STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION COMMISSION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION FOR THE PURPOSE OF CONSIDERING:	)	
APPLICATION OF THE NEW MEXICO OIL CONSERVATION DIVISION FOR REPEAL OF EXISTING RULE 50 CONCERNING PITS AND BELOW GRADE TANKS AND ADOPTION OF A NEW RULE GOVERNING PITS, BELOW GRADE TANKS, CLOSED LOOP SYSTEMS AND OTHER ALTERNATIVE METHODS TO THE FOREGOING, AND AMENDING OTHER RULES TO MAKE CONFORMING CHANGES; STATEWIDE	)	CASE NO. 14,015

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

COMMISSION HEARING

BEFORE: MARK E. FESMIRE, CHAIRMAN
JAMI BAILEY, COMMISSIONER
WILLIAM OLSON, COMMISSIONER

Volume XVI - December 6th, 2007

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, MARK E. FESMIRE, Chairman, on Thursday, December 6th, 2007, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

STEVEN T. BRENNER, CCR
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C U M U L A T I V E I N D E X

Monday, October 22nd, 2007 (Volume I)
Commission Hearing
CASE NO. 14,015

(Continued...)

(Continued...)

(Continued...)

(Continued...)

DIVISION WITNESSES (Continued):

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(Continued...)

Thursday, November 8th, 2007 (Volume V)
Commission Hearing
CASE NO. 14,015

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Friday, November 9th, 2007 (Volume VI)
Commission Hearing
CASE NO. 14,015

(Continued...)

(Continued...)

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Tuesday, November 13th, 2007 (Volume VII)
Commission Hearing
CASE NO. 14,015

(Continued...)

PUBLIC COMMENTS:

OGAP WITNESSES (Resumed):

DIVISION WITNESSES (Continued):

(Continued...)

PUBLIC COMMENTS:

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(Continued...)

Wednesday, November 14th, 2007 (Volume VIII)
Commission Hearing
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(Continued...)

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(Continued...)

Thursday, November 15th, 2007 (Volume IX)
Commission Hearing
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(Continued...)

Friday, November 16th, 2007 (Volume X)
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Monday, November 26th, 2007 (Volume XI)
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(Continued...)

Tuesday, November 27th, 2007 (Volume XII)
Commission Hearing
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Friday, November 30th, 2007 (Volume XIII)
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Monday, December 3rd, 2007 (Volume XIV)
Commission Hearing
CASE NO. 14,015

(Continued...)

PUBLIC COMMENTS:

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Tuesday, December 4th, 2007 (Volume XV)
Commission Hearing
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Thursday, December 6th, 2007 (Volume XVI)
Commission Hearing
CASE NO. 14,015

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PUBLIC COMMENTS:

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* * *

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(Continued...)

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IPANM	Identified	Admitted
Exhibit 1	-	-
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IPANM (Continued)	Identified	Admitted
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A P P E A R A N C E S

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(Continued...)

A P P E A R A N C E S (Continued)

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BRUCE BAIZEL

* * *

ALSO PRESENT:

JOHN BARTLIT, PhD
DONALD A. NEEPER, Phd
New Mexico Citizens for Clean Air and Water

* * *

WHEREUPON, the following proceedings were had at 9:08 a.m.:

CHAIRMAN FESMIRE: Okay, at this time we will call to order the special meeting -- the continuance of the special meeting of the New Mexico Oil Conservation Commission in Case Number 14,015, the Application of the Oil Conservation Division for repeal of existing Rule 50 concerning pits and below grade tanks and adoption of a new rule governing pits, below grade tanks, closed loop systems and other alternative methods to the foregoing, and amending other rules to conform to the changes; statewide.

At this time let the record reflect that Commissioners Bailey, Olson and Fesmire are all present, that a quorum is therefore present.

And I believe by agreement with counsel we were going to start with you, Mr. Carr --

MR. CARR: Yes --

CHAIRMAN FESMIRE: -- because you have some witnesses --

MR. CARR: -- yes, Mr. --

CHAIRMAN FESMIRE: -- first thing this morning?

MR. CARR: -- Chairman, may it please the Commission, today I will be presenting two witnesses for ConocoPhillips Company, and they need to be sworn.

CHAIRMAN FESMIRE: Okay. Would you both come

forward, please, and stand and be sworn?

COURT REPORTER: Excuse me, may I ask that the microphone at Mr. Carr's table be moved a little towards him? Thanks.

(Thereupon, the witnesses were sworn.)

MR. CARR: May it please the Commission, at this time we would call Mr. Gregg Wurtz, W-u-r-t-z.

CHAIRMAN FESMIRE: Proceed, Mr. Carr.

J. GREGG WURTZ,

the witness herein, after having been first 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. Gregg Wurtz.

Q. Mr. Wurtz, where do you reside?

A. Farmington, New Mexico.

Q. By whom are you employed?

A. ConocoPhillips.

Q. And what is your current position with ConocoPhillips?

A. I'm a staff hydrologist and safety person for ConocoPhillips in the San Juan Basin.

Q. And in this role what do your duties entail?

A. Both site investigation, hydrology assessments,

soil investigations and safety responsibilities for our workers and contractors.

Q. Have you previously testified before the New Mexico Oil Conservation Commission?

A. No, I have not.

Q. Would you review for the Commission your educational background and your work experience?

A. My educational background is, I have a bachelor of science in geology, with an emphasis on inorganic chemistry and hydrogeology.

My work experience is, I had approximately 21 years of experience in the environmental field, starting as an inorganic chemist in the mining and environmental industries working on to -- as an environmental hydrologist consultant for EPA and state agencies, working on various CERCLA and RCRA projects and then progressing into the coal mining industry, working as a hydrologist for the coal mining industry for approximately eight years. And then in the last eight years I've worked in the oil and gas industry as a hydrology and safety engineer.

MR. CARR: May it please the Commission, ConocoPhillips has only four exhibits today. I do have extra copies of them if anyone needs them to follow the presentation.

Q. (By Mr. Carr) Mr. Wurtz, is ConocoPhillips

Exhibit Number 1 a summary of your education and work experience?

A. Yes, it is.

Q. Are you familiar with the Application filed in this case by the Oil Conservation --

CHAIRMAN FESMIRE: Mr. Carr, I seem to be without an exhibit, I'm sorry.

MR. CARR: Nothing intended.

(Laughter)

CHAIRMAN FESMIRE: Thank you, sir.

Q. (By Mr. Carr) All right, Mr. Wurtz, are you familiar with the Application filed in this case by the Oil Conservation Division?

A. Yes, I am.

Q. And have you reviewed the proposed pit rules?

A. Yes, I have.

Q. Are you familiar with the current rules and practices followed by ConocoPhillips for the closure of temporary drilling pits in New Mexico?

A. Yes, I am.

Q. Has ConocoPhillips conducted sampling of selected drilling pits in preparation for this hearing?

A. Yes, we have.

Q. And were these samples taken after the task force had concluded its work?

A. Yes, they were.

Q. And the purpose of this sampling was not to determine what is in pits; is that correct?

A. That's correct.

Q. What was the purpose of the sampling?

A. The purpose of the sampling was really to determine what the concentrations of constituents were after we actually were ready to close the pits. So after they were mixed, and prior to topsoil application, that's what we were sampling and characterizing.

Q. Are you prepared to review this work with the Commission?

A. Yes, I am.

Q. Based on your work and your sampling, will you make recommendations to the Commission for ConocoPhillips concerning the proposed rule?

A. Yes.

MR. CARR: Mr. Chairman, we tender Mr. Wurtz as an expert witness in hydrology, geology and the management of hazardous materials.

MR. BROOKS: No objection, Mr. Chairman.

MR. JANTZ: No objection.

CHAIRMAN FESMIRE: Okay, there being no objection, Mr. Wurtz will be so admitted.

MR. CARR: May it please the Chair, we have

prepared a few slides. The first one is on the screen. We intend to use these only as demonstrative aids. We think they would facilitate Mr. Wurtz' testimony and would make it easier for the Commission to understand the presentation, and we don't plan to offer them as evidence. We have the four exhibits, and these are simply being used as demonstrative -- demonstrative aids.

CHAIRMAN FESMIRE: Okay.

Q. (By Mr. Carr) Let's go to the slide that's entitled, Agenda. Would you review the information on this slide for the Commission, please?

A. Yes, I'd like to talk about the temporary drilling pit sampling and analysis program and the data review associated with that.

And then I'd like to move on to the open-top, free-standing tanks which we may better know in this hearing process as below-grade tanks definition, how it relates to our tanks.

And then I'd like to just briefly speak to the closed-loop systems and safety and environmental concerns.

Q. Let's go to the next slide. This is the first matter you intend to discuss?

A. Yes.

Q. Okay, let's move to the second slide.

A. Basically, an overview of the sampling program is

-- as I stated before, we sampled materials after they were mixed in the temporary drilling pit with clean soils and prior to topsoil cover. So really, these soils would represent what we'd be hauling off if we had to haul them off to the landfill, or they represent what we'd be leaving behind after we topsoil over them and rehabilitate the site.

We looked at 14 temporary drilling pits. And again, this was after the OCD and industry sampling programs were completed, or certainly at the very tail end of them.

The pits were sampled after materials were mixed with soil to a bearing capacity and prior to topsoil application. Basically, there was a five-point composite grab sample collected from each pit.

And there is two pits that we'll see, as we look at the data, that were mixed to a 1-to-1 ratio, and I will explain that in a minute.

Q. How were these pits selected?

A. These pits were really selected -- I gave our direction just to -- as they close pits, prior to topsoil cover, to simply, after they were mixed, to collect the sample. They were randomly selected as the pits -- just as they came up in our drilling order, and they're spatially -- I actually plotted them on a map later on to just see

where they were in the basin of our operations, and they're a pretty good spatial coverage.

Q. Your selection was really dictated by your drilling and development program?

A. Yeah, and the timing of such, it was --

Q. And how was the sampling done?

A. The sampling was basically -- I had our staff go out and just take a five-point composite sample of the mixed materials, four corners and in the middle, and collect that sample and then submit it to the laboratory. It was a very simple sampling program, limited in its scope and its depth of analysis.

Q. Could you refer to what has been marked for identification as ConocoPhillips Company Exhibit Number 2? And I think it would be helpful if you would work through the exhibit and explain what it's designed to show.

A. Yes, thank you. And basically, this is just a spreadsheet that you have before you, and on the left-hand column, column A, is the parameters that we selected for analysis. As you work over to column B it's the units that are related to the results reported. And then what we used as a reference, there's the soil screening levels.

Now what I should point out is, I used a revision 3, and actually I found out after putting this together that there is a revision 4 of soil screening levels numbers

that are published, but they're just a little bit higher than these numbers, so these are actually a little bit more conservative.

And then as you work to the right on this spreadsheet, at the top row is just the date of analysis and the lab ID.

Each column from E all the way over to R represents an individual pit that was sampled, and then below each column is the actual laboratory results that were achieved.

And as I said before, on the slide, there was two samples that were mixed at a 1-to-1 ratio. Typically we mix our pits at approximately a 1-to-3 ratio, but columns F and columns Q were at a 1-to-1 ratio.

And the reason why we did that was, at one point in the task force group meetings, we were talking about sampling at a 1-to-1 ratio to characterize the drilling materials, and we also wanted to look to see how much we had to mix to make them -- or to mix the materials to meet the paint-filter test, and had them suitable for hauling. So we did a 1-to-1 ratio there.

And simply what we did there is, we scooped out one bucketful in a trackhoe, placed it on the side, and mixed one bucket of clean soil and mixed those in a small pile just to see what we had.

The results were that they weren't suitable to meet the paint-filter test, and they probably wouldn't be suitable to haul down the road in a vehicle.

Q. And were they weight-bearing, if it was a 1-to-1 mix?

A. No, they were not.

Q. Basically what you have in this exhibit, if I understand it, are numbers that reflect the concentrations in the soil after they're stabilized and mixed and before you're ready to put a cover over them; is that correct?

A. That is correct.

Q. Let's go to the slide that's labeled Lab Analysis. What does this show us?

A. Basically what this tells us as you look at this spreadsheet is, the parameters that we analyzed these materials was from BTEX, TPH, metals, general chemistry and cations and anions.

And we selected these parameters based on our operator knowledge of the MSDSs for the water-based mud systems that we use in the northwest part of New Mexico for ConocoPhillips and the industry sampling program and the results of that -- the preliminary results of the sampling program.

So we looked at what we put into the system, what we believed were things that we would see there, and then

we analyzed for those.

Q. And these soils that ConocoPhillips elected to dig and haul, this is what you'd be digging and hauling out of there; isn't --

A. That is correct --

Q. -- that correct?

A. -- these are materials, after we mix them we would then load them into a truck under the proposed rule and haul them to the --

Q. Let's go to the next slide.

A. And basically the results -- and you can see them here, and I do apologize, I probably -- this spreadsheet could have been a little clearer, and I -- but the overall result is, no parameters exceeded the soil screening levels, residential levels, in any of the parameters tested for.

Q. Let's move on. Now the observation slide, what does this --

A. Well, basically what this is, as you can see in this spreadsheet, we did have detections on some of the volatile organics and some of the metals. But from the volatile organics review, and consistent with Mr. Ben Thomas's testimony earlier this week, we feel that the levels that we see of volatilization and biodegradation would be a factor in those being potential constituents of

concern.

The metals, we also looked at those. We did detect some metals in this analysis, and the metals -- we looked at the -- what's the real solubility or the movement of these, and we looked at the TCLP solubility analysis in the industry sampling program and determined that these metals have very low environmental mobility or bioavailability, again consistent with Mr. Thomas's testimony.

We did also detect chlorides at the 250 -- or 250 range, but that is -- in my opinion, that is a water standard of 250, and I didn't think that was an appropriate standard for chlorides and soils, but we did have one detection in that.

Q. From this information, what conclusions can you draw?

A. The conclusions I draw from this data is that no risk to human health and the environment has been demonstrated from burying of drilling pit materials in the northwest of New Mexico.

And then I -- second conclusion is, no benefits of human health and the environment have been demonstrated by transferring the drilling materials to a landfill.

And the third, the practice of *in situ* management of drilling materials is protective of human health and the

environment in New Mexico, the current practice that we're doing now.

Q. Is it your recommendation that on-site disposal be allowed in northwest New Mexico?

A. Yes, it is.

Q. And what is the reason for that?

A. It's based on our 30 years of doing this process, the analysis that I submitted today showing that none of them, none of these constituents, appear to be of concern, and they're -- and what we've seen in the other previous analysis and reviews.

Q. Do you believe this recommendation is supported by the character of the materials that you would be leaving behind or disposing of on site?

A. Yes.

Q. Were you present for the testimony in this case when the Division testified about a crisis that makes this proposed rule necessary?

A. Yes.

Q. Has ConocoPhillips or its predecessor operators at these properties, Burlington, Meridian, El Paso -- have they had contamination issues in the San Juan Basin from temporary drilling pits?

A. A good question. I've worked for Burlington and ConocoPhillips for the last eight years, so I've got a good

understanding of any groundwater impacts or soil impacts related to drilling pits. And in those eight years I couldn't find any that were related, in the northwest, to drilling pits for groundwater or soil impacts.

I then looked at the rest of our records that we have on file and could not find any groundwater impacts related to drilling materials.

I also spoke to a number of environmental engineers or consultants in the northwest that do work for me and to see if they had history of that. They couldn't recollect any of those.

I also spoke with our -- we have a corporate division that deals with all our groundwater issues for ConocoPhillips nationwide, and they did not have any record of any drilling pits relating to groundwater contamination.

Q. Now you understand in this case that the Commission is considering the adoption of new rules governing temporary drilling pits in the San Juan Basin, as well as other things?

A. Yes, I do.

Q. Based on the performance of your company, do you believe these are warranted?

A. Based on our performance that ConocoPhillips and the companies predecessing Conoco -- Meridian, Burlington -- I do not think they're warranted.

Q. Your second slide, I believe -- yes -- discussed your concern about transferring drilling materials to a landfill? Could you elaborate on that?

A. Yeah. My concern is not only the safety of our workers on site, but it's also the safety of the general public, and everything is risk-based that we do.

And I see that transferring our materials across the roadways to a landfill has a lot of inherent risks involved, both on loading those materials on location to actually transporting that many trucks down the road with the public. And these trucks are heavy-haul trucks; they're not residential cars, as you well understand.

But a lot of our roads, both off-road -- are small, narrow lease roads, so my workers travel up and down those roads so these trucks will be on those same roads as they are, as well as the county roads that they have to take to the landfill. There's going to be more trucks on the road. And I feel that is a large risk to our community as well as our workers.

Q. When we're talking about landfills, are all commercial landfills the same?

A. No, and I'm sure everybody has seen a landfill or two, and they all look different, they're in different siting criterias and different areas.

ConocoPhillips, as a large company, looks at the

facilities that we put our materials in or the people that we work with very strongly. Because we are a large company, we have a lot of exposure to liability.

So when we look for a landfill, we look to make sure that it's operated correctly, it has a good regulatory record, it's been permitted correctly, so that we are -- we want to minimize our long-term exposure risk to liabilities and the potential to be a potentially responsible party in the history of that landfill.

Q. In your opinion, would on-site burial better enable ConocoPhillips to manage these wastes?

A. Yes, when I look at whether -- taking our materials to a landfill, I feel there's risks in actually transporting them there. But also when I get to the landfill, I'm mixing my wisk -- or our wi- -- risk -- waste --

CHAIRMAN FESMIRE: Waste.

THE WITNESS: Thank you very much.

-- our wastes with a variety of other wastes that are oilfield-related, so -- and I don't know exactly how they're going to be handled long-term, versus, if I look at our risk of handling our wastes, *in situ* burial on location, I know how that's done, I know what wastes are put in that drilling pit, and I know how they're handled and rehabilitated, and I know where to find them if I need

to.

The landfill -- if I go to the landfill, it can be mixed with a number of people's wastes, and I'm relying on the landfill to manage our waste.

Q. (By Mr. Carr) Does ConocoPhillips request the Commission allow on-site burial in the San Juan Basin?

A. Yes.

MR. CARR: Mr. Chairman, as I mentioned to you and the other Commissioners on Tuesday, that concludes the initial presentation for Mr. Wurtz.

But we had prepared a fairly, I think, short presentation as rebuttal testimony. It doesn't actually square off with what anybody has said about below-grade tanks, but we've been talking about them throughout the hearing, and it -- my impression was, it sounded like an oildrum in a pit.

And it seemed to us that perhaps it would be useful to explain to you what -- and show you several photographs of what these below-grade tanks are and why we believe they can be safely operated.

And so with your permission, I would like to proceed with that at this time.

CHAIRMAN FESMIRE: Okay. Mr. Carr, why don't you go ahead and do that.

MR. CARR: Okay.

DIRECT EXAMINATION (Rebuttal)

BY MR. CARR:

Q. All right, Mr. Wurtz, have you been present for testimony in this case concerning below-grade tanks?

A. Yes, I have.

Q. I think it would be helpful just to explain initially, what is a below-grade tank?

A. Thank you. And you'll see slides, and that's really why I brought them here today a little bit, is to give everybody a clarification of what below-grade tanks are and how we design them.

But really, it's a free-standing, open-top tank used on a production location for collection of production -- temporary collection and storage of produced waters. It's a tank that you can see all the sides, and it sits in a cellar. And I'll show you those as we go.

Q. Now the tank is for collection of produced water?

A. Correct.

Q. Does oil get into those tanks?

A. By design it should not, but incidentally sometimes oil is accumulated in the tanks, a very minor amount, almost a thin film.

Q. And what happens to that oil?

A. And that oil and water is collected on a frequency depending on how much water is produced from that

specific production location. A water truck comes there, recovers the water and the oil, takes it to one of our saltwater disposal facilities, and then the oil is separated -- and it is managed in -- through a refinery, but we account for that oil and distribute those -- oil to all the wells that go to that SWD, and the water is obviously injected down the hole.

Q. I'd like to have you review ConocoPhillips' efforts to comply with Rule 50 as it applied to these tanks, and would you go to your next slide, please?

A. Yeah, in 2004 -- actually 2003, 2004 --

CHAIRMAN FESMIRE: $125 million?

MR. CARR: Yes.

THE WITNESS: Yes.

-- ConocoPhillips and Burlington Resources spent approximately $125 million to comply with the current Rule 50 definition of below-grade tanks.

We had a lot of tanks that were in good condition, but you could not see all the visible sides of those tanks.

Now one of the requirements under the current rule is that you may be -- you must be able to test the integrity of those tanks annually if you can't see all the sides of them.

We looked at a different variety of ways to test

the integrity of those tanks to meet the rule, and we determined from our engineers, corrosion engineers and production people, that there just wasn't a good way to do that.

And we were willing to make this commitment to retrofit all our tanks with the design I'm showing you today, so we removed the tanks that were buried in place, where you couldn't see the walls, and took those out and replaced them with the design I'm going to show you today. But it was approximately 5000 tanks that we've done in the last four years.

Q. (By Mr. Carr) Explain why the tank is sited below-grade.

A. And that's a good question. The tank's sited below grade for a number of reasons, but probably the primary reason is for production. We have separators, compressors and oil storage tanks that all are at grade, and those drain to this water-drain, open-top tank that I'm showing you today.

And in order to have positive drainage, the tank that I'm showing you, the open-top, free-standing tank, has to be lower so that we don't have water accumulate in those pipes that drain to the tank.

If water accumulates there, we have problems with freezing, cracking of pipes or, even worse, cracking of

valves related to those pipes, and that causes spills. And one of the focuses was to make sure that we minimize the spills as much as possible.

So we put the tank below-grade so that all the other tanks that drain to it have a positive drain, it's free drainage to it, so we don't have water freezing in those lines or in those valves. So that's why we did it. So that's why there, up in the open-top, free-standing tank, is below grade.

We worked with the Aztec field office in the process of designing prototypes, and we also worked in the Santa Fe office developing a strategy and showing them different designs of how -- the tanks that we thought would be appropriate to meet the current Rule 50 and the different designs.

And we actually had them come out in the field, the Aztec field office, and look at some that we installed. And working together with them, we felt we had a good design.

As I said before, they're located below grade to prevent freezing and freezing-related spills. The tank's excavation itself is short to facilitate inspection of tank walls, designed for temporary storage of produced water at well locations.

The design development and focus, we got a task

group together at ConocoPhillips of engineers, production operation engineers, our corrosion engineer staff, and as well as myself in the safety aspect and looked at -- we needed something we could inspect, we needed something that was as best we could do for corrosion, to prevent corrosion and the possible leaks associated, and then worker safety focus as well. Those were kind of our primary goals with the new tank design.

We came up with a specification, a written specification that we could give our manufacturers, not only our manufacturers but our installers, on how we wanted to build these tanks and why -- what were some of the rationale behind the design parameters, as well as how we were going to install the tanks in the field.

And that's a written document here that we can -- you can have if you want to look at it. But included in that is things for corroding -- for coating of the tanks for corrosion, to minimize corrosion, the ability to inspect the tank. We have a sacrificial anode in it to further prevent corrosion. We have bonding and grounding...

MR. HISER: I'm just going to see if I can improve the focus.

THE WITNESS: Oh, okay. Okay, from my vantage point it looked good, so...

But what I'm really trying to say is, we put a lot of thought, we didn't just go out and just put a tank in the ground. We looked at a lot of different designs, we got our -- the Aztec field office involved from OCD, as well as Santa Fe involved with this process. We wrote a very detailed procedure for it so that we could maintain consistency and a good design.

Q. (By Mr. Carr) Okay, next slide.

A. And this is just a -- our engineering drawing showing the design. You can see the lower sketch actually shows at the bottom of that tank there's I-beams. It actually sits -- the tank itself sits on I-beams, and that facilitates -- it keeps it off the ground surface so we that don't have it sitting in standing water or on the soil for corrosion. We want to keep it off the ground.

It also facilitates us to inspect the bottom of it. If we do see a leak on a detection liner that we place underneath the tank, just a flat liner, if we do see a leak we can actually look down there with a mirror and look around it and be able to inspect the bottoms of it.

You'll also see that we have -- well, it's a kind of a complicated drawing. I will show you some other pictures, real life, in the field that might give you a better idea of it.

Q. Mr. Wurtz, how often do you inspect these tanks?

A. The tank -- at a minimum, our sites are visited at least once a month, but I would say once a week to every two weeks an operator is out there inspecting it, or somebody is out there that -- and we go through a very extensive program under our SPCC federal programs for the inspection of the valves, the tanks, for corrosion and leak -- potential leak problems.

Q. Okay, now what does this next slide, the photograph, show us?

A. What this slide really shows you, and I have a number of slides, but it shows that the outside ring -- that is kind of the outside shoring of the excavation, and that just keeps any soil from building up on the sides of the tank so that we always maintain visible the sides of the open-top below-grade tank there.

And then also you can see on the left that's our oil storage tank, and the valve and the piping going to that. If we got a freeze in that pipe, it could possibly compromise that valve, and then we'd have a catastrophic release of that tank.

So we want to make sure that we have positive drainage to that open-top free-standing tank.

Q. Now, if you -- this tank, they're open-top --

A. Yes.

Q. -- but that doesn't mean they're not covered?

A. No, and I have some other examples.

Q. All right.

A. As you can see from this one, it has an expanded metal covering on it.

Q. Okay, next slide.

A. This is probably a better look at it, but you can see how many pipes we have going to this free-standing tank, but you can also see the expanded metal top right there in front of us.

There is a hatch that -- if we had to get into that tank, which -- that's a combined space, and that's a story for another day.

But basically you can also see that you can walk around this tank from a distance and see that they're -- all the sides of the tank.

This is just another view of the same tank. These are all pictures of the same tank. But you can see the amount of piping and engineering and things that would go into that -- this design of tank.

If we had to retro-fit this tank -- and I spoke to our engineers as soon as that came up in the hearing, went back, and they were not comfortable, one, with the cost of actually tearing the top off of that, the expanded metal top off of it, because it's welded on there, and all the piping associated with it.

But more importantly, it didn't meet our -- one of our focus goals of corrosion. If we put a tank inside of that, we're going to have, if it rains -- which it hopefully does in New Mexico -- we'll have to pump the liquids out of that every time it rains. So there's going to be standing water in there. We won't be able to see the walls of it as much.

We designed the tank -- it may appear to be a fairly large volume, it's actually 120 barrels. Not all our wells make 120 barrels or even close to that, but we designed the tank with more than sufficient capacity so that we wouldn't have to take a truck over there all the time to empty that truck -- to empty that tank out.

And we do get some inclement weather out there where we can't get to those locations all the time in a timely fashion, so we've built more than enough capacity in a lot of these tanks so that if we can't get to those locations because of weather, we have a lot of freeboard to work with. And so that reduces our truck traffic on the roads, and it reduces -- we don't want to go out on the roads if it's muddy; it's going to tear up the roads, and there's more road costs involved with that.

So we want to have the ability to keep that well functioning, and this capacity allows us to do that.

But to tear all that out and put a tank inside of a

tank would be a major undertank- -- undertaking. And undertanking as well.

(Laughter)

A. And as well as -- and I think Mr. Olson -- or Commissioner Olson brought up one of the other things that's in the proposed rule, was actually building secondary containment by wrapping a liner around it and somehow banding that. And I think Bill and I have seen enough of these to say that that just may have sounded like a good idea on paper, but when it was put out in the field it really turned out to be a horrible idea, to be honest.

So we looked at some different ways to retrofit this, but we really believe that this is protective of the environment, this design, and I can show you some more pictures here.

That's just the expanded metal there, on top, and the piping going to it.

That square that you see underneath the expanded metal, that is what we call a muffler. These pipes that you see coming in from the right, they're coming from the separator. That separator dumps fluids to this tank under pressure from natural gas, so -- sometimes at pretty good pressure.

So we built this muffler so that we wouldn't get splashed out of the tank and going off and onto the soils.

That muffler actually muffles that pressure, so all the water drains right down into the tank, and we don't get any splash-out from the pressure of the gas emitting there.

And that brings me to another issue, is, we looked at the secondary containment of a double-walled tank, and we looked at it hard and first thought -- we though, well, okay, that might be a good idea here. Actually, we saw from -- our history in the field with double-walled tanks is, they -- actually condensation builds up inside those tanks, because it is free-standing, you have liquid inside, and the ambient temperature outside, you have the potential for condensation to build up between those two walls.

So that actually added to more corrosion. And we saw the double-walled tanks in this type of application were actually worse and less protective of the environment because of the potential for corrosion building up from the condensation.

Plus we had to -- had the expectation of our employees that come out and look at these tanks, they'd have to go and look between those two walls of tanks to see if there was any liquids in there. Gas does accumulate in these tanks, whether it's hydrogen sulfide or natural gas. There is possibilities of explosive environments there, and we don't want our people anywhere close to this tank unless

it's absolutely necessary. So we don't want them really inspecting that closely to the tank to look for that.

We've had some double-walled or double-bottomed tanks out there in the field before, and they turned out to not be what we thought they would be, and that's why we ended up with this design.

And that's just another view right there, just showing this tank, that you can see all the sides. It's fairly easy to inspect this location in the tank.

This is just a camera shot looking down into the tank. You can see that -- and you've probably seen it on some of the other slides. We have copper wire wrapped around. That's to bond all the pieces of this system together, because static electricity is one of our real big risks out there in the field, and it can be an ignition source. So we bond and ground all our equipment. But this shows that you can look down between the tanks and see the sides

And then you can also see, in the very bottom there, we don't put the -- what I call a detection liner. We lay an impermeable liner there and then place the tank on top of it so if there was a leak it would roll out to the side and we'll be able to detect it. It's not a containment where -- not -- the purpose is to detect anything that leaks from the bottom of the tank. And we

don't run it all the way up to the edge, we leave a soil boundary there so if there is rainwater it'll just soak in, but we will be able to still detect any leaks underneath the tank.

Q. And if you are out and you detect there has been a leak from the bottom of the tank, you with this configuration are able with a mirror device to go down and look at the bottom of the tank to ascertain what's going on; is that right?

