STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

ORIGINAL

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

CASE NO. 14161

AMENDED APPLICATION OF TARGA MIDSTREAM SERVICES, LP, FOR APPROVAL OF AN ACID GAS INJECTION WELL, LEA COUNTY, NEW MEXICO

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID K. BROOKS, Legal Examiner
WILLIAM V. JONES, Technical Examiner
TERRY WARNELL, Technical Examiner

August 7, 2008

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Legal Examiner, WILLIAM V. JONES, Technical Examiner, and TERRY WARNELL, Technical Examiner, on Thursday, August 7, 2008, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: JOYCE D. CALVERT, P-03
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Examiner Hearing
CASE NO. 14161

APPEARANCES

FOR THE APPLICANT:

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ALSO PRESENT (FOR MOMENTUM OPERATING COMPANY, INC.):

James G. Bruce, Esq.
ATTORNEY AT LAW
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MR. JONES: At this time, let's call Case No. 14161, Amended Application of Targa Midstream Services, LP, for Approval of an Acid Gas Injection Well in Lea County, New Mexico.

Call for appearances.

MR. HALL: Mr. Examiner, Scott Hall, Montgomery & Andrews Law Firm, Santa Fe, on behalf of the applicant. And I have four witnesses to be sworn. It's presently my intent to call only two of them, but we'll go ahead and have all four sworn in the event there's any questions that need to be addressed.

MR. JONES: Any other appearances?

MR. BRUCE: Mr. Examiner, Jim Bruce, representing Momentum Operating Company, Inc. I do not have any witnesses.

MR. JONES: Will all four witnesses, potential witnesses, please stand to be sworn? And please state your names.

MR. WRANGHAM: My name is Calvin Wrangham.

MR. WHITE: Clark White.

MR. PIERCE: Mike Pierce.

MR. YOUNG: Todd Young.

MR. JONES: Mr. Bruce, is Momentum --

MR. BRUCE: We are not. Momentum is the offset operator, and we're just here seeking information. We have no opinion either way on this case.

MR. JONES: Do you intend to cross-examine the witnesses?

MR. BRUCE: I would like to ask some questions, depending on what is said.

MR. HALL: At this time, Mr. Examiner, we would call Michael Pierce to the witness stand.

MICHAEL PIERCE

after having been first duly sworn under oath,

was questioned and testified as follows:

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, please state your name.

A. Michael L. Pierce.

Q. Mr. Pierce, where do you live?

A. Albuquerque, New Mexico.

Q. And how are you employed?

A. I'm self-employed. I own Peak Consulting Services.

Q. What do you do for Peak?

A. I'm the owner.

Q. What are your qualifications?

A. I'm a petroleum geologist. I've been practicing for 27 years. I just moved to Albuquerque from Hobbs, where I lived for 27 years.

Q. And you're authorized to speak for the applicant

Targa Midstream Services in this case?

A. I am.

Q. You previously testified before the Division and had your credentials as a geologist accepted as a matter of record, correct?

A. I have.

Q. Could you give this Examiner a brief summary of your educational background and work experience.

A. I got my Bachelor's degree from the University of New Mexico in Albuquerque in 1979, and in 1981 I moved to Hobbs as a petroleum geologist, and I worked there in various positions. I became a consultant in '86 like a lot of other people did and have been a consultant ever since, working primarily in the Permian Basin in Southeast New Mexico and West Texas.

Q. And Mr. Pierce, are you familiar with the lands that are the subject of this application?

A. I am.

Q. And you're familiar with what Targa seeks by this application?

A. I am.

MR. HALL: Mr. Examiner, we offer Mr. Pierce as an expert petroleum geologist.

MR. BRUCE: No objection.

MR. JONES: Mr. Pierce is so qualified as an expert in petroleum geology.

Q. (By Mr. Hall): Mr. Pierce, if you would, briefly explain to the Hearing Examiner what it is Targa Midstream Services is seeking by this application.

A. We are seeking to put in, install and drill, an acid gas injection well on the premises of the Monument plant southwest of Monument in Section 36, 19, 36. The legal description is 662 feet from the south line and 2513 from the east line. We propose to inject acid gas composed of H_2S and CO_2 and produced water through a closed system into the Devonian and Fusselman formations through open hole at a depth of approximately 8350 to 9200 feet.

We anticipate -- the Devonian will take fluid on a vacuum, but to keep the acid gas in solution, we are going to have an injection pressure of approximately 1125 pounds to 1150 pounds to keep acid gas in solution. The average daily rates are going to be about 3500 barrels to 5,000 barrels, maximum.

MR. HALL: I might address the request for relief briefly, Mr. Examiner. On the application, it stated that there would be injection at a pressure of zero PSI, and as was explained, in order to keep those injection materials in a liquid phase, they'll need to be injected at pressure equivalent or less than the fractured radiant pressure. So I view that as a material change from the relief that's requested on the face of the application. What I intend to do is file an amended application to make that request clear, re-advertise and re-notice this case. And then at the close of evidence today, I'll ask that the case be continued until the September 18th docket and see if, on the basis of that amended application and new notification, it's necessary to reconvene for further testimony.

But I'd like to go ahead and present the witnesses here today if the Division approves.

MR. JONES: What do you think about that?

MR. BROOKS: I think if you want to do it -- of course, if a protest occurs, it might be necessary to re-present the evidence in order to enable opposing parties to cross-examine. But if there's no protest, I don't see a problem.

MR. BRUCE: I have no objection to what Mr. Hall requests.

MR. HALL: Good.

Q. (By Mr. Hall): Mr. Pierce, did Targa request you to evaluate the feasibility of installing an acid gas injection well at its Monument plant?

A. Yes, they did. They asked me to look at a couple of different proposals. There's a -- right north of the Monument plant, there's a DLD, SWD well that was drilled a number of years back. They asked me to evaluate this well --

the potential of converting their existing disposal well -- San Andres disposal well, also at the plant -- into an AGI well, and then, third, the possibility of doing a Devonian AGI well.

We ruled out the first, the existing SWD well at the DLD plant, for a couple of reasons. It looked like it would not take the amount of fluid that we needed to dispose of. And also, it presented a problem having to build a pipeline across property that we don't own. So we moved to the San Andres AGI because that facility was in place, and it would have been relatively easy to make the changes we needed and do it very quickly. But that presents some problems also by the number of penetrations into the San Andres. And we usually receive some opposition from that, so we've decided to drop that one and go on to the Devonian application. That's where we are now.

Q. This is a new drill; is that right?

A. Yeah. This well will be a new drill, and it will be within the boundaries of the plant also.

Q. In the course of your work, did you prepare an administrative application on the Division C-108 form?

A. I did.

Q. And is that Exhibit No. 1?

A. It is.

Q. Let's look at that, if you would. On the first page of this C-108 application, let's note one thing. Who is the operator shown on there?

