

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:) CASE NO. 12,033
)
APPLICATION OF PUBLIC SERVICE COMPANY OF)
NEW MEXICO FOR REVIEW OF OIL CONSERVATION)
DIVISION DIRECTIVE DATED MARCH 13, 1998,)
DIRECTING APPLICANT TO PERFORM ADDITIONAL)
REMEDATION FOR HYDROCARBON CONTAMINATION,))
SAN JUAN COUNTY, NEW MEXICO)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

COMMISSION HEARING (Volume II)

BEFORE: LORI WROTENBERY, CHAIRMAN
JAMI BAILEY, COMMISSIONER
ROBERT LEE, COMMISSIONER

August 27th, 1999

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Commission, LORI WROTENBERY, Chairman, on Friday, August 27th, 1999, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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OIL CONSERVATION DIV.
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* * *

ALSO PRESENT:

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* * *

1 WHEREUPON, the following proceedings were had at
2 8:30 a.m.:

3 CHAIRMAN WROTENBERY: Good morning, it's 8:30
4 a.m. on August 27th, and we're ready to get started again.

5 Mr. Carr, you're up.

6 MR. CARR: Thank you.

7 At this time, may it please the Commission, we
8 would call our first witness, Ed Hasely.

9 May it please the Commission, on July 21st we
10 filed a motion for a correction and a substitution in the
11 prefiled testimony of Mr. Hasely. Attached to the motion
12 was copy of his testimony. The changes were noted, the
13 motion was not opposed by Mr. Alvidrez, and we would
14 request that his testimony now be substituted.

15 CHAIRMAN WROTENBERY: Yes, I think most of us
16 have already done that in our books, so it's done.

17 LOUIS EDWARD HASELY,
18 the witness herein, after having been first duly sworn upon
19 his oath, was examined and testified as follows:

20 DIRECT EXAMINATION

21 BY MR. CARR:

22 Q. Would you state your full name for the record,
23 please?

24 A. Louis Edward Hasely.

25 Q. Mr. Hasely, where do you reside?

1 A. Farmington, New Mexico.

2 Q. By whom are you employed?

3 A. Burlington Resources.

4 Q. Did you file or prefile direct testimony in this
5 case?

6 A. Yes, I did.

7 Q. And is that testimony included in what has been
8 marked as Burlington Resources Exhibit A?

9 A. As long as it's the new one here.

10 MR. ALVIDREZ: May it please the Commission, we
11 don't have any objection to Mr. Hasely's testimony, if this
12 will speed things along this morning.

13 CHAIRMAN WROTENBERY: Okay.

14 MR. CARR: We would move the admission of Mr.
15 Hasely's testimony.

16 CHAIRMAN WROTENBERY: Mr. Carroll?

17 MR. CARROLL: No objection.

18 CHAIRMAN WROTENBERY: Okay, it's admitted.

19 MR. CARR: We would also request that the record
20 reflect that Mr. Hasely's qualifications are set forth in
21 his testimony and that he should be qualified as an expert
22 witness in environmental engineering.

23 MR. ALVIDREZ: May it please the Commission,
24 before I get started with the cross-examination of Mr.
25 Hasely, we did have one outstanding matter from yesterday,

1 and that was supplying a lost page from PNM Exhibit 18 --

2 CHAIRMAN WROTENBERY: Oh, okay.

3 MR. ALVIDREZ: -- which Mr. Olson was kind enough
4 to provide us. And if I may, I'd like to present what's
5 been marked as PNM Exhibit 18-A to be included with that
6 exhibit. May I approach the court reporter?

7 MR. CARR: May it please the Commission, before
8 Mr. Hasely begins, I would tender him as an expert witness
9 in environmental engineering.

10 MR. ALVIDREZ: We have no objection.

11 MR. CARR: I pass the witness.

12 CHAIRMAN WROTENBERY: We accept his
13 qualifications.

14 And let me just -- You may have said this, but
15 just for the record, we have admitted both his direct and
16 his rebuttal testimony, everybody in agreement on that?

17 MR. ALVIDREZ: Correct.

18 CHAIRMAN WROTENBERY: Okay.

19 MR. CARR: There actually is no rebuttal. Mr.
20 Hasely didn't file rebuttal testimony.

21 CHAIRMAN WROTENBERY: Oh, he didn't?

22 MR. OWEN: May it please the Commission, so that
23 the record is complete, we submitted a proposed order,
24 unopposed order, granting our motion for substitution of
25 testimony corrected for errata, and if you're granting that

1 on the record today, as an oral grant of that motion, that
2 would be fine. I just want to make sure that the record is
3 clear on that point.

4 CHAIRMAN WROTENBERY: Yes, it's been done.

5 Okay, any objection to the admission of Exhibit
6 18-A?

7 MR. CARR: No, no objection.

8 CHAIRMAN WROTENBERY: Okay, 18-A is admitted.

9 Okay, now, Mr. Alvidrez.

10 CROSS-EXAMINATION

11 BY MR. ALVIDREZ:

12 Q. (By Mr. Alvidrez) Good morning, Mr. Hasely.

13 A. Good morning.

14 Q. I wanted to ask, you've been employed with
15 Burlington with regard to the Hampton 4M site since when?

16 A. August of 1997.

17 Q. And if we look at PNM's Exhibit 13, it appears
18 that -- You might not have that book in front of you.

19 A. I need a book of PNM's exhibits.

20 Q. I'll get the original exhibits here. You might
21 keep that up there so that we can refer to it readily.

22 Just purposes of clarification, when was it in
23 this scheme of things that you came on the scene? At what
24 point in time?

25 A. It was August of 1997.

1 Q. Okay. So you weren't involved in any of the
2 activities that are listed on this summary that occurred
3 prior to August of 1997; is that correct?

4 A. That is correct.

5 Q. And the only think you know about activities that
6 took place out at the Hampton 4M site is based on what
7 people have told you or what you've read in reports; isn't
8 that correct?

9 A. That is correct.

10 Q. Are you basically the counterpart to Ms. Gannon
11 from PNM that we've heard about with Burlington?

12 A. I'm not sure if I really understand her full
13 duties. I don't know if I can answer that.

14 Q. Are you the person in charge of overseeing the
15 investigation and remediation at the Hampton 4M site on
16 behalf of Burlington?

17 A. Yes, I am.

18 Q. And is that responsibility primarily yours?

19 A. That is true.

20 Q. And with regard to Burlington's activities in
21 terms of investigation and remediation, how is that funded?

22 A. The remediation activities?

23 Q. Yes, sir.

24 A. At the Hampton location?

25 Q. Yes, sir.

1 A. We prepared an AFE -- or I was not involved in
2 the AFE, but there was an AFE prepared.

3 Q. Okay, and what is an AFE?

4 A. Authority for expenditure, that we charge the
5 expense to.

6 Q. And who authorizes that, who approves the AFE?

7 A. Someone higher up in the company. I don't know
8 if that went to Mr. Ellis or who had the authority to sign
9 off on it.

10 Q. Do you know who prepared the Burlington AFE in
11 this case?

12 A. No, I do not know. It was not myself.

13 Q. With regard to the more recent work that has been
14 done out there, relating to the mass excavation, was an AFE
15 prepared for that?

16 A. Those charges were charged to the original AFE.

17 Q. So they just added onto the original one?

18 A. Correct.

19 Q. Have there been any expenditures that you have
20 recommended out there that have not been approved?

21 A. I'm not sure if I can think of anything, any
22 examples. We normally talk -- I normally talk between the
23 production foreman and my boss and his boss and make a
24 mutual decision on what needs to be done.

25 Q. All right. And who are those individuals that

1 you confer with on what needs to be done?

2 A. Johnny Ellis is the production foreman, Bruce
3 Gantner is my boss, and Ken Rabon is Johnny Ellis's boss.

4 Q. Do the expenditures that Burlington makes for
5 environmental investigation and remediation at this site
6 have to be approved by Mr. Ellis?

7 A. The expenditures?

8 Q. Yes.

9 A. He's involved in the decision on whether we --
10 what we do, yes.

11 Q. So he has some say over it?

12 A. Yes.

13 Q. And is Mr. Ellis's area of responsibility more of
14 an operation aspect of the well, rather than environmental?

15 A. Yes, that is true.

16 Q. And to the extent you spend money on the
17 environmental investigation or remediation at this site,
18 does that negatively impact Mr. Ellis's bottom line, so to
19 speak, with regard to this well?

20 A. I'm sure associated with this well, that's a true
21 statement.

22 Q. Okay. I want to talk a little bit about your job
23 responsibility. As I understand it you have responsibility
24 over the Hampton 4M well. Are your job responsibilities
25 divided up on some sort of geographical basis?

1 A. No, it's not necessarily geographical. We have
2 two environmental representatives in Farmington, and we try
3 to cover everything. It depends on what comes in, who
4 takes it. He has his specialties and I have my
5 specialties.

6 Q. Who is this other person?

7 A. His name is Jeff Schoenbacher.

8 Q. How do your responsibilities divide up in terms
9 of environmental investigation and remediation?

10 A. Currently, Jeff's handling most of the spills and
11 groundwater discharge plans associated with plants and
12 compressor stations, he handles all the waste-disposal
13 issues, and I handle the rest.

14 Q. How many sites are you overseeing for Burlington?

15 A. As far as -- ?

16 Q. As far as investigation and remediation of either
17 soil or groundwater contamination?

18 A. Well, I handle the whole area. We have several
19 groundwater cases going on, and as pit closures come up I
20 handle those.

21 Q. Okay, how many is that?

22 A. At any one time?

23 Q. Yes.

24 A. Fifteen to 20.

25 Q. And since you've been out there, since August of

1 1997, in total, how many sites have you overseen?

2 A. As far as pit closures?

3 Q. As far as pit closures, investigation or
4 remediation of soil contamination or groundwater
5 contamination?

6 A. I'll take a guess of 50 in the last two years.

7 Q. With regard to your educational background, have
8 you had any 40-hour OSHA training?

9 A. I did through my Phillips Petroleum days.

10 Q. Is that still current?

11 A. I'm not sure how Burlington handles that. We get
12 trained periodically. I don't know if I have the correct
13 number of hours to keep that current.

14 Q. So you don't know whether you're 40-hour approved
15 or not?

16 A. That's correct, I do not.

17 Q. And when we're talking about health and safety,
18 correct?

19 A. Correct.

20 Q. You oversee compliance with the OCD directives
21 with regard to the Hampton 4M site on behalf of Burlington?

22 A. Yes, I do.

23 Q. And as I understand it in this case, Burlington
24 actually appealed the original Hearing Examiner's decision
25 in this case; is that correct?

1 A. I was not involved in that decision, but -- So
2 I'm not sure if that's correct or not.

3 Q. Okay, so you don't know whether Burlington
4 appealed the Hearing Examiner's decision?

5 A. Not for a fact, I do not, no.

6 Q. You're the person responsible for environmental
7 investigation or remediation at the Hampton 4M site?

8 A. Yes.

9 Q. And you weren't consulted with on Burlington's
10 appeal in this case?

11 A. I'm sure I was consulted with, I'm just -- Right
12 now I can't remember what the outcome was.

13 Q. So you don't know, sitting here today, whether
14 Burlington appealed the decision or not?

15 A. Not a hundred percent, no, I do not know.

16 Q. Well, let me ask, you talk about, on page 3 of
17 your direct testimony, line 9, that what Burlington is
18 seeking in this case is a determination that PNM is a
19 responsible person for the contamination at the Hampton 4M
20 site; is that correct?

21 A. Yes, that is.

22 Q. And is that the only relief that Burlington is
23 seeking in this case?

24 A. As far as I know, that's the main point of this
25 whole hearing.

1 Q. Burlington is not asking to get off the hook for
2 soil contamination or water contamination at this site, are
3 they?

4 A. No, we are not.

5 Q. And you haven't made any recommendations about a
6 percentage of responsibility, allocation of responsibility,
7 between PNM and Burlington at this site?

8 A. Have I made any recommendations? Was that the
9 question?

10 Q. That's right. You haven't made any
11 recommendations in your testimony to the Commission about
12 how the responsibility should be allocated for cleanup at
13 this site?

14 A. No, I have not.

15 Q. And Burlington recognizes and accepts that it
16 contributed to soil contamination at the Hampton 4M site?

17 A. This is true.

18 Q. And it also acknowledges that it contributed to
19 dissolved-phase groundwater contamination at this site?

20 A. Yes, we've never denied that.

21 Q. And Burlington also acknowledges that it
22 contributed to free-phase groundwater contamination at this
23 site?

24 A. I'm not sure if we've agreed to that or not.

25 Q. Have you read Mr. Rosasco's testimony in this

1 case?

2 A. Yes, I've read it.

3 Q. And you don't recall where Mr. Rosasco has
4 indicated that Burlington contributed to free-phase
5 contamination at this site?

6 A. I do not recall right now. I won't argue the
7 point, though.

8 Q. Okay. I want to talk a little bit about the
9 history at this site. As I understand it, this was
10 originally a Southland Royalty site?

11 A. That is the way I understand it.

12 Q. Okay, well, that's at page 4, line 3 of your
13 testimony.

14 A. Uh-huh.

15 Q. You testified to that. Do you recall that?

16 A. Yes.

17 Q. And can you tell me the relationship between --
18 Well, let me ask. Wasn't there an intermediate, at least,
19 company name before it became Burlington? Was Meridian
20 involved in this site for some period of time?

21 A. The way I understand it, yes.

22 Q. Okay. And what's the relationship between
23 Southland and Meridian, in terms of the Hampton 4M well
24 site?

25 A. I'm not sure if I know. My guess is that

1 Meridian purchased Southland, and I'm not sure if that's --
2 That's the way I understand it.

3 Q. All right. And what about the relationship
4 between Burlington and Meridian?

5 A. Meridian became Burlington. I think it was
6 mainly a name change.

7 Q. Okay. You don't have any -- There's not a
8 question that Burlington was a successor to those companies
9 in terms of the Hampton 4M site; is that correct?

10 A. There's no question in my mind.

11 Q. Okay. I want to talk a bit about Burlington
12 Exhibit 2 a little bit. Have you got the Burlington
13 exhibit volume with you there, sir?

14 A. I think so. Of course, under the Tab 2 there's
15 nothing. That's not a good sign. What is 2?

16 Q. Burlington Exhibit 2 is described as the
17 "Hampton 4M Site Diagram".

18 A. We have one coming. Thanks.

19 Q. I wanted to ask you, sir, who prepared this
20 exhibit?

21 A. It was either Craig Bock or myself.

22 Q. Okay. And it was prepared by Burlington?

23 A. Yes.

24 Q. This exhibit as it's depicted is not to scale, is
25 it?

1 A. No, I wouldn't think it's to scale, no.

2 Q. So the spatial relationships as depicted in this
3 exhibit are not necessarily -- between the various
4 identified points is not necessarily accurate; is that
5 correct?

6 A. That's correct.

7 Q. If we look at the outlined area surrounding the
8 TPW-7 demarcation, you've got a little line there that says
9 "Former Location of Tank Battery" and in then in
10 parentheses it says "(Excavated)". Do you see that?

11 A. Yes, I do.

12 Q. I just want to clarify, Burlington did not
13 excavate to the groundwater that entire area that's
14 depicted in that outline; isn't that correct?

15 A. That's a true statement. We dug with a bulldozer
16 due to the rock on location, and to get in and out with the
17 dozer you had a slope on each side.

18 Q. What are the dimensions of that outline? If we
19 had gone out there and measured it, can you tell us what
20 the dimensions were of that outlined area of Burlington's
21 excavation?

22 A. I can't tell you, but I know it's in one of the
23 reports.

24 Q. Okay. We can look at that later. Do you know
25 the size of the excavation that did make it to groundwater

1 in the area of PNM's former -- I'm sorry, Burlington's
2 former tank battery location?

3 A. Could you ask the question again?

4 Q. Yes, do you know how big the excavation was that
5 actually was exposed to groundwater in the area of
6 Burlington's former tank battery location?

7 A. I do not have the dimensions. It would obviously
8 be the area that you could see on photographs that has
9 water in it.

10 Q. Do you have an estimate? I assume you've seen
11 that area and you're familiar with it?

12 A. Yeah, I'd estimate 25 by 25.

13 Q. Okay. So is it fair to say that the -- in terms
14 of Burlington's former tank battery location, the only area
15 that was excavated to groundwater was a site approximately
16 25 by 25 feet?

17 A. That's my estimate at this time.

18 Q. I wanted to ask a bit about some of the potential
19 source areas on Burlington's side of the wellpad. We have
20 one location, which is a former tank battery location;
21 isn't that correct?

22 A. Yes.

23 Q. And then there is also the production pit area on
24 this site as well, correct?

25 A. I'm not sure if I understand what you're

1 referring to on this diagram.

2 Q. Well, let's -- Maybe we can flesh it out a bit
3 with -- by having you refer to Burlington Exhibit 4. Have
4 you found Exhibit 4?

5 A. Yes, I have.

6 Q. This is a letter dated April 8th from Denny Foust
7 of OCD to Burlington Resources, attention Craig Bock, and
8 it refers to groundwater impacts on the southeast quarter
9 of the Hampton 4M location, and it goes on to state they
10 believe that it is, quote, "related to Burlington's
11 activities at the tank drain pit and production pit."

12 What I want you to do is to show us where the
13 tank drain pit is that's referred to in that letter and the
14 production pit that's referred to in that letter.

15 A. I don't know if I can do that. The tank battery
16 was all moved by the time I started. So the first time I
17 saw the location, there was not a tank battery over in this
18 area.

19 Q. So you have no knowledge about where the tank
20 battery was?

21 A. Well, I have a knowledge based on talking to
22 people in that area that's shown on that exhibit.

23 Q. Now, the OCD has identified the tank battery as a
24 potential source; isn't that correct, according to that --

25 A. According to this letter, yes.

1 Q. And you're the person for Burlington who's in
2 charge with environmental investigation and remediation at
3 the Hampton 4M site; is that correct?

4 A. That is correct.

5 Q. And you can't tell us today where the location of
6 the tank battery is? Or was?

7 A. Tank battery is or was? I was not out there. I
8 have this drawing to go off on where it was.

9 Q. So that's all you can tell, is what's on the
10 drawing?

11 A. Yes, as far as my knowledge.

12 Q. And you haven't talked to anyone who was out on
13 the site prior to that to tell them to show you exactly
14 where that tank battery was?

15 A. I've talked to a lot of people, and exactly where
16 it was, no, I don't know.

17 Q. Okay. Now, with regard to this tank drain pit
18 that's referred to in the OCD letter, can you tell us where
19 that is on Exhibit 2, Burlington Exhibit 2?

20 A. My answer would be the same as the other one.
21 That was in the area of that former location of that former
22 location of tank battery, but as far as the exact location
23 of the tank drain pit, I do not know.

24 Q. Your understanding, it was somewhere by the tank
25 battery?

1 A. That's where a tank drain pit would normally be
2 located.

3 Q. Okay. But again, you can't tell us where?

4 A. No.

5 Q. Is it fair to say that with regard to the tank
6 battery pit or tank drain pit, that Burlington hasn't done
7 any investigation in that area?

8 A. In which area?

9 Q. In the area of the tank drain pit?

10 A. It's my understanding the tank drain pit would
11 have been in the area that was excavated.

12 Q. So it's that 25-foot-by-25-foot excavation that
13 we've talked about?

14 A. That's the size we took down to groundwater.

15 Q. Okay. But you can't confirm that for us, you're
16 not sure because you don't really know where the tank drain
17 pit was; isn't that correct?

18 A. That's true.

19 Q. Let's look at PNM Exhibit 49. Have you found
20 that exhibit?

21 A. Yes.

22 Q. Can you tell us what that is?

23 A. It's considered a site-security diagram, I think,
24 which shows the general flow and where equipment is
25 located.

1 Q. Okay, and this one is dated February 28th, 1994,
2 at least it's stamped that date; is that correct?

3 A. Yes.

4 Q. And then it is listed -- The original date
5 apparently was February 3rd, 1994; is that correct?

6 A. I cannot read that.

7 Q. Up at the top --

8 A. Okay, yes, I do, I see that.

9 Q. What I want to ask is, what is this supposed to
10 show us?

11 A. It's supposed to show the general flow and
12 process of the fluids from this well.

13 Q. And this is for the Hampton 4M well site; is that
14 correct?

15 A. That's what it states.

16 Q. Now, there are a couple of pits located on that
17 site; isn't that correct? Actually three pits?

18 A. Yes.

19 Q. And if we were -- Would you agree that the
20 orientation of this is actually where the south is at the
21 top of the page and north is at the bottom of the page?

22 A. Is there a line on there?

23 Q. There is not a line on there, but I'm just
24 talking about the orientation of it. We know that
25 Burlington's equipment is towards the south, and the

1 dehydrators that PNM formerly operated are towards the
2 north?

3 A. Okay.

4 Q. But if we look at this, we've kind of got that
5 upside-down, wouldn't we, Exhibit 49?

6 A. I don't know if I followed you again. It appears
7 that south is to the top of the page.

8 Q. Okay, that's what I wanted to confirm.

9 A. Okay.

10 Q. If we go back to Burlington Exhibit 2, the pit
11 that's shown in the southeastern portion of PNM Exhibit 49
12 would be located where?

13 A. I guess in the lower right-hand corner of Exhibit
14 2.

15 Q. We don't really -- You don't really know for sure
16 where that would be? You can't really tie it in with any
17 precision on Exhibit 2; is that correct?

18 A. That's correct. And I'd like to make a statement
19 that the site-security diagrams are in no way to scale or
20 anything like that either, general layout.

21 Q. I understand. It just shows the approximate
22 locations of surface equipment and pits, correct?

23 A. The general layout.

24 Q. Okay. Now, with regard to pits that we've
25 identified, I mean, we know there are at least two, based

1 upon the Burlington Exhibit 4. Burlington has not drilled
2 down directly in the area of the tank drain pit and
3 installed a permanent monitoring well there, have they?

4 A. Like I said, we do not know exactly where this
5 tank drain pit is.

6 Q. So you couldn't even do that if you wanted to?

7 A. Correct.

8 Q. And likewise, Burlington hasn't drilled a
9 permanent monitoring well in the area of its production
10 pit; isn't that correct?

11 A. What are you referring to as a production pit?

12 Q. Well, the production pit that's referred to on
13 Burlington's Exhibit 4.

14 A. Again, like we talked before, I don't know where
15 that production pit is.

16 Q. So is my statement correct that Burlington hasn't
17 installed a permanent monitoring well in the area of
18 Burlington's production pit?

19 A. That's a true statement.

20 Q. Now, those two areas were identified as, I guess,
21 the prime suspects for Burlington's release of
22 contamination; isn't that correct?

23 A. According to that Exhibit 4, yes.

24 Q. Well, do you disagree with that Exhibit 4?

25 A. No, but that was before my time.

1 Q. But you don't disagree with that?

2 A. No, I do not disagree.

3 Q. And you've now been on duty out there for over a
4 year?

5 A. Over two years.

6 Q. Over two years, that's right, 1999.

7 And you -- I assume that you were aware of this
8 letter that we've marked, that's been introduced and
9 accepted into evidence, which is Burlington Exhibit 4,
10 shortly after you came on the job; is that correct?

11 A. That's correct.

12 Q. And in the two-year time period you've been out
13 there, you haven't taken any action to ascertain the exact
14 location of the two prime suspects in terms of Burlington's
15 source of contamination?

16 A. When we went out and excavated over in that area
17 of the former tank battery, we excavated this whole area,
18 looking for any signs of contamination as we went down, and
19 then we followed the contamination that we found.

20 Q. But you don't really even know where this is, so
21 you can't be sure that you've got the contamination; isn't
22 that correct?

23 A. That's why we did the entire corner back there.

24 Q. Okay, well, you haven't done the entire corner
25 down to groundwater -- isn't that correct -- in the

1 southeast corner?

2 A. That is correct.

3 Q. So it's certainly possible that you have missed
4 some contamination in that area?

5 A. That's possible.

6 Q. And we know from the temporary wells that were
7 installed in that area, that there are some very high
8 readings in terms of contamination and concentration; isn't
9 that correct?

10 A. That is correct.

11 Q. In fact, the highest readings that we've received
12 out at that site are in the area of Burlington's -- in the
13 southeast corner of the Hampton 4M wellpad; isn't that
14 correct?

15 A. The highest dissolved-phase.

16 Q. The highest dissolved-phase readings are on
17 Burlington's -- in the area of Burlington's operations;
18 isn't that correct?

19 A. Yes.

20 Q. Is your understanding that the production pit
21 that is referred to in Burlington Exhibit 4, is in that
22 same area of excavation that Burlington did in the
23 southeast corner of the wellpad?

24 A. I am not certain on that.

25 Q. You don't even have -- You don't have any idea

1 where that production pit was on the Burlington side of the
2 wellpad?

3 A. If it was over in that area that the tank battery
4 was moved, yes, I -- no, I do not know where it is.

5 Q. And again, I want to confirm, you're the person
6 for Burlington who's in charge of overseeing environmental
7 investigation and remediation at this site?

8 A. Yes.

9 Q. Okay. Is there anyone else at Burlington who
10 would know where the location of these pits were?

11 A. I've talked to previous operators, the previous
12 foremen, trying to find exact locations. Exact locations
13 aren't --

14 Q. Just no luck? Nobody knows?

15 A. There's a lot of opinions, and we've chased them
16 around.

17 Q. Let's look at PNM Exhibit 4. Have you found
18 that?

19 A. Yes, I have.

20 Q. PNM Exhibit 4 shows the locations of Burlington
21 tankage. Do you see that? 500-gallon produced liquid
22 tank?

23 A. A 300-barrel Mesaverde tank and a 210-barrel
24 Dakota tank? Have you been able to confirm that by looking
25 at that?

1 A. The 300-barrel, are you talking to the purple
2 dots?

3 Q. Yes, sir.

4 A. Okay.

5 Q. Have you -- Do you see those?

6 A. Yes, I do.

7 Q. You wouldn't dispute PNM's designated locations
8 for those tanks, would you?

9 A. I have no idea where they got that information.

10 Q. You have no basis to dispute it, right?

11 A. I don't have any basis to dispute it.

12 Q. Did you ever talk to anyone at PNM about where
13 the two pits were that are referred to in the OCD letter?

14 A. I cannot recall if I did or not.

15 Q. Did you ever talk to anyone at the OCD about the
16 location of those two pits that are referred to in the OCD
17 letter?

18 A. I'm sure Denny and I have talked. I don't
19 recall.

20 Q. You don't recall whether you --

21 A. I don't recall.

22 Q. Isn't that something that would be important to
23 know in conducting proper investigation at the Hampton 4M
24 site?

25 A. It would be very good information to have.

1 Q. And wouldn't it likewise be very important
2 information in conducting remediation at the Hampton 4M
3 well site?

4 A. It would be good information to have.

5 Q. And you've been there two years now, and haven't
6 gotten that information?

7 A. No. Again, we excavated that southeast corner of
8 the location, looking for contamination, since the exact
9 locations of everything weren't known at the time.

10 Q. Okay. Let's look at PNM Exhibit 47.

11 MS. RISTAU: It's 46.

12 Q. (By Mr. Alvidrez) I'm sorry, 46. Do you know
13 what this is?

14 A. Well, it states that it's the 4M location,
15 1-31-97.

16 Q. Does this help you at all in locating the areas
17 of the pits that are referred to in Burlington Exhibit 4?

18 A. Yes. I cannot see where a tank drain pit is, but
19 it appears that's the separator pit.

20 Q. So will that help in your further investigation
21 out at this site?

22 A. It could come in helpful.

23 Q. Now, let's look back at Exhibit 4, PNM Exhibit 4.
24 Would you agree that the area that's been excavated to
25 groundwater by Burlington does not extend directly

1 underneath either of the two tanks that are depicted on
2 that location?

3 A. I don't know if I can state that.

4 Q. Well, would you agree --

5 A. What was the PNM exhibit that had the picture?

6 Q. Number 4. I think you've got your hand on it.

7 A. No, the photograph.

8 MS. RISTAU: Number 46.

9 THE WITNESS: Oh, okay. Well, looking at the
10 photograph and knowing where we excavated, I would think
11 it's right in that same area.

12 Q. (By Mr. Alvidrez) I'm talking about, though,
13 excavation to groundwater.

14 A. Well, again, it's too close to tell. Underneath
15 the tanks?

16 Q. Directly underneath the tanks, to groundwater.

17 A. I couldn't say one way or the other, looking at
18 the photographs.

19 Q. With regard to the produced liquid tank that's
20 depicted in PNM Exhibit 4 --

21 A. Uh-huh.

22 A. -- would you agree that Burlington did not
23 excavate to groundwater directly underneath the location or
24 former location of that tank?

25 A. That is a true statement. We did an excavation

1 to the north of that, down to six and a half feet, and saw
2 no signs of hydrocarbons.

3 Q. But you didn't go down to groundwater; isn't that
4 correct?

5 A. That is a true statement.

6 Q. As I understand it, you testified that you've
7 reviewed the records in this case; is that correct?

8 A. Yes.

9 Q. And I assume your review was pretty careful and
10 painstaking.

11 A. It was painful.

12 (Laughter)

13 Q. (By Mr. Alvidrez) But not careful?

14 A. I would say it was careful too.

15 Q. All right. I'd like to have you look at page 6
16 of your testimony, particularly at line 3. You make a
17 statement, actually beginning at line two:

18

19 Burlington's records reflect that in April 1996,
20 PNM discovered contaminated groundwater at the Hampton
21 4M gas production location under PNM's former
22 dehydration pit, which is shown on Burlington
23 Exhibit...2.

24

25 And I want to ask you if you could show us the Burlington

1 record that reflects the discovery of contaminated
2 groundwater in April of 1996.

3 A. I'm guessing I was going off of Craig Bock's
4 report --

5 Q. Okay.

6 A. -- where he listed out...

7 Q. Is Mr. Bock's report an exhibit that we can --

8 A. Yes, I'm looking at Exhibit 7.

9 Q. That's Burlington 7?

10 A. Right. Okay, I do not see where it says April.
11 And I'm -- According to Mr. Bock's report, Burlington
12 Number 7, it said December 16th is when PNM conducted the
13 vertical-extent drilling. So April may be incorrect.

14 Q. Okay. I'd like you to look at page 5 of your
15 testimony, beginning at line 17. Actually, let's move up
16 to line 14. The question is asked of you to summarize
17 Burlington's actions to address the contamination at the
18 site. You go on to state, beginning at line 14:

19
20 These actions include removing contaminated soils
21 under the production related pits on this location,
22 trenching to collect hydrocarbons seeping from the
23 northwestern edge of the well pad, participating in
24 the continuing investigation...at this site and
25 finally remediating the site pursuant to the directive

1 of the Oil Conservation...

2

3 ...Commission [sic], beginning at line 17. I want to focus
4 on that statement and clarify, try and clarify what you
5 mean when you say "finally remediating the site pursuant to
6 the directive of the Oil Conservation" Commission.

7 Is it Burlington's contention that this site is
8 now remediated?

9 A. No, not fully remediated.

10 Q. Would you agree that the area of PNM's former pit
11 has been fully remediated by Burlington?

12 A. We have excavated down to groundwater in the area
13 of PNM's operations.

14 Q. And you've taken out all the soil that was in the
15 pit, together with the pit bottom; isn't that correct?

16 A. Best that we could do when we were out there,
17 yes.

18 Q. Well, you did a thorough job in that area, did
19 you not?

20 A. We tried to.

21 Q. And you went all the way down even from there and
22 removed the entire soil column all the way down to
23 groundwater; isn't that correct?

24 A. Correct.

25 Q. And you even went below groundwater; isn't that

1 correct?

2 A. In some areas, yes.

3 Q. So all of the soil, contaminated soil associated
4 with PNM's former dehydration pit has been removed; isn't
5 that correct?

6 A. Underneath the area of your operations, yes.

7 Q. Is there other soil contamination in other areas
8 of PNM's operations that hasn't been removed?

9 A. Well, we followed that contamination to the
10 north, all the way around, and we never did get completely
11 out of it, and to the east.

12 Q. And how can you distinguish between whether that
13 contamination was PNM's operations or from Burlington's
14 operations upgradient?

15 A. We cannot.

16 Q. Let's talk a bit about Burlington Exhibit 6.
17 Have you found that exhibit?

18 A. Yes.

19 Q. Now, this is a letter from Craig Bock, your
20 predecessor, to Denny Foust; is that correct?

21 A. Yes.

22 Q. And in the second paragraph it says:
23

24 PNM Gas Services (PNM) previously found dissolved
25 phase hydrocarbons in their groundwater monitoring

1 well MW-4. This well is down gradient of Burlington's
2 operations and may indicate contamination from the
3 activities associated with the production tanks.
4

5 Do you see that sentence?

6 A. Yes, I do.

7 Q. And is it your understanding that the production
8 tanks that are referred to are Burlington's production
9 tanks?

10 A. Yes.

11 Q. It goes on to state, in the fourth paragraph, it
12 says:

13
14 If groundwater is encountered, Burlington will
15 assume the vertical extent of contamination has been
16 reached. Subsequent excavation efforts will focus on
17 the horizontal extent of contaminated soil. A
18 groundwater monitoring well will be placed in the
19 center of the excavation.
20

21 What do you understand that paragraph is referring to?

22 A. I'd like to read the paragraph above to
23 familiarize myself --

24 Q. Absolutely. Read the whole letter if you need
25 to.

1 A. It appears that it's referring to that southeast
2 corner of the location.

3 Q. Okay. And is that the area of the original
4 excavation that Burlington conducted out there?

5 A. Yes, it is.

6 Q. As I understand it, groundwater was encountered
7 -- is that correct -- in that excavation?

8 A. Yes.

9 Q. And it says, "Subsequent excavation efforts will
10 focus on the horizontal extent of contaminated soil." Was
11 that done?

12 A. When we excavated that corner in the southeast,
13 we got down to where we could not find additional impacted
14 soils.

15 Q. It goes on to state, "A groundwater monitoring
16 well will be placed in the center of the excavation." That
17 was not done, was it?

18 A. That's correct.

19 Q. All right. I want to talk about Exhibit 7 for a
20 moment, Burlington Exhibit 7. In the "Plan of Action"
21 section, which appears on page 4, have you found that?

22 A. Yes.

23 Q. That talks about Burlington "constructing a small
24 pad off site and upgradient of the well location to conduct
25 an investigation of groundwater"?

1 A. Yes.

2 Q. In the second paragraph? And that ultimately
3 became MW-1; isn't that correct?

4 A. Correct.

5 Q. And that -- MW-1 was actually installed by Public
6 Service Company; isn't that correct?

7 A. At the time I thought we were all working
8 together.

9 Q. Okay, who paid for it?

10 A. I would assume PNM did.

11 Q. Okay. So when you say you're working together,
12 you're not talking about Burlington helping cover the cost
13 of that well, right?

14 A. That's the way I understood we worked on previous
15 projects in the past, that PNM would install the well and
16 we'd share costs.

17 Q. Okay, and you haven't shared the costs yet?

18 A. They've never asked for it.

19 Q. And they haven't sent you a bill?

20 A. They have sent us a bill?

21 Q. No, I said they haven't sent you a bill?

22 A. Correct.

23 Q. But if they send you a bill, you'll promptly pay
24 half, right?

25 A. Not at this time, no.

1 Q. What's changed? Why is the deal off?

2 A. Because I'm sitting here right now.

3 (Laughter)

4 Q. (By Mr. Alvidrez) But you would agree the
5 original deal was that Burlington would share half the cost
6 of that well?

7 A. That is the way I understand it, yes.

8 Q. Okay. The last paragraph there, it says,
9 "However, if Burlington discovers no contaminants in the
10 groundwater flowing to the Hampton 4M location, then
11 further investigation will be conducted on site."

12 A. And this is still referring to the upgradient
13 well?

14 Q. Well, it's your report, so that's how I'm reading
15 it, but if I'm incorrect, let me know.

16 A. Yes, that's the way I understand it, that if we
17 installed this upgradient well and it came back clean, that
18 would indicate that it's coming from our location, and
19 further investigation would be conducted.

20 Q. And that well came back clean, in fact, did it
21 not?

22 A. Correct.

23 Q. This report was prepared by -- and I'm talking
24 about Exhibit 7 -- by your predecessor; is that right?

25 A. Yes.

1 Q. On that same page that I've just been talking
2 about, the very top paragraph, it states, "Since no
3 contamination exists...just above the saturated zone, this
4 may indicate subsurface flow of contaminants to that
5 particular sampling location." And what we're talking
6 about is the TPW-7 and TPW-5, and you might want to go back
7 to the prior page there.

8 A. Okay.

9 Q. Do you understand that that's what it's referring
10 to?

11 A. Yes.

12 Q. It says, "This result may or may not indicate
13 contamination from an off site source." Do you see that?

14 A. Yes.

15 Q. And then it says, "The geology of the location
16 may cause a release on the surface to channel through
17 fractures while traveling downward through the soil." Is
18 that correct?

19 A. That's what it states.

20 Q. It says, "This channeling effect may not leave a
21 direct trail of contaminants in the soil directly under the
22 release..."; isn't that correct?

23 A. That's what it states.

24 Q. And it says, "Leading to the possible conclusion
25 that the soil auger did not penetrate the contaminant

1 channels leading to the groundwater." Isn't that correct?

2 A. That's what it states.

3 Q. So in terms of where the contaminant travel came
4 from, this suggests the possibility that contaminants may
5 travel along the water table to some other location; isn't
6 that correct?

7 A. Yes.

8 Q. And that's really PNM's position in this case;
9 isn't that correct?

10 A. Yeah, that's the way I understand it. And it
11 also indicates that the geology allows the contamination to
12 go through channels, which they're talking about, the soil
13 channels, fractures.

14 Q. Right. I'd like to refer to your testimony at
15 page 8, line 18.

16 A. Could you say where we're at again?

17 Q. Your testimony, page 8, line 18.

18 A. Mine shows a blank line there. Where are we at?

19 Q. Which version of your testimony --

20 A. I'm not sure.

21 MR. OWEN: May it please the Commission, the
22 corrected testimony may not have found its way into that
23 binder. With your permission, I'll substitute it.

24 CHAIRMAN WROTENBERY: We're looking in the
25 corrected testimony, and it is a blank line.

1 THE WITNESS: That's what I thought.

2 MR. OWEN: Perhaps Mr. Alvidrez --

3 MR. ALVIDREZ: Maybe I'm looking at the wrong
4 testimony here. Page 8, line 8 --

5 MS. RISTAU: You said 18.

6 MR. ALVIDREZ: Oh, did I say 18?

7 THE WITNESS: You said 18.

8 MR. ALVIDREZ: I apologize, I meant to say --
9 I've got the right testimony, fortunately. I meant to say
10 line 8.

11 Q. (By Mr. Alvidrez) You make the statement there
12 that "Nine o [sic] ten test holes were excavated..." Can
13 you show us on Burlington Exhibit 2 where those nine or ten
14 holes were excavated?

15 A. I do not know where all the holes were excavated.
16 I know one of the ones that they're referring to was, I
17 believe, on Exhibit 2?

18 Q. Yes, Burlington --

19 A. Burlington's Exhibit 2. One of the test holes
20 was immediately adjacent to the north of the separator tank
21 that's shown on that at the bottom of the page, and that
22 went to 6.5 feet. The others were scattered around
23 location where the former tank battery is in the dotted
24 line.

25 Q. Were there nine holes drilled, or were there ten

1 holes drilled?

2 A. I do not know.

3 Q. Did you keep any records? Did Burlington keep
4 any records relating to the --

5 A. I could not find records on that, other than
6 Craig Bock's report.

7 Q. Do we know the depth of each of those holes, how
8 far they went down?

9 A. We have some of that records, yes.

10 Q. And do you have those with you today?

11 A. No, I do not.

12 Q. Where are those records?

13 A. Back in Farmington.

14 Q. You know, you were asked -- you were hit with a
15 subpoena Monday which has been, I guess, an item of
16 contention, and one of the things that was asked for were
17 records relating to Burlington's work at this site. My
18 understanding of your discussions with your counsel is that
19 you were asked to bring -- or look for that material and
20 bring it with you; is that correct?

21 A. We -- I received that subpoena.

22 Q. But you weren't asked to look for the material?

23 A. I was never asked to look for the material, no.

24 Q. And you weren't asked to bring it with you?

25 A. I was asked to bring some stuff down, yes. Yes,

1 I was.

2 Q. And what did you bring down?

3 A. Most of the stuff that I have.

4 Q. But you didn't bring the records relating to
5 those nine or ten boreholes?

6 A. I have a sketched thing, handwritten. I did
7 bring a sketched thing that was handwritten by -- from
8 Philip Environment.

9 Q. Which relates to the nine or ten boreholes?

10 A. Yes, it does.

11 Q. Okay, and you brought that with you?

12 A. It's in my vehicle.

13 Q. Outside?

14 A. Yes.

15 Q. Okay. Would you agree -- Well, let me ask, does
16 that Philip's report show nine boreholes or ten boreholes?

17 A. I received it Wednesday or -- Tuesday or
18 Wednesday, and like I said, it's a faxed copy of
19 handwritten sketches on there, and there's -- I think I
20 counted up 11, but I'm not sure.

21 Q. Would you agree that the boreholes -- this type
22 of sampling or investigatory work that was conducted by
23 Burlington was not particularly thorough, as evidenced by
24 not even knowing how many boreholes there were?

25 A. I was not involved when this was going on, so...

1 Q. Well, I'm not asking whether you were involved,
2 but I'm asking you to comment on the thoroughness of the
3 work that was done with regard to those boreholes.

4 A. I would have much preferred a lot better records
5 on what was done..

6 Q. So you would agree that Burlington's record
7 keeping with regard to the investigation at this site
8 hasn't been up to the standards that you would like to see?

9 A. I guess that's a true statement.

10 Q. Let's talk about Exhibit 7, Burlington Exhibit 7.
11 This was a bit of an issue. We talked about that a little
12 bit.

13 I want to talk about the issue of putting in a
14 permanent monitoring well in the former location of TPW-7,
15 and you understand that one of the criticisms that PNM had
16 with regard to some of the work that Burlington had done
17 out there was that, in fact, no monitoring well has ever
18 been installed out there; isn't that correct?

19 A. Yes.

20 Q. And my understanding from the line of questioning
21 from your counsel of PNM witnesses was that some agreement
22 has been reached with the OCD whereby Burlington either
23 doesn't have to put that in now or the time for installing
24 it is delayed; is that correct?

25 A. I met on site with Bill Olson after we had done

1 our excavation, and we talked about whether we needed a
2 well directly in the source area and another one to replace
3 MW-4 or whether one well would be sufficient. And at the
4 time we agreed on one well there. He also wants --

5 Q. One well where?

6 A. In the vicinity of MW-4 and the excavation. And
7 then he's also asked for an additional well over to the
8 east side of the location, which that has not been
9 installed because we were waiting to backfill.

10 Q. Okay, can you show us on Burlington Exhibit 2
11 where you're talking about?

12 A. Well, I know it's shown on PNM Exhibit Number 4.

13 Q. All right, we can look at that if that's easier.

14 A. That's classified as MW-13.

15 Q. All right, that's the well that was installed in
16 the area of MW-4; is that correct?

17 A. Correct, in between MW-4 and where our excavation
18 was.

19 Q. And MW-4 was taken out in connection with
20 Burlington's mass excavation in that area?

21 A. That is correct.

22 Q. And you said there's another well that OCD wants
23 you to put in?

24 A. Yes, when we were doing our excavation, we ran
25 into contamination at the east wall, at the edge of the

1 location where we couldn't go any further because the
2 hillside comes up and we could not get all that
3 contamination out, so Mr. Olson suggested that we put a
4 well in, in that area.

5 Q. You're talking about the east wall. The east
6 wall of what?

7 A. The east wall of that entire location,
8 approximately directly east of MW-8 and somewhat north.

9 Q. All right, let me understand. There was
10 contamination over in that area?

11 A. Yes, there was.

12 Q. And that contamination is upgradient of PNM's
13 former dehydration pit; isn't that correct?

14 A. Based on how you draw your lines.

15 Q. You would agree that it's upgradient?

16 A. Based on what I've seen, yes.

17 Q. And what was the nature of the contamination in
18 that area of the east wall?

19 A. Extremely high PID readings.

20 Q. Was there groundwater coming in?

21 A. Not in that area, no.

22 Q. And in terms of extremely high PID readings, what
23 levels are we talking about?

24 A. I would be guessing, but --

25 Q. You don't know? Is there something you could

1 refer to in your records which would show us the level of
2 PID readings in that area?

3 A. I would think that Philip's report, Philip
4 Environmental's report on that work.

5 Q. That's a Burlington exhibit?

6 A. I don't know which one, but --

7 Q. Find it for you here. I think it is --

8 MS. RISTAU: Burlington Exhibit 28, I think.

9 Q. (By Mr. Alvidrez) -- Burlington 28, correct.
10 Now, this is the report that was prepared by Philip
11 Services in connection with the mass excavation that was
12 done by Burlington in the area of PNM's former pit
13 location?

14 A. Yes, and my last page is cut off.

15 Q. So this is not a complete report?

16 A. Well, the diagram that was the last page of that
17 report extended on down.

18 Q. Why don't we refer to PNM Exhibit 60? I believe
19 that's a more complete exhibit. Have you found that
20 exhibit?

21 A. Yes.

22 Q. Can you show us on PNM 60 where the area that
23 you're talking about, the high PID readings to the -- on
24 the eastern wall?

25 A. It's taking some time to go back through the --

1 Q. Sure.

2 A. I'm not exactly positive. I'm looking up at 50
3 and 55, are the sample points, which is east of PNM's
4 former pit location.

5 Q. So you're not exactly sure now where the high PID
6 readings were that you were talking about?

7 A. No, I'm not exactly sure at this time.

8 Q. I wanted to ask a bit, this particular drawing
9 that we have as part of the Philip's report is not to
10 scale; is that correct?

11 A. That's what it states on it.

12 Q. Okay. It says some of the orientations may be
13 off; isn't that correct?

14 A. Yes.

15 Q. And you've identified 50 and 55 as being to the
16 east of PNM's former pit location?

17 A. On this drawing.

18 Q. Okay, but in fact they may not be directly east;
19 would you agree?

20 A. That is correct.

21 Q. What I want to ask is, where on this map are the
22 discussions centering on the installation of another
23 monitoring well?

24 A. Well, again, this map isn't to scale, so I'm not
25 sure if I could pinpoint it on here.

1 Q. Well --

2 A. What I will do is, we have photographs of this
3 area that show where it is, and we can -- based on the
4 photographs and the topography out there, or the landmarks,
5 we can identify it.

6 Q. Maybe we can look at PNM Exhibit 4 again, because
7 that is a photograph of the site, an aerial.

8 A. But it's not a photograph of where this area is,
9 right?

10 Q. Right, it's not a photograph of the post-
11 excavation, but perhaps you can orient yourself, perhaps
12 you can't. Perhaps you can tell us where the approximate
13 location, as best as you can provide it, of this proposed
14 new well.

15 A. Okay, without studying the photograph that we
16 would have, I would put it probably where the green
17 lettering, "Point at which gas purchased by PNM", on that
18 east side.

19 Q. And that is to the east and upgradient of PNM's
20 pit?

21 A. It's to the east and to the north -- or south,
22 sorry.

23 Q. And that would be upgradient from PNM's former
24 pit?

25 A. Based on what I've seen of some of the

1 groundwater flows, yes.

2 Q. Let me ask, we -- Let's look at PNM Exhibit 6,
3 which shows an area of -- in the photograph and a rough
4 area of some of the excavation, the mass excavation that
5 Burlington conducted out there. There is discussion in the
6 report, free product entering from a seam in the soil. Do
7 you recall that part of the Philip's report?

8 A. Yes, I do.

9 Q. And when we look at the Philip's report, that
10 isn't noted anywhere on that diagram, is it?

11 A. On the -- In the Philip's report?

12 Q. Right --

13 A. Correct, it's not.

14 Q. -- the diagram we looked at?

15 A. No.

16 Q. Where was that inflow on PNM Exhibit 6?

17 A. It looks like you already have it labeled there
18 in the green.

19 Q. Okay, and you would agree that's a good
20 approximation of where the inflow was?

21 A. Yes. We didn't really see it across that whole
22 area. I mean, it was a fairly small area where it was
23 seeping in.

24 Q. And when we're talking about an inflow, we're
25 talking about water, groundwater coming in with free

1 product in it, right?

2 A. Correct.

3 Q. And with enough that you had some cells, sand
4 berms built out there, and the free product collected in
5 those, in at least the easternmost cell; isn't that
6 correct?

7 A. Yes, it is.

8 Q. And again, the area of that inflow was to the
9 east and to the north of PNM's former pit? I'm sorry, to
10 the south of PNM's former pit?

11 A. Yes.

12 Q. And again, that is upgradient of PNM's former
13 pit?

14 A. Based on what I've seen, yes.

15 Q. Let's go back to the Philip's report that we have
16 on PNM Exhibit 60. And before I ask you a question on this
17 exhibit again, just to make clear, with regard to that
18 inflow of groundwater and free product that you just talked
19 about upgradient of PNM's former pit, at the time you saw
20 that inflow, the area of PNM's former pit had been
21 excavated by Burlington; isn't that correct?

22 A. The area directly under their pit, yes, that's
23 correct.

24 Q. It was completely gone; is that correct?

25 A. We excavated down to groundwater under the area

1 of PNM's pit.

2 Q. Right, so that area was completely gone under
3 PNM's pit?

4 A. Correct.

5 Q. So we know that that inflow wasn't coming from
6 the area of PNM's former pit; isn't that correct?

7 A. It was not coming from the area of PNM's former
8 pit.

9 Q. As I understand it, there were several samples
10 taken in connection with the mass excavation that was done,
11 I think a total of 79 samples; is that right?

12 A. Not laboratory samples, but --

13 Q. No.

14 A. -- the PID, yes.

15 Q. PID readings. And when we're talking about PID
16 readings, we're really talking about just going out there
17 with a PID and taking readings from the soil, right?

18 A. These were samples that were collected and put
19 into either a baggie or a jar and heated up and following
20 the procedure.

21 Q. Heated headspace?

22 A. Correct.

23 Q. And then they wave a PID over it, and you get a
24 reading back from the PID?

25 A. They put the PID into the bag, and that was the

1 way --

2 Q. Right. And that's different from an analytical
3 result where you capture some of the soil, send it off to
4 the laboratory and have the laboratory analyze the soil
5 concentrations; isn't that correct?

6 A. That is correct.

7 Q. And really, what a PID is measuring, it's not the
8 concentrations in the soil but just the vapors that are
9 being given off by the soil; isn't that right?

10 A. Correct, it's a good screening tool.

11 Q. But it's only a screening tool, correct?

12 A. The OCD allows pit closure based on it.

13 Q. But you would agree it's certainly not near as
14 precise as use of analytical results?

15 A. I would agree.

16 Q. Now, in connection with PNM's work out at this
17 site, how many cubic yards of soil was ultimately moved?

18 A. PNM's work?

19 Q. I'm talking about Burlington's mass excavation.

20 A. I think we had in there over 6000 cubic yards,
21 and that was, I think, in my testimony somewhere. Yes, we
22 removed approximately 6440 cubic yards.

23 Q. And you conducted, as is listed on here, 79
24 either PID readings or analytical results; is that correct?

25 A. Correct.

1 Q. When we look at the number of analytical results,
2 out of the 79 in this 6000 cubic yards of soil removal,
3 only three were analytical; isn't that correct?

4 A. That I don't know. Is that in the report?

5 Q. Well, look at -- It's in the report. I counted
6 three. If you can show us, that would be great, if there
7 are more.

8 A. Okay, I see the three also, that list the BTEX
9 and TPH.

10 Q. Were there more analytical results performed by
11 Philip's?

12 A. Not that I'm aware of.

13 Q. Okay. And you would agree that three samples,
14 when you're talking about an area that was covered in terms
15 of the excavation at this site, is not very many analytical
16 samples, is it?

