STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:	)	CASE NO. 12,365
APPLICATION OF DUGAN PRODUCTION CORPORATION FOR SALTWATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO	)	ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MARK ASHLEY, Hearing Examiner

April 20th, 2000

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK ASHLEY, Hearing Examiner, on Thursday, April 20th, 2000, 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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I N D E X

April 20th, 2000
Examiner Hearing
CASE NO. 12,365

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A P P E A R A N C E S

FOR THE DIVISION:

LYN S. HEBERT
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

CURTIS & DEAN
P.O. Drawer 1259, 506 West Arrington
Farmington, NM 87401
By: JOHN DEAN

* * *

WHEREUPON, the following proceedings were had at 8:46 a.m.:

EXAMINER ASHLEY: The Division calls Case 12,365.

MS. HEBERT: Application of Dugan Production Corporation for saltwater disposal, San Juan County, New Mexico.

EXAMINER ASHLEY: Call for appearances.

MR. DEAN: My name is John Dean, I'm an attorney representing Dugan Production, and I have with me John Alexander, the vice president of Dugan Production.

EXAMINER ASHLEY: Any additional appearances?

EXAMINER ASHLEY: Mr. Dean?

MR. DEAN: I hand you what's -- the exhibit package for this case, which has 11 exhibits, has an index in the front.

This is also an Application by Dugan to convert its West Bisti Unit Number 153 to saltwater, produced water disposal service. The formation proposed for injection is the Mesaverde. The well is located in the West Bisti Unit in San Juan County, which is a Gallup Class 2 enhanced recovery water injection project.

This well was drilled in 1957, and the well from 1960 to 1984 was utilized as -- for water injection service as a part of the waterflood project. It was abandoned at that time because of a casing leak.

Dugan purchased the well sometime after that, or purchased the project sometime after that, re-entered the well with the intention to restore it to Gallup injection service, came up with some problems with the casing, moved up to the Mesaverde and tested that for purposes of water injection into the Mesaverde, and hence this Application to change the service.

Dugan owns all of the mineral interests in the area of review; no one else owns any mineral interest.

The surface user is the Navajo Agricultural Products Industry, which we refer to as NAPI. They were notified, and we received a letter, as did the Division, indicating that they had some concern because this was going to interfere with the surface use. We have obtained a copy -- In fact, a copy of the proposed future expansion of the NAPI was enclosed with the letter.

We have determined that this well and the associated equipment do not interfere with any proposed future use, and those are proposed uses. The well is currently, and has been for 40 years, in the same location, well before the introduction of the NAPI project.

We were then contacted by NAPI again, told to notify the BIA. We then notified three or four people in the BIA as the proper surface owner. We have not heard from anybody else with regard to that. We do have proof of

service on all of those people.

I at this time, if there's no questions, call John Alexander to testify and ask the Hearing Officer to recognize him as an expert from the last case, to qualify in areas of petroleum engineering.

EXAMINER ASHLEY: Mr. Alexander is so qualified.

JOHN ALEXANDER,

the witness herein, having been previously duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. DEAN:

Q. All right, did you prepare the Application for the West Bisti Unit Number 153 conversion to saltwater disposal?

A. Yes, I did.

Q. You signed that Application?

A. Yes, I did.

Q. And are all the items and documents attached to it true and correct to the best of your knowledge?

A. Yes, they are.

Q. Okay. Dugan owns all the mineral interest in this area, right?

A. That's correct.

Q. No one else owns any areas -- any of the minerals at all?

A. That's correct. Within the area of review, that is correct.

Q. All right. And so in this case you notified the surface owner of the proposed Application?

A. Correct.

Q. And did you hear from them?

A. Yes, I did. I notified Mr. Lorenzo Bates, who is the director of NAPI, and told him or notified him that we would be proposing to use West Bisti 153 as a disposal well.

We received a letter back from him stating their objection. He also notified, I believe, Ms. Wrotenbery that they were objecting to the use of this location because of their interference on their farming operations.

Exhibit Number 2 is a representation of all the wells within one-half mile of the proposed well, as well as all the leases and wells within one mile -- I mean within one-half mile, and within two miles of the proposed location. We'll be discussing more about these in just a minute.