A. Oh, Targa Resources LLC, and it is Targa Midstream.

Q. Okay. And Targa Midstream is the entity that will be responsible for regulatory compliance and operations for this well?

A. That's correct.

Q. And the hearing application is filed in the name of Targa Midstream Services, correct?

A. That's correct.

Q. And Targa Midstream has the bond and an OGRID with the Division?

A. That's correct.

Q. Okay. Who are the owners of the project?

A. Versado has the surface ownership, and Versado is owned by joint venture between Targa and Chevron.

Q. So those three, Versado, Targa and Chevron --

A. Correct.

Q. -- are joint ventures for this?

A. Right.

Q. Let's look at Tab H and locate this well. What is under Tab H of Exhibit 1?

A. It's a C-102.

Q. Okay.

A. And this shows the proposed location for the

Monument AGI No. 1 well.

Q. If you look at the subsequent pages under the C-102 form, are you provided with an area locator map and a Topo map for the vicinity of the well?

A. Right. And then just the detail of location and that.

Q. So we can see where we are?

A. Yeah.

Q. Who is the owner of the surface where the facility will be installed?

A. Versado.

Q. Okay. Explain to the Hearing Examiner briefly why Targa needs this facility?

A. Targa needs this facility to dispose of acid gas that's produced or that is a byproduct of the natural gas processing and the produced water that comes in to the plant along with the natural gas.

Q. And it's from the Monument plant?

A. At the Monument plant, that's correct.

Q. Okay. Let's explain how you identified the injection interval for this well.

A. There's a number of wells in the area, 12 to be precise, that penetrated the Devonian Fusselman in this interval. And the Devonian and Fusselman intervals exhibit sufficient porosity that we think that we can dispose of the amount of the liquid we need to dispose of to make this project successful.

Q. Okay. Turn to Tab A in your Exhibit 1. Let's talk about your well bore schematic.

A. Okay.

Q. And at the same time you might also wish to refer to Exhibit No. 2, which is another well bore schematic.

A. Oh. Which one did you want? Yeah. I've got that one.

Q. In Tab A.

A. Okay. Tab A. I got you. Okay. This is the proposed well bore schematic, the detail on how we want to build this well. We plan to set 13 3/8 casing in the anhydrite approximately 1,050 feet and cement to surface.

Intermediate, we plan to set 9 5/8-inch casing, approximately 9,000 -- excuse me -- 5,000 feet to cover the production interval in the San Andres from the north Monument Grayburg-San Andres and cement that also to surface. We plan to set 7-inch casing in the top of the Devonian at approximately 8350 and cement that also to surface. We will be using H_2S/CO_2-resistant cement on the long string, and the casing also will be corrosion-resistant casing.

Q. And the differences between the schematic and under Tab A and then Exhibit 2, on Exhibit 2 you show is tubing string, right?

A. Right. We didn't quite have the detail when I submitted the C-108. The tubing we plan on running is going to be 3 1/2 inch, internally coated with Duoline 20. The packer will CRA trimmed, corrosion-resistant alloy. And it'll have the subsurface safety valve, also CRA trimmed.

Q. And there is a narrative which is page 2 of Exhibit 2, which sets out what you said. These are the details for your casing program.

A. Right. And the packer will also be CRA trimmed, and we will set that approximately 50 feet above the shoe.

Q. All right. This will be an open hole completion?

A. Yes, open hole completion, from the top of the Devonian to the base of the Fusselman.

Q. And again, what are the materials to be used for the tubing? Are they corrosion-resistant?

A. Yes. The tubing will be J55 internally coated, Duoline 20.

Q. Okay. And what are the average and maximum daily injection volumes and rates you anticipate for this well?

A. The average will be about 3500 barrels a day with a maximum of 5,000 barrels a day. And we got this number by what we see currently coming into the plant.

Q. Is this system a closed system, and by that I mean is it available for use by third parties?

A. It's a closed system, and only the plant will have use of this system.

Q. Okay. Let's talk about the Devonian and Fusselman formations. If you could, give the Hearing Examiner a geologic analysis of those two formations.

A. Okay. The Devonian and Fusselman are primarily composed of dolomite, limestone and minor chert. The well will sit on the west flank of the NW/SE Trinity anticline. This anticline is fairly well developed or controlled. We have a number of wells, 12 wells to be exact, that were drilled between 1948 and 1961 looking for McKee gas. And so we have a pretty good idea of what the structure looks like.

In the process of drilling for the deeper gas, multiple DSTs were run on the Devonian looking for oil and gas. And these DSTs yielded only water. Most of these DSTs -- or all the data I got on these -- I got from OCD files. So those are available. And DSTs are a very reliable method of looking at the Devonian and Fusselman formations.

Q. What is the vertical extent of the injection formation?

A. Approximately 900 feet.

Q. Okay.

A. From the top of the Devonian to the base of the Fusselman.

Q. And where did you pick the top of Devonian?

A. It's going to be approximately 8300 feet.

Q. Okay. And the base of the Fusselman is?

A. 9250.

Q. Okay. Let's look at your well log and structure map, Exhibits 3 and 4. Let's talk about the well log first. Identify the well for this log.

A. This is the Amerada Petroleum State F well. It is located one location to the west of the proposed location. This well is in Unit N, and our proposed location is in Unit letter O of Section 36.

And this is just -- I put this in just to show the section and what we're looking at. You can see the Devonian overlaid by the Woodford shale. The Fusselman is kind of a fuzzy pick, the Montoya is a little better, and then the Simpson and McKee. And McKee is the deep gas zone I've referenced already that a number of wells produced from. And currently there's only two wells producing from the McKee right now. The other wells have been plugged back or plugged.

Q. So this log is typical of the logs you've seen for your study area?

A. Like I said, most of these wells were drilled in the late '40s to the early '60s. And about half of them of the gamma ray/neutron. The others have IES logs, old induction logs, one sonic log. So this is the material we have to work with to calculate the porosity and get an indication of the prime.

Q. In your view, was the data sufficient to allow you to re-evaluate the porosity sufficiently?

A. Yes. You know, it's hard to put an exact number, you know, say this is exactly 22 percent on the neutron log, but these are good indications of porosity. And so, yeah, it's not too far a stretch.

Q. Okay. Let's look at Exhibit 4, your structure map, and discuss that for the Hearing Examiner.

A. Okay. There was -- I think there was 12 data points on there, and the orange dot, or the pink dot, will be the proposed location. It's pretty well developed structure and not a lot of guesswork in there. We've got good control around the well, proposed well location. And like I said, there was a number of DSTs on these prior wells that tested the Devonian and yielded to be -- or determined it to be unproductive.

Q. And your mapping the top of the Devonian stretch?

A. Yes. This is the top of the Devonian.

Q. Now, overall throughout your study area, did you determine that the permeability and porosity in the reservoir is adequate for the project?