17 A. We were removing the apparent contamination, and
18 there wasn't a need to do a whole bunch of sampling.

19 Q. So you don't think that -- You think three
20 samples was adequate for the amount of excavation work that
21 was done out there?

22 A. For what we were doing, yes, which was removing
23 the core of the contamination that we could find.

24 Q. Well, don't the soil samples, the analytical
25 samples, help you find contamination or confirm

1 contamination and the precise levels of that contamination?

2 A. It helps us on the precise levels, but when we're
3 taking out the core of the contamination, you don't really
4 need that information. We used the PID to determine
5 whether the soil needed excavated or not and followed it
6 that way.

7 Q. Well, let's look at where you chose to do you --
8 Well, why did you do any analytical samples at all?

9 A. Informational purposes.

10 Q. So you were trying to get information, pretty
11 precise information, about certain locations; is that
12 correct?

13 A. Yes.

14 Q. And in other locations you weren't worried about
15 precision; is that correct?

16 A. I'm not sure if I'd agree with that. It was
17 apparent that it needed done, we didn't need a lab result
18 to tell us that it needed done.

19 Q. Okay. Well, let's look at where you did your
20 analytical samples, as depicted in PNM Exhibit 60.

21 A. Sample numbers 5, 6 and 16.

22 Q. Right. And just to speed things along, if you're
23 looking at this site, Number 6 is by -- in the vicinity of
24 MW-6; do you see that?

25 A. Yes, I do.

1 Q. And that's in the area -- close to the area of
2 PNM's former pit location, correct?

3 A. That's correct.

4 Q. And then analytical sample 6 is also close to
5 MW-6; isn't that correct?

6 A. Yes, both 5 and 6 are in that area.

7 Q. And then if we move down to 16 and look in the
8 drainage, that's the other area where you did the
9 analytical sample; isn't that correct?

10 A. Okay, yes.

11 Q. Now, if we look in the area of Burlington's
12 excavation, I mean the excavation on Burlington's part of
13 the wellpad, no analytical samples were taken there, were
14 they?

15 A. That's correct.

16 Q. Why didn't you take analytical samples on
17 Burlington's side of the wellpad?

18 A. I don't know if I have an answer. Like I stated
19 before, we were going for the core of the contamination,
20 and I guess I didn't feel the need to have one there.

21 Q. When you say you're going for the core of the
22 contamination, are you talking about the core of
23 contamination in the area of PNM's pit?

24 A. No, I tried to get the contaminated soil off the
25 location.

1 Q. What about the areas of contamination that were
2 identified in Burlington Exhibit 4? Where are you going
3 after the core of contamination in those areas that were
4 identified by the OCD, that is, the production pit and the
5 tank pit?

6 A. Well, like I stated previously, we excavated that
7 area around the former tank battery, and we dug a 6-1/2-
8 foot test hole near the separator pit, which did not show
9 any contamination.

10 Q. But you're not even sure if that's in the right
11 location, are you?

12 A. I'm not sure of what?

13 Q. Those pits, you're not even sure if that's the
14 right location?

15 A. Well, your photograph helps. The excavation was
16 in the southeast corner.

17 Q. Okay. Let's look at some of the readings that
18 you got in the southeast quarter of your excavation. Let's
19 focus on the area close to MW-4. We've got sample numbers
20 18, 29 and 17 and 35. Do you see those?

21 A. Yes, I do.

22 Q. We look at the chart, 17 is 794 ppm, which is
23 above OCD closure standards, is it not?

24 A. Yes.

25 Q. And likewise 18 is 196; that's above OCD closure

1 standards, is it not?

2 A. Yes, it is.

3 Q. And if we look at 29, you pegged the meter on
4 that one. That's 2900. That's as high as the PID will go,
5 right?

6 A. Yes, I think so.

7 Q. And 35, again, were 1825, again well above the
8 standards?

9 A. Uh-huh.

10 Q. Is that correct?

11 A. Yes, it is.

12 Q. And these are all in the area of Burlington's
13 operations, correct?

14 A. Yes, under the area of our former tank battery.

15 Q. Okay. And looking at 76, moving northward,
16 samples number 76 and 79, which are just outside the area
17 of excavation, 76, you pegged the meter on that one. That
18 was 2999 again.

19 A. Okay.

20 Q. And 79 was 2990. You pegged the meter on that
21 one as well; is that correct?

22 A. Yes, it is.

23 Q. Now, just so I'm clear, you're not in any way
24 suggesting that PNM's former pit had anything to do with
25 the contamination readings that we're seeing in this area

1 that we've just been talking about, are you?

2 A. State that again so I can understand it.

3 Q. Yes, I just -- I want to make clear, you're not
4 contending in any way that PNM's former pit location had
5 anything to do with the elevated readings that we've just
6 seen and just talked about in the area of Burlington's
7 operation?

8 A. I have not contended that.

9 Q. Okay. If we move northward a little bit, I think
10 sample 69 shown there is again pegged to 2999?

11 A. Okay.

12 Q. And sample 61 is above standard at 167, sample 62
13 is at 452. These are all above OCD closure guidelines, are
14 they not?

15 A. Anything over 100 is over their...

16 Q. Let me ask, you talked about whether you could --
17 you talked about the methodology you used where you used
18 the baggie, put the soil in the baggie and then stuck your
19 PID in there. Does OCD allow you to use a baggie for
20 heated headspace?

21 A. As far as I know, yes.

22 Q. Okay. Does OCD allow closure based on PID
23 readings for TPH?

24 A. No, they require either a BTEX analysis and a --
25 either a BTEX analysis or a PID reading, and they also

1 require a TPH, total petroleum hydrocarbons.

2 Q. So you couldn't close this based on the -- You
3 couldn't close this site, Burlington site, based upon the
4 PID readings that you were using; is that correct?

5 A. Well, once we have groundwater contamination,
6 those guidelines kind of go out the window and they focus
7 on cleanup of the groundwater.

8 Q. Even if you didn't have the groundwater
9 contamination to contend with, you couldn't have closed the
10 site based on the readings that we're seeing there?

11 A. No, sir.

12 Q. You indicate at page 10 of your testimony that
13 Burlington installed temporary wells; is that correct?

14 A. Yes. Yes, it is.

15 Q. And isn't it true that in each of those temporary
16 wells contamination was confirmed?

17 A. I think that's a true statement, down near
18 groundwater.

19 Q. And in fact -- well, let me -- Before I leave the
20 issue of the excavation we're talking about, and you just
21 talked about contamination of groundwater, just so we're
22 clear, that excavation that was down in Burlington's area
23 of the soils doesn't have any effect on remediation
24 groundwater contamination; isn't that correct?

25 A. Ask that one again too, please.

1 Q. Yes. The excavation that you've shown in the
2 area of Burlington's former operations that we've gotten
3 Philip's report, that excavation doesn't have any impact on
4 the groundwater contamination that's under Burlington's
5 portion of the well, does it?

6 A. I guess I don't understand. We excavated down to
7 groundwater, we left that open to help remediate, allow
8 oxygen to get into there. I'm not sure what you're asking.

9 Q. Well, you didn't excavate to groundwater this
10 entire location on the map on PNM Exhibit 60, did you?

11 A. That's a true statement.

12 Q. I mean, really, the only area where you excavated
13 to groundwater as part of the mass excavation was in the
14 area of PNM's pit; isn't that correct?

15 A. During the second --

16 Q. The second excavation.

17 A. -- process, I think we went down to groundwater
18 in your area. We dug down in several areas as we moved to
19 the north --

20 Q. Moved to the south?

21 A. Or, sorry, to the south. And I purposely asked
22 them to go down to check to see if there's contamination
23 down there. We did not see it --

24 Q. You didn't see --

25 A. -- in two different areas.

1 Q. You didn't see contamination in the groundwater?

2 A. Not as we were moving north.

3 Q. What did you do to check the groundwater in the
4 north?

5 A. Excuse me, we did not see soil contamination down
6 near the groundwater.

7 Q. Okay, and I want to make clear, my question to
8 you was directed to groundwater contamination. We know we
9 have groundwater contamination in MW-8, do we not?

10 A. We did.

11 Q. MW-8 was taken out?

12 A. It's not there anymore.

13 Q. And the soil excavation that you did in that area
14 didn't do anything to remediate the groundwater, the known
15 contamination in the area of MW-8, did it?

16 A. We removed the sources around there, which is
17 part of the remediation that you would do to remediate
18 groundwater.

19 Q. When you say you removed the sources, what
20 sources are you talking about?

21 A. The contaminated soil that we removed out of our
22 excavation.

23 Q. So were these soils that you were taking out
24 saturated with hydrocarbon product?

25 A. I've got real confused on what "saturated" means.

1 Q. Well, I'm talking about saturated with
2 hydrocarbon product.

3 A. I don't know if I know.

4 Q. You talk about in your testimony that you
5 supervised the work that Philip's was doing for Burlington
6 with regard to the latest excavation; is that correct?

7 A. Yes.

8 Q. And were you on site at all times when they were
9 doing the work out there?

10 A. No, I was not.

11 Q. Was anyone from Burlington on site at all times
12 that they were doing the work out there?

13 A. I would bet not at all times.

14 Q. How much time were you out at the site when they
15 were doing the work out there?

16 A. I would estimate 50 percent of the time.

17 Q. Okay. How many days total did Philip's perform
18 excavation work out there, from November to February?

19 A. I don't have an answer for that.

20 Q. Is it not reflected in the report?

21 A. According to the report, they started -- they
22 mobilized on November 10th, continued November 11th through
23 November 17th. The project was shut down November 17th.
24 That's when we had constructed the cells so we could
25 monitor the inflow. We resumed excavation on November 30th

1 and continued through December 4th.

2 Q. So there was quite a hiatus there, a couple-month
3 hiatus on the work that was done at that site?

4 A. I don't know what "hiatus" means.

5 Q. A period when they didn't do any additional work?

6 A. Correct.

7 Q. And you were out there, you estimate, half the
8 time?

9 A. Yes, that's my guess.

10 Q. Okay, have you got time records that reflect how
11 long you were out there?

12 A. No.

13 Q. With regard to periods of time when you weren't
14 out there, who was directing the activity?

15 A. Philip Environmental.

16 Q. Were they basically unsupervised at that point?

17 A. I had contracted Philip Environmental to oversee
18 the job.

19 Q. Well, who was --

20 A. Unsupervised by Burlington, yes.

21 Q. Right, unsupervised by Burlington.

22 A. We weren't there. We weren't there, they were
23 unsupervised by Burlington personnel.

24 Q. What was the scope of work for this particular
25 project for Philip's?

1 A. I'm not sure if I can tell you exactly, but we
2 asked Philip to go out there. We knew we had contaminated
3 groundwater and contaminated soil, and the general overall
4 scope was to remove the contaminated soil into source
5 areas.

6 Q. Did you -- Well, what I want to ask, I guess, did
7 you have a written scope of work that you sent to Philip's
8 that said, Here's what we want you to do? Or did you talk
9 to them and say, Keep on going till we tell you to stop.
10 Or how was that set up?

11 A. I don't recall whether there was something in
12 writing or verbally, I do not know.

13 Q. Did you do any field audits of the work that was
14 done there?

15 A. When I was on location, that's more or less what
16 I was on location for, was to make sure things were going
17 as planned.

18 Q. Did you document any of what you saw out there,
19 or did you just kind of walk around and see what they were
20 doing?

21 A. Mainly walked around and see what they were
22 doing.

23 Q. You didn't make any notes or notations or
24 anything of that nature?

25 A. Not that I know of.

1 Q. What were criteria that were used in terms of
2 when Philip's would stop excavating in a given area?

3 A. It was based off the PID readings, visual --
4 Again, we were going after the core of the contamination,
5 not trying to get every little piece. So if we had a
6 little bit of contamination of wall that we were going to
7 have to move 1000 cubic yards to get to, we did not chase
8 that. But basically off the PID.

9 Q. So you were just taking PID readings, that was
10 what you were using?

11 A. PID and visual. Most of the time you didn't need
12 any PID to tell you that you were in contaminated soil.

13 Q. Was there a particular PID reading that you set
14 as the limit?

15 A. We always used 100, which is what the OCD
16 guidelines were.

17 Q. Now, you've talked about you were going after the
18 source of contamination, and what I want to know is, why
19 did you not excavate to groundwater, for example, in the
20 area of TPW-5, which is clearly on Burlington's part of the
21 wellpad.

22 A. I'm not sure where -- TPW is all the way down
23 south.

24 Q. Well, let's look at Burlington Exhibit 2. I
25 think that will give you a reference point.

1 A. Okay, on that, when we were excavating that
2 former area, like I said, it was mainly rock. We had to
3 have a large dozer with a ripper go through and rip it as
4 we went down. And there's a hill coming up from TPW-5, and
5 so we excavated as far south as we could go, plus we were
6 ending up with clean readings as far as PID.

7 Q. Well, I wasn't asking about the soil. I'm
8 talking about, why didn't you go to groundwater there?

9 A. It wasn't physically possible with the way we
10 were doing it.

11 Q. But you know that the groundwater is contaminated
12 at that level, don't you?

13 A. Based on that one sample that was taken.

14 Q. You would agree that when you have free product
15 in the water table, that as the water table moves up and
16 down, that free product actually has the capacity to
17 contaminate the soil, right?

18 A. Yes, I would agree.

19 Q. And in turn, the contamination that remains at
20 that soil can then, as the water table fluctuates up and
21 down, contaminate water, right?

22 A. That's correct.

23 Q. And we know that that -- there is a band of
24 contamination that is still in that area of Burlington's
25 operations; isn't that correct?

1 A. I know we had high dissolved-phase in that area.
2 Did we have --

3 Q. In fact, you have the highest dissolved-phase --

4 A. Highest dissolved-phase.

5 Q. -- on site; is that correct?

6 A. Yes.

7 Q. Now, with regard to your instructions to Phillips
8 as to when they should stop digging, we went through
9 Exhibit 60 and the little schematic that was provided and
10 showed several locations where you pegged the meter. And
11 apparently Burlington didn't keep on digging.

12 A. Well, that's not a true statement because we did
13 keep on digging. We ended up removing all that soil near
14 MW-4. These readings that Phillips put on their report
15 were the heated headspace samples that they took and
16 documented as they did it, and it doesn't show that we
17 continued digging until either we were chasing something
18 very small, or we --

19 Q. So is your testimony, in every instance where you
20 have above 100 ppm on your PID, you kept on going till you
21 found something under 100?

22 A. No, I did not state that, because we did not
23 chase everything.

24 Q. I see. Where are the areas that you didn't
25 chase? You can show us on Exhibit 60. Where did you not

1 continue to chase? We talked about the east side, I guess.

2 A. Okay, we talked about that. We also ran into
3 that same problem on the northwest side. We didn't chase
4 that all the way out.

5 Q. On the west side, can you be a little more
6 specific about that?

7 A. The northwest side, which is northwest of PNM's
8 former pit location, we still had high soils along that
9 line.

10 Q. How come you didn't chase that?

11 A. We were getting out to a fairly small band and we
12 didn't want to keep chasing. We had to move a lot of soil
13 to get a small band.

14 Q. Do we know at what elevations these readings were
15 taken at, how deep in the soil?

16 A. That's been discussed. We have approximate
17 depths.

18 Q. Where is that shown on the Philip's report?

19 A. It's on that Table 1.

20 Q. When you say approximate depths, these things
21 were not surveyed in any regard, were they?

22 A. No. Like I said before, we were out there to
23 remove contamination, and it would have been very
24 cumbersome to try to survey in exact locations of samples.

25 Q. It may have been cumbersome; you admit, though,

1 that it would have been helpful in terms of defining
2 precise locations?

3 A. Yes, I couldn't argue that.

4 CHAIRMAN WROTENBERY: Mr. Alvidrez, we probably
5 need to take a break within the next ten minutes or so.

6 MR. ALVIDREZ: Okay.

7 CHAIRMAN WROTENBERY: I don't know what you've
8 got left.

9 MR. ALVIDREZ: I still have more questions.

10 CHAIRMAN WROTENBERY: Okay, shall we take it now
11 then?

12 MR. ALVIDREZ: We can take it now, yes.

13 CHAIRMAN WROTENBERY: Okay, let's do that. We'll
14 take a 15-minute break. My watch says it's five after ten.
15 We'll come back in at twenty after.

16 (Thereupon, a recess was taken at 10:05 a.m.)

17 (The following proceedings had at 10:20.m.)

18 CHAIRMAN WROTENBERY: Is everybody ready? Okay,
19 go ahead.

20 MR. ALVIDREZ: May it please the Commission.

21 Q. (By Mr. Alvidrez) Mr. Hasely, we were going over
22 PNM Exhibit 60 before the break, and I was having you
23 describe for us where the areas were that Burlington had
24 above standard PID readings but nonetheless quit
25 excavating, and you were describing those for us. Are

1 there other areas that you haven't described for us yet
2 where the PID readings were in excess of 100, and yet the
3 excavation was stopped in that area?

4 A. I don't know if -- There may have been some other
5 areas, not that I recall right now. Those are the areas
6 that I remember, that --

7 Q. Is there somewhere where that's document so that
8 you can go back and refresh your recollection where those
9 areas of high concentrations were?

10 A. No, I don't think it is documented.

11 Q. If you go back out there now, it's anybody's
12 guess as to where you left that contamination in the soil?

13 A. It would be an educated guess.

14 Q. Okay. Now, I guess I am curious as to why
15 Burlington didn't just shut in this well for a period of
16 time and excavate the whole area to groundwater to make
17 sure that all the remediation was complete, all the
18 contamination was out of there.

19 A. Are you asking a question there?

20 Q. I am. Can you tell us why Burlington didn't do
21 that?

22 A. Ask the question again, please.

23 Q. Yes. We know, based on your testimony, that
24 there is still soil contamination in place out there. We
25 know from your testimony there's still groundwater

1 contamination in place out there, and I'm asking, why
2 didn't Burlington come in with its bulldozer and simply
3 take the wellpad out and address that contamination, the
4 soil and groundwater contamination? Why did you stop where
5 you did?

6 A. For one, what you're stating wouldn't make sense.
7 We followed the contamination that we could find and
8 removed that. It wouldn't make sense to take the whole
9 location down to the groundwater.

10 Q. Why not?

11 A. Well, cost is the one that jumps to mind.

12 Q. But there's still contamination out there,
13 correct?

14 A. Yes, there is.

15 Q. And you thought that this mass excavation in
16 PNM's area was an appropriate remediation methodology,
17 correct?

18 A. Yes, because we were finding contaminated soil.

19 Q. Okay, but yet you don't think that same
20 remediation technology is appropriate in the area of
21 Burlington's operations?

22 A. We removed the contaminated soil that we found in
23 the area of Burlington's operations.

24 Q. Wait, I thought you testified that you left some
25 contaminated soil in place. You're not sure exactly where,

1 but you left it in place?

2 A. Yeah, there's certain areas, we did not do a 100-
3 percent cleanup. We went in, like I stated before, to get
4 the core -- the main part of the contamination.

5 Q. How do you know that that's the area of -- main
6 part of the contamination?

7 A. Because we excavated where we found contaminated
8 soil.

9 Q. And if you excavated in the area of Burlington's
10 operations you might find, in fact, that there's even more
11 contamination over there; isn't that true?

12 A. You mean under our current operations?

13 Q. Under your current operations.

14 A. The possibility, I guess, is there, yes.

15 Q. But you really don't know what's out there
16 because Burlington hasn't really done the same type of
17 comprehensive investigation that PNM did on its site of the
18 wellpad in the area of its former operations; isn't that
19 correct?

20 A. I'm sorry, but you'll have to ask it again. My
21 mind wandered.

22 Q. Well, we know that PNM identified the location of
23 its former pit, and they sunk two permanent monitoring
24 wells in that area, and that's where we found the free
25 product floating on the water table, correct?

1 A. Yes.

2 Q. But Burlington hasn't gone into the locations of
3 its former pits and installed a similar well; isn't that
4 correct?

5 A. Yes, that's true.

6 Q. And it's likely that if Burlington went in there
7 and installed these permanent wells and allowed the water
8 table to equilibrate, that we could see even thicker levels
9 of free product underlying Burlington's operations; isn't
10 that correct?

11 A. I wouldn't say it's likely.

12 Q. It's certainly possible?

13 A. Yes, it is possible.

14 Q. And if we go off of the BTEX levels again,
15 Burlington is the hottest area on the wellpad that we know
16 about, isn't that right?

17 A. As far as the dissolved-phase in the water --

18 Q. Yes, sir.

19 A. -- that's correct.

20 Q. And the level of dissolved-phase can have a
21 correlation to the thickness of the free product, can it
22 not?

23 A. I don't know if I can answer that.

24 Q. Okay. That's beyond your area of expertise?

25 A. I'd say it is.

1 Q. All right. The area of the production pit --
2 Let's go to Burlington Exhibit 6 for a moment, and really
3 what I want you to look at is the third page, the site map.
4 This map has got a scale to it, it appears, is that right?

5 A. I'm not sure if I see what you're looking at. On
6 this map?

7 Q. Yes, sir.

8 A. Okay, yes, I do see what you're -- Yes.

9 Q. There's some scale to it. Is that a -- What is
10 the reading of that? In yards or -- Do you know what that
11 is?

12 A. I do not know. My guess would be feet.

13 Q. Your -- All right. This is a Burlington-prepared
14 exhibit, is it not?

15 A. Yes, it is.

16 Q. And Burlington depicts the flow of the
17 groundwater gradient on the wellpad there; is that correct?

18 A. Yes, they do.

19 Q. And that's shown with an arrow?

20 A. Yes.

21 Q. Now, in terms of possible areas on Burlington's
22 site for contamination, there's a production liquid tank
23 that's depicted there in the southern part of the diagram,
24 correct?

25 A. Yes.

1 Q. I want to confirm, now, that production pit was
2 not an area of excavation with the bulldozer by Burlington;
3 isn't that correct?

4 A. Not with the bulldozer.

5 Q. And that is a potential source for groundwater
6 contamination in that area; isn't that correct?

7 A. It is a potential source, but I would think if we
8 had contamination there we would be seeing levels in MW-3,
9 which MW-3 had always been clean.

10 Q. Okay, but it's still a potential source, and we
11 know that TPW-5, which is pretty close, we had some very
12 high readings; isn't that correct?

13 A. That's correct.

14 Q. And there's also a depiction of a 500-gallon
15 production liquid tank on this particular diagram. Do you
16 see that over by the product tank battery?

17 A. Yes, I do.

18 Q. And that is to the north of the 300-barrel
19 Mesaverde holding tank, correct, product tank?

20 A. Yes, north and east.

21 Q. Okay. And on the other diagram, PNM Exhibit 49,
22 which was a schematic of the Burlington pit sometime in
23 1994, that showed a pit to the south and to the east of
24 where the 210-barrel Dakota tank would have been; is that
25 correct?

1 A. That's what's shown on that PNM 49, yes.

2 Q. So it appears that that pit was somehow moved or
3 covered up at some point in time between the time PNM
4 Exhibit 49 was prepared and Burlington Exhibit 6 was
5 prepared; is that correct?

6 A. Again, I'm not sure how accurate or how the
7 relative locations of this PNM 49, that site security
8 diagram. If we go off of what it states and what's on
9 this, then the answer is yes.

10 Q. I wanted to follow up and ask you, I asked why
11 you didn't just go in and take out the entire location with
12 a bulldozer like you did in PNM's area, and you said cost
13 was one of the factors; is that correct?

14 A. Cost, yes, was one of the factors.

15 Q. Okay.

16 A. I mean, it was not a -- That was never something
17 that I considered.

18 Q. Why?

19 A. Because I wanted to get the contamination, I
20 wanted to dig where the contamination was, and it didn't
21 make sense to dig a lot of the location that was not
22 impacted.

23 Q. Well, Burlington has indicated that it was
24 interested in cleaning up this wellpad completely; isn't
25 that correct?

1 A. I think everybody's interested in that.

2 Q. And this certainly is one way of ensuring that
3 that is going to be done; isn't that correct? Going in and
4 excavating the entire wellpad?

5 A. Yes, I could not argue with that logic.

6 Q. Okay. Then is cost the only reason that
7 Burlington didn't go in and excavate the entire wellpad
8 out?

9 A. Cost and common sense.

10 Q. So are you saying that mass excavation doesn't
11 make sense in terms of a remediation methodology?

12 A. Not if there's not impacted soil.

13 Q. What about if you've got impacted groundwater,
14 which we know we have on Burlington's portion of the
15 wellpad?

16 A. It still wouldn't make sense, excavating all this
17 clean soil above the impacted groundwater.

18 Q. Well, did you excavate any clean soil above PNM's
19 operations?

20 A. Yes, we did.

21 Q. Why did you excavate clean soil? It doesn't make
22 any sense to do that.

23 A. To get to the massive amounts of contaminate soil
24 that was below it.

25 Q. So you had clean soil on top and then

1 contaminated soil underneath?

2 A. Right. PNM dug out their pit down to 12 feet and
3 left 10 feet of contaminated soil there.

4 Q. Is that the only clean soil you're talking about?
5 There are other areas of clean soil out there?

6 A. Oh, there was areas all around there that it
7 might not have been -- we didn't see impacted soil till we
8 got down, you know, a certain depth. It wasn't evident on
9 the surface.

10 Q. What makes you think the same phenomenon has been
11 happening on Burlington's side of the wellpad, in the area
12 of its operations and former operations?

13 A. The same phenomenon.

14 Q. In terms of the clean soil and the contaminated
15 soil in different layers out there?

16 A. Well, that's why we excavated that southeast
17 corner. We took the dozer and we ripped out, looking for
18 any impacted soil.

19 Q. You would agree that the great amount of
20 excavation that took place in the November and February
21 time frame was done in the area of PNM's operations, rather
22 than Burlington's operations; isn't that correct, in terms
23 of the depth?

24 A. That is correct. We excavated where we found
25 contaminated soil.

1 Q. I'd like you to look at Burlington Exhibit 21.
2 This is a letter dated October 28th from yourself to Bill
3 Olson of the OCD; is that correct?

4 A. Yes, it is.

5 Q. And in the third paragraph down there, the last
6 sentence, it says, "If PNM does not agree to undertake this
7 action by Friday, October 30, then BR..." that's Burlington
8 Resources; is that correct?

9 A. Yes, it is.

10 Q. "...is prepared to immediately remediate the
11 contamination on the entire location..." That's what you
12 represented to the OCD?

13 A. Uh-huh.

14 Q. Is that "yes"?

15 A. Yes, it -- I'm sorry, yes.

16 Q. And you have not done that; is that correct?

17 A. We remediated all the contamination that we found
18 on the entire location, other than the -- I'm not sure what
19 the word is, incidental ones or the ones we could not
20 feasibly get --

21 Q. Well, your --

22 A. -- as far as contaminated soils.

23 Q. Well, by reading this, it doesn't say soil
24 contamination on the entire location, does it?

25 A. Doesn't state that, no.

1 Q. When you said "remediate the contamination", you
2 were talking about soil and groundwater, weren't you?

3 A. I would guess we're looking at both.

4 Q. Again, my question, Burlington has not completely
5 remediated the entire location at the Hampton 4M; isn't
6 that correct?

7 A. That's a correct statement.

8 Q. But yet you told the OCD you were going to do
9 that; isn't that correct?

10 A. That's what this letter states.

11 Q. And this letter was written by you?

12 A. Yes.

13 Q. Why haven't you done it?

14 A. We did what we felt was necessary to start this
15 process going. We never said we're through with it.

16 Q. So you're not through with it? You're not
17 through with the remediation process out there?

18 A. If we were, I don't think we would be here right
19 now.

20 Q. Okay. Well, I'm talking about Burlington.
21 Burlington is not through with the remediation process out
22 there?

23 A. No.

24 Q. What is your plan for further remediation out
25 there?

1 A. I don't know if we have a set plan yet. We're
2 going to monitor and see if what we did was effective. If
3 not, we'll have to continue on.

4 Q. Okay. Burlington has installed how many
5 monitoring wells out there since the mass excavation?

6 A. We installed one, that MW-13.

7 Q. Okay. And you've seen the results of the
8 sampling that has taken place in the existing monitoring
9 wells; isn't that correct?

10 A. Yes, I have.

11 Q. And we're not seeing the levels of dissolved-
12 phase go down, are we? I mean, the trend is up, isn't it?

13 A. Since our excavation?

14 Q. Since your excavation.

15 A. I think so.

16 Q. And that would suggest that the remediation was
17 not successful in terms of addressing the groundwater
18 contamination; isn't that correct?

19 A. Well, for one, we went from several feet of free-
20 phase to now some dissolved-phase, so we're going in the
21 right direction. But I think it's still too early to tell.
22 We did this -- This mass excavation that you talked about
23 stirred up a lot of soils. Things are going to take some
24 time to settle out.

25 Q. And that can account for why we're not seeing the

1 free-phase floating on the water; isn't that correct?

2 A. That could be the case also.

3 Q. We could still have a lot of free-phase down
4 there; isn't that correct?

5 A. That is correct.

6 Q. Was it Burlington's intent to try and dewater
7 this site as part of its excavation activity? That is, get
8 all the groundwater out?

9 A. That was discussed, as far as if it was a --

10 Q. -- perched --

11 A. -- perched aquifer, that we would get it all out.

12 Q. You weren't able to do that, were you?

13 A. No.

14 Q. Was the -- You talked about the area to the east,
15 upgradient of PNM's former pit where there was a seam and
16 there was water and free product flowing in. Do you recall
17 that testimony?

18 A. Yes, I do.

19 Q. Did that water ever stop flowing in?

20 A. No, it did not.

21 Q. It kept on flowing in; is that correct?

22 A. Yes, it is.

23 Q. And was free product flowing in with that water?
24 Did it continue to flow in?

25 A. Not at the end, not that we could visibly see

1 coming in anymore.

2 Q. Did you take any samples of that water, lab
3 analyses?

4 A. Yes, I did.

5 Q. And what were the readings on that?

6 A. I do not recall.

7 Q. Is there somewhere in the Burlington
8 documentation that would tell us what the readings were?

9 A. I don't know if those samples are in there or
10 not. I don't think so. Best of my recollection, they were
11 over the standards, they were not clean water, which I did
12 not expect them to be clean water.

13 Q. Were those samples ever provided to the -- the
14 sample results ever provided to the OCD?

15 A. I don't think so. If they would have been, they
16 would have been in here.

17 Q. In where?

18 A. They would have been in some of my reports to the
19 OCD.

20 Q. Well, let me ask, since the mass excavation, what
21 reports have you made to the OCD?

22 A. I have not made any reports to the OCD.

23 Q. So you haven't given the OCD the sample results,
24 correct?

25 A. Correct.

1 Q. And likewise, you haven't given PNM those sample
2 results, have you?

3 A. Not to my knowledge. I don't know.

4 Q. You're aware that PNM has made requests for that
5 information, correct?

6 A. Yes, I am aware.

7 Q. But it still wasn't provided? And I'm talking --

8 A. It wasn't purposely not provided, but I don't
9 know if it was provided or not.

10 Q. Well, you didn't provide it, right, to PNM?

11 A. Not that I recall.

12 Q. Was the report that -- the Phillips report, ever
13 provided to the OCD outside of the context of your prefiled
14 testimony?

15 A. On the mass excavation?

16 Q. The mass excavation.

17 A. No.

18 Q. So there hasn't been any reporting to the OCD
19 about what Burlington has done -- there hasn't been any
20 written reporting, anyway, about what Burlington has done
21 following the mass excavation or what happened out there?

22 A. Correct.

23 Q. Do you have those sample results from that --
24 that you just talked to, from the inflow into the
25 Burlington excavation?

1 A. I probably have them out in my truck.

2 MR. ALVIDREZ: Out in the truck?

3 If it please the Commission, we have asked many,
4 many months ago -- and I can pull out a letter -- for
5 materials relating to the work that was done, Philip's,
6 part of this informal discovery that we've talked about,
7 and it certainly was not provided to me.

8 That was also one of the subject matters of our
9 subpoena, which was quashed yesterday by the Commission. I
10 think under the circumstances, we should certainly have the
11 opportunity to look at that data. I think it's certainly
12 relevant to what we're talking about.

13 And the gentleman has testified that it's in his
14 car, and it would not seem to be an undue burden to
15 retrieve it.

16 CHAIRMAN WROTENBERY: Mr. Carr?

17 MR. CARR: May it please the Commission, Mr.
18 Alvidrez contacted me concerning this sort of information
19 several months ago. I contacted Burlington, and I was
20 advised that they directly advised PNM that they had
21 instructed Philip's to make anything available to them.
22 The last I heard about -- That was the last I heard I heard
23 about it until yesterday -- or till this subpoena on Monday
24 or Tuesday of this week.

25 We did contact witnesses, the ones we could find,

1 and told them to bring whatever they have. And what we got
2 was, as they were arriving to town, in Mr. Hasely's case, a
3 box full of all sorts of stuff that we haven't had a chance
4 to review.

5 I don't think that there is anything there, I
6 would guess, that's particularly harmful. I don't know
7 exactly where it is. We would want to take a look at it
8 before we produce it. I'm sort of at a loss to go beyond
9 that. If you want to break, we can go look for them.

10 MR. ALVIDREZ: Perhaps we --

11 CHAIRMAN WROTENBERY: Perhaps we'll take a --

12 MR. ALVIDREZ: -- can review it over lunch?

13 CHAIRMAN WROTENBERY: That's what I'm thinking.
14 We might take a long lunch to give you time to look at it.
15 I do think the Commission would be interested in seeing
16 some of that data, as well, including --

17 MR. CARR: If it's just a question of, with a box
18 of material, with what's been going on this week --

19 CHAIRMAN WROTENBERY: Right.

20 MR. CARR: -- we would like to look at it before
21 we -- We will look for -- What? What was it you were
22 asking for, Rick?

23 MR. ALVIDREZ: Well, let's look at the box of
24 material.

25 MR. CARR: We're not going to look at the box of

1 material together. You were asking for something. What
2 was that?

3 MR. ALVIDREZ: I want any documents relating to
4 that mass excavation, any work that was done from November
5 to February.

6 MR. OWEN: May it please the Commission, I had a
7 discussion with Ms. Hebert on Tuesday after I filed my
8 Motion to Quash -- or actually, it was Wednesday, after we
9 filed the Motion to Quash. And following the Commission's
10 ruling on my Motion to Quash, I believe it's appropriate
11 for us to produce any test results in the context of this
12 discussion that have been taken since the mass excavation.

13 However, what we're seeing here is an attempt to
14 back-door the Commission's ruling on the Motion to Quash.

15 We'd be happy to produce any recent test results.
16 We would have been happy to produce any other documents if
17 we would have been asked for them, however, those weren't
18 -- the request was not made until the subpoena was served
19 upon us on Monday.

20 MR. CARR: Let us see what we've got, and then
21 after lunch we will report to you.

22 CHAIRMAN WROTENBERY: Okay. I think at this
23 point the specific questions have been about the test
24 results.

25 MR. ALVIDREZ: I think it's kind of important to

1 note how this is all playing out. I mean, I asked Mr. Carr
2 in writing, written letter, for this information.

3 Mr. Carr didn't call me back, didn't write me
4 back, didn't tell me. I don't know that he's telling his
5 people, Give them whatever they want. I can't contact his
6 people ethically. I can't contact Philip's. I mean, there
7 was no response to my request.

8 And I think it would have been appropriate for
9 Mr. Carr to write me a letter and say, If you want this
10 information, you know, you have my permission to talk to my
11 people directly, or have your people call my people, or go
12 talk to Philip's. But there was none of that going on.

13 I talked to Mr. Olson right before it was time to
14 file the testimony, because I wanted to make sure we had
15 everything. And he assured me, Oh, you've gotten
16 everything. And what I had was the report, I had the
17 Philip's report, that's it. Oh, you've gotten everything.

18 CHAIRMAN WROTENBERY: Well, let's give Burlington
19 a chance to --

20 MR. CARR: And my understanding was that Mr.
21 Alvidrez -- the material had been made available to him.
22 If it hadn't been, I'm surprised he waited until 48 hours
23 before hearing to revisit the subject. We'll look and see
24 what we've got, and we will attempt to work that out with
25 Mr. Alvidrez.

1 CHAIRMAN WROTENBERY: You'll do that at lunch,
2 and then we'll revisit the question at lunch.

3 Also, I know the Commission would be interested
4 in the information on the test holes that was discussed
5 earlier.

6 Q. (By Mr. Alvidrez) All right, let's continue on
7 with some of the other exhibits. And you recall, Mr.
8 Hasely, there was discussion about -- between your counsel
9 and Ms. Gannon with regard to PNM's position to undertake
10 remediation at the demand of Burlington. Do you recall
11 that?

12 A. Yes, I do.

13 Q. And one of the exhibits that was placed into
14 evidence is a Burlington Exhibit 22. Do you see that?

15 A. Yes, I do.

16 Q. That's a letter from myself to Rand Carroll. Do
17 you see that?

18 A. Yes.

19 Q. And it's indicated that it's carbon-copied to
20 William Carr, your -- Burlington's counsel?

21 A. Yes.

22 Q. Okay. In that letter there are some concerns
23 that PNM is expressing about Burlington's proposed mass
24 excavation out there. Do you understand that?

25 A. Yes.

1 Q. I want to go over some of those concerns. If we
2 go down to the third paragraph on the first page, the last
3 sentence, the statement is made, "The result of
4 Burlington's proposed wholesale excavation will be the mass
5 disturbance of the Hampton..." PNM wellpad. Do you see
6 that?

7 A. Yes, I do.

8 Q. And that is a true statement, is it not? I mean,
9 the mass excavation did result in the mass disturbance of
10 the wellpad, do you agree?

11 A. That is correct.

12 Q. And it goes on to state, "...and the potential
13 release of large amounts of Burlington's free product
14 downgradient of the site." Do you see that?

15 A. Yes, I do see it.

16 Q. Now, we know from Monitoring Well 5, which is
17 downgradient, that since Burlington's mass excavation
18 activities, the concentrations of contamination have
19 increased; isn't that correct?

20 A. I'm not sure without looking at the results.

21 Q. Well, let's look at PNM Exhibit 48-A.

22 A. I don't think I have the most recent one in here.

23 Q. It should be -- it was included in the -- It
24 should be in the front of the book, the white book. It may
25 be a loose paper there.

1 A. Yes, I found it.

2 Q. Do you see that now, where MW-5 is now showing
3 evidence of sheen?

4 A. Yes. I also see that concentrations of BTEX have
5 lowered from the July sample to the August.

6 Q. But not lowered particularly significantly; isn't
7 that correct?

8 A. Any downward trend I see I think is pretty
9 significant --

10 Q. Well --

11 A. -- or I hope is significant.

12 Q. But isn't also the appearance of sheen
13 significant?

14 A. Yes.

15 Q. And sheen suggests the potential, anyway, for the
16 arrival of free product; isn't that correct?

17 A. Yes, the potential.

18 Q. Okay. So there may be some credence to the
19 concerns that PNM expressed with regard to the potential
20 release of large amounts of free product downgradient from
21 that site; isn't that correct?

22 A. Ask you question again.

23 Q. Yes, I said there may well be some credence to
24 PNM's concerns that Burlington's mass excavation may result
25 in the potential release of large amounts of free product

1 downgradient?

2 A. Yes.

3 Q. Going on to the second page, page 2 of that
4 letter, second paragraph, it says, "Secondly, Burlington's
5 proposed remediation methods will interrupt PNM's ongoing
6 remediation and monitoring activities at the Hampton 4M
7 Well site." Do you see that?

8 A. Yes, I do.

9 Q. And that was also a true statement; isn't that
10 correct?

11 A. Yes.

12 Q. And the second sentence goes on, "PNM's
13 remediation activities have recovered over 1000 gallons of
14 free product to date." That was a true statement as well;
15 isn't that correct?

16 A. Correct.

17 Q. How many gallons of free product did Burlington
18 recover as a result of its mass excavation?

19 A. We don't have a good number on that. We sucked
20 out those cells periodically, and they had free product on
21 it, and we don't have a good volume of that. And I guess,
22 in my mind, we also removed a lot of free product in this
23 saturated soil that we removed, but I don't have...

24 Q. Not even a best guess?

25 A. I don't -- Maybe Mr. Rosasco later on might

1 have --

2 Q. Did you ask Mr. Rosasco to try and calculate how
3 much was removed?

4 A. We've talked about it, yes.

5 Q. And what's his opinion?

6 A. I don't want to speak for Mr. Rosasco.

7 Q. Well, did he tell you how much he thinks was
8 removed?

9 A. Yes, but I don't remember.

10 Q. You don't recall sitting here -- You talked to
11 him about it yesterday, didn't you?

12 A. Yes.

13 Q. In fact, it was yesterday when you asked him to
14 calculate how much he though had been removed?

15 A. I didn't ask him to calculate that. I guess he
16 come up on that all by himself.

17 Q. All by himself. But you talked to him about it
18 yesterday, and yesterday is when he told you how much he
19 calculated?

20 A. Yes.

21 Q. And you don't remember today?

22 A. No, I do not.

23 Q. Going on down to the last paragraph on page 2,
24 beginning with the sentence that says:

25

1 Even if Burlington is successful in removing the
2 existing soil contamination at the site, soil
3 contamination will only re-occur as a result of
4 fluctuations in the level of ground water beneath the
5 site, particularly if the actual release point or
6 points are not first identified and addressed.

7

8 Do you see that sentence?

9 A. Yes, I do.

10 Q. And that sentence is also true, is it not?

11 A. Yes, it is.

12 Q. As I understand it, you had groundwater just
13 continuing to seep in to that open excavation, and there
14 were -- We know that it was above standards, based on what
15 you've said. We can't say how much above, because we
16 haven't been provided with the results, but we know that
17 contaminated water was continuing to come into that
18 excavation, correct?

19 A. Yes.

20 Q. And Burlington went in and just pushed clean soil
21 on top of that contaminated groundwater; isn't that
22 correct?

23 A. Yes, we had to do that to continue following the
24 contaminated soil to the north and south --

25 Q. You had to --

1 A. -- to the east.

2 Q. You had to push in the -- that area, cover up the
3 contaminated area, in order to do that?

4 A. Logistically, we had to cover that up so we could
5 continue moving into that east wall.

6 Q. This --

7 A. And again, this was contaminated water.

8 Q. Right. It was contaminated with hydrocarbons?

9 A. Correct.

10 Q. And that contaminated water will now, in turn,
11 contaminate the clean soil that you put in there; isn't
12 that correct?

13 A. It has the potential to, yes.

14 Q. Well, is there any doubt in your mind that it's
15 going to contaminate that soil?

16 A. Dissolved-phase, I'm not sure. I don't know.

17 Q. That's beyond your area of expertise?

18 A. I guess I would agree with that.

19 Q. If the soil in that area is contaminated, won't
20 you just have to go back in and take it out?

21 A. If the groundwater does not clean up, and that's
22 what our concern is.

23 Q. And so far, the groundwater has not cleaned up;
24 isn't that correct?

25 A. That is true.

1 Q. Let me have you look at Burlington Exhibit 14,
2 and page 2 is what I want to concentrate on. This is a
3 letter from PNM to Bill Olson of the OCD, where PNM is
4 critical, I guess, if you'll agree to that statement, of
5 Burlington's activities out there; is that a fair
6 characterization?

7 A. Yes, it is.

8 Q. I want to go down to the section Roman numeral
9 II, "Burlington Document Review". There are a couple
10 bullet points and then a paragraph, and then there are four
11 more bullet points on that page. I want to go through that
12 with you.

13 The second bullet point there, on page 2 of this
14 exhibit, shows that:

15
16 While total BTEX concentrations in MW-4 did
17 decrease as stated by Burlington, concentrations of
18 the most mobile and toxic constituent, benzene,
19 increased following remediation activities conducted
20 by Burlington. PNM does not agree with the statement
21 that the decrease in total BTEX concentrations in the
22 quarter immediately following excavation points to the
23 success of source removal activities; additional
24 monitoring is needed.

25

1 Now, as I understand the Burlington report that's
2 referred to there, Burlington was saying, We're showing
3 some success here, because we've got a decrease in total
4 BTEX. Is that the context in which this discussion is
5 taking place?

6 A. I would like to look at the report.

7 Q. Sure, sure, please refer to it.

8 A. Do you know where it is?

9 Q. Well, it's the Burlington report, I think it's
10 probably a fairly thick one. I believe it's the August,
11 1997, report, which you can find at PNM Exhibit 31.

12 A. I don't think that's the correct one.

13 Q. Okay. That's Burlington 1997 data. There's also
14 a Burlington Resources 1998 groundwater contamination and
15 status report.

16 MS. RISTAU: PNM 36.

17 Q. (By Mr. Alvidrez) PNM 36, I'm informed. And I
18 think to jump back, looking at the last page -- well, the
19 last page of the letter; it would be the third page in the
20 document -- it says, "The source removal appears to be
21 effective as shown by the decrease in dissolved BTEX in
22 monitoring well MW-4." Do you see that?

23 A. Yes, I do.

24 Q. And that's a statement that you're making to Bill
25 Olson of the OCD, correct?

1 A. Correct.

2 Q. And what we know is that following the submission
3 of your report, in fact, MW-4 didn't get better. Free
4 product actually appeared in it; isn't that correct?

5 A. That's true.

6 Q. So your conclusions about the effectiveness of
7 the Burlington excavation, the original excavation, was
8 incorrect; isn't that true?

9 A. Well, my statement just said that it appears to
10 be effective, and it did at the time.

11 Q. But you would agree that, in fact, it was not
12 effective?

13 A. I would agree that free-phase showed up in MW-4.

14 Q. You were relying upon the decrease in BTEX
15 concentrations. There's some evidence that Burlington's
16 excavation, the original excavation, was originally
17 remediating the groundwater; isn't that correct?

18 A. Correct.

19 Q. And in fact, that excavation didn't effectively
20 remediate the groundwater, based on the results in MW-4;
21 isn't that correct?

22 A. Yes.

23 Q. Going on to the second point, it says:

24

25 Monitoring well MW-8 was installed by PNM as an

1 additional well downgradient of the Burlington source
2 area, and upgradient of the former PNM pit. This well
3 detected soil contamination at depths of 14 to 20 feet
4 below grade; groundwater was visibly contaminated by
5 sheen and high dissolved phase contamination.

6
7 Do you see that --

8 A. Yes, I do.

9 Q. -- discussion? And in fact, what occurred at
10 this location in some months was that free-phase product,
11 the thickness, the maximum thickness of .37 feet appeared;
12 isn't that correct?

13 A. Yes, I think so.

14 Q. And that well was downgradient of Burlington's
15 source area; isn't that correct?

16 A. Yes, it is.

17 Q. And it's upgradient of PNM's former pit; isn't
18 that correct?

19 A. Based on how I've seen the groundwater contours,
20 yes.

21 Q. With regard to the third bullet there on page 2,
22 it says:

23
24 Temporary well TPW-02 was installed by Burlington
25 at a location upgradient of the former PNM pit. This

1 temporary monitoring well encountered free product on
2 installation and significant soil contamination at a
3 depth of 25 to 26 feet.

4
5 Those recitations of the data are correct, are they not?

6 A. I don't -- Where at? The third bullet doesn't
7 say that.

8 Q. Third bullet on page 2 where we're talking about
9 TPW-2.

10 A. My third bullet states, "Monitoring well MW-8..."

11 Q. I beg your pardon, it's the fourth bullet. We've
12 covered the third bullet.

13 A. So what's your question again, please?

14 Q. Well, that the statements that are contained in
15 there are a correct recitation of the data; isn't that
16 correct?

17 A. Yes.

18 Q. And the sentence that says, "Free product is not
19 likely to migrate upgradient in an environment where both
20 the topographic and groundwater flow gradients are as steep
21 as..." one point 0 [sic], you would agree with that, would
22 you not?

23 A. Upgradient on the water table, I would agree.

24 Q. Okay. And it says, "Thus the contamination at
25 TPW-02 likely originated from upgradient sources." You

1 would agree with that, would you not?

2 A. No, not necessarily.

3 Q. You don't agree that the contamination at TPW-2
4 likely originated from upgradient sources?

5 A. A possibility is the contamination from PNM's pit
6 went down, and like I said, it can move through the
7 fractures. TPW-2 was very close to PNM's operations.

8 Q. Well, which is the more likely scenario, though.
9 We're talking about possibilities. What's more likely?

10 A. I don't know if I have an answer.

11 Q. So if PNM says that the more likely scenario is
12 that the contamination in TPW-2 came from upgradient, you
13 would have no basis to dispute that?

14 A. Just saying there's other possibilities.

15 MR. ALVIDREZ: If I could have just a moment?

16 I'm very close to the end here.

17 Mark an exhibit here, if you could hand me the --
18 We're at PNM Exhibit 72 at this point. I'll give this to
19 Mr. Carr and Mr. Carroll.

20 Let me hand you what we've marked as PNM Exhibit
21 72 and have you take a look at that, look at this exhibit.
22 I have one for the Commissioners as well.

23 (Off the record)

24 Q. (By Mr. Alvidrez) Let me tell you what this
25 exhibit is before we question you on it. This is an

1 exhibit which depicts groundwater elevations that have been
2 surveyed in based upon the November, 1998, groundwater
3 elevations in the various wells that are identified there,
4 MW-4, MW-8, MW-10, MW-2 and MW-6. And you understand that
5 PNM has surveyed in the well locations, correct?

6 A. Yes.

7 Q. And you don't have any disputes with the
8 methodology of the surveying; is that correct?

9 A. That is correct.

10 Q. And we also have depicted in this the levels of
11 free product, or the free-product thicknesses that are
12 shown there. There's .026 [sic] product in MW-4, MW-8 is
13 .02 product, MW-10 2.11, and so on.

14 And what we're looking at, if -- and we
15 understand from the discussions yesterday that these wells
16 are not all on a straight line with one another, that they
17 go off at various -- at different points. But if we look
18 from the -- looking at the groundwater elevations, from the
19 south to the north we see decreasing groundwater
20 elevations, wouldn't you agree?

21 A. Yes.

22 Q. And we've got groundwater elevations at MW-4,
23 6106.07, decreasing all the way to MW-6, to 6100 even. Do
24 you see that?

25 A. Yes, I do.

1 Q. And the numbers that are in the middle, in the
2 MW-4, MW-8, et cetera, are the number of feet between each
3 of the wells. So we have 45 feet between MW-4 and MW-8 and
4 so on.

5 This diagram depicts what the groundwater table
6 looks like in terms of the way the levels of groundwater
7 are below the Hampton 4M well site in that space between
8 MW-4 and MW-6; would you agree?

9 A. Based on the situation of these monitoring wells,
10 yes.

11 Q. Okay. If you had free-product contamination
12 floating on top of the water table at that location, at the
13 Hampton 4M well site, wouldn't the trend or the tendency be
14 for that contamination to go from the higher water levels
15 down to the lower water levels?

16 A. Free-phase will go with the flow of the water,
17 yes.

18 Q. And the flow of the water would be generally to
19 the north; isn't that correct? Maybe northeast on the
20 wellpad site at the Hampton 4M?

21 A. Generally, based on what I've seen.

22 Q. Now, MW-10, which is shown here on PNM Exhibit
23 72, is in the same general location as TPW-2, correct?

24 A. Yes, I think that's correct.

25 Q. So again, wouldn't you agree that the tendency,

1 based on these groundwater elevations, would be for that
2 free product to go from the area of Burlington's operations
3 towards TPW-2?

4 A. If that's the way the groundwater is flowing, and
5 it appears that way based on this information.

6 Q. Okay, and that is the way the groundwater is
7 flowing, correct?

8 A. I do not know that.

9 Q. Well, you talked about it. You said based on
10 what you've seen, you thought the groundwater flowed in
11 that direction, correct?

12 A. Yes, but I don't know.

13 Q. Okay. Just a couple of things I want to clarify
14 on the record, and then we'll be done.

15 On page 15 of your testimony there was some
16 debate yesterday about what was said at various times, I
17 guess, how to interpret things, and what I'm looking at,
18 page 15, line 5 of your revised testimony, and in that part
19 of your testimony you were asked whether PNM remediated the
20 site.