Exhibit Number 3 are copies of the return receipts from notification of Linda Taylor, who is real property, BIA real property; her boss Genni Denetsonee; Elouise -- and I'm sorry, I can't pronounce the lady's last name --

Q. Chicherello, probably?

A. Okay, probably. -- who is with the BIA Regional Office in Gallup; and then also notices to Mr. Bates and to Mr. Aktar Zaman with Navajo Tribal Minerals.

Q. Now, in your experience at Dugan in working on Navajo trust land, which is what this is, is that the people you normally notify when anything is going on?

A. Yes, generally.

Q. Okay, and so you feel like they received proper notice --

A. Yes, I do.

Q. -- the right people received notice?

And you talked to Mr. Bates, and he gave you these names for contact?

A. That's correct.

Q. And you haven't heard any further from Mr. Bates?

A. I received a call from a Daniel Lopez, who's an assistant to Mr. Bates, a couple of weeks ago, who told me that NAPI could not object to this and that the BIA Director would to be notified, because the status of the land was Navajo trust surface.

If I may, just a quick explanation of what happens here in the West Bisti Unit, so everyone will understand what goes on: Prior to the establishment of the Navajo Indian Irrigation Project, both the surface and the

minerals were under the jurisdiction of the Bureau of Land Management. At this point, the federal government and the state still maintain the mineral interest.

The surface was traded to the Navajo nation to be used as part of the Navajo Irrigation Project.

Different portions of the project were transferred at different times, so I'm not quite sure exactly when this particular parcel was transferred.

The rules of conduct with NAPI where we have existing facilities require that any surface facilities, lines, tank batteries and such that were in place prior to NAPI being traded the surface or being given the surface, are the responsibility of the Navajo Agricultural Products, Incorporated, to move. Facilities placed after their ownership are the responsibility of the operator.

In this particular case, all the facilities involved here were in place in 1960, long before NAPI was ever conceived. And because of that, one of the reasons we selected to use this well was to try and stay out of their way.

Q. Okay. And so after this conversation with the representative of Mr. Bates' office, then, you notified all these other people --

A. Yes, I did.

Q. -- at his direction?

A. That is correct.

Q. All right. And you received an objection from NAPI. Did you take some time and look that over and do some investigation about it?

A. Yes, I did.

Q. Tell us what were the results of that investigation.

A. Okay. To be next in order, Exhibit 4 is also a copy of the published -- publication in the San Juan -- in the *Farmington Daily Times*, again further noted by mail.

Looking at Exhibit Number 5, Exhibit Number 5 is a map which I received attached to the letter of objection from NAPI. This is their exact map. And you'll see down there in Section 35 -- you may have to turn a little cockeyed to see it -- down there in Section 35 they have an X with the West Bisti Unit 153 marked. That location is approximately correct.

The circles on this are proposed irrigated fields. None of these fields are currently in place at this time, this is only a proposal as an extension of the irrigation project block nine.

I've taken just a moment to sketch in -- not to scale or anything, but to sketch in a number of the lines coming into this area. There in about the center of that section, Dugan operates its West Bisti Unit production and

injection gathering facility. This is about a four- or five-acre site containing all of our production tanks, the water-gathering and separation facilities and injection facilities for the waterflood. And that sits, like I said, there in the middle of that field that I've so indicated.

The injection lines come out of this and run to the various injection wells within the field. The line running to the 153 is still in place; it was never taken up after Chevron temporarily abandoned the well.

So given this large number of lines here, they're already going to have some difficulty in moving things, and I can't see that this one well would make any difference whatsoever in their planning.

Also, by not building a new location or new rights of way, we don't cause any further disturbance.

Q. Okay. What's the current condition of the wellbore that's proposed for use?

A. Referring to Exhibit Number 6, Exhibit Number 6 is a schematic of the West Bisti Unit 153, as it will be if it is approved for disposal. The red indicates cement that is now in place, the blue on this drawing represents a series of casing holes that have been found, and the yellow represents the proposed injection interval.

The 9-5/8-inch casing was set at 214 foot, cemented to the surface, as verified by circulation.

