A. Yes, I do.

Q. Okay. Go ahead.

A. To do a thorough examination of the waters that are available, we put together Exhibit 2.

Exhibit 2 has three water analyses.

The one on the left is the water within the San Andres Unit that we want to flood.

The center analysis is an analysis of the City of Hobbs' water.

And on the right is the Devonian water from the Knowles South Unit.

The composition of the water is listed in the bottom half of the page. You can see the field -- Hobbs field is over 18,000 PPM TDS.

The City water is only 792.

And the Devonian water is a higher TDS, which is 34 -- over 34,000.

What we've done here is used the Department of Energy's water scaling mixing model to look at their affinity for scaling and mixing.

And the result was that the City water combined with the East Hobbs water is -- is

favorable.

But combining the Devonian to Hobbs Unit is less favorable and has a significant increase in the scale volume, so the water is not really compatible for that purpose.

A further step was taken. We contacted Resolute and asked them about the availability of this water for us to buy and either truck or pipeline.

And they had indicated that their lease required continuous operations, and they would lose their lease to disposal water, and since it was only for a short period of time, six months to two years, they were unwilling to put that at risk, so -- so they said it was not available.

Q. Just a minute, here, Mr. Sutherland.

MR. BRUCE: Mr. Chairman, if I may approach the commission?

CHAIRMAN CATANACH: Certainly.

MR. BRUCE: I will hand you -- and I just printed this up last night.

Q. (By Mr. Bruce) Mr. Sutherland, could you describe what Exhibit 17 is?

A. Exhibit 17 is an e-mail I requested from Resolute to document, you know, these conversations

that we've had over the past year or so about water, and I felt it would be important to get a statement from them.

And they wrote me this e-mail basically saying they're unwilling to supply the water for the reasons I previously stated.

Q. Okay. What is Exhibit 3, Mr. Sutherland?

A. Exhibit 3 is a summary of the economic evaluations that I conducted on six water source scenarios.

And so in Column 1 -- in the first column are all the scenarios.

Column 2 is the total costs, capital operating costs, purchase costs if there's purchased water involved.

So the total cost of water, if we went the entire two years at the full rate, and to fill up for each scenario.

And the third column is a look at if we spend a half year on fill-up and we don't get the pressures we anticipate and we abandon, stop buying water or trucking water, but abandoning it -- or terminating is a better word -- terminating the project after a half a year, and what -- what's the capital exposure at that point to Tabula Rasa to

look at this.

And then the fourth column is the project delay. All of these cases have the same time lines and whatnot, except for in the -- in the last four scenarios, because it involves pipelines and other permitting issues and the logistical issues. We put about a 9-month delay as our estimate on all of those projects from the base time line.

And then the last column is an explanation of the results.

And subsequent to this we have details on each of these scenarios we would go through.

Q. Okay. Let me ask a couple of questions, though, about the project.

First, the project delay.

When did Tabula Rasa join with Linn in first looking at this project?

A. The negotiations for this project, I believe -- well, they're more than two years old. We started looking for water over a year -- maybe a year and a quarter ago.

Q. Okay. So there's already been substantial time spent on this, and you would like to minimize further delay?

A. That's correct.

Q. And then one thing I want to get up front is the injection of carbon dioxide only as fill-up.

Your final line under the explanation is loss of oil production.

Would you have to pretty much shut in unit production in order to fill it up with CO2?

A. Yes, we would.

Q. But if there's no production from the unit, would it then not terminate?

A. We would probably have to define some edge wells and keep a few wells producing to hold the unit.

Q. Okay.

A. But essentially, yeah, shut down the unit.

Q. What's -- Exhibits 4 through 9, are they simply the backup economic data?

A. Yeah. They're the details of all of these cases I've summarized in Exhibit 3.

Q. Okay. And if --

MR. BRUCE: Mr. Chairman, I don't know if you want Mr. Sutherland to go through them, but he's certainly willing to do that. Maybe I'll just ask him --

Q. (By Mr. Bruce) When you look at these, maybe just indicate the cost estimate to fill up the

reserve and the time for simple payout of the projects.

A. Okay. If we could go to Exhibit 4, this is the case where we go forward with purchasing City water source.

Our estimate for that is $1.4 million. It has $340,000 in capital, which is primarily infrastructure that we will buy from the City, which is 3,300-foot of City main, and install that for the City, and then turn it over to them.