21 And you came up with a very unambiguous answer of
22 "No", correct?

23 A. Correct.

24 Q. Now, I want to make sure that you meant by that,
25 because there was quite a bit of discussion about it.

1 What you're talking about there, you're not
2 asserting that PNM hasn't done anything out there, right?

3 A. No, I would not assert that.

4 Q. I mean, you'd acknowledge that PNM did do soil
5 remediation at the site, correct?

6 A. Yes, limited.

7 Q. And -- well, and they were covered -- Well, they
8 only had a limited area of their pit; isn't that correct?

9 A. That's all they chose to excavate.

10 Q. Okay. And PNM also recovered free product at
11 this site; isn't that correct?

12 A. Yes.

13 Q. And you would agree that recovery of free product
14 will have a beneficial effect in terms of the dissolved-
15 phase? That is, the more free product you take out, the
16 less potential there is for dissolved-phase in the
17 groundwater; isn't that correct?

18 A. Yes.

19 Q. And that removing free product, a gallon of free
20 product, can save many, many times, in terms of gallons, in
21 fact, millions of gallons of fresh groundwater; isn't that
22 correct?

23 A. I heard that discussed yesterday.

24 Q. Well, would you agree with that?

25 A. I would say many, many. I have no idea on --

1 million.

2 Q. Okay. On page 15, on line 16, you say, going on,
3 really, beginning at page 15,

4
5 On October 28, 1998, Burlington wrote to the Oil
6 Conservation Division's Environmental Bureau and
7 advised that data acquired from two recent soil
8 borings confirmed that a substantial amount of soil
9 contamination remained in place...of PNM's operations,
10 and to a lesser extent near the previously remediated
11 Burlington pit.

12
13 I want to ask you, which soil borings are you referring to?

14 A. That would be soil boring 1 and 2.

15 Q. Now, soil boring 1, that was drilled on
16 Burlington's side of the wellpad, correct?

17 A. Yes, directly north of our excavation that was
18 still open.

19 Q. All right. It wasn't done right in the middle of
20 the excavation, however, was it?

21 A. No, our excavation was still open, they did not
22 put it there.

23 Q. Okay, and it was done upgradient from the
24 excavation, SB-1?

25 A. It would have been --

1 Q. -- downgradient?

2 A. -- downgradient side.

3 Q. And SB-2 is the one that you did directly in the
4 middle of PNM's former pit location, correct?

5 A. Correct.

6 Q. And the results that you got are depicted in PNM
7 Exhibit 15, in the reports with regard to SB-2; isn't that
8 correct? That's towards the very end, one of the last
9 pages.

10 A. Of PNM Exhibit 15?

11 Q. Right. And I really want to concentrate just on
12 the last two pages.

13 A. Okay. Yeah, that shows the lab result out of one
14 sample that was collected.

15 Q. And these are Burlington's own lab results, or
16 lab results that Burlington commissioned. These aren't lab
17 results that PNM commissioned; isn't that correct?

18 A. That is correct.

19 Q. And you don't have any reason to doubt that those
20 lab results are flawed in any way, do you?

21 A. No.

22 Q. And we know, based on the lab results again, that
23 total BTEX came out to be 36, maybe 37 parts per million,
24 correct?

25 A. That's correct.

1 Q. And the diesel range that was shown there is --
2 came up with a reading of 44.5 parts per million, correct?

3 A. The diesel-range part of total petroleum
4 hydrocarbons --

5 Q. Right.

6 A. -- was 44.5.

7 Q. And you have no reason to question, again, the
8 validity of those results?

9 A. No, I do not.

10 Q. Well, just one last question.

11 On SB-1, the results relating to SB-1, which is
12 also contained in 15, the SB-1 shows there is contamination
13 of the lab results, there is contamination in the area of
14 SB-1 at the levels where the lab analyses were done; is
15 that correct?

16 A. Well, it's below the guidelines.

17 Q. Right. And we know that the BTEX reading for PNM
18 was below the guidelines, correct?

19 A. Uh-huh.

20 Q. Is that correct?

21 A. Yes, sorry. Yes.

22 Q. In SB-2. And likewise, the diesel range was
23 below the guidelines as well; isn't that correct?

24 A. I've never seen a guideline for just diesel
25 range.

1 Q. Have you talked to the OCD about the
2 acceptability of the diesel-range readings in terms of TPH?

3 A. I was told yesterday that it has been accepted in
4 some cases, and they're planning on changing that.

5 Q. Was the data provided to the OCD in SB-1 and -2
6 outside the context of this proceeding?

7 A. No, they've never -- They did not receive copies
8 of this. I just stated in my letter that they indicated
9 that, but I did not attach copies.

10 And you already asked me one more question, so...

11 (Laughter)

12 MR. ALVIDREZ: And that's my last question.

13 CHAIRMAN WROTENBERY: Mr. Alvidrez, I'm
14 anticipating you're going to move to introduce PNM 72. But
15 before you do that, we have a little discrepancy in the
16 numbering in our records.

17 MS. HEBERT: The large map.

18 MR. ALVIDREZ: Oh, I apologize, I forgot that we
19 had made that PNM Exhibit 72. Would you like to re- --

20 CHAIRMAN WROTENBERY: What was 71, also? We were
21 having --

22 MR. ALVIDREZ: The large map is 71 and this
23 should be 72.

24 CHAIRMAN WROTENBERY: Okay.

25 MR. ALVIDREZ: 48-A came in as 48-A and not 70,

1 71.

2 CHAIRMAN WROTENBERY: Okay. So the large aerial
3 photo is 71. We now have the chart marked as PNM 72, and
4 are you moving to introduce --

5 MR. ALVIDREZ: Yes, I would move the admission
6 of --

7 MR. CARR: May it please --

8 MR. ALVIDREZ: -- PNM Exhibit 72 at this time.

9 MR. CARR: May it please the Commission, I have
10 one question about Exhibit 72. It shows groundwater
11 elevations, and I wonder if someone could identify for us,
12 what is that based on? I can't find it on Exhibit 48-A. I
13 think it says it's not calculated, and I just would like
14 that so we can verify --

15 MR. ALVIDREZ: From the November elevations that
16 were -- November of 1988 [sic], the surveys that were done.

17 MR. OWEN: The raw data for product --

18 MR. ALVIDREZ: It was the surveys that were done
19 in November of 1998.

20 MR. CARR: Is that anywhere in the information?

21 MR. ALVIDREZ: Well, there are -- PNM Exhibit 66
22 is a survey, but I think it was done later on, although
23 some of the survey locations are in there. 66 is survey
24 data that was done --

25 MR. CARR: Does this have the information from

1 which this was calculated?

2 MR. ALVIDREZ: Yes.

3 MR. TERAUDS: The information that you're
4 referring -- cross-referencing to in 48-A for groundwater
5 elevations, 48-A does not contain groundwater elevations
6 for any well that had measurable free-product thickness in
7 it.

8 And so the actual elevations, for example, for
9 Monitoring Wells 10, Monitoring Well 8, where there was
10 measurable free-product thickness, although that one was
11 corrected because of the minor amounts of sheen, where we
12 had significant free-phase, we did not show an elevation on
13 this table.

14 Mark took the groundwater elevations from the
15 field log books that are entered into spreadsheets in order
16 to prepare that chart. So we don't actually have the depth
17 measurements in the exhibits, the raw data, that go into
18 the calculation of the elevation. But those could be
19 provided.

20 MR. ALVIDREZ: Would you like to look at the raw
21 data for --

22 MR. CARR: I think maybe if we could just defer
23 admitting this until after lunch when we talk about other
24 data, we can check.

25 MR. ALVIDREZ: Okay.

1 CHAIRMAN WROTENBERY: Okay, we'll do that, then.

2 MR. CARROLL: No cross.

3 CHAIRMAN WROTENBERY: No cross, Mr. Carroll.

4 Commissioner Bailey, any questions?

5 CHAIRMAN WROTENBERY: No.

6 CHAIRMAN WROTENBERY: Commissioner Lee, do you
7 have any questions?

8 COMMISSIONER LEE: No.

9 CHAIRMAN WROTENBERY: I just -- Oh, you do?

10 EXAMINATION

11 BY COMMISSIONER LEE:

12 Q. About the gas-and-water ratio --

13 A. Yes.

14 Q. -- what -- Are you familiar with that?

15 A. I would prefer to defer that to our next -- I'm
16 not sure our next witness, but one of our --

17 Q. Which witness?

18 A. Larry Dillon.

19 Q. Thank you.

20 A. He's the one that would be more familiar with
21 that.

22 EXAMINATION

23 BY CHAIRMAN WROTENBERY:

24 Q. And I just have one question. Would you be able
25 to answer a question about the hydrocarbon seep that's to

1 the northwest of the wellpad?

2 A. I'm familiar with it, yes.

3 Q. Burlington has installed a trench to intercept
4 that seep; is that right?

5 A. We did that back in 1997, before my time, and
6 during -- The seep never quit. The trench was put in
7 between the seep and the wellpad, to try to intercept it.
8 The seep continued. And then during our mass excavation
9 that trench has been removed because we followed
10 contaminated soil out to that.

11 So the trench is no longer in place.

12 Q. The trench is no longer in place?

13 A. No longer in place.

14 Q. Is the seep still there?

15 A. The seep is still there.

16 Q. Okay.

17 A. And -- I mean, we call it a hydrocarbon seep.

18 It's a water seep that has had a sheen on it and recently
19 tested over the guidelines.

20 Q. Okay, the recent sampling and analysis, that was
21 of the seep after the trench had been removed?

22 A. Yes, Bill Olson collected a sample.

23 Q. And the photos that are in PNM 16 and 17, those
24 photos show a date of March, 1999. Those photos are of the
25 seep after the trench was removed?

1 A. Was removed, correct.

2 Q. There is standing water here, and it does appear
3 that there's a sheen on that water. Has there been any
4 effort to pump the water that is collecting there, or to
5 skim the hydrocarbons or in any other way control --

6 A. Not --

7 Q. -- the seep?

8 A. -- to my knowledge. We were anticipating or
9 hoping that the soil-removal work that we did would
10 eliminate the hydrocarbon part of it.

11 And we're talking a very small seep. The area of
12 that water is about like this. It's not something you can
13 throw a vac truck in and skim that out; it's too small.

14 Q. What has happened to the seep since you completed
15 the remedial work that you did at the end of 1998 and the
16 first part of 1999?

17 A. It has continued to seep water and, based on
18 these photographs, continued to have a sheen.

19 And Mr. Olson collected a sample, and it was -- I
20 think benzene was 40 parts per billion, which is over the
21 10.

22 CHAIRMAN WROTENBERY: Okay, thank you.

23 Mr. Carr, now it's your turn.

24 MR. CARR: This will be brief.

25 THE WITNESS: Thank you.

REDIRECT EXAMINATION

BY MR. CARR:

Q. Mr. Hasely, does Burlington contend that the remediation effort is concluded at the Hampton 4M well site?

A. No, we have never contended that.

Q. Do you admit that Burlington is a responsible party?

A. Yes.

Q. Do you believe there are other responsible parties for the problem at this site?

A. Yes, I do.

Q. In conducting its remediation efforts in November and December of 1998 and early 1999, did -- You were responsible for that effort, were you not?

A. Yes, I was.

Q. Did you focus those efforts on the PNM portion of this site because it was owned by PNM or because it was under the PNM pit?

A. I focused the efforts where I felt there was the most contaminated soil, which is what we were after.

Q. In your opinion, did you remove, within the equipment technology available to you, contaminated soils that were a source for continuing contamination at this site?

1 A. Yes.

2 Q. There have been questions about the efforts and
3 the excavation around MW-4. Can you just summarize for the
4 Commission what you did that's shown on Exhibit 60 in the
5 southern edge of the wellpad, the last page of Exhibit 60?

6 A. Okay, during the excavation we wanted to keep
7 MW-4 in place, but as we were following the contaminated
8 soil we came to MW-4. These readings were taken, and
9 obviously several of them were fairly high, over 1000 on
10 the PID. And then we continued our excavation into that
11 until we observed clean soil visually or smell or we
12 thought we had taken out the contamination.

13 Q. All right. During the cross-examination you
14 talked about a 25-by-25-foot area that had been excavated
15 to groundwater under your old production equipment on the
16 southern end of the pad; is that right?

17 A. That's an estimate on the size of that water.

18 Q. Was this area the only area that had been
19 excavated to groundwater by, say, mid-1998 on this site?

20 A. Yes, excavation, that's the first time anybody
21 excavated down to water.

22 Q. And during the mass excavation, was there
23 additional excavation performed to groundwater?

24 A. Yes.

25 Q. In the area of the Burlington pit?

1 A. In the Burlington pit as we moved south towards
2 the Burlington pit, several places, we dug down to
3 groundwater searching for contamination, soil
4 contamination.

5 Q. During the cross-examination, there was the
6 implication that an investigation might not -- or a
7 remediation might not be complete until you excavated down
8 to the groundwater. Would you agree with that?

9 A. I don't think that's a true statement. You
10 eliminate the source.

11 PNM has indicated that's their normal route on
12 remediating, they eliminate the core of contamination and
13 groundwater will cleanup, do not have to go down to
14 groundwater.

15 Q. Did PNM excavate to groundwater at any spot on
16 this site during their remediation efforts?

17 A. Not to my knowledge.

18 Q. When you were excavating soil, you were taking
19 clean soil out with contaminated soil; isn't that right?

20 A. Yes, the way we had to excavate this site, due to
21 its rocky nature, was with the bulldozer. It's very hard
22 to segregate the soils when you're digging with the
23 bulldozer, so we treated everything, once we got into
24 contamination -- even though half the blade might be
25 contaminated and the other half not, we treated that whole

1 source as contaminated soil. There wasn't an easy way to
2 segregate it.

3 Q. Does Burlington continue to work with the OCD to
4 finish this job?

5 A. Yes.

6 MR. CARR: That's all I have.

7 MR. ALVIDREZ: A couple of questions.

8 RECROSS-EXAMINATION

9 BY MR. ALVIDREZ:

10 Q. In your discussions with Mr. Carr about MW-4, I
11 understand that you continued to excavate in a southerly
12 direction after you encountered MW-4, till you hit soils
13 that were within the clean level; is that correct? Below
14 100 ppm, according to PID readings?

15 A. I don't know if we got PID readings. They did
16 not show up on here to where we felt we had removed the
17 core of the contamination.

18 Q. Was that, then, just based on visual observation?

19 A. A lot of the PID samples out here were not heated
20 headspace, and the visual and using the PID out in the open
21 just to get an idea, again, whether we were cleaning up or
22 not.

23 Q. So if you don't use the heated headspace, the PID
24 readings are not particularly reliable; isn't that correct?

25 A. That would be a true statement.

1 Q. So we really don't know whether you have cleaned
2 up the soils, based on PID readings, in the area of MW-4;
3 isn't that correct?

4 A. That's true.

5 Q. You indicated -- Well, I guess based on your PID
6 readings in the area of MW-8, the soil was within
7 acceptable limits, at least at the one PID reading you took
8 in the soils in that area, soil sample 71, correct?

9 A. Yes.

10 Q. You can look at PNM 60.

11 A. Yes, I --

12 Q. But we know that MW-8 had free product in it;
13 isn't that correct?

14 A. Yes, it had small amounts of free product towards
15 the end.

16 Q. And wouldn't you agree that the source of that
17 free product would be from Burlington's operations?

18 A. It may have been.

19 Q. Isn't that the most likely source for free
20 product in MW-8?

21 A. I would agree with that.

22 Q. And you did not excavate down to the groundwater
23 in the area of MW-8 where there was known groundwater
24 contamination; isn't that correct?

25 A. That I don't know. I'm not sure what the

1 groundwater level was in MW-8. That sample was taken at 20
2 feet, 20.6 feet. I'm not sure what the -- Hold on one
3 second. No, this doesn't have a depth to water.

4 In that area I can say that we did dig down to
5 groundwater, it might not have been right at MW-8 but in
6 that area of our excavation. We were out of -- We were not
7 finding contaminated soil anymore, and I was concerned
8 about contaminated soil being down on the groundwater below
9 where we were. And in several areas we dug down to expose
10 groundwater, looking for contaminated soil, and did not see
11 any.

12 Q. Are those shown anywhere, documented anywhere,
13 where you went down to groundwater?

14 A. No.

15 Q. Do you have any groundwater sampling analyses?

16 A. No, we did not sample the groundwater in those.
17 We were looking for soil contamination. I would have bet
18 money that the water was over the standards.

19 Q. I beg your pardon?

20 A. Taking a sample out of those excavations would
21 not have been a representative sample.

22 MR. ALVIDREZ: Okay, that's all the questions I
23 have.

24 CHAIRMAN WROTENBERY: Mr. Carroll?

25 MR. CARROLL: (Shakes head)

1 CHAIRMAN WROTENBERY: Anything else?

2 MR. CARR: No questions.

3 CHAIRMAN WROTENBERY: Thank you for testimony,
4 Mr. Hasely.

5 Should we start our lunch break now, or do we
6 have --

7 MR. ALVIDREZ: We might, because we can look at
8 the documentation that we to look at.

9 CHAIRMAN WROTENBERY: Okay.

10 MR. ALVIDREZ: With regard to that documentation,
11 I'd like to reserve the right to recall Mr. Hasely if there
12 are questions that come up as a result of what's provided
13 to us.

14 CHAIRMAN WROTENBERY: Okay, we'll do that.

15 We will then -- Will an hour and a half for lunch
16 do us? We'll start back up about ten after one then.

17 (Thereupon, a recess was taken at 11:35 a.m.)

18 (The following proceedings had at 1:10 p.m.)

19 CHAIRMAN WROTENBERY: Looks like everybody's
20 ready to get started again. Let's just take a few minutes
21 and talk about the scheduling here.

22 The Commission doesn't really see any reason why
23 we can't move this along and finish up today. We are
24 willing to go a little bit late if need be.

25 What do you all anticipate? Do you think that's

1 achievable?

2 MR. ALVIDREZ: The goal would be to finish by
3 today?

4 CHAIRMAN WROTENBERY: Yes.

5 MR. ALVIDREZ: Then that's certainly in keeping
6 with what we would like to do as well.

7 CHAIRMAN WROTENBERY: Okay, great. Okay.

8 MR. CARR: I mean, my role is smaller today,
9 thank God.

10 (Laughter)

11 MR. CARR: But I will do all I can.

12 CHAIRMAN WROTENBERY: Okay, thank you.

13 MR. CARROLL: No objection.

14 CHAIRMAN WROTENBERY: No objection.

15 Well, let's get started then.

16 MR. ALVIDREZ: If we may, we'd like to recall Mr.
17 Hasely. There were some documents that were produced which
18 I think are certainly relevant and would further the
19 ultimate resolution of this case. So if it please the
20 Commission, if we may have the opportunity, I would
21 appreciate that very much.

22 CHAIRMAN WROTENBERY: Yes, that's fine.

23 Mr. Hasely, you're still sworn.

24 MR. ALVIDREZ: I've just received copies of these
25 documents, so I'm frantically trying to put in the exhibit

1 numbers.

2 May it please the Commission.

3 Q. (By Mr. Alvidrez) Mr. Hasely, during the lunch
4 break just a few minutes ago I was provided with some
5 documentation which I understand came from your file; is
6 that correct?

7 A. Yes, it is.

8 Q. And let me show you what I have marked as PNM
9 Exhibit 73. Here are copies for the Commissioners.

10 Can you tell us what Exhibit 73 is?

11 A. It's a schematic of the Hampton location that I
12 received from Philip Environmental, which shows in pencil
13 the approximate locations where they did those test holes.

14 Q. These are the nine or ten boreholes that were
15 referred to earlier?

16 A. Correct.

17 Q. And for the record, when were those boreholes put
18 in?

19 A. I'd have to look it up.

20 Q. Okay. Well, the record, I think, will show where
21 the timing -- It was certainly well in advance of the mass
22 excavation that took place, correct?

23 A. That's correct.

24 Q. And can you tell us how we can tell where the
25 boreholes were made at this site?

1 A. The penciled-in circles that have lines going
2 through them.

3 Q. Okay. They're just hand-drawn in there?

4 A. Yes, they are.

5 Q. And can you tell us -- These weren't surveyed in
6 or anything like that; is that correct?

7 A. No. I mean, that is correct.

8 Q. They're just approximate locations?

9 A. Yes.

10 Q. And again, this particular drawing is not to
11 scale in any respect, correct?

12 A. It's not to scale.

13 Q. With regard to the boreholes, can you tell us
14 what mechanism you used to make those boreholes, or was
15 used to make those boreholes?

16 A. I was not present at the time, but I think they
17 were done with a backhoe.

18 Q. Okay. So is there any record or anything else
19 that tells us how they were done, whether it was hand
20 augering or backhoe or some other method?

21 A. Not that I'm aware of at this time. It was not
22 augered in.

23 Q. It was not augered in. So someone basically took
24 a backhoe, dug a scoop down to a given depth, and then PID
25 readings were taken?

1 A. The way I understand it is, they dug down and
2 they hit rock on most of the areas, and they took PID
3 readings at that time.

4 Q. Okay. And to be clear, that was PID readings?

5 A. Yes.

6 Q. Were they heated headspace, or do you know?

7 A. I do not know.

8 Q. So we don't know how accurate those readings are?

9 A. No.

10 Q. If I'm reading this correctly, if we look at the
11 very bottom of the diagram, the exhibit there, there's a
12 circle with a "2" and then a dash behind it. Do you see
13 what I'm talking about?

14 A. No, I don't.

15 Q. All right. Well, let's look at the trash pit.

16 A. Okay.

17 Q. Do you see that there's something denominated as
18 a trash pit?

19 A. Uh-huh.

20 Q. And then there's a "4" by it?

21 A. Yes.

22 Q. Is that to signify four feet deep? Is that your
23 understanding?

24 A. That is my understanding.

25 Q. Okay. I notice that there isn't any PID reading

1 for that location; is that correct?

2 A. There's nothing denoted on this.

3 Q. Okay, so we don't know what the PID readings were
4 in that location, correct?

5 A. Correct.

6 Q. And likewise, if we move immediately to the
7 right, there's a two-foot hole or two-foot bore, and that
8 has no PID reading associated with it either, does it?

9 A. That is correct.

10 Q. We move directly up from 2, there's another
11 borehole. Can you tell us at what depth that was taken?

12 A. I can't really make it out.

13 Q. Okay, and there's no reading, no PID reading,
14 associated with that?

15 A. No.

16 Q. And if we move up north on this schematic from
17 there, there's one that was taken at one to two feet, a
18 borehole; is that correct?

19 A. Yes, not a borehole, though, just an excavation.

20 Q. I'm sorry, a soil boring that's been described?

21 A. An excavation.

22 Q. Okay, an excavation. Don't the reports refer to
23 these as soil borings?

24 A. I'm not sure if they do or not. I thought they
25 were called test holes.

1 Q. Test holes, all right. And again, there's no
2 reading associated with that?

3 A. Not marked on this.

4 Q. Well, do you have readings elsewhere? Is there
5 another key that would indicate what the PID readings were
6 in these locations?

7 A. No, not that I have. The only thing that I have
8 to go off of is one of the reports in here where Craig Bock
9 stated something to the effect of PID readings did not show
10 any soil contamination.

11 Q. But there's nothing on this to confirm that?

12 A. As far as data, no.

13 Q. Okay. I won't belabor the point, but there are a
14 number of test holes, as you've described them, where there
15 are no PID readings, correct?

16 A. That is correct.

17 Q. And there's nothing to substantiate the fact that
18 in fact the readings were below OCD guidelines, correct?

19 A. Other than that report.

20 Q. Okay. I notice that there's also a legend at the
21 bottom that talks about proposed soil borings and proposed
22 monitoring well. Do you see that legend at the very
23 bottom?

24 A. Yes, I do.

25 Q. There's one of the monitoring wells, proposed

1 monitoring wells, identified as BRMW-3; do you see that?

2 A. Yes.

3 Q. And Burlington never installed a monitoring well
4 in the location of BRMW-3, correct?

5 A. Not on the wellpad. I'm guessing that that was
6 put on there as far as to show an upgradient well, which
7 would be MW-1.

8 Q. Upgradient from -- What do you mean?

9 A. From the wellpad --

10 Q. From the wellpad --

11 A. -- where MW-1 is located.

12 Q. Isn't this on the wellpad, this BRMW-3? That's
13 on the wellpad, isn't it?

14 A. Yes, on this drawing.

15 Q. And that was never installed, correct?

16 A. That's what I said, we never installed one there
17 on the wellpad.

18 Q. All right. And we know that just to the west of
19 there, where TPW-5 was installed, there were some pretty
20 high readings in terms of the BTEX concentrations in the
21 groundwater?

22 A. Yes.

23 Q. And likewise there's a BRMW-1; do you see that --

24 A. Yes, I do.

25 Q. -- part of the wellpad? That well was also not

1 installed, was it?

2 A. I really don't know what these wells are. I'm
3 not familiar with these.

4 Q. Do you understand them to be proposed monitoring
5 wells?

6 A. According to this drawing, yes. MW-1 looks to be
7 approximately where MW-8 is --

8 Q. Okay.

9 A. -- or was.

10 Q. There were a few samples, soil samples, taken
11 closer to the PNM pit. I guess there's one off just to the
12 west of there; is that correct? And that showed a 1 ppm
13 soil reading at six feet?

14 A. I'm not seeing where that is.

15 Q. If you move up to where MW-2 is and then go
16 immediately to the left.

17 A. Okay, yes.

18 Q. And there's one just south of there. It appears
19 to be 15 feet that showed just 1 part per million on the
20 PID?

21 A. Correct.

22 MR. ALVIDREZ: Let me show you -- Well, let me
23 move the admission of PNM Exhibit 72 at this time.

24 CHAIRMAN WROTENBERY: 72 or --

25 MR. CARR: 73.

1 MR. ALVIDREZ: 73, I'm sorry.

2 CHAIRMAN WROTENBERY: 73?

3 MR. ALVIDREZ: Yes.

4 CHAIRMAN WROTENBERY: Any objection?

5 MR. CARR: No objection.

6 MR. CARROLL: No objection.

7 CHAIRMAN WROTENBERY: It's admitted.

8 MR. ALVIDREZ: Let me show you what we've marked
9 as PNM Exhibit 74. I have to apologize, I wasn't proved
10 enough for all of the Commissioners, but I have a couple
11 here.

12 Do you have any more copies, by any chance?

13 MR. OWEN: We have one additional copy. You can
14 have it.

15 MR. ALVIDREZ: It might be helpful.

16 MR. OWEN: And Mr. Alvidrez, I note that the copy
17 we were just handed by our people has Number 74 written on
18 it.

19 MR. ALVIDREZ: And I think that's what I was
20 referring to --

21 MR. OWEN: I mean, you have 73 written on the
22 copy we just got, so --

23 MR. ALVIDREZ: Oh, I apologize. It should be 74.

24 Q. (By Mr. Alvidrez) Can you identify for us what
25 PNM Exhibit 74 is?

1 A. Yes, this is the lab results from Intermountain
2 Laboratories from two water samples taken out of the open
3 excavation down in the area of PNM's operations.

4 Q. And again, when we previously were examining you,
5 we talked about some water samples that you took from the
6 seep area, coming into the mass excavation, correct?

7 A. Right, not to be confused with the natural seep.

8 Q. Right.

9 A. Into the excavation that we had --

10 Q. The seep that was created after the excavation
11 occurred.

12 And just for clarity, can you tell us where these
13 samples were taken from? Were they taken from the water
14 that was accumulating in the cells, or were they -- Did you
15 try and take it right from the source where it was coming
16 into the excavation area?

17 A. It was taken out of the cell where it was
18 accumulating.

19 Q. And how long had the water been allowed to
20 accumulate in those cells by the time these samples were
21 taken?

22 A. We can figure out by the date. I do not know.
23 It looks like they were sampled on January 20th. I'm sure
24 they were open for some time, and we had sucked out those
25 cells several times in that time frame.

1 Q. Okay. So did you -- You never actually took a
2 sample right from the outflow from that seep, it was coming
3 in directly from the seep, rather than as it sat in a pool
4 in one of the cells?

5 A. I wouldn't have known how to collect a sample as
6 it oozed out of the ground.

7 Q. Okay. Was there a particular cell that these
8 samples were taken from?

9 A. Yes, these were taken out of that east cell, the
10 one that had the free-phase coming into it early on.

11 Q. On the chain-of-custody record, it just refers to
12 Hampton 4M Number 1 and Hampton 4M Number 2. How can we
13 find that on any map or schematic so we know exactly where
14 those samples were taken?

15 A. You can't.

16 Q. And to confirm, the readings showed -- the
17 analytical results showed that the constituents were higher
18 than the OCD guidelines for groundwater; is that correct?

19 A. That is correct, on both of them.

20 Q. On both of them. Were the samples taken from the
21 same identical cell?

22 A. Yes.

23 Q. And within five minutes of one another?

24 A. Yes.

25 Q. These were taken from the easternmost cell, as I

1 understand it, three cells you've discussed in your
2 testimony?

3 A. Correct.

4 Q. And the easternmost cell is the cell that's
5 farthest away from PNM's 4-M pit, right?

6 A. Correct.

7 MR. ALVIDREZ: I have no other questions.

8 CHAIRMAN WROTENBERY: I don't think I heard you
9 offer --

10 MR. ALVIDREZ: Oh, let me move Exhibit 74 into
11 evidence.

12 MR. CARR: No objection.

13 CHAIRMAN WROTENBERY: Okay, it's admitted into
14 evidence.

15 Have we resolved the question on PNM 72?

16 MR. ALVIDREZ: Do you have an objection?

17 MR. CARR: We would like to just have that data
18 made available after the hearing, if you would do that, and
19 then we will withdraw any objection.

20 MR. ALVIDREZ: I can confirm for you that you had
21 the data made available to you previously in response to
22 PNM's subpoena. We can gather that information up again so
23 it's easily discernible.

24 MR. CARR: If you would do that, or if we can
25 just talk to you about and find out where it is. We'd like

1 to confirm those numbers --

2 MR. ALVIDREZ: Certainly.

3 MR. CARR: We're not going to slow it down --

4 CHAIRMAN WROTENBERY: Okay.

5 MR. CARR: -- and do not object to the admission
6 of the exhibit.

7 MR. ALVIDREZ: Okay.

8 CHAIRMAN WROTENBERY: We'll admit PNM 72, subject
9 to the provision of the data.

10 MR. OWEN: Mr. Alvidrez, we have additional
11 copies now, if you would like, of the two exhibits.

12 MR. ALVIDREZ: Of the two exhibits. It might be
13 useful for the record and the court reporter if we can
14 stamp those.

15 We have no further questions.

16 CHAIRMAN WROTENBERY: Mr. Carr?

17 FURTHER EXAMINATION

18 BY MR. CARR:

19 Q. Mr. Hasely, do you recall any conversations with
20 Philip Service, concerning making their data available to
21 PNM?

22 A. I recall a phone call from Robert Thompson with
23 Philip a few months back, asking me if it was acceptable to
24 give information to PNM, which I replied to yes.

25 MR. CARR: That's all I have.

1 CHAIRMAN WROTENBERY: Mr. Carroll?

2 MR. CARROLL: No questions.

3 EXAMINATION

4 BY COMMISSIONER BAILEY:

5 Q. Since the analyses were done with volatile
6 organics, shouldn't we expect to see those results much
7 higher if it had been a fresh sample than one that's been
8 in the pit for a while?

9 A. I guess I'd like to refer that to someone else.
10 I'm not familiar enough with on what levels to expect,
11 based on the age. You're saying that they've been in that
12 open excavation for a while? That does allow -- have time
13 to volatilize.

14 Could you ask your question again?

15 Q. Wouldn't we expect to see the results much higher
16 for a fresh sample than for these that have been aged for a
17 while?

18 A. That's probably a true assumption, that --
19 because once it's out there it's allowed to volatilize off.
20 So coming straight out of the -- the water coming straight
21 into that excavation may well have been higher than what
22 these lab results show.

23 CHAIRMAN WROTENBERY: Commissioner Lee?

24 COMMISSIONER LEE: (Shakes head)

25 CHAIRMAN WROTENBERY: Thank you, Mr. Hasely.

1 MR. CARR: May it please the Commission, at this
2 time Burlington Resources calls Larry Dillon.

3 May it please the Commission, we have discovered
4 that we have an error in our exhibit book. We recite that
5 Exhibit 36 is a Mesaverde production curve and, in fact, we
6 have provided everyone with two copies of the Dakota
7 production curve which is, in fact, Exhibit 35. So we need
8 to substitute and provide the curve for Mesaverde
9 production for the extra copy of the Dakota production that
10 was included in your book.

11 So I would move that we be authorized to put the
12 correct exhibit in the book, I guess, is the procedural --

13 CHAIRMAN WROTENBERY: Any objection?

14 MR. ALVIDREZ: Interestingly, I seem to have
15 gotten a correct version of the exhibits.

16 MR. OWEN: May it please the Commission, Exhibit
17 35 should be a Dakota curve, Exhibit 36 should be a
18 Mesaverde curve. I have extra copies of both.

19 MR. ALVIDREZ: They're switched.

20 MR. OWEN: Yeah, some are switched.

21 MR. ALVIDREZ: Well, one thing I would like is a
22 color copy. We weren't provided with color copies.
23 They're a little hard to read.

24 MR. OWEN: May it please the Commission, the only
25 color copy that we have is one original that we propose

1 including in the record proper.

2 CHAIRMAN WROTENBERY: Will you be able to help us
3 distinguish between the two lines on the black and white?

4 It was difficult.

5 MR. OWEN: Yes, I suppose the witness will be
6 able to do that.

7 CHAIRMAN WROTENBERY: Okay, let me make sure I
8 understand. We had in our books both the curves for the
9 Mesaverde and the Dakota, but they were just switched. The
10 Dakota is supposed to be 35 and the Mesaverde is supposed
11 to be 36?

12 MR. OWEN: That is correct.

13 CHAIRMAN WROTENBERY: Okay.

14 MR. OWEN: We apologize for the confusion.

15 LARRY W. DILLON,

16 the witness herein, after having been first duly sworn upon
17 his oath, was examined and testified as follows:

18 DIRECT EXAMINATION

19 BY MR. CARR:

20 Q. Could you state your name for the record,
21 please?

22 A. Larry Wayne Dillon.

23 Q. Mr. Dillon, where do you reside?

24 A. Farmington, New Mexico.

25 Q. By whom are you employed?

1 A. Burlington Resources.

2 Q. And what is your position with Burlington?

3 A. I am a supervisor of the production operations
4 engineering group.

5 Q. Did you file rebuttal testimony in this case?

6 A. Yes, I did.

7 Q. And has that testimony been marked and included
8 in Burlington Resources Exhibit A?

9 A. I don't know. Do I need to check? Actually, I
10 don't see it in Exhibit A.

11 CHAIRMAN WROTENBERY: I have it as Exhibit G.

12 Q. (By Mr. Carr) All right, then we stand
13 corrected. As Exhibit G?

14 A. Okay.

15 Q. Is that included --

16 A. Oh, yes --

17 Q. -- as Exhibit G?

18 A. -- yeah, that's correct.

19 Q. If you were asked the questions that are set
20 forth in that prefiled testimony -- Do you have a copy of
21 that report --

22 A. I have a copy --

23 Q. -- of your testimony --

24 A. -- but I don't have -- It's not listed as Exhibit
25 G.

1 CHAIRMAN WROTENBERY: Was it Exhibit G in your
2 book, Mr. Alvidrez?

3 MR. ALVIDREZ: I believe it was.

4 CHAIRMAN WROTENBERY: Mr. Carroll?

5 MR. CARROLL: It is in ours.

6 CHAIRMAN WROTENBERY: Okay, it is --

7 THE WITNESS: All right.

8 CHAIRMAN WROTENBERY: -- I think we can agree
9 it's Exhibit G.

10 Q. (By Mr. Carr) All right. Referring to that
11 testimony, if you were asked the questions that are set
12 forth in that prefiled testimony here today, would your
13 answers be the same as those set out in that testimony?

14 A. Yes, they would.

15 Q. Are your qualifications as a petroleum engineer
16 set forth in your prefiled rebuttal testimony?

17 A. Yes, they are.

18 MR. CARR: May it please the Commission, we would
19 tender Mr. Dillon as an expert witness in petroleum
20 engineering, and we'd also move the admission of his
21 prefiled rebuttal testimony.

22 CHAIRMAN WROTENBERY: Any objections?

23 MR. ALVIDREZ: We have no objection.

24 MR. CARROLL: No objection.

25 CHAIRMAN WROTENBERY: Okay, it is admitted, we

1 accept Mr. Dillon's qualifications.

2 MR. CARR: And I tender the witness for cross-
3 examination.

4 CROSS-EXAMINATION

5 BY MR. ALVIDREZ:

6 Q. Mr. Dillon, I'd like to refer you to page 2, line
7 27, of your rebuttal testimony, and you're discussing your
8 review of the Dakota production in that line beginning at
9 line 25 through 27 --

10 A. Yes.

11 Q. -- and you state that the production in oil and
12 gas from the time the well was completed tracked very well,
13 except for 1995?

14 A. That is correct.

15 Q. What is the explanation for why there was a
16 divergence between the gas-oil ratio in 1995?

17 A. I would like to refer to PNM Exhibit 45 while
18 I -- and also to Burlington Exhibit -- I guess 35.

19 As you can see in Burlington Exhibit 35, the
20 Dakota production, oil production, ceased tracking the gas
21 production rate. And it's easier to see -- I don't know
22 who I need to give this to, but this is the color copy
23 that's a lot easier to visualize.

24 CHAIRMAN WROTENBERY: Unfortunately, we don't
25 have a color copier. Would you all be able to provide some

1 additional color copies --

2 MR. CARR: Yes, we will.

3 CHAIRMAN WROTENBERY: -- after the hearing?

4 MR. CARR: We will.

5 THE WITNESS: But I can pass this up to the
6 Commissioners. And I will get your answer.

7 The red line on that curve is the gas rate --

8 CHAIRMAN WROTENBERY: Mr. Alvidrez, would you
9 like to look at it?

10 MR. ALVIDREZ: I think I can --

11 THE WITNESS: -- visualize it --

12 MR. ALVIDREZ: -- make it out from the black and
13 white.

14 CHAIRMAN WROTENBERY: Okay.

15 MR. ALVIDREZ: Thank you.

16 THE WITNESS: And as you can see, the darker
17 line, which would be the lower line in the black-and-white
18 copies, if you see in 1995, particularly early 1995, first
19 six months or so, that the oil production rate was much
20 lower than it had previously had been, yet the gas rate
21 remained constant for the most part. The well was still
22 producing the same volume of gas, but a reduced volume of
23 oil.

24 There's a couple of things that could have
25 happened here.

1 One thing that could have happened in this well,
2 which is -- I'll classify as a possibility, is, that well
3 was not lifting the liquids from that well as well as it
4 had been before. It was having more difficulty lifting the
5 liquid, including water and oil, from the wellbore. And
6 yet the gas rate remained constant. This is not a typical
7 profile, because typically you would see a little bit of
8 falloff in the gas rate also.

9 But what supports the possibility of the fact
10 that the well was just not capable of lifting these liquids
11 from the wellbore is the fact that in early 1996, you will
12 see, when plunger-lift or artificial-lift equipment was
13 installed on the well, the oil resumed to its previous
14 rate, previous yield. So that is one possibility that
15 could explain why there was a reduction in the gas -- in
16 the oil-production rate during 1995.

17 Q. (By Mr. Alvidrez) But you can't say with any
18 degree of certainty that that's what happened?

19 A. No, I cannot say with any certainty. As I said,
20 that is not typical behavior.

21 Q. On gas production where you've got oil production
22 as well, do the ratios generally track one another when you
23 look at the production history on a given well?

24 A. Typically, they track pretty well. There can be
25 a decline in the yield of oil to gas, as you produce a

1 natural gas well. You can see both, you can see both.

2 Q. But you wouldn't have any disagreement with Mr.
3 Heath's testimony on that issue, that typically you see a
4 rough, pretty rough -- not pretty rough, but a general
5 correlation between the oil and gas production from a well,
6 the gas-oil ratio?

7 A. Yes.

8 Q. And 1995 is simply a mystery to us as to what
9 happened at the Hampton 4M?

10 A. There are no absolutes of what happened to the --
11 And what I want to qualify, the Dakota-produced oil --

12 Q. Right.

13 A. -- if we look -- I had referenced PNM's Exhibit
14 Number 45, which is basically not a gas-oil ratio but an
15 oil-yield curve. There's two different operating regimes
16 in this curve, one from January, 1996, forward, and another
17 one from January, 1996, I guess, back into the future -- or
18 back into the past, excuse me.

19 What happened in January, 1996, is, artificial
20 lift was installed on both the Mesaverde and on the Dakota
21 tubing. So what you have from 1996 forward, you're getting
22 oil production from the Mesaverde and you're getting oil
23 production from the Dakota.

24 Previous to that, all the oil production from
25 this well, except for a small, minute amount, and except

1 for the first-year production was from the Dakota. So what
2 we're talking about here is a reduction in the oil yield
3 from the Dakota side, because basically the Mesaverde had
4 not been a contributor for some number of years.

5 Q. This 1995 production is an anomaly, clearly,
6 correct?

7 A. Yes.

8 Q. Let's talk about Exhibit -- I mean, I'm sorry,
9 page 2, beginning at line 33 of your testimony. You talk
10 about, "In 1994, Burlington...installed above-ground steel
11 pits at the Hampton 4M well." Can you tell us, what were
12 you doing, what was Burlington doing at that site, prior to
13 1994?

14 A. I'll answer your question in just a second, but
15 first I'd like to qualify. I think I answered Mr. Carr's
16 question, I wouldn't want to change anything in my
17 testimony, but I see something here I do want to change.
18 Those were above-ground fiberglass pits and not steel, just
19 to correct that.

20 Prior to 1994, there was a pit near the tank
21 battery, and earthen pit near the tank battery, and there
22 was an earthen pit near our separators. If you want to
23 look at PNM Exhibit Number 49, that's back to what's
24 labeled as Meridian but Burlington's site-security diagram,
25 and you can see that there was an earthen pit near our oil

1 stock tanks, and there was also an earthen pit near our
2 separators for both the Dakota and the Mesaverde. So
3 liquids from those activities at those facilities would
4 have gone into those earthen pits.

5 Q. Referring to PNM Exhibit 49, the earthen pit
6 you're talking about is the one that's more towards the
7 middle of the page, where the separators were discharged
8 right into that pit; is that correct?

9 A. Right. Right, the diagram indicates -- You see
10 the circles with the "S" in it. Those are the separators.
11 And then the arrows with the "W" representing water.
12 Typically, it's designed for water to dump into that
13 earthen pit, correct.

14 Q. And with regard to the pits that we've looked at
15 in various diagrams, there was a pit -- perhaps it wasn't
16 lined, perhaps it was lined; I'm not sure -- that was shown
17 located to the north of storage tank 1. Do you recall the
18 testimony relating to that?

19 A. I remember a little bit about that, yes,

20 Q. Okay. Do you know anything about that pit?

21 A. No, nothing more than what is shown here on this
22 site diagram of its approximate location.

23 Q. So is the answer to my question about what was
24 happening prior to 1994 that the discharges were being used
25 -- Well, there was no lining to the pits; they were simply

1 earthen pits, correct?

2 A. That's correct.

3 Q. Were those pits used for blowing down or
4 unloading any of the wells?

5 A. Not to my knowledge. I have interviewed the
6 operational personnel, and they indicate it's very unlikely
7 that we used -- The pit that would be in question would be
8 the pit near the separators, where we would blow the well
9 through the separator directly to the pit.

10 Q. Why would you have to blow down a well?

11 A. Typically why a well would be blown to -- what we
12 say, atmosphere, through the separator, would be if it's
13 loading up with liquids again, the liquid column is
14 building up in the well and impeding your gas flow. And so
15 you would want to maybe blow that well and get the liquids
16 out of the wellbore so you could resume production at an
17 optimum rate.

18 Q. Isn't that the same reason why you would install
19 a plunger lift?

20 A. A plunger lift is exactly designed to do that, to
21 lift liquids from the wellbore. It's one of many means of
22 artificial lift, which -- It's just the well and lifting
23 liquids from the wellbore, and maintaining gas rates.

24 Q. So it's clear that there was a problem at this --
25 at the Hampton 4M in terms of liquids building up and

1 impeding the flow of gas?

2 A. That's -- Absolutely, that is true. And it was
3 evident on the Mesaverde side from -- if you look back on
4 the Mesaverde curve which is Burlington Exhibit Number 36,
5 there was very little oil production after 1986, which
6 would be the second year of productive life of this well.
7 In other words, the Mesaverde hadn't been able to lift
8 liquids on its -- from its tubing string since that time.

9 So it definitely was a problem on both sides,
10 particularly the Mesaverde.

11 Q. Wouldn't that be some indication with regard
12 particularly to the Mesaverde, that you would have to blow
13 down that well in order to keep the Mesaverde production
14 going?

15 A. No, that is -- we wouldn't have to -- I'm
16 assuming you mean Mesaverde gas production going.

17 Q. Correct.

18 A. No, that wouldn't be necessary. The Mesaverde
19 formation, there's typically three zones that are -- where
20 you'd be perforating and completing in Mesaverde, and those
21 zones can accumulate liquids and hold liquids while gas
22 continues to produce up the wellbore. It's not an optimum
23 situation, but it's very typical that you can produce gas
24 from a Mesaverde well while not lifting the liquids.
25 You're just not doing a very efficient job of producing

1 your gas.

2 Q. So we have, if we look at the production history
3 in terms of oil for the Mesaverde, you have very low oil
4 production from that well in 1990, 1992, 1993, 1994 and
5 1995, and up to 1996 when the plunger lift was installed;
6 is that correct?

7 A. That's correct.

8 Q. And so for that six-year period, approximate six-
9 year period, Burlington was operating this well in not a
10 particularly efficient manner?

11 A. In terms of not realizing the maximum production
12 from -- in terms of gas and oil, that's correct.

13 Q. If -- The liquids that the Mesaverde is not
14 bringing to the surface, where do those liquids stay? Do
15 they stay in the ground?

16 A. Yes, they would stay in the wellbore, stay in the
17 reservoir.

18 Q. And those are liquids which couldn't go up to
19 Burlington's separators, correct? They wouldn't have gone
20 up to Burlington's separators?

21 A. That's correct, they would not have made it up
22 the wellbore.

23 Q. And they likewise, those liquids likewise, would
24 not have gone to PNM's dehydrators, correct?

25 A. No, not if -- If the liquid obviously wasn't

1 lifted out of the wellbore, it's not going to make it to
2 any of the production facilities on location.

3 Q. So if we look at the Mesaverde production,
4 anyway, for at least the 1990-to-1996 time frame, we would
5 see much, if any, Mesaverde production going through PNM's
6 dehydrator, correct?

7 A. That would be correct.

8 Q. So that would cut down on the amount of free
9 product that could have been discharged into PNM's pit,
10 correct?

11 A. That liquid was never on the surface of this well
12 location.

13 Q. And is the answer to my --

14 A. That was --

15 Q. -- question yes?

16 A. -- I guess that's a yes.

17 Q. Okay. Let me ask -- Let's talk a little bit
18 about the plunger lift. That was to help unload the
19 liquids in this particular well so that you could re-
20 establish or increase liquid production, including the oil;
21 is that correct?

22 A. Correct.

23 Q. Is that a fairly expensive proposition to
24 undertake for a well?

25 A. As it turns out, it's really not. The cost to

1 install this kind of equipment, say, for this well, would
2 probably be between \$10,000 and \$15,000, total, to take
3 care of both sides, both the Mesaverde and the Dakota.

4 Q. Okay. At the time the plunger lift was
5 installed, were there any additions or changes to the
6 equipment at the Hampton 4M site that you've been able to
7 tell?

8 A. No, there -- From what I understand, there was no
9 changes to the surface equipment at that time, other than
10 the surface equipment you would need right at the wellhead
11 to catch the plungers. That was the only alteration that
12 I'm aware of.

13 Q. There was no new equipment brought in and no old
14 equipment taken out?

15 A. No.

16 Q. Prior to installing the plunger-lift equipment in
17 1996, what lift methods were used by Burlington to unload
18 the Mesaverde side of the well?

19 A. None. There were -- If there was some type of
20 artificial lift employed, you would see some oil production
21 from the Mesaverde.

22 Q. Who did you talk to at Burlington about how they
23 operated the Mesaverde production?

24 A. I didn't talk to anybody about how we operated
25 the Mesaverde production --

1 Q. Oh, I'm sorry --

2 A. -- because what I have done is, I have looked at
3 the production curve and correlated with when the plunger
4 lift was installed and made the determinations.

5 Q. I'm sorry, I thought you had testified that you
6 talked to some people at Burlington to see about whether
7 they operated this well utilizing the blowdown, as we've
8 talked about.

9 A. Okay, that is correct. We didn't talk
10 specifically about the Mesaverde side of this well.

11 Q. It was just in general, did we ever use the
12 blowdown at this site, correct?

13 A. Correct.

14 Q. Who did you talk to at Burlington?

15 A. I talked to the production foreman -- his name is
16 Johnny Ellis, his name has come up before -- and his
17 supervisor, Kenneth Raybon.

18 Q. How long has Mr. Ellis been production supervisor
19 at the Hampton 4M? Do you know?

20 A. I'm guessing around four years.

21 Q. So that would take us back to 1995, maybe?

22 A. Correct.

23 Q. And his boss is -- What's his name?

24 A. Kenneth Raybon.

25 Q. And is it Rabon, R-a-b- --

1 A. R-a-y-b-o-n.

2 Q. R-a-y-b-o-n.

3 A. Correct.

4 Q. How long has Mr. Raybon been involved with this
5 site?

6 A. Let's see, Mr. Raybon has been the superintendent
7 over this area, I want to say, for at least 10 years, maybe
8 a few more, maybe 11 to 12.

9 Q. Would Mr. Raybon have personal knowledge about
10 the operations at this particular site?

11 A. He probably wouldn't have, personal operations,
12 unless something were to come to his attention. He has
13 approximately 2500 wellbores, operated wellbores, under his
14 area of responsibility, so it's very unlikely he knew much
15 at all about the day-to-day operations of this well.

16 Q. So he wouldn't really know too much about what
17 happened at the Hampton 4M well unless someone told him?

18 A. Correct, he probably wouldn't understand
19 specifically -- or know specifically about this well. But
20 in general, he had a good understanding of how our wells
21 were operated and what was going on in the field and what
22 his people were doing.

23 Q. Wasn't it the practice, when you did do a
24 blowdown, you usually blew it down to the separator pit?

25 A. That is correct.

1 Q. And we know that prior to 1994 the separator pit
2 at this location was unlined, correct?

3 A. That is correct.

4 Q. Would you also agree that it was common practice
5 in the 1980s to blow down wells when you had trouble with
6 gas production because of the buildup of liquids?

7 A. I don't know that specifically, if that was an
8 operation practice that Burlington employed.

9 Q. Okay, was that before your time?

10 A. No, it's not before my time, but I was not in a
11 position supporting the production operations of Burlington
12 Resources at that time.

13 Q. Mr. Ellis can really only talk about how this
14 well was operated from 1995 to the present time frame,
15 correct?

16 A. Yes, with any -- Yeah, with any certain
17 knowledge.

18 Q. And did you talk to anyone who was involved in
19 the day-to-day operations of this well for the period prior
20 to 1995?

21 A. Prior to 1995, no I have not.

22 Q. So we really don't have any specific knowledge
23 about how this well was operated prior to 1995 in terms of
24 whether the blowdown procedure was utilized, correct?

25 A. No, no specific knowledge, other than just

1 comments from these people with the responsibility that it
2 was unlikely; that's how we operated it.