A. Yes.

Q. Okay.

A. Not easily, but we can look at it.

Q. I mean, there's no way to perform integrity testing on this tank?

A. Well, we looked at, you know, in the process of -- you know, we weren't excited about pulling out a lot of our defined below-grade tanks under the current rule, because they were good tanks, we felt they were doing their purpose.

We looked at a lot of different ways to do integrity testing, and we just didn't find anything that we felt was satisfactory to meet that requirement, whether it was filling it up and watching the level, we had problems with evaporation and temperature fluctuations causing that water level to go up and down. Our engineering staff

wasn't comfortable with that, and we feel this is a more protective design.

Q. And when you're looking for a leak, you're not looking for a huge discharge. It starts with a small leak; isn't that right?

A. Yeah, a lot of times --

Q. And that's why these other things got in the way of being able to ascertain the integrity?

A. Yes. A lot of times your corrosion leaks will almost start as a sweat. It'll just barely sweat out and you won't even hardly see it. And then all of a sudden, whether it's ice forming in the tank or some condition has changed, all of a sudden it'll pop and then you'll get a little bigger leak, and then a -- maybe a -- catastrophically if it's not caught right away.

But they don't start as just immediate failure of the tank. They're very small, usually, my experience has been with them.

Q. With this configuration, do you believe that ConocoPhillips can fully monitor these tanks to assure they're protective of groundwater, human health and the environment?

A. Yes, I do, and --

Q. Was --

A. -- we do.

Q. Was this type of design shared with the task force?

A. Yes, it was.

Q. And what happened?

A. Well, we actually -- we realized there was some confusion on the definition in the current rule on below-grade tanks, so myself and Dr. Neeper, I believe, we came up with a new definition to describe this type of design. And we submitted that and it was drawn as a consensus that this was a definition that we could all live with.

That's different than what came out in the current rule -- or the proposed rule, excuse me.

Q. Mr. Wurtz, how were these tanks actually installed? Did you sample --

A. Oh, yeah --

Q. -- the site before you placed them?

A. As part of pulling out the, as defined in the current rule below-grade tanks, we would pull the tank out -- I'm talking about a tank that's buried and you cannot see the sides. We would remove that tank, and then we'd treat it just as a pit closure. We'd sample three feet below and determine if there is any contamination identified, and then if there was we would remediate it. If there wasn't we'd -- in either case we'd fill out a pit-closure form and submit to the Aztec field office.

Q. So you filed a C-144 --

A. Yes, that's --

Q. -- that would show your sampling results --

A. Yes.

Q. -- on each of these?

Now you stated that ConocoPhillips has done this, 5000 -- at 5000 sites since 2004?

A. And make sure I clarify that. Not all of those were retrofits. As you know, we drill approximately 400 to 300 wells a year, so every new design has this new tank on it as well.

Q. And the $125 million cost is an actual number, not an inflated figure?

A. No, after we -- I heard that in one of the hearings, I got on the phone, as I'm sure all of us are doing -- we're working swing shift on our other jobs -- and called all my production foremen and engineers and said I needed some numbers to see what the real impact of this was and how many we've done.

I was involved with the actual design, and I've seen a number of them installed, but I -- even then I wanted to make sure I had some solid numbers to present.

Q. Mr. Wurtz, if the proposed rule is adopted as proposed, in your opinion will ConocoPhillips have to go and again retrofit each of these tanks?

A. To meet the current definition under the proposed rule, we would have to retrofit these tanks at a substantial cost. And I also ran the numbers on that a little bit, and it would be anywhere from $7000 to $10,000 possibly, to retrofit them.

Q. Is that per site?

A. That's per site. Just the tank itself would be an additional $2000 to build a double-walled tank configuration. And that's an estimate, they haven't built any of those.

Q. And the objective of this would be to provide secondary containment at these sites; is that right?

A. Yes, as required by the proposed rule.

Q. And if I understood your testimony, adding this secondary containment, in fact, would not reduce corrosion leaks?

A. No. From all our engineers -- and we have a staff of corrosion, integrity engineers that -- they're certified corrosion engineers -- they believe this is a better design and more protective of the environment than a double-walled tank.

Q. In your opinion, do these below-grade tanks pose any threat to human health, the environment or groundwater?

A. No.

Q. And what do you recommend to the Commission

concerning the proposed rule on below-grade tanks?

A. I recommend that we go back to the definition that was agreed to at the task force, and -- based on this design, and allow this to be a satisfactory approach to that design of a tank.

Q. Mr. Wurtz, if the proposed rule is adopted, will ConocoPhillips use closed-loop systems?

A. Yes.

Q. And why is that?

A. We'll want to use closed-loop systems -- again, it comes back to hauling our materials to the landfill. If we use the closed-loop systems, as opposed to a dig-and-haul, it's going to be less materials that we have to haul on the road. However, there's tradeoffs in everything. The closed loop is going to be a larger footprint, from speaking to our engineers. We're going to have more equipment on location.

Q. And are there safety concerns?

A. There certainly is safety concerns. We're going to have additional people on location, and from my safety background, anytime -- it's just simple math. The more people you have on location with more iron, you have a more higher probability of injuries and accidents and incidents. We're going to have more truck traffic.

I think one of the questions came up of why we

didn't want to use bigger trucks to limit the amount of trips to the landfill. And from a safety point, a larger truck is harder to maneuver on a small location with a lot of iron on there.

We're also going to have traffic patterns. These trucks are going to have to go around where all my people are walking. We're going to have backhoes moving cuttings from the cyclones to the drying pads, we're going to have more electricity out there with more electric motors and things that we have to operate. More electricity means more hazards.

With the more valves, piping, tanks, there's more spill potential anytime -- it's just -- When I look at things, I minimize the amount of tanks and the piping that I have, and so you're going to have a greater spill potential.

If we do have an upset condition, whether we get a water kick or a well kick, there's going to be valves that have to be turned on and off. And we do a lot of training around spill prevention and countermeasures, but there's still -- it's a greater potential, the more valves that you have.

And then the last one is stormwater. With the drying pad and that much activity, in inclement weather we're going to have the potential for more stormwater

runoff that's used on these locations, whether it's just moving the cuttings to the drying pad or trucks coming in and out of our location, or the amount of people there and the amount of equipment that we have to have staged on location.

Those are just an initial look at them. I haven't done a lot of closed-loop -- those stepout as concerns that we'll have to look at.

And we do a lot of training around safety. ConocoPhillips, our overall, -riding principle is, if it's not safe to do, we won't do it. And we'll take as many measures, and we're willing to do whatever we can to keep our workers safe.

Q. In your opinion, would permitting on-site burial in the San Juan Basin result in a safer situation at the well sites, the wells that are operated by ConocoPhillips?

A. Based on what I've seen from the closed-loop systems and my knowledge of *in situ* burial right now, and the safety records that we have, I believe the current practice of *in situ* burial would be safer.

Q. Mr. Wurtz, were ConocoPhillips Exhibits 1 and 2 prepared by you?

A. Yes.

MR. CARR: May it please the Commission, we would move the admission into evidence of ConocoPhillips Exhibits

1 and 2.

CHAIRMAN FESMIRE: Is there any objection?

MR. BROOKS: No objection, Mr. Chairman.

MR. JANTZ: No objection.

CHAIRMAN FESMIRE: ConocoPhillips Exhibits 1 and 2 will be admitted into the record.

MR. CARR: And keeping in mind that the photographs were only used as demonstrative tools.

And I pass the witness.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: I just hope those were helpful to understand.

CHAIRMAN FESMIRE: Mr. Hiser, do you have any questions of this witness?

MR. HISER: I do not.

CHAIRMAN FESMIRE: It's a little hard for me to keep who's cross-examining...

Ms. Foster?

MS. FOSTER: On behalf of IPANM, yes, I do have a few questions for Mr. Wurtz.

EXAMINATION

BY MS. FOSTER:

Q. Mr. Wurtz, you're familiar with the proposed Rule 17?

A. Yes, I am.

Q. Okay. And could you define for the Commission what you believe to be a sump?

A. A sump is a temporary -- it's a vessel for the temporary storage of, I believe, 500 gallons of fluids, and it's one that you cannot see all the sides of, and it's -- under the current -- the proposed rule, it would have to have secondary containment and it would have to have a visual inspection of it annually.

Q. Okay, and would you support the Division's request for secondary containment and leak detection on a sump?

A. Yes, I would --

Q. Okay. And what about those -- the yellow buckets that you have off the pipes? Wouldn't that also be defined as a sump?

A. Yeah, Ms. Foster, I was -- when I said, Yes, I would, I stopped, but then you started again.

It's hard when you write a regulation to make one size fits all. There are certain things that we had out in the field, that their purpose is to minimize spills from drips and turning off valves and things, and what you're speaking to is designed specifically for that. It sits at the end of a pipe. In case you turn the valve off, there's still dripping through the pipe, and you have a kind of a housekeeping issue. And we put little teeny --

CHAIRMAN FESMIRE: -- boxes --

THE WITNESS: -- drip box- -- yeah, exactly -- out there. And the intent is -- one is to heighten the awareness to our employees to make sure that -- we don't want -- one of our mantras at ConocoPhillips is, Not a drop. So we want them to understand, we don't want any drops on the ground, and we want to use as much technology and engineering as we can to support that.

So sumps, in certain cases we have sumps that are appropriate, and I think the proposed rule is applicable and relevant, but not in all cases.

Q. (By Ms. Foster) So for not all sumps. Would you recommend a differentiation between sumps in terms of the volume that a sump receives to have secondary liner or secondary containment, or how could you differentiate between the types of things out in the oilfield that are considered sumps?

A. You know, I didn't come prepared to speak to that today, but I would say a volume would be one consideration to look at.

MS. FOSTER: Okay, thank you. I have no further questions.

CHAIRMAN FESMIRE: Mr. Jantz, do you have any questions of this witness?

MR. JANTZ: I do, Mr. Chairman.

CHAIRMAN FESMIRE: Would you like to do that now, then?

MR. JANTZ: I would love to do that now.

CHAIRMAN FESMIRE: Okay.

CROSS-EXAMINATION

BY MR. JANTZ:

Q. Good morning, Mr. Wurtz.

A. Good morning.

Q. My name is Eric Jantz, I'm the attorney for the Oil and Gas Accountability Project.

I just have a few questions about the sampling process for the results that you have on -- I think it's Exhibit 2, your spreadsheet.

You said these -- this sampling was conducted after the task force hearing; is that right?

A. I think it was collected right at the very tail end of the task force hearing --

Q. Okay.

A. -- but it was after OCD had completed their sampling, I believe.

Q. Okay. Were the results shared with the task force? I guess not.

A. I don't think they were. I know they were not shared with the task force.

Q. Okay, they were not shared with the task force.

Were you here for Dr. Thomas's testimony?

A. Yes, I was.

Q. Do you recall the discussion that I had with him about split-sampling?

A. Yes.

Q. Were the samples on this sampling protocol split?

A. No, they weren't. And kind of the reason for that is, we have a drilling schedule and we have equipment that comes out and closes these pits, and I probably wouldn't have had -- and that's why I instructed my people to collect the samples almost opportunistically when they close they pit, they -- to collect the sample prior to closure.

I would -- that schedule changes on a 24-hour basis, so if I was to give any other entity an opportunity to do split samples, I'd almost have to have them on a less than 24-hour call. So it wasn't very easy to do. But possible, certainly possible.

Q. And I assume, then, that there wasn't any supervision or that the OCD wasn't invited to this -- to the sampling, to the actual sampling?

A. There was no -- OCD was not invited --

Q. Okay.

A. -- to this. However, I did oversee not all the sampling of the pits, but I did oversee sampling of the

pits.

Q. Okay. When you selected the parameters to test for, you said that was based on experience; is that right?

A. It was based on operator knowledge of what we put into the system, as well as what was identified in the industry sampling program.

Q. Okay, so it wasn't necessarily comprehensive then?

A. No, it was not, and I don't portray it to be.

Q. Okay. And that's, I suppose, why pollutants such as uranium and radium aren't included here?

A. Correct, because they weren't identified in the industry's sampling program --

Q. Okay.

A. -- and there'd be nothing from our operator knowledge to expect that we added anything like that into the system.

Q. Looking at your spreadsheet --

A. Yes.

Q. -- there are a couple instances, row F and row Q, where the level --

A. Column?

Q. Column, I'm sorry --

A. That's all right.

Q. -- yes, column. Column F and column Q, where the

tested level exceeds the soil sampling level for benzene. You didn't find that of concern?

A. No, and those -- because those were the two that I explained that we mixed at a 1-to-1 ratio --

Q. Okay.

A. -- and typically we mix those at a 1-to-3 approximate ratio. So those -- I expected those to be a little higher.

Q. Could you say with some certainty what the concentration might be at a 1-to-3 ratio?

A. I can only use the other pits that I sampled as a comparison --

Q. Uh-huh.

A. -- and I would say that the two that you referred to, column F and Q, would come into alignment with those numbers as well.

Q. And with column Q we have the total BTEXs exceeding the soil screening level, or no? At a very high level, at least, substantially higher than the rest. Is there an explanation for that?

A. Not exact- -- no, there's not an explanation except it was, again, mixed at a 1-to-1 ratio.

Q. Okay. Again, looking at the -- some of the -- I guess column I, K, M, N, O, P, Q and R for gasoline-range hydrocarbons --

A. Uh-huh.

Q. -- were you here when Dr. Thomas testified that those hydrocarbons might be of concern?

A. I believe he spoke to the diesel range.

Q. Right, which he -- which I believe he said weren't of concern.

A. Right.

Q. He'd be more concerned with the gasoline range?

A. Right.

Q. The presence of the gasoline-range hydrocarbons in those pits, is that a concern at all?

A. As I said in my slides, I don't believe they're a concern, because -- my experience with landfarming and remediation in the field, those in that range are very unstable, and they either biodegrade or volatilize very quickly.

Q. Okay. Looking at the arsenic row --

A. Uh-huh.

Q. -- it looks like in a lot of cases the arsenic in the pits exceeds this soil screening level. Well, I shouldn't say in a lot. Actually, none of them do.

A. None of them do.

Q. None of them do.

A. I was going to say, boy, I hope I didn't --

MR. JANTZ: I withdraw --

THE WITNESS: That was my worst fear today.

MR. JANTZ: I withdraw that question, then. That was my fault.

That's all I have. Thank you, Mr. Wurtz.

THE WITNESS: Thank you very much.

CHAIRMAN FESMIRE: Mr. Huffaker, do you have anything of this witness?

EXAMINATION

BY MR. HUFFAKER:

Q. Mr. Wurtz, you're aware that there are closure sampling standards in the draft rule, aren't there?

A. Yes.

Q. Why didn't you prepare yourself for those?

A. Well, actually I did look at those a little bit, the 3013s and the DAFs. And again, the constituents or detected were the volatiles in the metals, and I felt that the volatiles -- my experience from soil remediation would volatilize or degrade, they seem to be very unstable.

And the metals, based on the TCLP analysis that was done on the industry, they did not -- they did not seem to be very soluble or available.

Q. How about your closure standards in section 13.F.(1) of the proposed rule for benzene, total BTEX, TPH and chloride?

A. I didn't look at those in detail.

MR. HUFFAKER: Thank you, that's all I have.

CHAIRMAN FESMIRE: Dr. Neeper?

DR. NEEPER: Yes, I have a few questions.

CROSS-EXAMINATION

BY DR. NEEPER:

Q. Good morning, Mr. Wurtz.

A. Good morning, Mr. Neeper.

Q. It's a pleasure to meet you again after our joint experience on the task force.

I'll just refer back to a previous question regarding gasoline-range organics.

A. Certainly.

Q. You had stated, if I understood you correctly, that those would either biodegrade or volatilize, and therefore were not of concern; is that correct?

A. Yes.

Q. Would that be true if they were buried with a liner, particularly a liner that would -- with a closure for the top?

A. I have no experience. I have to base my experience on that, on landfarming or spill contamination that I've looked at in my experience, and there's never been a liner involved in that.

Q. Let's see if we can derive an answer for that. Would volatilizing material require ventilation from the

atmosphere?

A. Certainly it would --

Q. And --

A. -- my experience would tell me.

Q. And would biodegradation -- biodegradation of these substances not require oxygen?

A. I believe they would.

Q. So if the material were wrapped in a burrito then, would we expect that it would no longer volatilize or biodegrade?

A. I think to a certain extent you're correct.

Q. So it would be there, if not for all time, at least for all time?

A. Yes, and that's probably why I'm not very supportive of the total encapsulation with the liner.

Q. Regarding your sampling, I'm going to explore that a little bit so as to explain it if I can to everyone in the room. You took composite samples. If I understand correctly, that means you took -- was it five separate containers of material from the pit, and mixed them in a bowl or some container?

A. No, how we did it actually is, we went and grabbed at five different points -- four corners and the middle -- and we just grabbed a sample, and we placed that into the sample container. We didn't do any mixing. We

tried to minimize the volatilization of the sample, so all we did is mix it and put it in the container, and at the laboratory, then, they collected a sample.

Q. So the total volume of sampling material, then, was something like a half liter or so?

A. It was probably two liters almost.

Q. Two liters, okay. Right, I think it was a large sample.

Are you aware of the results in the industry committee's sampling of the very large concentration of variations from one location to another in a pit?

A. Yes. And certainly anytime you sample soils you're going to have that problem. I can sample two points right next to each other, and they possibly could come out different.

Q. And so whereas you have some numbers for concentrations in your pit from a single composite sample, that doesn't tell us anything about what the extremes might be in that pit; is that right?

A. No, actually when we went out -- and that was a concern that I had, and when I went out and looked at how they were mixing the pits, they did a very efficient job of mixing those materials prior to closure to make sure that they had weight-bearing capabilities.

So the pit materials, clean soil put on top, they

mixed it into a very homogeneous sample. So when we did collect a sample I felt it was representative, as best as I could do in the field.

Q. All right, you have identified my concern precisely, which is, if you're mixing clean soil with the pit material and thereafter sampling it with something like a liter-sized ultimate sample, you have to feel that that mix was good to the 1-liter characteristic size?

A. Well, typically my experience, then, in any environmental sampling program, you can only do as -- what you're constrained with, without sampling the entire volume of the media that you're looking at. But I felt that was a representative sample from that individual pit, by collecting four -- five spots on it, and collecting it as a composite sample.

And with the mixing that they did -- not so much that we weren't trying to dilute it, we were just trying to get it to a point that we could either -- if we had to, under the pending regulation, to mix it and put it into a truck to meet the paint-filter test, or to actually operationally have it weight-bearing so that we can push the topsoil on top of it. That was the purpose of the mixing.

Q. Okay, I understand the purpose. I'm just getting at the scale of the mixing. Was the tool for the mixing

something like a backhoe bucket?

A. Yes, certainly was.

Q. And characteristic volume of that is perhaps a yard or a fraction of a yard?

A. Yes, it's not --

Q. So it would be something like 1000 liters, is your tool? 1000 liters being a little bigger than a cubic yard?

A. I'm not sure I understand.

Q. We're mixing -- we put clean soil in a pit --

A. Uh-huh.

Q. -- and we mix it with a tool. The characteristic size of the tool is not 100-liter, it's more like 1000-liter?

A. Oh, yes, certainly, yeah.

Q. And so we're trying to get a 1-liter good sample from a 1000-liter mixing tool. You're feeling it's well mixed, and I'm saying you're basing that feeling on mixing with a very large tool and hoping to get a 1-liter uniform -- uniformity on the scale of 1 liter?

A. I'm not sure -- I really was looking at how well were the pit and soil contents mixed together, so it wasn't -- so it was a representative sample. I wasn't so much focused on the tool that I was using to mix but the media that I was sampling, and I collected it from five different

spots to be representative spatially of that material.

Q. Okay, we'll leave that question.

But you did bring up your reason for mixing was to gain mechanical properties that you needed.

A. Yes.

Q. You also mentioned, I believe, that that material was then the material that you would haul if you did dig and haul, even though you don't plan to do so?

A. Yes.

Q. Why would you mix before hauling? Can you not haul wet material?

A. There's a couple reasons for that. One, it's very hard to pick up and actually physically put it in a truck using the mixing tool that you were referring to, the trackhoe or backhoe bucket. It would be hard just physically, operationally, to pick up something that's in a pudding form or even a little bit more solids, so you'd mix it to do that.

The second would be, the trucks that we have available in the northwest part of New Mexico is -- they're either belly-dumps, which that's a truck that opens and closes at the bottom, so those wouldn't be very applicable for anything but a very solid material that would pass a paint-filter test.

And then from an environmental standpoint, I do

not want any trucks going down the road that have any potential for leaking anything on the road, because now I have a cleanup from here to the landfill, and I have exposure to the public.

So I want to make sure that those contents, prior to putting in a truck for public highway use, or any movement all for that matter, is solid enough that they wouldn't drip out of that truck.

Q. But I thought you had maintained that these materials really were not toxic or what we would call hazardous, or that Dr. Thomas had felt that?

A. And certainly that is correct. But anytime you see an oilfield-related vehicle going down the road, whether it's spilling orange juice on the ground, I guarantee you I get a call.

Q. I understand that.

A. So to avoid that potential perception and liability, I want to make sure that we have nothing coming out of our trucks.

Q. The environmental community sometimes feels uneasy with mixing materials before they are characterized or before one issues an opinion as to what should be done with them because they have the old statement, The solution to pollution is dilution.

Is there any reason why my colleagues should not

feel uneasy with establishing the idea that things can be handled in a less conservative fashion because they are diluted? Is dilution the solution we're looking for here in terms of environmental protection?

A. Certainly it's not our intent. As I said, it wasn't to dilute the sample. And actually -- EPA actually has a dilution rule that prohibits you from doing that.

However, EPA also recognizes to physically work with materials that you're remediating or transporting, you need to mix those so that you can practically manage those.

That's what we were trying to do, was to sample the material after we got it to a state that was manageable.

Q. On your chart you show the electrical conductivity in micromhos per centimeter as a characteristic of the material. Could you express that in the usual EC units that have been used in this hearing? If not, I'm happy to propose a hypothetical.

A. I think I'll let you propose, because I don't have my calculator with me to --

Q. All right. The -- as I have understood it, the EC units used in this hearing have been millimhos per centimeter or sometimes decisiemens per meter, both of which have the same number. And I would interpret micromhos per centimeter as being just 1000 times,

millimhos per centimeter --

A. Correct.

Q. -- would that strike you as correct --

A. Yes.

Q. -- as an engineer? Thank you.

Okay, I notice that you measured the conductivities. Was this of a saturated paste, or was this of the inherent material, or was this of an extract?

A. Very observant, Mr. Neeper.

Q. Thank you, sir.

(Laughter)

A. Well, if you look at the data, not everybody would -- that would stand out to them. And it actually stood out to me. I was like, how did we do that?

And I called the laboratory, and what they did is exactly what you said, Mr. Neeper. They did a saturated paste, and from that extract they did the conductivity measurement.

Q. So their conductivities, if we divided by 1000 to get millimhos per centimeter, do not look high. That is, not many numbers come out significantly larger than 1, or greater than 1?

A. Correct.

Q. I'm trying to rectify that or compare that with the chloride measurements. Let's take as an example the

largest chloride measurement which was in your one-to-one mix, column Q. 898 is the number on your chart.

Was that chloride measurement, which is expressed in milligrams per liter, made according to the leach test that has been described in this hearing, which uses a 20-to-1 dilution ratio?

A. No, it was not. It's a total analysis.

Q. So the liter, then, is --

A. Oh, for the chloride -- I'm sorry, I was -- I was thinking ahead what your next question was going to be.

I imagine that was done on the leachate.

Q. So you believe that was a 20-to-1 leachate?

A. Not a 20-to-1 dil- -- they just did a soil paste extract.

Q. Oh, that's for saturated --

A. Yeah, that wasn't the SPLP. Yes.

Q. So that would be closer to a 1-to-1 dilution, then?

A. Depending on the soil.

Q. Yeah.

A. Yeah.

Q. But not a 20-to-1?

A. No.

Q. That leaves me greatly relieved.

A. Okay. I'm sorry.

Q. We found in the OCD sampling, and I believe also in the industry committee sampling sometimes, much higher levels of chlorides than this in pits. Do your wells uniquely have less chloride, or do you use a different drilling fluid combination that would lead to lower chlorides?

A. Well, in the industry sampling their focus was to find out what was in the pits. And we used pits from our deepest wells, so the worst-case scenario.

In this case I did not get -- I just -- whatever came up on the drilling schedule, collect a sample. So these could be from wells that are not as deep, or maybe they had used a different -- basically I think they're just not as deep, so there's not as much potential for chlorides in there.

Q. But this is after a 1-to-1, or maybe up to a 3-to-1 dilution.

A. Uh-huh.

Q. So if we wanted to know what was in the original material we'd have to double it or multiply it by 3 or 4 to see. To compare these measurements with the measurements from unmixed pits, we would have a factor of 2 to 4, we would expect a factor of 2 to 4 difference; would that not be true?

A. Yeah, that's possible.

Q. So the unmixed material, then, would not -- would show potentially a much higher electrical conductivity?

A. Certainly.

Q. Perhaps a conductivity exceeding 4?

A. Yeah, I -- without looking at it and analyzing it I wouldn't want to guess.

Q. The pits that were sampled in the other sampling exercises sometimes showed very high sodium. You may remember, I believe, in my testimony I speculated that that might be due to the addition of other drilling fluids for maintaining pH.

Could you express why perhaps yours don't show sodium in those quantities that other sampling might have showed?

A. Right. Probably the one thing I would think -- without really, you know, looking at each well, these wells may be -- we have a variety of different formations that we drill into. And as you know and the Commission knows, the depositional systems of a lot of those formations we drill through are shallow-sea-derived, so you would expect some sodium chlorides in those.

Some of these with the lower numbers may then -- and it didn't go all the way through some of those more saltier formations.

Q. I'm taking it by inference, then, that you were

not using significant quantities of sodium carbonate or soda ash or sodium hydroxide in your drilling fluids, as perhaps other people might use?

A. Yeah, and I did not look into the actual drill mix or what they used at each location. I just simply focused on the pits that were available and sampled those, so I didn't really go back into the driller's logs and look and see what things may have happened or what they added or didn't add. So I really can't answer that one.

Q. What I'm getting here is your statement that the rule, in effect, is a one-size-fits-all situation, unfortunately; we're stuck with that.

But is it possible that your pits wound up to be considerably cleaner, shall we say, with considerably smaller amounts of contaminants than perhaps some of the pits of other drillers?

A. Yes, I feel that's one of the concerns I have with a prescriptive rule, is, it doesn't take into account the site specifics or the fundamentally different factors of possibly the northwest versus the southeast.

Q. Would you then favor a rule that was more based on you have to sample your pit, and after we see if it's clean enough or dirty enough, then you either have to haul it or not haul it?

A. I'd have to really evaluate that. I didn't come

prepared to answer that question.

Q. Other than that, you have a prescript- -- you're stuck with a prescriptive rule, then?

A. I believe I am.

Q. Regarding your tanks, you showed pictures of what I would call a beautiful tank.

A. Why, thank you --

Q. I have seen --

A. -- I'll pass --

Q. -- others that are --

A. -- that on

Q. -- less beautiful --

A. -- to the engineers.

Q. -- but that's a beautiful tank.

What kind of tanks do the other operators use?

A. Well, and that's a good question, thank you for asking it, Mr. Neeper -- Dr. Neeper, excuse me.

Q. I never use the title.

A. Okay. There is a variety of different tanks out there. I think they all try to meet the same primary objective to be protective of the environment.

If they choose to do exactly what ConocoPhillips did -- I don't know, I've seen a lot of different variations, but the main theme is, you can -- it's inspectable, all sides, and you can detect if there's

leaks.

Q. Is there -- you can detect if there's leaks how? With a big tank like that, if it's leaking in the middle, you wouldn't detect it.

A. No. You mean on the bottom?

Q. On the bottom, yeah.

A. Yeah. And without cleaning it out and visually inspecting it, then the detection liner that we use underneath would -- if there was something there, as you and I wrote that definition -- you would see that daylight on the edge of that liner, that detection liner.

I can't speak for all the other people, I haven't looked at all their operations. I -- We have almost 10,000 wells in the San Juan Basin, so it usually keeps me off the streets at night.

Q. Okay. The detection liner you speak of is something we envisioned, it's not what's currently in place; is that right?

A. Actually, we use that in place.

Q. You use that --

A. That is our --

Q. -- other operators do not necessarily use that --

A. I can't speak for all --

Q. But it's not required at this time?

A. At this time it's not.

Q. Thank you very much.

A. Thank you.

Q. One further question. When you dealt with these recent pits that you sampled, did in any case you happen to sample under the pit liners?

A. No.

Q. Okay. Or have you sampled under any other pit liners of other pits?

A. No, and really -- basically what I sampled is what I said, I didn't look under the liners, although I was fairly impressed how they mixed the materials without compromising the liner.

Q. So the exact bottom may not have been mixed, but the rest has been?

A. I would say they mixed it completely.

Q. Mixed it completely, down to the liner?

A. Down to the liner. From what I observed, I was very impressed.

Q. Pose a question. Would it surprise you if in Texas the operators testified that it was impossible to close a liner without ripping it?

A. I'm very proud of our operators in the northwest.

(Laughter)

DR. NEEPER: Thank you, no further questions.

CHAIRMAN FESMIRE: Why don't we go ahead and take

a 14-minute break, reconvene at 20 till, at which time, Mr. Brooks, I'm assuming you'll begin your cross-examination?

MR. BROOKS: Correct.

(Thereupon, a recess was taken at 10:26 a.m.)

(The following proceedings had at 10:44 a.m.)

CHAIRMAN FESMIRE: Let's go back on the record.

Let the record reflect that this is a continuation of Case Number 14,015, that all three Commissioners are present, and that we -- when we broke earlier, Mr. Brooks, you were about ready to begin your cross-examination of Mr. Wurtz?

MR. BROOKS: Yes, may it please the Commission.