And then the rest is operating costs, which is around 17 cents a barrel, is the result on a per-barrel basis of the ongoing operating costs.

But the cumulative cost is $1.4 million. And if we found the project needed to be terminated within six months, we would have spent $710,000.

Q. And that's the most economic prospect?

A. Yes. And it -- it has a 7.1-year payout. It's kind of long. It has a lot to do with the fact that it will take a couple of years to fill the reservoir, then they have to start the CO2 process, which has a delay. So some -- it tends to increase at times quite a bit.

Q. Okay. And Exhibit 5?

A. Exhibit 5 is a scenario where we are able

to get water trucked from the Knowles field, which is -- you know, the -- 13 and three-quarter miles away.

I will add that all of these scenarios used the same oil uplift forecast and the same base operating costs.

And outside of this additional cost for the water system, the same capital costs, so -- and the same oil price assumptions and CO2 price assumption.

So we've tried to keep all of the base economics the same, only add in this additional cost for water and if there's a delay of additional time for delay.

This particular case, we spent 13.3 million, so significantly more money, which is nearly $600,000 in capital and $2 a barrel of operating -- $2.03 per barrel of operating cost, and a 7.8-year payout.

However, you know in this scenario, we don't consider the fact that there's over 100,000 truck trips through the city of Hobbs. So we don't have any costs for damaging roads. We have no costs for any traffic safety issues or congestion. So those costs are not here, but it is in excess of

100,000 trips to ship this much water.

Exhibit 6 is a scenario where we pipe the water from the Knowles field. It's a little bit shorter, because we take a direct pipeline route. We're only at a nine-and-a-quarter-mile pipeline. However, it's going to be used for two years.

But because of that, it's $5.3 million. The capital estimate is a bit more. It's 1.95 million and 54 cents a barrel.

If we abandon or terminate the project early, at six months, our exposure is larger. It's $3.5 million, because we built more physical infrastructure up front, and the payout on that is 8.1 years.

This does not have any costs for abandoning the pipeline, if there's any cost there, nor does it have any cost built in if there's brine -- brine leaks along the city over that 9-mile pipeline route.

Q. And Exhibits 5 and 6 both concern Devonian water, correct?

A. Yes. That's correct. It's Devonian.

Q. Which is incompatible with the formation water?

A. Yes.

Exhibit 7 is when we looked at -- looked into drilling wells within the field for a water source. And we looked at -- in the non-fresh -- in the non-fresh zone, which is just below us in the Glorietta.

Again, this has some delay in it, an extra six-month delay, but all the other basic economic input is the same over the cost estimate here, what it's going to cost.

There's not very many Glorietta wells to go by for producibility, but we estimate about 800 barrels a day per well, so we would need to drill 11 new wells to achieve the rate.

And in here I wrote the cost to do such.

The total cost of drilling, operating, you know, lift -- submersible pump lifting cost factors and whatnot, over the project we would spend $15.1 million for this water source.

That's 10.7 in capital and about 71 cents a barrel.

And if the project terminated early it has a $12.7 million exposure, because this is a lot of upfront structure.

Additionally, what was not considered in this is that we did not put any moneys in here yet

to look at whether we would have to pay the surface owners a fee for the water. It may be available under the unit agreement. I'm not certain, but it was not considered in here, so the costs potentially are higher than this.

The next scenario is on Exhibit 8. And this is the exhibit of CO2 with -- our fill-up with CO2 only.

Again, the same base economics. This is a $25 million cost over the -- for fill-up.

It's about $3.1 million in capital and $3.51 a barrel equivalent, water equivalent.

Again, if we cut the project short, we -- the expenditure at that point is $17 million.

The issue to part of the cost -- and it's listed in here. But we have to accelerate our capital to get ready for CO2 injection earlier than the water base case, because we've got to go right to CO2. So there's well work in the capital improvement.

Also we have two years of lost oil production, which -- lost or delay, which we have to pay Linn back for the base. We have to guarantee Linn their base oil production. And so that cost is in there also.

We -- however, we presently don't have an 18-million-a-day CO2 contract, presently, to cover this. We have some contracts that would cover a portion.