3 Q. And those -- We've identified --

4 A. Yes, we have.

5 Q. -- two people, and those are the only ones you've
6 talked to?

7 A. That's correct.

8 Q. Okay. What was the model of the production unit
9 that's installed on the Hampton 4M? Do you know?

10 A. I'm not aware of what the model make or number or
11 type is on the production site.

12 Q. So you wouldn't know whether the production unit
13 used on the Mesaverde side is the same one that's used on
14 the Dakota side?

15 A. It's my understanding that the production units
16 were identical, but I don't know that for a fact. That
17 would be a question that would be better deferred to Mr.
18 Rhodes, if he knows that question, or if he knows that
19 answer. But I don't know specifically.

20 Q. I wanted to follow up on something you said. I
21 think you indicated that the well perhaps wasn't operating
22 on the Mesaverde side as efficiently as it could otherwise
23 have operated, correct?

24 A. Correct.

25 Q. For a period of time from about 1985 to 1996,

1 correct?

2 A. Correct.

3 Q. And when you're talking about that, that results
4 in a reduction of gas production, correct?

5 A. There would be some reduction in gas production
6 and also oil production.

7 Q. And there certainly was a reduction on the oil
8 production from that site?

9 A. Absolutely.

10 Q. Why wasn't Burlington a little more diligent in
11 terms of production from the Hampton 4M well?

12 A. Oh, I don't think it's a question of diligence.
13 When we talk about these plunger lifts, it's a rather new
14 program that we have employed over the last four or five
15 years that's been very successful to help these wells
16 produce liquids and gas, particularly since reservoir
17 pressures continue to decline in the San Juan Basin.

18 Early on, when these wells were drilled, there
19 was sufficient reservoir pressure to lift the liquids from
20 the well, along with the gas stream. However, over time --
21 and this Mesaverde is a good example -- the reservoir
22 pressure got to the point where it just wasn't sufficient
23 to lift the liquids from the wellbore.

24 And in this case it may look like it took some
25 time before we got to that point of putting artificial lift

1 in, but I don't think it's a matter of diligence. I know
2 things that could have happened where operational
3 procedures like trying to soak the well to keep the well
4 going, other types of operational procedures that were
5 employed in this period of time, that we don't do much of
6 that now.

7 So there were ongoing operations and activities
8 to try and maximize flow rates. But as we've learned more
9 about these plungers with artificial lift and started
10 employing them wholesale on wells, we're seeing the benefit
11 at our produced rates.

12 Q. At page 3, line 9 of your testimony, you talk
13 about "In October of 1997 Burlington...commingled the
14 Mesaverde and Dakota strings..."; is that correct?

15 A. Yes, that's correct.

16 Q. And that's when the equipment, at least half of
17 the surface equipment, was removed, correct?

18 A. That is correct.

19 Q. And you also indicated, At that time Burlington
20 production personnel inspected the liquids tank. What tank
21 are you talking about when you're talking about the liquids
22 tanks?

23 A. Those would be the two stock tanks. Again, if we
24 want to refer to Exhibit 49, PNM Exhibit 49, it would be --
25 they're both labeled Stock Tank Number 1. One was for the

1 Dakota oil and one was for the Mesaverde oil. So those
2 would be the two tanks that I was referring to.

3 Q. And can you tell me with regard to those liquid
4 tanks what the inspections consisted of?

5 A. The inspections is basically just a visual
6 inspection. There was no indication of an obvious spill at
7 the lo- -- below the tanks when they were moved. There was
8 no obvious, I guess, leaks. It was from a visual
9 standpoint.

10 Q. Now, these tanks sit on top of a gravel footing,
11 don't they?

12 A. Typically, there's a little bit of gravel placed
13 under these tanks. Sometimes they may sit on the ground.
14 I don't know what --

15 Q. Do you know what happened here -- I'm sorry.

16 A. No, I don't know specifically about these tanks.

17 Q. Okay. With regard to your testimony about the
18 inspection on the tanks, you didn't perform the inspection,
19 correct?

20 A. No, I did not.

21 Q. Who is it that you talked to that told that they
22 inspected the tanks?

23 A. Again, this was Johnny Ellis, the production
24 supervisor over there.

25 Q. What happened to the tanks that were at the site

1 when the production was commingled out there?

2 A. There were two different tanks, there were two
3 different-size tanks. The Mesaverde tank was a 300-barrel
4 tank. That tank has remained on location. It serves as
5 the oil tank for the commingled streams from the Mesaverde
6 and the Dakota side.

7 The Dakota tank, which is a 210-barrel tank, was
8 moved to another location and is in service there.

9 Q. Do you know what -- I'm sorry, I didn't mean to
10 interrupt.

11 A. No, I'm finished.

12 Q. Do you know what location it was taken to?

13 A. It was taken to the Hampton Number 4.

14 Q. Well, we're talking about the Hampton Number 4
15 here. Is it not 4M?

16 A. This is 4M, but you asked me where that other
17 tank was.

18 Q. Right, right.

19 A. Different location.

20 Q. Okay. Were there any -- Beyond a visual
21 inspection, were integrity tests done to those tanks?

22 A. No, it is not typical to do that if there's no
23 visual, I guess, detection of a problem with the tank.
24 It's not common practice to test these storage tanks.

25 Q. Okay. Now, product has to go from the separator

1 to the tanks; is that correct?

2 A. That's correct.

3 Q. And that product is transported by means of
4 piping, correct?

5 A. Correct.

6 Q. And the piping is underground; isn't that also
7 correct?

8 A. In most instances, it is. I don't specifically
9 know about the Hampton 4M location.

10 Q. So you don't know whether the piping that's
11 associated with these production tanks could have leaked;
12 is that correct?

13 A. I do not know that.

14 Q. Would you agree that piping, underground piping,
15 buried piping, can often be the source of releases at a
16 site?

17 A. I would not use the word "often". I would say it
18 would be a very rare case that you would have any sort of
19 substantial leak from this type of piping on location.

20 Q. Was there any type of inspection schedule or
21 anything associated with the above-ground storage tanks
22 that were used out at that site?

23 A. No, there was not.

24 Q. And is there any documentation that establishes
25 what inspection was conducted on the tanks out there prior

1 to commingling?

2 A. No --

3 Q. Is there --

4 A. -- obviously since we haven't done any sort of
5 pressure testing, there's no documentation to back that up.

6 Q. But nothing, even written, to talk about how they
7 looked or anything like that?

8 A. Not that I'm aware of.

9 Q. I think if you look at PNM Exhibit 46, it might
10 shed a little light on the tanks and the setup where the
11 tanks were. Do you see those tanks?

12 A. Yes.

13 Q. Do those tanks appear to be on a gravel footing?

14 A. It looks like right around the tanks there is
15 some gravel that they would sit on.

16 Q. Would you agree that gravel footing underneath a
17 tank makes it more difficult to tell that a tank has leaked
18 or not?

19 A. No, I don't know that I would agree with that. I
20 don't think that -- From my perspective, I don't see how
21 that would make any difference.

22 Q. When the tanks were moved, were there any soil
23 samples that were taken directly underneath the tanks to
24 confirm by analytical result that there was no leaking from
25 the tanks?

1 A. Well, it was my understanding that when the tanks
2 were moved, the ground was excavated down to six feet, and
3 there was no hydrocarbon contamination detected. I don't
4 know that for a fact, but that's my understanding.

5 MR. ALVIDREZ: That's all the questions I have.

6 CHAIRMAN WROTENBERY: Mr. Carroll?

7 MR. CARROLL: No cross.

8 CHAIRMAN WROTENBERY: Commissioner Lee?

9 EXAMINATION

10 BY COMMISSIONER LEE:

11 Q. Look at this one.

12 A. Dakota?

13 Q. Yes. Your plunger lift is lifting both oil and
14 water, right?

15 A. That's correct.

16 Q. Do you have any water there?

17 A. No, I do not have the water --

18 Q. What would you expect you get from the Dakota,
19 production, the water production?

20 A. A rate?

21 Q. Yes.

22 A. I would say the oil cut was probably less than 50
23 percent from the Dakota, so I'm guessing -- I'm really
24 guessing here. I'd have to go out and talk to the lease
25 operator. But typically it would be maybe two barrels to

1 every barrel, two barrels of water to every barrel of
2 condensate.

3 Q. With constant oil?

4 A. Yes, yeah.

5 Q. So you think this is the -- whatever the oil
6 production, also proportional to your water production?

7 A. Correct.

8 Q. And what is your separator's pressure?

9 A. Separator pressure were probably -- The only data
10 that I have that would indicate what the pressures were on
11 that was from an offset well, and it was approximately 200
12 pounds from the period of mid-1995 through the end of 1998,
13 plus or minus 200 pounds.

14 Q. You said they're 200 pounds from the beginning of
15 the life of your well to the end of your well?

16 A. Line pressures were higher in the early life of
17 the well, but I don't have -- I don't know exactly what the
18 data is and what -- specifically for this location, what
19 the pressures were. Historically, they were higher in the
20 field.

21 Q. Whenever you're operating this well, your
22 blowdown, does that happen very often in the beginning of
23 the life of your well?

24 A. On the Dakota side?

25 Q. Yes.

1 A. I'm not sure if the well was blown down early in
2 the life of the well. I just don't know for sure.

3 COMMISSIONER LEE: Okay, thank you. No further
4 questions.

5 CHAIRMAN WROTENBERY: Mr. Carr?

6 REDIRECT EXAMINATION

7 BY MR. CARR:

8 Q. Mr. Dillon, from your testimony concerning what
9 happened in 1995, you looked at the equipment. And was it
10 your testimony you saw no evidence of a leak?

11 A. It is my testimony -- If you're talking about the
12 Dakota and Mesaverde oil storage tanks, I did not observe
13 those tanks. But from what I understand from Mr. Ellis is
14 that there were no leaks in those tanks.

15 Q. We you able to establish the integrity of the
16 wellbore?

17 A. Yes, I did it -- By reviewing Bradenhead test
18 records, there was no indication that there was any
19 communication between the Mesaverde and the Dakota side.
20 And the Bradenhead, which would indicate any pressure leaks
21 from the intermediate casing, showed zero pressure. So the
22 Bradenhead tests looked very good.

23 Also, when we did the commingle operation in
24 1997, we did pressure-test the 7-5/8 intermediate casing to
25 800 pounds on the surface, and the tests held. There was

1 no leakoff for 30 minutes. And then when we nipped the
2 wellhead back on we tested that to 1100 pounds, and that
3 also held for 30 minutes without any decrease in pressure.

4 So the integrity of the wellbore is very sound.

5 Q. By the time we got to the period in question in
6 1995, it was your testimony that there were fiberglass
7 tanks on this facility?

8 A. Yes, the fiberglass pits, if you will, were
9 installed in mid-1994, both for the water dump for the two
10 separators and also for the -- where the tanks were if they
11 wanted to drain any water off the bottom of the tanks, they
12 could now drain that into a fiberglass tank, which replaced
13 the earthen pits.

14 Q. At that time, do you have any idea what the
15 status of the pit at the PNM dehydrator was?

16 A. To my knowledge -- And the only thing I have to
17 go by is PNM Exhibit Number 13, that that was still an
18 earthen pit, and that in -- As far as April, in the
19 chronology here, April of 1996, it indicates that the pit
20 at PNM's dehydrator remained an unlined surface
21 impoundment, is the term. I'm assuming that's what it
22 means. That's the only knowledge I have.

23 MR. CARR: That's all I have.

24 CHAIRMAN WROTENBERY: Thank you.

25 MR. ALVIDREZ: I have a few follow-up.

1 THE WITNESS: Sure.

2 RECROSS-EXAMINATION

3 BY MR. ALVIDREZ:

4 Q. Commissioner Lee asked you about the relative
5 production of water and gas from the Dakota. Do you recall
6 that question?

7 A. Yes, I do.

8 Q. My understanding is, the Dakota was producing a
9 greater amount of water than it was oil; is that your
10 testimony?

11 A. No, I don't know that for a fact. I'm just -- I
12 was giving a -- what would be typical for a Dakota well.

13 Q. In a typical Dakota well, then, it produces more
14 water than it does oil; is that correct?

15 A. That's correct.

16 Q. So we have water that goes up through the
17 separator, correct?

18 A. That's correct.

19 Q. And to the extent that the separator doesn't
20 remove it and the water is entrained in the gas, it then
21 goes to the PNM dehydrator, correct?

22 A. That's correct.

23 Q. And we would have a situation with the Dakota
24 production, certainly, that you would expect there would be
25 more water than oil; isn't that correct?

1 A. Well, no, I wouldn't think that would be normal,
2 because you have a separator, production separator, that
3 the gas stream would go through first, which would kick out
4 most of your water and put it into, prior to 1994 the
5 earthen pit, and after 1994 the fiberglass tank. And then
6 on the inlet of PNM's dehydrator you would catch any
7 residual water that would get by the main production
8 separator.

9 Q. Well, the Burlington separators were intended to
10 remove oil from the gas stream, right?

11 A. They were intended to remove oil and water from
12 the gas stream.

13 Q. That would be my second question.

14 A. Yes.

15 Q. And did you review the operational history of
16 those separators as to how well they were working?

17 A. No, I don't have any knowledge of how they were
18 working, other than there is no indication that there were
19 any repairs done to that equipment. There's no records in
20 the well file that indicated that we had to put together an
21 AFE and spend money to go out and repair that equipment.
22 So based on that, it must have been functioning properly.

23 Q. Your assumption is that it was functioning
24 properly, correct?

25 A. Correct.

1 Q. And if it's functioning properly, it's going to
2 remove in excess of 99 percent of the liquids from that gas
3 stream, correct?

4 A. It should.

5 Q. Which leaves very little to head down to PNM's
6 dehydrator, correct?

7 A. That's correct.

8 Q. Can you tell us what the procedure is to drain
9 water from the storage tanks out there? Those tanks get
10 water --

11 A. I'm intimately familiar with how they do that.
12 I've heard that when they pull a load of oil they will try
13 and drain a little bit of water off the bottom of the tank
14 so whoever is purchasing the oil is not transporting water
15 off-location.

16 Q. And what do they do with that water? Where does
17 it go?

18 A. The pit is open, so it will evaporate. Also, if
19 the tanks get full, they will bring in a truck designed to
20 haul water and pull a load of water out of those tanks and
21 haul it off-location to a disposal well.

22 Q. Okay. Well, when they're draining the water out
23 of the tanks, do they drain that water into a pit? Is that
24 where it goes, tank pit?

25 A. Prior to 1994, again, I think we've gone over

1 this, but in Exhibit Number 49 of PNM, there's a pit by the
2 stock tanks. That would be the pit that we're talking
3 about.

4 After 1994, there was a fiberglass tank set --

5 Q. Right --

6 A. -- and any activities there, then, would be
7 drained into the fiberglass tank.

8 Q. -- we have gone over that.

9 A. Okay.

10 Q. And what I'm really getting at is, basically the
11 procedure when you're dewatering the tank is, you open the
12 valve and let water head towards that -- in 3-94 it was an
13 unlined pit, now it's a fiberglass tank, correct?

14 A. That is my understanding of how they could have
15 operated that well.

16 Q. And under those circumstances you can certainly
17 have a release of product at the same time you've got the
18 water --

19 A. It would be a very small amount of oil that would
20 get on the ground in that case?

21 MR. ALVIDREZ: That's all the questions I have.

22 MR. CARR: No questions.

23 CHAIRMAN WROTENBERY: Okay, thank you very much,
24 Mr. Dillon.

25 MR. CARR: May it please the Commission, would

1 there be any objection to Mr. Dillon being excused at this
2 time?

3 MR. ALVIDREZ: We have no objection.

4 MR. CARROLL: No objection.

5 CHAIRMAN WROTENBERY: No.

6 MR. CARR: Thank you.

7 At this time we would call James Rhodes.

8 JAMES E. RHODES,

9 the witness herein, after having been first duly sworn upon
10 his oath, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. CARR:

13 Q. Would you state your name for the record, please.

14 A. James Edwin Rhodes.

15 Q. Where do you reside?

16 A. Farmington, New Mexico.

17 Q. By whom are you employed?

18 A. Process Equipment and Service Company,
19 Incorporated.

20 Q. And what is your position with that company?

21 A. I'm vice president of plant operations.

22 Q. Did you file direct and rebuttal testimony in
23 this case?

24 A. Yes, I did.

25 Q. And is that testimony --

1 MR. ALVIDREZ: To speed things along, we wouldn't
2 have an objection to the admission of his direct and
3 rebuttal testimony in this case.

4 MR. CARR: We would move the admission of the
5 direct and rebuttal testimony and request that the record
6 reflect he is qualified as a mechanical engineer.

7 MR. ALVIDREZ: As a mechanical engineer?

8 MR. CARR: Yes.

9 MR. ALVIDREZ: We have no objection.

10 CHAIRMAN WROTENBERY: Okay, direct and rebuttal
11 testimony is admitted, and his qualifications are
12 recognized --

13 MR. CARR: And I pass --

14 CHAIRMAN WROTENBERY: -- by the Commission.

15 MR. CARR: -- the witness for cross-examination.

16 MR. ALVIDREZ: May it please the Commission.

17 CROSS-EXAMINATION

18 BY MR. ALVIDREZ:

19 Q. Mr. Rhodes, your company, Process Equipment and
20 Service Company, manufactures dehydrators; is that correct?

21 A. That's correct, dehydrators, separators,
22 production units, heaters, treaters.

23 Q. Okay, but the particular pieces of equipment,
24 surface equipment, that were at the Hampton 4M well were
25 not manufactured by your company; is that correct?

1 A. That is correct.

2 Q. They were manufactured by the company that Mr.
3 Heath formerly oversaw?

4 A. That is correct.

5 Q. What I want to ask is, does your company
6 manufacture any dehydrators which include what's known as a
7 sensing-element separator?

8 A. Yes, we do.

9 Q. And that sensing-element separator is designed to
10 detect free product coming from some source, usually a
11 separator or a production unit, before it hits the
12 dehydrator; is that correct?

13 A. Well, I think -- That is correct, up to a certain
14 point. There's a little bit of a misconception here. The
15 sensing element -- And if you look at Mr. Heath's written
16 testimony, the sensing element was devised by Mr. Heath
17 when he was working for Southern Union back in the 1960s.

18 If you read through his testimony it states that
19 at that time Southern Union was providing dehydration -- a
20 dehydrator on a well location that was equipped with an
21 elaborate separator, which the reason they had an elaborate
22 separator was to protect their dehydration process or their
23 glycol and the contactor from contamination due to
24 malfunctions in the production unit upstream of the
25 dehydrator.

1 Well, they reached a decision sometime in the
2 mid-1960s that they were not going to tolerate this
3 anymore. They weren't getting any revenues from the
4 liquids they were collecting due to these malfunctions.

5 So instead of being nice and collecting these
6 free liquids and dumping them back into the operator's
7 storage facilities where the operator could sell it, they
8 put on a sensing-element-type unit which, in fact, was not
9 designed not to dump product on the ground, it was designed
10 to shut in the well if the amount of liquids reached a
11 point where it could damage their dehydration, where it
12 could contaminate their dehydration.

13 Therefore, instead of -- It's better termed as a
14 high-level shutdown than it is termed as a sensing element.

15 Q. When you say high-level shutdown, what kind of
16 volumes are you talking about before the sensing element
17 would kick in?

18 A. Well, that's going to be a very arbitrary thing.
19 It depends on the settings of the devices. I've looked at
20 some, you know, to see the possibilities of how much
21 liquids can be dumped from the separator-dehydrator -- the
22 separator on the dehydrator. That particular piece of
23 equipment out there, that's a Chem-Ray 1400 SMS dump valve.
24 It's a liquid discharge valve. It's operated by a level
25 controller.

1 If you go to Chem-Ray's catalog, the smallest
2 trim or the smallest orifice they put in that valve that
3 the liquid passes through is an 1/8-inch-diameter orifice.
4 However, I've never seen one that small. You know, most of
5 the time in this kind of situation you'll see a 1/4-inch or
6 3/8-inch or even a 1/2-inch in this particular valve.

7 But assuming a 1/8-inch which is, like I say, the
8 smallest that can be purchased, if you'd listen to Mr.
9 Dillon he said that, you know, possibly the pressure in
10 that separator was 200 p.s.i.g., 200 pounds. Well,
11 according to the Chem-Ray catalog, to their sizing, that is
12 capable of dumping almost 200 barrels a day through a 1/8-
13 inch orifice. Okay?

14 So I would say that this piece of equipment is
15 capable of dumping up to 200 barrels a day with the
16 smallest orifice, depending on how it's adjusted.

17 Q. That's not the practical application of the
18 equipment, however, is it?

19 A. Oh, no, it's not. It's not practical for this
20 equipment, because we've got a well that's making less than
21 a barrel a day.

22 Q. And isn't the -- I mean, the fact of the matter,
23 the sensing element on the separator is intended to protect
24 the dehydrator from --

25 A. That's correct.

1 Q. -- relatively large volumes of product, correct?

2 A. Yeah. Yeah, Mr. Heath said when he developed
3 that, that it was developed in accordance to reacting to
4 Dakota production, and he's taken his testimony that Dakota
5 production could have been several hundred barrels a day.

6 Q. Well, getting back to my question, though, we're
7 clear there's --

8 A. Okay.

9 Q. -- agreement on the purpose for the sensing --

10 A. Okay.

11 Q. -- element in the separator, correct?

12 A. Right, substantial.

13 Q. All right. And you sell these things to people,
14 your company does, correct?

15 A. Yes, sir.

16 Q. And what do you tell them about the use of the
17 sensing-element separator?

18 A. We have not sold one of those since approximately
19 19- -- oh, mid-1980s. I can't give you an exact date.
20 That was when -- That was basically the last units we sold
21 to -- It would have been at that time Gas Company of New
22 Mexico.

23 Q. So your last involvement with this particular
24 piece of equipment was back in -- sometime in the 1980s?

25 A. That's correct.

1 Q. When you were selling them to your customers --
2 Well, let me ask, who were you selling these things to?

3 A. The sensing element?

4 Q. Yes, the sensing element?

5 A. Only to Southern Union, which became Gas Company
6 of New Mexico.

7 Q. Okay, that was your only customer?

8 A. For that particular --

9 Q. For that --

10 A. -- design, that is correct.

11 Q. And is it your understanding that the reason they
12 were purchasing these units was so they could protect their
13 dehydrators from relatively large amounts of free product
14 hitting the dehydrator?

15 A. Yes.

16 Q. And it's -- This sensing-element separator is, by
17 design, intended to shut in the well to cease production if
18 large amounts of free product hit the sensing element,
19 correct?

20 A. It will shut it in if the amount of liquid coming
21 into the dehydrator is greater than the amount that can be
22 discharged from the dehydrator.

23 Q. You talked about that 1/8-inch orifice, correct?

24 A. That's correct, 1/8-inch diameter.

25 Q. And we also talked about an adjustment, a

1 restrictor on that; is that correct?

2 A. No, I did not talk about that.

3 Q. Well, isn't that orifice subject to being
4 adjusted down even further so --

5 A. No, you cannot make the orifice smaller. You can
6 adjust the spring. This is a diaphragm-actuated motor
7 valve.

8 Q. Okay.

9 A. They call it a motor -- There's no motor in it.
10 It's got a housing that holds the diaphragm. On top of the
11 diaphragm is a spring. Below the diaphragm is an open
12 cavity. The diaphragm is connected to an inner valve which
13 moves up and down, and it either plugs the hole, the 1/8-
14 inch hole or, once you lift the inner valve off of the
15 orifice, then the valve is open. Well, the way the valve
16 opens is, pressure underneath the diaphragm compresses the
17 spring, raises the inner valve off of the orifice and
18 allows liquid to flow through.

19 Q. Okay. So the orifice isn't subject to
20 adjustment, but the spring certainly is. And that will
21 restrict the amount of free product that will be discharged
22 from the sensing element separator, correct?

23 A. It can restrict the amount being discharged --

24 Q. And if you operate --

25 A. -- but --

1 Q. Well, I'm sorry, I'll let you finish.

2 A. But if the fluid level continues to raise into
3 the separator -- This is a throttling-type level control,
4 it's a proportionate-type device. The higher the liquid
5 level raises in the separator, the more output comes from
6 the level controller, which increases the pressure under
7 the diaphragm and opens the valve further.

8 Q. But if you restrict that valve, that valve can't
9 open any more, right?

10 A. Until the pressure builds where it does open
11 more. It can be -- You can adjust that screw, you can
12 compress the spring so you can't open the valve at all.

13 Q. Right.

14 A. So you can restrict its travel, yes.

15 Q. And in the normal operation of that sensing
16 element, you would have the spring restricted, correct? In
17 some regard? In normal operations.

18 A. Yes, you'd have to have the string restricted in
19 some regard, because otherwise just the pressure inside the
20 vessel itself, inside the separator, will push up against
21 the bottom of the inner valve and open the valve by itself.
22 That's why the adjusting screw is there.

23 Q. All right. And that in turn restricts the amount
24 of fluids that can be discharged from the sensing element,
25 correct?

1 A. It is possible, yes, it is possible to restrict
2 the amount of fluids discharging from the separator.

3 Q. Well, that's what the separator is intended to
4 do, correct?

5 A. Is to discharge fluids.

6 Q. Well, it's -- but also to shut in the well if the
7 fluids are too great, correct?

8 A. Yes.

9 Q. And wouldn't you agree that a sensing-element
10 separator is designed to allow just a small quantity of
11 what's considered to be irreducible liquid carryover from
12 the operator's mechanical separator?

13 A. No, I do not agree.

14 Q. You're saying that this particular piece of
15 equipment is only intended to address what would be a
16 catastrophic failure of the separator --

17 A. Well, that's --

18 Q. -- where large amounts of free product would come
19 over?

20 A. It would not be a catastrophic failure if it
21 happened on a well, on a Dakota well, that was -- where Mr.
22 Heath could have made several hundred barrels a day. If it
23 carried over five barrels, it might shut in the well.
24 That's not catastrophic when you're making 400 barrels a
25 day to start with. Do you agree?

1 Q. I don't know. Perhaps catastrophic wasn't the
2 term, but some type of upset that would allow --

3 A. Certainly --

4 Q. -- large quantities to go --

5 A. Certainly, some type of upset.

6 Q. And it's not intended to just limit the amount of
7 free product to the irreducible liquid carryover? That's
8 where you and Mr. Heath have divergent opinions?

9 A. That is where we would disagree.

10 Q. Okay. You heard Mr. Dillon talk about the
11 separators at this particular location, correct?

12 A. Yes.

13 Q. And he indicated that the separators would have a
14 capacity of operating normally to remove in excess of 99
15 percent of the free product that would head to the
16 dehydrator, correct?

17 A. That's correct, yes --

18 Q. And you wouldn't --

19 A. -- operating normally.

20 Q. Operating normally. And you heard Mr. Dillon
21 also testify that he had no indication that the separators
22 at the Hampton 4M were operating other than normally; is
23 that correct?

24 A. That's correct, I heard him say that.

25 Q. So what that means is that there would be really

1 only very small amounts of free product that would ever
2 reach PNM's separator, correct?

3 A. No, I think what that means is, he had no
4 indication.

5 Q. I beg your pardon?

6 A. What that means is, he had no indication that
7 very little free product reached their separator. I
8 personally disagree with that.

9 Q. Why do you think that large volumes reached the
10 separator?

11 A. Well, I -- in my testimony, I put down four
12 reasons that I thought we could lose basically a year's
13 worth of oil production, 1995's oil production. I think
14 we've all agreed that oil production went away in 1995.

15 I listed that it was possible but not probable
16 that it was blown to the atmosphere.

17 I listed that it could have been leaky storage
18 tanks, and I think we've perhaps dispelled that.

19 I mentioned that it could have been a problem
20 with the low-pressure separator at the production unit.
21 The low-pressure separator is a three-phase separator
22 whereas it separates gas from oil from water. Okay? The
23 production unit -- Can I just explain what a production
24 unit is?

25 Q. Yes.

1 A. We haven't actually heard that.

2 This production unit is what they call a two-
3 stage unit. It's got a high-pressure separator that's
4 mounted on top of a low-pressure separator. The high-
5 pressure separator, high pressure in this case is a 1000-
6 pound working pressure vessel. It's a two-phase unit. It
7 separates liquids from gas. Okay?

8 The liquids are dumped into the low-pressure
9 separator. Okay? It's a three-phase separator, oil,
10 water, gas. The three-phase separator then discharges a
11 certain amount of gas to the atmosphere. That's gas that
12 is dissolved in the liquids when you take a pressure cut
13 from the high pressure to the low pressure. It's much like
14 opening a can of Diet Coke. You know, you've changed the
15 amount of pressure that's on that liquid so some gas is
16 allowed to escape.

17 So the gas leaves, goes to the atmosphere, the
18 oil is dumped to a stock tank, and the water was dumped to
19 a pit.

20 If there was a problem with either of the dump
21 valves on the low-pressure separator, you could have dumped
22 all the liquid to the pit, you could have dumped all the
23 liquid to the storage tank. Okay, that's --

24 Q. Which pit would you have dumped it to --

25 A. Well, there are only --

1 Q. -- if there were a problem with the separator?

2 A. The separator pit.

3 Q. It wouldn't be PNM's pit?

4 A. No, it would have been the fiberglass pit that
5 was installed in 1994. Okay?

6 So okay, the last scenario would consist of some
7 kind of problem, whether it be a freezing problem, a
8 paraffin problem or a malfunction of the dump valve between
9 the high-pressure separator and the low-pressure separator.
10 If all the liquid cannot dump from the high pressure into
11 the low pressure, then the high pressure fills up with
12 liquid, and that liquid all goes downline, which goes into
13 the inlet separator on the dehydrator.

14 Q. What evidence do you have that that has happened?

15 A. I have no evidence that any of that has happened.

16 Q. These are just possibilities?

17 A. These are possibilities.

18 Q. Okay. With regard to your testimony where you
19 talk about you ran a -- I guess a test on PNM's dehydrator,
20 what did you do exactly?

21 A. I ran a performance analysis. I wanted to see --
22 There was a lot of statements made in Mr. Heath's testimony
23 about the separator on the dehydrator being just a small
24 separator, that it can only handle a small amount of
25 liquid.

1 Well, let's -- By handling a small amount of
2 liquid -- I ran a performance analysis -- that separator
3 with the three-minute liquid retention time can handle
4 about 120 barrels a day.

5 Q. That's a theoretical maximum, correct?

6 A. Oh, no, that's probably -- That's very
7 conservative. That's a three-minute retention time. A lot
8 of our customers specify a one-minute retention time on a
9 two-phase separator, so in that case your liquid capacity
10 triples, so it's -- no, it could actually handle -- I would
11 be comfortable in this situation, with the type of product
12 that is made at this well, with much more liquid than that,
13 without being concerned of carryover into the absorber.

14 I compared both the separators. The high-
15 pressure separator on the production unit is made out of
16 12-inch pipe. It's a 12-inch-diameter vessel. 12-3/4-
17 inch, actually. It's seven and a half feet long. It's got
18 a cross-sectional area for gas of about 3/4 of a square
19 foot.

20 I compared that to the separator on the
21 dehydrator. It's made out of 16-inch pipe, bigger material
22 than what's on a production unit. It's also got an area
23 available for gas of about 3/4 of a square foot. So it is
24 a little shorter, which limits its gas capacity. It will
25 have about 25 percent less gas capacity than the separator

1 on the production unit, but it has greater liquid capacity
2 than the separator on the production unit.

3 So I couldn't see the relation of saying that
4 this is a small separator and that it can't handle the
5 conditions of the well.

6 Q. Okay. Would you agree that the oil and gas ratio
7 for both the Dakota and the Mesaverde were too high for
8 fluid retention rates to even be a consideration in terms
9 of this particular --

10 A. Gas-oil ratio --

11 Q. -- separator? Right.

12 A. No, I would not agree. Gas-oil ratio is
13 basically your gas volume divided by your oil volume. If
14 you have no oil volume, if you lose your oil, your gas-oil
15 ratio goes to infinity. If you divide by zero, it goes to
16 infinity.

17 Well, if you're not making any liquid then
18 obviously your separator is going to handle all the liquid
19 you're making.

20 Q. Well, but we know that there were periods of time
21 when from the Mesaverde there was zero production, correct?

22 A. Right.

23 Q. And that means that that production could not hit
24 PNM's dehydrator and could not have gone to the pit; isn't
25 that correct?

1 A. Yeah, that's correct.

2 Q. We know in 1995 the Dakota production went to
3 zero?

4 A. That's correct.

5 Q. And that means that liquid could not have hit
6 PNM's dehydrator --

7 A. Oh, no. No, that means that that liquid did not
8 make it to the stock tank. It was not sold; it might have
9 very well been produced. It might have been produced into
10 the production unit if there was a malfunction of the
11 production unit, which is expected. I mean, that's why
12 they invented the sensing element, was to guard against
13 malfunctions of the production unit.

14 Q. And if there were malfunction, that could have
15 been discharged into the production -- the separator pit,
16 could it not? That's where that production could have
17 gone, the separator pit?

18 A. It depends on where the malfunction took place.

19 Q. But it's just as likely that it went to the
20 production pit?

21 A. Oh, no, you can't say it's just as likely.

22 Q. Why not? It depends on where the --

23 A. It depends on where the malfunction took place.
24 Okay?

25 Q. Well, if we had that malfunction, that would have

1 been one of those events where a large amount of free
2 product would have -- if it was going to head to the
3 dehydrator, would have gone to the dehydrator, correct?

4 A. Would have gone to the dehydrator?

5 Q. Yes.

6 A. That's correct.

7 Q. And that sensing element is designed under those
8 circumstances to shut that well in, correct?

9 A. No.

10 Q. I thought your testimony was, when we had a
11 failure in the separator that caused large amounts to head
12 toward the dehydrator, it shut it in?

13 A. That's right, I said large amounts.

14 Q. Okay.

15 A. This is a small amount.

16 Q. Oh, so it's only --

17 A. Relative to a Dakota well -- As I stated earlier,
18 this was a piece of equipment that was designed to shut in
19 a Dakota well that might make several hundred barrels of
20 liquid a day. This well is making less than one barrel of
21 liquid a day.

22 Q. And that's a small amount, I mean, in the scheme
23 of things, isn't it, in terms of its --

24 A. Oh, yeah --

25 Q. -- its production?

1 A. -- that's correct.

2 Q. And just so we're clear, in order for any of that
3 free product to get to PNM's dehydrator, it's got to pass
4 through Burlington's separator, correct?

5 A. That is correct.

6 Q. Would you agree that -- I think you testified the
7 dehydrator, the sensing-element separators with the
8 dehydrator, had a greater capacity than the production
9 units?

10 A. Has a greater liquid capacity.

11 Q. Greater liquid capacity.

12 A. It has less gas capacity.

13 Q. But in terms of -- That really is theoretical or
14 doesn't have much to do with anything, because if the
15 separator, the production unit, doesn't have the capacity,
16 it's never going to get to the dehydrator, correct?

17 A. No, if the separator doesn't have the -- Are you
18 talking about gas capacity or liquid?

19 Q. I'm talking about liquid capacity.

20 A. If the separator doesn't have the liquid
21 capacity, how you size a separator is, you size in an
22 appropriate amount of retention time so that it can do its
23 job. So appropriate capacity would mean that the gas is
24 slowed down, the velocity is slow enough, where the liquids
25 have time to fall out. Okay?

1 So if it was sized under capacity, then that
2 means the liquids would not have time to fall out, and it
3 would carry downstream into the dehydrator.

4 Q. But really, we're not looking at enough
5 production from this well where retention rates are that
6 big a concern, are we?

7 A. No, I was merely doing a comparison to dispel the
8 myth that the separator on the dehydrator was a small piece
9 of equipment and would not handle -- you know, would cause
10 operational problems if liquid was carried into it or, you
11 know, any of these other statements.

12 Q. Let's look at Burlington Exhibit 34. This is an
13 exhibit that you prepared; is that correct?

14 A. That's correct.

15 Q. And you've entitled this a "Two-Phase Separator
16 with Sensing Element"; is that correct?

17 A. That's correct.

18 Q. Where is the sensing element depicted in this?

19 A. Well, the sensing element is basically everything
20 that's not the separator. It's the -- It utilizes the
21 liquid-level controller, it utilizes the three-way
22 switching valve, and it utilizes the ball valve with
23 actuator at the inlet of the unit.

24 Q. You don't show any adjustment screw on the dump
25 valve diaphragm spring, do you, on this?

1 A. No, I do not. I do mention it in the text.

2 Q. And you likewise don't show any other way to
3 restrict the amount of liquids that this particular
4 separator could dump, correct?

5 A. I believe there is no other way -- on this
6 particular unit, there is no other way to restrict the
7 amount of liquids that it will dump.

8 Q. So really what we have shown here is a separator
9 that's a two-phase separator, correct?

10 A. That's correct.

11 Q. And then you've just added a three-way switch and
12 a ball valve with an actuator, correct?

13 A. Yes.

14 Q. And it's really not representative of the type of
15 sensing-element separator that we have at the --

16 A. Oh, it is exactly -- This sketch is made from
17 that unit.

18 Q. Where is the adjustment screw on it?

19 A. The adjustment screw is mentioned in the text.

20 Q. I want to know about this picture.

21 A. Oh, there is no adjustment screw on this picture.

22 Q. Okay, and you don't show any other mechanism to
23 show how you could restrict the dump from this separator,
24 correct?

25 A. No, I do not.

1 Q. Can you show us how this would be operated, where
2 you could get this particular separator that you've shown
3 in Exhibit 34 to shut in a well?

4 A. The only way this separator will shut in a well
5 is if the volume of liquid coming into it is greater than
6 the volume of liquid and the rate -- Let's call it rates of
7 liquid.

8 If we have a greater rate of liquid coming in
9 than we have leaving through the discharge valve, the
10 liquid level will rise in the separator, it will cause an
11 increased pressure to output from the liquid level
12 controller to a set point on the three-way switching valve.
13 The three-way switching valve is a pneumatic valve. It
14 will switch and it will send pressure to the ball-valve
15 actuator, which closes the valve.

16 Q. Okay. But you really can't show -- I mean, those
17 pieces aren't really depicted here?

18 A. Oh, yes, they are.

19 Q. Well, with regard to how you would make those
20 adjustments to restrict the amount that could be
21 discharged, correct?

22 A. I've furnished text with this, explaining how it
23 works. Is the text -- Well, the text is not in the
24 exhibit.

25 Q. No, it was not included.

1 A. I guess there is -- I do have text, I guess it's
2 not in the exhibit.

3 Q. Did you bring that text with you?

4 A. Yes, I did.

5 Q. May we look at it?

6 A. Certainly.

7 MR. CARR: Certainly.

8 THE WITNESS: Who, you?

9 MR. ALVIDREZ: I'd like to look at it.

10 Q. (By Mr. Alvidrez) With regard to the combination
11 production unit or what's commonly called the separator out
12 at this particular site, did you do any performance tests
13 on it?

14 A. Yes.

15 Q. What did you do in terms of performance tests at
16 the site?

17 A. I already discussed that. I just determined what
18 its gas capacity and liquid capacity would be, and that was
19 of the --

20 Q. Okay.

21 A. -- that was of the high-pressure separator
22 portion. I didn't think we were interested in the low
23 pressure.

24 Q. So when you talk about a performance test, I
25 mean, physically what did you do? Did you just look at it,

1 or --

2 A. No, I ran a performance analysis based on the
3 size of that equipment, based on physical laws, to say how
4 much gas it will handle and how much liquid it will handle.
5 It did not involve dissecting anything or --

6 Q. Okay. Well, I guess I was unclear when --

7 A. Oh, okay.

8 Q. -- when you say a performance test, to me that --

9 A. No, it's a performance analysis.

10 Q. Analysis.

11 A. I did not say test.

12 Q. My assumption was that you did something where
13 you actually operated it in some manner and observed how it
14 would operate.

15 A. No, I --

16 Q. You did not do that?

17 A. That is not correct.

18 Q. I want to talk about one of the things that
19 you've talked about, and we've been talking about how much
20 things can dump and not dump, and you did provide the
21 narrative that went along with this Exhibit 35. And you
22 make the statement in your narrative under Number 6:

23

24 It's important to note that this type of valve
25 can be adjusted open at a wide range pressure under

1 the diaphragm. An adjusting screw can be used to
2 change the compression of the spring, thus allowing
3 the valve to begin to open at as little as 1 to 2
4 pounds per square inch under the diaphragm. On the
5 other extreme, if the adjusting screw is tightened
6 excessively, the valve may only slightly open, even
7 with the full 25 p.s.i. under the diaphragm.

8

9 Correct?

10 A. That's correct.

11 Q. So if you --

12 A. That's the same --

13 Q. -- if you restrict that down --

14 A. -- same statement I made, is, you can make the
15 valve not open at all.

16 Q. Right. If you restrict that down, it's operator-
17 restricted, in a restricted manner, it's going to cut down
18 on the amount of fluids that can be discharged; is that
19 correct?

20 A. Yeah, that's correct, at that time, yes.

21 Q. At that time. And you saw Mr. Heath's testimony.
22 When he was out there, that restrictor spring, restrictor
23 valve, was apparently adjusted down, correct?

24 A. There's no way to measure that. Was it adjusted
25 down one inch, half an inch, two inches? At what pressure

1 did Mr. Heath observe that that valve would open?

2 Q. So you can't really tell what he was talking
3 about; is that what you're saying?

4 A. Oh, I know what the device is.

5 Q. But you don't know how -- to what extent it was
6 adjusted down, correct?

7 A. Oh, no, I do, because I actuated the motor valve.

8 Q. Well, you don't know, when Mr. Heath was out
9 there, what it was, correct?

10 A. No, I do not.

11 Q. And when you were out there it was unrestricted,
12 correct? That spring had been backed off considerably,
13 correct?

14 A. I cannot say that the spring had been backed off.
15 It was probably in exactly the same position that it was
16 when Mr. Heath inspected it.

17 Q. How can you say --

18 A. I can't --

19 Q. You don't know?

20 A. I can't say that it was or that it wasn't.

21 Q. Would you agree that if there were large amounts
22 of free product that were going through the dehydrator,
23 that a prudent operator would start noticing a lot of free
24 product building up in the pit? I mean, that's something
25 that would be pretty obvious, right?

1 A. Oh, yes, large amounts.

2 Q. Okay, and --

3 A. Not less than a barrel a day.

4 Q. Likewise, if you had loss of production on the
5 producer side of things, they'd want to know what was
6 happening with that production, correct?

7 A. Not necessarily. I would if I was the operator,
8 I'd want to know what happened to my \$20 a day worth of
9 oil. But I think Dr. Lee -- I mean, when he asked
10 yesterday, is this a gas well or is this an oil well? This
11 is a gas well. This is a company that's interested in gas
12 production. They never had an upset where they lost any
13 gas production. They didn't have operational problems at
14 the dehydrator.

15 You've got a lease operator that probably -- I
16 don't know how many wells this guy looks at, but it's got
17 to be a hundred, more than a hundred, probably. So if
18 you've got a well and it happens to lose \$20 a day worth of
19 oil, you might decide there's something better to do,
20 decide to check that out, in my opinion.

21 Q. You saw Mr. Heath's testimony where he indicated
22 that based upon his discussions with prior operators of the
23 dehydrator, this well had been shut in on occasion,
24 correct?

25 A. That's correct.

1 Q. And that's some indication -- the only indication
2 that we have that, in fact, this sensing-element separator
3 would work to shut in the well, correct?

4 A. That's correct.

5 Q. And --

6 A. If it was indeed shut in at the sensing element.
7 It could have been shut in elsewhere.

8 Q. Well, the clear implication -- you heard Mr.
9 Heath's testimony -- was that it was shut in due to the
10 sensing element. Do you recall that testimony?

11 A. I actually don't recall that, but I'll believe
12 you.

13 Q. He was asked that by Mr. Carr.

14 And likewise, the operators that Mr. Heath talked
15 to indicated that this dehydrator, the dehydrators that
16 were in operation at PNM's pit -- or PNM's dehydrators,
17 were operating properly, correct?

18 A. That's correct, that's what I would expect with
19 as little a flow, of liquid flow, I would -- and knowing
20 that this dehydrator has the ability to discharge that
21 amount of liquid, yeah, I would expect that it would run
22 very well.

23 Q. That it would -- ?

24 A. That there would be no operational problems with
25 this dehydrator as far as its ability to dehydrate.

1 Q. You're not testifying that there was some type of
2 steady-state carryover that was occurring out there where
3 the levels in the separator -- production that were
4 produced from the separator were precisely or very close to
5 the amounts that the dehydrator could tolerate so that
6 there was simply a constant flow for long periods of time,
7 are you?

8 A. Well, it could have very well been that way.

9 Q. That's a possibility?

10 A. It's a possibility.

11 Q. But it's unlikely, isn't it? I mean --

12 A. Well, no, as Mr. Heath stated yesterday, this
13 level controller has the ability to control, to set a
14 level, to seek a level, and it will stay there, it will
15 crack the valve slightly, where you have a constant flow
16 leaving the dehydrator if, in fact, you have flow coming
17 in.

18 But it will seek a level, and if that level is
19 such that the sensing element never trips then, yeah, it
20 will ride a level for a long time.

21 Q. As I understand it, when you went out, the
22 sensing-element separator was not dumping any liquid to the
23 pit; is that correct?

24 A. No, that's not correct.

25 Q. When you went there, it was shooting out liquid .

1 to the pit?

2 A. When I've been there I haven't seen it dump to
3 the pit. I have seen the pit with liquid in it.

4 Q. And the liquid -- Well, you're talking about the
5 lined pit that this --

6 A. Yes, that's correct.

7 Q. And what I'm talking about, you weren't out there
8 when the sensing-element separator actuated --

9 A. No.

10 Q. -- and there was a dump?

11 A. No, I haven't -- No.

12 Q. And when you went out there, you went and
13 manually operated it so --

14 A. That's correct.

15 Q. -- it would do it, correct?

16 A. That's correct.

17 Q. But when you've seen it, it wasn't in a situation
18 where there was a constant stream or anything of that
19 nature, right?

20 A. No.

21 MR. ALVIDREZ: I don't have any other questions.

22 CHAIRMAN WROTENBERY: Mr. Carroll?

23 MR. CARROLL: No questions.

24 MR. CARR: (Shakes head)

25 CHAIRMAN WROTENBERY: Commissioner Lee?

1 COMMISSIONER LEE: I have a lot of questions.

2 EXAMINATION

3 BY COMMISSIONER LEE:

4 Q. So you have a two-stage separator, right?

5 A. On the production unit or the dehydrator?

6 Q. On the production.

7 A. That's correct.

8 Q. So the first one is 1000 p.s.i.

9 A. Right.

10 Q. Are you sure?

11 A. I believe on this one it's 1000 p.s.i.

12 Q. Then you separate two-phase, right?

13 A. (Nods)

14 Q. Right now your rich gas is moving toward the PNM,
15 right?

16 A. That's correct.

17 Q. Okay, what is the temperature on this separator,
18 roughly?

19 A. Usually around 70 degrees.

20 Q. Seventy degrees, right? When they hit the
21 separator of PNM dehy units, what is the pressure there?

22 A. It's the same pressure, there is no restriction
23 between the two.

24 Q. There's no restriction, right?

25 A. Besides frictional losses.

- 1 Q. What about temperature?
- 2 A. Temperature is going to be virtually the same.
- 3 Q. Virtually the same. Then you're going to a
- 4 dehy --
- 5 A. Correct.
- 6 Q. -- right? Your dehy, that's a glycol dehy?
- 7 A. That's correct.
- 8 Q. The glycol dehy would take out the water?
- 9 A. Takes out water vapor.
- 10 Q. And -- ?
- 11 A. Water vapor.
- 12 Q. Water vapor, and -- ?
- 13 A. And it can take out some hydrocarbon?
- 14 Q. Heavy end?
- 15 A. Yes.
- 16 Q. Some heavy end?
- 17 A. Yes.
- 18 Q. Where does the water go?
- 19 A. This water is --
- 20 Q. The glycol gets the water at the higher end, then
- 21 they move to -- where?
- 22 A. The rich glycol, water-rich glycol, is discharged
- 23 from the contactor, from this contacting vessel.
- 24 Q. Right.
- 25 A. It's discharged into a -- basically a boiler,

1 it's called a reboiler or a glycol regenerator.

2 Q. So you boil it?

3 A. You boil it.

4 Q. Then you're coming back?

5 A. That's correct.

6 Q. So there's no accumulation between these two,
7 between your -- The 1000-p.s.i., if you go into the
8 separator, your pressure is going to decrease, the
9 temperature is going to decrease, right?

10 A. I didn't --

11 Q. Or very little?

12 A. I didn't say that the separator was operating at
13 1000. I say that it's capable of operating, that's its
14 maximum allowable.

15 Q. What is the separator of -- The dehy unit is
16 operating on 1000 p.s.i.?

17 A. No, no, it's operating at about 200 also.

18 Q. Then the separator of the dehy unit, what is the
19 pressure there?

20 A. That's the same unit we're talking about.
21 There's a --

22 Q. That's a 200 p.s.i.a. unit?

23 A. It's operating at the same pressure as the --

24 Q. Of the dehy unit? Something missing?

25 A. There's a -- The production unit consists of two

1 separators. Okay? The high-pressure separator --

2 Q. I only care about the gas from the high-pressure
3 separator.

4 A. Okay, the gas from the high-pressure separator --

5 Q. Moving towards PNM --

6 A. -- moving towards PNM. PNM's unit consists of,
7 on the same skid, a separator that has this sensing element
8 in it --

9 Q. Separator. What is the pressure of that
10 separator?

11 A. It's about 200 pounds.

12 Q. Then tons of the free product come out, right?

13 A. Only if there's a malfunction. Most of the free
14 product has been dumped from the production separator.

15 Q. What is free product? I'm tired of this free
16 product.

17 A. It's liquids, liquids, water, liquid hydrocarbon,
18 free product.

19 Q. Liquid hydrocarbon --

20 A. Liquid hydrocarbon --

21 Q. -- in the 1000 p.s.i.a. can be in the vapor
22 phase?

23 A. Yes, but the unit's not operating -- The unit's
24 only operating at 200. But --

25 Q. Yes. You have a rich gas, right?

1 A. Yes.

2 Q. Okay. You go into the 1000 p.s.i.a. rich gas
3 going into the 200 p.s.i.a. --

4 A. But it's not at 1000 p.s.i.a. It's only at 200.
5 I shouldn't have confused you by saying a 1000-pound
6 separator. The separator is rated to handle up to 1000
7 pounds. It's only operating right now at 200. Okay? The
8 gas flow going into it from the well is at 200 p.s.i.

9 Q. So right now it's 200 now?

10 A. Yes.

11 Q. And what's the --

12 A. The only way -- The only way that you're going to
13 condense out much free product downstream is by cooling it.

14 Q. By cooling it.

15 A. And there's no facility to cool it.

16 Q. There's no facility to cool it.

17 A. In the wintertime --

18 Q. So is it 200 all the way to the PNM --

19 A. That's correct.

20 COMMISSIONER LEE: All right, thank you.

21 EXAMINATION

22 BY COMMISSIONER BAILEY:

23 Q. You started to say something, in the wintertime,
24 what?

25 A. Well, in the wintertime you get cooling in the

1 pipeline between the production unit and the separator,
2 which causes condensation, you know, as he was thinking.
3 You can condense out a small amount of hydrocarbon and a
4 small amount of water, and it's just due to cooling. The
5 ability of gas to hold a liquid diminishes as it gets
6 cooler.

7 FURTHER EXAMINATION

8 BY COMMISSIONER LEE:

9 Q. In the winter, the atmospheric temperature is
10 very low, right?

11 A. It can be up there, uh-huh.

12 CHAIRMAN WROTENBERY: Mr. Carr?

13 REDIRECT EXAMINATION

14 BY MR. CARR:

15 Q. Mr. Rhodes, it is your testimony that the amount
16 of discharge into the pit at the purchaser's dehydrator is
17 really determined in part on how that equipment is set; is
18 that your testimony?