5-1/2-inch, 14-pound casing to 5049 feet, where it was cemented with 100 sacks of cement with 3-percent gel. And a temperature survey run shortly thereafter found cement top to be at 4450 foot, as you can see so indicated.

This well operated from March of 1957 until October 2 of 1960 as a waterflood injection well -- I mean as -- excuse me, as a Gallup producing well.

In October of 1960 it was converted to a waterflood injection well, utilizing the same perforations from which it was produced, those perforations being from 4908 foot to 4990 foot. Injection was under, of course, plastic-lined tubing and a packer.

This well served as a waterflood injection well from October 2 of 1960 until the middle of 1984, I think it was around May of 1984, when Chevron, who was then the operator of the West Bisti Unit, discovered a hole in the casing on a mechanical integrity test.

To determine where this hole was located, Chevron entered this wellbore. They set a cast-iron bridge plug above the Gallup perforations at 4850 foot and spotted 40 foot of cement on top of that.

Chevron then, in a workover, came up the hole and discovered that the 5-1/2-inch casing had numerous holes in it from the blue interval that I show there, which is 2814 foot to 3617 foot. They determined that entire length had

numerous holes in it.

The casing above 2814 foot and the casing below 3617 foot, down to the bridge plug, which set on top of the Gallup, were both pressure tested and found to be holding pressure with no problems.

Chevron decided that what they would do is to temporarily abandon this well -- this was in 1984 -- instead of attempting a casing repair. They went in and squeezed cement. Physically, what they did was pull all the tubing and everything out of the hole, and from the surface pumped 175 sacks of cement into the hole beginning at 2814 foot.

After so doing, and then they displaced that cement down to about 2600 foot or so, they ran tubing in the hole, tagged the top of that cement at approximately 2600 foot and then pressure tested above that plug to 700 p.s.i., where they found that there were no leaks.

The BLM allowed them to TA the well at that time. It would not be allowed by today's standards, but at that time, 1984, that's what they did. And so from 1984 until Dugan decided to re-enter the well, the well remained shut in.

Dugan took over operation of the West Bisti Unit in November of 1989 from its previous operator, who was Chevron, who had been preceded by Gulf, and the field was

originally drilled by the British American Oil Company back in 1957.

This waterflood, as I said earlier, actually began in October of 1960, and I would imagine it's one of the older waterfloods probably within the State of New Mexico; I'm not quite sure.

Dugan had decided to re-enter the West Bisti Unit 153, and as John said earlier, our original best plan was, we were going to clean out these plugs, we were going to repair the casing, we were going to return the well to Gallup Waterflood Service, no permits necessary other than approval of the sundry notice to do so, no muss, no fuss. But as is so often the case, our plans were thwarted.

We re-entered this well in 1999, May of 1999. We pressure tested the casing above this well, above the temporary cement plugs that were set in there, and found that it leaked.

We re-entered the hole, ran a tubing and a bit in the hole, tagged up at about 2747 foot, just slightly below where Chevron had said they tagged. They left their cement plug, and we pressured up and found that we had a hole in the casing at that point.

So prior to drilling any of the old cement out, I went in and pumped 260 cubic foot of Class B cement through a hole that we found to be at 2739 foot, and that was done

underneath the packer.

During the time that I was pumping that cement, I had returns out the 5-1/2-inch by 9-5/8-inch casing annulus, which would indicate that there were no obstructions in the casing. I know it's a little confusing. You need to remember that Chevron had previously, also in the same interval, pumped 175 sacks. During their squeeze job, their reports say that they also had circulation in the same fashion that I found it.

My conclusion from that was that even if it had lifted some cement, probably the bulk of Chevron's job went into the Mesaverde or below that, as our pump job indicated that there were at least no restrictions in there. Possibility we could have pumped around, I guess, but that would not normally be my experience that that would happen in that fashion.

At the conclusion of Dugan's squeeze job, we drilled out the cement that we had left in the casing, we drilled it out to 2747 foot, which was the top of the existing cement plug left by Chevron. We pressure tested the casing at 1500 p.s.i., and it held with no leaks.

At that point, I drilled the old cement plug starting at 2747. I got to approximately 2820 and fell out of cement. So that is as far as the original squeeze job had gone, and -- which really, as you can see here, the

holes here started at 2814, so their squeeze job just barely got into the top of the interval with the holes as they existed.