But the 18-million-a-day contract is in excess of what we would be going for in the main flood, so we would actually put more up-front CO2. But that contract is not in hand right now.

So we're assuming we'll be able to get that contract in this scenario. I don't know if that's true.

The final exhibit is the final case which is where we look into piping City affluent or City gray water to the field.

And again, this has all the same base economics. It has some delay in it.

But this scenario costs 3.- -- approximately $3.5 million total, which is 2 million capital and 24 cents a barrel.

Early shutdown, we'd have an exposure of around $2 million.

What we don't know is the actual cost for the gray water. I put in 6 cents a barrel. We really don't have a cost structure on that. So I put in something -- I thought that was reasonable to

scope out what these economics look like.

It has an 8-year payout.

However, this was a scenario that we looked at pretty early in the game, and the City had indicated that gray water wasn't available on that side of the city for some time on there. The City planned to put in a gray water system, and it wasn't of sufficient volume for them to change their schedules. Our water demand was too small.

Q. So at this point, gray water is not available?

A. It is not.

Q. What is Exhibit 10?

A. Exhibit 10 is a letter from Tim Woomer, the director of utilities for the City of Hobbs. He's the -- he's the person that we talked to a year and a quarter ago about what was available for gray water.

And that was the point in time where -- that the water from the City main was maybe our best -- our best bet for what we needed to do.

And after the last meeting I contacted him and I said I'd appreciate a letter to the commission stating what we had talked about.

Number one, whether they had the capacity

on the existing system to supply us the fresh water.

And number two, what the current status today is of their gray water system.

So in the middle paragraph he talks about what facility we're going to build for them, and the fact that we're going to charge the industrial rates -- actually, outside the city industrial rates for water -- I think they charge other industrial customers -- and that they had that capacity.

And the final paragraph discussed the gray water issue about availability in our systems and their City master plan for gray water construction.

Q. So, Mr. Sutherland, I mean, the City water isn't just used for domestic purposes, it is used for industrial -- purchased by industrial customers too, is it not?

A. Yes.

Q. And, Mr. Sutherland, what is Exhibit 11?

A. Exhibit 11 is a letter to the New Mexico State Land Office, to the commissioner of public lands. And it is a notification to them that we would like to use fresh water injection in the field, and that we have examined alternatives and we feel that -- you know, from an economic and technical standpoint, this is the best option. And

we're looking -- we are looking for approval from the State Land Office.

Q. At this point, the commissioner has refused to approve that -- the commissioner of public lands has refused to approve that.

Is that correct?

A. That's correct.

Q. So that is an issue we will have to deal with separately from what is before the Oil Conservation Commission?

A. That is correct.

Q. Okay.

MR. BRUCE: Commissioners, Exhibits 12 and 13 are simply the unit agreement and unit operating agreement which you requested.

And of course Section 18 of the unit contains the provision regarding approval of the commissioner of public lands to use fresh water.

And Exhibit 14 is simply my affidavit and notice containing, as you requested at the last hearing, notice to the City of Hobbs and the land commissioner giving notice of this hearing.

And both parties did receive actual notice, and the green cards are attached.

Q. (By Mr. Bruce) Two final exhibits,

Mr. Sutherland.

What is -- what is the purpose of Exhibit 15?

A. Exhibit 15 was put together to take a look at fresh water injection in the state of New Mexico on state lands, I should say essentially what we are requesting.

So a database search was done on oil and gas sites to look at the State's requirements for filing information on hydraulic stimulation or frac jobs in the state.

And so a search was just done in the Hobbs district on State lands, which is Sections 16 and 36, and looked at just the Bone Springs formation and looking at the period from 2012 to 2015, which is approximately when that requirement was -- or that information became available on the State's site.

And on the right is a little table that just shows all the wells I found. It has the API number, and then it has the gallons of water used in the stimulation job, where it's located, and operator, and when the job was done.

And what was found, that there's over 275 million gallons of fresh water used in these

frac jobs on State lands only during this period.

Our project is requesting 263 million gallons over the two-year period.

And I concluded, you know, if State lands are 1/18th of the frac jobs, because they represent 1/18th of the sections, the 36 sections, there's probably over 5 billion gallons of fresh water injected just into the Bone Springs during this particular period of time in just the Hobbs district alone.