19 A. That is correct.

20 Q. In Mr. Alvidrez's testimony there was a
21 suggestion, I think, that the Dakota production could go to
22 zero at some times. Do you have any information or
23 evidence that suggests that ever happens?

24 A. No.

25 Q. What is your understanding of the rate at which

1 the well produces?

2 A. From looking at Mr. Dillon's information, my
3 understanding is that the well produces around a barrel of
4 oil a day, maybe a little more water. There seems to be no
5 data on the water.

6 Q. Do you know the amount of discharge that came out
7 of the PNM separator into the pit?

8 A. No, I do not.

9 Q. Is it your testimony that the presence of this
10 particular configuration of equipment on that unit would
11 not restrict the amount that could be dumped -- the
12 percentage of the production that could be dumped into a
13 pit?

14 A. That is correct.

15 Q. If you were -- Is it your testimony that this
16 equipment, properly functioning, could discharge the entire
17 liquid produced from the well into the pit at the PNM
18 dehydrator?

19 A. That is my opinion.

20 Q. If you were discharging for a one-year period of
21 time a barrel a day, approximately how many gallons would
22 that be?

23 A. 365 times 42.

24 Q. Over 15,000?

25 A. It would be around 15,000.

1 Q. Are you aware that the estimated unaccounted-for
2 product is 13,440 gallons for 1995?

3 A. I just saw that, just right before I testified.

4 Q. In your opinion, could this equipment discharge
5 that volume into the dehy pit?

6 A. Yes.

7 Q. When were you actually physically present at the
8 Hampton 4M well site?

9 A. I was at the Hampton 4M the first part of May,
10 and I actually don't remember what day. It was like the
11 4th of 5th of May. And I went back out there last Friday,
12 which would have been the 20th of August.

13 Q. Could you tell how the sensing element was set
14 when you were visiting the site?

15 A. Both times I visited the site, the sensing
16 element was actually placed out of service. So it couldn't
17 -- It wasn't functioning, so --

18 Q. You don't know how it was set at any time while
19 it was owned by PNM, do you?

20 A. No.

21 Q. When you were at the site, was there liquid in
22 the fiberglass tank at the producer's -- or, I'm sorry, at
23 the purchaser's dehydration unit?

24 A. It is a steel tank at the --

25 Q. Were you able to see if there was liquid in that

1 tank?

2 A. Yes, I was.

3 Q. And what did you see?

4 A. I had no way to measure the amount of liquid in
5 the tank, but it appeared to be about an eight-foot-
6 diameter steel pit tank, five to six feet tall, and it
7 appeared to me like it had, I would say, 18 inches to two
8 feet of liquid in the pit.

9 MR. CARR: That's all I have, thank you.

10 CHAIRMAN WROTENBERY: Mr. Alvidrez.

11 RECROSS-EXAMINATION

12 BY MR. ALVIDREZ:

13 Q. Let me ask you a follow-up. You said there were
14 18 inches to two feet of liquid. Can you be a little more
15 specific when you're saying -- telling us what the liquid
16 is?

17 A. Well, all I could obviously see was the oil on
18 top, and it was -- Like I say, there was no way I could
19 measure it, but it was obviously, you know, four, five, six
20 inches deep oil, and I don't know what below that. That's
21 as deep as I could --

22 Q. And when you were there, every time you've been
23 there, that sensing element separator that we've talked
24 about has been, I think you said, disabled?

25 A. Disabled.

1 Q. Are you aware that PNM hasn't operated any
2 dehydrators at this site since June of 1995?

3 A. Yes, I'm aware of that.

4 Q. I had a question. You said in your opinion, this
5 dehydrator -- sensing element associated with the
6 dehydrator could have discharged approximately 15,000
7 gallons of product over the course of a year; is that
8 correct?

9 A. It could do that or more, yes, or less. It
10 depends on how it's set.

11 Q. I think you also testified you have no idea how
12 much --

13 A. That's right.

14 Q. -- might have come through there?

15 But let me ask also, isn't the same thing true
16 with regard to discharges from the production unit? That
17 production unit could likewise discharge a barrel a day for
18 a year and also discharge 15,000 gallons, correct?

19 A. Well, it could have discharged 15,000 gallons,
20 but there was a fiberglass pit at that time. We're talking
21 about 1995, and --

22 Q. Well, prior to 1994, if that happened?

23 A. Prior to 1994? Sure, I would have no way of
24 knowing.

25 Q. Okay. And that would have gone right into the

1 unlined pit, correct?

2 A. If that's --

3 Q. If it had done that?

4 A. That's correct.

5 Q. Do you know the dimensions of the dehydrator pit,
6 the unlined dehydrator pit that PNM utilized?

7 A. No, I do not.

8 Q. So you don't know whether that pit could have
9 sustained a 15,000-gallon release before it would overflow
10 or run off somewhere, right?

11 A. I am not a soil scientist, I have no specific
12 knowledge of that.

13 Q. Would 15,000 gallons over the course of a year be
14 something that an operator of a dehydrator would notice in
15 their pit? I mean, that volume, something they would
16 likely notice?

17 A. Once again, there are -- I'm sure there are soil
18 situations that exist that would allow that amount of fluid
19 to leach into the soil. That's going to vary from site to
20 site, from situation to situation.

21 Q. Well, what about the situation that we have out
22 at the Hampton 4M?

23 A. I'm not a soil scientist, I don't know.

24 MR. ALVIDREZ: I have no further questions.

25 MR. CARROLL: No questions.

1 CHAIRMAN WROTENBERY: Okay, thank you very much,
2 Mr. Rhodes.

3 THE WITNESS: Thank you.

4 CHAIRMAN WROTENBERY: And I think it's time for
5 us to take a break.

6 We'll take a break till 3:15.

7 (Thereupon, a recess was taken at 3:00 p.m.)

8 (The following proceedings had at 3:15 p.m.)

9 CHAIRMAN WROTENBERY: Are we ready? You have
10 called your --

11 MR. CARR: Are we back on the record?

12 CHAIRMAN WROTENBERY: Yeah, we're back on the
13 record.

14 MR. CARR: May it please the Commission, at this
15 time Burlington Resources calls Paul V. Rosasco.

16 May it please the Commission, there is a
17 correction that needs to be made to Burlington Exhibit 41.

18 In the column at the top of which is entitled
19 "PNM impoundment" there are a number of numbers. There are
20 two in the center, toward the bottom. One is "102". That
21 should be "102,000", not "102".

22 And just to the right of that, "412". That
23 should be "412,000".

24 And if Mr. Alvidrez is agreeable, I would move
25 the admission of the testimony.

1 PAUL V. ROSASCO,
2 the witness herein, after having been first duly sworn upon
3 his oath, was examined and testified as follows:

4 VOIR DIRE EXAMINATION

5 BY MR. ALVIDREZ:

6 Q. May we see the basis for the change -- the
7 corrections, which results you're talking about?

8 A. Certainly, those were results that were in the
9 Philip report, and they were reported in parts per million.
10 And I had made a correction, but apparently the printed
11 copy had the numbers still shown in parts per million
12 rather than parts per billion.

13 Q. Okay, the Philip's reported -- Well, PNM has one
14 at Exhibit 60; is that correct?

15 A. Yes.

16 Q. And where in the report are those?

17 A. Go to Table 1. You'll see on the right-hand side
18 under a column called "Results", for samples 5 and 6 the
19 BTEX is reported as 102 parts per million, or milligrams
20 per kilogram. And right below it is BTEX of 412 parts per
21 million, or milligrams per kilogram.

22 And I put this table together based in large part
23 on Exhibit 48, or now 48-A, which had all the units in
24 parts per billion. And I did make a conversion on this,
25 but unfortunately the printed version ended up with the old

1 values. So it's just to make sure all the units were
2 consistent.

3 Q. And those correspond on Exhibit 60, the diagram,
4 as to where?

5 A. You'll see location 6 is -- See where it says
6 MW-2 on the diagram?

7 Q. Yes.

8 A. See where it says "PNM's former pit location"?

9 Q. Right.

10 A. And right there above it, it says MW-2. It's
11 just to the -- above and the right of the 2 is Number 6.
12 You see where it says MW-6. And just below the "6" in MW-6
13 is Number 5, I believe. It's right there.

14 Q. And how are those related laterally to the former
15 PNM pit location?

16 A. Well, Number 6 is between Wells 2 and 6. It's
17 right in the vicinity of where the former pit location was.
18 The Well 2 went right through it.

19 And Number 5 is just off to the side there.

20 Q. Do you know how far away from MW-6 it was?

21 A. No, I think, as we've talked about earlier, this
22 drawing is not to scale.

23 MR. ALVIDREZ: Okay. I don't have any objection.

24 MR. CARROLL: No objection.

25 MR. CARR: I would move the admission of the

1 testimony of Mr. Rosasco and ask that his qualifications as
2 a hydrogeologist and civil engineer be accepted and made a
3 matter of record. They are set forth -- His qualifications
4 are set forth in the prefiled testimony. He has filed
5 direct and rebuttal testimony.

6 CHAIRMAN WROTENBERY: Thank you. Any objection?

7 MR. ALVIDREZ: No objection to the testimony,
8 either rebuttal or direct.

9 CHAIRMAN WROTENBERY: Okay, Mr. Rosasco's direct
10 and rebuttal testimony are admitted into the record, and
11 his qualifications are accepted.

12 MR. CARR: And I tender the witness for cross-
13 examination.

14 CROSS-EXAMINATION

15 BY MR. ALVIDREZ:

16 Q. Mr. Rosasco, just very briefly with regard to
17 your background, as I understand it you have two degrees in
18 geology; is that correct?

19 A. I have a bachelor's of science in geology and a
20 master's of engineering in engineering geology.

21 Q. Okay, have you had -- What has your course work
22 consisted of in terms of chemistry?

23 A. Basic college chemistry and geochemistry
24 associated with groundwater contamination.

25 Q. Okay. And what about your background with regard

1 to contaminant fate and transport?

2 A. Fate and transport classes associated with
3 groundwater, hydrogeology classes and groundwater modeling
4 classes.

5 Q. Was that at the undergraduate level?

6 A. Graduate level.

7 Q. Graduate level, okay. I wanted to ask at page 4,
8 line 14 of your testimony --

9 A. Of the direct?

10 Q. Yes, I'm sorry, the direct testimony. You are
11 asked upon what you base this conclusion, and you use the
12 term "High levels of hydrocarbon contamination". And what
13 I want to know about is, what is your definition of "High
14 levels of hydrocarbon contamination"?

15 A. Well, this wasn't necessarily in relationship to
16 other sites or anything else; these were in relationship to
17 the results obtained that we just talked about on Exhibit
18 41, basically, that we have high levels in the soil column
19 below both of the pits.

20 Q. So when you're talking about high levels, this is
21 what you're referring to, correct?

22 A. Yes, sir.

23 Q. Okay, that's what I'm getting at.

24 For your reading with regard to Exhibit 41, at
25 what level is that 622,000 taken? How many feet down?

1 A. I believe that was the sample taken by PNM -- In
2 fact, I know for a fact, that's the sample taken by PNM at
3 12 feet, as I recall, during the excavation, the sample
4 taken at the base of the excavation that was spoken of
5 earlier.

6 Q. Okay. And the reading of 36,960 that's under the
7 indication of the PNM impoundment, where was that taken?
8 What depth was that taken?

9 A. That was taken in the SB-1 boring, and I'd have
10 to check to be absolutely sure, but I think we've talked
11 about that at 15 --

12 Q. At the SB-2 boring?

13 A. SB-2, I'm sorry, thank you. We've talked about
14 that as being, as I recall, 15 feet or 16 feet. I'd have
15 to check.

16 Q. Fifteen feet, I believe is what the --

17 A. I think that's correct.

18 Q. If you want to confirm that, PNM Exhibit 15, the
19 last couple of pages --

20 A. Yes.

21 Q. -- of that exhibit show where that data is from.

22 A. Yeah, that sample was obtained at a depth of 15
23 feet.

24 Q. We've talked about the 412,000 and the 102,000
25 coming from the Philip's report; that's PID, correct?

1 A. No, sir, that's a lab sample that was submitted
2 for BTEX analyses. These are all --

3 Q. A lab sample.

4 A. -- results of laboratory samples. I did not plot
5 all of the PID readings. They were extensive and they were
6 already -- you know, the vast majority of them were already
7 shown on the Philip diagram.

8 Q. And the 59,600 is --

9 A. That comes from boring TPW-2, and it is shown on
10 Exhibit 48 or 48-A.

11 Q. Okay. TPW-2 wasn't part of -- wasn't under PNM's
12 impoundment, correct?

13 A. No, and that's off to the side.

14 Q. Okay, I see what you mean.

15 And then the 87,300 there?

16 A. That was from -- That's from MW-12 at a depth of
17 23 1/2 feet, as shown on Exhibit 48 or 48-A.

18 Q. Okay, and your testimony is that this shows, I
19 believe, high levels of hydrocarbon reflected on page 4 of
20 your testimony, correct?

21 A. This is one of the things that I'm showing.
22 We've talked about results for TPH also, but I have shown
23 the BTEX results on Exhibit 41.

24 Q. And you go on to state at line 15 that what you
25 characterize as high levels of hydrocarbon contamination

1 extended "continuously throughout the vertical column of
2 the soil beneath the base of each impoundment..." Is that
3 your testimony?

4 A. Yes, sir.

5 Q. Okay. Now, with regard to that 36,960 that's
6 depicted on Exhibit 41, are you calling that a high level
7 of contamination? Is that your description?

8 A. It certainly is an elevated level. It's below
9 the OCD guidelines for BTEX.

10 Q. It's below the closure guidelines, correct, for
11 BTEX?

12 A. As applied to sites that don't have groundwater
13 contamination, yes.

14 Q. Right, okay. Now, with regard to the depiction
15 that we have in Exhibit 41, if we compare the relative
16 concentrations of BTEX, again, you would acknowledge that
17 the concentrations that are shown below the Burlington
18 impoundment, the highest one is certainly higher than the
19 highest level of concentration shown in the PNM
20 impoundment; would you agree?

21 A. Yes.

22 Q. I notice that you have readings for the PNM
23 impoundment that are within the soils above the soil-water
24 interface, yet you don't have any similar analytical
25 results underneath the Burlington Resources impoundment.

1 Why is that?

2 A. None were obtained during the excavation. The
3 Burlington impoundment was excavated all the way down to
4 the water table based on visual and PID readings, is my
5 understanding, that it was continuously contaminated all
6 the way to the water table.

7 Q. Okay. But you would expect that those
8 contamination levels in that soil column, although we don't
9 have analytical results, you would expect that they would
10 be above OCD guidelines?

11 A. Yeah, I have not formulated any opinions on that,
12 but I would expect them to be high in the same manner that
13 I have described the others, yes. I wouldn't expect them
14 to be any different than what we've seen elsewhere.

15 Q. And we've established your definition of "high"
16 can include levels that are less than the NMED closure
17 guidelines, correct?

18 A. I didn't formulate a numerical cutoff when I used
19 that language. I was just looking at the results under the
20 impoundments relative to what we would expect for
21 uncontaminated soils or for what we saw in other soil
22 samples, for example, around the area, such as in the
23 drainage and so forth. These are substantially elevated
24 compared to other parts, other soil samples.

25 Clearly, the 36,000 or 37,000, if we can, is

1 below the OCD guidelines, but does show that it contains,
2 you know, an elevated level of BTEX. But I'm looking at
3 the total data sets, in essence, when I made that
4 conclusion.

5 Q. So when we're talking about the PNM area, you've
6 used the description -- actually, you've used it for both,
7 you say there's continuous high contamination in the soil
8 column. And when we look at the analyticals we find that,
9 in fact, there isn't continuous high contamination; isn't
10 that correct, based on the soil boring at 15 feet, SB-2?

11 A. No, I disagree.

12 Q. Well, where are the high levels of contamination
13 at 15 feet?

14 A. The BTEX was one indication. If you look at the
15 soil boring for SB-2, for example, as I think this was
16 discussed before, all of the PID readings from 14 feet down
17 to the groundwater level were all, with one exception,
18 above 1000. That was another piece of the data of data
19 that I used, the TPH sample.

20 And I think it's been discussed previously, but
21 releases from a source that move through soil are not going
22 to be uniform, you would not expect it to be a uniform
23 column. It's going to be variable as a result of
24 variations in the soil structure and the presence of
25 fractures or more permeable zones such as the sands. So

1 the contamination will vary highly. And the borings, it's
2 a hit or miss as to whether you hit the highest level or
3 not.

4 So just because you have one level like the
5 37,000 does not mean that there's not continuous
6 contamination. And I think, as I've tried to summarize
7 with the other data, there certainly is other information
8 that indicates the contaminant levels were high all the way
9 down.

10 Q. Well, with regard to the PID readings, and we can
11 see -- You would agree that the analytical results are much
12 more dependable, qualitative, than are PID readings,
13 correct?

14 A. The analytical results, certainly for BTEX, are
15 more precise, it's a more precise measurement. The BTEX,
16 obviously, does not measure the gasoline-range organics of
17 the total petroleum hydrocarbon. Hydrocarbons are made up
18 of hundreds of compounds. The condensate from the Dakota,
19 I think we've been talking about, is a very light material,
20 it's got a very high gravity, it's a lot of C-5 through
21 C-10. When we talk about hydrocarbons, it includes those
22 materials.

23 And the PID would reflect that type of a more
24 volatile, lower molecular weight hydrocarbon material also.

25 Q. Let me ask, with regard to your depiction in

1 Exhibit 41, and we might as well talk about the depiction
2 in 40 as well, and I think 39, and -- Well, let's just
3 stick with those.

4 Those -- The way you have the soil-water face
5 isn't meant to be representative of what the actual levels
6 of groundwater are, are they, the elevations?

7 A. No, these drawings are not to scale either
8 vertically or horizontally. These are simply schematics to
9 present the data in a simplified fashion.

10 Q. And it's very simplified, correct?

11 A. That is correct.

12 Q. And if we -- It's probably not intentional, but
13 if we were trying to rely on these, in some respects it
14 would be a bit misleading, wouldn't you agree, with regard
15 to the configuration of the soil in relation to the
16 groundwater underneath the various wells that you've talked
17 about?

18 A. The water table should -- You know, if I had been
19 trying to more precisely do it, the water table should show
20 a drop as it moves from the south end of the pad, from the
21 Burlington impoundment, to the north end.

22 In the vicinity between MW-4 and MW-8, for
23 example, it should show a drop.

24 Q. It should show a drop from Burlington's
25 impoundment to the area of PNM's impoundment, correct?

1 A. I think based on the cross-section shown in
2 Exhibit 60, is it? PNM Exhibit 60? It drops between MW-4
3 and -- No, it's not 60. I can't remember, it's 61 or 62.

4 Q. Are you talking about PNM's Exhibit 61 --

5 A. Yes. It drops --

6 Q. -- or 62?

7 A. Yes. It drops somewhere north of MW-4, in the
8 vicinity of MW-8 is where it starts to drop.

9 Q. Okay. And if we wanted to see how that water
10 table dropped at this particular -- at the wellpad there, a
11 better reference point to illustrate that would be PNM 62,
12 as opposed to the Exhibits 39, 40 and 41 of your --

13 A. That's correct.

14 Q. That you referred to?

15 A. That's correct.

16 Q. It's also a little misleading if we just look at
17 this cross-section, because these wells that you've
18 indicated are not all in a straight line, correct? They
19 dot the different places across the wellpad?

20 A. They are not perfectly in a straight line, but I
21 don't think that -- I mean, that would apply equally to
22 both the drawings that I've prepared and to PNM Exhibit 62.

23 Q. Right.

24 A. It's typical in the geology to take the boring
25 logs close to the alignment and pull them in. Otherwise,

1 you'd have no more than two logs per cross-section, if you
2 tried to make it in a perfectly straight line.

3 Q. As I recall your testimony, you were called out
4 to this site back in May of 1998. That's the first time
5 you had any involvement at the Hampton 4M; is that correct?

6 A. I was first contacted about this site in May of
7 1998.

8 Q. And what was that contact? What was the nature
9 of that contact?

10 A. Mr. Bemis contacted me just to talk to me a bit
11 about the nature of the project.

12 Q. Okay. Were you contacted in relation to what was
13 going to be the hearing, the original hearing that we had?
14 Was it in that context you were contacted or another
15 context?

16 A. I was -- I can't recall the exact specifics, but
17 Mr. Bemis just called me to say he had a project he was
18 interested in getting my advice on, and he wanted me at
19 some point to come down and meet with their staff and
20 review the information.

21 Q. What was your understanding of what it is you
22 were going to do for Burlington?

23 A. I was asked to review the information, and I
24 believe Mr. Bemis was requesting an independent evaluation
25 of the data to determine whether or not this was all a

1 Burlington problem, all a PNM problem. He had -- His own
2 employees had given him their opinions, and he wanted
3 somebody to come in and look at it separately,
4 independently, and give him advice.

5 They also were asking for my suggestions on how
6 to investigate it and remediate it, counsel them as they
7 made their -- identified their options for it.

8 Q. Okay. And when was the first time that you came
9 out to meet with Burlington representatives and talk about
10 this site?

11 A. September of 1998, I believe. It's in my report.

12 Q. What happened in that period of time between May
13 and September?

14 A. Late -- Sometime in that summer, and I don't
15 recall exactly when, I received some documents to review.
16 But the May discussion was just a preliminary discussion
17 with Mr. Bemis, so it wasn't until September that we
18 actually coordinated a meeting where I came down and --

19 Q. Now --

20 A. -- met the staff and went to the site.

21 Q. -- as I understand Burlington's position in this
22 case, and I want to make it clear on the record, Burlington
23 does acknowledge that it has contributed to groundwater
24 contamination in the free-phase of this site, correct?

25 A. I have advised them of that, yes.

1 Q. Okay. And Burlington likewise acknowledges that
2 it has contaminated soils out there as a result of its
3 operations, correct?

4 A. Yes.

5 Q. And Burlington also acknowledges that it has at
6 least contributed to the dissolved-phase contamination in
7 the groundwater at this site; is that correct?

8 A. Yes.

9 Q. Are you aware that when the situation involving
10 groundwater contamination was identified at this site, that
11 Burlington originally took the position that it was not
12 responsible for the free-phase groundwater at this site?

13 A. They may have. That may be in some of the
14 documents. I'm not aware of what their positions they may
15 have taken and discussions. I'd only know as much as was
16 in the documents. I believe that's what we just talked
17 about, that's why Mr. Bemis asked me to come down and meet
18 with him and review the data.

19 Q. Okay, but I want to find out, is it your
20 understanding that originally Burlington had taken the
21 position that it was not responsible for the free-phase
22 underlying this site, based on your review of those
23 documents?

24 A. I didn't form opinions about what Burlington's
25 positions were several years ago or not. That wasn't

1 within the scope of my purview. I formed opinions about
2 whether or not Burlington was or was not a source and
3 advised them as such. Certainly there were people within
4 Burlington who had opinions that it wasn't theirs, but I
5 advised them otherwise, that they did indeed contribute.

6 Q. When was the point at which you advised them
7 otherwise, that they did indeed contribute?

8 A. Basically in September, as I recall.

9 Q. But that was the first time --

10 A. It's the first time --

11 Q. -- you advised them?

12 A. -- I met with them, so yes.

13 Q. When you had the meeting with them, were the
14 Burlington representatives saying, We don't believe we
15 caused free-phase contamination at this site?

16 A. I believe it was put to, Let's sit down and
17 discuss it, and I was being brought in, as I stated, as an
18 independent party to review it. There was not a -- I mean,
19 I basically presented what I felt was the condition, so I
20 didn't go through a lot of discussions as to what their
21 positions were or were not.

22 Q. In your testimony you talk a bit about the way
23 that soil can go through the -- the way contamination can
24 go through the soil column down towards groundwater,
25 correct?

1 A. Yes.

2 Q. And one of the variables that you talk about is
3 that depending on the pathways, the permeability pathways
4 and that sort of thing, it can have an influence as to
5 whether that product goes straight down or goes off in
6 different directions, correct?

7 A. That's correct.

8 Q. And you don't have any information on the
9 permeability pathways at the Hampton 4M site, correct?

10 A. I don't have any quantitative information. I
11 believe it's been discussed by various parties, and I
12 observed in the field that there were layers of varying
13 hardness when the excavations were conducted. We know that
14 part of a pad consisted of fill material, down to a depth,
15 say, I believe around 12 feet, for example, at the PNM
16 former pit location. There was a hard sandstone layer,
17 we've talked about other sandstone seams.

18 We do have -- Basically, it's not a uniform
19 lithology. There are some differences in that, that would
20 represent differences in permeability, and those hard
21 sandstones do have, by their nature, some fractures and so
22 forth in them.

23 Q. And you can't state, based on what you saw, as to
24 what impact that could have in terms of the migration, with
25 any certainty, correct?

1 A. At no site could you go out and actually map the
2 actual fractures and so forth, especially when you're
3 excavating with a bulldozer. You just look at what it is
4 and form general conceptual models as to how the
5 contaminants would migrate downwards.

6 Q. In connection with your work for Burlington, you
7 haven't calculated how much free product made it to the
8 groundwater from PNM's former pit; is that correct?

9 A. No.

10 Q. And with regard to the manner in which Burlington
11 conducted its remediation out here in terms of the mass
12 excavation, you would agree that the nature of that
13 remediation makes it more difficult to create reference
14 points at the site so you can pinpoint a source, correct?

15 A. I'm sorry, I'm not sure I understand your
16 question.

17 Q. Well, Burlington utilized a fairly invasive
18 technique in terms of the excavation that it used at this
19 site to perform remediation, correct?

20 A. It's the only method that could be used, but yes.

21 Q. And you would agree that it was fairly invasive,
22 correct?

23 A. I'm not sure I know what you mean by "invasive".
24 I mean, it required movement of large amounts of soil.

25 Q. Lots of soil --

1 A. Yes.

2 Q. -- at the site?

3 A. Correct.

4 Q. Somewhat in excess of 6000 cubic yards of soil,
5 correct?

6 A. That's the number that's been reported, yes.

7 Q. And you would agree that under those
8 circumstances it would be much more difficult to create
9 reference points for various readings and such so that you
10 could pinpoint a source at this site?

11 A. I guess I'm having trouble. The goal was not to
12 pinpoint a source as part of the excavation, the goal was
13 to remove the contaminated soils that were a source of the
14 groundwater contamination.

15 If the goal had been to investigate and map, if
16 you will, where the high-concentration material was, it
17 could have been done. The fact that it was being excavated
18 does not prevent that. You know, detailed surveys could
19 have been set up and so forth, and samples could have been
20 mapped in three dimensions and taken. It would have
21 greatly slowed down the excavation process, but it could
22 have been done.

23 That wasn't the goal. And when we discussed it,
24 we discussed it in the terms of, Let's just get this stuff
25 out of here.

1 Q. But the data that would be generated from a
2 process like you've just described in terms of referencing
3 data points and surveying things in, would provide you a
4 more accurate picture of what was happening in the vadose
5 zone; wouldn't you agree?

6 A. It could, yes.

7 Q. A more accurate picture than we have as a result
8 of Burlington's activities out there and investigation out
9 there, correct?

10 A. It could, I'm not going to say that it absolutely
11 would, because it's a function of the number of samples
12 that were taken. If you took hundreds of samples to map
13 it, again, I think we've talked about a boring can go down
14 and you'd have variations in contaminants a few feet apart,
15 you'd have to take a tremendous number of samples in order
16 to map it in the level of detail I think you're looking
17 for, and that's inconsistent -- I mean, that's a different
18 goal, a different objective than just going out and
19 removing the contaminated soil.

20 Q. There's no doubt that in the course of
21 Burlington's operations out there, that clean dirt was
22 mixed with contaminated dirt; is that correct?

23 A. That is correct.

24 Q. And that greatly increased the amount of soil
25 that had to be treated; isn't that correct?

1 A. I can't say whether it "greatly". It certainly
2 did increase the amount. I don't know to what magnitude it
3 did. I know there was an attempt at the very beginning to
4 look at soil blending as a possible means of remediation,
5 but -- when I was out there and observed it, and my
6 understanding is that generally they tried to segregate the
7 clean soils as best as they could.

8 But using a bulldozer, clearly, as we just talked
9 about, you can have clean soils next to dirty soils, and if
10 you're using a bulldozer you're going to gather up both
11 together. So yes, it would result in additional soil.

12 Q. Let me jump back to Exhibit 41 for a moment, and
13 I guess I'd like to get a little -- I have what I believe
14 is a good idea of what you've described as the PNM
15 impoundment. That was the former dehydration pit; is that
16 correct?

17 A. Yes.

18 Q. And then you've identified a "BR impoundment".
19 Can you tell us exactly what that is?

20 A. Well, for purposes of this drawing, it was that
21 excavation that had been done in the southeast corner that
22 is shown on the various air photos that have been
23 referenced throughout this hearing.

24 Q. And that was in the general of the former tank
25 battery at this site?

1 A. Correct, and I think there's a pit that was
2 located there also.

3 Q. And we've also identified a production pit that
4 was at this site. Do you recall that testimony earlier
5 today?

6 A. Yes.

7 Q. It was a pit where the separators, Burlington
8 separators, would discharge to?

9 A. Yes, that's -- You're talking about the pit that
10 the separators discharged to? I want to make sure --

11 Q. Yes.

12 A. I'd like to refer to one of the exhibits to make
13 sure we're talking about the same thing.

14 Q. Okay, that's --

15 A. Can you help me? Is it 6? No.

16 Q. PNM 6 may --

17 A. I think we're looking at -- There were a number
18 of different pits, and I want to make sure we're speaking
19 about the same one before we go further.

20 Q. Four or 5. In fact, 5 may show it a little bit
21 better.

22 A. Okay. So you're talking about the 2000-gallon
23 produced liquid tank, the stock tank --

24 Q. Yeah.

25 A. Which I think we've heard testimony about. It

1 was an earthen pit at one point and then later was -- a
2 fiberglass tank was put in that location --

3 Q. Correct.

4 A. -- on top?

5 Q. Correct.

6 A. Okay, yes.

7 Q. Where does that appear on any of your exhibits?

8 A. It does not.

9 Q. Do you have any data about the soil column
10 directly underlying that former unlined pit location?

11 A. Yes, there were -- I think we've heard testimony
12 about -- They were referred to as borings, but I think you,
13 through the examination determined they were trenches,
14 backhoe trenches. There were nine to ten referenced in the
15 report. Find the exhibit number for you.

16 Q. That's what we discussed with Mr. Hasely; isn't
17 that correct?

18 A. That's correct. And if you look at that, it's
19 Exhibit 31, PNM 31. And it's going to be difficult --
20 Let's see, it's got a cover page and then five pages of
21 text, then there's a figure, couple of figures, and then
22 there's a Table 1.

23 Q. All right.

24 A. There is samples obtained. If you note, it
25 says -- You'll see a series of locations the MWS, the TPWs,

1 and right below that it says "north of lined separator
2 pit" --

3 Q. Right.

4 A. -- and the date is 4-30-97, and it's APP-6.5-01.
5 It shows nondetect for TPH, nondetect for BTEX. This is a
6 soil sample obtained at 6.5 feet immediately north of the
7 pit that we were just speaking of.

8 Q. And that was a PID reading, correct?

9 A. No, sir, that is a laboratory analysis. If you
10 go back in this report, in Appendix A -- and you'll have to
11 bear with me again, because I don't have it tagged or any
12 other way to find it quickly, but you will find that there
13 is a laboratory data analysis for that BTEX and TPH in this
14 report.

15 I have found it, and I don't know how to tell you
16 to get to it, but it's got a fax page number of 006 in the
17 upper right and it's from On Site Technologies, and there's
18 the total petroleum hydrocarbons. If you want, I can try
19 to count pages for you.

20 Q. No, that's all right.

21 A. You'll see a series of them that are listed with
22 TWP, and then TWP-07, TWP-07, and there's one with just the
23 total volatile aromatics on it for the Hampton 4M. I don't
24 believe this one has a -- It just says sample ID 04383, and
25 right behind that is the TPH, and right behind that is the

1 BTEX analysis. And you'll note that the "APP" has been
2 handwritten in as "active production pit" at 6.5 feet.

3 Q. But it's clear from that report, is it not, that
4 that sample was taken not from the former production pit
5 location but an area to the north of that pit?

6 A. Actually, it's not clear from this report. This
7 report, if you go back to Table 1 -- I'm sorry to jump
8 around so much -- it says "Refer to Figure 1: Hampton 4M
9 Site Diagram" for the location of this sample. I did not
10 find that Figure 1 in the report, so the copy of the report
11 starts with Figure 2, I believe.

12 Q. Okay. Well, let's look at that report, let's
13 look at Figure 2.

14 A. Okay. It shows a star there that apparently
15 appears to be that sample, but I could not back that up
16 entirely.

17 Q. But if that's accurate, then in fact that sample
18 was taken to the north of the former production pit,
19 correct?

20 A. It would be immediately to the north of the --
21 what is at the time a lined separator pit. I can't tell
22 exactly how it would coincide with the former earthen pit.
23 It's very close, but I can't tell exactly from this
24 diagram.

25 Q. So it's clear that that wasn't taken directly in

1 the center of the pit; is that correct? That sample was
2 not?

3 A. It's not taken directly in the center of the
4 lined separator pit that existed at the time this sample
5 was taken. I think I just testified, I can't tell exactly
6 how that coincides with the former earthen pit that was in
7 this location.

8 Q. So we don't know whether that reading is
9 representative of the former earthen pit; is that correct?

10 A. I just know it's right in the general area. I
11 can't say exactly how it relates to the former earthen pit.

12 Q. Would you acknowledge that that former earthen
13 pit is also a likely source of free-product contamination
14 at this site?

15 A. No, I would not.

16 Q. And why is that?

17 A. It certainly was a possible source, but given the
18 results for MW-3, for example, which have never shown any
19 contamination, and the groundwater gradient that has been
20 seen, it does not appear that that area, that western
21 portion in the production facilities, is a source of free-
22 product contamination.

23 Q. Well, with regard to the precise location of the
24 former unlined pit, you don't know where that is, do you?

25 A. It's in the same location. What I didn't know

1 was the exact configuration, the exact dimensions of it,
2 how it relates to that sample. But my understanding is, it
3 was in the same location that the lined separator pit is.
4 I can't say that these boundaries are exactly coincident.

5 Q. With regard to Monitoring Well 3, we've talked a
6 bit about this already, but the underlying lithography can
7 have an impact as to the groundwater flow; is that correct?

8 A. Certainly variations in hydraulic conductivity
9 will affect the directions and the migration of groundwater
10 and hydrocarbons.

11 Q. And we know from this site that sometimes it
12 takes a while for free product to reach one of the
13 monitoring wells, correct? It took quite a while for the
14 free product to arrive at MW-4, right?

15 A. For the free product to show up at MW-4? I don't
16 know about your use of the term "arrive" but for it to show
17 up --

18 Q. For it to show up.

19 A. -- that's correct.

20 Q. Okay.

21 A. Yes.

22 Q. And likewise, free product didn't immediately
23 appear in MW-8, correct?

24 A. No, I don't think that's correct.

25 Q. MW-4 had free product in it from the inception --

1 A. You were speaking about MW-8?

2 Q. I'm sorry, yes, MW-8.

3 A. Well, the data on 48-A, for example, shows that
4 there was at least a sheen the first time it was looked at,
5 and then it showed free product immediately the next time
6 it was sampled.

7 Q. It took a little while, a few weeks, anyway, for
8 that to occur?

9 A. For the sheen to turn into a measurable
10 thickness, that's correct. And then it dropped back to a
11 much lower thickness after time.

12 Q. And MW-4 took several months before the
13 measurable free product showed up; isn't that correct?

14 A. It took actually not several months, it took
15 almost two years before anything was detected. I don't
16 know that that necessarily represents an equilibration-type
17 phenomenon or if there's some other mechanism such as
18 water-table fluctuations or something that would cause the
19 occurrence of free product at that location.

20 Q. When was MW-3 installed?

21 A. These wells were installed in 1997. I'd have to
22 check. Again, Exhibit 31 I think has the boring logs. And
23 January of 1997 is the date started and completed, January
24 31st, 1997, for MW-3.

25 Q. Okay. And MW-3 was one of the wells that was

1 destroyed by Burlington when it was doing its operations
2 out there in November of 1998; is that correct?

3 A. I believe that is one of the wells that was taken
4 out of -- Yes.

5 Q. So we don't know whether MW-3 would still be
6 showing no free product as of the present time; is that
7 correct?

8 A. That is correct, but I believe it is highly
9 unlikely that that well would show free product. If you
10 look at the BTEX levels, that well also never showed any
11 BTEX. You know, the levels were all essentially nondetect,
12 whereas in MW-4 you did have detectable and fairly high
13 levels of BTEX right from the beginning.

14 Q. As I understand your plans out at this particular
15 site, when you originally went out there with regard to the
16 remediation and called for taking a bulldozer and
17 continuing to move in a southerly direction on the wellpad;
18 is that correct?

19 A. That was the sequence of construction that was
20 implemented, yes.

21 Q. And your original intention was that you would
22 take out the whole wellpad, if necessary, to remediate this
23 site?

24 A. I don't recall any discussion that we would take
25 out the whole wellpad. There may have been a comment to

1 the effect of, if necessary it could be done for a
2 reasonable amount of money. But the goal was never to take
3 out the whole wellpad; it was to go and remove
4 contamination where it was found.

5 Q. Do you remember giving testimony under oath in
6 the proceeding that we had before the Hearing Examiner on
7 this case back in November of 1998?

8 A. Yes, I do.

9 Q. And do you remember being cross-examined on this
10 point at that hearing?

11 A. I don't recall at this time.

12 Q. Well, let me quote or read back some of your
13 testimony which was given on November 20th, 1998, from the
14 transcript of that hearing, appearing at page 411, line 2.
15 You were asked the question:

16

17 QUESTION: And will you end up taking the well
18 pad out altogether, if that's necessary.

19

20 And your answer at line 4 on that same page:

21

22 We'll take it out and replace it as we go. We'll
23 move the clean dirt aside and excavate the dirty dirt
24 and put the clean dirt back down and rebuild the well
25 pad as we go.

1 Do you remember that testimony?

2 A. Yes, it does, it says if it's necessary, and
3 that's what we meant, that we would go out and remove
4 contamination to the extent necessary. That didn't mean
5 we'd remove the entire wellpad if it was uncontaminated.

6 Q. Okay, has it been remediated? Has that well site
7 been remediated?

8 A. Completely, no.

9 Q. Yes. So there's still contamination there?

10 A. That's correct.

11 Q. And there's still soil contamination present at
12 the site, correct?

13 A. Yes.

14 Q. And we're talking about soil contamination above
15 guidelines.

16 A. That's -- Yes, I believe that is likely.

17 Q. With regard to health and safety issues, you had
18 some -- a brief discussion in your testimony, your rebuttal
19 testimony, about health and safety issues, but I want to
20 confirm. You didn't have any responsibility for health and
21 safety at this site at all, did you?

22 A. That is correct.

23 Q. What was the cost of the remediation that
24 Burlington undertook at this site, that mass excavation?

25 A. I don't have those -- I don't have a total cost

1 for that.

2 Q. Have you been told any range of numbers as to how
3 much they've spent so far?

4 A. I may have been told a number of about \$60,000 at
5 one point, but I don't recall.

6 Q. Okay. Do you remember the range being discussed
7 of \$60,000 to \$80,000 for remediation at that site?

8 A. I believe that was the type of number we
9 discussed before we went out to do the excavation, yes, and
10 that may be the \$60,000 that I just referred to also.

11 Q. As I understand it, you originally believed that
12 you could completely dewater this site, get all the water
13 drained out?

14 A. One of the concepts was that the water occurred
15 perched in a sand lens and that if we excavated out that
16 sand lens we'd take the water out.

17 I went out to the site on my first visit and
18 spent quite a bit of time. The wellpad is located in a
19 bowl, there's a series of ridges around it, and there's
20 very small upgradient area for groundwater to -- or for
21 surface water to accumulate, infiltrate in and provide
22 recharge to the groundwater system.

23 So it appeared that this was an isolated
24 groundwater system, a perched system, potentially, or a
25 saturated lens that was confined. So one of the

1 possibilities was that if we just went down and took that
2 out, there would not be the contaminated groundwater.

3 It certainly appears that there is some ongoing
4 source of groundwater flow into this area. I still to this
5 day can't quite figure out where it comes from, because you
6 go up on that ridge and it drops out the other side, so
7 there's not a big area upstream to provide that water. But
8 there certainly is water coming out of it.

9 Q. It's clear that you were not able to dewater that
10 site, correct?

11 A. That's correct.

12 Q. And with regard to Mr. Hasely's testimony, he
13 talked about contaminated water flowing in from a seam on
14 the eastern side of the excavation. Do you recall that
15 testimony?

16 A. Yes, I do.

17 Q. And Burlington ultimately made the decision that
18 they had to cover up that area, including the contaminated
19 groundwater; do you recall that?

20 A. Yes, I do.

21 Q. Was that done at your direction?

22 A. To cover it up?

23 Q. Yes.

24 A. No. But we did have discussions, Mr. Hasely did
25 talk to me about it. I can't remember if it was during the

1 time or after the fact. Again, we talk about the fact, and
2 some of the photos show, there's a very steep ridge. The
3 pad is basically built out from that ridge, and they had
4 excavated up to the edge of that ridge and they couldn't
5 excavate any further. You'd be going up quite a distance
6 to take material out, native material that's vegetated,
7 outside of the edge of the pad. So they made a decision on
8 that basis that they couldn't remove any further back into
9 the hillside.

10 Q. I want to get back to SB-2 a little bit. If we
11 have a scenario where groundwater had not been encountered
12 at this site and PNM had gone in, in the middle of its pit
13 and had drilled down to the level of 15 feet, as you did
14 with SB-2, and taken an analytical reading and gotten back
15 the 37- -- 36-, 37-parts-per-million reading with regard to
16 benzene, in terms of the OCD guidelines PNM could have
17 closed the pit as to benzene levels on that -- I'm sorry,
18 BTEX levels on that basis; isn't that correct?

19 A. Let me make sure I understand your hypothetical.
20 So we're setting aside groundwater altogether?

21 Q. Right.

22 A. Not only is there no groundwater contamination,
23 there's no groundwater at all.

24 Q. Well, let's just say there's no groundwater
25 contamination.

1 A. And if they had gotten this result here. Are we
2 also setting aside the PID readings that we have?

3 Q. Well --

4 A. I mean, these excavations were -- both the
5 original PNM excavation and the Burlington excavation were
6 guided by PID readings, which is allowed in the OCD regs.
7 I think it would be difficult to -- you'd have to ask Mr.
8 Olson -- If you have PID readings that say you're above
9 standards and then you have a BTEX sample that's below, I
10 guess Mr. Olson would have to make that call as to whether
11 or not the fact that you had those substantially elevated
12 PID readings below this BTEX would be something of concern.

13 But -- That's what I'm trying to understand from
14 your hypothetical. Are you setting aside the PID readings
15 also?

16 Q. Well, I'm just talking about the -- Well, yes, I
17 am.

18 A. Okay.

19 Q. I'm not -- I am setting aside the PID readings.

20 A. Well, if you set aside those, I guess then I'd
21 still believe you have to take a total petroleum
22 hydrocarbon sample, and that's in PNM's pit-closure plan,
23 to do a TPH sample.

24 Q. Right.

25 A. And so the 194 for the TPH would still be above

1 the standards for the closure.

2 Q. But we've also talked about the DRO, correct?

3 A. I've heard reference to that. I don't see
4 anything in the OCD guidelines about DRO, I don't see
5 anything in the PNM plan about using DRO, and I don't hear
6 any testimony at this specific site that DRO was going to
7 be used. But that may be something you have to ask Mr.
8 Olson.

9 I can only look at what's in the written plans,
10 and the written plans talk about TPH, which is not just
11 DRO.

12 And in fact, if you look, while we're at it, on
13 SB-2, the lab analyses, the highest concentrations were in
14 the GRO range, the 149. And we've talked about the Dakota
15 condensate, the Dakota liquid or oil, as we've talked
16 about. That is a light oil, C-5 through C-10, which
17 matches up with this gasoline range. And when we're
18 talking about seeps of hydrocarbon and free product, this
19 is the type of material we're trying to get at.

20 Q. Well, you can't say that the contamination that
21 you're seeing in the soil came from the Mesaverde versus
22 the Dakota, can you? Based on that reading alone?

23 A. All I'm saying to you -- No, I cannot
24 characterize it exactly. What I'm saying to you is, when
25 we have a well that produces a light-range hydrocarbon and

1 we have hydrocarbon contamination, the GRO, in my opinion,
2 is just as important for consideration.

3 And again, as I stated, the plan did not say look
4 at DRO or whatever; it says look at TPH, the total
5 petroleum hydrocarbon analysis.

6 Q. You've gone on and discussed reasons why maybe
7 now things -- I guess why this couldn't have been closed
8 based on the readings at SB-2. But again, we've talked
9 about your testimony previously at the hearing that was
10 held in November, and you were asked the question on page
11 417 of your sworn testimony, beginning at line 6:

12
13 QUESTION: And there is a -- Now, can you tell us
14 where SB-2 was made?

15 ANSWER: SB-2 was obtained at a depth of 15 to 16
16 feet in a boring drilled through the location of the
17 former PNM dehydrator pit.

18
19 Question at line 11:

20
21 Okay. Are you familiar with the pit-closure
22 standards that are applicable?

23 ANSWER: I have discussed those with Mr. Hasely,
24 yes.

25 QUESTION: Okay. So isn't it true that had this

1 test just been done with regard to this particular pit
2 when it was a new pit and we came back with total BTEX
3 readings of 36,960, as indicated here, that that would
4 have qualified that pit for closure?

5 ANSWER: That result in and of itself would have
6 been less than the 50 ppm standard, that's correct,
7 sir.

8

9 Do you remember that testimony?

10 A. Yes, I do.

11 Q. So you're varying that testimony a bit today?

12 A. No, I'm not. I think I responded to you at that
13 point that that value was less than the 50 ppm standard. I
14 didn't say that it would be closed, because I think as the
15 OCD guidelines read, all bets are off when you have
16 groundwater contamination. And I think we've also talked
17 about the TPH.

18 Q. Okay, and we'll have to wait until we hear from
19 Mr. Olson on the TPH issue for any type of definitive
20 answer on that, I suspect; is that correct?

21 A. I guess. If there's been a discussion between
22 Mr. Olson and another party about using DRO at this
23 location as an alternate for TPH, I wouldn't be aware.

24 Q. Okay. I want to talk a little bit about what the
25 data are showing with regard to groundwater following

1 Burlington's mass excavation at this site. Have you had a
2 chance to review that data?

3 A. I received a copy of Exhibit 48-A yesterday
4 morning, so yes, I've had a chance to look at it.

5 Q. Okay. And MW-12 is in the area of PNM's former
6 dehydration pit, correct?

7 A. Yes, it is.

8 Q. And we're seeing increases in the concentration
9 since that well was installed back in May of 1999, correct?

10 A. Yes, we have seen increases in that, in the total
11 BTEX in that well. I would note that the majority of that
12 appears most recently to be due to one result, the toluene
13 result. The benzene seems to be fairly constant, in July
14 and August to be -- ethylbenzene seems to be fairly
15 constant, and the xylenes appear to be relatively constant
16 in July and August. But the toluene went up dramatically
17 between the July and August samples.

18 Q. And likewise, we're now seeing a sheen in MW-5,
19 according to the reports, correct?

20 A. That is my understanding. Obviously, I've only
21 seen this as a report, I haven't personally seen the sheen.
22 It was reported, I guess, based on observations made just -
23 - what? About a week ago, I guess.

24 Q. And we've also noted sheen in MW-12, correct?

25 A. That is correct.

1 Q. With regard to your direct testimony at page 8,
2 line 2, you talked a bit about --

3 A. Just a moment, I'm sorry. It's difficult to flip
4 and keep up with you.

5 Q. Follow --

6 A. Yeah, a lot of paper, for all of us. Page 8,
7 line 2? Okay.

8 Q. You state here:

9
10 Furthermore, groundwater monitoring results
11 obtained from the well MW-7, located in the wash
12 downgradient of the Hampton 4M well site have
13 displayed significant reductions in contaminant
14 concentrations subsequent to recent remediation
15 activities conducted by Burlington.

16
17 Do you see that testimony?

18 A. Yes, I do.

19 Q. And that was a discussion about -- in the context
20 of whether or not Burlington's recent excavations have
21 resulted in adverse groundwater impacts?

22 A. That was in response to -- yes, to claims that we
23 understood were going to be made by your witnesses about
24 increases and just broad statements about increases in
25 wells.

1 Q. Now, MW-7 at the time it was tested and the test
2 result that you're referring to, was almost dry; isn't that
3 correct?

4 A. I don't have -- I did not have any -- There was
5 no information presented to me to that effect. I suppose I
6 could take the groundwater elevation and the total depth of
7 the well and calculate that, but I have not done that.
8 That's the first I've heard of it.

9 Q. And with regard to the readings that were taken
10 in MW-7, really, the only downward trend was for BTEX,
11 correct?

12 A. No, I believe if you'll look at Exhibit 48-A,
13 you'll see the benzene drops dramatically, the toluene
14 drops dramatically, the ethylbenzene and the xylene, and
15 then obviously because all four of those drop, you know,
16 substantially, then the total BTEX drops substantially. I
17 mean, we're talking about an order-of-magnitude decrease in
18 these constituents at a minimum.

19 Q. But with regard to the wells on the wellpad --
20 Well, I shouldn't say wells on the wellpad, but let me ask,
21 with regard to these readings that we're getting in MW-5
22 showing an increase in the appearance of sheen, that would
23 suggest that there has been, in fact, some adverse impact as
24 a result of Burlington's mass-excavation activities?

25 A. Well, first off, I don't agree that MW-5 shows an

1 increase.

2 Q. Why is that?

3 A. Well, let's take a look at the data, if you will.
4 If you look at -- And I can streamline this by doing total
5 BTEX if you'd like --

6 Q. Okay.

7 A. -- or we can talk about individual constituents.
8 But if you'll look at the total BTEX on Exhibit 48-A, you
9 see numbers prior to the excavation of approximately
10 25,000, 23,000 up to 28,000 -- I see a 22,000 immediately
11 before the excavation. And after the excavation I see
12 numbers on the order of 23,000 to 26,000. Those numbers
13 are essentially the same. I don't believe there's any
14 difference in those numbers, particularly given the
15 variations associated with laboratory analyses --

16 Q. We do --

17 A. -- sample-collection and other processes.

18 Q. We do have one indicator, though, the appearance
19 of sheen, which suggests that --

20 A. The appearance of sheen that was noted in August
21 of 1999, just most recently, that's correct.

22 Q. Right, which suggests that conditions are getting
23 worse at that site?

24 A. Certainly that's a possibility. I obviously have
25 not seen that sheen, and it hasn't been confirmed. I did

1 find it interesting to note that when the sheen showed up,
2 the BTEX level dropped from the July to the August sample.

3 So, you know, that may be reflecting non-BTEX-
4 related hydrocarbons in this case, showing up as a sheen.
5 But until we get some additional data or see the sheen
6 appear another time, I can't make a lot of judgment about
7 it.

8 Q. Looking at -- I mean, you've talked a little bit
9 about some falling or at least static results. When you
10 look at MW-4 and the history of that site on Exhibit 48-A,
11 you can see that back in May of 1997 we had readings of
12 total BTEX of 3486. Do you see that?

13 A. Yes, sir.

14 Q. And then it dropped down later on to January 12,
15 1998, we have 1363. It dropped even further in April of
16 1998 to 1142. It shot back up a bit to 1694 on 7-1-98.
17 And then just a few months later, in October of 1995, we
18 had two-thirds of a foot of sheen -- I mean, two-thirds of
19 a foot of free product there, correct?

20 A. That's correct.

21 Q. So even in the face of fluctuating BTEX readings,
22 it's certainly not dispositive as to whether or not you're
23 going to get free product showing up in the well?