A. Yeah. You can't get permeability off well logs, but historically the Devonian and Fusselman have been excellent intervals to dispose water into. They very typically take water on a vacuum, and very large amounts of water on a vacuum, very strong disposal wells. And the logs are sufficient to determine porosity, if porosity is present or not.

Q. Based on your study, are you satisfied that the injection fluids will remain contained within the injection interval?

A. Yeah, I am. The Devonian is overlaid by the Woodford shale, and it ranges from 50 to 100-feet thick in the area. And that's going to serve as an excellent cap to prevent the upward migration of any injector fluids. The Woodford shale is present in all the wells in the study area, so it's laterally extensive. So I don't see a mechanism for a cause to let fluids migrate up the hole.

Q. All right. Are the Devonian and Fusselman productive of oil and gas in this area at all?

A. They are not productive in oil and gas at all. I think the nearest production is about ten miles away from the Devonian.

Q. Okay. Let's refer back to the C-108 exhibit, Exhibit 1, and look at Tab B. If you would discuss for the Hearing Examiner the area of review for your hydrogeologic and geologic analysis shown on those exhibits?

A. Okay. Just the various areas of review?

Q. The first sheet is a two-mile area.

A. Okay. The two-mile area of review. And then the half-mile area of review, and then a one-mile area of review.

Q. Okay. And within the area of review, did you determine the existence of any other production from other formations?

A. Yeah. There's production from a number of formations below us, I mean, above us: the Yates, 27-3500 feet; the Grayburg-San Andres, approximately 35-3900 feet; we have the Paddock at 5600; the Tubb at 6700 feet; and, the Abo from approximately 7100 feet. And below us we have the McKee at 9500 feet.

Q. And if we would turn to Tab C, which is more of the C-108 form at Part III, 5 -- so it would be the second page under Tab C, numbered paragraph 5 there -- what does that show us?

A. That shows the formations that produced and the depths they produced from in the area of review.

Q. Okay. And if we turn to Tab E, is this a list of wells in one mile area of review?

A. Yes. These are all the wells that penetrated the Devonian in the area of review. And each is listed by API number, well name, operator, section, township and range, unit, footage, total depth, the current perforations, where they're at, you know, what they're producing from now, and the pool, and whether or not they've been plugged and abandoned.

Q. Okay. And for all those wells, let's look at Tab F. You have well bore schematics. Is that for all the wells within the area of review?

A. These are all the wells that are listed in the previous page there.

Q. And including the new AGI No. 1 well?

A. That's correct.

Q. On top?

A. That's correct.

Q. Now, what was the source of data for these well bore schematics?

A. OCD files, OCD records.

Q. Was the data that you utilized from the OCD's records sufficient to permit you to determine the casing depths and accurately calculate cement tops and bottoms in each of the wells?

A. Yes, they were.

Q. Okay. Was there any evidence of casing leaks in any of the wells?

A. One of the wells, the Union Texas well, it had some casing leaks and that was essentially due to cement not being brought up high enough on the long string, at 56-5700 feet. And this well was plugged -- or the casing leaks were fixed, but the well was plugged a number of years ago.

Q. So that's the Union Texas Britt A?

A. Yes. And they had casing leaks, and they were -- and the leaks were essentially due to the casing not being brought up high enough on the long string. And this well was subsequently plugged. It was P&A'd in '78.

Q. This well is no longer an issue --

A. No, it's not.

Q. -- in terms of providing a conduit for fluids?

A. No. Absolutely not.

Q. Okay. Are you satisfied that the conditions of the wells in the area of review are such that none of them will act as a conduit for fluids from the injection interval to fresh water supplies?

A. Yeah. I'm satisfied that they won't act as a conduit for fresh water supplies.

Q. Would you identify all of the fresh water aquifers within the area of review?

A. The Ogalalla is not present at the plant site or even within a mile of the plant site. The only aquifer we have is in the alluvium from a depth of about ten feet to fifty feet. And all the fresh water that people use at the various plants and the one residence that's located in the area of review is piped in from up north of the plants. There's a fairly documented area that the water is -- this surface water, or this alluvial water, is fairly well contaminated, so nobody uses it to drink.

Q. Are there any known sources of fresh water below the injection zone?

A. No known sources.

Q. Okay. Now, have you examined the available geologic and engineering data for evidence of open faults or other hydrologic connection between the disposal zone in any source of underground drinking water?

A. I have. I've looked at that. I don't see any sources or any paths to do that.

Q. Okay. Now, let me ask you: Are there any fresh water wells producing within the one-mile area of review?

A. There is one windmill that was not present three months ago. It's evidently an old well that within the last month or six weeks someone has put a windmill, but it -- the time I was out there, it was not producing.

Q. Now, the Division requests that it be provided with water samples from two or more fresh water wells within the area of review. They simply weren't available, were they?

A. They were not available.

Q. Let's look under Tab B again. The area of review maps and the last page of those exhibits under Tab B is an aerial photograph?

A. That's correct. This just shows the various things in relation to the Monument plant where the well will be located, the existing saltwater disposal well at the plant right now, and then an occupied residence there to the south and the El Paso plant.

Q. Do you know what the source of drinking water is for the residence?

A. Yeah. They get their fresh water -- it's off the pipe going to the El Paso plant.

Q. Okay. Let's turn to Tab G. Let me ask you: In the course of evaluating the porosity of the injection interval, did you determine the aerial extent of the pour space that would be occupied by the injection fluids?

A. I did.

Q. Okay. Let's go over your calculations under Tab G. What is does this show?

A. These are -- I did a radius projection for the given amounts of the fluids we want to inject. The first three gallons per barrel, these are constants, gallons per cubic feet and gallons -- or a cubic feet per barrel. The low barrels per day is 3500 barrels, high barrels is 5,000 barrels a day. Low cubic feet -- simply divide the 3500 for low by the 5.6 cubic feet per barrel. And then the high also do the same way. Acre foot is a constant, 43,560. The net porosity is a number I got -- 300 net porosity feet times .06 percent, 6 percent porosity was the cut off.

The wells I examined in the area of review are the 12 wells. There were six wells that I could readily get porosity off of, gamma ray/neutron logs. Those six wells averaged slightly over 460 feet net porosity over 6 percent. What I did, to be conservative, I took the porosity -- I cut off the porosity at 300 feet -- and partly, I did that just to account for the variances in the logs not being calibrated and partly I wanted to show a radius of injection. Had I used 450 feet, my radius of injection would have been very small and unrealistic. So I used the 300 as a cutoff, and I believe that's a conservative number.

With that, I calculated the volume per acre. And that's at 784,000. And the next number is low rate days per acre. How many days, essentially, it would take to fill up an acre based on the 6 percent, and that's 1,256 days to fill up an acre producing at the low rate.

Then the next column is low rate per years. I just divided that 1256 by 365 days per year. And I got 3.44 years to fill up an acre. Low rate acres per year is just the inverse of the previous number. It's just .291 years. And then the next one is acres per 30 years, 30 times .291. That give me 8.73 acres that will be filled up at 30 years of injection at 3500 barrels a day. The high rate would be 12.45.