And so I point out -- there's a small graph there that shows time on the X axis and the gallons of fresh water on the vertical axis, and then a little listing of how many jobs per year have been performed, and there's kind of a half year in 2015.

But you can see there's a trend line that sizes are going up. And really, sizes that were 2 million gallons are now at least 5 to 6 million, and there's a lot of plus 8-million-gallon jobs -- or some that have been done. Pardon me.

So if we look at the average, it's about 5.2 million gallons right now. And so it's estimated there are -- you know, could be -- using this 1/18th factor I put in there -- there could be

seven Bone Spring frac jobs per week in that district alone.

We're looking for the equivalent of one every other week. So I think this shows that there is industrial use of fresh water going on in the Hobbs district.

Q. And finally, Exhibit 16.

A. Exhibit 16 are the outcomes. The last time there were some questions about what would happen if there was no makeup water, and what would happen if there was makeup water available.

And on the left I have the no makeup water, the left column side.

And so what would happen is, we could -- the East Hobbs Unit would continue as is with Linn's operation. And this shows the production curve. It's making about 162 barrels a day. And that will decline off and reach its economic limit in April of 2019. And then subsequent, there would be assumed field abandonment.

This particular forecast was done using a 107 water/oil ratio, and in the future using an arachidic-type method water/oil ratio cum, which is a standard practice in water floods.

It's pretty reasonable. We know that, you

know, the life is -- you know, it's three to five years out under most scenarios.

So that's what happened in the no water makeup case.

In the makeup water case, of course, we initiate the CO2 flood, and late this year we'll begin the fill-up and monitor pressure quarterly to make sure this water is still good.

In 2017, late '17, you stop all the makeup water and switch over to CO2 injection.

We reach peak oil in 2020.

We recover an incremental 4.7 million total barrels with the field.

The City of Hobbs receives 3,300 feet of new water main.

The City of Hobbs receives a million dollars of revenue for the water.

The royalty owners get paid $55 million over that period of time.

This is assuming a $70-barrel pool of oil, so it's plus or minus with the price over time. But...

And then the State, in severance, ad valorem, school, reserve, those sorts of taxes are around $11 million over the period, and of

course any sales tax on local goods and services purchased will be provided to the local area.

And the field life will be extended 13 to 15 more years past what would have been.

And there still remains, at that point in time, over that 13- to 15-year period, potential to extend the CO2 development, because we only develop -- we don't fully develop the whole unit. And if economics are good enough, there could be a further extension of the CO2 project.

Q. Mr. Sutherland, in your opinion, will waste of reserves occur if the CO2 flood is not instituted in this unit?

A. Yes. Approximately 4.6 million barrels will not be available.

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

A. Yes.

Q. And were Exhibits 1 through 17 either prepared by you or compiled from Linn's records on the unit?

A. Yes.

MR. BRUCE: Mr. Chairman, I would move the admission of Linn's Exhibits 1 through 17.

CHAIRMAN CATANACH: Exhibits 1 through 17 will be admitted.

MR. BRUCE: And I have no further questions of the witness.

CHAIRMAN CATANACH: Questions, Commissioner Balch?

COMMISSIONER BALCH: So nobody is very happy about it, but the price of oil is projected to go to 40 this year. That's a little bit less than the 70 that you used in your estimates.

THE WITNESS: Yeah.

COMMISSIONER BALCH: Is there a risk, in your opinion, if this application were to be approved of the project, getting a year into fresh water injection and then failing because of outside economics?

THE WITNESS: Yeah. There's always that risk.

COMMISSIONER BALCH: And what would you put that at? I mean, we don't want to put a -- half the water in the ground and have nothing to do with it.

THE WITNESS: Yeah. And I -- I think that risk is everybody's -- every company's point of view.

I would say that Tabula Rasa's point of view, we've developed the East Seminole flood in Texas, just across the border, and we're developing right now the Emma CO2 flood.

Our point of view is that right now our cost and availability of material and time to build these projects is good. And CO2 requires a big up-front capital commitment and construction, CO2 purchase, and then wait for the response.

So our point of view right now is we're reaping the benefit of low -- actually, low oil price right now on the capital side.