CHAIRMAN FESMIRE: It may, sir.

CROSS-EXAMINATION

BY MR. BROOKS:

Q. Good morning -- Are you doctor or mister?

A. I am a mister.

Q. Okay. Well --

A. People call me a lot of things. We'll stick with mister.

Q. Well, that -- one of our -- one of the hearing examiners over at the Water Quality -- over at the State Engineer's Office said people asked what he ought to call -- what they ought to call him, and he said he was fine with your Honor or Mr. Hearing Examiner or Mr. and his

name, but he could think of some other things people sometimes called him that he didn't approve of, so...

Okay. First of all I'm going to ask you a few questions about your sampling, your Exhibit Number 2.

A. Uh-huh.

Q. I'm a little bit confused about it at this point. The figures on lines 7 through 25 are stated in either micrograms per kilogram or milligrams per kilogram, correct?

A. Correct.

Q. That means -- those are not the result of leachate testing, then; is that correct?

A. Correct.

Q. And are those a result of sampling of the actual waste?

A. They're --

Q. Of the stabilized waste?

A. The stabilized waste. They're a soil sample analysis, and it was run as a total.

Q. So for those would the appropriate -- for those results on lines 6 through 25, would the appropriate multiplier be whatever multiplier you used to stabilize the waste in that particular -- in that particular pit?

A. I'm not sure I unders- -- Could you ask that a different way?

Q. Well, to get to the original concentration in the pit waste, in the raw waste --

A. I know what you're asking now.

Q. -- you would multiply by the stabilization ratio?

A. It wasn't my intent to back those into what the pit contents were. I was trying to characterize what the material as stabilized, the concentrations there, were. So to actually back those in, I'm not sure if that would be appropriate or not.

Q. I'm not sure -- what do you mean by -- Why would it not be appropriate?

A. I'm not saying it wouldn't be appropriate, I'm just saying it's an approximate 3-to-1 ratio --

Q. Yeah.

A. -- or 4-to-1 ratio. I'm not sure exactly what that ratio is.

Q. Now in your direct testimony you said at 1-to-3.

A. I mean 1-to-3, excuse me.

Q. 1-to-3, you mean one part of waste and three parts of clean soil, not vice-versa?

A. Correct.

Q. And of course I can understand -- and you don't know precisely what the -- other than the ones that you did on a 1-to-1 basis for sampling --

A. Correct.

Q. -- purposes, you don't know exactly what the ratio is?

A. I would say at a minimum it's 1-to-3. It could be more.

Q. Could be more than that?

A. And it could be less, I just --

Q. So --

A. Just from my observations, I would say it was probably a 1-to-3 ratio.

Q. In other words --

A. -- one part --

Q. -- we can't take this data and derive what the original concentration in the raw waste was?

A. I think I would use the data that was generated by OCD or industry as a better representation of what's in the pits than try to take this and extrapolate it back.

Q. Thank you, thank you.

Okay. Now the figures that are put in milligrams per liter -- and that's the figures on lines 29 through 48 -- what kind of testing -- You went over this with Dr. Neeper, but I didn't really understand it. How was this -- how did you get to these results?

A. In the laboratory what they'll do is, they'll take an amount of the soil that was submitted to them and then make a soil-paste extract. Basically they add de-

ionized water, and mix that soil and water together until it becomes a type of a paste.

And then they'll filter that through a Whatman filter, a number 2 Whatman filter, and the filtrate that comes from that is the liquid that they tested here.

Q. Now this may sound like a stupid question.

A. No, it's not.

Q. Well, I've been dealing --

CHAIRMAN FESMIRE: You haven't heard it yet.

(Laughter)

Q. (By Mr. Brooks) I've been dealing with -- for the last several months with these engineers, and I don't -- I'm not an engineer, and I don't --

A. That's okay, I'll try to help.

Q. But was this testing done -- Whenever they talk about testing, they give some number or code and, you know, I don't understand what any of these are, but is there some method that -- is there some method or procedure that describes what you do that you can refer to --

A. Yeah, the --

Q. -- to interpret the results?

A. Yes. To answer your question, you're referring to the EPA or state method that was established to --

Q. That's what I'm assuming, yes.

A. And they are -- they used all approved methods,

and I can provide those.

Q. Okay, and you will undertake to provide those to Mr. Hiser so that -- or to Mr. Carr so that he can provide them to us; is that correct?

A. If that is your pleasure, I can do that.

Q. We would appreciate that.

CHAIRMAN FESMIRE: Mr. Wurtz, when can you do that?

MR. BROOKS: Okay, now --

CHAIRMAN FESMIRE: Mr. Wurtz, when can you do that for us?

THE WITNESS: I imagine it's just a matter of giving the laboratory a call, or I can actually look at the raw data, and they may have that method in there. Typically they just say they followed all the US EPA standards, and I review -- I audit the laboratories to make sure they're following all those and meeting all the QC -- I would say hopefully by the end of the day, but that's given the right person picks up the phone at the laboratory, and I can get those to you.

Q. (By Mr. Brooks) Now did you have a sampling program by which you did -- or a sampling plan by which you did this, a written protocol for doing this sampling?

A. Yes. And if I may, can I just go back real quickly? Do you want all the methods for every parameter

analyzed?

MR. PRICE: Yes.

THE WITNESS: Instead of just the --

MR. BROOKS: My client says yes.

THE WITNESS: Okay, that's fine.

Now to answer your questions, we did use a sampling and analysis plan. And basically it was a very simple plan that just described how I wanted the samples collected, where I wanted them collected and how they were to be submitted for analysis. But I did put a plan together and submit it to our staff so that they could follow it out.

Q. (By Mr. Brooks) And could you also furnish that to us?

A. Yes.

Q. Do you have sampling sheets and a chain-of-custody description?

A. I do have the chain-of-custody descriptions. But sampling sheets, what are you referring to there?

Q. This would be part of the laboratory report.

A. Yeah. Do you want the hard data? Is that what you're looking for from the laboratory?

Q. Yes.

A. If it please the Chairman, I can put all this together, but that may take a little bit more than the end

of the day. But I'm fully willing to do that.

Q. (By Mr. Brooks) Can we get it by Monday? Because they're hoping to close this proceeding by Monday.

A. I think I can.

Q. Okay.

A. If all goes well.

CHAIRMAN FESMIRE: Mr. Carr, do you object to that?

MR. CARR: No, I do not.

Q. (By Mr. Brooks) Okay. Now this is not -- this procedure is not the same as the leachate extraction procedure that dilutes the samples 20 to 1, is it? If I understood what you -- I guess I'd better -- I guess I should let you write first.

A. Oh, no, that's all right, I was listening to you at the same time.

No, it did not use the leachate procedure, the SPLP procedure.

Q. Yeah, the leachate procedure has a 20-to-1 dilution, right?

A. Correct.

Q. What is the dilution on this procedure?

A. For which analyte?

Q. We're talking about -- is it different for different ones? We're talking about -- I'm talking about

the ones that --

A. Well, let me run through it, maybe I can --

Q. I'm talking about the ones on lines 29 through 48 that are --

A. Okay, so we're --

Q. -- expressed in --

A. -- back on that.

Q. -- milligrams per liter.

A. And I'd have to look at that procedure. It depends on the soil, that what they have to do is establish a paste, and it's -- and as Mr. Neeper said, it can vary a little bit -- or Dr. Neeper said. But what you're doing is trying to just get it saturated.

Q. Right.

A. So depending on how much it takes to saturate that, there's -- I'd have to look at the --

Q. So sitting here without more information, you can't tell us what the --

A. No, but I can say probably from my experience in the laboratory that it's probably a 1-to-1 ratio.

Q. That would be an approximation?

A. Yes, pretty close one.

Q. Okay. The table reflects that you have some fairly significant numbers in the BTEX and the total hydrocarbons there, as I believe it was Mr. Jantz pointed

out. And I believe your response to that was that you think those were volatilized; is that correct?

A. I would agree that I do expect them to volatilize and biodegrade, but I don't agree that they're very significant.

Q. You didn't give us a standard that we could compare it to on this table?

A. And as I stated, the original copy that I gave you, the SSLs were revision 3 of NMED's.

I subsequently looked at revision 4 of NMED's levels, and they do have levels for the BTEX constituents, and these that I've shown in the pits are considerably lower than that.

Q. Well, there's quite a --

A. I think I've exceeded none for the revision 4.

Q. There's quite a wide variation, is there not? You've got -- in column in Q you've got 1100, in column K you've got 9.5, column L you have 1.2. So variability is very considerable on the BTEX?

A. I think the variability there can be explained by the 1-to-1 ratio in column Q. If you drop that out or -- and column F out as not representative of what's really being left behind in the pits, then I think we're a little -- it tightens up those numbers a little bit, at least for the benzene constituent.

Q. Now your preferred means of closure, as I understand it, is to not have a liner cover over the waste, correct?

A. That's correct.

Q. Will the volatilizing constituents -- if you don't have a liner cover, will the volatilizing constituents rise up through the cover soil?

A. Mr. Thomas would probably be a better person to answer that. But my experience is, those constituents -- if we put the topsoil on them immediately, they would rise up. But they break down pretty quickly, they're not very stable.

Q. And -- but as long as they were rising up from the soils, could they present a hazard to someone on the surface?

A. I'd have to really look at that from the standpoint of what NMED has, levels related to volatilization. I would think at these very -- what I consider to be low levels, that would be almost unmeasurable, if not insignificant.

Q. Okay. Well, I used the word hazard deliberately instead of risk, because I understand that you have to compare to some standard to --

A. Right.

Q. -- according to Dr. Thomas anyway, you have to

compare it to some standard to be able to say anything about risk --

A. I would think --

Q. -- and we don't have a standard here to compare to.

A. Yeah.

Q. Okay. Now, with regard to your results, did you -- Dr. Thomas testified that he reviewed the industry committee's and the OCD's testing results. Did ConocoPhillips furnish their testing results to Dr. Thomas?

A. We did not.

Q. Okay. Now you testified that you have no experience with groundwater impacts from drilling reserve pits?

A. That's correct, from the review of our data in ConocoPhillips.

Q. Did you -- were you present when Mr. Hansen testified -- gave his testimony with regard to migration of pit wastes?

A. Yes, I was.

Q. And do you recall that he testified that even from an unlined pit, assume 50 feet to groundwater, that it -- his modeling showed that it would take 70 years for -- for the chlorides, which is the most mobile contents, to reach groundwater?

A. Right.

Q. And given the length of history of production in the San Juan Basin, would you expect much of it to show up now if it takes 70 years to move that distance?

A. I would not, not now or in 70 years. And I base that comment -- not to disregard what Mr. Hansen had presented, is, I actually have collected some field data of pits that gives me a -- what I feel, a better understanding of what the transport is down and up.

I had Mr. -- Dr. Buchanan collect some data that I would be glad to show today, to qualify that statement.

Q. Thank you. Now I want to ask you a couple of -- a few questions about below-grade tanks. The design that you illustrated or described and showed pictures of to the Commission --

A. Yes.

Q. -- under existing OCD Rule 50 -- you are -- you're familiar with existing OCD Rule 50 --

A. Yes, I am.

Q. -- the current pit rule?

A. Right.

Q. Under existing OCD Rule 50, is that design a below-grade tank?

A. No.

Q. And it's not a pit either, is it?

A. No.

Q. Okay. Now what kind of -- my understanding is, you put these open-top tanks into place in substitution for some other kind of facility that served that purpose prior to the -- their installation?

A. Yes.

Q. And what -- were these pits, or were these below-grade tanks that you --

A. They were below-grade tanks, meaning it was a tank, steel or fiberglass, that was in the ground, below-grade, but you could not see the sides.

Q. So these were below-grade tanks under the Rule 50 definition?

A. Correct.

Q. And were there any instances in which you used them to replace drilling and reserve -- or not drilling pits, no, that's not what their function is. I misspoke. Production pits, were there any instances in which these were installed to replace pre-existing production pits?

A. I'm not sure I understand that question. They're all production pits.

Q. Well, these installations are not pits, right?

A. Right.

Q. They're tanks?

A. Correct.

Q. Oh --

A. And when you say an earthen pit, is that what you're --

Q. Yeah, exactly.

A. Okay. No, I think we had closed all our earthen pits a long time --

Q. -- prior to the adoption --

A. Yeah.

Q. -- of Rule 50?

Do tanks of this type require permitting under Rule 50, of the type that you described today?

A. I don't believe they're described in Rule 50.

Q. Okay, or under any other existing OCD rule?

A. To my knowledge, no. But I look at these rules every day and I'm amazed.

Q. Now Rule 50 did not prohibit the use of below-grade tanks? Does not prohibit the use of below-grade tanks?

A. No, it does not, and -- you're correct. And we looked at that. Certainly as a company we did not want to incur $125 million cost if we could figure out a way to use the existing equipment, because at the time we thought those -- when they were put in, I'm sure they didn't put those in thinking they were not going to be good.

But we looked at it, and the testing integrity

requirements for a below-grade tank, as defined under the current Rule 50, we could not find a procedure that we felt was adequate to test the integrity of that tank.

Q. But there is no -- there is no integrity testing requirement for tanks that are not below-grade tanks under current rules, right?

A. Say that again?

Q. There is no integrity testing requirement for tanks that are not below-grade tanks under the current rule?

A. That are not below-grade --

Q. That are not below-grade tanks.

A. Correct.

Q. Okay. Wouldn't it be more accurate, then, to say that ConocoPhillips spent $125 million to avoid compliance with Rule 50, rather than saying -- and you understand I'm using the term "avoid" as opposed to "evade"; I'm not saying you're doing anything --

(Laughter)

THE WITNESS: Thank you.

Q. (By Mr. Brooks) -- that you spent $125 million to avoid compliance with Rule 50, rather than you spent $150 -- $125 million to comply with Rule 50?

A. No, that's not -- what I would say is that we did what we thought was the most protective design.

Q. Okay. Well, let me ask you a little bit about this design. Now what would occur if you had -- if the tank overflowed?

A. If the tank overfills?

Q. Yes, because it's an open-top tank.

A. Certainly. It -- we have measured in place, we actually have a sonar device that tells us what the liquid level is in that tank. If it gets over a certain point, some of our wells will actually shut itself in.

And then -- but to answer you simple question, if it overfilled it would overtop and go into that second secured area, the shored ring.

Q. Then it would have to be cleaned up because there's no secondary containment, correct?

A. Correct.

Q. And how could you get in there to clean it up?

A. Well, first of all, we take a lot of measures to prevent it from overfilling.

Q. Right.

A. And we do a lot of training around that, and that's one of the things for the remote-sensing that we use in there as well, to shut in the wells. But if we do have an overfilled condition that happens, then we have to pull that tank out and remediate those soils and then reinstall that whole system again. So you can imagine we're not very

keen on doing that. So we're very careful --

Q. And you would have to do that if you had a significant leak too, wouldn't you?

A. Yes.

Q. Because you can't get into that space around the tank?

A. No, you can't get into it. Typically, if you're going to have -- I was speaking a little bit before to that, to the Commission, was, if we have a corrosion leak, it's not usually a catastrophic leak. It's a very small -- almost a sweat, and then it becomes a little drip, and then it becomes larger and larger. So we'll detect that before we have a significant release like that.

But to answer your question directly, if we did have a significant release, we would have to excavate that, just as if we had --

Q. You would have to remove the tank.

Do you know if other operators monitor their tanks in the same manner that you do?

A. I believe they do, but I can't speak for them.

Q. Okay. If -- Now as I understand, the only real checking you have is visual inspection?

A. Yes.

Q. Now if you --

A. I shouldn't -- actually, back up. I think we're

actually starting an integrity program where we may go and actually measure the thickness of all -- of some of those tanks, but I'm not --

Q. Yeah.

A. -- really familiar with that yet.

Q. Now if you -- if you had a lot of moisture so that there was rainwater going into the space around the tank, it would be moist, would it not, at least for a time? You would have moisture --

A. What would be --

Q. -- around the tank, around the base of the tank?

A. Yeah, but -- that's true, if we had a -- in New Mexico we have very localized, high-intensity rainstorms, so we would have moisture there.

However, with an approximate 60-inch evaporation rig, soils dry out pretty quickly.

Q. Yeah, but as long as the soil was moist you wouldn't be able to detect a leak just by --

A. That liner --

Q. -- looking down into it, would you?

A. You would see it on the liner. The liner dries out fairly quickly in our neck of the woods, I should say that, in the northwest. It'll dry out within hours.

Q. Now what you have here is a liner that's just under the tank; is that correct?

A. Yeah, what I call it and Conoco calls it is a detection liner. It just detects if we have a compromise of that tank where we can't see it underneath the tank. It'll detect it. It's not a containment liner where it is not designed to contain any liquids that --

Q. It does not line the space surrounding the tank?

A. No, it only lines the space right under. It's just a flat sheet.

Q. Okay. Now if you had to retrofit as required by the new rule, it's my understanding you said you would have to remove the tank and put in a whole new tank?

A. We may not. If we're -- it depends on how we wanted to retrofit. If we wanted to retrofit and put a whole new tank in and start over, we'd remove that tank obviously.

If we wanted to put a tank within a tank, more than likely we'd remove that whole tank just because that would take a lot of fabrication that we don't typically do out in the field, to place, I guess, another tank inside of the tank that you saw. But --

Q. Well, that was going to be exactly my question. Why couldn't you put a new tank within the existing --

A. Certainly. One, that reduces our volume, and we like to have that extra freeboard for the reasons I stated, that it gives us a little bit more time, and it prevents

spills if we do have bad road conditions. It prevents that overflow condition that you were talking about that I say we've done a lot of things around that to make sure that doesn't happen.

So we want as much volume in that tank as possible.

To put a smaller tank in, obviously it would be smaller. Plus we -- then that tank, every time it rained we would have to remove the fluids from that outer tank because they would collect, and there's corrosion issues related to that.

Our experience in the field with using double-walled or double-bottomed tanks was that corrosion was significant and faster than this design.

Q. Thank you. I just have one question, I believe, about the closed-loop systems.

A. Uh-huh.

Q. You testified that if this rule were enacted in its present form, that you probably would use more closed-loop systems -- ConocoPhillips would probably use more closed-loop systems, correct?

A. That's my understanding of it, but I would probably have to refer to our drilling department.

Q. And you -- Well, I was interested in the statement you made that there would be less material to

haul, because that's what I would have already suspected, but there's been some testimony, some contrary testimony in this hearing.

A. And I'm glad you asked that. Compared to a dig-and-haul scenario where we'd have to mix the materials to make them suitable for hauling, for the reasons I said I didn't want to -- in the trucks, I would mix that volume of material with clean soil, and I'd have a very large -- in the dig-and-haul scenario I'd have a very large volume of material.

Q. You're talking about dig-and-haul scenario with an earthen pit, right?

A. With a regular drilling --

Q. With a conventional --

A. Yeah, with a --

Q. -- reserve pit?

A. -- temporary drill pit.

When you compare that option versus the closed-loop, the closed-loop seems more attractive for we'll have less trucks on the road, and our concern as a company, ConocoPhillips, is our exposure to liabilities. The less trucks we have on the road, the less landowner issues we have, the less livestock we hit, the less people we potentially could injure on the road. These are big trucks, small roads.

So we would consider anything we could to make that volume of truck traffic decrease.

Q. Well, it would also be true that the less trucking you had -- the less material you had to haul, the less money it would cost, correct?

A. And I know this is going to sound funny, but ConocoPhillips -- we're a business and we want to make money, but when it comes to lives and safety that comes second.

Q. In this case, though, the two would, in your opinion, bring to the same result?

A. Again, we focus on the safety.

MR. BROOKS: Okay. I believe that's all my questions.

CHAIRMAN FESMIRE: Commissioner Bailey?

EXAMINATION

BY COMMISSIONER BAILEY:

Q. The wells that are represented on your spreadsheet, were they all TD'd in the same formation, or does this represent different formations in the San Juan Basin?

A. They represent different formations in the San Juan Basin. Unfortunately, I cannot tell you what formations those are today. But if you would like, I could find that out for you.

Q. That's not necessary, I just want to be sure that they're not all from the same target formation.

A. No, and I'm really -- as I set this program up, I didn't want them to pick any -- I just wanted -- as they came up on the drilling list, when you're ready to close them, grab me a sample.

Q. Does ConocoPhillips have centralized evaporation pits for their produced water?

A. No, we do not, Commissioner.

Q. So all of your produced water goes to injection wells now?

A. Yes, ma'am.

Q. Would ConocoPhillips consider having its own centralized landfarm or landfill, rather than having to transport pit materials to a public landfill?

A. Very good question, thank you. And as I stated a little bit before, if ConocoPhillips puts material in the landfill, a county or an OCD-permitted facility, and it comes time to clean that landfill up, we would certainly, from my experience with CERCLA -- you look down that list of the people that contributed to that landfill, and the biggest players or the deepest pockets are usually the first ones you contact.

We would -- as ConocoPhillips, we would be responsible for not only the waste that we put into that

landfill but possibly wastes that other smaller operators that are not available to help in the cleanup costs for that landfill, we'll be assuming their liability as well.

So based on that, would ConocoPhillips consider opening their own landfill for our own wastes? That would certainly minimize our liability exposure, and that's why we feel that managing our wastes in the field, we have better control over that.

So yes, we would consider that.

Q. Do you have a feel how long it would take to get a ConocoPhillips landfarm or landfill permitted?

A. Thank you for the question, Commissioner Bailey. Actually, I have spoken to the waste management people, first to see if they were prepared to take our -- the volume of wastes we have, since we drill 300 or so wells a year. And then secondly, what is the timing to get a permit approved?

Certainly there's caveats of the public interest and concern and how torturous that path may be, but they quoted me a year -- two years to three years.

Q. I guess I was under the impression that when OCD presented the proposed rule and the green items were the ones that showed a consensus and the black items showed that there was no consensus, I was -- had assumed that that was because the people of the task force could not agree

among themselves. But then you mentioned that there was consensus for the definition of below-grade tanks within the task force, and after all those meetings OCD changed and on its own changed the definition of below-grade tank.

A. That's the way I understand it, and actually when that copy came out and someone said, Have you looked at the definition of below-grade tanks?, I was like, No, but I know we agreed to it, I'm not even worried. I was busy on another project.

And they said, That's not it.

And I said, No, no, we had consensus on it.

To be honest with you, as I have been through this whole hearing, I didn't look at it right away, because I said we had consensus on Dr. Neeper and I worked on it. I just thought, well, maybe they interpreted it differently than what it really speaks.

And then when I finally did read it, I realized that it was different, it was not the definition that we had consensus on in the task group. So it was changed.

Q. Are there any other surprises since the task force agreements and what the proposed rule came out?

CHAIRMAN FESMIRE: Do we really want to talk about surprises?

(Laughter)

THE WITNESS: Well --

(Off the record)

CHAIRMAN FESMIRE: I talk about surprises.

THE WITNESS: Yeah. Probably, without -- to honor Chairman Fesmire's surprises, I can say probably the one that was the biggest one for me was the 100-mile stipulation. That was not discussed in the task group, so that was probably the one that jumped out as the highest concern for me.

Most -- I'd say all of our wells in the northwest for ConocoPhillips are within 74 miles of the landfill, the county landfill, so that would have a big impact on our operations, and that was not discussed in the task group. But there's other surprises as well, I believe. I just -- I'm not here to -- I can't speak directly to them, I didn't have a list for you.

COMMISSIONER BAILEY: That's all I have. Thank you.

THE WITNESS: Thank you very much.

CHAIRMAN FESMIRE: Commissioner Olson?

EXAMINATION

BY COMMISSIONER OLSON:

Q. I'll start right there with just a follow-up on what -- Commissioner Bailey was saying something -- I think I've asked this of all the witnesses, and you were on the task force. So -- or you participated in the --

A. I was the peanut gallery for every one of the meetings, but I did not sit at the table.

Q. Okay. But you've been involved in a lot of the discussions that are involved in this rule --

A. Yes.

Q. -- during the task force and afterwards?

A. Yes.

Q. So what is your understanding of the rationale of the 100-mile radius?

A. And you have asked that question of everyone.

I guess I heard Wayne say that it was based a little bit on economics and trucking costs, it was based on -- they wanted to minimize the risk by making it more attractive -- or -- well, not more -- making it more attractive. Forcing you to go to a landfill within a 100-mile radius, because they wanted to minimize the impact spatially of all these individual burial sites. And they wanted to put that liability all in one localized place.

My --

Q. And --

A. I'm sorry.

Q. That's okay.

A. My experience in CERCLA and EPA, I looked at quite a few Superfund sites that were landfills, so I may look at it from a different perspective of, I've been at

the other end of these landfills where they've had to have been cleaned up, and I had to look down the list for ConocoPhillips and go after them under the CERCLA regulations.

Q. Well, I guess, coming along that same line, you know, you were talking about minimizing liability.

A. Uh-huh.

Q. If you operated your own landfill facility versus having -- so you have one landfill facility versus adding 400 landfill facilities a year across the countryside, isn't that a -- doesn't that reduce your liabilities?

A. If we operated just one landfill ourselves. We're not in the landfill business --

Q. Right.

A. -- and don't have any intention of being in that, so that's not our core business. But that is an option that I -- as I've told Commissioner Bailey. We feel that the materials as they're managed today at the individual well locations are protective of the environment and human health, and so we don't feel that that liability would be any better, whether it was at the site or in a large facility, because liabilities of moving it to the landfill is where we see a liability as well.

Q. But then I guess you're landfilling on someone else's property, this is not on ConocoPhillips' property.

So aren't you incurring a liability by creating all these different landfills on other private property?

A. Yeah, federal or private or state.

Q. Right.

A. And that's a very good question. As kind of a reality check, any time I do something I think, If it was my property would I want that out there. And from spill cleanups where I've dug through probably -- and this is -- don't quote me, 15 to 20 drilling pits in my time, very old drilling pits, no liners involved, as well as some of the recent information that I've gathered with Dr. Buchanan, I would say I wouldn't have a problem with that drilling pit being on my ranch.

Q. Well, I guess coming back to the liability issue, doesn't that seem to be a greater liability? You're spreading your liability by landfilling across numerous properties versus one location, so that seems to me to be increasing your liabilities, because now you're responsible to all these different landowners versus --

A. Right.

Q. -- yourself on your -- on property that you own yourself.

A. Managing that --

Q. Right.

A. -- yeah. 10,000 versus 1, basically --

Q. Right.

A. -- is what you're saying.

I think the concentration at each individual location -- and it's a small amount that we do leave behind -- versus a large volume, a large mass in one location, I'd really have to look at that, but I believe what we're doing today, from my experience, probably be less liability than one large facility.

Q. And I guess -- I think we've heard this before, that coming down to the mineral rights taking preference over surface rights, is landfilling on someone else's property necessary for the production of the minerals?

A. With all due respect, Commissioner Olson, I'm not sure I'm prepared to answer that question today.

Q. Okay. Coming down to the sampling that you showed on the table --

A. Uh-huh.

Q. -- the one thing I did note, that you had vastly different SSL levels than those of Dr. Thomas.

A. Yeah, and I tried to explain that up front, that those are revision 3 of the SSLs. And the revision 4 of the SSLs, which are higher, so these are actually more conservative -- Dr. Thomas used the revision 4, the most currently used document of SSLs, and mine are lower. I used revision 3. And I'm sure you're more familiar with

those than I am, but the SSLs, revision 4, are actually a little higher in a lot of cases.

Q. Well, there's also different SSLs, there's --

A. Right.

Q. -- things for residential soil sampling versus something that's done for --

A. -- construction --

Q. -- construction purposes.

A. Right.

Q. And I think I understand -- you said yours were done with -- using residential scenario --

A. Yes.

Q. -- assuming that that may be a future residence. Okay.

A. Yeah, even though most of our facilities are in a rural location, we are seeing that more and more people are in our communities.

Q. Okay. So -- and again on the sampling, you said these were five-point composites. You didn't do any actual individual sampling just to -- for comparison purposes to see what you're getting in different portions of the pit then?

A. No, I did not.

Q. Okay. And you were mentioning that you hadn't found any records of groundwater contamination. I guess

has ConocoPhillips done any -- ever had the opportunity to take groundwater samples around any of the drilling pits, especially those in the shallow groundwater areas?

A. Thank you for asking, Commissioner Olson. And I know you've asked that a couple times of some of the other testimony, and so I started thinking, you know, have we?

Now in the State of Colorado, as part of the requirements up there, we collect a sample prior to drilling and then at a one-, five- and seven-year frequency for the closest well to that drillpad. And I reviewed those and didn't see anything that would be above what I considered the pre-drilling level.

Then I also looked back to see how many spill locations, not related to a drill pit -- a temporary drilling pit, but how many spill locations we had where we had issues with groundwater and we installed groundwater wells.

Unfortunately, I wasn't able to review all those, but I know I have gotten closure, and the first sample that I collect is from the whole 3103 parameter suite. So I was thinking possibly that OCD or ConocoPhillips -- we may have some of that data. I haven't reviewed it, but there may be some data out there, because that -- even though it was for a spill, we are monitoring groundwater and we are monitoring downgradient of the production location where

obviously the drillpad and drilling pit is. So there may be some well -- groundwater well information.

And I do apologize, I did not look at it, it just came to me in one of those wake-up-in-the-middle-of-the-night and go, Aha, maybe we do.

So I can't say I haven't ever installed a groundwater well next to a temporary drilling pit, but we may actually have some that's presumptively ready to look at.

Q. When you were mentioning, I guess, Colorado requires that you sample groundwater quality adjacent to the pit with a monitor well -- I'm not sure I understood --

A. Well, no, and I'm sorry if I didn't make that clear. They know where you're going to put your proposed well, so they ask you to look at the closest well to that location.

Q. So a private well or irrigation --

A. Any -- yeah, any well that's available --

Q. Uh-huh.

A. -- and sample that well, and possibly two wells depending on the case. And then use that as a receptor and sample it before drilling and then one, five and seven years.

Q. But those are some distance from the --

A. And they can be, and I should have clarified

that.