The next one I did 100 percent safety factor. What that means is that if I essentially doubled the injection rate, that would give me 17.46 acres to fill up in 30 years. And I did that for a safety factor. And if that were the case, I would have injection ratings of 492 feet, and that would still be within the lease lines of the plant. We would not cross any lease lines. And even at the high rate, with the 100 percent safety factor, we would not cross the lease lines. With just the 3500 and the projected numbers of 3500 and 5,000, our radius of injection would be 348 feet, approximately, and 415 feet, approximately.

On the next page is the graphic of that. And those show the 30-year low and 30-year high rate radius injection. The safety factor also takes into consideration that we're probably not going to have a perfectly circular injection radius due to inconsistencies, being the formation and porosity not being homogenous. If we did have a plume going one way or the other, it would still not cross the lease lines.

Q. Okay. Let's turn to Tab D. When you submitted the administrative application to the Division, you provided for legal notice in the Hobbs newspaper?

A. I did.

Q. And then you sent written notice to the offset operators, XTO Energy, Apache Corporation, Chevron USA -- Chevron's a partner in this, of course.

A. That's correct.

Q. Pursuant to your notification, did you receive any objections?

A. I received no objections.

Q. Okay. In your opinion, Mr. Pierce, can this project be drilled and operated so the injection fluids will remain contained within the injection formations?

A. I think it can be drilled and operated in such a manner as to keep the injection fluids within the injection formations.

Q. And will the injection operations pose any threat or impairment of correlative rights or waste of hydrocarbon resources?

A. I don't believe there will be any waste of hydrocarbon resources. The Devonian has been well-tested with DSTs and appears to be non-productive. So, you know, no correlative rights issues there.

Q. In your opinion, can this project be drilled and operated so that public health and safety and the environment are projected?

A. I think we can drill and operate this and protect the environment.

Q. And will operation of the project also allow for the underground sequestration of the carbon dioxide that would otherwise be released to the atmosphere?

A. That's correct.

Q. Were Exhibits 1 through 4 prepared by you or at your direction?

A. They were.

MR. HALL: At this point, Mr. Examiner, I move the admission of Exhibits 1 through 4. This concludes my direct of

Mr. Pierce. I pass the witness.

MR. JONES: Exhibits 1 through 4 will be admitted.

[Applicant's Exhibits 1 through 4 admitted into evidence.]

MR. JONES: Before Mr. Bruce cross-examines, you'll have other witnesses to talk about different subjects; is that correct?

MR. HALL: Yes.

MR. JONES: Okay. Go ahead.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Pierce, if I ask some questions that can be better handled by one of Targa's other witnesses, let me know.

A. Okay.

Q. You can shut me up.

A. Okay.

Q. First off, I just want to clear up: Will the operator of the well be Targa Midstream?

A. That's correct.

Q. Okay. Is Targa Resources the owner of the well?

A. No. Targa Resources is -- help me out here, guys.

MR. HALL: We have another witness that can answer that.

Q. (By Mr. Bruce): Okay. I'm just curious. I didn't understand why the two names --

A. That was me.

Q. Okay. Looking at your Exhibit 3, the log, Mr. Pierce --

A. Yes, sir.

Q. -- is Targa seeking to inject into the Devonian and Fusselman?

A. Correct.

Q. Is there -- that's fine. I just wanted to clear that up.

A. It will be an open hole completion --

Q. Okay.

A. -- from the top of Devonian to the base of the Fusselman.

Q. Okay. What are -- and, again, if somebody else has this data just let me know -- what are the permeabilities in the Devonian and Fusselman, and is there that much difference between the two?

A. Yeah. From zone to zone, they are going to be different. I can't give you an exact measure of permeability. That's not something we can measure off a log. We can get an indication of perm off of a log, but to actually measure perm, we would have to core it and do lab analysis on it.

Q. Okay.

A. So perm is an indirect and -- off of a resistivity log, especially the newer ones, there's multiple curves and the separation between these curves, that's an indication of permeability.

Q. And the wells that you showed on your Exhibit 4, are they generally older wells?

A. Yeah. These are all -- all the wells that were --

Q. Those dozen Devonian and Fusselman penetrations?

A. Yeah. 1948 to '61 vintage.

Q. So you're dealing with old logs?

A. Exactly. This Exhibit No. 3 is an example of that.

Q. Okay. And what about the porosity of the zones. Do you have any idea as to that?

A. Yeah. I can calculate the porosity, and that's subjective.

Q. Sure.

A. What we do is we scale the porosity. None of these logs were calibrated. This is before API standards. So we have tools that we can use. If you look at the neutron perf -- that's on the far right-hand side of your -- that's on the far right-hand side. As that curve moves to the left towards the center of the log, that's an indication of more porosity. As it moves to the right, towards the far right, that's an indication of tighter rock. So we know that tight rock is zero to 2 percent. And on shale we know that that can be upwards of 30 percent. So we kind of scale it.

Q. Did you use any particular figures in your calculations for those two zones?

A. Well, I used a 6 percent cutoff, and each one was a stand-alone.

Q. Looking at this, the Devonian would have better porosity than the Fusselman?

A. Yes, it would. In this well, it would have much better porosity.

Q. And what about generally on permeability: Does the Devonian have better permeability than the Fusselman?

A. Probably overall it does, yes. But, you know, the Fusselman in here exhibits sufficient porosity that I thought we could go ahead and include that. And that still gave us enough separation between the producing interval below us that we could take advantage of that porosity also.

Q. Did you ever -- and let me go back. You said that most of the production out here, the deeper production, was McKee or maybe Montoya?

A. McKee.

Q. McKee.

A. Right.

Q. The gas wells?

A. The gas wells.

Q. Of these wells on your Exhibit 4, you said the Devonian was not productive.

A. The Devonian has not produced from this structure ever.

Q. Okay. What about -- go ahead.

A. Go ahead.

Q. Go ahead.

A. I mean just no oil or gas ever out of this structure.

Q. What about the Fusselman?

A. No oil or gas out of that, either. Both of those zones were tested with DSTs, mostly in the Devonian, but a few in the Fusselman, and found to be non-productive.

Q. I don't know if I'm asking this in the right way, Mr. Pierce, but in the McKee production, would the reservoir, a shot of the McKee reservoir, look similar to the Devonian?

A. It would probably look similar. Maybe not exact, but it would look similar, yes.

Q. Did you ever calculate the aerial extent of the reservoir out here?

A. The Devonian is present to the south and west and north, and to the east, it pinches out at some point.

Q. And I think you said the nearest Devonian or Fusselman producer was about ten miles away.

A. Yeah. It's far away.

Q. You said there's no fault connecting a fresh water zone to the injection well. Is there any faulting out here in the Devonian or the Fusselman?