After drilling out cement, we continued to lower the dual string, got to 3210 foot, where we set down, and were unable to go any further. I spent two days, both with a bit and with a mill, attempting to drill past this obstruction. I got no more cement, only a small amount of formation coatings and small amounts of metal.

My conclusion from this is that the casing is either parted or collapsed or in some way damaged at 3210 foot, and I was unable to get below that depth.

At that time my original plan, which was to go to the Gallup, was rethought. I came up with the idea of trying to inject into the Mesaverde at this point, realizing that I couldn't get below 3210 foot, also realizing that we did have some holes in the casing below that. And so that's what initiated this Application.

Q. All right. And after that, the history of the well, then how do you intend to make sure that water goes only into the proposed injected interval, interval of injection?

A. Despite the fact we have not run a cement bond log again, we know that the casing pressure tested above 2747 foot. I know that I put 260 cubic foot of cement in

there. If all that cement went up, it would have reached a depth of 1250 foot, which is about the top of the Pictured Cliff formation up there. And if I used a slightly smaller -- If I used 75 percent of the volume of the cement, it would be about 1600 foot, calculated top of the cement there.

Now, I realize that I will not be able to conclusively say where the water is going to go once it gets past 3210 foot, which is an interval that I cannot get through because of the casing condition.

I also know that the top of the cement from the original cement job, my temperature survey was at 4450 foot. I have put on the left side here of your little schematic --

Q. Exhibit 6, that's Exhibit 6?

A. I'm sorry, Exhibit 6. -- the depth to the formations involved.

As you can see, from 3210 foot, which is actually above the top of the Point Lookout, to 4450 foot, which is the known top of the cement, I'm not going to be able to entirely check it, where my water goes, because I won't get past that point.

I know that the Point Lookout exists in there -- and we're going to present evidence in just a minute concerning the water quality of these things -- and I know

that the Mancos shale with its top there at 4027 foot, down to the top of the cement at 4450 foot, is a massive shale. It is nonproductive anywhere in the San Juan Basin, or in this area of the San Juan Basin. And being a shale, it's not going to take any water.

I would also not expect that the water quality in the Mancos shale would be anything -- would be any lower than 10,000 TDS, as it typically doesn't produce water.

Q. All right, so you're -- the uncertainty there is the location, or how far down the hole the 175-sack cement squeeze done by Chevron went?

A. Correct.

Q. All right. And you don't think, though, that that causes enough concern that the water quality will be affected or that the water will go anywhere that will cause any harm to anybody else's rights or the water?

A. No, I do not. If you will look at Exhibit 7, it's a little bit large, but Exhibit 7 is a log cross-section that we did of all the wells within the area of review. So this contained every well that's within one-half mile of this well.

The subject well, Mr. Examiner, is the second from the left and is identified the West Bisti Unit Number 153. The well just to the left of it, the Jeeter Number 3, is a Fruitland Coal well, and you can tell it's a little

bit shallower.

Also, about on the left-hand side of Exhibit 7 you'll see a little cartoon map here of exactly how this cross-section runs concerning the wells, if you should get disoriented during this discussion.

If you look on this cross-section at the West Bisti Unit 153, you'll see that I have marked an interval on the right side of the track here called "proposed injection interval". That runs from this -- and I'm sorry, the numbers are a little bit small for you to read, but it runs from 2747 foot all the way down to the top of the cement at 4450 foot, relatively long interval. But since all that's going to be exposed to injection pressure, I decided to call that all the injection zone.

If you follow this log across to your right, what you'll find is -- and the legend here is that the green colors are cement, known cement outside the casing, the red are known cement plugs inside of the casing, and so you can see that all of the other wells in this section, within a half mile here, have been plugged.

You'll also note that above the top of the proposed injection interval in each one of these plugged wells, there has been a cement plug placed in there. You'll also notice that they vary a little bit. I wish I had a good explanation for that. The Bureau of Land

Management is responsible for telling us where we set our plugs, and so we set it where they say set it, and -- But they do vary around a little bit.

But in each case, there is a plug within the Mesaverde, and that plug is above the zone of the injection that we plan to utilize in the West Bisti Unit 153.