24 A. I would agree entirely. We've heard testimony
25 about BTEX or benzene-to-BTEX ratios as a precursor of free

1 product, and I think there's absolutely no basis.

2 In free product, just -- I know that's not a good
3 term. It's the continuous phase of oil that flows as a
4 liquid on top of the water table or on top of the capillary
5 fringe that will accumulate in wells. That's why they call
6 it free, the free product will actually accumulate in the
7 well. And it's a bad term, I guess, in terms of oil
8 history practices, but it is an environmental term.

9 Basically, that material can easily be the C-5
10 through C-10 hydrocarbon, for example, and have absolutely
11 no relationship to the BTEX.

12 Q. Let's talk a little bit about your rebuttal
13 testimony. You talk a bit --

14 A. Can I ask --

15 Q. Sure.

16 A. I think other witnesses have had problems. Where
17 exactly is that in the notebook? There is no G, I think,
18 which was what was referred to.

19 MR. CARR: It is a tab.

20 THE WITNESS: There's a tab?

21 MR. ALVIDREZ: Right.

22 MR. OWEN: Mr. Rosasco, does Tab H appear in that
23 notebook?

24 THE WITNESS: No, it does not. That may be the
25 problem that other witnesses have had also.

1 MR. OWEN: May it please the Commission, I'm
2 handing Mr. Rosasco what is his prepared rebuttal testimony
3 only.

4 THE WITNESS: Okay, I have a copy of it now, Mr.
5 Alvidrez.

6 MR. ALVIDREZ: That will help, I think.

7 Q. (By Mr. Alvidrez) You talk on page 3, line 12,
8 about hydrocarbons, "(either free phase or dissolved
9 phase)", and I want to find out, what is your definition of
10 free-phase hydrocarbons?

11 A. The term free-phase hydrocarbon has -- in general
12 practice, refers to the continuously saturated hydrocarbon
13 material that will accumulate on top of a capillary fringe
14 or on top of the water table and will flow into wells.

15 It has also been used to refer in the literature
16 to refer to what we talked about, residual or retained
17 hydrocarbon that has flowed down as a hydrocarbon phase and
18 is retained in the soil.

19 I tend to use the term "residual" to separate out
20 that which is free to flow, if you will, along the top of
21 the water table, from that which is just adsorbed or
22 trapped within pore spaces and does not flow under gravity
23 or other processes.

24 Q. But the free-phase would be primarily made up of
25 hydrocarbon material, as opposed to hydrocarbon mixed with

1 water, correct?

2 A. The free-phase is entirely a hydrocarbon itself.
3 Now, the zone in which it occurs can have trapped water in
4 it, but it is a zone where the majority of the pore spaces
5 are filled with hydrocarbon.

6 Q. Okay. And dissolved-phase, what is that?

7 A. That is water that contains hydrocarbon
8 constituents, not hydrocarbon itself but the individual
9 constituents of hydrocarbons dissolved in the water,
10 actually, being carried in the water.

11 Q. And they're generally relatively small amounts of
12 soluble hydrocarbons in comparison with the amount of
13 water, correct?

14 A. They are measured in the parts-per-billion range
15 to parts-per-million range. So on that basis I would say
16 they are small. Obviously from other standpoints such as
17 water-quality criteria and that, they may or may not be
18 small.

19 Q. As a general proposition, without the
20 intervention of some type of chemical or physical forces on
21 dissolved-phase, you really can't create free-phase from
22 dissolved-phase; is that correct?

23 A. Yeah, I would agree with that statement. I
24 suppose there's a certain circumstance where the dissolved-
25 phase is right at saturation, and you fluctuate up and

1 down, you can deposit enough in the soil that at some later
2 time you could generate a sheen, for example, but I think
3 it's pretty unlikely that that would occur.

4 Q. Okay. I had a question at page 4, line 15, of
5 your testimony -- or I should say page 4, line 15.

6 A. Okay.

7 Q. And what I want to concentrate on is your
8 statement as it pertains to dissolved-phase hydrocarbon.
9 If we look at that statement to read "...dissolved phase
10 hydrocarbon that have migrated downward to near the water
11 table would tend to accumulate on top of the capillary
12 fringe and...laterally." Do you see that?

13 A. "...and spread laterally." Yes, I do.

14 Q. How would the dissolved-phase stay on top of the
15 water table? Why wouldn't it just become part of the
16 water?

17 A. Well, we're talking about the capillary fringe
18 here, for example. Or not for example, but in this
19 particular sentence.

20 The capillary fringe -- and it's a difficult
21 concept to understand -- when we measure the water table,
22 that's the surface where water is at one atmosphere of
23 pressure. It's equal to the atmosphere in an unconfined
24 aquifer.

25 The capillary fringe is a zone immediately above

1 it where fluids, water in a simple case, exists at a
2 negative pressure. It's nearly saturated, and it's at a
3 negative pressure. So when hydrocarbons come down or other
4 substances come down and they hit it, they will stack up,
5 in essence, and move across that surface, at least to the
6 point that they have enough force to push through that
7 negative pressure, you accumulate enough to push down
8 through there.

9 Q. Moving on to page 6 of your testimony, at line 18
10 and 19, you were asked about Ms. Terauds' testimony where
11 she explains the fact that the largest amount of free
12 product is immediately below the location of the former PNM
13 pit, as being attributable to "unfortunate geology for
14 PNM..." Do you recall that question?

15 A. Yes.

16 Q. And you acknowledge that that certainly is a
17 possibility, correct?

18 A. That is correct.

19 Q. When we look at the cross-section as it pertains
20 to this particular wellpad side, and look at the
21 groundwater gradient levels, wouldn't you agree that that's
22 more than a possibility but is, in fact, a probability?

23 A. Well, first off, I think we've got to be careful
24 when we talk about groundwater gradient.

25 Q. Okay.

1 A. The cross-section certainly presents a slice
2 through the earth, and it does contain a gradient. But I
3 think there's an exhibit that was prepared by PNM -- Bear
4 with me, I'll try to track it down. I think it's Exhibit
5 8, which is the water elevations, which tend to show the
6 surface, not just the slice.

7 And you'll note that the groundwater gradient is
8 not due north. In fact, in various testimony here it's
9 talked about as being north-south in some cases and east-
10 west in others. I mean, this is a portrayal that shows
11 it's actually a surface that has variation in it beneath
12 the wellpad, and more generally flows in a northeasterly
13 direction.

14 And if you look where the Water Level BROG, which
15 is Burlington Resources OG -- I'm not sure what OG stood
16 for, but excavation, you'll see that actually at that
17 location the gradient is essentially, as portrayed on the
18 contours here, the groundwater elevations, is from the east
19 to the west.

20 Q. Okay. Well, that's what I'm -- I think you said
21 it flowed to the northeast. Doesn't it really flow to the
22 northwest?

23 A. If I said northeast, I apologize. I meant
24 northwest. That would be a general trend, whereas that
25 cross-section implies it's a north-south flow.

1 Q. Well, when we look at this too, I mean, there can
2 be seasonal fluctuations in the groundwater --

3 A. Certainly.

4 Q. -- flow, correct?

5 A. Certainly, I'm sorry.

6 Q. When we're looking at PNM Exhibit 8, that was the
7 groundwater flow as of July, 1998, correct?

8 A. Yes.

9 Q. But in terms of the relative water elevations,
10 would you agree that generally the elevations are lower
11 towards PNM's part of the wellpad, as compared to
12 Burlington's part of the wellpad?

13 A. There's -- If you look at the PNM Exhibit 8, it
14 looks like if you -- in the south part of the pad -- now,
15 recognizing that it's flowing from east to -- or the
16 gradient is from east to west -- roughly 6106, whereas at
17 the PNM portion it would be 6102. So there's about a four-
18 foot difference, at least based on that map.

19 Q. With regard to your testimony on page 7, lines 1
20 and 2, you talk about the free product not being observed
21 in Monitoring Well 4.

22 A. This is a continuation, it starts on the bottom
23 of page 6, this full sentence.

24 Q. Right, "This conclusion is supported by the fact
25 that with the exception of late 1998 and early 1997 [sic],

1 free product was not observed in...MW-4..."

2 A. That's correct.

3 Q. What explains the recent arrival of free product
4 in MW-4, in your opinion?

5 A. The only explanation -- and that's why I was
6 interested in getting the data for -- that was discussed
7 earlier, is the possibility that it appears that the water-
8 level elevation went up a bit in MW-4, possibly in the
9 summer of 1998.

10 And so I'd like to get that data that I think Mr.
11 Sikelianos has -- I think it was referred to in his field
12 notes -- that was used to prepare Exhibit -- and I know
13 there's questions about the numbers, but this one is marked
14 72 -- because Exhibit 48-A did not have it.

15 But that's certainly one explanation you could --
16 If the water table comes up, if hydrocarbon had been
17 trapped in the soil, in the capillary fringe, that process
18 can release those capillary forces and allow some free
19 product to accumulate. Where it had been in residual form,
20 it can now be released, and you can have accumulations.
21 That's often the case when you see sheens.

22 Q. And MW-4 is substantially upgradient from PNM's
23 former operations, correct?

24 A. It's definitely upgradient a ways.

25 "Substantially" is a relative term. But yes, it's close to

1 the Burlington pit.

2 Q. Okay. You talk about, at page 7, beginning at
3 line 12 about your conclusions about free product below the
4 PNM pit representing "...its proximity to a major source of
5 free product release..." and you go on to state that that's
6 further supported by the effectiveness of PNM's free-
7 product system. Do you see that testimony?

8 A. Yes.

9 Q. What we had with PNM's free-product recovery
10 system was a recovery well that was placed in the center of
11 PNM's former pit, correct? And it would, in effect, sense
12 whether there was free product and then pump that free
13 product to the surface, into a tank; is that your
14 understanding of the basic setup?

15 A. Yes.

16 Q. And in some regards it was like sticking a straw
17 into a glass and pulling the liquids up, the free product,
18 if you will, through the straw and putting it in a
19 container somewhere else. Is that a fair but crude
20 analogy?

21 A. That's correct.

22 Q. And if you had a situation like that and somebody
23 was -- you were drinking out of a straw and pulling up the
24 water in the glass, and someone kept adding water to the
25 glass, you wouldn't be able to empty that glass as long as

1 they kept adding water to it, correct?

2 A. That would be correct.

3 Q. And in the same sense, if you had PNM's --

4 A. If the rate that it's being added at exceeds the
5 rate you're taking it out at, yes. Sorry to interrupt.

6 Q. And if we try to apply this analogy, crude as it
7 is, to the situation that we have with PNM's recovery well,
8 if you have product that keeps going into the area where
9 that recovery well is at a rate that's in excess of how
10 fast that recovery well can remove it, that recovery well
11 is never going to empty out the free product, or it's going
12 to take a very long time; is that correct?

13 A. As long as there's a continuing source of release
14 to the total system. That well won't necessarily --
15 There's two ways that that well -- your analogy of a straw
16 would not, as you say, recover it all.

17 The first is, if you've got a large volume around
18 it and a single well trying to pull it out, it's going to
19 take a long time before you ever see any significant
20 reduction in thickness from that single well.

21 The other example, which is, if there's a source
22 of ongoing release to the subsurface that is balancing
23 what's being taken out, then that's another way to offset
24 the benefit of the recovery that you would get.

25 Q. Okay, so another explanation as to why PNM

1 couldn't get that free-product level to go below the two-
2 foot level would be the possibility, at least, that there
3 was a replenishing supply of free product coming from
4 upgradient, correct?

5 A. It's certainly a possibility. I don't see any
6 data that supports that, but it's certainly a possibility.

7 Q. Isn't the fact that PNM couldn't have an impact
8 at its recovery well, didn't have an impact on that area to
9 less than two feet, at least some data that supports that
10 theory?

11 A. No.

12 Q. Not at all?

13 A. No.

14 Q. And why do you say that?

15 A. I think a very simple explanation is, there's
16 been calculations of a volume of free product, not done by
17 me but by PNM's experts, talking about 15,000 gallons and
18 so forth. Sucking 1000 gallons is only a small fraction of
19 the total that's there. So you won't see a big reduction
20 in that well -- in that thickness in that well, if that's
21 what you're taking out. And you don't need to add any more
22 to the system to see it.

23 So I'm saying that there's two possible
24 explanations, so you can't conclude the one or the other,
25 necessarily, based solely on the fact that the well didn't

1 take it all out. I looked at the fact that the upgradient
2 well, Number 4 and so forth, do not show additional free
3 product, the pit at Burlington didn't show additional free
4 product and so forth, I don't see an ongoing source.

5 This looks like a release that occurred at some
6 point and we've got a pool of hydrocarbon in the
7 subsurface. We're not adding to it, it's just there. It's
8 just that the recovery well is only taking out a very small
9 fraction over time.

10 Q. So you remember Ms. Terauds' testimony that she
11 presented two scenarios, either you've got a continuing
12 source or you've got a laterally extensive source --

13 A. Correct.

14 Q. -- is that correct?

15 A. That's correct.

16 Q. And you think the more likely scenario here is
17 that we have a laterally extensive source?

18 A. I believe that to be the case.

19 Q. Okay. And when we look at the laterally
20 extensive source in PNM Exhibit 57 -- And so we can get our
21 bearings here as to this laterally extensive source,
22 there's a key here that tells us that the very darkest
23 shade of red or orange is free-phase hydrocarbons. Moving
24 up in terms of lightness, we have measurable hydrocarbons
25 with greater 1000 parts per billion. And then the very

1 lightest shade of red or orange is the greater than 10
2 parts per billion, benzene. Do you understand those
3 contours as they're depicted here?

4 A. With one correction or clarification. I think
5 you said that the in-between color represented greater than
6 1000 parts per billion hydrocarbons; it's actually --

7 Q. -- benzene.

8 A. -- 1000 parts per billion benzene.

9 Q. You're right. But if we look at the contours of
10 this laterally extensive plume, would you agree that in
11 terms of the area of the free-phase hydrocarbons, that are
12 appears -- the greatest amount of that area appears
13 upgradient of PNM's former pit?

14 A. The way this -- Yes.

15 Q. Okay. I want to talk about page 8 and line 14 of
16 your testimony, and I had a question that wasn't clear to
17 me. You talk about "BTEX analysis of a sample from the
18 bottom of their excavation contained 16 milligrams per
19 kilogram...of benzene, 622...total..." et cetera. And what
20 I wanted to find out is, at what depth -- What is your
21 understanding, at what depth this sample was taken?

22 A. I believe it was taken at 12 feet.

23 Q. And is that sample taken at or below the
24 capillary fringe of the water table here?

25 A. Well above it.

1 Q. Have you made any record of the seasonal
2 groundwater fluctuations at this site, followed that at
3 all?

4 A. I'm not sure I understand your question.

5 Q. Well, have you -- We talked about groundwater
6 level fluctuations earlier, and what I wanted to find out
7 from you is whether you tracked the relative groundwater
8 fluctuations.

9 A. They are shown on PNM Exhibit 48-A.

10 Q. Okay. Likewise, I think PNM -- Okay, they're
11 shown on PNM Exhibit 48-A. Can you discern any
12 relationship between the fluctuation of the groundwater
13 levels and the groundwater concentrations of hydrocarbons?

14 A. I've reviewed the data and I haven't seen any
15 obvious trends. I haven't specifically plotted those out.
16 I think there are some exhibits here that have plotted some
17 of that out. In fact, I think we were talking about -- No,
18 that's not correct, I take that back. There may be some
19 exhibits that I've seen too, I just can't recall right now.

20 I know what it is. There are --

21 Q. Look at --

22 A. Yes, there are --

23 Q. -- PNM Exhibit --

24 A. -- exhibits that I have reviewed. I think PNM
25 Exhibit 70.

1 Q. Seventy, right.

2 A. Yes, I've some plots that will show water levels
3 in conjunction with the most recent chemistry data. This
4 is just for this summer, type information, not over time.

5 Q. Right. And what does with regard to --

6 A. I don't believe --

7 Q. -- over time?

8 A. I don't believe it shows any -- it can show
9 anything. We don't have very many data points, and if you
10 take, for example, the first sheet of PNM 70 --

11 Q. Right.

12 A. -- let's take a look at that particular plot.

13 There's a line shown, and this is about for MW-13.

14 Q. Right.

15 A. Okay? There's a line shown that shows an upward
16 increase. But I think that's somewhat misleading, if you
17 look, there was two samples obtained on -- I think it's May
18 26th of 1999. One was obtained by PNM and one was obtained
19 by Burlington. I think that Burlington, as I recall,
20 looking at 48-A, was the higher result of the two. Okay.
21 And the lower of those two was the PNM result.

22 This line that shows the upward trend is based
23 solely on using the average of those two results. If you
24 take the higher reading that you got and just draw it, the
25 line goes straight across, it shows no change.

1 And so, this represents the variability of the
2 sampling more than it shows any kind of temporal trend.

3 Q. What about with regard to MW-12 where we have
4 more data points?

5 A. Well, MW-12 shows -- for benzene, we show a line
6 that is increasing. And indeed, the data for MW-12 shows
7 benzene of 1800 to 1900 -- Well, excuse me, let me back up.
8 I think it shows benzene -- because we have an earlier
9 sample on this one -- benzene of 790 and May 5th of 1999.

10 Then there were two samples obtained, one by
11 Burlington, one by PNM, May 26th, that show 1800 and 1900.
12 And just to be fair, the higher one of these was PNM's.

13 Then in July again, there are two samples that
14 are a duplicate sample obtained, and I can't recall whether
15 Burlington obtained those or PNM obtained those. It
16 doesn't say on this diagram; I've seen the results. But a
17 duplicate was obtained and it shows a 4500 and a 4600.

18 And then we have a 4800 in August.

19 So that does show an increasing trend over that
20 very short period of time. The xylenes show a trend that
21 drops and then goes back up. The toluene shows -- To me,
22 the toluene and ethylbenzene and xylenes all just show
23 basically the variability of the data; they don't show any
24 kind of trend.

25 Q. So is it your -- Would you agree that these show

1 at least the possibility of an upward trend, with regard to
2 the sampling that has been done after the mass excavation
3 out there?

4 A. In the case of benzene, it does show a trend that
5 over time is increasing. I believe, as I indicated, in the
6 case of the other three constituents it's primarily just
7 noise in the data. And likewise in total BTEX, are we
8 seeing an upward trend?

9 A. It showed a drop from -- If you want to take
10 these numbers as absolute, which I caution people against
11 doing because I don't believe these numbers -- although the
12 labs will certainly work hard to get you precise numbers,
13 they're subject to the variability of the sample
14 collection, the laboratory analysis. In this case we have
15 two different laboratories and so forth. So I don't treat
16 these as absolute numbers and try to measure small
17 incremental changes between these.

18 But if you want to do it that way, you've got the
19 May 5th results of 4770, then it dropped to either 4640 or
20 4200, depending upon which analysis you use, and then it
21 goes back up.

22 So to me, yes, if you look at the broader data
23 you can argue the BTEX on the total goes up, but there's
24 variability in that too.

25 Q. Is it your opinion that we just need to wait some

1 more time before we can make any judgment about the trends
2 out here?

3 A. That is my opinion. I will point out, and I
4 think I do in my testimony, that it is significant to me
5 that since the excavation we've had no accumulations of any
6 significance of free product. We are talking about sheens
7 showing up, but whereas before there were two feet of free
8 product, we haven't seen that come back.

9 It is possible some free product will come back,
10 but I do not believe, based on the amount of hydrocarbon-
11 contaminated soil that was removed, we're going to see the
12 types of thicknesses of free product come back in Well 12
13 that we saw prior to the excavation.

14 Q. How long do you think would be a representative
15 time to wait in terms of your data collection before you
16 can discern a trend out here?

17 A. I've advised Burlington that we should continue
18 monitoring through the remainder of this year, that we
19 should meet with Mr. Olson and discuss this with him. But
20 my recommendation was, at least in terms of evaluating the
21 effectiveness of the excavation and to decide what the next
22 course of action would be at the wellpad to deal with
23 groundwater, would be to continue the monitoring through
24 the end of the year and look to make some decisions about
25 what needs to be done beginning at the start of next year.

1 But that's something that has to be discussed
2 with Mr. Olson and others at the OCD, obviously. That's --
3 We can't make that decision by ourselves.

4 Q. By the end of the year you would think that we're
5 coming up to at least being able to discern some trends out
6 there with some validity; is that correct?

7 A. I'd like a year's worth of data, because we have
8 seasonal effects that we're trying to deal with. And, I
9 mean, typical sites, a lot of times I'll try to argue for
10 two years of data, just to make sure we don't have an
11 anomaly.

12 But given that we're also trying to get the site
13 cleaned up, I would like to at least see the better part of
14 a year's worth of data to make sure we're not just seeing
15 the effects of seasonal changes in the water levels or
16 seasonal changes in temperature conditions and other
17 things. We do have soil conditions and temperatures that
18 do change.

19 Q. If free product is going to collect out there or
20 appear out there, when do you think is the most likely time
21 when we would see that?

22 A. Well, my opinion is, if we don't see it in the
23 course of this -- shortened year, I guess, if you look at
24 May through December, kind of time frame, which is, you
25 know, seven, eight months is what I'm basically looking at,

1 into early January -- if we don't see them there, I don't
2 think it's going to occur, necessarily.

3 Or if it does, I think it's going to be
4 relatively small. I think I stated in my testimony, I
5 would not state that there will never be any free-product,
6 you know, accumulation of hydrocarbon in the wells. There
7 will be sheens, there will be some, I think, some amounts,
8 because as the water table goes up and down, we will move
9 some material out of the soils.

10 We've talked about the fact that there were some
11 soils that clearly contained free-phase hydrocarbon in that
12 east side up underneath that wall, that ridge, that they
13 could not excavate out. Well, there's still some that
14 could be coming back in. So I think we will still see a
15 bit, but I think we'll see substantially reduced
16 thicknesses.

17 Q. That inlet that we've talked about where the seam
18 where the water and free product is coming in, do you have
19 an opinion as to the source of that?

20 A. I heard testimony from, I believe it was Ms.
21 Gannon, that they looked at the Williams pipeline that's
22 located to the east. That's a possibility, I suppose. I
23 think it's being evaluated or has been evaluated. We
24 didn't find any basis to conclude that was it.

25 I think it's just, again, the laterally extensive

1 amount of hydrocarbon material that accumulated beneath
2 this wellpad that spread out, and we've just got to wait
3 for that to drain back out of there, whatever volume that
4 is.

5 Q. With regard to your testimony at line 17 --

6 A. Which page, I'm sorry?

7 Q. I'm sorry, page 17, lines 14 through 18.

8 A. I'm sorry, I think you said line 17 --

9 Q. I'm sorry, page 17

10 A. -- or you said page 17 --

11 Q. -- of your rebuttal --

12 A. Okay.

13 Q. -- lines 14 through 18.

14 A. Okay.

15 Q. The question begins at line 11 about, "Will
16 changes in the benzene to BTEX ratios over time show that
17 PNM was not a source..." You talk about that to some
18 extent, but you indicate that if we do see changes in these
19 ratios, "...they are likely to be in response to
20 disturbances associated with recent excavations."

21 A. That certainly is a possibility, yes.

22 Q. And with regard to that, what we may see in the
23 change of those BTEX ratios is that they can increase,
24 you're saying that that's as a result of the disturbance?

25 A. Again, I've stated, I don't believe that the

1 benzene-to-BTEX ratio represents an indication one way or
2 the other as to whether the material was sourced by PNM or
3 sourced by Burlington. I mean, I look at the broader set
4 of data, and both operations contributed.

5 And I don't believe it's a precursor,
6 necessarily, to free product. I don't agree with that. It
7 is a dissolved constituent. It represents what is
8 leaching, that can be from the soils, that could be leached
9 from residual hydrocarbon or from free-phase.

10 So I don't believe -- That's basically what my
11 opinion is, is that it may be just an aberration of the
12 data, and to draw any conclusions based on it, I don't
13 agree with it. Again, we're dealing with hydrocarbons,
14 BTEX's, only, you know, four compounds out of dozens or
15 more that make up hydrocarbon.

16 Q. If Burlington's remediation was successful,
17 wouldn't you expect the dissolved-phase groundwater
18 concentrations to decrease?

19 A. I certainly would hope so, but I don't know that
20 I necessarily expect it to occur, or at least expect it to
21 occur in this short period of time, if I may finish. The
22 goal was to get the highly concentrated material out.
23 There's still source material left. I mean, we've heard
24 testimony they could not get to every part of it due to
25 just the constraints of the wellpad and so forth. So there

1 certainly is some material left. Over time I would
2 certainly expect that to be done.

3 It's the same concept that was used on the free-
4 product recovery. The more free product or the more soil
5 containing -- removed, that has retained hydrocarbons, that
6 is taken out, is that much less that can be leached into
7 groundwater.

8 So I certainly believe that it should contribute
9 over the long term to reduction. But what the time frame
10 of that is, since we can't really bound the nature of the
11 problem in terms of how big the source was, or how big the
12 contaminated -- the highly contaminated soil was, I can't
13 tell you how fast it's going to occur.

14 Q. Would you agree that to the extent PNM removed
15 free-phase contamination from the groundwater, that had the
16 effect of reducing the potential for dissolved-phase
17 contamination?

18 A. Yeah, that's correct.

19 Q. And with regard to PNM's activities associated
20 with the excavation out there, is it likely that moving the
21 bulldozer over across the soils there in the area of the
22 highest thickness of free-phase contamination could result
23 in a mixing effect, if you will, that could increase
24 dissolved-phase levels of contamination?

25 A. I'm sorry, I don't understand your question, I

1 apologize.

2 Q. Well, what I'm asking is, you've got a situation
3 where Burlington has gone in and disturbed the area where
4 the free-phase was residing, correct, with its excavation?

5 A. Taken it out.

6 Q. Well, it was also disturbed in terms of the
7 bulldozer running back and forth over it, mixing it up and
8 that sort of thing --

9 A. Dig it up, you're --

10 Q. -- was it not?

11 A. You're disturbing it, okay, I see what you're
12 saying. Okay.

13 Q. And just that activity, that physical activity on
14 top of the water table and the soils in the area of the
15 water table, wouldn't that result in a mixing up, if you
16 will, of the groundwater and the free product?

17 A. Well, certainly, I think I testified already that
18 the hydrocarbon, whether it occurs as a continuous zone or
19 as retained hydrocarbon, is there and moves slowly due to
20 its viscosity, its adsorption onto the soils and that, the
21 capillary forces affecting it. And when you go in and
22 disturb this, you change some of those forces. So yes, it
23 could free some up.

24 Q. And that could result in increased dissolved-
25 phase downgradient from PNM's former well site?

1 A. Could. Dissolved-phase is a function of -- If
2 you have water recharge, for example, through the
3 excavation at the time that it's open and allow water to go
4 in, that could increase a load to the dissolved-phase;
5 that's certainly a possibility.

6 Q. So to that extent there's certainly a possibility
7 that these activities could have exacerbated the dissolved-
8 phase downgradient of the wellpad?

9 A. I will give you that over a short term, going in
10 and removing all of this material could have resulted in a
11 slight increase over the short term. Again, we've taken a
12 large volume of hydrocarbon out of the subsurface that was
13 there as a source, so in the long term it's taking a lot of
14 material out, and it's going to be a long-term benefit.

15 Q. You heard Mr. Hasely's testimony that there were
16 hydrocarbons left in the soil above guidelines out at this
17 site following Burlington's excavation activities?

18 A. Yes, I heard him testify to that.

19 Q. What are Burlington's plans with regard to
20 addressing the soils at present?

21 A. Well, I think, as I indicated, we haven't -- and
22 I've advised them that we need to -- once we get through
23 with all of this, we need to sit down with Mr. Olson and
24 talk to him about what needs to be done next. My advice
25 was to collect some monitoring, because we did disturb the

1 site, and we need to see what the effects of that are,
2 positive or, as you imply, negative, and then make a
3 decision as to what can be done next.

4 Obviously, we've done as much excavation as could
5 be done in a realistic manner, so we'd have to look at
6 potentially other technologies if there's still a need to
7 remove additional source materials or additional
8 contamination from below the site.

9 Having removed a large amount of free product or
10 residual hydrocarbon or retained hydrocarbons from the
11 subsurface, hopefully -- which was one of the goals -- we
12 may now be in a position to go back to the approach that
13 was described earlier of what we call monitored natural
14 attenuation, where we can watch for a while and see if the
15 dissolved concentrations start to decrease. If they don't,
16 subject to what the OCD wants, we may have to look at other
17 technologies.

18 Q. And if that natural attenuation is allowed, you
19 would leave those soils in place; is that correct?

20 A. You mean the clean soils that were put back or --

21 Q. No, I'm talking about the --

22 A. -- the remaining materials that could not be
23 reached?

24 Q. -- that remained in the soils --

25 A. Certainly, if we've done enough source reduction

1 now that we can allow natural attenuation to take place,
2 then yes, the material that was left behind, although it's
3 still highly contaminated in small areas, would not be a
4 significant source.

5 Q. Are there any plans for Burlington to install any
6 monitoring wells in the area of its former unlined
7 separation -- separator pit?

8 A. Separator pit. I just want to make sure, but
9 again, we've gone back and forth on the various pits, and I
10 just want to make sure --

11 Q. You might look at PNM Exhibit 6 --

12 A. Thank you.

13 Q. -- or --

14 A. Six doesn't show it.

15 Q. Well, it shows the location of the unlined
16 separator pit, correct?

17 A. Okay, we're talking about the fiberglass tank
18 that is just to the west, slightly north, of TPW-06?

19 Q. Yeah, and if I understood your testimony, your
20 understanding was that that's also the approximate location
21 of the unlined separator pit; is that correct?

22 A. That's my understanding, correct.

23 Q. And what I'm asking you is, are there any plans
24 for Burlington to go in and install a monitoring well in
25 that area?

1 A. Not that I'm aware of. I have not advised them
2 that that's a necessary item.

3 Q. And the basis for that advice is that no free
4 product showed up in MW-3?

5 A. Well, no free product or dissolved-phase
6 contamination shows up in MW-3.

7 Q. There is -- You would concur that the OCD has
8 indicated that that pit they regard as a potential source
9 for groundwater contamination at this site?

10 A. I think you've referred to some correspondence
11 several years ago that occurred about looking at that pit.
12 Certainly at that point in time -- I think we'll have to
13 ask Mr. Olson what the OCD's current feeling is about that
14 pit.

15 My recommendation would be, again, to monitor
16 through the remainder of this year, see what's there. If
17 we don't see changes, then maybe there are some additional
18 investigations that need to be done, and that might be an
19 area that is a possibility. But at this stage, based on
20 the data that I've seen to date, I don't see any reason to
21 go in and put a well at that location.

22 Again, there may be a slight difference in
23 philosophy here. This is a fairly small site by standards,
24 at least, that I'm used to. You don't necessarily need a
25 well in every 40 feet to answer whether or not you still

1 have groundwater contamination occurring and so forth. You
2 know, the density of wells and the locations of the wells
3 that are needed is something that will be discussed with
4 the OCD.

5 Q. Are there any plans to put in any wells in the
6 area of the far southeast corner of the wellpad?

7 A. Not to my knowledge. I think Mr. Hasely would be
8 a better one to ask, but I think there was discussion about
9 -- When MW-4 had to be taken out, there was discussion
10 about whether that well should be replaced or a well should
11 be put back in, in the center.

12 I think you talked about that there was a
13 commitment, subject, of course, to leaving the excavation
14 open, to put a well in back in that former pit area that
15 was excavated --

16 Q. Right, the source --

17 A. -- And my understanding from discussion with Mr.
18 Hasely about discussions that he had with Mr. Olson was,
19 MW-13 was located to sort of be between those two
20 locations. It was a well that they agreed to put in that
21 replaced MW-4 but also put it back closer to the force --
22 source, excuse me.

23 Q. Where it is practical, isn't the usual practice,
24 though, to put a well in right in the middle, as best you
25 can determine, of the source area?

1 A. No, not necessarily. I'd actually like to see my
2 wells slightly downgradient of the source area. Again, you
3 have to make the assumption somehow that the source is
4 uniform to justify a well right in the center.

5 A well immediately downgradient, such as where
6 MW-13 is, to me, is just as good if not better, because as
7 groundwater moves past the source area, you get -- and I
8 won't go into the technical -- but you get dispersion, you
9 get spreading of it, so you can detect the contamination
10 better from a source if your well is slightly downgradient,
11 because as the contamination leaves, it's coming from just
12 a part of the source, it spreads, so you can see it easier.

13 Q. Is the only reason Burlington doesn't go back in
14 and excavate, like it did in the area of PNM's former pit,
15 the rest of the wellpad the issue of cost?

16 A. Not to my knowledge. Again, I don't think cost
17 became an issue in this. I never -- I mean, I questioned
18 that in the beginning to make sure it wouldn't. If we
19 started on this, I advised them once you start excavating,
20 you've got to go get it all, otherwise, we have these types
21 of discussions.

22 It is driven by contamination. The PID readings
23 that were obtained in the field were used to guide where to
24 get the contamination out.

25 Q. You said once we start the excavation, we've got

1 to go get it all. I think that was your testimony.

2 A. Yeah, within the limits, the practical limits of
3 what you can do from excavation at the site. Because
4 again, this is a very constrained site as we talked about
5 it.

6 Q. You talked about your preference, putting monitor
7 wells in downgradient locations, correct, so you could tell
8 whether the wells are detecting contamination moving
9 downgradient; is that correct?

10 A. You asked about, isn't it preferable to put a
11 well right through the center of the source?

12 Q. Uh-huh.

13 A. And I indicated to you it's certainly possible,
14 but my preference, and I think some of the -- If you go and
15 look at the various literature, is to put the well
16 immediately downgradient of the source.

17 Look at the RPRA program, any of the other
18 programs, they prefer to have a well right at the edge of a
19 unit rather than -- you know, the downgradient edge of the
20 unit.

21 Q. With regard to the wells that PNM put in such as
22 MW-4 and the contamination we see in MW-4, you would agree
23 that what we're seeing in MW-4 is as a result of upgradient
24 contamination, correct?

25 A. Yes.

1 Q. And likewise in MW-8 that PNM installed, you
2 would agree that the contamination that MW-8 detected was a
3 result of upgradient contamination?

4 A. I believe it is -- Can you just bear with me a
5 second?

6 Q. Yes.

7 A. I want to check one thing.

8 It certainly gets a little more questionable with
9 MW-8, but certainly some of the contamination and maybe a
10 majority of it in MW-8 came from upgradient sources.

11 Q. And those upgradient sources would be Burlington,
12 correct?

13 A. Correct.

14 Q. You're not in a position to talk about
15 allocation, that is, relative contribution as between
16 Burlington and PNM at this site, are you?

17 A. Not at this time, no.

18 Q. Do you expect to be working on that issue in the
19 future?

20 A. Well, I kind of guess that depends on where we
21 all go from here. My understanding is, that's possibly the
22 next step, so...

23 MR. ALVIDREZ: I have no further questions.

24 CHAIRMAN WROTENBERY: Mr. Carroll?

25 MR. CARROLL: No cross.

EXAMINATION

BY CHAIRMAN WROTENBERY:

Q. I just wanted to make sure I understood what you said about monitoring the site over the course of the rest of this year, when you talk about till the end of the year. Can you give me a little more definitive date?

A. Sure, sure. And I've thought about this a bit, and obviously, as I indicated, I've suggested that Burlington get together with Mr. Olson as soon as we're finished with all of this and sit down and talk to him.

My recommendation would be -- and it's a compromise between the issues we talked about, about getting enough time to see what the trends are, but also not just delaying this process into the future, trying to make some decisions and get out and finish this site up. The site has been around for several years, we don't want to just drag this out forever.

So my recommendation was to collect samples through the fall into the -- about the first of the year, make some decisions. And depending on what that data shows us -- We just have gotten -- I mean, I just was presented with new data yesterday. Might collect another set in October and one more in December-January time frame, and then make some decisions about where to go from there. Those data may tell us that the decision is, we should get

1 another sample or two.

2 But my suggestion was get those to -- sit down in
3 January or February, with Mr. Olson, with a plan as to
4 whether it's -- additional monitoring needs to be installed
5 or additional monitoring needs to be performed or whether
6 some other additional action needs to be taken at the site.

7 Q. In the meantime, you don't see a need to install
8 additional monitoring wells at the site?

9 A. I was informed about a request to have one on the
10 east side where there was the sand seam where the material
11 was seeping out. If we can get far enough to the east --
12 and that material was in the edge of the pad, but we're
13 close to the edge where this goes up, this ridge goes up
14 quite steeply. I'd certainly like to see what that shows,
15 that we can push it far enough east and see what the
16 eastern extent of that is, and I think that was sort of one
17 of the intents of that well. And if we can get some
18 information, I think that would be helpful, yes.

19 Q. Okay. Any other additional wells that you would
20 propose?

21 A. I haven't come up with any at this time, but then
22 I haven't actually sat down and focused on it either. So
23 just to be fair, I haven't sat down and said, Do we need
24 additional monitoring wells? There's quite a few still out
25 there, so...

1 CHAIRMAN WROTENBERY: Thank you.

2 Mr. Carr?

3 MR. CARR: I have no questions.

4 CHAIRMAN WROTENBERY: No questions? Anything
5 else?

6 MR. ALVIDREZ: I just have one very quick follow-
7 up.

8 FURTHER EXAMINATION

9 BY MR. ALVIDREZ:

10 Q. With regard to the data collection, what is
11 Burlington's intention with regard to the frequency of that
12 collection?

13 A. Well, you'd have to ask Burlington. I think I
14 just made my suggestion, which is all I can speak for.
15 That's up to Burlington, and I guess OCD, so...

16 Several samples were collected in May, and then
17 we have the samples in July and August. I certainly can
18 suggest waiting a couple of months at least. No point in
19 going out there weekly. I mean, I'd wait a couple months
20 to get one in October, as I just said, and then again
21 December or January. Quarterly, in essence, is what I
22 would suggest, but --

23 Q. Would you also recommend that Burlington took a
24 sample from PNM's existing wells that are out there?

25 A. Well, I'd certainly encourage us at this stage to

1 sample all of the wells each time.

2 MR. ALVIDREZ: No further questions.

3 CHAIRMAN WROTENBERY: Anybody have anything else?

4 Thank you for your testimony --

5 THE WITNESS: Thank you.

6 CHAIRMAN WROTENBERY: -- Mr. Rosasco.

7 MR. CARR: That concludes our presentation in
8 this case.

9 CHAIRMAN WROTENBERY: Thank you, Mr. Carr.

10 And I believe that takes us to the Oil
11 Conservation Division.

12 MR. CARROLL: Could the Division take five
13 minutes? Or my witness requests five minutes.

14 CHAIRMAN WROTENBERY: Okay, sure. We'll take 12.

15 (Thereupon, a recess was taken at 5:03 p.m.)

16 (The following proceedings had at 5:15 p.m.)

17 WILLIAM C. OLSON,

18 the witness herein, after having been first duly sworn upon
19 his oath, was examined and testified as follows:

20 DIRECT EXAMINATION

21 BY MR. CARROLL:

22 Q. Mr. Olson, will you please state your name and
23 who you're employed by, for the record?

24 A. My name is William C. Olson, and I'm employed by
25 the Environmental Bureau of the Oil Conservation Division.

1 MR. CARROLL: Madame Chairman, I've been informed
2 by other counsel that they will stipulate to Mr. Olson's
3 testimony and his qualifications as an expert, so I would
4 ask at this time that his direct testimony and rebuttal
5 testimony that have been filed -- I don't believe they've
6 been marked, if they could be marked as OCD Exhibits A and
7 B, and I move those exhibits into the record.

8 CHAIRMAN WROTENBERY: They're admitted.

9 MR. ALVIDREZ: May it please the Commission.

10 EXAMINATION

11 BY MR. ALVIDREZ:

12 Q. Mr. Olson, I'd like you to look at PNM Exhibit 6,
13 please. Have you found that exhibit?

14 A. Yes, I have.

15 Q. There was discussion during PNM's testimony about
16 a line in the sand that you drew at the site. Do you
17 recall that discussion?

18 A. I know there's been discussion of a line in the
19 sand, I guess what we've considered things to be upgradient
20 of the dehydration unit and dehydration pit to be maybe
21 what you maybe refer to as the line in the sand.

22 Q. Well, you recall from your prior testimony before
23 the Hearing Examiner that the line in the sand was
24 discussed in some detail, correct?

25 A. That's correct.

1 Q. And what I would like you to do on PNM Exhibit
2 6 -- and you have the original volume before you, and I
3 believe you've got a pen or pencil there as well, is to
4 show us by drawing on that document where exactly this line
5 in the sand was.

6 A. I can describe it to you. It's approximately in
7 the location of the line of TPW-1, -2 and -3. It would be
8 just to the north of that line, right along where the
9 production equipment -- It would then be to the north of
10 that dehydration equipment.

11 Q. Okay. So if we drew a line where the printing is
12 on TPW-1, TPW-2 and TPW-3, would that be a close
13 approximation of your line in the sand?

14 A. It would be a close approximation.

15 Q. And when was it that you drew this line in the
16 sand at the Hampton 4-M site?

17 A. It was during a site inspection with both PNM and
18 Burlington. I don't remember the exact date. I believe it
19 was in 1997, I believe.

20 Q. And your line in the sand was a way of allocating
21 responsibility at this site; is that correct?

22 A. It was a way of allocating responsibility for
23 remediation of contamination, that's correct.

24 Q. And was it also a means of allocating
25 responsibility for investigation of contamination?

1 A. That is correct.

2 Q. And the way you drew the line, PNM was
3 responsible for investigating and remediating any
4 contamination north of your line in the sand; is that
5 correct?

6 A. That's correct.

7 Q. And Burlington, in turn, was responsible for
8 remediating any contamination south of the wellpad at that
9 line; is that correct?

10 A. On the wellpad south of that line, that's
11 correct.

12 Q. And you would agree that the area, potential
13 area, of PNM's responsibility for investigation and
14 remediation was substantially larger in geographic terms
15 than the area that you had apportioned to Burlington; isn't
16 that correct?

17 A. That's correct.

18 Q. And your line in the sand was relatively
19 absolute, or was absolute, with respect to the nature of
20 the contamination. And what I mean by that is that PNM was
21 allocated responsibility for soil contamination on its side
22 of the land, correct?

23 A. That's correct.

24 Q. On its side of the line, I should say. And it
25 was responsible for free-product contamination on that side

1 of the line, correct?

2 A. Yes.

3 Q. And it was also allocated responsibility for any
4 dissolved-phase face contamination; is that correct?

5 A. Yes.

6 Q. And that included dissolved-phase contamination
7 that went down the wash for what we know is several hundred
8 feet, correct?

9 A. Yes.

10 Q. And Burlington, by contrast, had no
11 responsibility, according to your ruling, with regard to
12 the free-product contamination in the area underlying PNM's
13 pit on its side of the line, correct?

14 A. That's true, that was based upon the data that
15 was available at that time.

16 Q. And likewise with regard to the dissolved-phase
17 responsibility, Burlington had absolutely no responsibility
18 under your ruling for any dissolved-phase that was escaping
19 off of the wellpad downgradient; isn't that correct?

20 A. That's correct.

21 Q. And that's the state of affairs that we found
22 ourselves, or that the situation was, in March of 1998 when
23 PNM appealed the OCD directive; isn't that correct?

24 A. That's correct.

25 Q. It would still have that firm line in the sand?

1 A. That's correct. At that time the only known
2 measurable product was essentially, in the large vicinity
3 of it, in the vicinity of PNM's pit.

4 Q. PNM had indicated to you in advance of filing its
5 appeal that it strongly suspected that there was, in fact,
6 free-product contamination on Burlington's side of that
7 line; isn't that correct?

8 A. That's correct.

9 Q. And yet you discounted PNM's contentions with
10 regard to the presence of free-product contamination; isn't
11 that correct?

12 A. Yes, we had some -- There were some small volumes
13 that were measured on the upgradient side at that time.

14 Q. Okay.

15 A. I think we know a lot more about it today than we
16 did at the time that ruling was appealed.

17 Q. All right. And when we saw what happened as a
18 result of the appeal, the ruling was altered, what your
19 ruling had been; isn't that correct?

20 A. I'm sorry, would you say that again?

21 Q. Yes, after the -- The ultimate ruling from the
22 administrative hearing before the Hearing Examiner altered
23 your ruling, what your ruling had been at this site; is
24 that correct?

25 A. Yes, we changed our opinion based upon the

1 evidence presented at the hearing.

2 Q. Okay. So that hearing process that we went
3 through did have the effect of changing your mind about the
4 situation out there and the allocation of responsibility
5 out there; isn't that correct?

6 A. Actually, it wasn't the hearing that changed our
7 mind, it was the data that was presented to us that had not
8 been fully presented to us in the past when we made the
9 initial ruling.

10 Q. Okay. Well, you've been presented with data that
11 there was, in fact, contamination, free-product
12 contamination, upgradient of PNM's former pit, correct?

13 A. That's correct.

14 Q. What is the new data that you're referring to
15 that changed your mind?

16 A. I'm referring to the increases in free-phase
17 product that we saw in upgradient wells, specifically in
18 Monitor Well 4 and Monitor Well 8, and I believe we were
19 also seeing product in Monitor Well 10 as well.

20 Q. And you don't have any doubt that the source of
21 that contamination that we saw in those wells that you've
22 described came from Burlington's activities; isn't that
23 correct?

24 A. I believe that's from Burlington's activities,
25 yes.

1 Q. Okay. And you would agree that Burlington
2 contributed to the free product that was directly under
3 PNM's former pit; isn't that correct?

4 A. That's correct.

5 Q. And the way it got there is that it traveled
6 through the groundwater, through the gradient flow, from
7 Burlington's operations to PNM's pit?

8 A. That's correct.

9 Q. And you can't make a determination, or haven't
10 made a determination, as between PNM and Burlington, as to
11 who has contributed the vast majority of free product in
12 the area of PNM's pit; isn't that correct?

13 A. That's correct. I don't think we are capable of
14 doing that, to tell you the truth.

15 Q. Okay, when you say "we", you're talking about the
16 OCD?

17 A. I'm talking about the OCD, yes.

18 Q. And you would agree that the free product that is
19 coming from Burlington's operations at this site are
20 contributing to the dissolved-phase contamination at the
21 site?

22 A. Yes.

23 Q. And you would agree that with respect to PNM's
24 activities on this site, up until the time it appealed your
25 ruling in March of 1998, that PNM was acting diligently

1 with respect to investigating and remediating at this site?

2 A. Yes.

3 Q. And if we look at the history of the activity at
4 this site with regard to comparing Burlington's activities
5 and PNM activities, it's pretty clear that PNM was the most
6 active party involved in remediation and investigation with
7 respect to this site, up until the November, 1998, time
8 frame at least, correct?

9 A. That's probably true, I guess, except -- if I put
10 it back, they -- you might want to start putting that
11 monitor well in, but PNM did participate in -- as well at
12 the, you know, the inspection of the activities that went
13 on with that, so...

14 Q. When you're talking about this monitoring well,
15 what are you talking --

16 A. I'm talking about Monitor Well 11 that we
17 requested to be placed in, I believe, in September, 1998.

18 Q. Okay, and Burlington ultimately paid for that
19 anyway, correct?

20 A. That's correct.

21 Q. But PNM was involved in terms of just looking at
22 what was going on and how it was installed and that sort of
23 thing; isn't that correct?

24 A. That's correct.

25 Q. And you would agree that it's -- We're talking

1 about free product, free-phase in this proceeding. You
2 would agree that it is a relatively rare occurrence, at
3 least, where you would find free product underneath a
4 dehydrator pit?

5 A. I would say it's less frequent. We have had it
6 occur at, as I had stated in my prefiled testimony, at
7 approximately 13 sites.

8 Q. Well --

9 A. In terms of the overall scheme of things, in
10 terms of -- I mean, I've probably done upwards of -- I
11 don't know, thousands of pits, maybe up around 4000. I'd
12 say that's 13 out of 4000, so it is a less frequent
13 occurrence, but I wouldn't say that it does not occur.

14 Q. Well, we're not saying it's impossible, but we're
15 saying it's a relatively rare occurrence.

16 A. I'll say it's less frequent, yes.

17 Q. You wouldn't agree with the characterization of
18 "relatively rare occurrence"?

19 A. Yes, that's fine.

20 Q. Okay. And you would agree also that if
21 equipment, the dehydration equipment, is working properly,
22 there should only be discharges of dissolved-phase; isn't
23 that correct?

24 A. That's correct.

25 Q. You don't have any facts to suggest that the PNM

1 dehydrators at this site were not operating properly; isn't
2 that correct?

3 A. I think we had, from the testimony of Mr. Rhodes
4 that there is product in the tank at the dehy unit, and --
5 a well as PNM's admissions that there is some small volume
6 of carryover of product, up to maybe 1000 -- under best-
7 case conditions, about 1100 gallons, approximately.

8 Q. Okay, and that would be 1100 gallons over the
9 life of the operation of the dehydrator, correct?

10 A. True.

11 Q. And really, those weren't best-case -- That
12 wasn't PNM's best-case scenario; that was their worst-case
13 scenario, wasn't it?

14 A. I guess that's a matter of opinion. If you see
15 product in the dehy tank, I think you could see right there
16 that there is some type of carryover of product, and it's
17 just a matter of questioning what the actual volumes are at
18 that point.

19 Q. Okay. With regard to OCD's usual practice in
20 assigning responsibility, it is the usual practice for OCD
21 to assign responsibility to the current owner or operator
22 of a particular piece of equipment; isn't that correct?

23 A. I think that the Division first assigns
24 responsibility to the current operator. If that current
25 operator is not available, we would go for past operators

1 as well.

2 Q. In this case, the current operator is Williams;
3 isn't that correct?

4 A. That's correct.

5 Q. And Williams is available; isn't that correct?

6 A. That's correct.

7 Q. And OCD has taken no action with respect to
8 Williams at all; isn't that correct?

9 A. That's correct, and I assume we could have done
10 as we'd done on other sites and just issue an abatement
11 plan requirement for this site to Williams.

12 Q. But you haven't done that, correct?

13 A. We have not done that, because PNM has been the
14 responsible party, at least in our eyes, that's been
15 working on the site, through whatever contractual
16 agreements that they have with Williams.

17 Q. And it's clear that the contractual agreements
18 that PNM has are with Williams and not with the OCD,
19 correct?

20 A. That's correct.

21 Q. Would you agree that the practical effect of your
22 drawing a line in the sand at this site was to apportion
23 responsibility for investigation and cleanup at this site?

24 A. I'd say that had its effect of just determining
25 who was responsible for what areas of contamination.

1 Q. If you could repeat that?

2 A. For who was responsible for investigation and
3 remediation of what areas. Since the majority of the
4 product at that time, and we had no -- was located under
5 PNM's pit, and we really didn't have any indication -- of
6 only small, very small measurable volumes on the upgradient
7 side, it was a logical designation at that time.

8 Q. You would agree, however, that the OCD should
9 only allocate responsibility based upon the activities of
10 that responsible party, would you not?

11 A. That's correct.

12 Q. And if a party is -- did not contribute to a
13 particular contaminant source, they should not be held
14 responsible for the cleanup of that contaminant source; is
15 that correct?

16 A. Sure.

17 Q. And with regard to this particular site, what is
18 the OCD's position with regard to the relative
19 responsibilities for cleanup, with regard to groundwater at
20 this site? I want to know your current thinking on this
21 topic.

22 A. On just groundwater?

23 Q. Let's talk about groundwater right now.

24 A. On groundwater, we believe that both parties are
25 responsible for free-phase and dissolved-phase

1 contamination at the site.

2 Q. Everywhere?

3 A. No.

4 Q. Okay, where is -- Can you tell us in terms of
5 responsibility for free-phase where you break down or where
6 you draw the line?

7 A. I think we've still kept with our current line on
8 our prefiled testimony, where we recommended that
9 Burlington be responsible for activities associated with
10 remediation and investigation south of the PNM or I guess
11 Williams equipment area, and then for the downgradient
12 contamination to be the responsibility of both PNM and
13 Burlington.