A. The Devonian is very typically faulted, but there's no evidence from the logs that I have, from the data I have, to suggest a fault. There's no very steep dips anywhere. There's good well control on this structure, and there's no very steep dips anywhere to indicate that there might be a fault there.

Q. Do you have any idea how close the nearest fault would be?

A. No, sir. I don't.

Q. And what is a structural dip in the Devonian and the McKee?

A. Overall, it's probably going to be to the south and west. I mean, we're on the central basin platform here, and we're on the edge of the Delaware Basin, so I would imagine it's a southwest, or south/southwest dip.

Q. Does Targa have any information as to the temperatures, bottom hole temperatures, in the Devonian and the Fusselman?

A. Those would come from these old logs, if they were recorded.

Q. Okay. And do you have any idea what the pressures, the bottom hole pressures?

RFT 2

A. The DST data also, they ranged from 2400 pounds to 3100 pounds.

Q. Are they similar in both the Devonian and the Fusselman?

A. I believe they are, yes. That 3100 pounds did come from the Devonian.

Q. Since there's no production, you'd expect them to be the same today as they were then?

A. Correct.

Q. And I heard you testify earlier, Mr. Pierce, you said that normally if you're just injecting whatever into the Devonian, it would normally take it on vacuum.

A. Yes, it would.

Q. But what were the pressures that you said you will be injecting?

A. We will be using surface pressure of approximately 1125 pounds, 1150 pounds, and that's the pressure we need to keep the CO_2 and H_2S in liquid form, and that should be our operational pressure.

Q. And what is the injection fluid? What will it be comprised of, roughly, in percentages, etc? I mean, what is the percentage of the H_2S? Would that be better --

A. I think that's a Todd question.

Q. Anything about content or composition, somebody else could handle that?

A. Yes.

Q. Are there any other similar acid gas injection wells in this area, like I say, within the couple of townships, that you're aware of?

A. There have been -- Todd probably has -- I know there's been a couple permitted, but I don't know if there's any operational yet.

Q. Okay. I think just one -- looking at your Exhibit 2 at the second page.

A. Yes, sir.

Q. Regarding the ESD system: What is an ESD system?

A. That would be a Todd question.

Q. Okay.

A. I think that stands for emergency shutdown. That's a Todd question.

MR. BRUCE: That's all I have.

MR. JONES: Is Todd an engineer?

MR. HALL: Yes.

MR. JONES: And Cal is going to handle the surface questions?

MR. HALL: We have people here than can address everything. As you know, Mr. Examiner, the rules for acid gas injection wells are a work-in-progress. So we brought a host of people to address anything that comes up. But we'll put on Mr. Young to address some of the matters Mr. Bruce touched on.

EXAMINATION

BY MR. JONES:

Q. Okay. Well, I had some amateur geology questions. The Woodford shale, how come it's so radioactive? And what formation is it in?

A. No. It's -- I think it's called the Woodford.

Q. What age rock is it?

A. Probably Devonian.

Q. It's the upper Devonian?

A. Yeah. I believe so. I could verify that for you in just a second.

Q. That's all right. That's not -- how come it's so hot?

A. It's a shale, a calcium.

Q. It's really hot. That's always a good marker.

A. Absolutely. Right. Absolutely. It's generally a black, a grayish black shale.

Q. Okay. Your calculations -- before I forget -- were they based on the whole thickness of the Fusselman and Devonian --

A. Correct.

Q. -- the invasion calculations?

A. Right.

Q. So if one of them had more -- obviously, one of them -- or some zones in some of them will be more --

A. I'm assuming, you know -- for that calculation, I assumed homogenous porosity. And obviously, that's not the case.

Q. Speaking of porosity, you got out of old graduated rule and angled it over there?

A. That's exactly what we had to do, right.

Q. Okay. There's no -- now, the deeper wells that were drilled out here, there's several of them, I noticed, that were deeper than that. They were all McKee targets?

A. Correct.

Q. And the bailout zone was the Devonian Fusselman that never worked?

A. Well, I think the bailout zone was up the hole further.

Q. Up the hole?

A. Yeah. Only -- I mean, I don't know exactly how many actually produced out of the McKee. There's only two right now that are currently still in the McKee of those wells.

Q. And those are half-mile radius wells; is that right?

A. Yes -- a one mile radius.

Q. And those are all Apache?

A. I think Apache has one and Chevron has one.

Q. And Apache had no concerns about this application?

A. They expressed none. I received no notice from them.

Q. So basically, all the McKee owners have been notified?

A. Absolutely.

Q. That McKee gas -- and what age rocks is McKee?

A. The Ordovician.

Q. It's Ordovician?

A. I think so.

Q. Okay. There's no fault connection between the Devonian Fusselman and the McKee?

A. Like I say, there's nothing indicated that the structure map would indicate, you know. Generally, you know, it's really hard to see a fault in a well log. What you look for is very steep dips, you know. And we just, you know, the structure has got fairly good control, and we just don't see that happening.

Q. What kind of structure is the McKee on?

A. It's an anticline also. I believe it's going to be a much smaller closure.

Q. But it's a mirror of this anticline?

A. It will look similar. I won't call it actually a mirror imagine, but it will look similar.

Q. I'm really glad you advised or Cal decided to, with probably your advice, to switch to the Devonian instead of trying the upper formations. I'll just say that. But you could have a well out here that's injecting water from the plant in another formation; is that correct?

A. Yes, we do. The plant currently operates the Graham State No. 7. It's in Unit letter O also, and it's been permitted 15 years ago or so, and it's injecting into the lower San Andres.

Q. Okay. And what kind of water -- what kind of fluid is going into it?

A. 35- to 5,000 barrels a day of produced water.

Q. Plant water?

A. Plant water. And it's a closed system also.

Q. Why not use that well to continue disposing of plant water and use this other one to dispose of CO_2 and H_2S? Is that another question for Todd?

A. I think that's.

Q. Okay, Todd. Sorry about that. It just seems like you're going to have a mixture of variances between the three components there.

One thing also, if there's a certain type of liquid that can go into a Class II well -- these are called Class II underground injection control wells -- and if you -- was Wayne Price's group notified of this, and have they given you any feedback?

A. They were notified. I didn't speak with Wayne directly. One of -- Cal, I think, spoke with Wayne directly.

Q. They may be all out there shoveling that big hole in the ground.

Maybe I can talk to Cal later about that. But the DSTs in the Devonian and the Fusselman: Did you look at those at all?

A. I did.

Q. The recovery zones on those, what were they?

A. Some of the recoveries were essentially dry and then some recovered 6-7,000 feet of saltwater and sulfur water.

Q. So some of them had no permeability; is that right?

A. Or the formation was damaged during drilling. I mean, a dry test doesn't necessarily mean a lack of porosity or perm, but it could.