Same thing exists in the lower part down here. All of the cement plugs are above the Gallup top, and so each one of them has been properly plugged.

So water entering our proposed injection well, if it should reach one of the adjacent wellbores, would have at least two cement plugs between itself and any surface water. Just FYI, really, the only potable water, our USDW known out here, is probably the Ojo Alamo, which in the pace of most of these wells is actually behind the surface pipe, if it even exists at all.

You'll also notice, Mr. Examiner, that the Pictured Cliff and Fruitland Coals have also been protected in each one of these places. The Fruitland Coal is a significant resource to us out here in this area, along with other operators. So it is also well protected, not only by its own plug but by the plug in the top of the Mesaverde.

So my conclusion is that we can contain any water injected within the West Bisti Unit Number 153.

Q. Well, what about the proposed -- the water quality in the injection interval?

A. If you will refer to Exhibit Number 8, Exhibit Number 8 is a water sample taken from the interval, as I discussed earlier, about the holes in the West Bisti Number 153 casing.

I swabbed the Mesaverde at that point and recovered this water sample. It showed a total dissolved solids, you can see in the right-hand column down there towards the bottom, of 35,693 parts per million, or -- 1.2, that's about the same thing, milligrams per liter. And so it was significantly above 10,000 TDS at that point.

I swabbed about 200 to 250 barrels in order to collect this sample, and I felt that at least I was sure that I had an area around the wellbore that was giving me the water that was in there. We were also unable to swab this well down.

To further check my water quality here, I took one other step. If you'll look at Exhibit Number 9, it is a two-log cross-section. This two-log cross-section compares the West Bisti Unit Number 153 on the left side there, with a well called the West Bisti Unit Number 131.

The West Bisti Unit Number 131 is a water-source well. It's up in Section 28, it's about two miles from our subject well. The West Bisti Unit Number 131 has only been

used as a water-source well for the West Bisti Unit.

Back when the flood began, back in 1960, they did not have enough water to inject, so British-American drilled a number of water-source wells into the Mesaverde. The water from these wells was used as makeup water to start the flood.

Now, what happened was that very quickly into the flood, about 1962, sometime as early as 1961, British-American experienced severe water breakthrough. So at that point they began to circulate a lot of their injected water and soon after that discontinued the use of these water source wells. I don't have any information in their records to indicate exactly when this well was not used, but I know that when Dugan took over the unit, as I said, in 1985, it had not been used for years.

And it's never been put in any other service, it's never been used as an injection well, it's never been used for anything else. So I felt that this was an excellent example to determine the quality of the water in the Mesaverde.

If you'll look here to determine where this well is completed, down here in the bottom, a 7-inch string of casing was run to total depth on this well. The interval from 2030 to the TD of 2600 was actually slotted 7-inch casing.

British-American cemented above the slotted 7-inch casing using a cement basket and baffle, and then cleaned out, so leaving that interval from 2030 to TD of 2600, virtually it's an open hole except for the slots in the 7-inch casing.

You can see by my log correlation, comparing it again to the 153, that this 131 well is completed almost entirely within the Cliffhouse member of the Point Lookout -- I mean, excuse me, of the Mesaverde.

And that's where the water sample -- I swabbed 270 barrels of water out of this well, a significant volume. Again, I was unable to swab it down.

Exhibit 10 is a copy of the water analysis that I took from this well after removing approximately 270 barrels. You'll see that the total dissolved solids were 23,480, approximately. And so I feel that this is probably as good a representation as any of the type of water that's contained within the Cliffhouse.

Also, as a matter of interest, there is a preponderance of correspondence in British-American's well files concerning the poor water quality within the Mesaverde, primarily from a scaling tendency. As a matter of fact, when I re-entered this West Bisti Unit Number 131 well, which has been used for nothing else, I had to drill 600 or 700 foot of solid calcium carbonate scale out of it

to even get down to where I could swab it. So it's pretty nasty water in my opinion.

Q. What type of water will be disposed of in this well?

A. The water to be injected into this well would come from our West Bisti water injection facility. Exhibit 11 is a copy of a water analysis I had taken, apparently back in September of 1999. It will show that it had total dissolved solids of only 20,892 parts per million.