But in -- a year from now, if we don't get some rebound, us and every operator could be in a bind. And so we're -- we think we're pretty good in the 70 -- maybe even in some of the $60 per barrel, but we're rather bullish on the price and going forward with our projects. Because if we could put them in for half of what we used to put them in for, then we end up in a lot better shape when the oil price rebounds. So it's a typical oilfield gamble on our part.

COMMISSIONER BALCH: All right. And in two years you have enough available CO2 for your flood.

THE WITNESS: Yeah. We have contracts in place with Kinder Morgan for Seminole East and Emma field. And actually, one at South Mount over near Slaughter/Levelland. These contracts are contracts for volumes, and they could be used on any property we use, and we can move volumes. And so...

And with our project timing, you know, early in the project we require a lot more volume. And then sometimes we require less, so it fits in our schedule. We do have contracted volumes.

Plus we have 15 million a day of equity CO2 coming from Colorado presently, so we actually can cover the first 15 million a day from an equity of CO2.

COMMISSIONER BALCH: Thank you, Mr. Sutherland.

COMMISSIONER PADILLA: Mr. Sutherland, I have a question about the incompatibility of the Devonian water.

Can you speak a little bit more about that as it would impact operations?

THE WITNESS: San Andres water is -- has scale in it. I mean, it is scale -- it will cause scale. And we chemically have to do our best to treat it.

When we're out of water that has higher TDS or whatnot, we actually get a lot higher volume of scale dropout. And so either the chemical treatment goes way up or there's just -- and it -- when we get a scale problem, we have mechanical failures on pumps and whatnot, so it isn't just treating the water, we have rod pump scale and whatnot that we have to repair. So the operating costs can go way up, so we are pulling wells on a lot more frequent basis.

COMMISSIONER PADILLA: Would the operating costs basically be increased based on your chemical mitigation, if you were to increase chemical mitigation to account for increased scale?

THE WITNESS: Yeah. But it's whether you can completely mitigate is always the question. I don't know that we can.

But it's definitely going to cost more to treat the water. There's definitely more mechanical problems.

COMMISSIONER PADILLA: Okay. I had another question as it relates to your economic model regarding CO2 implementation.

Can you speak a little bit about the distinction of the costs, or the differentiation

between lost production on Linn's behalf and these -- yeah -- as opposed to the up-front acceleration of the project?

Does that make sense?

I'm just wondering how much of that cost is associated with CO2 and how much is associated with Linn's loss of production.

THE WITNESS: The number in the cost estimate, just the straight CO2 cost, we show as $18.4 million.

So if you just throw everything back on Linn -- which it isn't, but if you did -- you would say 18 of the 25 million was just -- just the CO2 purchase from Kinder Morgan.

If we add in at least some of the acceleration of capital and things like that, which I put in there at 2.2 million, you know, we're over 20 million of 25.

So you know, it's -- at least 20 of the 25 is directly related to purchasing CO2 and getting CO2 into the ground.

You know, the other losses and things along way are the other 15 to 20 percent of the cost.

COMMISSIONER PADILLA: Okay. My last

question, as it relates to your frac analysis in the Bone Springs.

THE WITNESS: Yes.

COMMISSIONER PADILLA: Are those extrapolations based strictly on water fracs or does that include any nitrogen treatments?

THE WITNESS: It is just water reported to the State on their form --

COMMISSIONER PADILLA: Okay.

THE WITNESS: -- listed as fresh.

COMMISSIONER PADILLA: Okay.

CHAIRMAN CATANACH: A couple of questions, Mr. Sutherland.

On your economic analysis, are you using $70 as the price of oil?

THE WITNESS: Yeah. I think when we started this, this was just a $70 case.

Now, I think I probably should have noted that it's flat. And our assumption was by -- you know, since we get oil until 2018 or 2019, we're assuming by 2018/'19 we'll at least get the 70 WTI. And of course there's a little deduction and all of that in it, but 70 West Texas.

CHAIRMAN CATANACH: Okay. But if you're assuming $70-a-barrel oil now and it's -- you've

got -- using fresh water as a marginal project at the current oil price at 70, is it -- what -- how is that effective at the current price? I mean, is it still economic?

THE WITNESS: It's still in the very low teens. So it depends on what your cost of capital is, whether you consider that economic or not.

CHAIRMAN CATANACH: I mean, that's quite a difference from 52 to 70. And I'm wondering how that -- that should greatly affect your economics, even to use the fresh water at this point.