Q. Any damages to the Devonian when you drilled through it?

A. Yes. Yes, you can. I mean, it's not as sensitive as say, the Morrow, but it can be damaged, yes.

Q. How much would it cost to drill these wells? Did you see that?

A. I have not seen an AFE for this well.

Q. It's a pretty good bet that it's going to be good, though.

A. Yes, I think so.

Q. All right. That DST, you should have been able to see possibly some kind of a boundary out there, maybe an indication of a fault, if you analyzed the DST.

A. Well, I think to have that, you'd have to have the original DST chart, wouldn't you?

Q. You would. They're not available at all?

A. Not in OCD files.

Q. Well, they wouldn't be. You'd have to get them from Apache or whoever Apache --

A. But see, Apache acquired from Amerada, and there's a number of, you know -- Chevron acquired from Texaco who acquired from Skelly. And, I mean -- and if we knew who ran the DSTs also, you know. If Halliburton ran them, we might be able to go to Halliburton and track down a couple of them. But I think those records are probably not available.

Q. Okay. The faults, if they were available, or they were out there, would they be Sealing ~~ceiling~~ faults, do you think?

A. Well, it all depends on the displacement of the faults. I mean, if it was excessive, it might not be. But the Devonian -- like I said, the Devonian is typically faulted, but the Devonian produces in many places in West Texas and Southeast New Mexico. But I think in most places they are Sealing ~~ceiling~~ faults.

Q. Do you agree with -- have you had input on the placement of the different casings in this well?

A. I think those were based on my recommendations.

Q. Are you going to use any DV tools, stage tools?

A. We -- I mean, if necessary, in my experience on the area, we have had to use external casing packers and DV tools to get good primary cement jobs. So I think those options are definitely on the table based on what we see without drilling the well.

Q. Are you designing the cement to circulate on all strings?

A. That's correct.

Q. If it doesn't circulate, are you going to run a bond log?

A. I think if we -- yeah. And I think the procedure would be -- my recommendation would be to run the bond log and perforate and bring the cement up to surface as good as we can do.

Q. Or at least run a bond log on the intermediate.

A. Right.

Q. You said the casing is going to be Corrosion ~~erosion~~-resistant casing, which has a low tensile strength.

A. That's -- I can't address that.

Q. Okay. And the tubing and the composition of the -- all the details about the tubing, the coating and everything should go to another witness?

A. Well, the tubing, I think, is J55 Duoline, you know, line tubing, so -- that was the information that was provided to me. Maybe Todd has some more information on that.

Q. And the backside between the tubing and the casing?

A. I think it will be loaded with diesel.

Q. Diesel. So there's basically no residual oil in the Devonian. It must have moved through there. It just didn't get trapped; is that right?

A. That's my interpretation of it.

Q. Okay. Did you talk to Paul ~~Couts~~ Kautz at all about any of this?

A. I did. I bounced the tops off of Paul, and I think he agreed with those.

Q. Okay. Is there any LPG wells around here?

A. Yes. I think there's two LPG wells, and my understanding is they will be plugged in the near future.

Q. Okay.

A. And they've been inactive for several years.

Q. Okay. How far away is this from the plant? It's in the plant boundaries?

A. Right. It's within 200 feet of the plant. I think it's between the plant and the flare.

Q. Okay.

MR. JONES: Mr. Warnell?

MR. WARNELL: No questions.

MR. JONES: Mr. Brooks?

MR. BROOKS: No questions.

MR. JONES: Any others? Okay. Thank you, Mr. Pierce.

MR. HALL: At this point, Mr. Examiner, we would call Todd Young to the witness stand.

TODD YOUNG

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

DIRECT EXAMINATION

BY MR. HALL:

Q. For the record, please state your name.

A. Todd Young.

Q. Mr. Young, where do you live and by whom are you employed?

A. I live in Andrews, Texas, and I'm employed by Targa Midstream.

Q. And in what capacity are you employed?

A. I'm the Monument area manager.

Q. You've not previously testified before the Division; is that correct?

A. That's correct.

Q. Would you give the Hearing Examiner a brief summary of your educational background and work experience?

A. I graduated from the University of Arkansas with a chemical engineering degree in 1990. I've been working in gas plant processing for the last 17-plus years with different roles and responsibilities and increasing levels of responsibilities to the position that I'm in today as an area manager.

Q. You're familiar with the application that Targa has pending before the Division?

A. Yes, sir.

Q. And you're familiar with the layout of the Monument plant and its operation as well as this injection facility?

A. Yes. The injection facility is located on our plant site.

MR. HALL: At this point, Mr. Examiner, we offer Mr. Young as a qualified expert chemical engineer.

MR. BRUCE: No objection.

MR. JONES: Mr. Young is so qualified.

Q. (By Mr. Hall): Mr. Young, how is Targa currently processing its waste gases at the Monument plant?

A. Through sulfur recovery units. The H_2S and the CO_2 recovered from the amine system is routed to the sulfur recovery unit.

Q. Is the sulfur recovery unit at its maximum capacity?

A. Yes, it is.
Q. Is that constraining the ability of the plant to receive additional volumes of produced gas for processing?
A. Yes, sir.
Q. Is that resulting in curtailment of production in the area?
A. Yes, sir, it is, of the quality gas.
Q. Okay. Why are we pushing up against the maximum capacity of the sulfur recovery unit? Is it because you're seeing increased gas volumes delivered to the plant?
A. The volumes for this quality of gas remain pretty consistent at our levels, but what we're seeing is an increase in H_2S and CO_2 levels where they have almost doubled in concentration.
Q. Let's look at Exhibit 5. Do you have that before you?
A. Yes.
Q. Explain what Exhibit 5 shows to the Hearing Examiner. You can just do a walk-through of what we're looking at in the process.
A. This represents the flow schematic for reference purposes, but if you look on the left side, you'll see the inlet gas from our gathering system that's gathered from producing wells. We bring that in with compression. That gas is then sent to the amine system. That gas we consider raw

sour gas, which just means it's unprocessed gas from the wellhead. It contains H_2S and CO_2.

From the amine system, working left to right, that amine system removes that H_2S and CO_2. The gas from the amine system we consider sweet gas now, without H_2S and CO_2 in it. That gas has to be dehydrated and the water removed from it before we can recover the NGLs. After dehydration, the gas is considered dry gas where we route it to NGO recovery. Through that NGL recovery process, we recover the NGLs. That includes the methanes, the propanes, the butanes and the natural gasoline. The remaining methane is what we consider residue gas. That gas is sold to El Paso. It's similar to what you see in your houses from the distribution systems.

If you go back to the amine treater block, the off gas there we consider acid gas. That's H_2S and CO_2. Our current operation, that H_2S and CO_2 is routed to the sulfur recovery unit. At the sulfur recovery unit, we make sulfur by converting the H_2S to sulfur. The CO_2 passes through the sulfur recovery units and through the incinerator where it's vented. The H_2S that's not recovered is oxidized and burned in the incinerator.