The Commission needs to be aware that two sources of water come into this injection facility. One are primarily the Fruitland Coal waters which come in. Typically, their total dissolved solids run 19,000 to 20,000.

And also, of course, the water injection facility for the West Bisti Unit, the Gallup water coming in here typically would have qualities of maybe 40,000 TDS or in that neighborhood somewhere.

But these waters are mixed, they are not causing any problems by mixing the two waters. The result, though, is that a lot of the higher TDS waters are actually diluted by some of the lower waters, giving us this analysis.

Q. So Exhibit Number 11 would show the typical quality of the water that's going to go in?

A. Right.

Q. All right. And how do you propose to equip this well for disposal?

A. Referring back again to Exhibit Number 6, which is the wellbore schematic, what I propose to do is to run a plastic-coated 2-3/8-inch tubing, a Baker AD-1 tension type injection packer set at 2747. Again, I know that I have cement at this point, I have pressure tested above this point and know the casing is in good shape above that point.

Q. Okay.

A. And also the casing -- The tubing casing annulus, of course, would be loaded with packer fluid.

Q. All right. And you've studied available geological and engineering data to determine there is no connection between this well and any known sources of drinkable water?

A. Yes, I have.

Q. All right. And are you convinced in your experience as a petroleum engineer and in the industry that this proposal as presented would protect water quality, correlative rights, public health and safety and the surface rights?

A. Yes, I am.

MR. DEAN: All right, we move for the admission of our Exhibits 1 through 11.

EXAMINER ASHLEY: Exhibits 1 through 11 will be admitted --

MR. DEAN: We don't --

EXAMINER ASHLEY: -- into evidence.

MR. DEAN: -- have any other testimony. We'll stand for any questions you might have.

EXAMINATION

BY MR. ASHLEY:

Q. Okay. Mr. Alexander, in Exhibit 7, the cross-section, does that include all the wells in the AOR?

A. Yeah, this includes all the wells within the technical area of review.

Q. And you're satisfied that they're all submitted properly to --

A. Yes. Like I said, Mr. Ashley, if you look down on the left-hand side below the Jeeter 3 log, there's a little map that shows the cross-section, that identifies it a bit more clearly.

Q. Okay. Now, when you were talking about the cross-section in Exhibit 9, did you talk about a severe water flow somewhere, or water out of zone? I can't remember.

A. I didn't hear your question.

Q. Didn't you talk about a water flow when you were talking about water out of zone?

A. On the 131 well? I mean, on --

Q. Well, that's what I was wondering.

MR. DEAN: I think he's asking you about when they started getting water back and quit using it as source water.

THE WITNESS: Oh, I'm sorry, Mark, losing track of where we are here.

I don't know exactly when they stopped using the water source wells. I mean, I know that they were not using them in 1989. We took -- My understanding, and I'm actually trying to find that.

In looking at the performance curve of the West Bisti Unit as a whole, I know that, like I said, in 1962 and 1963 the water just goes through the roof. And so my guess would be that somewhere in that period of time, that they stopped utilizing any of the water-source wells that were out here.

Q. (By Examiner Ashley) What do you mean by the water going through the roof and that they stopped using these --

A. Oh, water being produced from the Gallup producing wells. They had breakthrough early in the flood, and so if you're looking at performance curve of the unit, plotting oil, gas and water, you get to a certain point, you get this huge increase in water production. That huge

increase in water production was when the flood began to break through --

Q. Okay.

A. -- and they had pretty a premature water breakthrough in this particular unit. So when they got that big water increase, which British American was really not expecting that to happen, they abandoned the use of the water source well, because now they had all that water breakthrough, they just put it back into their system and recycled it. That's what I meant.

Q. Okay, I thought you meant breakthrough in this 131.

A. Oh, no. No, no, I'm sorry.

Q. Okay. Now, looking at Exhibit 6, the wellbore schematic, you stated that when you re-entered the well you noticed holes at 2339?