THE WITNESS: It greatly affects the PV, less so the return. And -- if you look at these numbers.

But because of the delays, there's so many up-front years in this thing, your turn starts to be less affected by -- by what you think. Like price would affect it less than you think it would be affected, so it's not quite as sensitive.

But no, I did not run a current scenario at the current price. I think when I was doing this we were closer to thinking we were getting closer to the 60.

But you know, we -- we thought it was very reasonable, looking at the future price index, that

70 would be in that time frame, that that -- actually, 70 plus. But...

CHAIRMAN CATANACH: So is there a -- is there a point in the price of oil that you would probably say that we can't do this? I mean if it goes down much more than it is now, do you -- do you -- do you say that we can't do it at that price?

THE WITNESS: Are you asking, Is there a price that we'd say we don't even want to start injecting water?

CHAIRMAN CATANACH: Right.

THE WITNESS: I would say it would be the -- the future outlook of oil prices in this time frame would guide us.

We're prepared to -- you know, we've been prepared to inject kind of two years for nothing. I mean, that was a change we had that we didn't really care for.

But we looked at it and said, We think we can do this and it fits into our CO2 supply contracts, so it makes sense for us to ready this asset.

If we're, you know, getting ready to buy equipment, which is about, oh, seven to eight months prior to starting CO2 injection, we would look at

the out- -- the outlook of oil prices. And yes, there would be a price, probably sub- -- it would have to be north of the mid 60s, and then we would look at maybe not doing the project.

That's about a year and maybe a quarter from now we would start looking at that and make a decision about a year or three quarters from now on price.

CHAIRMAN CATANACH: Okay. On your failure case, total cost for one-half of your fill-up, that -- is that -- are you saying that you would take another look at it a half a year from now or...

THE WITNESS: What we wanted to really -- just to demonstrate -- is that Tabula Rasa, since we're funding 100 percent of this water fill-up, that we have a capital exposure, because there is potential for this thing to get terminated, like we've just discussed.

So the question was, from our agent and our funders, is: If you're six months into it and it's not filling up nice, it looks like you're going to need more water, it's not going to be practical and we say terminate the project, how much do we have into this?

And they basically made a judgment, Go

ahead. This is -- we'll risk this kind of money on the City water base, which is $700,000. They said -- and we will look at it quarterly, so there might -- you know. But we'd probably at least give it a half year to see where we're going.

But let me see where it was. It's exhibit -- yeah, Exhibit 4. Yeah. It's $700,000.

I said they were willing to put that forward, which is about half capital and half payments in operating costs for water.

If -- if I came to them and said, I want to fill it up with CO2, shut down production, kind of the other extreme, I'd -- they'd have $17 million of exposure and find out that we didn't get anywhere, and they'd be unwilling to make that investment.

CHAIRMAN CATANACH: Mr. Bruce, I think we, last time, talked about whether that fresh water injection was in the -- was it in the unit agreement?

MR. BRUCE: Yeah. It's Section 18 of the unit agreement, Mr. Chairman.

CHAIRMAN CATANACH: So it is in the unit agreement. So that's what you guys are talking about in terms of having to amend the unit agreement

with the State Land Office.

MR. BRUCE: With the State Land Office. And that would be exhibit -- I think it's Exhibit 11, the letter to the land commissioner, which -- at this point the land commissioner has refused to do it, but we're going to have to deal -- we still need the commission's approval, so we decided to move forward with this hearing at this time.

And you know, we are going to have to address the situation with Mr. Padilla's boss.

COMMISSIONER PADILLA: If I might ask one more question, Mr. Chairman.

CHAIRMAN CATANACH: Yes.

COMMISSIONER PADILLA: Mr. Sutherland, going back to the gray water issue -- and I realize that the City of Hobbs has said that they're not going to accelerate that schedule.

I just wanted to see if there was a way for you to quantify that cost. I know you said 6 cents a barrel.

What are you basing that on?

THE WITNESS: I think I -- I think I charged -- from my notes, I believe what I did was I took half -- about half the fresh water, a little

less than half the fresh water rate, which would be -- 15 is the fresh water. Yeah, 6 is the gray water. So...

COMMISSIONER PADILLA: Other than --

THE WITNESS: But they said they couldn't charge me more than fresh water.