Q. Right.

A. But sometimes they're very close too. And when I say very close it could be, you know, 300 yards.

Q. But then there hasn't been -- but they don't require it right next to the pit like a monitor well?

A. No, it's not for the purpose of monitoring the drilling pad. So again, that would be -- we'd have to look at that data and see if there's any usefulness for it. And it may not even be downgradient, but that's their logic, is to look at something downgradient.

Q. And then you mentioned that you'd had Dr. Buchanan collect some data. What were you referring to?

A. What we did is, we went out -- again, worst-case scenario -- and we looked at a well I think in the 1960s. It was a Dakota well. And we said, Okay --

Well, first -- let me back up -- we went out and tried to find drilling pits that we could sample, the oldest ones we could find on record, the deepest for our worst-case scenario, and -- with a drilling rig. And out of the five locations,we could only find two drilling pits, even with drilling -- punching holes all over the place. But we did find two. So then we picked one, and it was just because it was closest to the road.

And if you'd like, I can pull up just three

slides that will show you what we did find.

Q. Sure.

A. I won't try to take any longer than I have to here.

This was a location in northwest, the Douthit Number 3C -- I'd have to give you the number exactly. But we went out -- we did find it with the drill rig, but Dr. Buchanan is a firm believer in putting his hands right on it. So we went out with the trackhoe.

And if you can visualize the pit as lengthwise, we just cut slices crossway through it, to look at it.

So what you're seeing here in this picture is a cross-section of the pit and a shovel, just a standard shovel as -- for reference.

So the thickness of the pit -- and at first I was like, Boy, that doesn't -- we dug three trenches across this, but at first I was like, Boy, that doesn't look like a lot of material.

But then I started thinking a little bit about it, and at that time they let the materials dry out. That pit could have sat there for a year open and dried out completely. So we may only really see what sacks of bentonite and cement and cuttings were actually added to that. So it may be very representative of a pit if we went out and dug a bunch of them.

But basically what you see is a soil horizon above it, you hit the gray layer there where the shovel is, and then you go below it.

Then what we did is, we took samples at 4-inch increments and collected those for electrical conductivity. We sampled from the surface at 4-inch increments, and then we sampled the drilling pit materials themselves, and then we sampled below at 4-inch increments.

We also sampled to a depth of 13 feet. Now I didn't let Dr. Buchanan go into a pit 13 feet, if you're asking that question. What we did is, we did expand the sampling interval to 1-foot increments, and we laid back one side of this pit, and then we actually used a -- kind of a clever sampling mechanism on the trackhoe bucket to collect a sample at 1-foot intervals.

Q. So you took 4-inch samples -- let me just understand -- 4-inch samples down to the pit, took pit contents, and then one foot after that?

A. No, 4-inch even after it. And I'll show -- I have a graph here that will show us --

Q. Okay.

A. -- the intervals.

But we sampled below the pit contents at 4-inch intervals for I think -- I believe two feet. And then we got to a point that Dr. Buchanan felt we can go to a one-

foot interval.

What you can see is a white -- and that's a calcium carbonate layer which is representative of kind of -- the calcium carbonate precipitates out, and it depends on what level it precipitates out, but it precipitates out because the moisture is gone. So you'll see that level in certain areas -- well, all the areas is what Dr. Buchanan says. And I'm not a soil expert by any means, but I do know the right people to ask.

So what you see here, the red line represents the pit, and the green line represents -- we stepped off a location where there was no disturbance and did a similar pit and did a similar sampling routine. So the green line represents an undisturbed background sample.

So you'll see in the red line, the 4 inches to 8 inches to 12 inches, and then we start getting into the -- what would be, Dr. Buchanan says, where the salts start migrating up from the pit materials.

And then you'll see a spike right where the pit materials are at 20 to 36 or somewhere in there, and then they -- that represents really the drilling materials -- well, I won't get up -- and then it starts going back down.

You'll see the second spike lower down in the red line, and that's the calcium carbonate, and that's where the salts finally rested. They didn't transport any

farther than that.

And then you'll see as we go at depth that red line goes back down to background levels as we started at the top.

The green line background, you can see that it started, a background -- and Chairman Fesmire, again, these samples -- the accuracy of that analysis, you may get a little movement in those numbers, as you were talking to Dr. Buchanan about.

But you'll see that that background level stays pretty constant until it gets close to that carbonate layer, it's a calcium carbonate layer, and then it -- again, that's where the calcium carbonate is held or precipitates out, and it's not soluble anymore, and then it goes more to a background level as well.

So what this is telling me -- and this is what qualifies some of my statements this morning, is, we do see that the salt is migrating up a little bit, but it's washing right back down. We see the salts moving downward, but then they get -- they essentially stop where the moisture stops at the carbonate level, and then they go back to background levels.

Now this was a pit of 1960s, but as you go in depth you're going to have less and less moisture to move anything. So I'm basing some of this information on,

granted, a limited data set, but it helps me understand the process. And from ConocoPhillips' standpoint, it helps us understand our liabilities.

Q. Okay. Would you be able to provide us copies of these?

A. I certainly would.

Q. Okay. And then I think as I understand it -- so based upon this, then, ConocoPhillips is proposing the taco approach, I guess, as we've started to call it now, versus the burrito?

A. Based on this information and the information we've seen in other places, I think in an abundance of caution we feel that a liner is one approach.

This location did not have a liner, so I could almost say in abundance of caution I like the tossed-salad approach, no liner. But I don't have enough data to --

Q. Uh-huh.

A. -- it's just from what I've seen so far.

Q. But I guess, then, based -- I guess on the original task force items, I guess you said half of you would be in agreement with using the burrito approach, then? Or maybe I -- I guess I'm kind of a little confused.

A. Yeah. I would say from our task force, we would agree to a liner but not the top sheet on it. So I guess a taco instead of a burrito or a chimichanga or all the other

things we've heard since then.

Q. Okay, thanks. And I guess did ConocoPhillips also support them, like having a landowner notification provision? We've talked this as, you know, liability issues and things, but would they support the concept of landowner notification on these?

A. Certainly ConocoPhillips supports working with our landowners in every which way we can.

As far as the landowner provisions of getting approval, to my knowledge that would -- I guess I would use the term surprise from Commissioner Bailey. That was not, I don't believe -- and I can't say I remember everything -- I don't believe that was in the original consensus document.

Q. So do I maybe understand that you support landowner notification or landowner approval or --

A. I support landowner notification. The approval part I do not support.

Q. And so what happens when you do workovers on a site? Do you end up using the same pit location or --

A. Commissioner Olson, that's a good question. And I'm not sure I'm the right person to answer that. I have someone here that can --

Q. Okay.

A. -- but I can't answer that for certain.

Q. Okay. And when -- you were mentioning about the closed-loop -- maybe you had a picture, I think, up earlier of --

A. Uh-huh.

Q. -- I think one of your last slides of the --

A. Just my safety concerns.

Q. -- of the -- I think it was your last slide. The one after that, it's --

A. Oh --

Q. -- the pictures.

A. -- yeah.

Q. And what's the approximate size of -- is that all -- is that both the same pad, or is that two different ones?

A. No, that's all the same -- It's two different pads, I shouldn't say that. It's two different pads, and really what I was showing here is, we're very proud of our reclamation efforts.

As you may have gleaned from my résumé and my experience, I worked with Dr. Buchanan and the reclamation industry and the mining industry. We do a lot for seedbed prep, crimping and mulching, and we try to do our very best job in reclamation.

Q. What are the size of those pads?

A. And I would have to -- I'm not sure. I'm going

to say two acres, but we try to get it down to a half an acre.

Q. A half acre that you're actually using --

A. Yeah --

Q. -- for the operation?

A. -- yeah, right.

Q. So it originally starts out as two acres --

A. Yeah.

Q. -- the larger part of that, that's been re-seeded, is two acres --

A. Yeah.

Q. -- roughly? Okay.

A. Yeah. And that seems like a lot, but if you get all the equipment, even under the current operations that we do, at first I had to say -- I was like, Well, that seems like a lot of disturbance. But we pack that location with stuff, as far as iron, trucks, tanks. So we need that to operate safely.

And we're trying with BLM as much as possible to find ways to make it smaller.

Q. And then I guess is another one of your witnesses going to be able to talk about the size of a pit location or a pad location with closed-loop, then?

A. Yes, they are.

Q. Okay. And then just a couple of questions on the

below-grade tanks.

What kind of liner thickness do you use under those? Do you know?

A. I'm not sure if I could pull that right off the top of my head.

Q. Okay. And do you have any -- what do you think about risks of punctures when you're installing that? Do you put something down to cushion it with the I-beams underneath that or --

A. And what we try to do is smooth that soil layer as much as possible so that -- pat it down really well, and then we put that liner down. And believe it or not, with that many I-beams that weight is distributed fairly well. We don't see that it's like crimping or anything like that.

Q. Okay. And you mentioned that you had problems with two-wall tanks in the past, double-walled tanks. What kind of problems did you have?

A. Basically corrosion. Well, two problems, actually. The tanks that we have were either a double-walled completely, around the entire tank, or just the bottom part of it.

And one was -- actually telling whether it was leaking or not by the sight or the observation viewing point, it would build up condensation in there, and you would be like, Well, gosh, we're having a problem, and we'd

-- we'd pull it out and there was no problem, it was just the condensation building up there, the water. So we found a way to try to actually remove that water, but the condensation kept building up.

Then we also -- as a safety point, we didn't want our personnel to be that close to that area where there is gas venting.

The double-bottomed ones specifically, the top wall would sometimes fail, and we didn't catch it, and it was almost a false sense of security. And then the bottom, the outermost wall, would fail. So with the condensation buildup, the potential for corrosion was higher, and that increased our risk for having a leak.

Q. So your corrosion problems you were seeing were on the inner -- those inner surfaces?

A. Yeah, that annulus.

Q. Okay. And I guess you mentioned that you've spent $125 million to develop this other -- these other systems that you've installed now. But that was all done with, I guess, OCD approval at that point?

A. Yeah, and it wasn't just to develop, it was part of retrofitting and pulling those tanks out and putting them back in. It wasn't -- We did spend a lot of time coming up with the right design, but it wasn't that much. $125 million was the whole project to date.

But we did go with the field office of OCD and show them various designs. We had a lot of prototypes before we got to what we feel is this design you saw today, and showed those to them and wanted to get their thoughts. And then we came to Santa Fe and showed them pictures and designs and drawings of them. And they never wrote us an official, We approve of this design, as far as I know. I wasn't part of all those meetings.

Q. Okay. I think that's all I have.

COMMISSIONER BAILEY: I have just one more.

CHAIRMAN FESMIRE: Commissioner Bailey wants to ask another question.

FURTHER EXAMINATION

BY COMMISSIONER BAILEY:

Q. Just one very short one while you have the photographs up.

A. That's quite all right.

Q. These are illustrations of interim reclamation?

A. The one on the bottom right is right after we've seeded, mulched and crimped, and the one on the top left would be probably the very first year or the first couple of months, and I don't know what time of year exactly.

Q. Do you normally provide interim reclamation on other land surfaces, other than just BLM?

A. Yes.

Q. So that is a regular practice --
A. That's our standard practice --
Q. -- to have --
A. -- on every --
Q. -- reclaim back to only to what's necessary for a production or a workover facility?
A. Yes, Commissioner Bailey.
COMMISSIONER BAILEY: Thank you, that's all I have.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Let's talk about the Douthit project. Could you pull that back up?
A. The Douthit? Yes.
Q. Was that pit lined?
A. No, it was not.
Q. And when you went out there to do the work, did you tell the OCD you were going to do it?
A. No, we did not, that --
Q. Was the OCD invited to see the results of the work?
A. No, they were not.
Q. And why is that?
A. And actually, if you'll notice, I was missing Monday of last week. We kind of pulled this off on swing

shift, to be honest with you. We got it all together and did it very quickly because --

Q. So you did it in preparation for this hearing and didn't tell the OCD or anybody else that you were going to do it?

A. It's not so much in preparation for this hearing, just so we had a better understanding of what was out there.

Q. Okay. And is that why Conoco did their own sampling, pit sampling, the results of which are in Exhibit 2?

A. Yes.

Q. Okay. Now Conoco is part of the industry committee, are they not?

A. Yes.

Q. And the industry committee had already done a lot of sampling, hadn't they?

A. Yes.

Q. And I know this sampling is expensive because OCD had already -- also done a lot of this sampling, hadn't --

A. -- yes.

Q. -- they?

A. Yes.

Q. And did you tell anybody in the OCD that you were going to do this sampling?

A. No, we did not.

Q. Did you invite any inspectors from the OCD out there?

A. No, we did not.

Q. But it had been very important, when the committee established their -- the task force established their sampling procedure, that other witnesses be there, that samples be split and that the results be shared, right?

A. Yes.

Q. But ConocoPhillips didn't do that when they did their analysis?

A. We did not. And as I said before, in the first -- on the Exhibit 2, because it was in the drilling schedule, it would have been very hard -- not impossible, you're correct -- to let OCD know exactly when we were going to go out there and at what time of day --

Q. And so you chose not to let OCD know exactly when you were going to go out there, and you also chose not to let OCD know that you were going to go out there and that you were going to take these samples and that you were going to use this data?

A. Yes, that's true, I think I -- Yes, I'll just say. I think I had a conversation with Brandon, we tried to work something out, but his schedule is as busy as mine,

so I'm going to answer, We did not.

Q. Okay. You were present at all of the task force meetings?

A. I believe I was.

Q. Were you present the day that the OCD volunteered to go out and bear the cost of providing -- of developing samples?

A. Yes, I was.

Q. And why did they do that?

A. My understanding is, they wanted to gather some information.

Q. Who's "they"?

A. OCD, excuse me. OCD wanted to gather information to answer the question.

Q. Why would they need that information if the industry committee had already gone out there and developed that information?

A. I don't believe they were aware of our information at that time.

Q. Okay. So did the people in the task force notify them that they had that information?

A. My recollection is, no, we did not at that time.

Q. And in fact, didn't the people on the -- didn't the industry representatives on the task force affirmatively state that they did not have that

information?

A. That I don't remember.

Q. Okay. Is ConocoPhillips hauling to landfarms now, or landfills now?

A. No, we're not.

Q. Have they hauled to landfills in the northwest in the past?

A. No, we have not.

Q. Now you said that ConcocoPhillips is a large company and they wanted to minimize the long-term liability.

A. Yes, sir.

Q. I think it's pretty easy to imagine why, but could you tell me, at least from the corporate standpoint, why they would want to do that?

A. Well, certainly anytime you're a large corporation, you're an easy target, whether it's -- you put the name on the side of your vehicle and people crash into your vehicle, all the way up to, in this instance, a landfill where someone's looking for a potentially responsible party to help in the cleanup of it. They'll look at the deepest pocket to go for. In practical means, they know that they may have the money to do that.

So ConocoPhillips is very cognizant of that exposure and liability. Because we are such a large

corporation, we are targeted quite a lot. So we try to minimize that, and that is communicated down to each employee.

Now for a better explanation of that, I'd have to have somebody from corporate that could answer it more fully, but that's my understanding.

Q. You answered the question.

Now talking about the pit design, I think Commissioner Olson covered this a little bit, but not all operators have gone to the extent that you all have to address that problem; is that correct?

A. From the limited knowledge that -- I mean, I haven't looked at everyone. So there's a lot of different designs out there. I know some use a wood box instead of the metal ring, the culvert ring that we use. Some use a metal box. Some just lay the sides back of the soil. We felt there was a little maintenance in that, so we didn't want to do that. But I think everybody's intent was to make the sides visible and -- so that you could see all the sides.

I can't speak for the -- what I call the detection liner, if everybody's doing that. I know I've seen some where they put it on gravel, and that gravel is just to prevent a connection between the soil for corrosion and probably to keep water, any standing water that would

accumulate maybe in a clay soil --

Q. The same function your I-beams serve?

A. Yes.

MR. HISER: Mr. Chairman, I just -- I hate to do this. Just to clarify. You asked about a pit, and I think he --

CHAIRMAN FESMIRE: Oh, I'm sorry, I meant below-grade tank. I'm sorry.

THE WITNESS: I understood.

CHAIRMAN FESMIRE: We were talking the same thing.

MR. HISER: I just wanted to make sure that the record is clear on that as well.

Q. (By Chairman Fesmire) So what -- I mean, just conceptually, what changes should we make to the proposed rule to facilitate the kind of facility that you all have installed?

A. I guess I would go back to really the definition that Dr. Neeper and I worked on, that was consensus of the task group, and that, I think, clarified what a below-grade tank was and what this -- what I call an open-top, free-standing tank was, and how they were applicable in this rule, the proposed rule.

I guess that would be my first start, Commissioner -- Chairman Fesmire, excuse me.

Q. Now you mentioned that to go in under the current proposal it would cost you about $7000 to $9000 per site. What are you going to have to do with that?

A. Well, those are rough estimates. I did call our tank manufacturer and ask him, Okay, if I have to do this, you know, how much is it going to cost me for a double-walled tank? Not my first, second or third choice, but what's the incremental increase for just constructing a new tank? And that would be $2000 more than we're paying right now.

We'd probably -- We'd look at a lot of different options, so I just kind of used some estimates from my engineering and corrosion staff that helped us develop these specifications, and they were saying, Well, we could put a tank inside a tank, we may look at that, but we don't like that because of the corrosion and the maintenance issues, and we have to tear all that out. That's probably a day or so of actually pull the tank out and then take it into town, have a shop cut that expanded metal off, put a new tank in. And again, we're not excited about that idea.

And then we'd have to fabricate a top back on, because BLM requires any open-top tanks to be screened. And then we'd have to figure out how to make that work. But it would easily probably be in that range, because we'd have to remove it, fabricate, put it back in, and it's a

day to set that and a day to pull it out, usually, and it's about $2000 each day.

Q. Now the results that you have in Exhibit 2 --

A. 2?

Q. Yes. -- you didn't send those to Dr. Thomas, you testified, if I -- if my notes are --

A. That is correct.

Q. Why didn't you do that?

A. To be honest -- and I have been through this whole hearing, is --

(Laughter)

A. -- because I'm using that word, and Bill is going to throw something at me in a minute. But we've gone through a lot of change at Burlington, the ConocoPhillips acquisition, and I really just prepared it quickly. I would have liked to have given you a better sheet of data than what I gave you. I'm working as hard as I can to keep things afloat, so I didn't have the time --

Q. I know that feeling, Mr. Wurtz.

(Laughter)

A. Yeah, I'm sure you feel that pain, from seeing all the things that you do.

So I didn't have the time to really present it to Dr. Thomas, to be honest with you. If you saw, I ran over here when I saw him. That's the first time I had met him,

and I went through it real quick with him and said, What do you think?

So the quick answer is, the timing.

Q. How do your results -- and I'm saying this mostly out of ignorance. How do the results that you have -- I realize, given that they have been diluted -- and before I ask the question, I guess I probably ought to ask another question.

It seems to me that what you've done is compiled an analysis of what you think the probable contents of that buried pit would be, as opposed to the contents of the pit when it was sampled by the other organizations, right?

A. And that's correct.

Q. Okay. And how does this differ from the other two sets of results that we've talked about today?

A. It differs from the very beginning. The focus of the other two sets, OCD was really trying to answer the public concern, what's in the pits? and what -- what is in the pits? And so did the industry. They looked at worst-case scenario situations.

I was looking more of a focus -- Well, let me back up.

OCD did a judgmental sampling. They looked at the worse places they could find and grabbed a sample where there was staining, visible evidence of petroleum

hydrocarbons of some sort. So that was what their judgmental sample system -- or a program set up.

The industry looked at a much more comprehensive and bullet- -- what I would call bulletproof sampling, and they randomly set up a grid and looked at those pits to try to get a little bit more of a thorough analysis of it. But again, their intent was to answer, What's in the pits?

My sampling, albeit simple and straightforward, was to answer the question, What does this stuff look like when we're done mixing it, right before we put the topsoil and overburden on it and we leave it away? What is our -- what does the -- what does it look like?

Q. Now under the current Rule 36, several of these pits -- in fact, most of these pits, could probably be landfarmed, couldn't they?

A. I believe they could. I didn't look at that data, to be honest with you.

Q. But there are a couple due to the chlorides that couldn't be, right?

A. Uh-huh.

Q. The contents as you --

A. Right, yeah, the 250 level for chlorides may be triggered.

Q. Now were you speaking as an environmental professional or for the company when you started talking

about -- and this is a paraphrase -- the benefits of the dispersion of waste in many small pits, as opposed to the concentration? Is that you or is that your opinion, or was that the company's position?

A. I guess that's a combin- -- it -- I'm going to answer this kind of -- it was a combination of both. I felt -- if we have more control on how we manage our wastes and we leave them out there in the field, it's a risk-benefit decision, and I see one of the big risks is hauling.

I feel the risk of leaving it in place -- no one that I can see, from the data that I've generated and that I've viewed, will be substantially hurt or harmed, or the environment will be harmed, by the materials that we leave in a pit that's mixed and covered up.

I cannot say that same thing if we haul it to a landfill, based on the road and the exposure to accidents, that someone may be hurt or harmed in that process.

So I just looked at it in very simple terms, both as an engineer or as an environmental scientist, and from the company's standpoint, that it's a risk to leave it there, it's a risk to take it to the landfill. We feel that what we're doing currently is protective of human health and the environment. And what little sampling I did helped me understand that.

But we do understand, when that truck leaves our location we have very little control of what happens between there to the landfill and then how it's handled at the landfill. And that's exposure and risk that we see is greater than the -- what we're doing today.

I hope that helps understand that.

Q. Well, if that was your objective in presenting Exhibit 2, how come you used the soil screening levels -- or the residential soil screening levels, and not the closure standards that are proposed under the rule, for the comparison column?

A. The industry sampling -- and this is one where I should have probably spoken to Dr. Thomas, is -- the industry sampling, they used the SSLs as their comparison, and I wanted to be consistent with that.

I'm not saying that that wouldn't be a good idea, to look at some of the other data that I've become much more familiar with in the last two months, to compare to. That may be a very good suggestion.

Q. I think this is going to be the last question. I'm kind of going back to the first subject. When the OCD proposed to do their sampling, to spend what amounted to $30,000, how come nobody said, Hey, we have that data?

A. I think OCD -- Well, being from a scientist, I'll answer this as a scientist. The more data you can have,

the better decisions you can make.

I think -- I'd like to believe that we did our sampling, industry did their sampling, in a very scientific manner and followed all the protocols, because we knew it was going to be questioned. But I felt there was a lot of validity in OCD collecting their samples by their people, and that they knew from their lab how they collected it so that they could say, We know this data is correct, as best to our abilities.

So as a scientist, more data is better. We had our data, industry. OCD had their data. I'm definitely sympathetic on the cost, I appreciate that. And I went home last night and looked at my -- the stuff was collected after that. But yes, we didn't -- at that time, and I don't think we were prepared, it wasn't in a format that we were prepared to share it, and then OCD stated they were going to collect the data.

Q. Okay. And I realize you didn't answer this question in this manner --

A. Oh, sorry --

Q. -- but if it was represented to you that the OCD was affirmatively told that that data didn't exist, that would have added a problem to the credibility of this data, wouldn't it?

A. I'm not sure --

Q. To the credibility of the industry data that was gathered.

A. I'm still not sure I understand.

CHAIRMAN FESMIRE: Mr. Carr, I think I'm going to ask for comments --

COMMISSIONER OLSON: Could I maybe ask just one more question?

CHAIRMAN FESMIRE: Oh, sure.

COMMISSIONER OLSON: Not on that line, but just some stuff I'd asked earlier.

FURTHER EXAMINATION

BY COMMISSIONER OLSON:

Q. So I guess maybe just more in general, is ConocoPhillips in agreement with the recommendations, though, that came out of -- the overall recommendations that came out of the original industry task force meetings that you participated in?

A. I'd have to look into it in detail, because I wasn't a task member, so I -- but I did review quite a bit of it. I did have to step away from the project.

Probably the only thing would be on the top layer of the liner, it was something that -- I think there was a lot of things that were -- and I think that the nice lady from the Cattleman's Association said it best, is, there was a lot of give and take and negotiation to come to a

final consensus on a lot of things, assuming that everything was as we saw it that day, and things that changed, so -- A lot of things changed on that consensus document.

So I think, to answer your question directly, is, Conoco was probably satisfied with most of the things that were consensus, but I'd have to look at all of them again.

COMMISSIONER OLSON: Okay.

CHAIRMAN FESMIRE: Mr. Carr, with your permission we'll postpone any redirect you might have until after lunch.

MR. CARR: Mr. Chairman, I do not have redirect.

CHAIRMAN FESMIRE: Okay. Well then I'll ask at this time, are there any other questions of this witness?

MR. BROOKS: I have a couple, Mr. Chairman.

CHAIRMAN FESMIRE: Okay, why don't we wait -- On the subject of the people that came after you, right?

MR. BROOKS: Yes.

CHAIRMAN FESMIRE: Okay.

MR. BROOKS: Yes.

CHAIRMAN FESMIRE: Why don't we go ahead and ask, is there anyone who would like to make a public comment on the record at this time?

Okay, Mr. McWhorter, Mr. Bidegain.

Mr. McWhorter, why don't you come forward.

DR. NEEPER: Mr. Chairman --

CHAIRMAN FESMIRE: Yes, sir.

DR. NEEPER: -- point of order.

CHAIRMAN FESMIRE: Pardon?

DR. NEEPER: Point of order.

CHAIRMAN FESMIRE: Yes, sir.

DR. NEEPER: Regarding this witness, I understand you said there would be redirect.

CHAIRMAN FESMIRE: There will be --

DR. NEEPER: We have some significant questions. A very crucial problem we have is that two weeks ago I agreed to spend this afternoon, starting at two o'clock, with a terminally ill patient. Is it possible I could get my questions in, or that my questions could be deferred until tomorrow morning?

CHAIRMAN FESMIRE: Are you going to --

THE WITNESS: I will be here.

CHAIRMAN FESMIRE: Mr. McWhorter, why don't we go ahead and go through that, go through his questioning? Then we'll take your comments, Mr. Bidegain's comments, then we'll break for lunch.

MR. McWHORTER: Okay.

CHAIRMAN FESMIRE: Dr. Neeper, they are limited to the subjects that were raised --

DR. NEEPER: To the subjects --

CHAIRMAN FESMIRE: -- after your questioning?

DR. NEEPER: -- that came up during the questioning.

CHAIRMAN FESMIRE: Okay.

FURTHER EXAMINATION

BY DR. NEEPER:

Q. I was surprised with the graph that you showed, this looking very much like data. Was this intended to be submitted as an exhibit at some point?

A. Well, again, this was done after all the exhibits were provided for this hearing.

Q. So this was done after I submitted my own exhibits; is that correct?

A. To be honest, I don't remember. I was -- if your question is, was there any intent to compare them to your data, I didn't even -- that wasn't even a consideration. I just wanted to look at this, and there were some problems in getting in the field and getting equipment, so the timing was postponed a little bit.

So honestly -- there I go again. Sorry, Bill.

Q. I can make it simple for you. When was the trench dug?

A. A good question. Last Monday. Not this Monday, but the Monday before.

Q. Thank you. That means this investigation was

done after all exhibits had been submitted --

A. Yes.

Q. -- and exhibits had been, so far as I know, mostly shared among all --

A. Yes, sir.

Q. -- participants?

Is there, then, a reason why you did not offer this in some way in direct testimony, rather than waiting for it to come out during questioning?

A. Say that question again, please?

Q. Is there a reason why you did not advise the Commission of the existence of these data during direct testimony, and instead you waited for it to come out under questioning?

A. I'll have to refer a little to my legal counsel on the protocols there, so...

CHAIRMAN FESMIRE: If it's not a proper question, your counsel can object. Otherwise, I'm going to have to --

THE WITNESS: Oh, okay.

CHAIRMAN FESMIRE: -- direct you to answer the question.

THE WITNESS: No, there was -- it was just -- we collected it and gathered it as quick as we could to look and just -- as I have better understanding -- we had had

intents of doing it a long time before that, but timings and field work, it just didn't work.

Q. (By Dr. Neeper) In your measurements, did you measure the moisture content of the soils or the hydraulic potential or any other hydraulic parameters?

A. We did measure the moisture potential. I wasn't able to get that data together quickly enough, and I'm not sure -- It as done by Dr. Buchanan, and I'm not sure if he has that data yet.

Q. You measured the electrical conductivity. Was that from a saturated paste?

A. Yes.

Q. Did you make any measurement of the chloride content, which might be a cause of that --

A. No, we did not.

Q. Okay. You're aware that in your graph the electrical conductivity exceeds a threshold at least for damage to some plants that's often seen around a value of 4, at a depth of about 16 inches; is that right?

A. I'd have to look at the data again, but --

Q. You can put your slide on the screen, if you wish.

A. You can tell I haven't had a chance to look at this data very much, because we just literally put it together. But at 16 inches, yeah, it looks like we're

about 4, 5 almost.

Q. All right. Now your picture of the site showed that the site was vegetated mostly with sagebrush; is that correct?

A. I think there was grasses, sagebrush, and again -- I'm sorry, let me expand that for everyone. It looks like there's some four-wing saltbrush, there's sagebrush, there's shadscale, there's indian rice grass. And I'm not an expert by any means, I'm trying to learn from Mr. Buchanan. But from that I can see there is grasses, shrubs and woody plants.

Q. All right. So you don't know, then, yourself whether this -- the vegetation on the site was relying on salt-tolerant vegetation only?

A. No, I can't answer that because I'm not a vegetation expert.

I can tell you that of the five sites we tried to find we could only find two, because there was no -- at least from my vantage point and our operations people, we couldn't tell where they were. But all vegetation looked the same --

Q. Your other --

A. -- there was no impact.

Q. Your other slides showed pads in the piñon-juniper region; is that not correct?

A. I'm sorry, what?

Q. Other pictures you had up here showed --

A. Oh, yes --

Q. -- showed your sites --

A. -- yes.

Q. -- in piñon-juniper.

Would the situation be different if this pit were in piñon-juniper? Would that forest have regrown with this EC value at the depths you found it?