Our proposed operation -- what you see is the future with the dotted line that represents the proposed change where the H_2S and CO_2 will be routed to acid gas compression. On the far right, you see the gas plant water that will be combined with the acid gas, the H_2S, and CO_2, and be injected into our acid gas well.

Q. On the exhibit can you show us specifically where that gas will be mixed with the waste water?

A. Yes, sir. On the dotted line, as you follow that to the acid gas compression block, after the backflow valve -- the backflow pressure valve on the acid gas compression, the produced water mixes in the mixing chamber for injection into the injection well.

Q. Explain to us how the injected water will be maintained in a liquid phase?

A. Downstream of the acid gas compression is a back pressure valve. That back pressure valve will be used to maintain the pressure at a point to where the acid gas, the H_2S and the CO_2, can remain in solution during the injection.

Q. Okay. Let's talk about the components of the disposal fluids. If we turn back to the C-108, Exhibit 1, and under Tab C, page 3.

A. Thank you.

Q. Tab C on the third page under Tab C, under Part VII, does that show the components of the acid gas and water?

A. That represents our compositions, yes, sir.

Q. Can you briefly discuss what we're looking at here?

A. The acid gas represents the H_2S and CO_2 in concentrations from 20 to 30 percent H_2S, the remainder being CO_2 and water. That water source is water from the plant, plant processed water and produced water.

Q. Okay. Now, Targa currently has a discharge permit that covers the entire plant, does it not?

A. We do.

Q. And will the company be seeking an amendment to that permit to include the injection facility?

A. We'll be submitting a modification to the existing discharge permit to include the facilities for the disposal of the acid gas through an injection well.

Q. Okay. Now, explain the need for surface compression facilities for operators.

A. In order to inject the acid gas in liquid phase, we have to compress that acid gas to a pressure that reaches the critical phase where it can be maintained in a liquid phase.

Q. Okay. Let's turn back to one of the well bore schematics. Exhibit 2 will be fine. We have the annular space between the casing and the tubing. Will that be filled with an inert fluid to surface, a leak detection system?

A. Yes, sir. This diesel fuel is being recommended by the OCD, and that is what we intend to use.

Q. And will the well be equipped with a pressure

gauge as well for leak detection?
A. Yes, sir. We'll monitor that pressure daily.
Q. And overall, you're understanding is the design for this acid gas injection well is consistent with the designs for acid gas injection wells previously approved by the Division?
A. Yes, sir. This is consistent with our Eunice acid gas well that we recently approved. We also are operating acid gas injection system in Texas at our Sandhill facility, and we've been doing that for five-plus years.
Q. So Targa has some history and experience in operating acid gas injection wells?
A. That's correct.
Q. Explain the plans for testing the well prior to commencement of injection?
A. We pressure test the casing and monitor the backside pressure, similar to what we do with our Bradenhead well test and our mechanical integrity testing that we do on our saltwater disposal well.
Q. Okay. And will you ask the Division's district office to witness the mechanical integrity tests?
A. Yes, we will.
Q. After the commencement of injection operations, what data will be collected?
A. We'll provide the injection pressures and rates

on a continuous basis and report that as required by the OCD.

Q. Now, once it receives approval for this well, will Targa submit a proposed amendment to its H_2S contingency plan for approval by the Division's environment bureau?

A. Our current 118 contingency plan covers our plant site and this source is not a different site. It's the same source. We'll amend that to reflect the new location of the well and the compression equipment, our H_2S monitoring, the fencing addition that we'll make in that area, our wind socks, and safety system changes that we've made to the plant. But the source remains the same. There's not an additional source for exposure for the 118 contingency plan.

Q. In your opinion, Mr. Young, can this project be drilled and operated so that public health and safety and the environment will be protected?

A. Yes, sir. My office is at the facility.

Q. Okay. You feel safe working there, then?

A. Yes, sir.

Q. Was Exhibit No. 5 prepared by you?

A. Yes, sir.

MR. HALL: At this time, Mr. Examiner, we move the admission of Exhibit 5, and that concludes our direct of this witness.

MR. JONES: Exhibit 5 will be admitted.

[Applicant's Exhibit 5 admitted into evidence.]

MR. JONES: Any questions?

MR. BROOKS: No questions.

MR. BRUCE: I just have a few questions.

CROSS-EXAMINATION

BY MR. BRUCE:

Q. Mr. Young, Tab C of the form C-108, looking at the page 3 with your H_2S content --

A. Yes.

Q. -- looking for minimum volume will be roughly 21 percent H_2S and 68 percent CO_2. Is the rest water?

A. Yes, sir.

Q. Okay. So it's roughly ten percent water under either scenario?

A. Yes, sir.

Q. And looking at your Exhibit 5, once it comes out of the acid gas compression, it will be liquid to the well and down as it is injected?

A. That's correct.

Q. Just one or two more. The well bore diagram on page 2 of that, the ESD system, there is a valve at the surface, or is there more than one valve?

A. The subsurface safety valve and then the back pressure valve on the downstream side of the compression represents two ESD valves.

Q. Okay.

A. And that is emergency shutdown devices, or ESD.

Q. And the types of grades of the casing and the tubing are just industry standard with corrosion resistance?

A. That's correct. That's what I understand we'll install.

MR. BRUCE: That's all I have, Mr. Examiner.

MR. JONES: Okay.

EXAMINATION

BY MR. JONES:

Q. Mr. Young, the water is going to be the same water that's being put in the lower San Andres right now?

A. That's correct.

Q. And do you have an analysis of that water? Or could you send an analysis in for the file?

A. We have done that. It's submitted. We haven't got the results back, but it's been submitted.

Q. Okay. That was the main thing. I had something else. That safety valve is in the tubing, right?

A. Yes, sir.

Q. And how far down will it be?

A. I can't tell you that without --

Q. In case something happens to the wellhead.

A. Yes, sir. I can't give you the footage. It's similar to our other designs.

Q. So why didn't you want to use the other well continuous for the water and just use the new well for the CO_2 and H_2S?

A. From my perspective, I guess our experience has been to inject the water. And we've operated that way successfully. The other thing that I understand is that the water will take up less space than the gas and the corrosion issues are less in the liquid phase. That is the intent of why we tried to do it that way.

Q. So if you add the water, it insures it's going to be in a liquid phase along with the pressure?

A. It's all ready -- once we go to the critical phase and give it water, it'll stay in that liquid phase. Essentially the water is saturated with the H_2S and CO_2.

Q. Okay. But from the tubing -- the top of the tubing -- basically from there to the formation, sometimes the Devonian takes it really pretty low pressure, so you're not going to have flashing?

A. Not at those pressures.

Q. Okay. Well, that's -- so it's more advantageous to do that, then?

A. That's what I understand from the process.

Q. And your compressor that compresses the CO_2 and the H_2S, do you have trouble maintaining that compressor? Don't you have a lot of corrosion problems?