COMMISSIONER PADILLA: Okay. Other than the timetable, is there a detriment, from an engineering point of view, to postpone any project?

THE WITNESS: I think there's -- you know, we talked about this potential if oil gets lower and lower. I mean, when this project does not -- when the East Hobbs is not positive cash flowing, there is an oil price where that happens, yeah. That's one risk. Okay?

But as far as doing nothing, no. It does -- it does require a little more makeup water. Now the only fluid leaving the field now would be oil volumes, because all the water now is returned, so that replaces it.

But there will be a little more pressure drop in the field.

COMMISSIONER PADILLA: Thank you.

CHAIRMAN CATANACH: So just one more question, Mr. Sutherland.

If you were to inject, say, for a year and then it became -- due to the price of oil or something else -- if you quit after a year, would you still gain some reservoir benefit by injecting in that year, or would you lose that benefit if you had to stop for a while?

THE WITNESS: Everything we've done on -- you know, we've done some simulation, some material balance. And while we think it's a fairly close system, although it communicates over most of the San Andres interval, we don't believe there -- we believe that whatever new volume we bring into the unit will remain there and it will not leak out.

So the benefit of increased pressure will remain in the field.

CHAIRMAN CATANACH: Okay.

Did you have any questions?

MR. BRANCARD: Yeah. I just have one.

Mr. Bruce, so on the unit agreement and State Land Office approval, is it your proposal that if the commission approves your request today, that it be subject to the land office?

MR. BRUCE: Well, I don't know if the commission order has to be. But certainly under the unit agreement that approval is required, which is

why we wrote Exhibit 11, the letter to the commissioner.

So you can handle it however you want.

MR. BRANCARD: Okay.

MR. BRUCE: Can I ask one follow-up question, Mr. Chairman?

CHAIRMAN CATANACH: Yes.

Q. (By Mr. Bruce) If you did abandon the project a year from now, or a year and a quarter from now, Mr. Sutherland, the City of Hobbs would still receive the benefit of that 3,300 feet of main water main being built?

A. That's correct.

Q. And they want that built?

A. That is correct.

MR. BRUCE: Thank you.

CHAIRMAN CATANACH: So just one more.

If we do approve this request, can we limit it to two years? Would that be sufficient for you guys? And is there an estimated start date or...

THE WITNESS: Yeah. The estimated start date, we would have to construct the City facilities and do all of that.

But we think possibly around November we

could start injection, November/December. And we would be fine with a two-year limitation.

COMMISSIONER BALCH: Would it be more practical to have a volume limitation with a requirement to rehear if you need to exceed that?

THE WITNESS: I --

COMMISSIONER BALCH: Because you have an idea of the volume you want to put in.

THE WITNESS: I don't -- you know, I don't -- you know, if it's the total volume that -- I have no problem with that.

Odds are we actually won't, you know, be able to ramp right up to 8,600 barrels a day. You know, we're going to bring it on, and we might have to raise some of the pressures on the field similar to North and South Hobbs to get a little more volume in.

I don't think we'll have to convert any existing wells to water injection to achieve that rate.

But if any of these things happen, you know, it will ramp up. So we probably actually won't achieve 8,600 barrels a day over the whole time. It will be a little less.

But I think, from our standpoint timing of

the project, it needs to work in that time frame for us. That's why I said we'd monitor the pressures quarterly to make sure it's filling up as predicted pressure-wise. If it pressures up quicker we would use less water.

MR. BRUCE: Mr. Chairman, because the commencement date is at this point not set, we wouldn't want, say, November 1, 2015, to November 1, 2017. That's the only thing I'm thinking of.

CHAIRMAN CATANACH: Well, I mean we can structure the order so where you can notify us when the start date is and we can start the clock from there, I think.

MR. BRUCE: Yes.

CHAIRMAN CATANACH: And would you guys be -- would it be sufficient to give you a daily limit of 8,600 barrels?

THE WITNESS: Yeah. Yes.

CHAIRMAN CATANACH: That would be okay?

COMMISSIONER BALCH: Would that limit operational flexibility? I mean some days you're going to be less and some days you'll be more, right, potentially?

THE WITNESS: It's -- you know, it's -- there will be. I just don't foresee the capacities

to really get much more over that into the San Andres.