A. I'm not a soil expert, I can't answer that question. I can say that the cattlemen like the carrying capacity that we increase with our vegetation.

Q. I understand that.

Given the bottom of the plume, if you will, of the EC --

A. Uh-huh.

Q. -- gradient that you found here, can you speculate or guess -- that's at about 100 inches -- can you guess or make any comment on why in some of the drilling that I showed through an existing pit with a liner we found chloride down to 30 feet?

A. I cannot.

Q. So this is not a general condition that would apply anywhere?

A. In the northwest -- and again, it's limited, but

I think this may be -- represent quite a few of our locations.

Q. Chairman Fesmire asked you a question about hauling to -- these wastes to landfarms --

A. Landfills.

Q. No, landfarms --

A. Oh, okay.

Q. -- he used the term "landfarm". Is it reasonable for one to think that some of the wastes are being diluted to meet landfarm standards?

A. Yes.

Q. And would you be able to supply that task force definition of the below-grade tank that you referred to?

A. I cannot. I can reproduce it, but I cannot find the original document that I sent to you, and I wish I could.

Q. You and I are in the same position.

A. Okay.

(Laughter)

A. That would make my life a lot easier.

DR. NEEPER: Thank you, Mr. Chairman.

CHAIRMAN FESMIRE: Mr. McWhorter, would you like to give it a try now?

MR. McWHORTER: Okay, sir.

CHAIRMAN FESMIRE: Mr. Wurtz, we'll probably have

a little bit of redirect after lunch.

THE WITNESS: Okay.

CHAIRMAN FESMIRE: I mean recross after that.

THE WITNESS: Thank you.

CHAIRMAN FESMIRE: Mr. McWhorter, we've got an option here. You can either make a statement of policy -- statement of position, or you can be sworn and testify as a witness. Do you have a preference?

MR. McWHORTER: I prefer to be sworn in.

CHAIRMAN FESMIRE: Okay, would you raise your right hand, please?

(Thereupon, the witness was sworn.)

PINSON McWHORTER,

the witness herein, after having been first duly sworn upon his oath, testified as follows:

DIRECT TESTIMONY

BY MR. McWHORTER:

MR. McWHORTER: My name is Pinson McWhorter, and I work for Yates Petroleum Corporation in Artesia, New Mexico. I've worked for Yates since 1989, so it's roughly 18 years. I've worked in capacity as reservoir engineer, reservoir engineering supervisor, operations manager for seven years, and recently I took a new position, a new group we formed, as the manager of the engineering advisory group.

I've been off and on in these proceedings, hearing what's going on, and I just have a few comments to make about the -- what I euphemistically refer to as the no-pit rule.

As I see in my experience as an operations manager and a reservoir engineer, that if these new proposed rules are implemented as they are proposed, we've seen quite a bit of testimony, heard quite a bit of testimony on the increased cost that will be incurred by operators because of this.

I know that we have heard Mr. Byrom testify that -- and also Mr. Roe the other day, that certain marginal wells would not get drilled because of the increased cost. And I would affirm that that is true, that these increased drilling and completion costs will cause certain wells on all lands, state, federal or fee, not to be drilled because of the increase.

The economics of these wells are very sensitive to capital expenditures, capex costs. No doubt there will be some of these wells -- marginal wells, as we term them -- that will be in competitive drainage situations, and those wells will not be drilled because of the increased capex due to the proposed new rule. Therefore, a quantity of reserves under that lease will be drained by the offending well.

Under that scenario, I have a hard time seeing that we really have the interest of correlative rights being protected.

And I kind of thought, but maybe I'm wrong, that it was almost an *a priori* charge to the OCD to protect correlative rights. It's almost primal charge, it's almost a fundamental charge, even prior to any charges about protection of the environment.

I've seen two or three rationale given in the paper -- in the newspapers, about why this rule, new proposed rule, would be implemented. One is protection of groundwater, public health and environment. And I see that it really kind of causes the opposite effect, the proposed new rule.

Public health, I maintain, will not really be protected because there will be adverse consequences for the people of New Mexico. Increased heavy truck traffic, increased traffic accident fatalities. Whether we dicker over what that number might be, round it off to a certain decimal point, that doesn't really matter. What really matters are, those are real people. It's not just a statistic that will increase, it will increase fatalities for real people.

Now I realize that if you live in Los Alamos, Santa Fe or Durango, that you're probably not going to be

affected by the increased truck traffic, the increased fatalities, the increased accidents, injuries, the costs of all that.

But we who live in southeastern New Mexico and northwestern New Mexico, we will be directly impacted, our families might be part of those people who are injured or a fatality. So this has real consequences to us, beyond just the economics, beyond just arguing over the correct calculation statistics.

We also see that there will be, despite our arguing over what the levels are, increased airborne emissions, pollutants, that we will be subject to. I realize that in other areas of the state you're not going to be subject to that. You can promulgate these rules and you don't have to suffer the consequences, the adverse consequences of it.

We will experience increased dust emissions. There are not many lease roads that are blacktop. And there will be increased dust emission because of the increased traffic. Whether you haul less because of the closed-loop system, you still have increased traffic. Whether you a little more because of the dig-and-haul, you still have increased traffic, and the increased probability, expected value, that you will have these fatalities. It's real people that live in these areas that

are going to be affected by this.

So I see that that's really not a positive impact for public health, that's more like a negative impact for public health, for the people of northwestern New Mexico and the people of southeastern New Mexico. You know, it's the air that *we* breathe that we're talking about.

Supposedly, the environment will be better protected. But I see that the environment will have adverse consequences. We've talked about them. Increased dust emissions, increased airborne pollutants, whether we argue over the amounts or not, increased CO_2 emissions, carbon.

I thought I recollected that the Governor had issued an executive order that we're supposed to reduce these carbon emissions. So I don't know what your concept of an order is, but having been in the military before, when an order is given you comply with it and you don't promulgate policies that will countermand that order.

And so it looks like to me that this increased CO_2 emissions, dust, pollution, emissions, would be something that would have a countereffect on that executive order, not only the health of the people, but just the pollution of the environment.

As operations manager for seven years I can tell you that I've had numerous occasions to be involved with

landowners, surface owners, grazing lessees, and their concerns over various issues about the presence of oilfield on their lands, damage to fences, damage to roads, damage to cattleguards, damage to pastures, not staying on the roads, speeding, dust, increased truck traffic. All of these will increase in likelihood, not decrease.

So therefore, the surface owners, the land owners, the grazing lessees, they're going to see more of these problems, in likelihood. It's just -- it's just common sense, it's not a matter of calculating these things. And I don't have any calculations done and I didn't bring my calculator, so I don't think I can answer any questions on any specifics, but it's just common sense, this is what's going to happen. And these are real impacts that we see.

I told you that I just recently took a position in a whole new group called the engineering advisory group, as the manager of that group. In fact, one of my staff testified here last week.

Part of our new task for Yates Petroleum is to evaluate business strategies. And I can tell you, I can guarantee you, that we are looking at the business strategy of continuing to drill in New Mexico. We drill over 300 wells a year. Over 100 of them are in the Permian Basin of New Mexico.

We operate close to 3000 wells in the Permian Basin of New Mexico. We operate close to 2000 wells in the Powder River Basin of Wyoming, coalbed wells, and close to 200 wells in the Green River Basin of southwestern Wyoming. So we have significant operations. And we have operations in Texas, we've operated in Louisiana.

And I can tell you that these other regulatory environments are much friendlier than what we have seen develop in New Mexico over the past couple of years, past few years. And this business strategy of continuing -- not continuing to operate production wells, but continuing to drill, will be evaluated. It'll be looked at hard as to where we might spend our resources, not only peoplewise but drilling dollarwise, that we might look at spending it in Wyoming or west Texas, Utah, Nevada, Mississippi, Arkansas, Louisiana.

I'm not saying that we're not going to drill in New Mexico, please don't mis-hear me. But we are looking at that strategy of continuing to do that.

We, Yates Petroleum, we are citizens of New Mexico. The people who work for Yates Petroleum, for the most part, are citizens of New Mexico. Yates -- Yates was responsible with other partners for drilling the very first commercial oil well on state lands in New Mexico. It's pictured right back there, the Illinois Number 3.

We have been in the business of drilling and producing oil and gas since the 1920s. We have been business partners with the State of New Mexico since those days. We would like to continue those good relationships.

But we do have to -- we d have to be cognizant of the economics and the risk, not only the economic risk, not only the geological risk, but the regulatory risk of any given environment.

We live here. Our headquarters are in Artesia, New Mexico. Our families live here. And we work here also. Our families work here for the most part. We recreate, we play here, we're sportsmen here. We enjoy the State of New Mexico and the beauties of the grasslands in the Caprock area in Lea County, the beauty of northern New Mexico and the mountains.

We don't have any desire to pollute. Why would we want to pollute our area that we live in, and our families live in, and we like to play in? There's no intention. We're concerned about the environment also, and we're concerned about public health also, and we're concerned about groundwater. And we don't intend or desire to promulgate business policies that would in effect be harmful to the citizens of the State of New Mexico, of which we are part of that. I mean, that's us too, and that's our families.

So in conclusion -- and on Sunday mornings this is when everybody wakes up, when the preacher says, In conclusion -- if the no new pit rule, which I call it, is implemented, I see no real gains. But I see real economic costs, and I see real negative impacts on public health and the environment. So why do we need a new rule? We have a pit rule, Rule 50, which is adequate.

I want to thank you, Mr. Fesmire, Mr. Chairman, and the other Commissioners for allowing me to just come here and just make these brief comments about the proposed new pit rule.

CHAIRMAN FESMIRE: Are there any questions of this witness?

MR. BROOKS: Yes, sir.

CHAIRMAN FESMIRE: Mr. Brooks. Would you start by identifying yourself, just in case he doesn't know who you are?

MR. BROOKS: Yes, I'm David Brooks, and I am the attorney for the OCD in this proceeding.

THE WITNESS: Yes, sir.

CROSS-EXAMINATION

BY MR. BROOKS:

Q. I have two questions, I think, and I keep saying a couple of questions, but I think I mean it more literally this time.

A. Two questions that grow into others?

Q. Well, sometimes that -- sometimes that does happen. But I don't anticipate much here.

You talked about drainage situations --

A. Yes, sir.

Q. -- and expressed a concern about -- that your correlative rights might be impaired because somebody else has a well that the new rule might make uneconomic for you to drill an offset; is that what you're saying?

A. Possibly, possibly.

Q. Are you aware that another thing that Yates could do in that situation would be to apply to the Division to issue an order restricting the production of that well that was draining your -- your acreage, until such time as it would be feasible for you to drill an offset?

A. Yes, I am aware of that. But what doesn't make sense to me, Mr. Brooks, is that we would have to go to all these extra gyrations of seeking to restrict another operator, when it would be as simple as if we did not have these -- these economically onerous rules that are proposed to be in place, we could go ahead and drill the well. That would seem to be a simpler solution.

Q. Yeah. My question was just, could that be done?

A. A lot of things can be done.

Q. Okay.

CHAIRMAN FESMIRE: That's one.

(Laughter)

Q. (By Mr. Brooks) Okay, the other one has to do with traffic.

A. Okay.

Q. There is truck traffic in the oil and gas business from sources other than waste hauling, right?

A. That's right.

Q. And if oil and gas activity were to increase because of, say, a large increase in the price of natural gas --

A. Uh-huh.

Q. -- which probably brings smiles to the faces of everybody --

A. Sure.

Q. -- in this room, but would you advocate that the Oil Conservation Division should restrict -- would -- in that scenario ought to restrict drilling in order to prevent all these hazards that you're talking about from added truck traffic?

A. No, that seems -- that just smells a little bit like a straw-man argument.

Now Mr. Brooks, if we were to have this hypothetical -- I notice that you cranked on Mr. Pease the other day for using hypothetical numbers that he was given.

If we're going to use your hypothetical and we have an increase in other kinds of oilfield traffic because of increase in drilling, what with these new pit rules we would have even more increase in truck traffic because of having to haul from closed-loop systems or a dig-and-haul scenario. So it would go up even more.

So I'm not advocating to restrict it, and I'm not advocating that the OCD restrict truck traffic now. But I am asking the OCD -- actually, the Oil Conservation Commission, to seriously consider the impact of this new rule, that there are adverse consequences to this new rule, beyond just what the economic impact is.

MR. BROOKS: Thank you, I have no further questions.

CHAIRMAN FESMIRE: Commissioner Bailey?

COMMISSIONER BAILEY: I have no questions.

CHAIRMAN FESMIRE: Commissioner Olson?

COMMISSIONER OLSON: Yeah, I just have one question.

EXAMINATION

BY COMMISSIONER OLSON:

Q. Did Yates support the original task force recommendations that came out? Not the ones -- I'm not talking about the ones that are proposed now, but the original task force recommendations that industry seemed to

support?

A. Well, I'm going to -- I'm going to tell you that I was not part of the task force process, and I'm not aware of all that went on there, and I'm not -- I don't have the answer to that, so I can't say whether we were or weren't.

Q. Okay, thank you.

A. I'm sorry, I just don't have the answer to that.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Mr. McWhorter, does -- You call this the no-pit rule. Have you all made any contingency plans for what you would do -- Surely there are some wells in New Mexico that you'd be interested in drilling.

A. Oh, yes, and I alluded to the fact that -- I was not saying that we would not drill in New Mexico.

Q. So what contingency plans have been made if the rule does pass?

A. Well, if the rule does pass we might have to just restrict ourselves to drilling those prospects that have sufficient upside to them that we could justify the additional cost.

Q. And what would you do for a pit on those?

A. Well, hopefully -- hopefully, we'll be able to just bury it in place as we're doing now.

Q. But if this rule passes --

A. If this rule passes?

Q. -- and it's inside the 100-mile proposed radius?

A. Well, if it passes then obviously we have to comply with the rule as it passes. We're certainly not advocating to be not in compliance with the new rule.

Q. Would you use closed-loop systems or --

A. We have used closed-loop systems in the past, and I would say that would be a well-by-well, site-specific decision about whether we'd use closed-loop systems or whether we were going to use a reserve pit and then dig-and-haul it.

Q. You say you have used closed-loop systems, in New Mexico?

A. Yes, we have.

Q. Okay, and why would you use those?

A. Well, oftentimes the -- primarily where we have used them is where there has been some sort of site determination such as in karst topographies and things like that where there are significant issues there.

We have worked with -- I'll just give you an example -- with the Bureau of Land Management that we would use a closed-loop system. And in fact, we're drilling a well almost -- it's on the southern Eddy County border, almost in Texas, right now with a closed-loop system, because of that, because of that issue.

CHAIRMAN FESMIRE: Are there any further questions of this witness?

Mr. McWhorter, thank you very much.

MR. McWHORTER: Thank you.

CHAIRMAN FESMIRE: Mr. Bidegain, are you ready to go?

Did you hear the options we have?

MR. BIDEGAIN: Yes, sir.

CHAIRMAN FESMIRE: Do you have a choice?

MR. BIDEGAIN: Swear me in.

CHAIRMAN FESMIRE: Okay, would you raise your right hand, please.

MR. BIDEGAIN: Karin requests it.

(Thereupon, the witness was sworn.)

PHIL H. BIDEGAIN,

the witness herein, after having been first duly sworn upon his oath, testified as follows:

DIRECT TESTIMONY

BY MR. BIDEGAIN:

MR. BIDEGAIN: Mr. Chairman, members of the Commission, I thank you for your time and I thank you for waiting for lunch on me. And I did sit on the -- I guess I should say I --

CHAIRMAN FESMIRE: Phil, would you start with your --

THE WITNESS: Phil Bidegain --

CHAIRMAN FESMIRE: -- yeah.

THE WITNESS: -- I'm a landowner, Quay County. The infamous Tucumcari Basin, I think it's called now. and I did sit on the task force, and -- I still think it's harder on this -- that table than it is out there.

But I wanted to express -- share with you some concerns that I have over the protection of the land and water.

I want to caution you not to let economics overrule the protection of the land and the water. It's very, very hard to undo contamination. I know we strive for perfection, but I don't think we can reach it, so I think these rules need to increase the odds that we have no leaks, and increase the odds of protecting the land and the water.

In the task force I pushed -- my main concern was trying to get them to agree to a 100-foot closed-loop system when groundwater was 100 foot or shallower, but we never reached consensus on that, and that would be one of the deals that you'll have to blame on me there was no consensus, because I couldn't agree to the 50-foot.

I think when we try to reclaim -- we've talked about reclaiming to the previous condition. In this previous condition, there was nothing buried there.

I think with the on-site burials, there's nobody watching -- I mean, nobody watches or keeps track where all those are, nobody knows exactly where they are.

Our land -- I'm the fourth generation, but I've lost the older generations that can remember where those things were that happened back then.

So in conclusion I ask that you consider protecting the land and the water, because land and water is just a finite amount, there's just so much of it.

And I'll close, let's go to lunch.

CHAIRMAN FESMIRE: Not quite yet.

Are there any questions of this witness? Ms. Foster, would you --

MS. FOSTER: No, thank you.

CHAIRMAN FESMIRE: That was just a joke?

MS. FOSTER: No.

CHAIRMAN FESMIRE: Okay. Are there questions of this witness?

MR. BROOKS: No questions.

CHAIRMAN FESMIRE: Mr. Bidegain, thank you very much.

MR. BIDEGAIN: Thank you.

CHAIRMAN FESMIRE: With that, we'll adjourn for lunch and reconvene at two o'clock.

(Thereupon, noon recess was taken at 12:39 p.m.)

(The following proceedings had at 2:08 p.m.)

CHAIRMAN FESMIRE: We're back on the record.

For the record, this is the continuation of Case Number 14,015. The record should reflect that all three Commissioners are present, we therefore have a quorum.

I believe, Mr. Brooks, you were about finish -- or begin a recross-examination of the current witness?

MR. BROOKS: That is correct, thank you. May it please the Commission. I have to get back to where I was here.

J. GREGG WURTZ (Resumed),

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

CROSS-EXAMINATION

BY MR. BROOKS:

Q. Oh, yeah. You said something about you made some inquiries about how long it might take for a permit for your own landfill facility?

A. Yes.

Q. And of whom did you make those inquiries?

A. I spoke with the waste management company people.

Q. Now they would be -- they operate solid waste landfills under the Environment Department?

A. That's correct.

Q. And what you would be applying for, I would

assume, would be a centralized facility, what we call a centralized facility, under OCD --

A. If you say so, yes.

(Laughter)

Q. (By Mr. Brooks) A centralized facility --

CHAIRMAN FESMIRE: Do you have some other points you want to make, Mr. Brooks?

(Laughter)

Q. (By Mr. Brooks) A centralized facility -- Well, if he's going to be equally agreeable, I'll --

(Laughter)

Q. (By Mr. Brooks) Well, a centralized facility is a -- a centralized facility is an oil and gas waste measurement facility under our Rule 36 that accepts wastes from only one operator, so I was assuming that's what you contemplated.

A. That sounds correct.

Q. But you did not make any inquiries of OCD as to what its permit --

A. No, I did not. I was just trying to get a feel for the timing, that is correct.

Q. And if you had, you might have gotten two different answers, depending on whether or not there's going to be another rulemaking proceeding --

(Laughter)

Q. -- after the permit was -- after the application is pending.

Okay. And then the question came up about landfarms, that some of this waste is removed to landfarms.

A. The drilling waste?

Q. Yes.

A. Yeah, the question came up, yes.

Q. And there is a chloride standard for landfarms, right?

A. Yes.

Q. And do you know what that is?

A. I believe it's 500 and 1000, depending on your distance to groundwater.

MR. BROOKS: Thank you. I believe that's all my questions for this witness.

CHAIRMAN FESMIRE: Mr. Carr, so you have anything else of this witness?

MR. CARR: No, I do not.

CHAIRMAN FESMIRE: Okay. Mr. Wurtz, thank you very much. And that ends your ordeal for a while.

THE WITNESS: Thank you.

CHAIRMAN FESMIRE: Mr. Carr, you had another witness?

MR. CARR: Yes, I do, Mr. Chairman.

At this time we call John W. Poore, P-o-o-r-e.

CHAIRMAN FESMIRE: Mr. Poore, would you come forward? You've already been sworn in this case, haven't you?

MR. POORE: Yes, I have.

CHAIRMAN FESMIRE: Okay, would you take the witness stand, please?

JOHN W. POORE,

the witness herein, after having been first 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. My name is John W. Poore.

Q. Mr. Poore, where do you reside?

A. I live in Farmington, New Mexico.

Q. And by whom are you employed?

A. ConocoPhillips.

Q. What is your current position with ConocoPhillips?

A. I'm a staff reservoir engineer working in the inventory management group.

Q. What are your duties as a staff reservoir engineer in the inventory management group?

A. Well, the name almost says what it is. I manage the inventory of the future drilling prospects we have.

And to do that, I run a lot of economics and help prepare long-range plans, budgets and reserve reports.

Q. Have you previously testified before the New Mexico Oil Conservation Commission?

A. No, I have not.

Q. Would you review your educational background and work experience?

A. Okay. In 1982 I earned my bachelor of science in chemical engineering from Ohio State University, with a technical specialty in petroleum engineering.

After college I started working for Shell Oil Company, started out in the Permian Basin, which included some of the properties in the -- southeast New Mexico. After that, I went on to an assignment in the Gulf of Mexico, worked on some offshore projects. I also had a business administration assignment where I worked on budgets, long-range plans, reserve reports.

After that, I was hired by ARAMCO over in Saudi Arabia, and I spent almost 13 years over there, and I was responsible for reservoir management of some of the super-giant fields in the Middle East. While I was there I also had an assignment in business planning, and I worked in their department and developed economics programs and put together economic evaluations of the long-term drilling opportunities they had.

About three years ago I figured it was time to get out of the Middle East, at the urging of my wife, and I got a job with Burlington Resources up in Farmington, New Mexico, and subsequently they've been purchased by -- acquired ConocoPhillips, who I'm now employed by.

Q. Is ConocoPhillips Exhibit Number 3 a summary of your education and your work experience?

A. Yes, it is.

Q. Are you familiar with the Application filed in this case by the Oil Conservation Division?

A. Yes, I am.

Q. Are you familiar with the proposed pit rule?

A. Yes.

Q. Are you personally familiar with ConocoPhillips' drilling activities in the San Juan Basin and the costs associated with this activity?

A. Yes, I have.

Q. Have you identified for your company the impact of the proposed rule if, in fact, it's adopted as proposed?

A. Yes, that was a task -- an assignment given to me.

Q. And are you prepared to review your work on this subject with the Oil Conservation Commission?

A. If it pleases the Commission, yes, I am.

MR. CARR: May it please the Commission, we would

tender Mr. Poore as an expert in reservoir engineering and inventory management, I guess.

CHAIRMAN FESMIRE: Mr. Poore, are you a registered professional engineer in New Mexico?

THE WITNESS: No, I am not.

CHAIRMAN FESMIRE: Are you in the process of getting that way?

THE WITNESS: It's one my goals to get my professional license here. When I was overseas, it wasn't required.

CHAIRMAN FESMIRE: One of these days in the near future, though, if you're going to come talk to us a lot?

THE WITNESS: Yes.

CHAIRMAN FESMIRE: Is there any objection to Mr. Poore's qualifications as an expert in reservoir engineering and inventory management?

MR. BROOKS: No objection, Mr. Chairman.

MR. JANTZ: No objection.

MR. HISER: No objection.

MS. FOSTER: No objection.

CHAIRMAN FESMIRE: Mr. Poore will be so accepted, this time.

MR. CARR: And that's all we were asking for, Mr. Chairman.

Q. (By Mr. Carr) Mr. Poore, have you prepared an

exhibit for presentation in this hearing?

A. Yes, I've worked with ConocoPhillips' drilling and construction department and -- our environmental department as well, on a team that put together the information for this economic evaluation.

Q. And are these the people you typically work with in making these -- preparing budgets and reservoir evaluations?

A. Yes, they are.

Q. And you have a person from the drilling department with you here today, do you not?

A. Yes, and if there's some questions that you ask about the drilling, I'll try to answer them to the best of my ability, similar to how I'd answer them for my management, but we have Sean Robinson here from our drilling department that -- if he's needed.

Q. Let's go to what's been marked ConocoPhillips Exhibit Number 4, and I'd ask you to identify that, please. And a copy of that is on the screen. And what is this?

A. This is the presentation I put together for my management to summarize the closed-loop drilling costs and the economic impact on our inventory.

Q. Was this exhibit prepared for this hearing?

A. No, it was not.

Q. For whom was it prepared?

A. It was prepared for my management to help advise them and make their -- on their decision-making process. And after all this material was prepared, they then gave me an authorization to share it with the Commission.

Q. Does ConocoPhillips prefer to close temporary pits with on-site burial?

A. That's our current practice, yes, it is.

Q. Now you understand as you developed these recommendations, that operators are not required to use closed-loop systems under these rules in all cases?

A. Yes, that's my understanding. If the well is within 50 foot of groundwater, a closed-loop system would be required. Within a 100-mile radius of a landfill, my understanding is, we have two options, the dig-and-haul option and the closed-loop option.

And just as an aside, when I went to our inventory I was able to calculate the distance from each of our potential wells to the landfill, and they're all within the 74 miles, so they would all be within that 100-mile limitation.

Q. Now when you say 74 miles, is that a 74-mile radius, or is that the trip distance?

A. That is sort of as-the-crow-flies distance.

Q. If you or your company is just given a choice in these areas of closed-loop system or dig-and-haul, can you

tell the Commission which your company would prefer?

A. In most cases we would prefer the closed-loop system. We looked at the costs of the dig-and-haul, and what we found is, they were about the same cost and sometimes slightly higher cost. But as Mr. Wurtz had testified earlier today, the liability issue of hauling a lot more material on the roads with the heavy-haul trucks was a concern for us, and so in most cases we would choose to use the closed-loop drilling.

Q. And you were present for Mr. Wurtz' testimony on safety concerns?

A. Yes, I was.

Q. And do you concur with those?

A. Oh, yes, we are -- we ought to almost have a tattoo on our foreheads, Safety is our number-one priority. And it's actually explicitly stated above our profit incentive. And so our company takes safety very seriously, and make sure all its employees know that that's our primary mission. We won't do anything unless it can be done safely.

Q. When making these determinations as to whether to go dig and haul or work with a closed-loop system, are there other factors that you consider?

A. If a well is real close to a landfill, the cost balance may lend itself that we may do a few dig-and-hauls

for wells that are close proximity, but that would be a call where we're trying to balance that extra risk exposure with the cost savings, and I don't have an evaluation of that. We'd have to look at those on a case-by-case basis.

Q. Now when we're talking about going to closed-loop systems, are we just talking about the addition of additional tanks?

A. No, it's actually a pretty complex system that uses a lot of technology. And as Mr. Al Springer had testified, sometimes these closed-loop systems, things don't go well. And so it substantially requires more equipment than just the additional tankage out there.

Q. Let's go to your Exhibit Number 4 that's on the screen, and I'd ask you to just work through this exhibit for the Commission.

A. Okay. For the close-loop drilling costs, we divide it up into two components: the rig costs -- and most of these costs are on a per-day basis -- and then the hauling costs.

When we looked at the rig costs, we have two different kind of rigs out in northwest New Mexico. We have rigs to drill the deep horizons, the Mesaverde-Dakota, and then we have some shallower rigs for the Fruitland Coal and PC. These were the cost estimates we've been quoted from the drilling companies and the companies that provide

closed-loop systems.

And for the shallower well we have, you know, about $3000 a day estimated for additional cost for the equipment.

Now for the deeper horizon, we actually need two different systems. The shallow system uses a fluid system, and then we need an additional $1500 a day, by this estimate, for the air-drilling system. So on the deeper wells we need two different types of closed-loop system, for the fluid system and the air drill.

Q. In drilling wells, Conoco does not own and operate the rigs itself; is that correct?

A. No, we contract all our rigs out.

Q. Okay. And when we look at these costs of $4500 per day for Mesaverde-Dakota equipment and $3000 a day for Fruitland Coal and PC equipment, are you talking about additional costs over and above normal rig rates and costs?

A. Yeah, these would be add-on costs for the closed-loop systems, in addition to our normal drilling rig rates.

Q. And so these figures are really based on quotes that you've received from drilling companies?

A. Yes, they are.

Q. Okay. And are they current?

A. They were current when I made this a couple months ago. Subsequently, our drilling department has been

doing some more inquiries to see if we can get this equipment in and trying to refine the cost estimates a little bit more.

And what's of particular concern is the air-drill systems. There's not many of them in the world, and it's a big uncertainty for us how the air-drilling system is going to go. And we've gotten a cost estimate now, instead of $1500 a day it may be upwards of an additional $2000 to $3000 a day, up to, you know, $3500 a day incremental. So these numbers may actually go up with our latest off-the-press cost estimates, but at the time I prepared this, these were the best estimates we had.

Q. Okay. Now the next entry, $1200 a day for personnel. What is this?

A. For this additional equipment we estimate there will be an additional person required to operate the closed-loop system for a 24-hour basis. So the $1200 a day represents the cost for personnel to operate the equipment.

Q. So this is one person at all times?

A. One person at all times.

Q. And now let's go to the next entry, the $300-a-day figure.

A. Okay, in order to run the closed-loop system, there will be frac tanks that we need on site for on-site storage, and the cost estimate we have for that is an

additional $300 a day.

Q. Now these are all daily costs. What is the last entry in that column?

A. The last is just a grouping of miscellaneous charges that would be sort of like a one-time setup fee for each well. There will be some extra loads of water that may need to be hauled, some mud, and some custom rig modifications to, you know, marry the closed-loop system with the drilling system.

Q. And would these costs be incurred each time?

A. Each time you drill a well, but not on a daily basis.

Q. Okay. And when we look at these costs, we're looking at the cost of a closed-loop system once it's up and running? I mean, we're talking about --

A. Correct, yeah, this doesn't --

Q. -- having the equipment and going for it.

A. That's right, this assumes that everything is in place, and this would be what our expected normal operating costs would be.