A. 2739.

Q. 2739.

A. Right.

Q. Okay.

A. Just above where they had left their initial plug.

Q. Okay. And then you squeezed those holes?

A. Yes, I did.

Q. And then you pressure-tested at that point?

A. Yes, I did. And then after the pressure test is when we drilled out, you know, the old plug.

Q. And you drilled down to the 3210 and --

A. I drilled down to -- Actually, Mark, I drilled down to 2820 when I fell out of cement. You can just pull a mark through there. That's when I actually felt -- Then I continued in the hole with no other obstruction till I got to that 3210. So I actually fell out of the cement, though, with 2820.

Q. Now, have you cemented any more since then?

A. I have not.

Q. Okay. And so the top of cement from 2747 is 1250?

A. That's a calculated value. I have not run a cement bond log on that.

Q. Okay. Do you think that having this casing obstruction will pose any problem to waters moving -- or control of waters moving out of zone?

A. I don't think it will present a problem, because even if water -- I cannot tell you that -- where the water's going to go below that. Obviously, I can't get down through that, at least at this time, and -- but I know that anything below the 3210, what I have formationwise below me is what's left of the Menefee, all the Point Lookout, which is generally, and as you saw in our other

exhibit, the primary sand interval within the Mesaverde, is probably going to take most of the water. And the only thing open below that, then, is the Mancos shale.

So my reason for that statement is that I know the Mancos shale is not going to take anything, so I'm not worried about anything about -- or not concerned that anything below 4027 is going to take any water. If it takes it, it will be small.

So my own personal opinion is that most of the water will go into the Point Lookout, even though you can't see it's going in there, or into the Menefee. The Cliffhouse you can see here is virtually cemented off.

And I have no reason to expect that the waters in any other of the Mesaverde intervals would be any -- you know, any higher quality than what I found in the Cliffhouse interval, and what I also swabbed out of the holes here.

Q. Okay. Back to Exhibit 7, can you show me on the West Bisti 153, on that log, where this casing part is?

A. Yes, I can. What I might have to do, if I may approach --

Q. That's fine.

A. -- is to give you -- I apologize that -- That's a little bigger section, cross-section, for this.

Q. That's the same exhibit, just a larger exhibit?

A. Right, this is exactly the same exhibit. This exhibit was prepared, and this one was exactly the same, this West Bisti Number 153. The casing part is going to be down here at 32- -- I can't even hardly read it here, I'm sorry. It's going to be right here.

Q. Which is --

A. Mark, if you'd like, I can leave this for you.

Q. Okay, that would be fine.

A. I don't have any other copies. I mean, I've got one for myself, but if you would like this --

Q. Yeah, I'd like to have that.

A. -- you can certainly have it.

MR. DEAN: Why don't we mark it as Number 12, and --

THE WITNESS: It's already marked as 7.

MR. DEAN: Okay, it's just a big version of 7.

THE WITNESS: It's just a big --

EXAMINER ASHLEY: Okay.

THE WITNESS: -- just a blown-up version of 7.

EXAMINER ASHLEY: Okay, thank you.

THE WITNESS: But that's where the casing part is, or casing obstruction. Mr. Ashley, I can't really tell you exactly what it is. I just know that it's an obstruction.

Q. (By Examiner Ashley) Okay. Now, is there

currently injection going on right now in this pool, in this unit? There is?

A. There is injection into the Gallup --

Q. Okay.

A. -- here. Of course, this well was temporarily abandoned, so it has not been used in years.

Q. Okay. And the source of injection water is a combination of the Fruitland Coal waters and the Gallup waters?

A. Yes, sir, that's correct.

Q. And that's what this Exhibit 11 --

A. Yes, sir, it is.

Q. Okay. I have some more questions about Exhibit 5.

A. Five is -- ?

Q. It's the map that was submitted by the Navajo --

A. Okay.

Q. -- the injection?

A. Okay.

Q. Now, the X down at the lower portion of that, that is the actual 153 location?

A. Yes, sir, it is, as close as I can spot it. They put it on there, I verified it was approximately correct.

Q. Okay. And what are these other lines on here? I see the line -- Yeah, can you just explain what these other

dashed lines are?

A. Okay, the other lines are -- the dashed lines -- and I'm sorry I didn't differentiate between the two. The dashed lines -- obviously one of them leads down to the 153. That's an injection line.