COMMISSIONER BALCH: So really, your estimate of the water is the high-end estimate?

THE WITNESS: Yes.

COMMISSIONER BALCH: Likely you will use less?

THE WITNESS: That is correct.

CHAIRMAN CATANACH: Okay. Any more questions?

Okay. This concludes your presentation?

MR. BRUCE: Yes, sir, it does.

CHAIRMAN CATANACH: Okay. Do I hear a motion from the commission to go into closed session?

COMMISSIONER PADILLA: So moved.

CHAIRMAN CATANACH: And seconded?

COMMISSIONER BALCH: Second.

CHAIRMAN CATANACH: All in favor?

ALL MEMBERS: Aye.

(A recess was taken from 10:01 a.m. to 10:31 a.m.)

CHAIRMAN CATANACH: Do I hear a motion to go back on the record in this case?

COMMISSIONER BALCH: I'll make that

motion.

COMMISSIONER PADILLA: I'll second.

CHAIRMAN CATANACH: All in favor?

ALL MEMBERS: Aye.

CHAIRMAN CATANACH: Back on the record.

And I would just like to state that during the closed session we did discuss -- we only discussed the merits of this case, Case 15284, and that's all that was discussed.

And at this time, I think I'll turn it over to Mr. Brancard.

MR. BRANCARD: Okay.

The proposal that the commission would like to discuss is to amend Order R-11980-A to deal with Order Paragraph Number 9, which indicates that no fresh water shall be used as makeup water or otherwise injected.

The proposal is that the commission would approve the use of fresh water as makeup water. It would be subject to the approval of the commissioner of public lands under the unit agreement, and the applicant shall inform the division of the decision of the commissioner of public lands.

The applicant shall also -- if that approval occurs -- inform the division of the date

of the first injection.

The injection of fresh water is then limited to two years from that date of first injection.

The injection of fresh water is also limited to 8,600 barrels per day.

And any reporting of injection volumes that is required by the division shall indicate the amount of fresh water that is used in the injection.

Is there anything else that I missed?

CHAIRMAN CATANACH: No, I don't think so. I think it sums it up.

At this time do I have a motion to vote on the application?

COMMISSIONER BALCH: I would make a motion to vote on the proposed order.

COMMISSIONER PADILLA: I will second that.

CHAIRMAN CATANACH: All in favor?

MR. BRANCARD: Will we have a roll call on this one?

CHAIRMAN CATANACH: Yes, we will, but let's -- we're voting on the motion at this time.

COMMISSIONER BALCH: But this is a roll call on the --

CHAIRMAN CATANACH: Okay. So this is a

roll call vote.

Commissioners will you please state your vote?

COMMISSIONER BALCH: Florene, do you have --

MS. DAVIDSON: The roll call vote?

CHAIRMAN CATANACH: Yes.

MS. DAVIDSON: Commissioner Balch?

COMMISSIONER BALCH: I vote yes.

MS. DAVIDSON: Commissioner Padilla?

COMMISSIONER PADILLA: I vote no.

MS. DAVIDSON: Chairman Catanach?

CHAIRMAN CATANACH: I vote yes.

So a roll call vote has been taken and the application, as stated by Mr. Brancard, will be approved.

Mr. Bruce, can we get you to do a draft order for us?

MR. BRUCE: Sure.

CHAIRMAN CATANACH: With the stipulations that we discussed?

MR. BRUCE: What is today? Would ten days be good enough?

CHAIRMAN CATANACH: Yes. That will be fine.

MR. BRUCE: Ten days is a Sunday, so I'll do it Monday.

CHAIRMAN CATANACH: You don't want to do it Sunday?

MR. BRUCE: It's the benefit of knowing every Thursday.

CHAIRMAN CATANACH: Is there anything else we have to do here today?

Okay. I move that we adjourn.

COMMISSIONER BALCH: I will second that motion.

CHAIRMAN CATANACH: All in favor?

ALL MEMBERS: Aye.

(The proceedings concluded at 10:35 a.m.)

CERTIFICATE

I, Paul Baca, RPR, CCR in and for the State of New Mexico, do hereby certify that the above and foregoing contains a true and correct record, produced to the best of my ability via machine shorthand and computer-aided transcription, of the proceedings had in this matter.

Paul Baca

PAUL BACA, RPR, CCR
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