Q. Okay, let's look at your hauling costs. And when you do this, you've got a box over there with a formula, d equals straight-line miles, et cetera. Would you explain what that is?

A. Okay, I'll start with that. The d is that

distance that I told you that I've been able to approximate the -- or I've been able to estimate the distance from the landfill to each of our future well locations. That's a straight-line distance. What I was trying to do was estimate what the actual truck distance would be for hauling cuttings to that landfill on a round-trip basis.

So I take two times the distance for round trip and then increase the number by 30 percent to account for the indirect route that the road system goes. I don't think we can get these trucks to go off-road and do a straight line, so we have to stay on the road system, and about a 30-percent increase in that distance to calculate the total trucking distance.

Q. Okay, would you review the hauling cost as set out on this exhibit?

A. Okay, we have several components of the hauling costs and disposal costs. The first $16 a cubic yard is a number we were quoted from the San Juan Landfill,as what we'd be charged to dispose our cuttings there.

The next line is $10 per cubic yard, and this is for loading machinery that needs to be available at the site during the whole drilling operations, and this would be to load the cuttings coming from the closed-loop system into the trucks to be hauled off.

The next number is our -- the estimate of how

much we get charged per truck hour of $80 an hour. The trucks we plan to use have a capacity of 10 cubic yards.

The next number is, you know, how many hours are we going to be needing a truck? So for that we had an estimate for a five-hour cycle time to cover a distance of 120 miles. Now that five hours includes loading and unloading, as well as driving, but it averages out that -- 24 miles per truck hour.

Q. You're using trucks that have a load capacity of 10 cubic yards. Why are you using that small a truck?

A. As Mr. Wurtz had testified this morning, these are the size trucks that we feel most comfortable with to operate on the lease roads and that we can safely get in and out of our wellsite locations for this volume of trucking that's going on.

Q. Okay, let's go take a look at these costs as they rely -- apply to the Mesaverde and Dakota deep wells.

A. Okay, for the Mesaverde-Dakota wells, the deeper wells, our average drill time is about 12 rig days. And the amount of cuttings that we believe we'd be hauling from the -- for the closed-loop systems for these deeper wells is 600 cubic yards.

Q. When I look at the whole variety of different distances of all our wells, the average is about 27 miles. Now when I've done these estimates, I've done them on a

per-well basis, so I've adjusted this number to reflect the actual distance each well would have to haul the cuttings.

But if we take the average of 27 miles, we get a cost estimate of about $115,000.

Q. And is that additional cost for the closed-loop system?

A. These are incremental costs that we would incur for a closed-loop system.

Q. Okay, and you're talking about hauling 600 cubic yards. That would be about 60 truckloads, correct?

A. That's 60 truckloads.

Q. And running these calculations, have you adjusted for the -- I guess the difference in volume or weight that occurs as a result of using a closed-loop system?

A. Yes, the 600 cubic yards is the volume we believe -- or the estimate we have of the -- after the cuttings are stabilized to meet the paint-filter test at the landfill, and it represents, I believe -- it represents a sixfold increase in what the wellbore volume is.

Q. Okay. Let's -- Before we go to the Fruitland Coal and PC wells, let's go to the second page of this exhibit, and I'd have you now review the Mesaverde and Dakota deep-well calculations at the top of the page.

A. Okay, on this next page I tried to show a little more detail of how I came up with that $115,000 average,

and I tried to break it -- I broke it down between the rig costs and the hauling costs.

If we look at the rig costs, these are mainly the variable costs we had per day. And so we take the Mesaverde-Dakota, $4500 per day for the equipment, plus $1200 a day for the personnel, $300 a day for the frac tanks. We get about six -- we get $6000 per day, times the 12 days we're out there drilling, and then we add that $13,500 fixed miscellaneous costs.

So that gives us a total cost associated with the closed loop on the rig of $85,5000.

Q. And this is a fixed additional cost that would apply to all wells, correct?

A. Yes, this doesn't matter how far a well is away, this would be incurred by all wells, no matter the distance.

Q. Not the hauling cost?

A. Now the hauling cost -- now this is a variable. And for this, we assume we have -- we start with the 600 cubic yards, and then we add the $16 per cubic yard for the disposal fee, the $10 per cubic yard for the loading machinery, the $80 per truck hour, times the average 27 miles.

And then using that formula to scale it up for the round trip actual distance, multiply by 2, add 30

percent. Divide by the 10 yards per -- 10 cubic yards per truckload, and then that 24 miles per truck-hour, and that will give us an average hauling cost of $29,500. And again, that's at the average distance of 27 miles.

And adding these two components together, we get the average additional cost of $115,000.

Q. And so this $115,000 figure is what ConocoPhillips uses as the additional cost that they incur if they go to a closed-loop drilling system on a Mesaverde or a Dakota well?

A. This would be the average cost. As I stated before, the cost per each well will be adjusted on the hauling cost to be reflective of the distance from the landfill.

Q. All right, let's go back to the first page and look at Fruitland Coal and Pictured Cliffs wells, down at the bottom.

A. Okay, down at the bottom, when we drilled the shallower wells we only needed four rig days. And because it's a shallower well, there's less cuttings associated with that, and the estimate is 400 cubic yards for the shallow wells.

The other thing with the shallow wells, the distribution of them area closer, and -- the Basin, they don't go as far out into the -- into the distance there, so

the average distance for the Fruitland Coal-PC wells is only 22 miles.

And when we put those components into the cost-estimating, we come up with just under $50,000, $49,500, for an average shallow well.

Q. When you use total rig days, are you allowing time for the cavitation of Fruitland Coal wells?

A. No, this is only for the drilling costs. Again, that's one of our uncertainties, is, if a well needs to be cavitated, a cavitation can go on two, three, four weeks sometimes. And so closed-loop will -- required for the cavitation. It would probably make most cavitation jobs uneconomical to do.

Q. Let's go to the calculation page now and focus on the portion of this exhibit that addresses Fruitland Coal and Pictured Cliff wells.

A. If we go through the same calculation technique -- I'll just summarize it.

The rig costs that will be incurred on all wells is $31,500, and that's for the four rig days and the miscellaneous costs.

Now the hauling cost for 400 cubic yards for an average distance of 22 miles comes out with $18,000. And again, that's a variable, depending on the distance the wells is away. And this gets us to the total of $49,500.

Q. These are additional costs for equipment to have a closed-loop system on a Fruitland Coal or a PC well?

A. That's correct.

Q. And this is where you only have the fluid system, not also the air system?

A. Correct.

Q. Let's go to the next page of this exhibit. What does this show?

A. This is where I summarized the impact on our capital inventory. What I did is, I -- we have an inventory -- we have an economic run for each future well that we think is potential to drill in the San Juan Basin, and it includes both wells that we operate and wells that others operate. But what I'm summarizing here is just the wells that we operate in ConocoPhillips.

And if we apply these additional costs and include them with our current economics, it would reduce the number of economic wells by 543 wells total. And the volumes associated with those wells is 263 BCF.

I also broke it out between the deep and shallow, so you can see that the impact is much more heavily weighted towards the deep wells, or 509 wells and 243 BCF -- the associated 243 BCF would become noneconomic, or uneconomic, because of these additional costs. For the shallow wells, there's only 34 wells affected, and the

volumes associated with that is 20 BCF.

Q. And this shows the impact of these rules and the increased costs on ConocoPhillips' development in the San Juan Basin; is that right?

A. Correct.

Q. Now, if the price of gas goes up, isn't it true that perhaps fewer wells would be knocked off the drilling schedule?

A. No, that's not correct. We have a full spectrum of projects. I actually have a slide that I could possibly show to help demonstrate that.

Q. And you're not intending to offer this as evidence?

A. No, it's just to help explain sort of the process and the distribution of what our inventory looks like.

Q. Will it facilitate your presentation?

A. I believe it would.

Q. Assist the Commission in understanding what you're saying?

A. I think so.

MR. CARR: Mr. Chairman, with your permission we'd like to put a slide up that will just be used for the purpose of this portion of Mr. Poore's testimony.

CHAIRMAN FESMIRE: Please, sir.

Q. (By Mr. Carr) All right, Mr. Poore, what does

this show?

A. All right, this is a representation of all potential future wells that ConocoPhillips operates in the San Juan Basin in northwest New Mexico. And on the -- and I've sorted these by present-value profit after tax.

And this gives you an idea of the distribution of our projects. It's not to scale. That inventory --

CHAIRMAN FESMIRE: -- wouldn't let you?

THE WITNESS: -- is confidential, yes.

CHAIRMAN FESMIRE: Can I ask a quick question?

THE WITNESS: Yes.

CHAIRMAN FESMIRE: What is your discount rate at your PV? What's your hurdle rate, I guess?

THE WITNESS: We use a 13-percent discount rate.

CHAIRMAN FESMIRE: Okay.

THE WITNESS: So that zero line defines -- Projects above that line are economic, projects below that line are uneconomic.

Okay, as you can see, we have quite a distribution of projects. If gas prices increase, this whole green line will shift up. But as you can see, we have -- we would then have a lot of projects that are currently uneconomic come up into the economic range.

But let's just assume we had perfect knowledge of future gas price. And if I did, I would be a millionaire

and probably wouldn't be sitting here. But let's just assume that's the case, and this plot represents -- I believe is a fair representation of what the distribution of all our potential future wells are.

So if we assume that, and not where the zero-profitability line is, that tie line shows the number of wells that would be economic and would be projects that we could possibly drill.

Now obviously, we wouldn't be proposing uneconomic wells to our management. Okay?

Next.

Now if we look at the increased costs for the new pit rules, it's going to decrease our present value profit by the costs that we've assumed from those cost estimates.

Now this line shifts down -- it's not the full amount. We've taken into account the after-tax effect. For every dollar we spend for an intangible cost or an expense account, we get to write it off, but it nets out that we're spending 60-cent dollars. So that's been taken into account for this analysis.

CHAIRMAN FESMIRE: Okay, and to clarify or save a question later, that's because the intangible drilling cost credit --

THE WITNESS: Well, there's no credit for intangible drilling cost, it just -- you're allowed to

treat it like any other normal expense, whereas tangible drilling costs, they're considered a tangible asset, and you have to go through a depreciation schedule. So I can't write it all off this year, I have to write off a portion in future years. So in that case we're spending more than 60-cent dollars. We're probably spending closer to 70-cent dollars, by the time you take into account the PV effects. But we're still spending 60-cent dollars. It's not free, but there is some cushioning of that cost from the tax treatment. And I prepared that specifically for you, because I knew you had a question on that.

(Laughter)

THE WITNESS: All right, so the present-value profit line will shift down because of these costs, and now the number of projects is represented by that blue bar down -- now these are the potential future wells that are economic.

And the shift in that line --

CHAIRMAN FESMIRE: Go ahead.

THE WITNESS: -- is, the fewer economic wells we can drill, and that's what I've quoted on that last sheet that you saw in my exhibit that showed -- we have 543 fewer wells drilled. And again, if I take the volumes associated with that, there's about a quarter TCF.

Now while I have this slide up for you guys to

see, if we look at the original green line and we look at all the uneconomic projects we have in our inventory, there's literally thousands of wells out there that are in that classification. And the volumes associated with that is over a TCF, so there's significant volumes that are currently uneconomic.

Our goal and challenge as a company is to try to find ways to make those economic. And adding -- increasing costs is going the wrong way for us. We want to turn this resource into reserves that can be produced and generate revenues, not only for us as a company -- We're always looking for profit, but here we both have the same goal. As we make more gas, the state generates more revenues from those through the taxes and the tax structure that's out there.

So our real challenge is, how do we get to that 1 TCF? And if we adapt [*sic*] these rules, we're going to add another quarter-TCF to what's uneconomic. And you know, we're sort of going the wrong direction on this from what our objective is and what we're trying to achieve.

Q. (By Mr. Carr) Now Mr. Poore, have you been present for most of this hearing?

A. I've been here for many of the days, yes.

Q. Were you here when Mr. Mullins, I believe it was, made a statement to the effect that the Mafia has the

better properties?

(Laughter)

A. Yeah -- I'm not sure I like being --

(Laughter)

A. I must be little Vito.

Q. How do -- suspecting you might be the Mafia, how do Conoco properties compare to other oil and gas properties on an average in the San Juan Basin?

A. On an average, we definitely have the better projects, and we do have a lot of the drilling. Now I think in the last couple years we've drilled between 35 and 40 percent of the wells in the Basin, so we are the major player in the Basin. We are the largest operator and drill the most wells.

But I would like to point out, if you look at this distribution, we have a wide range of projects as well We have some on the high end, but we also have a lot of wells that are on the fringe or marginal wells, similar to what some of the independent operators are doing. So our issues -- their issues are the same as ours.

Q. Would you say, though, that on an average ConocoPhillips is -- your properties are better able, probably, to assume the costs of this new pit rule better than, say, the properties of other operators in the Basin?

A. Now again, if I refer to this slide, the ones on

the far left with the higher profitability, yes, they can withstand these costs and still remain highly profitable. But as I stated before, we also have some on the marginal edge, and those are the ones that are more affected than the more profitable wells.

Q. Let's go back to your Exhibit Number 4, and you have on the last page some caveats that you have set out.

All right --

A. There we go.

Q. -- if we look at that, the first one says, Minimum one-year moratorium. Could you explain that to the Commission?

A. The cost estimates we put -- that are shown here are based on once we're up and running. It's going to take some time for us to gear up, and what we would recommend would be a minimum of one-year moratorium to give us that time to get the equipment in the Basin, get our safety programs in place and, you know, be ready to implement this rule. But it's going to take us some time.

If we're asked to immediately implement these rules, there's a shortage of systems out there that would allow us to do the closed-loop drilling. And whenever you have a high demand and low supply, costs can increase. And these costs can increase 50, 100 percent from what I've shown here.

And if we can't get those closed-loop drilling systems and we elect not to do the dig-and-haul, we actually have the potential to shut down our drilling program until these systems are available.

Q. What kind of rigs do you use in the Basin?

A. We actually have -- the San Juan Basin is geographically pretty unique, and we use some truck-mounted rigs to do a lot of our drilling. And they've sort of been customized to use in the San Juan Basin. They're very mobile, can get in, get out. They have a relatively small footprint, they're pretty nimble. And they're sort of site-specific and customized for our application.

Q. When you're using -- Does this limit your ability to just bring in rigs from other areas?

A. Yes, it does. And as, you know, Merrion's experience showed, you've got to be careful that you get the correct equipment and the properly trained personnel. If you try to bring in a rig from outside the Division, things can go wrong, as Merrion --

Q. Have you been able to ascertain what percentage of your rigs would require these closed-loop system drilling packages if, in fact, you were immediately moving into a program where you were doing a lot of closed-loop drilling?

A. Yeah, we have 10 rigs operating for

ConocoPhillips, and two of them mainly service the shallow zones, so they would just need a fluid system.

But eight of the rigs would have to have both that fluid system and an air-drill system. And the system that best suits what we would need for the air-drill system, I believe there's only one of them in the world, and I believe it's in Algeria. And so it wouldn't be available for us to use. We've contacted that company and they said it would take a minimum of six months to gear up to produce another one of those, and there's some patent issues involved as well, so that could delay the construction of the closed-loop air drilling system for us to use.

Q. It's fair to say however this plays out and whatever is adopted, if you're moving toward closed-loop systems, there are going to be some real lead times required to get your operations up and going and into the new program?

A. Yes, it is. There's just not enough equipment and systems available.

Q. What about the availability of needed trucking to go into the -- under the new rule?

A. That's actually another concern that we have. We've contacted the trucking companies, and they don't have enough trucks in their fleet right now to supply the needed

trucks.

And more importantly, the licensed drivers. Everywhere you drive around town, there's advertisements for CDL drivers, and there's a real shortage of CDL drivers right now, and we'd have to need even more CDL drivers.

Q. Have you attempted to estimate the number of additional trucks that would be required if this rule, as drafted, went into place?

A. I don't have that number off the top of my head.

Q. The -- you have on your list the next item, future dumping site. Would you explain that, please?

A. It's my understanding that the OCD has given the San Juan Landfill a temporary authorization to accept our waste, and I believe that expires in April of 2008. Now of course there may be an extension to that, but it's not a -- it doesn't look like it's going to be a permanent future landfill that we have, so we may need to look at additional sites to accept our wastes.

Q. When you have limited options, limited places to take this material, have you factored in anything for potential changes in the disposal charges?

A. We believe that the $16 a cubic yard is probably fairly representative of -- well, it's what we were quoted from the San Juan landfill. But the concern is if there's a limited supply of places to put your landfill and there's

a huge demand, that that price demand may shift the costs so that it could be even more expensive for us to dispose at these landfills.

Q. Let's go now to your entry, Larger drill pads.

A. As Mr. Wurtz alluded to earlier, ConocoPhillips -- safety is our number-one priority in our operations. In order to safely get all these trucks in and out of the well location, we'll require a larger wellpad. The estimate is 25 percent larger than the existing pads.

Now we already have a pretty small footprint for our drilling pads out there, so in order to get all this truck in and out, it would require larger than what we're currently using.

Q. Now we have an entry called Continuous Hauling, 24/7? Land Fill hours? What are these question marks in there for?

A. These are uncertainties that we have. Our drilling operations are 24/7, so we're operating in 24/7.

Now the landfill, the San Juan Landfills are, you know, business hours during the week. And they're not set up to accept weekend and evenings, trucks arriving for dumping. So we'd have to try to figure out some way to, you know, stage these out or have a holding area, because we wouldn't want to shut down our drilling operations, you know, waiting for the trucks to be able to deliver the

material to a landfill.

Weather is another question mark, as the -- We can drill through bad weather, but if the roads get into a certain condition we don't be able to drive the trucks on the road. So weather may impact our ability to cycle these trucks in and out of the well location.

Q. And your final entry, Additional water disposal?

A. For the water disposal for a closed-loop system, we're using the frac tanks, and we're going to have to get those -- get the fluids out of those frac tanks quickly in order so we can move them to the next location, because we can't haul these frac tanks loaded.

The way we are in our current practice is, we have a little bit of time to schedule out the additional water disposal. A lot of times we'll move it forward to the next drilling location, and we have a lot more options that we can look for use of that water.

So with a closed-loop system, we believe there may be the potential for additional water-disposal charges that we're currently not incurring.

Q. All right, Mr. Poore. Now based on this information, what impact does ConocoPhillips believe these closed-loop drilling costs will have on its drilling plans in New Mexico?

A. Well, as I showed at the top of this slide, we're

going to have to reduce our inventory, and this would require a reserve write-down for us on the scale of the volumes stated, but it -- which would mean fewer wells are going to be drilled in the future.

Q. What about economic projections out into the future?

A. Okay --

Q. How does this proposal impact those?

A. Now sort of an immediate effect -- we deal with a fixed budget. The company says you're allowed to spend X dollars next year, and if our costs go up -- and the estimate I have, these are about 10 percent of what our drilling cost. In order to stay within our fixed budget, we'll have to reduce our drilling program commensurately 10 percent. So it will have immediate effect of reducing the number of wells we can drill.

Q. Now Mr. Poore, when -- You're speaking here for ConocoPhillips. Are you saying that if the rules are adopted you would leave New Mexico?

A. No, we would not. We have a long history in the Basin, and as you can see from that other slide, we still have quite a few attractive investment opportunities to develop. So we'll be here, and as Mr. Wurtz said, we'll probably be here for a long time, and...

Q. What recommendations would you make to the

Commission for ConocoPhillips, based on the information you have presented here today?

A. Well, there's one other point I wanted to cover before we got to that, and it had to do --

(Laughter)

MR. CARR: You know, they never do what you tell them --

(Laughter)

THE WITNESS: He even tries to help me out.

But talking about the impact, I was just talking about the short-term budget impact. The other thing I want to address would be the long-term budget impact.

We compete with -- in ConocoPhillips, the San Juan Basin competes with investment dollars for projects throughout the world. By increasing our costs, it lowers our profit, profitability on the project that we propose, so our projects become less attractive when the company looks at where they want to distribute their capital dollars.

So what I can conclusively say is, we'll probably be allocated fewer capital dollars in the future as a result of these increased costs.

Q. (By Mr. Carr) And is there anything else you would like to say --

(Laughter)

CHAIRMAN FESMIRE: Before Mr. Carr starts asking questions again.

(Laughter)

THE WITNESS: The main thing I would ask the Commission, make sure we consider all of the economic costs, not just to the industry but to the State of New Mexico. We generate a lot of revenue in taxes and provide a lot of jobs, and it will have a huge impact on the overall economy of New Mexico, and I would just ask that you consider all aspects of that.

Q. (By Mr. Carr) Now Mr. Poore, the information you've been providing is really information that is specific to the San Juan Basin; is that correct?

A. Correct.

Q. Were Exhibits 3 and 4 prepared by you?

A. Yes, they were.

MR. CARR: May it please the Commission, at this time we'd move the admission of ConocoPhillips Exhibits 3 and 4.

CHAIRMAN FESMIRE: Any objection?

MR. BROOKS: No objection, Mr. Chairman.

MR. JANTZ: No objection.

CHAIRMAN FESMIRE: Seeing no objection, Exhibits 3 and 4 will be admitted.

MR. CARR: And that concludes my direct

examination of Mr. Poore.

CHAIRMAN FESMIRE: Thank you, Mr. Carr.

Mr. Hiser, do you have any questions of this witness?

MR. HISER: (Shakes head)

CHAIRMAN FESMIRE: Ms. Foster?

MS. FOSTER: I do not, thank you.

CHAIRMAN FESMIRE: Mr. Jantz?

MR. JANTZ: I do.

CROSS-EXAMINATION

BY MR. JANTZ:

Q. Good afternoon, Mr. Poore.

A. How are you doing, Mr. Jantz?

Q. I'm doing well, thank you.

Going to your first slide, the $13,500 miscellaneous costs --

A. Yes.

Q. -- will that vary from rig to rig, or wellsite to wellsite, I should say?

A. There's a possibility that it will be variable, but we believe -- or I believe that this is going to be a fairly representative average of the costs we would incur.

Q. Okay, so it could be lower in some cases?

A. In some cases. In some cases it could be higher.

Q. Okay. The calculation that you did for hauling

costs, the 30-percent increase to account for indirect route, where did that number come from, the 30 percent?

A. It's a rule of thumb that our construction department uses.

Q. Okay.

A. And to check that, I went ahead and assumed instead of straight line I could go directly east-west and north-south and estimated that distance, and it was close -- pretty close to the 30 percent. So 30-percent -- I was able to validate the 30 percent to my satisfaction.

Q. Okay. The incremental costs that you have on your first slide and second slide --

A. Uh-huh.

Q. -- those are for the closed-loop drilling only; is that right? The incremental costs of closed-loop drilling?

A. It includes the hauling cost and the -- and the closed-loop drilling cost as well, and they are incremental costs.

Q. Okay, so it's not just for the dig-and-haul option or just for the closed-loop option?

A. No, the costs that I have presented are for the closed-loop --

Q. Okay. Do you have a baseline cost, if you will, the costs you currently incur?

A. The estimate we have for the -- what a pit currently costs, a lined pit, is about $10,000.

Q. Okay.

CHAIRMAN FESMIRE: So is this -- does this number already have that in there?

THE WITNESS: I considered this incremental cost because -- I didn't include the cost for the drying pad, and because of some of those uncertainties out there, we may still need to drill -- or dig a pit for contingency, and so I think that $10,000 cost -- we really don't need to deduct it from these numbers, we can look at these as truly incremental costs above what our current operations are.

Q. (By Mr. Jantz) So what is the $10,000 that you say it costs to currently deal with waste via the pit method? What does that include?

A. That includes digging the pit --

Q. Uh-huh.

A. -- lining it, and then, once the drilling operations are complete, mixing the pit and closing it.

Q. Do you have a sense of how much the current costs are as a percentage of revenue?

A. No, I do not.

Q. Okay. So I guess you wouldn't have an idea of the incremental costs as a percentage of the revenue?

A. Not as a percentage of revenue.

Q. Okay. Did you do any calculations -- did you calculate the cost of what it might cost to have a centralized waste facility if ConocoPhillips chose to do that?

A. No, we did not include the cost for opening a new disposal facility.

Q. Okay. And when you're talking about potential liabilities, did you calculate the costs of the potential liabilities when you factored into this, or is this just sort of -- was this it?

A. This is it. I'm really not qualified to do liability risk evaluation for the company.

Q. Okay, so the potential for liability, such as groundwater cleanup or future losses, may not be included in this?

A. It is not included in this --

Q. Okay.

A. -- analysis.

Q. Let's see, the impact on capital inventory slide --

A. Okay, slide 3?

Q. Yes.

A. Oh, the caveats.

Q. Actually -- Yeah, that's the one. The reduction of 543 wells and 263 BCF, can you explain to me again what

that -- what you're talking about, how you got to that number and what exactly it means? I guess what I'm -- what I'm asking, is this based on current data, or is this a future projection?

A. This is our best estimate, using our current economic premises as to what the economics of these wells are.

Q. Okay.

A. So it's using our latest, best economic approximation of these future wells.

Q. So you're looking backwards to predict forwards; is that --

A. Not necessarily, I wouldn't say that. We know what our drilling costs are --

Q. Okay.

A. -- and that is influenced by our history, but we have current cost estimates. The economics reflect the current capital costs that we see in these wells. We have operating cost assumptions in there as well that is influenced by the past, but they are a current estimate. And then as far as gas price goes, we're given those by our -- we have economists up in our head office that give us our gas price from his forecast that we use to do all of our economic evaluation.

Q. Okay. On your slide with the lines --

A. Okay.
Q. -- the demonstrative exhibit -- the graph, I guess --
A. Yeah.
Q. -- this is a graphic representation of the 543 --
A. Yes, this is a graphical representation of the process I did.
Q. Okay.
A. Now I simplified it as a fixed cost, as I said -- stated earlier, I went through each well, estimated the specific cost for that well, so it -- the line would get a little jaggeder than what I show there, but it's a fair representation of the process and -- the process I used to come up with that estimated number of wells.
Q. Okay, but this could change based on cost of -- the price of the commodity --
A. Yes.
Q. -- is that true?
A. If the price of the commodity changes or some of our premises change -- these whole curves can shift up and down --
Q. Right.
A. -- but relative to each other, we believe they'll stay the same.
Q. Okay.

A. Or I believe they'll stay the same.

Q. Okay, I think that -- I'm sorry, one more.

CHAIRMAN FESMIRE: Mr. Hansen, did you come to stay for a while?

(Laughter)

Q. (By Mr. Jantz) Do these -- does this graph represent strictly closed-loop drilling, exclusively closed-loop drilling?

A. Yes, it does.

Q. So if the -- this could change if you were doing dig-and-haul?

A. We would evaluate dig-and-haul on a case-by-case basis, and in cases where the dig-and-haul was possibly a little less -- weighting those risks and costs, it may change slightly, but the majority of our wells, we believe, will be on the closed-loop system, the dig-and-haul, and that the -- or the dig-and-haul will be an exception --

Q. Okay.

A. -- basis, and probably only a few wells --

Q. And it could also -- that -- these curves could also change if you endeavored to do a -- construct and use a centralized waste facility; is that right?

A. Any of those cost components can change, and these costs can go up as well as down. If the costs go up, the gap between these curves will increase and cause more

wells to become uneconomic.

If there's ways that we can find to trim that, that cost differential, these two curves will come closer together and will reduce the number of wells.

Q. Okay.

A. But in all cases, it will be a significant increase in the amount of cost and -- the number of wells that would be reduced out of the inventory, I think that the 500 -- you know, over 500 is a reasonable number to assume would be the impact.

MR. JANTZ: Okay, thank you.

CHAIRMAN FESMIRE: Mr. Huffaker, do you have anything?

MR. HUFFAKER: (Shakes head)

CHAIRMAN FESMIRE: Dr. Bartlit, I'm assuming you don't.

DR. BARTLIT: No, sir.

CHAIRMAN FESMIRE: Okay. Mr. Brooks?

MR. BROOKS: Just a very few.

THE WITNESS: Thank you, Mr. Brooks.

CROSS-EXAMINATION

BY MR. BROOKS:

Q. Good afternoon, Mr. Poore.

A. Good afternoon.

Q. Well, I really do have just a few, but you did --

You can just leave that slide up for right now, because maybe that will be where you will explain it.

You said one thing that I really don't understand, and maybe you can explain it. Maybe I misheard.

It seemed to me you were saying that if the price of gas were to go up --

A. Uh-huh.

Q. -- that that would not -- that the wells that would be rendered uneconomic, or the prospects that would be rendered uneconomic by this increase in cost that you're postulating based on the rule, would not potentially be again made economic by a possible increase in future cost -- future price of gas. And I don't understand why that would not be true.

A. Okay, if -- looking at the slide, if that green line goes up because we have higher gas prices -- and that's what would be the effect, we -- the PV -- present value profit after tax would shift up, because we'll be generating more revenue from the higher gas prices. Okay?

But there will still be quite a few projects that are still unprofitable. Some that were unprofitable will be moved up to profitable, but then if we add the costs of the closed-loop drilling system, we'd then push those back to be uneconomic.

So it wouldn't be the exact same wells, it would be different wells. But because that line is fairly straight, the number of wells would be approximately the same.

Q. Well, I really don't understand what you're saying.

(Laughter)

Q. Now I do understand that an increase in the price of gas, depending on how much the increase was relative to the increase in costs, that it might make some uneconomic wells economic, and it might --

A. Yes, uh-huh.

Q. -- not make other uneconomic wells --

A. -- economic.

Q. -- economic.

A. Right.

Q. But it seems to me it would undoubtedly make some economic well -- some uneconomic wells economic, and I don't see how a rise in price would make any wells that would otherwise be -- that would otherwise be economic, uneconomic.