14 Q. And what is that allocation based on?

15 A. That's based upon what we believe to be the
16 sources of contamination at the site.

17 Q. Is that a 50-50 proposition, that is, that PNM
18 and Burlington are equally liable?

19 A. I'd say on our part we would probably consider
20 them equally liable.

21 Q. So your allocation is 50-50?

22 A. That's correct.

23 Q. And what is that 50-50 allocation based upon?

24 A. It's based upon both contributing to the
25 contamination downgradient from there. I don't think

1 there's been a lot of debate here over what volumes each
2 person contributes to this, and I don't think that's
3 something that the Division can determine based upon the
4 data that's been provided.

5 Q. Why is that? Why can't you determine that?

6 A. I think it's clear that there's -- both areas
7 contributed contaminants to the groundwater. It's a matter
8 of what volumes occurred. There's been a lot of dispute.
9 Burlington witnesses testified there could be potentially
10 large volumes, PNM witnesses testified that there could be
11 other volumes. I don't think it's an easy thing to say
12 what is the correct volume for each party.

13 Q. Well, so you just settled on 50-50 as --

14 A. That both are responsible for the contamination
15 that occurs there, so both are responsible for conducting
16 those activities.

17 Q. But -- And so your allocation has been a 50-50
18 split between PNM and Burlington with regard to groundwater
19 contamination?

20 A. I believe that's also what the Hearing Officer
21 adopted as well.

22 Q. Well, but that's the OCD's current position? I
23 just want to be clear on that, it's -- Correct?

24 A. Yes.

25 Q. But you can't state -- I mean, nonetheless, you

1 can't say what the relative contributions to the volumes
2 were by PNM versus what they were by Burlington; isn't that
3 correct?

4 A. True, you have a mixed -- whole mixed unit, once
5 the two sources come together, and you have to try to
6 decide what volumes are going to be attributed to what
7 sources, and I think there's a lot of dispute over what
8 those volumes are.

9 Q. Well, we know, however, that Burlington had a lot
10 more potential source area -- or sources on its portion of
11 the wellpad, do we not?

12 A. Potential sources, yes.

13 Q. So that may be one indication of which party
14 might have contributed the majority of contamination; would
15 you agree?

16 A. Yeah, I'd say there's a lot of potential sources,
17 but it appears to me that there -- it's really looking at a
18 historical problem.

19 I think some of the evidence that we've seen
20 indicates that there doesn't appear to be any problems with
21 the condensate tanks. That was a potential source of
22 contamination.

23 The wellbore was at one time listed as a
24 potential source of free product. That seems to be
25 discounted by evidence presented by Burlington.

1 So it appears to me -- and in conjunction with
2 other sites I've worked on, it appears to me to be a
3 historical problem based upon prior disposal practices at
4 the site.

5 Q. Well, when we look at the number of open, unlined
6 pits, PNM's side versus Burlington's side, where do we have
7 the greatest number of pits?

8 A. There's more of them on Burlington's side.

9 Q. And when we just look at the volumes of product
10 that were handled on Burlington's side, wouldn't you agree
11 that the greater volumes of the product was handled --
12 happened on Burlington's side of that line?

13 A. Sure.

14 Q. And let's look at PNM Exhibit 57. Have you found
15 that?

16 A. Yes, I have.

17 Q. If we look at the free product on that site as
18 shown, free-product contours on that site, we can see that
19 the majority of that free product is on Burlington's side
20 of your line of demarcation; is that correct?

21 A. I'd say for the areal extent of it, yeah, that's
22 true.

23 Q. Okay. And you don't disagree that that
24 contamination that originated on Burlington's side of the
25 wellpad came and pooled under PNM's former pit, correct?

1 A. Yeah, I believe it moved downgradient underneath
2 PNM's pit, that's correct.

3 Q. When we look at this data and the amount of
4 product handled on Burlington's site versus PNM's site and
5 all that, don't you have to reach the inescapable
6 conclusion that it's more probable than not that the
7 majority of that free product had to have come from
8 Burlington's side of the operation versus PNM's side?

9 A. Actually, I could possibly come up with the other
10 conclusion that a lot of it originated at the PNM pit,
11 since the largest thicknesses of product occurred directly
12 under the PNM pit.

13 Q. But you acknowledge that the thickness under
14 PNM's pit was contributed to by Burlington?

15 A. It was contributed to, yes. But that doesn't say
16 to what percentage.

17 Q. Well, when we look at the whole picture, wouldn't
18 you agree that the greater likelihood is that the majority
19 of that free-phase contamination under this site came from
20 Burlington's operations versus PNM's operations?

21 A. I don't think -- The Division hasn't been willing
22 to say that.

23 Q. What is your opinion, your personal --

24 A. I think it's very -- I think this is -- As
25 mentioned before, this a pretty atypical site. In our

1 experience, where you see greatest concentrations of
2 product is usually closest to one of the sources of
3 contamination, and in this case we obviously have
4 contributions. There's some steep gradients on the upside,
5 as was testified to by PNM. So there is contributions that
6 are coming down into that area. But then we also have a
7 significant accumulation under the PNM pit.

8 Q. Were you present during Mr. Dillon's testimony?

9 A. Yes, I was.

10 Q. And did you hear him testify that he believes --
11 he has no facts to indicate that Burlington's separators
12 were not operating properly?

13 A. I'm sorry, could you say that again?

14 Q. Yes, that he had no evidence to suggest that the
15 Burlington separators at the Hampton 4M site were not
16 operating properly? Do you recall that testimony of his?

17 A. I don't think he said he had any evidence one way
18 or the other, whether they were operating properly or not.

19 Q. Well, didn't he say that the assumption -- that
20 there hadn't been any repairs to the separators and that
21 his assumption was that they were operating properly? Do
22 you recall that?

23 A. Yes.

24 Q. And do you also recall he testified that under
25 those circumstances he believed there would be only minimal

1 amounts of carryover from Burlington's separators to PNM's
2 dehydrator?

3 A. Yes, I think that's consistent with PNM's
4 witnesses as well.

5 Q. All right. So wouldn't that testimony suggest to
6 you that the amounts that could have been contributed by
7 PNM, if at all, have to be much smaller than the amounts of
8 free product contributed by Burlington?

9 A. Based on that, I'd probably say you're correct.

10 Q. And notwithstanding that, your allocation is
11 still a 50-50 allocation as between Burlington and PNM?

12 A. That's correct.

13 Q. And why is that?

14 A. Because both contributed -- we believe both
15 contributed free-phase product, and you can't distinguish,
16 once the product is there, you know -- say you have 50
17 gallons of product underneath there and Burlington
18 contributed 45. Well, are you going to be able to go out
19 and pull up just your 45, or just your five that you put in
20 versus the 45 that Burlington put in? It's a very
21 difficult process of remediation practically.

22 Q. Well, you can, in fact, pull out 45 gallons of
23 free product, can't you?

24 A. Yes, you could. But then you come back to some
25 of those same things. If you pull out -- I think PNM has

1 asserted, We've pulled out our 1100 gallons. Well, as
2 Burlington testified to, you're also pulling out the
3 easiest recoverable product, the initial recovery is
4 usually the easiest and most extensive amounts that you can
5 recover.

6 Q. Well, I don't think Burlington testified to that.
7 I think there was a line of questioning --

8 A. Well, that may have been in the cross-
9 examination, correct.

10 Q. But Burlington never testified to that, and you
11 may recall that was to Ms. Terauds, and she said it
12 depended on a variety of factors with regard to whether
13 that's easier or harder, and one of the factors that you
14 looked at was the groundwater gradient. Do you recall that
15 testimony?

16 A. True.

17 Q. So under your scenario, if PNM added 10 gallons
18 to what may be a 15,000-gallon free-product plume, then
19 it's liable for half?

20 A. Well, I guess are you saying if you contribute to
21 the free-product phase, product plume, and if they pull out
22 their 1000 gallons, that they now -- not responsible for
23 the remaining dissolved-phase contamination as well, which
24 extends quite extensively downgradient.

25 Q. Okay, well, if you'll answer my question, I'm

1 talking about the situation where -- 15,000 gallons of free
2 product on the water table, and PNM contributed one gallon.
3 Is it your position that because PNM contributed that one
4 gallon, it is now responsible for cleanup -- half of the
5 cleanup of that 15,000 gallons out there?

6 A. I think it would depend on circumstances. In
7 this, I don't think we know what the true volumes are.
8 There's a lot of dispute over what the true volumes --

9 Q. There really isn't any dispute --

10 A. -- are.

11 Q. -- is there? I mean, you've heard the Burlington
12 witnesses. Mr. Rosasco says, I can't tell you how -- I
13 can't give you an allocation. He can't tell us. Do you
14 recall that testimony?

15 A. Yes.

16 Q. And you heard Mr. Hasely. He likewise said, I
17 can't tell you how much PNM did versus what Burlington did,
18 right?

19 A. That's correct. But you seem to want the
20 Division to be able to tell you how much --

21 Q. Well, what I want to --

22 A. -- everybody did.

23 Q. What I do want to point out is, PNM has told you
24 how much, the maximum amount it could have put in. They've
25 told you that, right?

1 A. I think that's potentially a minimum volume. I
2 don't know.

3 Q. Well, PNM has indicated -- What do you base that
4 on, what's potentially a minimum volume?

5 A. I base that on the testimony that was presented
6 here, that we know we've had free-phase product at the
7 site. I'm basing this on some other sites where we've had
8 free-phase product, up to three feet of free-phase product,
9 solely from a dehydration unit.

10 Q. It wasn't a PNM dehydration --

11 A. It was not a PNM dehydrator.

12 Q. What kind of dehydrator was it?

13 A. I have no idea what the equipment type was.

14 Q. Any idea of the volumes or setup or anything
15 else?

16 A. No, I don't.

17 Q. So we don't know really how well that particular
18 piece of equipment and that system correlates to what we
19 have at the Hampton 4M?

20 A. All I'm saying is that it is not impossible for
21 this to happen.

22 Q. We don't have to talk about what's impossible or
23 possible. We deal in probabilities from a legal standard,
24 don't we?

25 A. Well, I think it's -- using this same

1 circumstance, it is probable to have large contributions as
2 well from the PNM pit.

3 Q. It's probable or possible?

4 A. I said it's probable.

5 Q. And what do you base that on?

6 A. Based upon the testimony that's been provided
7 here.

8 Q. Which testimony is that?

9 A. Based upon PNM's testimony as well as the
10 testimony of Burlington.

11 Q. Well, if we look at PNM's testimony, again, they
12 say the maximum we could have put into the pit is 1100
13 gallons. Do you recall that testimony?

14 A. That's correct.

15 Q. And you would agree that the maximum they would
16 put into the pit, the amount that would ultimately reach
17 the groundwater, would be much smaller than 1100 gallons,
18 correct?

19 A. That's correct.

20 Q. Now, isn't it true that the only evidence that
21 the Division has is that PNM -- in terms of relative
22 amounts, is the 1100 gallons that PNM has talked about?
23 That's the only evidence you've got?

24 A. Well, and also referring to Mr. Rhodes' testimony
25 when he testified that it could have had up to 30 barrels a

1 day discharged to the -- under normal operating conditions.

2 Q. But we have Burlington's own representative --
3 He's talking about theoretically. That wasn't --

4 A. That's true.

5 Q. I mean, we don't have a well that produces 30
6 gallons a day here.

7 A. He talked about the well producing, I believe, a
8 barrel a day of liquids from the Dakota --

9 Q. And you have --

10 A. -- oil, condensate.

11 Q. -- Burlington's own witness, their own in-house
12 person, indicating that that was not the case, that in fact
13 there would only be small amounts of carryover to the
14 separators, correct?

15 A. I don't think he --

16 Q. You don't believe him?

17 A. I wouldn't say that I don't believe him. I don't
18 know that he really knows. He said they didn't have any
19 records of repairs on the equipment, so --

20 Q. And you think Mr. Rhodes knows?

21 A. I'm just talking about what the potentials are
22 from the site.

23 Q. So you're only dealing with potentials, you're
24 not dealing with actual facts; is that my understanding?

25 A. I'm dealing with the facts that are presented,

1 yes.

2 Q. Well, the facts about what happened out there?

3 A. The fact is that free-phase product, in my
4 opinion, was discharged from the dehydration unit, as
5 evidenced by observations of product in the tank. I mean,
6 I think that's -- it was undisputed as a fact that there is
7 product in the tank. The only question, I guess, as to
8 what the volumes are, I don't think the Division is willing
9 to sit here and say what the volumes are for each
10 contribution at that point.

11 Q. And so, is --

12 A. That's why the Division has set out to take the
13 position of 50-50 responsibility for the contamination.

14 Q. Is the Division doing anything to determine for
15 itself what the proper allocation ought to be at this site?

16 A. At this point I'd say a lot of the information
17 that's been presented here at this hearing has never been
18 presented to the Division before. There's been a lot of
19 new information, and part of the reason for our changing
20 position at the last hearing was new information that also
21 was being presented at the hearing, a number of which the
22 Division hadn't seen before.

23 Q. Well, based on what you've heard at the hearing
24 thus far, is the Division going to change its position?

25 A. No, the Division maintains our position that

1 they're both responsible for contamination from the pit on
2 down.

3 Q. And they're both responsible on a 50-50 basis?

4 A. That's correct.

5 Q. So really nothing that has come out during the
6 hearing has changed your mind; is that my understanding?

7 A. At this hearing, no, it hasn't.

8 Q. Okay. I wanted to ask a bit about the issue of
9 the excavation that Burlington performed out there. You
10 were present at least at some points in time when that
11 excavation was being carried out; isn't that correct?

12 A. Yes, on one day of the investigation.

13 Q. Just one day?

14 A. Just one day of the excavation.

15 Q. But based on the data that you've looked at and
16 reports that you've looked at, it's pretty clear that the
17 column of soil beneath PNM's pit has been removed; isn't
18 that correct?

19 A. I'd say it's been removed today, yes.

20 Q. And that would mean that as far as responsibility
21 for soil cleanup, that's been handled on PNM's side of the
22 line; isn't that correct?

23 A. Yeah, I believe so. There might be some small
24 contamination, if I recall, that was still left on the
25 south side a little bit, but I think the bulk of it has

1 been removed.

2 Q. With regard to remediation activities -- we
3 talked about the volumes and that sort of thing -- it's
4 very different, isn't it, to remediate, for example, a 50-
5 gallon release versus a 15,000-gallon release?

6 A. That's true.

7 Q. And it's likewise very different to remediate an
8 1100-gallon release, versus a 15,000-gallon release; isn't
9 that correct?

10 A. True.

11 Q. It's much more expensive for a party to have to
12 clean up the 15,000-gallon release, isn't it?

13 A. I'd say it is.

14 Q. And so if, in fact, PNM only contributed 15- --
15 well, 1100 gallons to this free-product situation that we
16 have at the Hampton 4M, the Division allocates a 50-50
17 split for the cleanup of 15,000 gallons, PNM is paying a
18 whole lot more than it otherwise would have had to pay if
19 it were just held responsible for its 1100-gallon, spill;
20 isn't that correct? Or 1100-gallon contribution?

21 A. Well, I think a free-phase product, at least
22 under the pit area now, doesn't appear to be an issue at
23 the moment.

24 Q. Well, let me ask about that. You've had a chance
25 to look at the data that's been developed since then. Can

1 you draw any conclusions based on that data?

2 A. I'd say based on the excavation data, I think the
3 data collection could have been a little better in terms of
4 getting, especially, more sample analyses across the base
5 of the excavation. We've -- a lot of PID analysis. I
6 think we're fairly confident in where we're seeing low PID
7 analyses, that that's fairly well cleaned up in those
8 areas. However, it would be better in terms of the overall
9 distribution of contamination, I think, as Mr. Rosasco
10 talked about, if we had better data on some of that.

11 Q. Why didn't you require Burlington to maintain
12 better data?

13 A. Burlington was operating under their -- If I
14 recall this now, we did not go under a separate plan for
15 this because they were operating under their generic San
16 Juan Basin pit closure plan. That allows a lot of leeway
17 for the operator in sample collection.

18 The same as for PNM. We don't have to do a
19 separate plan every time PNM is going out and taking a site
20 -- We don't tell them exactly where to take samples; we
21 give them a guidance, and it comes through their document
22 where they're, you know, talking about taking samples. But
23 if you get a very large areal excavation, a lot of times
24 that, even for PNM, falls by the wayside a little bit, and
25 then it gets -- and it varies.

1 Q. Would you agree that as to the Hampton 4M site,
2 that PNM's data collection has been more precise than the
3 data collection by Burlington?

4 A. I'd say PNM has been very good on their data
5 collection.

6 Q. And they've been more precise than Burlington has
7 been in its data collection?

8 A. I guess so. I would have liked to have seen some
9 data on when MW-2 -- I think that was the initial well that
10 was drilled at the site, and I think the reasoning was,
11 when that well was drilled, was, nobody was expecting to
12 find any groundwater at that site. It's up -- I think it's
13 been described, way up in an upper headwater. If I'm going
14 out and looking at the site, I wouldn't have expected to
15 find groundwater at the site myself.

16 And I think some of the initial boring appears it
17 was largely based upon just visual observations of the
18 hole, and all of a sudden at 25 feet groundwater was
19 encountered. So there isn't any really good profiling, I
20 don't think, through the pit area.

21 Q. Well, we did have some subsequent profiling that
22 was done; isn't that correct?

23 A. There was SB-2, that's correct.

24 Q. Let's talk about that. SB-2, we've seen, came up
25 with a reading of 36 parts per million for BTEX, correct?

1 A. That's correct.

2 Q. And in the ordinary course of things, if someone
3 were just going out to do a pit closure, as far as BTEX
4 were concerned that would be within the limits to allow
5 someone to close that pit; isn't that correct?

6 A. In the absence of groundwater contamination, I'd
7 say yes. Once groundwater is contaminated, those levels
8 are just guidance levels and don't have a whole lot of
9 basis on determining final clean-up levels.

10 Q. Isn't the reason that the OCD allows a party to
11 close a pit when they come back with a reading like that is
12 because the presumption is that when you get down to
13 readings that low, you're more likely than not going to
14 impact groundwater?

15 A. That's typically the case, but this is also
16 coming in at -- It also seems to conflict with evidence in
17 MW-2, which talks about essentially going off of visual
18 staining and odors in the monitor well.

19 Q. Well, but you would agree that the analytical
20 results, which is what Soil Boring 2 is based on, are much
21 more reliable than visuals or hydrocarbon odors, would you
22 not?

23 A. I agree, but I also would caution against using
24 the high levels in the OCD's guidance levels as absolute
25 protection for groundwater. They are far above the

1 groundwater standards, by a number of orders of magnitudes.

2 Q. I guess I didn't understand what you were talking
3 about in terms of groundwater standards.

4 A. The groundwater standard for benzene is 10 parts
5 per billion. The OCD guidance level for benzene in soils
6 is 10 parts per million. I've seen some cases where free-
7 phase product will not break the benzene and BTEX limits
8 for the OCD guidelines.

9 Q. Let's talk about the issue of TPH and BTEX -- I
10 mean, sorry, TPH and DRO. You've heard the testimony about
11 what the practice has been by the Division with regard to
12 looking at those measurements?

13 A. That's correct.

14 Q. And you heard PNM's testimony that in many cases
15 the OCD would allow closure based upon the DRO levels of
16 under 100?

17 A. Yes, we have allowed those for PNM as well as
18 other operators, although I will state that in the last
19 year we have been reconsidering that, now have been
20 requiring plans to do combined GRO/DRO for the total
21 petroleum hydrocarbons. That is the method for total
22 petroleum hydrocarbons in EPA 8015, is GRO and DRO.

23 Q. Let me go back. If we went back to -- PNM could
24 have gone back to December of 1997 and started Soil Boring
25 2 in the middle of its pit, and it had drilled down to 15

1 feet and performed an analysis, and the analysis showed the
2 results that we have for SB-2 -- that is, the 36, 37 BTEX
3 and the DRO of under 100 -- and presented that to you, you
4 would have allowed them to close this pit, would you not?

5 A. Yes, we would, in the absence of groundwater.

6 Q. Well, whether the groundwater -- In the absence
7 of discovering free product on the groundwater, correct?

8 A. That's correct.

9 Q. And it's just, I guess, PNM's bad luck that they
10 went too far at this site; is that really what the
11 distinction is?

12 A. Again, you might look at it that way. It's
13 happened on other sites.

14 Q. Yeah.

15 A. We've had differences with the contractors out
16 working on sites sometimes. That's why I caution against
17 using the guidelines as an absolute for groundwater
18 contamination.

19 Q. But I really want to get back to the fact -- The
20 reason you use those guidelines is because the OCD is
21 making some presumptions about the likelihood of
22 groundwater contamination, aren't they? That's why those
23 guidelines are there, correct?

24 A. Well, I would tell you that based on my
25 experience in the last years, I seriously think those are

1 inadequate, the benzene and BTEX limits that we currently
2 have.

3 Q. Inadequate in what regard?

4 A. For protecting groundwater.

5 Q. Are there any plans to change them?

6 A. Right now there's an industry-OCD committee that
7 will be looking at the guidelines.

8 Q. We don't know what's going to happen yet, do we?

9 A. We do not know.

10 Q. PNM's remediation system was removed as a result
11 of Burlington's excavation; is that correct?

12 A. I'm sorry, can you say that again?

13 Q. I said, PNM's remediation system was removed as a
14 result of Burlington's excavation?

15 A. Yes, along with a number of monitor wells.

16 Q. Okay. And what I want to find out is, did the
17 OCD authorize the removal of all that?

18 A. We didn't authorize them to go and -- Well, we
19 wouldn't authorize anybody to destroy the equipment at that
20 point.

21 Q. So that was something that Burlington just did on
22 its own?

23 A. That's what -- a decision, I guess, that
24 Burlington thought they had to do to be able to remove the
25 source through their...

1 Q. But what I'm trying to find out is, did you tell
2 them to go ahead and do it, take it out?

3 A. Well, I told them we didn't have a problem with
4 it, but it's not our issue, as being our equipment at that
5 point. So I think at our point in time, we'd requested to
6 see additional source removal back in March of 1998, I
7 guess that was, and this was going towards the goal of
8 removing major sources of free-phase product, which we
9 wanted to see occur, because we were having the seeps, and
10 the migration of contamination downgradient.

11 Q. But the issue about taking out the recovery
12 system, I want to be clear. You wouldn't have recommended
13 that? Is that -- Did I understand your testimony before?

14 A. If they wanted to take it out, I didn't really
15 have a problem with it. They were going to excavate soils
16 and be removing source materials, in that area. I didn't
17 have a problem with that.

18 Q. I thought -- Okay, well, what about with regard
19 to the monitoring-well network? Did you have a problem
20 with them removing that?

21 A. No, I think we had told Burlington that with the
22 monitor-well network removed, we would need to have some
23 type of replacement put back in -- I don't know if they
24 need to be exactly the same number of wells -- that we
25 would need to have a replacement system installed after the

1 excavation work is complete.

2 Q. Burlington took out several wells, did they not?

3 A. That's correct.

4 Q. And they haven't replaced all of those wells,
5 have they?

6 A. I believe they've only replaced one, which you've
7 called Monitor Well 13, which is in the vicinity of Monitor
8 Well 4.

9 Q. And why is it that you haven't required
10 Burlington to replace at least a semblance of the
11 monitoring well network at this site?

12 A. Because I'd say largely this whole case has been
13 in a state of disarray because of the hearing process.
14 It's been something for the Division to try to figure out
15 how we still proceed through on a lot of this case when
16 we're still dealing with a lot of these issues at issue.

17 Q. Is Burlington's removal of PNM's recovery well
18 and monitoring well evidence of the degree of access that
19 Burlington has over this site, versus the degree of access
20 that PNM has over this site?

21 A. I'm really not sure what --

22 Q. And really, what I'm getting at is, when push
23 comes to shove at this site and what goes on at this site,
24 Burlington is the party that is predominant, that has
25 control over what is done out there; wouldn't that be --

1 A. Probably true, they hold the lease for the site.

2 Q. Okay. And you're aware that Burlington has
3 recently taken the position that PNM can no longer land-
4 farm contaminated soils on site at Burlington's site,
5 correct?

6 A. I've seen the correspondence.

7 Q. And again, this is some more indication of the
8 control that Burlington exerts over the site versus the
9 control that PNM exerts over the site, correct?

10 A. I guess, but at the same time I'd say PNM had
11 control over discharging to an unlined pit, even though it
12 may not have been on a site that they had, as you say,
13 absolute control over, but they took the initiative to
14 discharge to an unlined pit.

15 Q. And just as Burlington --

16 A. Just as Burlington --

17 Q. -- had control of the discharge --

18 A. Just as every operator in the Basin has done,
19 that's correct.

20 Q. But when it comes to remediation and control over
21 the remediation, it's pretty clear that Burlington has the
22 upper hand in terms of control over this site; isn't that
23 correct?

24 A. That's probably true, but that is not a factor in
25 the OCD telling a party to go and remediate contamination.

1 You may have contamination at a refinery that migrates a
2 mile off of the refinery under -- all through private
3 property. That doesn't alleviate you of responsibility for
4 remediation of the contamination, just because that's not
5 your property that you have physical control over.

6 Q. Well, the issue of access certainly makes it more
7 difficult for you?

8 A. It does make it more difficult.

9 Q. It makes it more expensive for you to do that,
10 does it not?

11 A. It can make it very more expensive.

12 Q. And with regard to that issue in terms of
13 Burlington allowing access or not allowing access, does the
14 OCD have a position on that issue?

15 A. On access?

16 Q. Yeah, on PNM's access to land-farming.

17 A. I think it really is not a matter to the Division
18 whether the stuff occurs on site, it's hauled to a
19 centralized facility, it could be hauled to a commercial
20 facility. That's not a preference of the Division.

21 The Division's preference is that the site be
22 remediated and the actions of the remediation not pose
23 additional threats to the environment.

24 Q. Wouldn't you agree that on-site land-farming, as
25 a general proposition, is more environmentally sound than

1 loading the stuff up on a truck, traveling several miles
2 and dumping it somewhere else?

3 A. No, I would say not.

4 Q. Same difference?

5 A. Same difference.

6 Q. With regard to temporary wells, now, Burlington
7 installed seven temporary wells early on in the
8 investigatory process of this site. Do you recall that?

9 A. Yes, I do.

10 Q. Does the OCD have guidelines on the installation
11 and sampling from temporary wells?

12 A. Actually, the Division doesn't have really good
13 guidance on installation of monitor wells or temporary
14 wells.

15 Q. Would you agree that it's preferable in terms of
16 data collection that monitoring wells be installed on a
17 permanent basis rather than a temporary basis?

18 A. It would depend on the circumstance. If you're
19 looking at possibly doing some one-time sampling for a
20 release at a site, a temporary -- there's circumstances
21 where temporary wells could be okay, as long as they are
22 sampled and installed in a proper manner.

23 Q. Is 24 hours sufficient time to install and sample
24 in a temporary and expect it to show accurate depiction of
25 free-phase hydrocarbons?

1 A. I would say probably not. Most of our cases --
2 And I think it's been shown through some of this that a lot
3 of times we'll see high-level dissolved-phase contamination
4 and no product.

5 And usually that's an artifact of -- sometimes of
6 drilling or somehow product is just not entering the well.
7 Because in my opinion, if you have dissolved-phase
8 contamination in the -- benzene, in the part-per-million
9 range, you most likely have free-phase product somewhere
10 very near by.

11 Q. With regard to the levels of contamination that
12 we saw in the groundwater as a result of Burlington's
13 temporary well installation, it's clear that those were
14 much higher than what we saw over -- with regard to
15 sampling in the area of PNM's former pit; would you agree?

16 A. I guess -- What samples are you referring to?

17 Q. Well --

18 A. Groundwater samples or --

19 Q. I'm talking about the groundwater and soil.
20 Let's look at Burlington's exhibits here. It might be
21 easier to look at, look at the numbers themselves. And
22 what I'll have you look at is BTEX concentrations shown on
23 Burlington Exhibit 41. Have you found that exhibit?

24 A. Yes, I have.

25 Q. And when we look at the BTEX concentrations of

1 the soil-water interface there, in the area of Burlington's
2 impoundment, it's pretty clear that there are a number
3 there that are quite a bit higher than the concentrations
4 that we see correspondingly over at PNM's -- in the area of
5 PNM's impoundment; isn't that correct?

6 A. Are you talking about comparing samples taken at
7 the water table?

8 Q. Right at the water table.

9 A. There's one sample, yes, under the Burlington
10 impoundment that's higher than those found at the PNM
11 impoundment.

12 Q. Wouldn't you expect that if you put in a
13 monitoring well, a permanent monitoring well, in that area
14 right at Burlington's former impoundment, that it is likely
15 you could find a thicker band of free product than even
16 what we've found over under PNM's impoundment?

17 A. I don't know if that's necessarily true. I would
18 expect that you're going to find free-phase product there.
19 I don't know if you're necessarily going to see more based
20 upon that soil sample than you would under PNM.

21 I think the evidence that we've seen, at least
22 from the monitor wells, is that the greater concentrations
23 were under the PNM impoundment, though, in terms of
24 thicknesses of free-phase product.

25 Q. Well, we haven't had a permanent monitoring well

1 installed in the middle of Burlington's impoundment to be
2 able to compare, have we?

3 A. I agree, but I'm talking about observations I've
4 had of the excavation to groundwater when that was in
5 place. I mean, there -- What I observed a number of times,
6 usually there wouldn't be much product in the excavation at
7 that point. But I will admit, it is a light-phase product
8 that could be volatilizing, so all I really observed when I
9 saw that open excavation with groundwater exposed was
10 potentially some sheens off on one side.

11 Q. And when we had the excavation, mass excavation
12 over in PNM's pit, and the water was allowed to sit at the
13 bottom of that, after we didn't have -- we saw -- I guess
14 the lab analyses showed that there was dissolved-phase and
15 not free-phase over there; is that correct?

16 A. Over in the vicinity of the PNM pit?

17 Q. Right, when they left it open for a period of
18 time?

19 A. Well, I saw when they cut off one of the monitor
20 wells with the dozer that went through there. That was
21 when we were right about at the water table and actually
22 then saw where the monitor well was coming up, and all of a
23 sudden we were getting a little bit of fluid coming up out
24 of the monitor well, and you could see little bubbles of
25 product just coming right up out of that. So there was

1 obviously product in that vicinity.

2 Q. And that well that you were looking at was PNM's
3 recovery well, correct?

4 A. Yes, either -- I believe that was -- Look at the
5 map. I believe it was probably --

6 Q. -- MW-6?

7 A. -- either MW-6 or MW-2 at that point.

8 Q. Okay. Well, we know that that product-recovery
9 well had been working for quite some time, correct?

10 A. I mean, there was product in Monitor Well 2 as
11 well.

12 Q. Right.

13 A. That's correct.

14 Q. And because of that recovery system, it's going
15 to draw contamination to that area, is it not?

16 A. That's correct.

17 Q. So it's not surprising to find a thick layer of
18 contamination, free-product contamination, in that area; is
19 that correct?

20 A. That's correct.

21 Q. And you described a phenomenon where you said the
22 water came up through the hole?

23 A. Yes, it was coming up right -- We were maybe, at
24 that point -- I'm guessing -- at about -- oh, it must have
25 been about 26 feet, roughly.

1 Q. And we're talking about --

2 A. So right at the top of the water table.

3 Q. We're talking about the wellbore there?

4 A. Yes.

5 Q. And that action of the water coming up through
6 the wellbore would suggest there's some head to that water,
7 right? There's upward pressure?

8 A. That's correct.

9 Q. What do the OCD regulations say about
10 apportionment of responsibility among responsible parties?

11 A. They do not say anything about the apportionment
12 between responsible parties. They just talk about --
13 There's a definition of "responsible person", and it is
14 referred to a number of times throughout Rule 19, the
15 abatement regulations.

16 Q. Does the OCD allow for any proportional
17 apportionment between responsible parties at all?

18 A. I don't know that the Division has ever done that
19 for groundwater remediation sites.

20 Q. Is this the first time the issue has come up?

21 A. Yes, it is.

22 Q. When does the OCD regard a responsible party as
23 having completed remediation at a site?

24 A. Let me back up. It's -- the first time it's come
25 up, it's the first time I guess it's gotten to the point

1 where somebody is trying to tell us to distinguish who has
2 how much of what. We've had a few cases in the past year
3 where we have multiple sources of contamination, and I
4 don't think those have been resolved. We've had a few down
5 in the southeastern part of the State as well.

6 Q. And in this case, though, the way it's been
7 allocated is 50-50?

8 A. That's the same as we had allocated it in other
9 circumstances as well.

10 Q. And the reason being -- And the parties were
11 satisfied with that in those other cases, apparently?

12 A. I don't know that they're particularly satisfied.

13 Q. But they didn't appeal --

14 A. Right.

15 Q. -- that finding?

16 With regard to Burlington and its future plans
17 out at this site, I guess there was some discussion that --
18 you had some discussions with them with regard to future
19 plans; is that correct?

20 A. I had some discussions with them about placement
21 of -- actually replacement of some of the monitor well
22 network.

23 Q. Well, let's talk about that. Right now we've got
24 how many monitoring wells on the wellpad?

25 A. Oh, after the excavation work there's --

1 Q. Right. I'm talking about on the wellpad itself.

2 A. -- possibly four, I believe.

3 Q. Okay, and --

4 A. I'm not exactly sure. There's a replacement
5 well. Monitor Well 12 went in, Monitor Well 13, I believe
6 Monitor Well 9 still exists, and then Monitor Well 1, which
7 is on the upgradient side; I don't know if you really call
8 that on the wellpad.

9 Q. It's not on the wellpad?

10 A. That's correct.

11 Q. So we have, really, Monitoring Well 12 that was
12 put that was put in by PNM, Monitoring Well 9 that was put
13 in by PNM, and Monitoring Well 13 that was put in by
14 Burlington, correct?

15 A. That's correct.

16 Q. And do you think when we -- In terms of this
17 dispersion of the wells on there, it would be very
18 difficult, would it not, to be able to determine current
19 groundwater flow?

20 A. I'd agree with you.

21 Q. You don't really have very good triangulation
22 there, right?

23 A. I'll agree with you.

24 Q. And with regard to the installation of wells that
25 the OCD is proposing, where are we talking about putting in

1 the wells?

2 A. Let me -- If you'll give me a second. Initial
3 conversations I had with Burlington last April, we'd like
4 to see something in the vicinity of Monitor Well 4, which
5 they put in the replacement well, Monitor Well 13 --

6 Q. Okay.

7 A. -- and then we talked about wanting to see
8 something -- I wanted to see what kind of contributions we
9 had remaining down in that area that's designated, I guess,
10 on your figure as green, which says "Active Free Product",
11 to see what kind of --

12 Q. So if we're looking at -- just for reference,
13 looking at PNM Exhibit 6 --

14 A. That's PNM Exhibit 6, yes.

15 Q. You'd want a monitoring well in there; is that
16 correct?

17 A. That's correct.

18 Q. What's the time line for installation of that
19 well?

20 A. At this point, I would like to -- to tell you the
21 truth, I'd like to see some in here very soon.

22 Q. The --

23 A. The site's been going on for a long time, and I
24 think right now we've got -- The excavation work has been
25 completed since February, roughly.

1 Q. Right.

2 A. So I would -- To tell you the truth, I would have
3 liked to have seen some in sooner, you know, sooner after
4 the excavation work.

5 Q. Have you issued a directive to Burlington to put
6 in a well?

7 A. No, I have not.

8 Q. Why is that?

9 A. At this point I guess I expressed to them what
10 I'd like to see in a couple of the monitor wells. The
11 other thing I've been waiting on was seeing data from
12 annual reporting. I don't believe we've received an annual
13 report from Burlington at this point on the site.

14 Q. Have you gotten any written reports from
15 Burlington outside the context of this hearing on their
16 excavation?

17 A. I don't recall getting any annual reports that I
18 can think of.

19 Q. Well, I'm not talking about annual reports, I'm
20 talking about --

21 A. I'm talking reports since the excavation work.

22 Q. Right.

23 A. I don't recall getting any.

24 Q. Doesn't Burlington's groundwater management plan
25 call for periodic reporting?

1 A. That's correct.

2 Q. And they haven't been providing that reporting?

3 A. They did not provide an annual report this year.

4 Q. Has the OCD taken any action with respect to
5 Burlington in that regard?

6 A. At this point, no.

7 Q. Are you going to?

8 A. I have been intending to. I'd asked them at one
9 point about -- that I had not received the annual report.
10 I did that verbally. I have not followed that up with any
11 written requirements as of this date.

12 Q. When did you ask them verbally for the report?

13 A. I think it was fairly recently, probably in the
14 last couple months. I work on over 500 sites, so somehow
15 it just came to mind that I hadn't seen anything from them
16 this year.

17 Q. We talked a bit about the installation of wells
18 in known or suspected source areas; do you recall that
19 discussion?

20 A. I'm sorry, could you repeat that?

21 Q. Yes, about the installation of monitoring wells
22 in the area of suspected source locations?

23 A. Yes.

24 Q. And there was testimony from PNM that generally,
25 when you are trying to define contamination, you want to

1 put a well right in the middle of the source to the best
2 you can do that, correct?

3 A. A lot of times I'd say -- like Mr. Rosasco, I'd
4 prefer actually to see something right on the -- directly
5 on the downgradient side.

6 Q. But not far on the downgradient --

7 A. But not far, correct.

8 Q. And in fact, the OCD had requested a couple years
9 ago that Burlington put in a -- what I'll call a source
10 well in the middle of the area of their former tank
11 battery, correct?

12 A. Yeah, I believe it might have been in the area of
13 TPW-7, roughly.

14 Q. In fact, that was the point, the precise point --

15 A. Uh-huh.

16 Q. -- at which he told you to put it; isn't that
17 correct?

18 A. I believe so.

19 Q. And they never put that in, right?

20 A. That's correct, not that I know of.

21 Q. For a couple of years?

22 A. I don't know that we've ever had a permanent
23 monitor well at that point.

24 Q. Well, they actually have never put it in.

25 And there was discussion about, Well, the OCD

1 told us we didn't have to do that. Do you remember that
2 testimony?

3 A. I don't know if I ever exactly said we don't have
4 to. I think we got stuck on doing other things at the
5 time, and I think on my part I may have lost site of that
6 myself.

7 Q. So would you like to have a well put in at TPW-7?
8 Do you think that's still necessary?

9 A. I still kind of wonder a little in terms of the
10 contamination as well, I think, in the TPW-6 and -5 area.
11 I think we had some, you know, elevated levels of
12 contamination up in some of that area, and I think there's
13 a question as to exactly where pits were at this site.

14 I think one of the diagrams that you pointed out
15 earlier showed potentially a pit on the south side, another
16 indication sometime of a pit up towards Monitor Well 13.
17 So --

18 Q. All right, is --

19 A. -- I'm not denying that there's additional
20 investigation that's needed at the site. There is.

21 Q. And in the area of Burlington's --

22 A. Yes.

23 Q. -- operations?

24 A. Yes.

25 Q. Would you agree that the investigation in the

1 area of PNM's former operations is pretty well exhausted?

2 A. I'd say it's been pretty thorough.

3 Q. And if we -- But you can't say the same thing
4 about the investigation in the area of Burlington's
5 operations has not been as thorough; isn't that correct?

6 A. I don't know if I'd say it's been as thorough.
7 There's still a lot of holes that need to be filled in for
8 some of that area.

9 Q. If we filled in those holes, we might find a very
10 different picture in terms of the relative contributions of
11 contamination at this site as between Burlington and PNM,
12 mightn't we?

13 A. It's possible.

14 Q. And with regard to the area in the very southern
15 eastern portion, is it your recommendation that a well be
16 put in there as well?

17 A. I don't know if I'd want to specify certain
18 points. I think we'd need to see more wells in general on
19 the wellpad.

20 Q. What about in the area of Burlington's former
21 separator pit, the unlined pit?

22 A. I think I'd like to see something over in that
23 area in terms of -- I don't know whether it's usually some
24 boring work or -- I think they went down to approximately 6
25 1/2 feet. I don't know if that's really adequate to see if

1 they had vertical contamination or not. It was close to
2 the former pit, but I don't know if the depth was adequate
3 for determining if that had any contributions.

4 I don't believe it had contributions to the -- at
5 least from the available evidence, to the free-phase
6 product, just because we haven't really seen anything out
7 in Monitor Well 3, which is directly downgradient from that
8 area.

9 Q. Well --

10 A. But I'm not ruling that out, that that occurs.

11 Q. -- and as we talked about before, sometimes it
12 takes a very long time for the free-phase to show up,
13 correct?

14 A. Usually it takes a while for free-phase to show
15 up, but you're usually having dissolved-phase BTEX
16 concentrations, especially benzene, up in the part-per-
17 million range. So you know you already have a heavily
18 contaminated area, just for some reason you're not seeing
19 free-phase product in those areas.

20 Q. With regard to -- Let me ask, why hasn't the OCD
21 been a little more insistent, if you will, about the
22 installation of wells in these areas that you've just
23 described with regard to Burlington?

24 A. I think we did ask for additional work out of
25 Burlington in terms of asking for their groundwater

1 management plan, which actually they submitted a generic
2 plan which does cover this site, same as PNM. PNM has
3 operated under -- is not operating under a site-specific
4 plan for this site either; they operated under a generic
5 plan as well.

6 So they have the mechanism there to do it. If
7 it's not being done, that's a matter of compliance for the
8 Division to address, then.

9 Q. And that's, I guess my question, is, why hasn't
10 the Division insisted on compliance?

11 A. I guess at this point there's just been a lot of
12 confusion over the process of this with the hearings that
13 have been ongoing through this whole process.

14 Q. Well, with regard to Burlington's activities, the
15 hearing was only filed back a year ago, correct?

16 A. That's correct.

17 Q. There was a lot of time that elapsed between the
18 time when there was confirmed contamination on Burlington's
19 side of the wellpad and that appeal was filed; isn't that
20 correct?

21 A. That's correct. There's also been a lot of work
22 that's been done at the site in terms of the excavation
23 work and trying to remove the sources.

24 Q. Yeah, but that work has really been concentrated
25 primarily on PNM's side of the line; isn't that correct?

1 A. I'd say PNM's -- largely, the bulk of it was on
2 the -- it was kind of on both sides of the line, but I'd
3 say just as much seemed to be done on the upper side of the
4 line as well.

5 Q. Well, we're looking at groundwater contamination,
6 and it's certainly fair to say that the bulk of the work
7 was done on PNM's side of the line?

8 A. In terms of excavating the groundwater?

9 Q. In terms of the work related to cleanup of
10 groundwater, the bulk of the work has been done on PNM's
11 side of the line; isn't that correct?

12 A. I don't think so, from when I inspected the pad.
13 There were some extensive excavations that went to the
14 south side of the line as well.

15 Q. But that wasn't addressing groundwater
16 contamination on that side of the site, was it?

17 A. It was addressing sources of contamination, as I
18 understood it from my discussion with them. That was their
19 intent.

20 Q. You would agree, however, that the excavations
21 haven't been near as extensive, in terms of depth, over on
22 Burlington's side of the pad versus PNM's side of the pad?

23 A. All I can say, just based from what I've heard
24 here, is that the only areas that were really excavated to
25 groundwater were down towards the northern side of the

1 excavation work, as I understand it. But I don't really
2 have any knowledge, because I only witnessed a small
3 portion of that, which was on the south side -- or, I'm
4 sorry, the north side, directly in the vicinity of the PNM
5 pit.

6 Q. Do the OCD regulations and guidelines allow for
7 remediation to background levels?

8 A. Remediation of soils?

9 Q. Remediation of soils or groundwater?

10 A. The abatement regulations allow remediation to
11 background concentrations, that's correct.

12 Q. For soils and groundwater?

13 A. They would apply to both soils and groundwater.

14 Q. Okay. And when you're looking at background
15 levels for groundwater, what you're looking at is, what's
16 the water like in the upgradient -- upgradient of where
17 you're looking at; isn't that correct?

18 A. Upgradient of your source of what you've
19 contributed to, correct.

20 Q. And have you allowed sites to close based on
21 background levels, if something's cleaned up to the
22 background level?

23 A. I don't recall that we've ever looked at --
24 Usually, we're looking at cleaning up to the WQCC
25 standards. I can't recall background at least being used

1 on our sites for remediation. Sometimes I've used that for
2 soils levels at large-scale sites like with metals
3 contamination and things like that, but I can't recall that
4 on a groundwater site, we've gone to background. We
5 usually are going to WQCC standards

6 Q. So on a groundwater site you've never allowed
7 closure to background levels; is that your recollection?

8 A. I can't recall one. Maybe --

9 Q. PNM talked about the Cozzens site in the
10 testimony. Do you recall that?

11 A. Sure.

12 Q. And what's your understanding of what the
13 situation is there?

14 A. That's a totally different site. Actually, the
15 role is reversed there. The PNM dehydrator is located
16 upgradient of the Burlington equipment. Burlington had had
17 -- Well, let me back up.

18 PNM had come through and done some excavation
19 work on their pit in a similar fashion as here, installed
20 monitor wells, and as part of that discovered contamination
21 downgradient from some of the Burlington operations.

22 Once groundwater was remediated to WQCC standards
23 for four consecutive quarters, we closed PNM's pit out
24 because it was upgradient of the contamination which we
25 believe was caused by Burlington. It was actually a

1 reverse case to the one we have here with the Hampton 4M.

2 Q. Okay, with regard to the remediation efforts
3 undertaken by Burlington, how successful do you believe
4 Burlington has been?

5 A. I think they've removed a large portion of soil
6 contamination. The excavation -- Obviously, that was quite
7 a large volume to remove. I don't believe it's all been
8 removed at this point.

9 Q. And what about with regard to the groundwater
10 contamination? How successful do you think Burlington's
11 remediation efforts have been in that regard?

12 A. I think that's still to be seen. The initial
13 indications are, we're not seeing the large, measurable
14 free-phase product in the replacement well, for example,
15 for Monitor Well 12. So I'd have to say it's probably too
16 early to tell at this point, especially without additional
17 monitoring points.

18 Q. Are you disturbed at all about the -- even what
19 may be preliminary trends, but the trends we're seeing in
20 the wells where the concentrations are showing some
21 elevations?

22 A. I don't know if I see anything that I'd consider
23 that significant. I know you've talked about Monitor Well
24 5.

25 Q. Right.

1 A. I was looking at trends at that in PNM Exhibit
2 48-A during the prior testimony, and there's talk about a
3 sheen showing up. If you ask me, in my professional
4 opinion, that sheen or free-phase product has always been
5 in the vicinity, just based upon the BTEX concentrations,
6 benzene and concentrations that we've been observing over
7 time.

8 So I don't know if that -- we'd consider that a
9 trend. I've always expected, based on those
10 concentrations, that there is some free-phase product in
11 the vicinity of that well.

12 Q. With regard to MW-12 that was installed by PNM in
13 the area of its former pit, we know now that the soil
14 that's surrounding that is clean fill, correct?

15 A. What was placed back in was supposedly clean
16 fill, correct.

17 Q. Right, I mean, that's what Burlington said, it
18 was clean fill, correct?

19 A. Correct

20 Q. And so to the extent we're seeing any
21 contamination in MW-12, in the groundwater, that's having
22 to come from upgradient, is it not?

23 A. At that point most likely coming in from
24 upgradient, because most of the stuff in that vicinity was
25 removed, but I don't know how far -- There may be still

1 some residual that's left behind, but I'd say the bulk of
2 the product at that point was removed from that area
3 physically, so it appears to from the testimony.

4 Q. We talked a bit about Burlington's groundwater
5 remediation plan. Does that also require quarterly
6 reporting, quarterly monitoring and reporting associated
7 with that?

8 A. That's correct.

9 Q. And has Burlington complied with that requirement
10 of their groundwater management plan?

11 A. I don't know. We've had the -- Well, without
12 receiving the annual report, I think that was in the first
13 annual report we would have received at that point from
14 Burlington. Since we haven't received it, I don't think I
15 can say what they've been doing on some of their sites.

16 Q. When was the last report you got from Burlington?

17 A. On groundwater, that's -- I believe we -- I have
18 to look at the file, but I believe we just approved the
19 groundwater management plan last year.

20 Q. Okay. And when was the --

21 A. So the first report probably would have been due,
22 if I recall, I think it might have been due in April,
23 roughly.

24 Q. You haven't gotten an annual report yet?

25 A. No.

1 Q. And you haven't gotten any quarterly monitoring
2 reports --

3 A. The quarterly monitoring comes in in the annual
4 report. We require that to be done annually, but we don't
5 want to be -- We don't see a real need to look at it on a
6 quarterly basis. It's better to track remediation on an
7 annual basis.

8 Q. Well, has Burlington been sampling the wells on a
9 quarterly basis?

10 A. I have no knowledge of that.

11 MR. ALVIDREZ: We'll pass the witness.

12 CHAIRMAN WROTENBERY: Mr. Carr?

13 MR. CARR: I have no questions.

14 EXAMINATION

15 BY COMMISSIONER BAILEY:

16 Q. PNM Exhibit 57 shows the groundwater plume coming
17 from the wellhead?

18 A. Okay.

19 Q. You heard early on that the plume was moving at
20 about 500 feet per year? Is that --

21 A. That's been the testimony that's been presented
22 here.

23 Q. Do you agree with that?

24 A. I myself haven't exactly analyzed their -- just
25 looking at actual elevations and groundwater flow, that's

1 what you would see from that data. However, it doesn't
2 appear that the product has -- and the plume, has moved at
3 precisely that rate, because we're looking at, if I recall,
4 they talked about MW-11 being approximately 1000 feet, I
5 thought, or 1200 feet down if I've got that right.

6 I would have expected over the life of this well,
7 of the 12-, 13-year life, that we would have been seeing
8 contamination down here. So I don't think the -- The
9 groundwater flow may be at that rate, but I don't know that
10 the plume movement is occurring at the same rate as the
11 groundwater.

12 Q. But it appears as though the plume has crossed
13 from the lease lands onto fee lands --

14 A. Yes, it's crossed beyond --

15 Q. -- beyond its lease boundaries?

16 A. That's correct.

17 Q. Does the Burton well appear to be in the path of
18 any downward migration of this plume?

19 A. I don't think it's real clear at this point. The
20 groundwater flow regime through this area, we have kind of
21 limited data. Everything is pretty much in a straight
22 line. You don't get good hydraulic control for a gradient
23 on things that are more located in a line. So I suppose
24 one thing I have wanted to see is some more lateral points
25 to this plume, to really peg down a little bit more exactly

1 where it's going.

2 Q. Should the fact that the Burton well is only
3 about 500 feet from the leading edge of the plume provide
4 any sort of urgency or immediacy --

5 A. Yes --

6 Q. -- to the --

7 A. -- and that's why the Division issued out the
8 requirement in April -- or was that March, I believe, of
9 1998, in the spring of 1998.

10 Q. You would like, and you expect, that there will
11 be a sense of timeliness in completing groundwater plans
12 and cleanup of this area?

13 A. Yes. We actually had that concern expressed from
14 Dr. Burton himself, as ell. We had correspondence -- I
15 believe it was correspondence that was actually sent to
16 Burlington, which was then -- Burlington then forwarded it
17 to us.

18 And we had also, I believe, responded to Mr.
19 Burton as well, telling him that we were investigating
20 the -- working on remediation at this site, just to let him
21 know, and that we would also send him copies of
22 correspondence of actions that we were taking.

23 Q. Is there currently a product-recovery well on
24 site?

25 A. At this point there is not. There is a

1 monitoring well that was replaced, Monitor Well 12. I
2 don't believe it was really installed as a recovery well,
3 though.

4 Q. Should there be a product-recovery well at this
5 site?

6 A. I think at this point it's hard to say, because
7 right now we're not seeing the product that we had. That's
8 why I referred back to maybe looking at what we need to do
9 is get some monitor wells in for a start and figure out if
10 we do need additional product recovery.