The dashed line heading from northwest to southeast is one of our main injection -- I mean, one of our main disposal -- I'm sorry, Mark, production gathering lines that comes into this area. And there are numerous -- Again, this was a bit too busy to do.

If I may approach again, just to give you an idea here --

Q. Okay.

A. This is an overlay. This was a bit complicated to try and duplicate. This is a map that -- just to give you an idea of the complication that we have out here, we're down here in Section 35. Let me orient this for you. Okay, here we go. Okay.

All these lines are currently in place, including an El Paso main line that comes down through here, and all of them culminate right here, at approximately our injection facility. Like I said, this thing, you can just see that there are numerous -- This field's been operating here -- been here a long time, and there are just lines all over the place out here.

To further complicate the issue, we find lines all the time that we didn't even know were there. They were as-builts, and we have no facts or anything on them. So it's quite a line mess out there, according to the acronym, but it just is.

And I just tried to demonstrate on this map so that you could at least understand that NAPI is going to place a big project, because they're going to be responsible for moving most of these lines, they've been in there for years. Why they would want to farm this, I don't know. But that's obviously not my decision.

Q. Okay.

A. We're in their way, and they're in our way, and we kind of just agree to disagree on just about everything.

Q. Can we get a copy of that overlay, and we'll enter that as --

A. Can I make you one?

Q. Yeah.

A. I'll make it and send it to you, I can certainly do that.

Q. And we'll enter that as Exhibit 12, I believe?

MR. DEAN: Yes.

THE WITNESS: I apologize for not taking time to do that.

Q. (By Examiner Ashley) Now, can you review for me

again the position of NAPI and a little bit about the history of what's going out there and their --

A. Yes, I --

Q. Do they own the surface rights?

A. Okay, here --

Q. Is it considered part of the reservation?

A. Here's where there is -- The West Bisti Unit is in an area that we generally refer to as split estates. The Navajo nation owns the surface, either the BLM or the State of New Mexico owns all the mineral interests.

Because this is -- It is not on an Indian reservation, but it is in what the federal government loves to call Indian country. Because it is Indian country, the United States Environmental Protection Agency claims jurisdiction over all of UIC, underground injection control, in Indian country.

Of course, the State of New Mexico, because of their memorandum of understanding with the EPA concerning UIC, also claims jurisdiction over this same issue.

As an operator, I file -- I currently have an application in to the United States Environmental Protection Agency, and it's currently under review. Of course, I had this Application in when I filed with the BIA the notice of this hearing. I received some calls from the EPA folks and they said, Well, which one of these are you

going with?

And I said, I'm sorry, I don't understand.

Well, are you going with us or are you going with the state?

And I said, I'm going with both of you. I don't want to wind up as a referee between the New Mexico OCD and the USEPA.

MR. DEAN: It's actually -- it's reserva- -- it's trust land, it's not --

THE WITNESS: It's trust land.

MR. DEAN: -- it's clearly not reservation land.

EXAMINER ASHLEY: Okay.

MR. DEAN: That's -- The real answer is, it's not reservation land. The reservation boundary is quite some distance west of this area. NAPI almost entirely is held on trust land, not reservation land.

If it was reservation land, they would clearly have jurisdiction. Well, not clearly, but they would have the claim of jurisdiction because it's reserved.

EXAMINER ASHLEY: The EPA?

MR. DEAN: Yeah.

EXAMINER ASHLEY: Yeah.

THE WITNESS: While it's not the purpose of this hearing, I can also, sometime when you've got the time to explain, why the US EPA claims primacy, but I won't

introduce that into -- I'll tell you about it sometime if you'd like to hear it.

Q. (By Examiner Ashley) Mr. Alexander, do you know of any faults or other conduits that exist between the disposal zone and underground sources of drinking water in the area?

A. There are none.

EXAMINER ASHLEY: Okay. I have nothing further, thank you.

Case 12,365 will be taken under advisement.

MR. DEAN: Thank you. We'll send you, then, what's been referred to as Exhibit Number 12.

EXAMINER ASHLEY: Okay, thank you.

(Thereupon, these proceedings were concluded at 9:42 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12365, heard by me on 4-20 2000.

Mark Ashley, Examiner
Oil Conservation Division

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 April 28th, 2000.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002