A. Correct, if it's already economic, it'll stay economic.

Q. Right.

A. Okay? So if the gas price went up, we'll have

some economic projects that are economic --

Q. Right.

A. -- with the current rule as it is.

Q. Right.

A. If we then add the extra cost burdens for this closed-loop drilling, it'll push that project to be uneconomic.

Q. Right.

A. Additional costs --

Q. Right.

A. -- will come off the profit, and turn a well that may have been economic now to be uneconomic by the increased capital costs.

Q. But if the price of gas went up in the future, then that might make that project economic again?

A. That specific project. What I'm dealing with, though, is a whole spectrum of projects. Not a one -- single project, but thousands of projects. And so it wouldn't be the same wells, but it would still be the same quantity of wells.

Q. Well, I don't see why it would be the same. Now I --

A. It wouldn't be the exact same number, okay --

Q. I grant you that there might still be some that are uneconomic, depending on how --

A. Not just some, there will be a lot that are uneconomic.

Q. And how many would depend on big the price increase was, would it not?

A. Correct.

Q. And of course also on what happened to other costs?

A. Yeah. Under no circumstance do I see a gas price that would pull all of these above the line.

Q. Okay. But you will concede that some of them would come up above the line?

A. With the gas price --

Q. Yeah, depending on --

A. -- and then would be pushed down because of the increased cost.

Q. Well, now I was -- I guess that's where we're talking at cross-purposes, because I was thinking the increased costs are going to occur right now, and the increase in gas price will come sometime in the future.

So what I was seeing was, the increased costs will come now, they pull some wells down -- some prospects down into the uneconomic category, then the gas price comes along and increases and pulls them back up.

A. Well, everything we do from this point of view is projections --

Q. Yes, exactly.

A. -- into the future, and that's why I -- Let's assume that we have perfect knowledge of what the gas price is going to be in the future --

Q. But then you'd run your economics on what's going to happen in the future?

A. Correct. And this would represent -- would fairly represent the distribution of those projects with some being uneconomic, some being economic, where the increased cost would then turn some economic projects into uneconomic projects.

Q. I think we're saying the same thing, actually, we're just getting it in a different order.

But let me try one more time to try to get you to agree with --

(Laughter)

Q. -- to try to get you to agree with my --

A. Can my attorney object?

(Laughter)

Q. -- my view of --

MR. CARR: I would, but I'm enjoying this too much.

Q. (By Mr. Brooks) -- trying to state the question.

(Laughter)

MR. BROOKS: We're going to drive the court

reporter crazy, if we don't watch out.

(Laughter)

MR. BROOKS: And when I -- I don't -- I haven't paid that much attention to Steve, but when I hired a court reporter I was very protective of him because I was afraid he'd quit and I wouldn't be able to find a good court reporter, and they're hard to find.

That's a digression.

Q. (By Mr. Brooks) Anyway, of the prospects that would be uneconomic under the new rule, in your judgment --

A. Okay.

Q. -- there are at least some that would be economic if you assumed a higher price of gas, correct?

A. Yes.

Q. And how many of that would fall in that category would presumably depend on how high a price of gas you assumed?

A. Correct.

Q. Okay. One further question on that subject, and I'll move on to something else.

There are some other operators who might find prospects economic that ConocoPhillips would find uneconomic, right?

A. Okay.

Q. And do you ever sell prospects that -- where

that's the situation?

A. We do occasionally sell prospects that are currently uneconomic.

Q. Thank you. Okay.

You are aware that some of the prospects -- that some of the closures that you will be doing, the waste can be taken to -- will meet standards to be taken to landfarms, correct?

A. No, I'm not aware of that --

Q. Okay, I believe your --

A. -- technicality.

Q. -- colleague over there just testified to it --

A. Okay.

Q. -- during his testimony. And of course, that would presumably involve somewhat lesser costs versus landfill disposals?

A. I don't know.

Q. Okay, that's fair.

Now you didn't assume that there would be any cost savings by closed-loop systems, you have only the cost increases?

A. The costs that I've shown here, we believe, will be incremental costs because we haven't included all the costs of, say, the drying pad, which -- or additional -- we may still need to dig a pit for -- to handle contingencies

and upsets in the 24-7 operations, so --

Q. So for that reason you haven't backed out the cost of a pit?

A. Correct.

Q. Although you acknowledge that you may not -- if you may -- if you say you may need also to drill a pit, you may not also drill a pit? Right?

A. That's true. But with all cost estimates, there's a certain amount of --

Q. Right.

A. -- uncertainty with all of them. And if you -- the costs that we're estimating were an order of magnitude greater than the current cost of the pits.

Q. There's been testimony in this proceeding that closed-loop systems, as compared to conventional drilling systems, save money in various respects, such as reduced use of drilling fluid, recycling drilling fluid. There are various other -- Are you familiar with those studies?

A. I'm basically familiar with those studies. I've read through them a little bit. But I couldn't testify to the details of those.

Our drilling engineer, who's in the audience here, has studied them in detail, and he would probably be the better person to ask the details on those case studies.

Q. Well, I guess I'm not really asking the details.

There's been a lot of testimony about them pro and con already in this proceeding, but you didn't assume any such savings in your computations, correct?

A. The numbers we used were the best numbers available based on the expertise within our company, as to be representative of the costs that we will incur for going to a closed-loop system.

Q. Well, that's fine, but that doesn't answer my question, which was, you didn't assume any of the savings -- any savings --

A. No, I didn't assume any savings --

Q. -- as a result of closed-loop systems? Thank you.

I believe I have only one other question.

You said that safety was your first priority --

A. Yes.

Q. -- and the Environmental Bureau chief wanted me to ask you what priority environmental protection is in your operation.

A. When I say safety, safety and environmental are the same entity for us. They're handled by the same department, so environmental and safety would both be considered that number-one priority.

MR. BROOKS: Thank you, Mr. Poore.

THE WITNESS: All right.

CHAIRMAN FESMIRE: Why don't we go ahead and take a break until 3:30, and reconvene back here at 3:30?

(Thereupon, a recess was taken at 3:15 p.m.)

(The following proceedings had at 3:34 p.m.)

CHAIRMAN FESMIRE: Let's back on record.

This is again a continuation of Case Number 14,015. All three Commissioners are present, we therefore have a quorum.

We were about to begin the Commissioners' examination, I believe, of Mr. Poore; is that correct?

COMMISSIONER BAILEY: Sure, why not.

CHAIRMAN FESMIRE: Are you ready, Commissioner Bailey?

COMMISSIONER BAILEY: Yes.

EXAMINATION

BY COMMISSIONER BAILEY:

Q. From your comments I can assume that cavitation and the air drilling will pretty much cease in the San Juan Basin over the next couple of years?

A. I wouldn't say it would cease. The air-drilling part of it. There is equipment that we can order up and eventually get there, be brought to the Basin for the closed-loop air drilling.

But the cavitation, your observations are pretty accurate, that with those additional costs, very few

cavitations would be justified.

Q. I also observe that cavitation is the most effective way of putting a Fruitland Coal well on line.

A. It actually depends where you are in the coal formation, in the Basin. The wells in the high-productivity area, what we call the fairway, those have responded quite favorably to cavitation. In some of the underpressured areas out in the outer fringes of the field, we've been successfully using casing-frac completions on those wells.

So in general, we have been moving away from cavitations, just because of the nature of the wells that we're drilling, and that's for new wells.

But now for existing wells, there was testimony you heard before that, you know, we're always having to do cleanouts on these wells. And they're like a mini-cavitation. And so that's where the biggest impact, I think, would be, would be maintaining the existing wells and having to go back in and do the recavitations.

Q. So the production decline for Fruitland wells will be a steeper gradient than it has in the past?

A. If we can't do those cavitations, these wells will decline sharper than they are currently, yes.

COMMISSIONER BAILEY: That's all I have. Thank you.

CHAIRMAN FESMIRE: Commissioner Olson?

EXAMINATION

BY COMMISSIONER OLSON:

Q. Yeah, coming on to costs, I don't know if you were asked this, but I guess what is your total cost for these wells, just as drilled now? So these are incremental costs, right?

A. These are incremental costs.

It really depends on the horizon we're drilling and -- but roughly a million dollars is -- you know, for the deeper wells, is what the drilling cost is. So these represent about 10-percent incremental costs.

Q. So about a million dollars for the Mesaverde-Dakota wells?

A. A million -- actually, the latest number I have is, I believe, $1.3 million for the Mesaverde-Dakotas. I believe that's drilled, complete and equipped cost. That would be our total capital cost to drill a new well.

Q. And what about the Fruitland Coal-PC wells?

A. The Fruitland Coal-PC wells are cheaper. I believe those are closer to $800,000.

Q. And I'd asked -- Mr. Wurtz deferred a couple questions to you, so I'll ask you on --

A. Thanks.

(Laughter)

CHAIRMAN FESMIRE: It's called a punt.

Q. (By Commissioner Olson) -- on the pad sizes, what's your average pad size on the current wells now?

A. The existing -- for the deeper wells, the pad size is about 1.6 acres. For the coal wells, the PC-Coal wells, we're using about 1.1 acres. So we really have a pretty small footprint.

Q. That's total acreage, not just reclaimed -- not from what you're reclaiming, but that's the total acreage you use on -- in the drilling?

A. With the current operations, yes.

Q. Okay. So were there some older ones that -- at least the ones I think Mr. Wurtz showed looked like they were a little larger than one acre or so, like that?

A. The slide that Mr. Wurtz showed may have been the total area. The area I just quoted here is the footprint of the drilling rig and the equipment. Now there may be additional area around that that may have been visible from that slide. But, you know, the 1.6 acres is the footprint for our drilling operation.

Q. And then you say you need a 25-percent larger drill pad for closed-loop?

A. Yes.

Q. Okay.

A. That's about -- a little under half an acre,

about .4 of an acre.

Q. Okay. And what are -- if you were just doing dig-and-haul, what would your costs be on a dig-and-haul operation, versus a closed-loop? I mean, you've had a lot -- I guess what I see here, you've got significant rig costs --

A. Uh-huh.

Q. -- for closed-loop, and you're saying you do everything closed-loop.

A. Yeah.

Q. If you were using a pit with dig-and-haul, you wouldn't have all those rig costs, correct?

A. That's correct. If I can pull up the slide here -- and I'll give you an approximation of what the dig-and-haul costs would be, consistent with the numbers I've shown you.

Q. Thanks.

A. Okay, in that top calculation we have approximately $30,000 for hauling for the closed-loop system. The estimate is that to do the dig-and-haul we'll have to do more mixing, and we'll also have to dig up underneath the liner, and it would contain more volume. Our estimation is, it would be four times the volume.

So roughly, you'd take four times the $30,000 and come up with about $120,000 for a dig-and-haul cost

estimate. Slightly more than what we show here for the closed loop, but as Mr. Wurtz testified to, the liability exposure risk of all the additional truck traffic -- because it would entail, you know, four times the amount of truck traffic on the road as well.

Q. So you're saying the same thing would apply to the Fruitland Coal-PC wells of about 4 times $18,000?

A. That would be a reasonable -- But again, as I showed from our results, very few PC-Fruitland Coals were affected by this, that it had much less impact than the Mesaverde-Dakota, mainly because it's just a shorter amount of rig days and, you know, the overall cost was less for the closed-loop.

Q. And you understand that under the current rule, I guess as proposed by the Department -- or by the Division, it would be looking at closed-loop systems only actually being required where it's less than 50 feet to groundwater?

A. I thought it would be no matter what the distance to the groundwater is. If it's less than 50 feet to the groundwater, we have to use a closed-loop system, we can't use dig-and-haul. If it's more than 50 feet to the groundwater, we have the option of dig-and-haul or closed loop.

Q. Right, that's what I was getting at, that right -- under the way the rule is written -- so it's only

required for -- it's the company's option as to how they want to do things over 50 feet to groundwater?

A. Yes.

Q. But I'm wondering, how many of the wells are in the 50-feet-to-groundwater area?

A. I don't know how many that are -- there are in that category.

Q. And is ConocoPhillips in agreement that a closed-loop system should be used in shallow groundwaters where it's less than 50 feet?

A. I believe that's where we've used closed-loop system in the past, and I'm not sure I can really say for the company what we do, but it would seem reasonable to me that, you know, less than 50 feet from discussions I've had with Mr. Wurtz and Mr. Alexander, that that's an acceptable solution, for less than 50 feet to the groundwater.

Q. So then the real concern is those areas where it's over 50 feet to groundwater, and then this 100-mile radius which you're saying would force you into using closed-loop systems?

A. All our wells are within 74 miles, and I believe most of our wells are greater than 50 feet to groundwater. But those would be the exceptions, that are less than 50 feet to groundwater.

Q. And when you're talking about 50 feet to

groundwater, are you talking mostly just the river valleys? Is that what you're thinking of?

A. That's my understanding, yes.

Q. Do you have any consideration for where there's also shallow depth to groundwater or what was previously defined groundwater vulnerable areas in the San Juan Basin?

A. I don't have enough information. I don't know enough to answer that.

COMMISSIONER OLSON: Okay, I think that's all I have.

EXAMINATION

BY CHAIRMAN FESMIRE:

Q. Okay. Mr. Poor, can we start out with, What is cavitation? Could you explain that to us?

A. What is cavitation? It's a completion technique used on Fruitland Coal wells where after you drill through the Fruitland Coal with a drilling bit, a lot of times we'll come back in and use an under-reaming tool to make that a little bit larger.

And if there's enough reservoir pressure available, we'll let the reservoir pressure build up the pressure in the wellbore and then surge it into a pit and -- with the express purpose of trying to collapse the coal formation around the wellbore.

And they'll do this dozens of times, I've seen

sometimes even hundreds of times, where they'll let the pressure build up and -- like a huff-and-puff, you know, let it build up and release it. And each time they're trying to get that coal formation to break down.

And when it starts running -- it's a term they use, is, the coal starts -- it comes out in small, little chunks, and each one of those surges will bring coal to the surface. And typically they'll have those cavitation particulate go into a pit -- or a blast wall that then drains into a pit, to collect any type of fluids that would be coming up.

Now the other technique they use for cavitation where the pressure isn't as high is, they'll use an air mist to pressurize the well up to 1400 pounds per square inch, and then do the same technique, you know, let that pressure -- release that pressure in a way to try to get the coal formation to break down.

Q. Between these stages do they go in and clean the coal out before they do it again, or do they just let it sort of crumble around the wellbore?

A. In the wellbore? The ones I've seen, the only thing they do is the surging, and then they'll let -- the buildup. So it's surge, buildup, surge, buildup, and they'll repeat those.

Occasionally I do believe that they can go in

there and do some cleanouts if they feel it's necessary, but most of the time it's just surging.

Q. Okay. This is going to piggy-back on, I think, a point Commissioner Olson made, but I wanted to make it again.

If you decide you have to haul the materials, the waste material, it actually saves your company money to use a closed-loop system, doesn't it?

A. Relative to what?

Q. Relative to an open pit?

A. Our cost -- the cost estimates I presented to you were all incremental costs, so we believe it would cost us more money to --

Q. No, if you assume that you're going to have to haul the wastes.

A. Oh, haul the wastes in a dig-and-haul --

Q. In a dig-and-haul --

A. -- scenario.

Q. -- as opposed to a closed-loop system.

A. Okay.

Q. Is that a correct statement then?

A. Then -- Can you repeat that again?

Q. Okay. It actually costs less to use a closed-loop system than a dig-and-haul, once the decision has been made that you're going to have to haul your wastes; is that

correct?

A. In most situations. Again, it would depend on the distance that you have to haul those cuttings, and there could be cases where it would be cheaper --

Q. If you --

A. -- to dig and haul, versus closed-loop. But as Mr. Wurtz testified earlier, that is -- we need to consider the risk exposure of those additional trucks on the roads.

Q. Okay. Well, I'm going to go back to a point that Mr. Brooks made before lunch. When the rig count was climbing from 60 to 90, we didn't hear a lot of concern from the industry about the number of trucks on the road. Is that an accurate statement?

A. I don't know what the comments were about the truck traffic at that time.

Q. Okay.

(Laughter)

A. I didn't hear anything.

(Laughter)

A. Then again, I might have been on the other side of the planet at the time.

(Laughter)

Q. You testified that your hurdle rate was at 13 percent, that you used?

A. That's correct.

Q. What is that rate?

A. That's the discount rate that we use for all future cash flows in our present-value evaluation.

Q. Okay, so that -- the way I was always taught, that's the discount rate of the first foregone project, the -- what you could make -- your opportunity cost for money that you don't invest in the current budget, right?

A. That's one way to look at it, yes.

The way we use it, though, it's a corporate guideline that we're given, that we're told to evaluate all our projects at this fixed 13 percent. What it represents to our head-office people and how they do their investments, I'm not certain of. But how you described it is one way to consider, and what the 13 percent means.

Q. Okay, so you do an individual economic run on every proposed well in your inventory, right?

A. Correct.

Q. And if the -- That's just the first hurdle then, the 13 percent is the way you evaluate it, and you come up with a net present value, and you rank your projects at that NPV 13, right?

A. Correct.

Q. You don't ever get down to the negative present value projects at 13, do you?

A. Well, we don't propose them purposely.

Q. Okay, I guess what I'm saying is, you're going to make more on your money than the 13 percent, right?

A. Correct.

Q. How do you calculate what reserves you're going to use in the evaluation of a proposed well?

A. There's all kinds of different reserve-estimating techniques.

One thing I do want to point out. For most of these wells in our inventory, they're infill wells, they're -- in the Mesaverde-Dakota we're going from the 160 spacing down to the 80-acre spacing. So most of these are infill wells.

And so we have pretty good well control in understanding what the reservoir properties are.

Q. So they're pretty low risk, is what you're telling me?

A. No, I wouldn't say that they're low risk. The geological risk is low, but the depletion risk is unknown. With the Mesaverde-Dakota as a tight fractured reservoir, there is quite a bit of uncertainty whether your completion will be efficient enough and you'll tap into --

Q. As a former reservoir engineer, I'm taking umbrage at the fact you're calling that "that risk". If it's a completion risk, that's mechanical risk, that's the other guy's, right?

A. Okay, now if I go to the reservoir risk, we also have a depletion risk that would appeal to the reservoir engineer.

Q. But a good reservoir engineer ought to be able to predict that, shouldn't he?

A. There's still a lot of uncertainty in that number for a tight gas reservoir like we have with the Mesaverde-Dakota.

Q. Okay, but still you come up with an expected number, don't you?

A. Correct.

Q. And how do your expected numbers relate to the reserves that you calculate after you've actually drilled the well?

A. We're always doing lookbacks to see how well we're doing from our prediction versus what we actually achieve, and then we try to tune up our model if we see some discrepancy. And a lot of times we do, and we have to do this, and -- So it's a continually evolving process where we try to get close. And we get fairly accurate.

But the information we have is only the initial rate data, and maybe the first couple months, and then we have to extrapolate what the future is. Until it produces its last MCF we don't know what the ultimate recovery is, but we try to approximate that. And as I say, we get

better and better at it as we go along in the program.

Q. Okay, but you can take that initial rate -- or the initial couple of months' production, and you've got a type curve for that part of the reservoir that you can fit it to, don't you?

A. We do a pretty good job at matching that initial data.

Q. Okay. Now you said that -- and I may not have the numbers exactly right. Some certain percentage of the wells will not get drilled, and I think you used the number 10 percent, didn't you?

A. Yes.

Q. But that doesn't mean that 10 percent of the reserves won't get produced, does it?

A. What I was trying to illustrate with that testimony was what the immediate impact is going to be on our drilling program.

Q. Okay, and I'll accept that.

A. Yeah.

Q. But what I'm saying is, if you don't drill 10 percent of the wells in your inventory, you're not going to take the top 10 percent, you're going to take the bottom 10 percent, right?

A. Well, there's all kinds of decisions as to which percent you take. We have a lot of competitive drainage

issues that we need -- and sometimes we'll do a less profitable well over a more profitable well. See, if I can get --

Q. Now -- Okay, let me take that statement then.

A. Okay.

Q. If you're going to do the less profitable well over the more profitable well, the inherent assumption thre is that one day you're going to drill the more profitable well, isn't it?

A. Yes, I wouldn't argue with that.

Q. So out of that 10 percent, if one of those wells falls into it, that's a deferred project, that's not a foregone project, is it?

A. You're absolutely correct, and I was not trying to portray that as being lost; it would be deferred.

Q. Okay, so 10 percent of the wells that don't get drilled are not lost to the company or to New Mexico, they're simply deferred until some point in the future?

A. But if you have 10 percent less activity there's, you know, less services needed for those. So it does have a trickle-down economic effect on the state because our drilling activity level decreases -- you know, eventually we'll get the reserves, but the immediate impact, there'll be less services required to drill those 10 percent less wells. So there will be an economic impact on the state.

Q. Okay, so there will be an economic impact. But the reserves won't be wasted, they'll still be produced?

A. They will not be wasted, correct.

Q. Okay. And I know from experience that this comes down from on high. What is your gas price projection?

A. That's confidential information.

(Laughter)

A. But we try to tie it, at least in the short term, to the Henry Hub prices that we're actually receiving for the short term.

Q. Why do you use the Henry Hub and not the Blanco Hub?

A. I don't know, to tell you the truth, what our economist --

Q. Companywide average, closer --

A. It could be, and then your differentials on that.

Now we have a whole department of economists out there that predict supply and demand on a global and world scale, and they use those influences to estimate what we should be using for projected gas prices into the future.

Q. Okay. And I don't want to get into the realm of confidential information, but is it safe to say you're projecting an escalating gas price over the -- at least the near term?

A. Our price -- I'm not sure if I could say that.

(Laughter)

A. Mr. Wurtz reminded me I can't.

Q. Okay. Absent an answer, I'm going to assume I was correct.

A. I wouldn't make that assumption.

(Laughter)

A. Now you're going to make an assumption on that?

(Laughter)

Q. No, I'm going to let you tell your bosses you didn't tell me.

A. Okay.

Q. You mentioned something about Merrion's experience shows, and that's what I've got in my note.

A. Okay --

Q. And I remember you using that, and I don't remember the context but I remember it piqued my interest. What is Merrion's experience, and what does it show?

A. Let me get back to my notes on that. The -- I believe it was a drilling engineer from Merrion who was here to testify to the Commission as to what their experience with closed-loop drilling was, and I believe the cost numbers they had were over $200,000. And one of the statements the Merrion drilling engineer said, that it didn't work like they had expected it to work. And what was sucking on my mind during his discussion is the

sloppiness of his cuttings. And they were able to get into their landfill even though it didn't appear like it would meet that paint-filter test that we're aware of.

So that general comment was in reference to the testimony they gave of the difficulties they had with their closed-loop system.

Q. We've touched on this a little bit, but I think I need to make it a little clearer. How do you handle risk in your analysis?

A. It depends on what risk you're talking about. We handle all kinds of risks going from geologic reservoir risks to the environmental risks --

Q. I'm specifically interested in your inventory calculations, the calculations you do on your inventory wells. How do you handle risk in those calculations? Do you require a higher hurdle rate on those? Do you decrease the amount -- expected reserves? How do you handle it?

A. How we normally do it for the wells in the inventory, we'll have a dry well- -- you know, a dry wellbore cost so that if the well is not successful -- and then we'll put a probability of success on that. In most cases, it's -- as an example, let's say it's 90 percent probability of success, 10 percent that we're going to, you know, have a bad well, and we'll have to -- we won't have any rate or revenue generated from that. So we'll risk it

in that sense, using the probability of success and expected outcome.

So all these numbers I've presented are the expected after --

Q. -- 13 percent --

A. -- that risk is applied --

Q. Okay --

A. -- at a 13-percent discount rate.

Q. Okay, so what you're doing is, you're saying that over your inventory you will make your NPV at 13 percent on the average, right?

A. No --

Q. That was a real poor question --

A. Yeah.

Q. -- let me withdraw that.

As long as you're successful -- and, you know, given the lookback analyses that you were talking about --

A. Uh-huh.

Q. -- you've made more than 13 percent on your drilling, have you not? In the San Juan Basin, haven't you?

A. Yes, we have.

Q. And I suppose if I asked how much more you'd tell me you couldn't tell me?

A. I can't tell you. If I was in the Mafia, I'd

have some guy behind me that --

(Laughter)

A. -- to answer it for you.

Q. Which is a wonderful segue into my next question.

(Laughter)

Q. Prior witnesses who may have made that comment indicated that a significant amount of the acreage up there is tied up and held by production, right?

A. Yes.

Q. And that's true of you all's acreage, right?

A. That is correct.

Q. So as long as the other wells on the lease are producing, you can defer drilling on those leases until it becomes economically viable, right? No?

A. Let me see if I can --

Q. Excepting maybe state leases, I --

A. -- explain this a little more, and hopefully this will give you some insight into how our projects are.

As I stated previously, a lot of these are infill projects, and I'm sure you're fully aware that when we justify infill projects, there's a component of unique reserves that we use to justify these. Otherwise, we wouldn't get an order to reduce density.

Q. Right, accelerated reserves versus true reserves?

A. Correct.

Q. Okay.

A. And so it's very important to consider, you know, both the accelerated component and the unique reserve component for the economic evaluation. As a matter of fact, that's one of the reasons that we'd have a difficult time farming these properties out, if there was another operator who could --

Q. We might be able to hook you up.

(Laughter)

A. And the reason is, is if we already have a producing well on that lease, and what we're talking about is trying to farm out the infill well, we would not sell a property that would be in direct competition with our existing well. And what would be at risk would be that accelerated component.

Because it's all within the same lease, we don't mind if it comes from one well or the other because it's still the same ownership. If someone else owned that well, it would be reserve loss for us.

Q. Right. And heaven knows, writing down reserves is a mortal sin, right?

A. That's one of the things that scares me most about this. As I showed on a previous slide, we're looking at having to do a reserve write-down as a result of these increased costs.

Q. Would it be -- Having just testified that it wasn't waste, would it be a reserve write-down, or would you simply be changing the category of the reserves?

A. I'm not sure how -- I followed the first part of saying it is -- what a waste is. But in order to have it as a reserve, by the SEC definition of a reserve, it has to be economic. And they evaluate that economic based on the price as of December 31st.

Q. Right.

A. Okay?

Q. Right. But you would -- and I realize it goes outside the SEC definition, but you wouldn't write those reserves off your books -- not counting the SEC, but off your reserve books, but they simply go from proven to probable, right?

A. They change category, but it becomes a reserve write-down -- a write-off --

Q. As far as the SEC is --

A. As far as the SEC's -- require, and that's how a -- stockholders look at his well. So it has real effect, financial effects, having to write off those volumes.

And based on the analysis I showed you and tried to demonstrate on that slide, they wouldn't be produced because they're uneconomic --

Q. Right.

A. -- so they really would be lost reserves.

Q. By the SEC definition?

A. No, by -- in reality as well. We would -- these -- if I can go to this impact on our capital inventory, okay, if -- that 263 BCF would not be produced.

Now if --

Q. But these aren't booked reserves yet, are they?

A. Some of them are, quite a few of them are.

Q. Well, how is increasing the cost of drilling a well going to affect book reserves? You can't book those reserves but for -- if I remember the SEC regulations right, it's the well that you drill plus one offset location; is that correct?

A. Because we're an infill location, all those wells meet that hurdle from the SEC.

Q. Okay.

A. Okay?

Q. So you would --

A. As long as they're economic and we have a commitment to develop the well, and what we use as a criteria for that -- if it's in our long-range plan, period, that's enough requirement from the SEC that we have a financial commitment to produce those -- to develop those wells, we then can write them -- classify those as proved undeveloped reserves.

Q. Okay, and -- but that's for the accelerated portion. The new portion are not proved reserves, are they?

A. The new portion is. If we have the unique and the accelerated portion -- the accelerated portion is already in the well that we have. The unique portion is what we book as the proved undeveloped reserves.

Q. Okay, but the SEC doesn't allow you to use undeveloped reserves, does it?

A. It's a category that you're allowed, proved undeveloped, and you have proved developed reserves. They're two different categories that are reported to the SEC as proved.

Now as you stated before, there's probable and possible categorizations, and those have to do with, you know, risk uncertainty, technology uncertainty and economics.

But in order to get into that proved category, whether it's -- because developed, that means you have a producing well. If it's undeveloped, it has to be economic. And both proved developed and proved undeveloped are relied on heavily for investors to look at the valuation of the company.

And so there's a big push to get as many of those reserves classified as proved undeveloped, so we can get

credit for it, how Wall Street looks at the company.

Q. And if you want to know what happens if you get crosswise with that, just ask Shell or Forest or El Paso, right?

A. Yes. Not comfortable.

Q. But back to the point I was trying to make initially, if you take and decrease your -- the number of wells in your inventory by 10 percent, you're not going to decrease your reserves by 10 percent, are you?

A. Our inventory is complete. It includes both economic and uneconomic projects.

Q. Right.

A. The only projects we can include in reserves are economic ones. So if they move from economic to uneconomic, that would cause us to do a reserve write-down.

Q. But the point I'm trying to make is that the wells that fall off your list, to-be-drilled list, are not going to be average recoveries per well, are they?

A. The -- the figures that I showed there, you can estimate what the average recovery is per well if we have --

Q. But compared to all of the wells on your list, if we decrease the number of wells that get drilled, the expected recovery from the wells that don't get drilled is significantly less than the expected recovery per well,

from the wells that do get drilled; isn't that correct?

A. I'm not sure if I follow you.

Q. Okay, let me see if I can word it a little better.

A. Okay.

Q. The 10 percent of the wells that don't get drilled --

A. Yes.

Q. -- are going to have a lesser expected recovery per well than the 90 percent of the wells that do get drilled, correct?

A. When we look at what we're going to drill in a particular year, obviously we give a little more weight to the ones that are going to have higher recovery. But that's not our primary -- I mean, that's not the only consideration when we do a drilling program.

Q. I understand that. But the point I'm trying to make is, while we cut the number of wells by 10 percent, we're not going to cut the expected recovery to the state by 10 percent of what you would otherwise have, right?

A. As long as those wells stay economic they will eventually be drilled, okay? But in a short-term effect, if those are not drilled, they're not available for production, our production volumes are down, so there'll be less revenues for the state, even on a short-term basis.