11 I think that data we have now is kind of limited
12 for making those kind of determinations as to where you
13 would put something.

14 Q. Are there any air strippers on site for
15 remediation of the dissolved-phase?

16 A. No. Under the plan -- I believe this is also
17 under both of PNM's and Burlington's plans, and this is
18 consistent with Division approvals throughout the San Juan
19 Basin, most ground remediation sites are now being done
20 through product removal, if product is there, and source
21 removal, and then dissolved-phase contamination is largely
22 being addressed through natural attenuation.

23 We've had good success with remediation of sites
24 through natural attenuation. I think that this site could
25 be a candidate for that, based on what the extent of the

1 plume is, as long as it's not posing any threats to other
2 receptors such as the Burton well.

3 Q. That was my point. Should that general policy
4 hold true even when there is the water well within 500 feet
5 that may be infected by this?

6 A. I believe it still could, as long as we had
7 adequate monitoring between that and that point so that we
8 had some type of early detection when something is moving
9 in that direction.

10 As I understand it now, though, I don't believe
11 that well is actually being used, this one that's listed as
12 the EB well, if it's from my conversation with PNM that
13 that well wasn't being used at this point in time.

14 I don't know if we've really got any information
15 what other folks are using for water out here. I've always
16 kind of wondered that on some of these other -- There's
17 actually a residence here, there's a couple residences down
18 from this area that have gone in recently.

19 Q. So somebody has a well somewhere, it may not be
20 the EB-1 that we see here?

21 A. Yeah, I'm not sure what the source of their water
22 is.

23 COMMISSIONER BAILEY: That's all I have.

24 CHAIRMAN WROTENBERY: Okay, Commissioner Lee?

25 COMMISSIONER LEE: (Shakes head)

EXAMINATION

BY CHAIRMAN WROTENBERY:

Q. Let me just ask you about the issue of the trail of contamination between the pit bottom and the groundwater. That seems to me to be a key part of PNM's theory of this particular case. They don't see the kind of trail of contamination that they would expect to see if, in fact, the free product that is in the groundwater below their pit came from the pit.

Based on your experience in working with pit closures and pit investigations, what's your opinion on that particular issue?

A. I would apply that not just to pit closures but also just to contamination sites in general. I've worked on a lot through gas plants, refineries, a lot of different areas with different types of sources, and it's rare to really see -- I know there's been a lot of dispute about what -- You know, you have to have a saturated profile somehow with hydrocarbons to see free-product contamination of the groundwater. I've seen a number of sites where we've had what I would almost consider somewhat moderate levels of contamination which have resulted in free-phase product contamination of the groundwater.

I was out when they were doing some of the excavation work on the -- I believe it was even 20-foot

1 level. I was just checking out some of the soils
2 themselves as they were doing the -- you know, taking PID
3 readings and just taking a handful of soil on one. I still
4 had a kind of a little bit of a filmy feel to my hand in
5 terms of just a visual observation.

6 So it was one of my observations that we have had
7 free-product migration down through the PNM pit area, and
8 that was in the vicinity of the PNM pit, roughly.

9 I don't know if that exactly answered your
10 question.

11 Q. It did. I also wanted to follow up on the issue
12 of the other sites that you had identified from your work
13 where we had dehydration pits and we also had groundwater
14 contamination. There was some discussion, if you might
15 remember, in -- I believe it was in Ms. Gannon's testimony,
16 where she was questioning whether, in fact, there might be
17 another source of contamination in those particular sites.

18 I guess -- I think your statement had been made
19 that these were sites where you had groundwater
20 contamination beneath a dehydration pit, and there was no
21 upgradient separation equipment or other production
22 equipment.

23 A. Right. Usually there was other production
24 equipment, but it was located downgradient from that area.
25 The dehydration pit was in the upgradient portion.

1 And one circumstance was well upgradient, was the
2 sole, really, potential source in that area. In that
3 case, we had approximately three feet of free-phase product
4 that was in the monitor wells after the excavation, because
5 they only excavate so much to the physical location. And
6 that was from a dehydration pit that at that time had
7 supposedly been out of service for ten years.

8 Q. How many of those sites did you cite in your
9 testimony?

10 A. I think in ours we cited 13 sites, although some
11 of those are questionable, some of those are some of the
12 PNM sites where there is some question as to whether there
13 are upgradient sources.

14 Q. Okay. So there are a total of 13 sites that
15 you're looking at right now where you have dehydration pits
16 and groundwater contamination?

17 A. With free-phase product.

18 Q. With free-phase product. And you do consider a
19 sheen to be free-phase product?

20 A. Yes, I've always considered sheen to be free-
21 phase product, although there are some circumstances where
22 you could have organics. I've seen it in the San Juan
23 Basin and some of the areas where it's a little bit more
24 swampy areas, where you -- natural organics can still give
25 you a sheen as well on the surface. But I usually consider

1 sheen in a monitor well to be evidence of product, that
2 product is nearby.

3 Q. Out of those 13 sites, how many have the sheen
4 and how many have measurable amounts of free-product?

5 A. If you'll bear with me a second -- Out of eight
6 El Paso Natural Gas sites, some of these originally had a
7 sheen on them. All of them now have measurable product,
8 except for one which had been cleaned up sometime in the
9 past, one that had kind of droplets and sheen that was
10 observed, that -- one that actually knocked out a community
11 water supply, the Flora Vista water supply. Ranging from
12 approximately 3/10 of a foot up to two-point -- well,
13 almost three feet, approximately.

14 Q. And you say that you're still investigating the
15 possibility of some other source of contamination from
16 upgradient at some of those sites. How many --

17 A. At these sites I listed here, there's only one
18 that has a possible -- that I've listed, has a possible
19 upgradient source, from the data that I have available at
20 this time.

21 Q. Thank you. Now, I just want to ask you, what do
22 you think is the next step that needs to be taken in the
23 investigation and remediation of this site?

24 A. I'd say -- I guess a lot of the -- There's been
25 quite a bit of source removal done, and I would probably

1 echo Mr. Rosasco a little bit in thinking that we need to
2 collect a little bit more data to figure out exactly what
3 the current conditions are, since completion of this
4 excavation work on the wellpad itself.

5 The other thing that's been a concern of mine for
6 quite a while has been the downgradient portions of the
7 plume, as Commissioner Bailey was referring to concerns for
8 impacts on other receptors. We do have the one
9 downgradient monitor well which was put in at Monitor Well
10 11, but all our monitoring points are pretty much in a
11 straight line. We don't really have any lateral control on
12 the groundwater movement through that area.

13 Based on the topography out there, I would say
14 that's probably approximately where the groundwater is
15 going, but that's -- considering the receptors that we have
16 down there, I think we need to have a little bit more
17 confidence in exactly where that water is going, and that
18 contamination is going.

19 Q. Are you saying we need additional monitoring
20 wells --

21 A. Yes.

22 Q. -- in that area?

23 A. Both on the wellpad and downgradient from the
24 site.

25 CHAIRMAN WROTENBERY: Okay. Just in time, Mr.

1 Carroll. You're up.

2 MR. CARROLL: I beg the Commission's pardon. My
3 optimism was unfounded. I had to make a quick phone call.

4 CHAIRMAN WROTENBERY: Okay.

5 REDIRECT EXAMINATION

6 BY MR. CARROLL:

7 Q. Mr. Olson, I think Ms. Wrotenbery referred to
8 this well with the three feet of free product under the
9 former dehydrator pit.

10 A. Yes.

11 Q. What was the name of that well?

12 A. That was the Jaquez GC C Number 1 -- It was the C
13 Number 1, I believe, and the D Number combined well site.

14 Q. And who was the former operator of that
15 dehydrator?

16 A. El Paso Natural Gas, or El Paso Field Services,
17 currently.

18 Q. And you testified you didn't know what type of
19 dehydrator that was?

20 A. No.

21 Q. It could have been the same, it could have been
22 different?

23 A. I have no idea.

24 Q. And what was the configuration at that site?

25 A. The configuration at that site was that the

1 dehydration equipment was located upgradient from the other
2 source -- potential sources on the wellpad. Other areas
3 down the wellpad were also remediated by Amoco at that
4 point, that was an Amoco well site.

5 Q. Now, Ms. Gannon in her rebuttal testimony assumed
6 that there was no separator on this site. That was an
7 unfounded assumption, wasn't it?

8 A. That's correct.

9 Q. The separator was downgradient?

10 A. It's just located downgradient at the site.

11 Q. And you said ten years after that dehydrator was
12 last used, you still had a three-foot plume of free product
13 underneath the former dehydrator pit?

14 A. Yeah, according to El Paso that pit had been out
15 of service for ten years prior to conducting those
16 investigations when we discovered that amount of product on
17 there.

18 Q. Is there a groundwater gradient at that site?

19 A. Yes.

20 Q. And you still had a three-foot plume after ten
21 years?

22 A. Yes, some of it, I think, is related to -- There
23 is irrigation ditch to some of that area, which may be also
24 causing the stuff -- to limit the migration of some of the
25 plume.

1 Q. And you listed 13 sites, some of them had
2 possible other upgradient sources? How many of those sites
3 had no possible upgradient source?

4 A. Bear with me a second. I have seven -- six or
5 seven listed with potentially no upgradient sources.

6 Q. Okay, we'll move to the Cozzens site that was
7 also brought up in Ms. Ristau's rebuttal testimony and Mr.
8 Alvidrez's cross.

9 Ms. Ristau testified that you had approved
10 closure of a PNM dehydrator pit that was downgradient of
11 upgradient production operations. And then in response to
12 my question yesterday, Ms. Ristau assured me that the
13 dehydration unit was, in fact, downgradient of the
14 production operations. She was incorrect, wasn't she?

15 A. Yes, the equipment is actually -- PNM equipment
16 is located upgradient of the Burlington equipment.

17 Q. And you've researched your records and you have
18 evidence of that?

19 A. Yes, I do.

20 Q. I have what is marked as OCD Exhibits 4 and 5,
21 regarding the Cozzens site. Who prepared these site maps
22 and gradient maps?

23 A. I believe these were actually prepared by PNM. I
24 pulled them from the file. I believe this was data that
25 was provided possibly in one of the last reports we had on

1 the site. It's consistent with the prior reports as well.

2 Q. So the Cozzens site was in no way similar to the
3 Hampton 4M site?

4 A. Yeah, you could see on -- the gradient across
5 here is across to the south to southwest, and the -- on
6 Exhibit Number 5, you can see where the location of the PNM
7 pit was. And the other source areas were the separator
8 area and 300-barrel tank that's located for Burlington,
9 which is downgradient of the PNM equipment on that site.

10 So based upon that, once PNM had remediated their
11 pit area, the soils and groundwater, we had issued closure,
12 because we believed they had cleaned up their contributions
13 at the site.

14 Q. So Ms. Ristau just must have been mistaken?

15 A. Correct.

16 Q. I think Commissioner Bailey asked you this
17 question, but the area accessed by the SB-2 wellbore was
18 fairly limited; is that correct?

19 A. That's correct.

20 Q. And could the path of hydrocarbon migration have
21 been other than through the area accessed by that SB-2
22 wellbore?

23 A. That's highly probable. That's typical in
24 contaminant migration through soil. I've observed this
25 even in sidewalls of excavations where you see real

1 circuitous paths of contaminant migration at that point.
2 So it could possibly have just hit one area of it and -- I
3 will admit, they did take the sample from their highest
4 reading at that point, which was consistent with their
5 plans, so they were working within their approved
6 procedures, the OCD.

7 Q. Mr. Olson, Ms. Ristau also showed me yesterday
8 that the Hampton 4M dehydrator pit was fully remediated; is
9 that correct?

10 A. There might be some distinction of whether they
11 consider it fully remediated it now, the soils, versus when
12 they stopped excavation. At the time that they stopped the
13 excavation at 12 feet, the pit was not fully remediated and
14 was still highly contaminated in the base of the
15 excavation.

16 Q. Mr. Olson, you've heard testimony of Dr. Heath,
17 who testified that under certain assumptions 1100 gallons
18 would have been discharged to the pit?

19 A. That's correct.

20 Q. And you also heard Dr. Rhodes saying there could
21 have been pretty much an unlimited amount of product
22 discharged to the pit. Nobody really knows what volumes
23 were discharged to that pit, do they?

24 A. I think that's a point of dispute. It seems to
25 be clearly a point of dispute between the two parties.

1 Q. You don't know personally how much was discharged
2 to that pit, do you?

3 A. I do not.

4 Q. And in the absence of any known volumes, the OCD
5 won't apportion or even can't apportion liability, can it?

6 A. I don't believe so.

7 Q. I think you just testified that soil saturation
8 is not any real indication of free product moving through
9 the soil?

10 A. That's correct.

11 Q. So saturation isn't required for free-product
12 migration through soils to groundwater?

13 A. No, you're going to have product getting in pore
14 spaces. You've also got the volumes of water coming
15 through, flushing action, and it's also moving through
16 under largely unsaturated conditions if we take PNM's
17 assumption that it was small volumes.

18 Even most of these pits, it's unsaturated flow,
19 so you're not going to really see saturated conditions.
20 You may see some oiliness to the soils, possibly staining.
21 I think that was observed in one of the monitor wells,
22 Monitor Well 2, which was placed at the source.

23 Q. And what is staining an indication of to you?

24 A. Product migration. It's not necessary, but I
25 think -- Especially in this case, I think it's -- from some

1 of the documents I've seen, the product that's actually at
2 this site, I believe from the Dakota, is a clear
3 condensate. So even on the water it's somewhat difficult.
4 You look for a kind of little yellowishness on the water.
5 It seems a little difficult to --

6 Q. Clear condensate doesn't leave staining?

7 A. It won't likely leave the staining that you would
8 see from like a heavier oil.

9 Q. And I think you testified that, in fact, at sites
10 with benzene, BTEX and TPH levels well below OCD standards,
11 they had experienced free-product contamination of the
12 groundwater; is that correct?

13 A. I think that falls back to one of your earlier
14 questions, that when you're doing a boring, sometimes
15 you're hitting the contaminant migration pathway, and
16 sometimes you're not.

17 So we've seen sites where you've gone through
18 kind of cycles of contaminant migration and then hit
19 groundwater and found free-phase product.

20 Q. And then -- I know this is a pet peeve of yours.
21 We've heard many definitions of the base of the PNM pit.
22 What is your definition?

23 A. My definition of the pit was the original pit.
24 That is, the pit base was the pit base. And I believe that
25 was -- original excavation was -- I think, as testified,

1 was approximately 15 by 15, or 20 by 20 by approximately
2 three-foot depth. That would have been the base of the
3 pit. Anything else is just different elevations that were
4 reached of contaminants.

5 Q. So the 12-foot level was described as the base,
6 because that was the base of PNM's initial excavation --

7 A. That's correct.

8 Q. -- to remediate the pit?

9 A. That was not the base of the pit itself.

10 Q. And the 15-foot level with hydrocarbon staining,
11 that was described as the base because hydrocarbons pooled
12 there?

13 A. That's correct.

14 Q. And if the pooling of hydrocarbons was taken as
15 the definition of the base, wouldn't the groundwater be
16 described as the ultimate base of PNM's pit, because
17 hydrocarbons could not migrate downwards from there?

18 A. It depends on what definition you want to use for
19 "base", I guess, of the pit.

20 Q. I think you testified that based on your
21 experience with -- How many groundwater contamination
22 cases? In your testimony you say hundreds.

23 A. Oh, probably over 500 I've worked on, as well as
24 thousands of pit closures.

25 Q. And you say the greatest concentration of free

1 product occurs under the primary source of contamination?

2 A. In my experience, the greatest concentrations are
3 usually at a source. It's a little more difficult in this
4 circumstance when you have multiple sources, but it
5 typically occurs right at a source of contamination, the
6 greatest concentrations.

7 Q. Even a groundwater gradient such as we see here?

8 A. I would think -- I think, as I was kind of
9 mentioning earlier, I believe the plume migration is
10 running a little different rate than the actual groundwater
11 migration rates that are calculated from the gradients at
12 this site.

13 Q. So why wouldn't it flow at the same rate as
14 groundwater? Why would it pool up?

15 A. You're going to have sorption and biodegradation,
16 especially of the dissolved-phase portion of the plume.
17 We've seen this at a lot of sites in the San Juan Basin.

18 I think this alludes back to some of PNM's
19 testimony, that largely they'll see on a dehydration pit
20 that only received dissolved-phase product, that the
21 contamination might only have gone, you know, 100 or 200
22 feet, some limited distance, because you're getting an
23 equilibrium built up from migration of the contamination in
24 the absence of a free-phase, that the micro-organisms can
25 degrade the hydrocarbons. It kind of reaches somewhat of a

1 steady-state condition.

2 Q. Based upon your experience and knowledge, do you
3 believe that free-phase hydrocarbon contamination migrated
4 all the way down from PNM's dehydrator pit to groundwater?

5 A. Yes.

6 Q. And based upon your experience and knowledge with
7 over 500 groundwater contamination cases, do you believe
8 that PNM substantially contributed to the free-product
9 contamination in the groundwater at this site?

10 A. Yes.

11 Q. You just don't know the relative volumes, do you?

12 A. That's correct.

13 Q. And in the absence of that knowledge, the
14 Division is going to hold both parties equally responsible,
15 isn't it?

16 A. That's correct.

17 MR. CARROLL: That's all I have.

18 CHAIRMAN WROTENBERY: Mr. Alvidrez?

19 EXAMINATION

20 BY MR. ALVIDREZ:

21 Q. I want to talk a little bit about the Cozzens
22 site. I understand your testimony to be, in the situation
23 that we had at the Cozzens site the OCD found that PNM had
24 cleaned up its contamination and therefore let PNM off the
25 hook; is that correct?

1 A. That's correct.

2 Q. And really, I mean, the point is, that's exactly
3 what PNM is asking in this case. They're asking for OCD to
4 find that they've cleaned up their contamination, and they
5 want off the hook, right? That's what you understand PNM
6 to be asking for in this case?

7 A. That's what I understand they're asking for.

8 Q. So there's the analogy between Cozzens and
9 Hampton, would you agree, in terms of what PNM is
10 requesting?

11 A. I'd agree, but I believe that they're also a
12 different circumstance. But I understand what you're
13 saying.

14 Q. But the basic circumstance is, you found PNM
15 cleaned up its contamination, and that's how you let them
16 off the hook in that case, right?

17 A. That's correct.

18 Q. Okay, and in this case you're telling us we
19 haven't convinced you that we've cleaned up our
20 contamination?

21 A. That's correct.

22 Q. And that's why you're not letting us off? The
23 same principles apply in terms of being able to extract
24 oneself from liability for cleanup, correct?

25 A. That's correct.

1 Q. Let's talk a little bit about the Everett Burton
2 well. As you indicated in your testimony, that well is not
3 in use currently?

4 A. That's just my understanding from discussions
5 with PNM.

6 Q. Okay. Have you also been -- And there was some
7 discussion about some other residents in the area. Have
8 you also been informed by PNM that PNM has, in fact,
9 conducted a survey of residents in the area and confirmed
10 that they are on municipal water supply in that area?

11 A. I seem to recall that, I just couldn't -- There
12 was some verbal discussions, and I just wasn't sure what
13 the source of their water was.

14 Q. Is that coming back to you now?

15 A. Yes.

16 Q. And PNM also conducted sampling of the Burton
17 well; do you recall?

18 A. Yes.

19 Q. And that sampling came back, at least at the time
20 of the sampling, of nondetect, correct?

21 A. That's correct.

22 Q. Meaning the absence of contamination?

23 A. That's correct.

24 Q. You talked a bit about what happens in terms of
25 the natural attenuation, I guess, at the end of the

1 dissolved-phase plume. Do you recall that testimony --

2 A. Yes.

3 Q. -- in response to Mr. Carroll's questioning?

4 And that same phenomenon would be applying to
5 this plume that's shown on PNM Exhibit 57, would it not?

6 A. Yes.

7 Q. I mean, towards the ends of that plume, natural
8 attenuation is going to occur?

9 A. Yes, I think natural attenuation has proven to be
10 more effective groundwater remediation -- I don't want to
11 say activity because it's almost like a nonactivity, but
12 it's a monitoring -- Monitored natural is what it's
13 considered, but biodegradation is far more effective in
14 remediating dissolved hydrocarbons than any -- usually any
15 type of pump-and-treat system.

16 Q. So nature does a good job of taking care of
17 itself in terms of the dissolved-phase; is that correct?

18 A. Yes, once the sources of contamination are
19 removed. And that was our main concern with, I think, the
20 initial directive that you considered from March, that you
21 appealed. We were concerned about the sources of
22 contamination being remediated so we could get that natural
23 attenuation occurring and the subsequent shrinking of the
24 plume.

25 Q. If PNM -- If free product appears in MW-12, would

1 your recommendation be that PNM should install another
2 recovery well in that area?

3 A. I guess it depends on the amount that shows up,
4 because as of right now I believe we have a sheen showing
5 up in that well that's not really a recoverable amount. It
6 takes -- You need to get a sufficient amount of water -- I
7 mean, a sufficient amount of oil in there, before you can
8 start recovering it at that point.

9 Q. What would be a sufficient amount of oil, in your
10 estimation?

11 A. Oh, I'd say you're probably going to need
12 something up in -- I'm not sure exactly of what you'd need
13 for different types of equipment that are available today,
14 to tell you the truth.

15 Q. But it's pretty --

16 A. You need something more than a sheen, you need a
17 measurable amount that you could actually get something to
18 be able to skim it, either skim it off the water table or
19 if you have significant volumes, you do some type of a
20 dual-phase system where you try to bring it all in.

21 Q. It's pretty clear that if significant levels of
22 free product appear in the area of MW-12, that what we've
23 got is a situation of history repeating itself where the
24 upgradient contamination is concentrating under PNM's
25 former pit; isn't that correct?

1 A. I believe, yes, it's migrating back into that
2 area, yes.

3 Q. You talked about, I guess, some other groundwater
4 sites where you've seen a range of a sheen up to a three-
5 foot product thickness, correct?

6 A. Correct.

7 Q. And you talked about 13 of those sites, and when
8 we looked at them we kind of narrowed that down to maybe
9 seven or eight sites; is that correct, in terms of site --

10 A. Yeah, some of those are PNM sites, and there's
11 been some question about what contributions we have from
12 upgradient sources at those sites.

13 Q. At all of those sites there are suspected sources
14 upgradient, correct?

15 A. No --

16 Q. Well, I guess at seven out of eight sites there
17 are suspected sources?

18 A. Seven out of eight of the El Paso Natural Gas
19 sites, I can find no evidence that we have of upgradient
20 sources.

21 Q. I misunder- --

22 A. The PNM sites, I think I have actually two listed
23 as potentially not having an upgradient source; other one
24 is questionable. I think we've directed some of those
25 letters already to the operators of those sites to try to

1 cooperate in investigating the sites.

2 Q. With regard to those sites, you've talked about,
3 you looked at something on the order of 4000 sites,
4 correct?

5 A. That's correct.

6 Q. And out of those 4000 sites you can only identify
7 13 where we've had a groundwater situation like we've --
8 well, where we've got groundwater contamination?

9 A. No, there's -- Through all those pit closures
10 we've probably identified over 200 sites with groundwater
11 contamination.

12 Q. And how many sites with free-product
13 contamination out of all those?

14 A. For -- There's actually a number of those that
15 have -- I didn't go through and look at figures for
16 production sites that we have as well for -- I'm talking
17 about the producer's side of the operations. I've kind of
18 focused on just dehydration sites, and that's why I have
19 this number for dehydration sites.

20 Q. So the number that you're providing is out of
21 dehydration sites?

22 A. That's just of dehydration sites, yes.

23 Q. And so how many is the total number of
24 dehydration sites you're looking at?

25 A. Oh, I can't recall. I'd say probably -- There

1 might be a couple thousand, possibly, that we've worked
2 through.

3 Q. A couple thousand you've worked through, and
4 you've identified 13 sites with free product?

5 A. That's correct. I'm just giving you a ballpark
6 number, I don't --

7 Q. I understand, they're your best estimates,
8 correct?

9 A. Right.

10 Q. If we play the statistics game, we're looking at
11 a situation where something like this occurs in well under
12 one percent of the sites, correct? 13 out of 2000?

13 A. 13 out of 2000, yeah.

14 Q. You talked about what your next step would be in
15 terms of what you would recommend in terms of remediation
16 at this site, and I think you said you'd want to collect
17 more data, and the way you'd want to do that is install
18 some more monitoring wells?

19 A. That's correct.

20 Q. And you'd want some more on the wellpad, we've
21 talked about; is that correct?

22 A. That's correct.

23 Q. And you'd also want some down in the --
24 downgradient; is that correct?

25 A. That's correct.

1 Q. With regard to the downgradient situation, how
2 many more wells would you want to put in?

3 A. It largely depends on what we just find. I mean,
4 that's not a -- groundwater investigations are a dynamic
5 activity. They're not just saying we put two in here and
6 then we call it quits.

7 I would say initially we might put in a couple
8 for lateral extent on the downgradient portions of the
9 plume, possibly two, maybe three, and then look at
10 replacing -- doing some replacement up on the wellpad, as
11 well as looking at that area that I identified with
12 Burlington where we'd like to see what kind of product
13 remains over in that area where they had the excavation.

14 Q. You talked about the site where there was a
15 three-foot level of free product in the water. Do you
16 recall that discussion?

17 A. Yes.

18 Q. I think you testified you didn't know what kind
19 of dehydrator was out there?

20 A. That's correct.

21 Q. And I take it you don't know what kind of
22 separator was out there?

23 A. I do not.

24 Q. And this was site where production had ceased ten
25 years prior; is that correct?

1 A. Production had not ceased, they just had stopped
2 using the pit, apparently ten years prior. I think it was
3 in response to landowners not liking the pit, adjacent
4 landowner.

5 Q. Okay, was that well still in production when you
6 were surveying it in terms of investigation and
7 remediation?

8 A. Yes.

9 Q. But in terms of the similarity of characteristics
10 of the equipment on that site, you can't really address how
11 that would translate with regard to the PNM site; is that
12 correct?

13 A. Right, I can't attest to what types of equipment
14 were at the site.

15 Q. So we don't know how representative that site
16 would be, as compared to the Hampton 4M site?

17 A. In terms of equipment, I wasn't meaning to make
18 any implications towards equipment; I was just trying to
19 say that this is not an uncommon occurrence. It does occur
20 at other sites.

21 Q. There was discussion about how the OCD is
22 allocating. I think Mr. Carroll put the question to you,
23 in the absence of evidence on allocation between two
24 responsible parties, your allocation is 50-50, right?

25 A. That's correct.

1 Q. But in the -- So that's still an allocation,
2 correct? Just so we're clear, that 50-50 is an allocation
3 any way you look at it?

4 A. Well, I don't know if it's considered allocation;
5 we consider them equally responsible, so...

6 Q. And that means the allocation is 50 percent one,
7 and 50 percent to the other, right?

8 A. Well, not necessarily. On some sites we've had
9 one of the operators decide the other one was not wanting
10 to cooperate with them, so they went and did the whole
11 thing themselves. So in that case it wasn't really a 50-50
12 split of the actual work that was conducted, but it was an
13 allocation from us saying that they were equally
14 responsible.

15 Q. In the eyes of the OCD, the allocation is 50-50?

16 A. It's equally responsible, right.

17 Q. Okay. You were asked some questions about
18 whether or not in the free-product situation you would
19 expect to see a continuous column of hydrocarbon-saturated
20 soils all the way down to the water table, whether you have
21 to find that situation in order to establish that the free
22 product underlying that area came from up above. Do you
23 remember that line of questioning?

24 A. Yes.

25 Q. And you testified that, no, you don't have to

1 have a fully saturated soil column in order to have that
2 situation, correct?

3 A. That's correct.

4 Q. But in terms of -- That would be a good
5 indicator, however, if you did have that column right there
6 of fully saturated soil all the way down from the surface
7 or the bottom of the pit to the water table, right?

8 A. Sure, but in investigations that I've seen, the
9 only place I've ever really seen stuff really saturated is
10 directly underneath usually the sources, for a short
11 distance from the source, once there's been an ongoing
12 continual amount of head, say, in the pit.

13 Q. Okay, and let's talk about that a little bit.
14 You talked about the water table rising and falling, and
15 what that does is creates a smear zone --

16 A. That's correct.

17 Q. -- at the soil-water interface, correct?

18 A. That's correct.

19 Q. And you talked about the testing that was done in
20 the excavation -- or your observations in the excavation
21 that Burlington was conducting in the area of PNM's pit, at
22 the 20-foot level. Do you recall that discussion?

23 A. That's correct.

24 Q. And I think you said, you know, you could tell at
25 the 20-foot level that there was, you know, I guess you

1 described it as high levels of contamination; is that
2 right?

3 A. Just based on visual observations and odor,
4 correct.

5 Q. Okay. And we know from the data we have
6 concerning the 20-foot level and below that groundwater at
7 that point was right at about the 21-foot level, right?

8 A. Groundwater was approximately, I believe -- Yeah,
9 approximately 22 feet.

10 Q. Twenty-one and a half, I think, would be more
11 precise, right?

12 A. Approximately.

13 Q. Okay. And that's certainly within the area of
14 the groundwater fluctuations where it's most likely that
15 what you were observing in terms of that high concentration
16 was a result of that smear zone at the 20-foot level;
17 wouldn't you agree?

18 A. I don't know that I necessarily believe that.
19 It's possible.

20 Q. Isn't it more likely?

21 A. Not necessarily.

22 Q. You talked about, in terms of the OCD's
23 allocation and responsibility, that in the absence of --
24 and I think this was Mr. Carroll's wording -- in the
25 absence of a definitive showing of relative contributions,

1 the OCD is going to -- you're going to apportion on a 50-50
2 basis; is that right?

3 A. That's correct.

4 Q. But what about in the face of a showing of
5 probability, that is, more likely than not? Do you
6 understand what I mean when I'm talking about more likely
7 than not?

8 A. Uh-huh.

9 Q. And what I'm talking about, just so you know, is
10 something just slightly more than a 50-50 chance. We have
11 a 51-percent chance that something is the truth. Under
12 those circumstances, how does the OCD allocate
13 responsibility?

14 A. I don't think we've ever gotten to that point in
15 cases that I've worked on. This is the first one.

16 Q. Okay. And would you say right now, in looking at
17 this, if you had to look at the situation that you have out
18 there in terms of the source of the great bulk of the
19 groundwater contamination, free-product contamination out
20 there, that it's at least 51-percent more likely that most
21 of that occurred as a result of Burlington's activities,
22 versus PNM's activities?

23 A. I would say it's probable, based on the free-
24 product distribution that we see at the site, that there's
25 large contributions from the upgradient side of the site.

1 Q. Wouldn't you say that -- to use the 51-percent
2 scale, that it's probable that most of that contamination,
3 free-product contamination, was a result of Burlington's
4 activities rather than PNM's activities?

5 A. I'd say that's possible.

6 Q. Well, I'm asking about 51 percent. Wouldn't you
7 agree that at least 51 percent, more likely, that the
8 greatest amount of free-product contamination at that site
9 originated from Burlington's operations versus PNM's
10 operations?

11 A. I don't know, I haven't done exact calculations
12 of where we drew our little line as to what -- the volumes
13 we had from each area, so I don't know that I can really
14 tell you in terms as -- we had larger concentrations -- or
15 larger thicknesses of product in this vicinity, although
16 this a larger areal distribution. So I don't -- Like I
17 say, it's possible. I don't know that I've got a good
18 answer for that.

19 Q. But you would concede, however, that the majority
20 of that came from upgradient?

21 A. Yes, I would.

22 Q. I've been handed a note, and I want to check it
23 with you. My understanding is, the only free-product
24 dehydrator sites that PNM has on record with the OCD
25 besides the Hampton are the Florence 47X, the Shea -- or

1 the O'Shea 1M --

2 A. That's one I didn't know about.

3 Q. Okay.

4 MS. RISTAU: It's in our annual report.

5 (Laughter)

6 THE WITNESS: The one I didn't note --

7 Q. (By Mr. Alvidrez) -- and the Florence Z 40M?

8 A. Yes.

9 Q. Okay. And according to the information I have --
10 and you can tell me whether it comports with your
11 understanding -- the 47X has a contaminated well upgradient
12 of the old pit?

13 A. Yes, but I have note that it's a similar case to
14 the Hampton 4M. I don't think that's been entirely
15 resolved yet, in terms of us getting complete data from the
16 operator at this point.

17 Q. And also the information I have is that the two
18 other sites that we've talked about, in both of those cases
19 free product has been detected in wells at operator sources
20 upgradient of those -- of PNM's former activities?

21 A. The Z 40, I have the same designations, a similar
22 site. At two of the sites, though, that I couldn't discern
23 anything for upgradient sources from the files, that was
24 the Jaquez Number 2A and the Zachery Number 18E.

25 Q. Have you looked at PNM Exhibit 25?

1 A. Yes, I have

2 Q. PNM Exhibit 25 talks about the number of sites it
3 has with free product present?

4 A. That's correct.

5 Q. And it indicates that there is eight of those in
6 a summary of groundwater sites?

7 A. That's correct.

8 Q. And then moving on down, the third column under
9 that is groundwater sites with free product and identified
10 upgradient contaminant sources of the site, is eight as
11 well. Do you see that?

12 A. I'm sorry, could you say that again?

13 Q. It says there are eight sites as well?

14 A. Yes.

15 Q. And that doesn't comport with the information
16 that you have?

17 A. On mine I only had five listed that I found from
18 just reviewing my files with PNM, that had product. So
19 you're listing more than I had discerned from my files.

20 Q. Getting back to the soil column and the issue of
21 the saturation in the soil column, the -- we talked
22 about -- you testified that the absence of a continuous
23 column of saturated soil doesn't rule out the possibility
24 of free product, correct?

25 A. That's correct.

1 Q. But when you're talking about the massive amounts
2 of free product that we have here, let's make it clear.
3 The Hampton 4M is the thickest layer of free product of any
4 site you've ever seen, isn't it?

5 A. No.

6 Q. For a dehydrator?

7 A. For a dehydrator, I'd say it's probably one of
8 the larger ones -- it's probably the larger -- one of the
9 larger ones, I'd say.

10 Q. Isn't it the largest? Didn't you testify to that
11 before?

12 A. I'd say it probably is, over the -- possibly that
13 one site, I don't think it has that areal extent of product
14 though. Even though it has a fairly thick product, I don't
15 think it's that areally extensive, if I recall. So I'd say
16 it's probably the largest.

17 Q. Okay. So not only do we have a situation where
18 there's the thickest product, but it's also the biggest in
19 terms of the area that's being affected by the free
20 product, correct?

21 A. Correct.

22 Q. And under those circumstances, in order for that
23 much product to get to the groundwater in PNM's pit,
24 wouldn't you expect to see really very, very highly
25 contaminated soils all the way down?

1 A. Well, I would expect to even see some of that in
2 some of the soil borings we had with Burlington as well. I
3 don't think it was really seeing that kind of saturation
4 down through their borings like their TPW wells.

5 Q. Okay, but that wasn't my question. I'll get to
6 the --

7 A. I'm just trying to use a relative --

8 Q. Okay.

9 A. -- aspect. I don't think we've really seen it
10 anywhere on the site, so...

11 Q. Well, but let me ask, not -- But wouldn't you
12 expect, wouldn't your expectation be, that if you're going
13 to have that much going down, then you'd see some very
14 highly contaminated soils basically continuous from the pit
15 bottom to the water table?

16 A. I think Monitor Well 2 showed that.

17 Q. It didn't show highly contaminated soils?

18 A. They had high levels of -- I thought Maureen
19 Gannon testified that they had high levels of organics
20 there seen going down. I don't know if they're doing field
21 screening with the PID or not. I would suspect they were,
22 because that's their normal procedure.

23 Q. Well, but what Ms. Gannon testified to was that
24 what they were doing, they had some visuals, really, is
25 what they were looking at, when they installed that well,

1 correct, maybe just looked at it.

2 A. Okay.

3 Q. And they --

4 A. That's what reflected in the well log.

5 Q. And then there was some reflection, there was
6 some indication of hydrocarbon odors? Do you remember
7 that, in the boring log?

8 A. That's correct.

9 Q. She didn't testify that there were high levels of
10 organics --

11 A. I may have misspoken there --

12 Q. -- in the column.

13 A. -- I'm sorry.

14 Q. But getting -- What I want to find out is what
15 your expectation would be as an expert in order to have
16 what we're talking about in terms of volume of free product
17 underneath PNM's pit. Wouldn't you -- If you had just come
18 on the site, wouldn't you expect to see a solid column, a
19 continuous column, of highly contaminated soils all the way
20 down?

21 A. I would say -- I used to think that, and through
22 my experience on a lot of sites that I look at these days,
23 I've given up predicting what you're going to find at a
24 site. I've looked at a lot of pit sites where you never
25 would have expected to see any contamination, you see no

1 staining in the bottom of a pit. And once you begin
2 excavating, you find all kinds of things.

3 The same on even larger scale sites with looking
4 at soil boring, you look at a lot of spotty-type
5 contamination as you're going down, you think you've got
6 out of the stuff, you get down and get to the groundwater
7 and you've got massive groundwater contamination.

8 So to tell you the truth, I've kind of given up
9 on predicting a lot of soil migration of contamination,
10 because it doesn't always fit the -- what you expect.

11 Q. Well, have you had the converse true, where
12 you've had quite a bit of pretty heavy soil contamination
13 but you get down to the groundwater and there's no free-
14 phase?

15 A. I've seen that circumstance as well. That's why
16 I say, there's times that you just do not predict exactly
17 what you're going to see.

18 Q. And so it's entirely possible that the
19 contamination that you've seen with regard to underlying
20 PNM's pit, as based on the soil column, didn't contribute
21 to free-phase?

22 A. I'd say based on the one sample analysis, I don't
23 think was -- If you want to look at what's adequate sample
24 analysis for the site, whether it's Burlington or PNM, I
25 don't believe that's adequate to show one sample --

1 Q. Are you talking about --

2 A. -- convincingly show that you did not have
3 migration from that pit

4 Q. Are you talking about SB-2?

5 A. Yes.

6 Q. Okay, well, I'm not talking about SB-2. We know
7 what SB-2 -- At this point I'm not talking about SB-2. But
8 I think you just testified that at some locations you've
9 continuous highly contaminated soil all the way down.

10 A. That's correct.

11 Q. And you get to groundwater, and there's no free
12 product there?

13 A. No free product, but you'll have dissolved-phase
14 contamination.

15 Q. You'll have dissolved-phase.

16 A. Right.

17 Q. Absolutely. But no free product?

18 A. That's correct.

19 Q. And isn't it possible at this particular site
20 that what you've described as contaminated soil all the way
21 down didn't result in anything more than some dissolved-
22 phase underneath PNM's pit?

23 A. That's possible. I just don't believe that
24 happened. It's possible.

25 Q. What is different about this site than the site

1 you described where that same phenomenon occurred?

2 A. I'd say this site is different than about any
3 other site I've seen in the San Juan Basin --

4 Q. Yes, but what is that's different? What is it
5 that tilts the scale against PNM in this case?

6 A. That we have had discharges of free-phase product
7 to an unlined pit over a period of years, and the greatest
8 concentrations of free-phase product are located directly
9 under there, so it appears that there's some contribution
10 to that from the PNM pits, as well as the evidence of the
11 visual staining and observations from Monitor Well MW-2, as
12 well as the inspection I had during the excavation of the
13 site by Burlington.

14 Q. Okay, would you --

15 A. Based on a technical review of what I have seen,
16 that is my technical opinion.

17 Q. Would you at least entertain the notion that PNM
18 may just be the victim of bad luck --

19 A. I believe it's --

20 Q. -- in having its pit overlies a ponding area, if
21 you will, of free product at this site?

22 A. It's possible, but I don't believe on my
23 technical review, that that's the case.

24 Q. Okay. You talked about whether PNM contributed
25 -- in questions by Mr. Carroll, whether PNM contributed

1 substantial contamination. I think that was your -- That
2 was his words but he said, Based on your experience, would
3 you agree that PNM contributed substantial contamination in
4 the groundwater under its pit? Do you remember that
5 question?

6 A. Yes.

7 Q. What do you mean by substantial contamination?

8 A. To me substantial is that we're seeing free-phase
9 product on the groundwater, as well as substantial
10 migration of contamination downgradient from the -- both
11 source areas.

12 MR. ALVIDREZ: Okay, I have no further questions.

13 MR. CARR: I have no questions.

14 CHAIRMAN WROTENBERY: Did you want to
15 introduce --

16 MR. CARROLL: Oh, Madame Chairman, I move OCD
17 Exhibits 4 and 5 be admitted into evidence.

18 CHAIRMAN WROTENBERY: Any objection?

19 MR. ALVIDREZ: No.

20 MR. CARR: No objection. And Madame Chairman,
21 I've been advised that I failed to move the admission of my
22 rebuttal testimony. They were our exhibits -- I only moved
23 by letter the direct testimony, although I referenced both.

24 CHAIRMAN WROTENBERY: Oh, okay.

25 MR. CARR: So I do need to move the rebuttal

1 testimony of Rhodes, his Exhibit F; the rebuttal testimony
2 of Dillon, which was G; and Rosasco, which was H; and
3 Rebuttal Exhibits 34 through 41. So I would like to move
4 their admission.

5 CHAIRMAN WROTENBERY: Any objection? I thought
6 we'd already done it, actually.

7 MR. CARR: I thought we had too.

8 CHAIRMAN WROTENBERY: But just to avoid any
9 confusion --

10 MR. CARR: I don't want tomorrow morning to be
11 worried about it.

12 CHAIRMAN WROTENBERY: Okay, they're --

13 MR. ALVIDREZ: And just -- I'm sorry.

14 CHAIRMAN WROTENBERY: Go ahead. Let me submit,
15 just for the record, my understanding is that all of PNM's
16 exhibits have been admitted through Exhibit 74.

17 MR. CARR: We have no objection. I mean, that's
18 my understanding.

19 CHAIRMAN WROTENBERY: I believe so.

20 MR. CARROLL: No objection here.

21 CHAIRMAN WROTENBERY: Okay, we'll just say that
22 again, just in case we missed anything.

23 MR. ALVIDREZ: All of PNM's exhibits have been
24 admitted, 1 through 74?

25 CHAIRMAN WROTENBERY: Yes, they have.

1 Is there anything else from the parties at this
2 point?

3 MR. ALVIDREZ: No, Madame Chairman.

4 CHAIRMAN WROTENBERY: Okay, it's already 7:30,
5 so... My Commissioners are hungry, so I don't think I'll
6 take them in to deliberate on this case.

7 (Laughter)

8 CHAIRMAN WROTENBERY: Let me ask you this.
9 Here's what I propose that we should do.

10 How, long, Mr. Brenner, do you think it will take
11 to get the transcript?

12 COURT REPORTER: I'm going to do this one after
13 the previous hearing, so that will put it up to mid- to
14 late-November.

15 CHAIRMAN WROTENBERY: Okay, and I would think
16 that any written closing statements that might be submitted
17 in this case would come in after the transcript was
18 available, would be my guess.

19 So I don't know that we need to set a time frame
20 right now. What I was going to suggest is that we continue
21 the case to the October 14th meeting of the Commission.
22 I'm just double-checking to make sure that I've got the
23 right date.

24 Yeah. We have a meeting in September but it's
25 going to be in Farmington for the Industry Speaks - OCC

1 Listens annual get-together, so the next meeting here in
2 Santa Fe will be October 14th.

3 What I'd like to suggest that we ask,
4 Commissioners, is for Mr. Olson to visit with both parties,
5 both PNM and Burlington in this case, and to discuss in a
6 little more detail what our next steps need to be, because
7 there's a lot of complex allocation issues that have come
8 up.

9 But I think our first and immediate concern is
10 that the contamination at this site be addressed, and we
11 don't want to have any further delays in moving forward
12 with the investigation and remediation activity.

13 Mr. Carr, you want to say something.

14 MR. CARR: I just have question.

15 CHAIRMAN WROTENBERY: Okay.

16 MR. CARR: When you continue the case and re-open
17 the matter, that will not be for the presentation of
18 additional testimony on the issues in this case, it will be
19 to address what needs to be done at Hampton 4M, and it
20 would be a presentation by Mr. Olson to report to you on
21 what the discussions with the parties have been on that
22 issue?

23 CHAIRMAN WROTENBERY: Yes, that's what I have in
24 my --

25 MR. CARR: Because I just wanted to be sure --

1 CHAIRMAN WROTENBERY: I'm not talking about
2 reopening the case for purposes of taking additional
3 testimony, but we would like to hear back from Mr. Olson.

4 And of course, you and Mr. Alvidrez would have an
5 opportunity to comment, I think, on this --

6 MR. ALVIDREZ: I have a --

7 CHAIRMAN WROTENBERY: -- recommendation.

8 MR. ALVIDREZ: -- huge problem. I'll be in
9 Scotland --

10 CHAIRMAN WROTENBERY: Oh, will you?

11 MR. ALVIDREZ: -- at that time.

12 CHAIRMAN WROTENBERY: Okay.

13 MR. CARR: That's the day we'd like to do it.

14 (Laughter)

15 MR. ALVIDREZ: It will be a shorter meeting,
16 actually.

17 I guess I'm a little unclear. In terms of
18 submitting closing statements, and I'm sure you don't want
19 to hear anything verbally today, was it your suggestion
20 that we submit them in writing along with the proposed
21 order?

22 CHAIRMAN WROTENBERY: That's what I was going to
23 suggest, yes.

24 MR. ALVIDREZ: And can that be 30 days after the
25 transcript has been sent out?

1 CHAIRMAN WROTENBERY: We've done that in another
2 case, so I think that would make sense here, to do
3 something like that.

4 MR. CARR: And if it falls on Christmas Day --

5 CHAIRMAN WROTENBERY: We'll work out -- Yeah, we
6 can work out that schedule.

7 And again, Commissioner Lee is reminding me that
8 we would probably want to put a limit on the length of the
9 written closing statements.

10 MR. ALVIDREZ: Thank you.

11 CHAIRMAN WROTENBERY: What do you suggest?

12 MR. ALVIDREZ: Ten pages?

13 CHAIRMAN WROTENBERY: Ten?

14 MR. CARROLL: Five.

15 MR. CARR: I'd say five.

16 CHAIRMAN WROTENBERY: You'd say five?

17 MR. ALVIDREZ: There's a lot of --

18 MR. CARROLL: Five with a proposed order.

19 CHAIRMAN WROTENBERY: Well, we'll go to ten, and
20 then anybody who wants to submit a proposed order is
21 welcome to do that.

22 MR. CARR: Do we get a statistical point every
23 time we -- one less page?

24 CHAIRMAN WROTENBERY: I was thinking of waiting
25 until October to work out these dates, but since Mr.

1 Alvidrez won't be available, let's see. You're saying that
2 the transcript would be available mid-November?

3 COURT REPORTER: At the earliest.

4 CHAIRMAN WROTENBERY: At the earliest. Well, it
5 really -- It does appear that we're looking at the early
6 part of January for the submission of the written closing
7 statements. Shall we just make that --

8 MR. CARR: Could we just suggest January the
9 15th? If it's going to be that far back --

10 MR. ALVIDREZ: That's fine with me.

11 CHAIRMAN WROTENBERY: That's a Saturday, so we
12 might want to make it the 14th, but -- Okay.

13 MR. CARR: That takes it right -- so it's not
14 right on top of the holidays.

15 And then between now and then it's my
16 understanding that we will be reporting to you on --

17 CHAIRMAN WROTENBERY: Yes. Since we can't --
18 Let's see, won't work out in October. Our meeting in
19 November is going to be the 17th, Wednesday the 17th.
20 Would that --

21 MR. ALVIDREZ: I guess there's a point that has
22 been raised by Mr. Rosasco and also by Mr. Olson, that
23 maybe the thing to do is to see what happens at the end of
24 the year out there before they can really make a
25 determination as to what ought to happen after that.

1 CHAIRMAN WROTENBERY: Uh-huh.

2 MR. ALVIDREZ: So I'm not sure that -- Is there a
3 problem by waiting till after the next sampling event?

4 MR. OLSON: I think it might be better to have a
5 couple wells in the wellpad area, just so we could really
6 see what's going on with the product migration.

7 CHAIRMAN WROTENBERY: I guess that's what I'd
8 like you all to visit on, and it may be that you come back
9 in November and just tell us that your plan of action is to
10 continue monitoring for a few more months. But I think it
11 would be helpful if you would get together and work through
12 some of those details.

13 MR. ALVIDREZ: Okay.

14 CHAIRMAN WROTENBERY: Does that sound -- Any
15 addition or --

16 COMMISSIONER BAILEY: Because they will not only
17 discuss, but they are also authorized to go ahead and do
18 activities.

19 CHAIRMAN WROTENBERY: Yes, we would encourage --

20 COMMISSIONER BAILEY: -- talking about it,
21 they're doing it also.

22 CHAIRMAN WROTENBERY: Yes. Okay, yes.

23 Commissioner Lee, sounds good to you?

24 COMMISSIONER LEE: (Nods)

25 CHAIRMAN WROTENBERY: Okay. Anything else that

1 we need to cover today?

2 MR. OLSON: Am I excused?

3 CHAIRMAN WROTENBERY: Hold on, just a second.

4 Yes, you are. Thank you for your testimony.

5 MR. CARROLL: So there is no confusion about the
6 dates, can perhaps the Commission Counsel send out a
7 schedule so we know, in writing --

8 CHAIRMAN WROTENBERY: -- confirming in writing
9 what we've agreed to, yes. We'll do that.

10 Okay?

11 MS. HEBERT: There's one issue. Mr. Carr said
12 that the record wouldn't be open for additional evidence,
13 but would the testimony that you're going to receive from
14 Mr. Olson be additional evidence in this case?

15 MR. CARR: I would suggest that the issues in
16 this case are really separate from going forward with
17 remediation, and it probably could be a report to the
18 Commission on the progress without confusing the record,
19 then, with a subsequent -- without adding to this record a
20 later report on further remediation.

21 The real questions in this case, I think, are
22 pretty much within the context of what we've presented
23 here.

24 MS. HEBERT: I think I would agree unless the
25 Commission feels it needs additional testing information to

1 add to this record, and that's what I'm not --

2 MR. CARROLL: Well, Ms. Hebert, isn't that in
3 every case before the Commission? You can always use
4 additional test-hole information on any case.

5 MR. CARR: Or you could just direct that the case
6 will be reopened.

7 CHAIRMAN WROTENBERY: Yeah, and certainly I don't
8 consider that we will take additional testimony at the
9 November meeting.

10 I think we'll just hear a report on the status
11 there, and it may be that you will tell us that we'll have
12 additional data, come the early part of next year, and we
13 might need to consider reopening the case. But I think we
14 can just hear --

15 MS. HEBERT: -- the draft order, it's just the
16 evidence up to today.

17 CHAIRMAN WROTENBERY: Yes, at this point. But
18 that draft order -- We won't even have proposed orders till
19 January.

20 MS. HEBERT: Well, I understand that, but it left
21 my mind a little bit in limbo about what -- whether it
22 would be in or out of the report from Mr. Olson, as far as
23 part of this record.

24 CHAIRMAN WROTENBERY: I guess I'm too tired to
25 decide this. Maybe we can talk about that in November when

1 we hear what the nature of the report is.

2 (Laughter)

3 CHAIRMAN WROTENBERY: We'll adjourn this meeting,
4 thank you.

5 (Thereupon, these proceedings were concluded at
6 7:40 p.m.)

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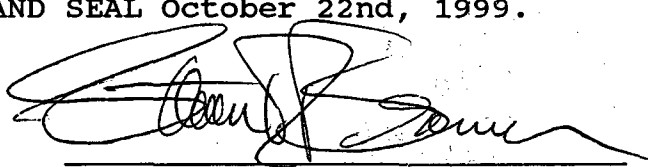
CERTIFICATE OF REPORTER

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 Division 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 October 22nd, 1999.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002