Eventually, they may be --

Q. Okay, granted --

A. -- produced --

Q. -- there will be less revenue, but it won't be 10 percent less than what would otherwise be expected, would it?

A. You'd have to look at the proportion of number of wells in our drilling program to the whole basin, and we have quite a few more existing producing wells, that's correct.

Q. Let me come about this one other way.

A. All right.

Q. The 10 percent of the wells that don't get drilled are the worst in your inventory, right?

A. No, they are not.

Q. Okay, now we get back to there again.

(Laughter)

Q. I think we're just going to have to disagree on this one.

A. Well --

Q. I understand your point. You know, there will be exceptions. But generally, the 10 percent of the wells that don't get drilled are not the ones that will contribute average recoveries, right? Unless your geologists are really off their rockers.

A. The 10 percent that I quoted less wells, that is an immediate impact on the drilling activity. It wasn't to represent --

Q. I understand that.

A. -- on that, so -- Let me try to get back to that and see if we can maybe come to a consensus that we can both agree on.

Those 10 percent are whatever wells that we have in next year's 2008 budget. Okay?

Q. Okay, maybe I can ask it this way.

A. Okay.

Q. The 10 percent that don't get drilled are not the ones with the 10-percent highest expected recoveries, are they?

A. Some of them may have high recoveries --

(Laughter)

A. -- some of them may have low recoveries. It depends on our prioritization. A lot of it depends on our permitting process. If we -- you know, if a high profitable well gets, you know, slowed down in the permitting process, that would be one that we would defer.

So that's why I can't -- I'm not trying to be evasive, it's just the nature of our drilling program. You just can't start from the top and go down. Ideally, that's what we'd like to do, but the realities are, there's a lot

of other considerations that go into it. So to make general statements one way or the other, I'm uncomfortable doing, because I'm not sure it fairly represents the way our business actually works.

Q. Okay. Now you talked about the immediate availability of closed-loop systems, if you had to -- if you had to go to that.

A. Yes.

Q. Have you all done any sort of an analysis to figure out how long it would take to get enough closed-loop systems into the market to satisfy the demand?

A. That's why we recommended that one-year moratorium. We believe that within a year we could be up and fully equip our -- at least the 10 wells that -- or 10 rigs that we operate. We feel after a year we could meet that.

Q. Do you think that's representative of the industry, or is that just ConocoPhillips?

A. I can't speak for the rest of the industry, but obviously the overall -- everybody's demand will affect everybody else's -- if there's only a fixed number available and there's -- I think the number quoted is 37 rigs in northwest New Mexico, and we have 10 of those, if another operator is vying for that same equipment it may slow down ours.

So I don't know if that helps your -- with what you'd asked or not.

Q. Well, it does and --

A. -- it doesn't?

Q. It does, and it -- it gets a couple other questions that I don't think I'm going to ask.

A. Okay.

Q. Just for clarification. Your shallow wells, your Fruitland Coal, your Pictured Cliffs wells, you believe that the use of a closed-loop system and the associated hauling and disposal of the generated wastes will have a net increase in cost per well of $49,500; is that correct?

A. On average.

Q. On average.

A. Variable by how far the hauling distance is.

Q. Okay. And those are the shallow ones. We've had some testimony that some of those wells are as shallow as 600 feet, but that's not on you all's -- on you all's --

A. That's --

Q. -- property?

A. -- that's not -- most of ours are in -- I think the average depth that we assumed for this was 2700 feet --

Q. Okay.

A. -- for the shallow wells.

Q. And for the deeper -- and that -- you know, that

conforms pretty well to prior testimony we've had for the very shallow wells of about $38,500 per well?

A. Yeah, those are extremely shallow wells --

Q. Right.

A. -- and a lot less cuttings and a whole different rig system --

Q. But it's not linear, I mean --

A. No.

Q. -- that's a reasonable number for their -- for their testimony too, isn't it?

A. It seems reasonable to me.

Q. Okay. And the deeper wells, the Mesaverde and the Dakota -- I've always wondered why folks up there call it the Mesaverde but -- the cost -- the expected increase of cost would be about $115,000. What average depth did you use on that one?

A. I have it in my notes here someplace. I think it was 7600 feet -- and 7900 feet.

Q. 7900 feet?

A. 7900 feet.

Q. And were you here when the gentleman -- his name escapes me -- testified about his experience with the Morrow wells down in southeast New Mexico?

A. I believe I was here that day, yes.

Q. And he said for, if I remember correctly, 12,000-

foot wells it was about $150,000?

A. I do recall numbers of about that order, yes.

Q. Industry representatives have been saying things, that it was going to cost $250,000 to $350,000 per well.

A. Uh-huh.

Q. Is that an accurate statement?

A. Industry hasn't -- I've heard those numbers reported from industry. Are they accurate as to what we think numbers are? I -- What I've presented here is what ConocoPhillips believes the numbers will be for our application in northwest New Mexico.

Q. So even in a deepest-case scenario -- I started to say worst-case scenario, and I didn't mean to, but even in the deepest-case scenario that you all are involved with in the northwest, you know, and all the restrictions that come with that, we're looking at $115,000?

A. That's -- based on this estimate. There's some other, you know, costs that could go in it. Like I stated before, we're not sure about the -- well, the cost that we've recently gotten on the air-drilling is significantly higher. It's another $2000 a day for the air-drilling system. So those deeper wells would have another $2000 a day associate with it, times the 14 days, so we may have another, you know, $28,000 to add to our cost estimate.

Another uncertainty that we have is, we have this

thing that I call spud rig. It's to set the surface casing, and we're not sure that that system would be -- make itself -- lend itself to do closed-loop drilling, and we save ourselves -- I believe it's about $18,000 per well by using that. So there would be additional costs there.

So there's ways -- depending on how the cost estimates come, the number I gave you, $115,000, could go higher, approaching $150,000.

Another cost that I hadn't included in here that we think would be a fairly significant cost is road maintenance. We didn't include those. If we have 60 truckloads going across a dirt road, there may be additional responsibilities we have to re-blade the road, you know, water it down and recondition it. And I worked with our construction department and we've come up with a cost model and I've, you know, applied it to the length of, you know, rig roads -- or dirt rig roads that we'd have to be using, and that's approximately another $16,000 we would add.

So the $115,000 I'd almost use as sort of a lowball number --

Q. Right now for the deep wells?

A. For the deep wells, and --

Q. Okay.

A. -- and so it can go higher. Up to $200,000, I

would think, would be a reasonable approximation. It could be justified. Whether that's what we'll get or not --

Q. Shall we take another five minutes to get to the $250,000, $350,000 range?

(Laughter)

Q. But there are also some potential savings in here that you haven't addressed? For instance, the lack of a pit under the right conditions?

A. I think I've addressed that. We didn't include the -- putting the pad in, and we may need to have either extra tankage or have some type of pit for the upsets out there and for the 24/7 operation.

So I think we've addressed that, and I wouldn't take any deduction from these cost estimates for that particular savings.

Q. Okay. What about some of the things that other operators have reported, like the increased penetration rate, things like that?

A. You'd have to ask our drilling expert. And like I've stated before, he's in the audience here if you'd like to --

Q. And I bet he loves hearing you say that.

(Laughter)

A. And -- I'm not qualified to assess, you know, those drilling --

Q. But you're --

A. -- operations.

Q. -- if other testimony has indicated that, you didn't take that into account in your analysis?

A. Our drilling engineer thinks these are the -- drilling engineering department thinks these are the best numbers that we have available, taking into account all aspects of our drilling based on our drilling experience.

So I would almost have to argue that the results these other operators had may not -- would not be indicative of what we would see up in our area.

Q. You're not saying they're better than you, are you?

A. We're the best.

Q. So if they can make money at it, you probably can too, with a little experience?

A. Make money, or you're talking about saving money.

Q. Save money --

A. Yeah.

Q. -- cut down your penetration rate, things like that.

A. To -- really to answer that question, I think a drilling engineer specialist would be better qualified to comment on whether those would be reasonable savings to look forward to.

CHAIRMAN FESMIRE: Okay. Mr. Carr, do you have any redirect on this witness?

MR. CARR: Just a little.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Poore, following up on the Chairman's questions, he has discussed with you the fact that you didn't factor into your calculations any savings. I just want to -- that might come from use of a closed-loop system.

Was it your testimony that your calculations are complete, and because of other factors that you didn't add on the cost side, you believe these are accurate numbers and that there are no hidden things that should be deducted from these figures to make them accurate?

A. I would say that. And like my testimony, there may be things that make it even higher.

Q. Okay. Now to try and understand some of your questions, I was having some trouble. You had -- you put up your graph on potential future wells.

A. Uh-huh.

Q. And using this graph, you showed the impact on the number of noneconomic wells in your inventory that would result from increased costs related to closed-loop drilling; is that what you were doing?

A. What I'm illustrating here is, all the wells to the left of that green vertical bar, under our current evaluation, are economic and would be part of our drillable inventory.

Now in our inventory we also have all the uneconomic wells also, and that's the tail to the right.

Q. All right. But now -- then you testified that there would be some wells that might be drilled for reasons other than economic reasons?

A. Correct, there's --

Q. And then as a result of that, if I understood your testimony, you would not be losing the reserves, you'd be deferring some reserves?

A. In that situation, yes.

Q. And you're deferring the reserves from the economic wells that you can go back and drill at a later time; isn't that what you're saying?

A. Yes.

Q. Now when you move the line showing economic and noneconomic wells to the left --

A. Uh-huh.

Q. -- you testified, if I understood it, that what you were doing was making additional reserves uneconomic to produce; is that correct?

A. That would be the effect of the increased capital

costs.

Q. And that the increased capital costs, I believe you testified, rendered an additional one-quarter TCF noneconomic?

A. The actual number is what's on the exhibit of 263 BCF. I rounded it to a quarter TCF.

Q. And you're not deferring those, they're going to remain noneconomic, are they not, because of the increased costs?

A. Correct.

Q. Now we've heard a lot about costs from the industry. Is it fair to say that what you have presented are ConocoPhillips' best estimates of what the increased costs will be if you move to closed-loop drilling?

A. That is correct.

Q. And because of that, there are going to be fewer wells drilled and less reserves recovered?

A. Yes.

Q. Now the numbers that you have given, these are actual numbers you presented for your management; isn't that correct?

A. These are the -- these are the exact exhibits that I presented to my management.

Q. And if there's concern about misinformation from the industry, this isn't it?

A. No.
Q. This is the number -- these are the numbers you gave to your management?
A. Yeah, these are the numbers you gave to my management, and these are the numbers they'll make their decision on.
Q. And because these are the only numbers they're going to look at when they make their decision, it really doesn't make any difference if Synergy has different numbers?
A. That's correct.
Q. Or OGAP?
A. Correct.
Q. Or the Energy and Minerals Department?
A. Yes.
Q. These are the numbers that will count --
A. That's right.
Q. -- and the only ones that count --
A. The only ones, yes.
Q. -- in making that decision?
A. Correct.
Q. And you're the largest producer in the San Juan Basin?
A. We are indeed.
Q. Do you believe these are the best possible

numbers you can put together, based on your experience and the information available to you to estimate the impact, economic impact, of moving to closed-loop systems on ConocoPhillips' drilling operations in the San Juan Basin?

A. Yes, they are.

MR. CARR: That's all I have.

CHAIRMAN FESMIRE: Is there any further recross on this witness, on that subject?

Mr. Jantz?

MR. JANTZ: None.

CHAIRMAN FESMIRE: Mr. Huffaker?

MR. HUFFAKER: None, Mr. Chairman.

MR. BROOKS: No questions, your Honor.

CHAIRMAN FESMIRE: Commissioner?

COMMISSIONER BAILEY: No.

CHAIRMAN FESMIRE: Mr. Poore, thank you very much. I guess that's the end of your ordeal today.

THE WITNESS: Thank you very much.

MR. CARR: And he can start eating again.

(Laughter)

CHAIRMAN FESMIRE: Is there -- We can either start Mr. Hansen's testimony, or I understand that there's been a request to get out of here by five o'clock. My thinking is that we should ask for -- on the record -- My mind just went blank.

MS. FOSTER: Public comment.

CHAIRMAN FESMIRE: Public comment, and then call it a day.

Is there anybody here who would like to make a public comment on the record?

Dr. Bartlit, why don't you come forward, please, sir? I think you know the drill, don't you? Do you want to be sworn?

DR. BARTLIT: I do.

CHAIRMAN FESMIRE: Would you raise your right hand, please?

(Thereupon, the witness was sworn.)

JOHN R. BARTLIT, DChE,

the witness herein, after having been first duly sworn upon his oath, testified as follows:

DIRECT TESTIMONY

BY DR. BARTLIT:

DR. BARTLIT: I appreciate the help of Mr. Wurtz in this endeavor.

MR. WURTZ: Well, I haven't helped you yet, so...

THE WITNESS: My name is John Bartlit. It's B-a-r-t-l-i-t, which is a little different than usual.

My credentials, I'm a volunteer with New Mexico Citizens for Clean Air and Water. I'm not an economist, I'm not in the oil business.

I have a doctor of chemical engineering. I've taken college courses in chemical engineering economics, and -- several of them. I know how chemical engineers look at economics. I'm experienced in working with graphical data of all kinds in my professional career.

I'm familiar with hearing dynamics. I was on the Mining Commission for five years, from 1997 to 2002, as an appointee of Governor Gary Johnson. This is relevant because it makes one familiar with the hearing dynamics, which we've seen a lot of here. By hearing dynamics I mean testimony, cross-examination. It's a very good process, it gets out information, but it is a very cumbersome process. It has a lot of graphical data, typically presented and discussed hurriedly and cross-examined in an awkward, time-consuming manner. Some of these data in graphical form require some thought to think about afterwards, and it cannot be -- create a useful question in 10 minutes.

So that experience on the Mining Commission I put forward as making me familiar with the problems and successes of testimony and cross-examination.

I've been involved in many environmental rule-making proceedings, I've testified subject to cross-examination many times, particularly giving perspectives of economic impact from industry's detailed cost data. I do not analyze industries, but I do analyze cost data

presented by industries and perspectives on that.

I have published papers on this topic. My copies are getting fewer, but I have three copies here. The title is, Putting Environmental Economics in Perspective: Case Study of Four Corners Power Plant, New Mexico, 1979, in a peer-reviewed article, journal -- *The American Journal of Public Health*. I put this forward to say that I have participated in hearings, and I have analyzed data and I have published analyses of economic data based on my engineering economic background in peer-reviewed journals.

With that introduction, I have sat in this hearing for not all of the days but most of the days, and I've heard lots of testimony, lots of cross-examination. We heard some very recently on economic data and its analysis and its interpretation and various interpretations, and this happens at hearings typically. It happened for five years while I was on the Mining Commission.

I heard the cross-ex- -- I heard the -- I did not hear the testimony of John Byrom. I did hear the cross-examination of him, and I have access to his exhibit, which I have before me.

I've heard economic testimony from many other industrial interests, much of it, as I'm giving this testimony now, as a sworn public statement rather than a

called witness from someone.

The meaning of charts that have been presented is clear to many but perhaps not to all, and I'm going to talk about a chart or two of John Byrom's. I am not going to argue with his data. This is not about whether his costs are right, it is not about whether his analysis is right, it is not about his methodology, it is not about his data on wells and uneconomic wells. I'm not qualified to judge that. I use his data. But I want to give a perspective which I have developed in the time since he gave -- since I heard his cross-examination.

And I -- again I say, it is not uncommon that these graphical data of a complex nature which is explored through testimony and cross-examination -- cross-examination by friendly counsel, cross-examination by adversarial counsel, that it is hard to grasp what it says there. And I want to say what I gathered from that testimony and that cross-examination over several days.

If we can go to exhibit page 14. Again, I'm not arguing with any of the data, I accept it. There has been argument about it. That's not my point.

Does someone have a laser pointer that I might --

CHAIRMAN FESMIRE: Jerry says he does.

THE WITNESS: I'm indebted entirely to industry for all my systems here.

(Laughter)

CHAIRMAN FESMIRE: Particularly Yates Petroleum, Artesia, New Mexico.

THE WITNESS: Uh-huh. Mr. Byrom said at that point right there, that is the -- shows the return on investment required, and I believe it was 15-percent return, which is what they -- that is their goal. And this dotted red line is a 15-percent return on investment after the increased costs that industry assessed would be added by the proposed rules if they're fully adopted. And that all the wells from here down become at risk of not being drilled, of being uneconomic, of being not drilled. The wells -- the drilling of those wells is threatened, is the word that was frequently used.

I asked myself, What if the rules are rejected in total? This Commission sees fit to adopt none of the rules, and they're all dismissed.

Now we are here, the 15-percent return figure where we were without any proposal, there are no added costs, there are no new rules, and all of these wells here are uneconomic, are threatened, are at risk, whatever term you want to use. And I intend as fully as I can to use Mr. Byrom's term -- "threatened", I think, was the word you used, or "at risk" or "uneconomic", any of those. And I understand his point. This is past data, you can't project

it in the future. But I am using his methodology and his data to explain what the meaning of this is as I realized it, far too late to cross-examine it in the original.

Here are all the economic -- un- -- threatened wells, threatened not to be drilled, if we raise -- we pass all the rules and raise the cost as much as industry says it will be. And I think his figure was around $120K.

And here are all the wells that are uneconomic or threatened or at risk if we raise the cost zero.

There is not a great deal of difference between those -- the wells that are uneconomic. These are only the wells -- It is of the order of a few percent. Now you can figure it, that's not my point.

The point is that almost all of the wells, a very high percentage of all wells that are threatened, at risk, uneconomic with the elevated price, are threatened, at risk, uneconomic without the cost rise.

That is the only point I make. It comes solely from this graph. As I look at it, it is a complex -- gathering information from graphs, graphical data, through cross-examination and testimony by friendly and adversarial counsel is a very awkward way to communicate and pass information back and forth.

If I could go to page 12, same data from the same report, same argument. Here is if we raise the costs as

much as industry says, all these wells are at risk, threatened, uneconomic, whatever the word is.

And if we raise it -- if we squash the rules, pass nothing new, no added costs, here are all the wells that are threatened, at risk, uneconomic, whatever the word is.

And this is my point. The point is that the economic effect on not -- on passing these rules, as presented in my analysis, using all of Mr. Byrom's assumptions, from these charts is very much smaller than some in the room may gather from the testimony and cross-exam that occurred before.

Another reason this is important is because I have seen in much of the testimony, the publicly sworn testimony such as I'm giving, many companies, industries, businesses, come up and say, I hear we'll lose 30 percent of the drilling. I don't know where that comes from, my customers tell it to me. If I lose 30 percent of my business, I'm dead.

This relates to that. And it is perhaps coincidental, or not, that all of these wells from here on down are about 30 percent of all the wells.

So I suspect that there is some -- that this graph and the one before it bear some relationship to the information that came to many businesses, that they would

lose 30 percent of the wells.

I'm not arguing with any of the industrial statements. I'm taking their graph, their data, their assumptions and telling you my perspective on it.

And that concludes my testimony.

CHAIRMAN FESMIRE: Thank you, Doctor.

Is there any cross-examination of this witness?

Ms. Foster?

MS. FOSTER: Yes, I do have -- I do have a few questions.

CROSS-EXAMINATION

BY MS. FOSTER:

Q. Mr. Bartlit, you said that you were not here for Mr. Byrom's direct testimony?

A. Correct.

Q. And so therefore your presentation now is based only on what you surmise was said on direct testimony but what you heard on cross-examination?

A. Cross-examination plus the exhibits, yes.

Q. Okay. Well, in his direct testimony, were you aware that that blue line that's represented here on the graph was the demonstration of what wells are currently considered to be marginal?

A. I'm well aware -- this came out under cross-examination that this is past data from undrilled wells,

and it is not data on future drilled wells --

Q. Okay --

A. -- yes, I understand that.

Q. -- so if you're reviewing this chart right here, then all the wells that are below -- in other words, number 31 and below were considered marginal wells or uneconomic?

A. I believe that's the term that has been used, yes.

Q. Okay. And then the dashed line that's represented on this chart is the additional cost that would be imposed if Rule 17 were to be passed?

A. As estimated by -- for this case, as estimated by Mr. Byrom, yes, I --

Q. Yes --

A. -- accept that.

Q. -- as estimated by Mr. Byrom using the costs --

A. I'm not quarreling with him, I'm not arguing with him here.

Q. Okay, well --

A. I take his dashed red line.

Q. Okay. I just -- I'm not quite sure I follow your comments that the real economic impact is really only the difference between the blue line and the red dashed line. If you're adding a substantial cost to your drilling, doesn't that -- does that not make all those wells beneath

the blue line even more uneconomic?

A. I'm taking the statements made repeatedly by Mr. Byrom under cross-examination that this dashed red line means that all of these lines -- Well, excuse me, I --

(Laughter)

MR. HISER: Would you like me to move?

THE WITNESS: All of these wells are threatened, at risk, uneconomic. Nobody intentionally tries to drill those wells. Nobody wants to drill those wells. Everybody is disappointed and unhappy, with the exceptions of some statements we heard from Mr. Poole [*sic*] in drilling those wells.

And if you raise no costs, these wells here are uneconomic, threatened, at risk. That's the number of wells -- that's how Mr. Byrom told this Commission and me how to analyze the data.

Q. (By Ms. Foster) No, actually that's not how he actually told the Commission or yourself to analyze the data.

Did he not say that since this -- these numbers were actually based on actual production rates of the well -- Obviously, you don't have producers who are going to purposely go out there and want to produce a marginal well, okay? And it just so happens that a third of those wells come out to be marginal, based on actual numbers --

A. I accept that.

Q. -- and based on the actual numbers that have come out, you can increase the cost, as demonstrated by the red dashed line on here. Okay? In effect, what you're doing is moving that blue line up to the red dashed line --

A. No, I'm moving the dashed red line down to the blue line, is what I'm doing.

Q. Okay, well then you're ignoring the cost of closed-loop drilling or the additional cost of --

A. I'm accepting -- I'm saying if -- I'm ignoring the cost of closed-loop drilling, because -- Moving the line down is premised on, I said, the Commission denies, rejects, all of the proposed rules, we don't like any of it, they say they vote 3-0, all of it's squashed, dead and buried -- excuse the expression --

Q. Okay --

A. -- and therefore there are no added costs, because of the -- because of everything we've done in the last three weeks, and the Commission -- there are no added costs. So in that case, those two lines are the same.

Q. Okay. In your hypothetical situation, then, in that instance the lines would be the same. However, that does not still stand for the proposition that all those wells below would be threatened. What it means is that the analysis that was done by the companies who decided to

drill those wells was inaccurate, and they resulted with a bunch of wells that were marginal.

A. We've agreed on that already, that people never intentionally drill a marginal well. It is an inaccuracy, an error, a flaw -- except as Mr. Poole pointed out, there could be a time when because of field configurations you drill them knowingly that they won't be high producers but ignore that. Everybody tries not to drill those wells, I agree --

Q. That's right, and --

A. -- and they will --

Q. -- what Mr. Byrom did --

A. -- they will now and they will anyway.

Q. Right. Well, what Mr. Byrom did was to use the historical numbers to demonstrate that in fact there is a percentage of wells that result in marginal wells --

A. Agreed --

Q. -- okay --

A. -- agreed.

Q. -- that do not rise to the production levels that are expected --

A. Right.

Q. -- and I believe that the blue line -- and in your hypothetical there is no red line on our -- in our hypothetical, but the blue line is the target level that

operators try to reach --

A. Yes.

Q. -- when they are --

A. Yeah.

Q. -- calculating their wells, correct?

A. Yes.

Q. Okay. So based on that premise, then, what I -- I'm not quite sure what I understand you to be saying in your presentation.

A. What I said in my presentation, really, is what I said in my presentation.

(Laughter)

A. And you're -- and you're trying -- you are trying to get me to say it in your terms.

MR. CARR: You can't argue with that.

THE WITNESS: And that's not what I want to do.

But this is my point about the hearing procedure. You see, the transfer of information to a Commission through the cross-examination and testimony procedure is very -- it's very excellent when taken enough time, but it is very slow, cumbersome, obscure, there are sides trying to obscure it, there are sides trying to make it clearer. I'm trying to make it clearer in my terms, you're trying to obscure it in your terms. We'll tussle a while, maybe.

And then my saying that my dashed -- my dashed

red line is not a hypothetical, it is -- if the proposal is passed as written, Mr. Byrom says it is the line. If it is not passed by the Commission, totally rejected, it disappears. There is no added cost, that is not hypothetical.

Q. (By Ms. Foster) Okay --

A. If no rules are passed, there are no added costs.

Q. Okay, Dr. Bartlit, I think in this instance we'll probably have to agree to disagree. But let me ask you two more questions.

The first question would be, did you speak to Mr. Byrom prior to you making this presentation on his interpretation of what these graphs were all about?

A. I talked to him in the hallway and I said to him, I do not understand your -- I said to him -- and I think he'll vouch for this. I also talked to Mr. Newman in the hallway also.

Q. Mr. Newman -- Did Mr. Newman prepare these graphs, or --

A. No. No, no, these are -- graphs are John Byrom's --

Q. Okay.

A. -- your exhibit --

Q. Yes --

A. -- not my exhibit.

Q. -- I know, that's why I question why you spoke to Mr. Newman.

A. Because he's in the oil business, and very knowledgeable, and I respect his opinion as I do everyone's in this room.

Q. All right. Well, Mr. Newman is not part of the Independent Petroleum Association, just --

A. Forget Mr. Newman --

(Laughter)

A. Mr. Newman is not credible for the purpose of our discussion, but John Byrom is.

(Laughter)

CHAIRMAN FESMIRE: For the first time since we started, I'm beginning to agree with Mr. Gallagher's description.

(Laughter)

THE WITNESS: John Byrom -- well, you lost my train of thought.

(Laughter)

Q. (By Ms. Foster) Well then let me ask you the next question. Based --

A. I talked to John Byrom in the hallway --

Q. Yes, okay.

A. -- thank you very much --

Q. Based on --

A. -- and in that I said, I do not understand your statement that this line here, the dotted -- dashed red line, puts every one of these wells at risk, threatens it, makes it -- puts it at risk is the word, threatens its drilling. I do not understand that, I said to John.

And he said, This is how we do our analyses in the business.

And this other person, whose first name is Dennis --

(Laughter)

A. -- agreed. He said, That is how we do our analysis in the business. So I left it at that, and I went to lunch --

Q. Well, then -- let me --

A. Wait a minute. I went to lunch at Smith's --

Q. Okay.

A. -- which has a delicatessen --

(Laughter)

A. -- and I sat there pondering. I was by myself and I sat there pondering, How can this line here threaten all of these wells? How can that little difference threaten so many wells? I asked myself that.

And then it struck me, and then I said to myself, What if this -- what if we don't pass the -- this is an idea I got -- that's why it takes three days to realize

what's going on. I said to myself, What if we pass no rules and there are no added costs? Now I'm here. Now he tells me that all these lines -- all these wells are at risk, or threatened. And I say, How can that be?

And I don't know, I'm not in the oil business, but I can make a common-sense engineering guess why that would be.

Q. Okay, and I think you went through that previously.

A. No, I --

Q. My --

A. -- didn't

Q. My final question would be that -- I mean, obviously, Dr. Bartlit, you're a very intelligent man, and you and Dr. --

A. Flattery will get you nowhere.

Q. -- Dr. Neeper have spent quite a bit of time involved in this -- this hearing process, as well as the task force process. I know, because I've seen you there, because I've been there.

A. I wasn't there -- I was there for a relatively few times. Don was the main person, I filled in a few times.

Q. Okay. And would it not be a fair statement to say, then, that if you and Dr. Neeper, who have been

involved in this process, are having a confusion with the economic impact analysis that has been presented by industry in this, wouldn't it have made more sense to have reviewed this in the task force process and maybe slowed this whole process down and discussed it?

A. My response to that is, I asked that to Don Neeper -- he was there more than I was -- and I said, Don, did you try to get economic data on the table to discuss at the task force?

And he said yes, he tried, and he requested it -- and I think John tried also to it, and I think Neeper and Don -- John, together tried, and the consensus was -- and I wasn't there that day, but the dynamic of the task force was, no, we don't want it.

Q. Okay, but --

A. But we tried, we tried, we always try.

Q. Right. Was the OCD not part of the task force?

A. They were certainly in the room. Whether they were on the task force or not -- I guess they were part of the task force.

Q. Okay, but -- so economic analysis numbers did not come from -- based on your testimony, from any of the parties that were involved in the task force process, whether it be the OCD or industry or even the environmental community?

A. But efforts were made by us, and I think John concurred with it, to do such.

Q. Okay.

A. And either people at the table or others sitting in the back of the room, not at the table, nodding to people -- sending signals to people at the table, said, No, we don't want to go there --

Q. Okay --

A. -- so we didn't go there.

Q. -- is your testimony today, then, that a better understanding of the economic analysis and the economic impact of this rule would have been helpful to you as an observer or a person involved in this process?

A. Of course.

Q. Okay. And therefore would that economic analysis information be more useful for the Commissioners to have had as well?

A. Of course.

MS. FOSTER: I have no further questions. Thank you.

CHAIRMAN FESMIRE: Are there any other questions of this witness? No, sir?

MR. BROOKS: Not from us.

CHAIRMAN FESMIRE: Okay. Commission?

COMMISSIONER BAILEY: No.

COMMISSIONER OLSON: (Shakes head)

CHAIRMAN FESMIRE: With that, we will adjourn until tomorrow morning at 9:00 a.m. in this room.

(Off the record)

MS. FOSTER: Mr. Chairman, actually I just wanted to put on the record that I by e-mail just submitted my brief.

CHAIRMAN FESMIRE: Okay.

MS. FOSTER: And I also received a copy from the Commission.

CHAIRMAN FESMIRE: Okay.

(Thereupon, evening recess was taken at 4:50 p.m.)

* * *

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Commission was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL February 10th, 2008.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 16th, 2010