A. Well, it's designed for that service, and we have experience doing that.

Q. So it's a very expensive compressor, probably?

A. Yes, sir. Those are alloys that are -- stainless steel is what you'll look at in the design of the compressor.

Q. And why has the H_2S and CO_2 gone up in concentration?

A. We've asked our producers that, and they haven't given us an answer. But they continue to go after that gas as a result of the pricing environment.

Q. Okay. Okay. Your surface is owned by?

A. Versado Gas Processors, LLC.

Q. Okay. And that's a pretty good area around that wellhead --

A. Yes, sir.

Q. -- because the surface is owned by --

A. Yes, sir. I don't know if we have the exhibit that shows that property line, but it's well within that property line. We intentionally picked that location to maintain that area.

Q. Is that area being used for grazing also?

A. No, sir. It's on our plant property.

Q. How do you control the weeds and everything?

A. We spray them.

Q. Okay. So that windmill that Mike Pierce was talking about, how far away is that?

A. It's on the west side of the property so that's over -- without the acreage, I can't tell you that. But the property runs from west to east. That's on the disposal well, the flare and the outer limits of our plant are all -- and the acid gas injection are on the east side of the system. So they're at opposite ends of the facility.

Q. Did you do that on purpose?

A. We chose the location on purpose.

Q. Because of the winds? Was that a factor?

A. The winds and the sulfur recover units in that area. It's predominantly the safe area of the facility.

Q. Okay.

MR. JONES: Any questions?

EXAMINATION

BY MR. WARNELL:

Q. I have one question, Mr. Young. On Exhibit 5 here --

A. Yes, sir.

Q. -- if we were to pencil in or maybe it's already there, I just don't see it, but I'm wondering about the water disposal well that you have now. How would you draw that into this area?

A. Take that box, take off that system and draw a box around it and then take a line and just route it with water coming out of the facility straight to our saltwater disposal well. So if you drew an outline around everything that's current --

Q. Okay.

A. -- those systems all tie in multiple ways to a line that runs to the saltwater disposal well on our property.

Q. Okay. I wouldn't want to confuse it with that liquid sulfur line down there.

A. Yes, sir. If you'll stay on the current at the box, that'll work.

Q. Okay. Thank you. That's all I've got.

MR. JONES: Mr. Books?

EXAMINATION

BY MR. BROOKS:

Q. I appreciate what you said about there won't be any more H_2S coming into the facility because it will be the same strength, right?

A. Well, right now we're limited on the amount of H_2S we can bring into the facility, so we'd like to see the H_2S concentrations or total volumes of H_2S increase.

Q. So the volume will increase. It'll be from the same sulfurs?

A. That's correct.

Q. But the volume will increase. Because it's from the same source, there's no reason to suppose, then, that the concentration will change?

A. What we've seen is the same volume -- we've doubled our H_2S concentration, H_2S and CO_2 concentration.

Q. Yeah.

A. So as we increase those volumes, our H_2S and CO_2 concentration will increase. This is why we need the acid gas injection to be able to handle those increased concentrations.

Q. Okay. And, of course, that will affect what goes into your contingency plan because your contingency plan is based on the concentration in your string, right?

A. It's a worst-case scenario, and we're not at those volumes and would not expect to be at those volumes -- would not expect to exceed those volumes with this change.

Q. And your present operation with the sulfur recovery unit, you do not compress the acid gas, correct?

A. That's correct. It's at low pressure to the sulfur recovery unit.

Q. And does the compression increase the hazard that may occur if there were a release?

A. It has exposure at a higher pressure, yes, sir.

Q. And does that increase the concentrations if it releases, it would release a higher concentration as opposed if it weren't compressed?

A. That span of pipe between the compression and the wellhead, which is limited, has the exposure to have a higher radius, but it'll be less volume in the event if we have a leak. Those ESD valve systems will shut off that small amount of volume. The major source remains at low pressure as it is today to the suction side of the compressor.

Q. Okay. You mentioned an occupied residence -- or your previous witness mentioned an occupied residence, I believe, in the one-mile or the two-mile area of review.

MR. HALL: It's under Tab A, Mr. Examiner, the last page there.

Q. (By Mr. Brooks): How how far is that from the plant? Oh yeah, it's on the last page of Tab B. How far is that from the plant?

A. I can't tell you if it's a mile or less over to his trailer house.

Q. Okay. Do you know if the owner of that residence has been notified?

A. Yes, sir. I gave him the copy of the notification.

MR. BROOKS: That's all I have.

MR. JONES: I just have one more question. What's your schedule on getting the well drilled and everything. Is it like next week or --

THE WITNESS: Unfortunately, the cost of the expenditure will require significant approval process. And then the availability of equipment and resources will be the next pending piece. So it's not -- we'd like to see it in the next year, would be our expectations.

MR. JONES: I don't see a big hang-up here.

RECROSS-EXAMINATION

BY MR. BRUCE:

Q. I forgot to ask you, Mr. Young. Just getting back, just to clarify for me: The applicant is Targa Midstream. The plant is owned by Targa Resources, right?

A. No, sir. The plant is owned by Versado Gas Processing, LLC.

Q. Okay.

A. The partners are Targa Midstream Services, LP, and Chevron USA, Incorporated. Versado Gas Processing, LLC, owns the Monument plant. The application, I think, represents -- had initially represented Targa Resources, LLC. Targa Resources, LLC, or Targa Resources, Inc., is the parent of Targa Resources, LLC and Targa Midstream Services, LP.

Q. Okay.

A. And that mistake has been corrected.

Q. All right. I was looking at that Tab B, and it shows the plant as being owned by Targa Resources. That's why I got --

A. It's actually owned by -- it's hard dealing with the regulatory piece. When we deal with regulatory agencies, we have the operator represented as Targa Midstream Services, LP.

MR. JONES: Thanks for doing that.

THE WITNESS: No one knows Versado.

Q. (By Mr. Bruce): And if I could, do you anticipate a 30-year life for this well?

A. I hope at least 20.

Q. What do you currently do with the sulfur?

A. It's sold by truck.

Q. Thanks.

MR. HALL: Mr. Examiner, we have Cal Wrangham, the manager of Targa for health, safety and environment, and if you'd like, we can make him available to you if you need to discuss the Rule 118 H_2S contingency plan at all.

Our understanding, based on prior applications like this, is that it's a condition of approval that the operator submit an amended plan prior to the commencement of operations. But if you have any questions about that, he's available today.

MR. JONES: I really don't think so. Because that could be -- that will be part of Wayne Price's group.

MR. HALL: He has been in communication with Mr. Price about this.

MR. JONES: Okay.

MR. HALL: With that, as we indicated, I'll file an amended application to specify that the relief will include a request for surface pressure injection at or below the fracture pressure gradient of 1600 pounds or less for that depth.

MR. JONES: Okay.

MR. HALL: And then I will notice -- again, we have notified all the surface owners within two miles, I think, and offsetting operators. In accordance with my understanding of the rule, under Rule 701, which refers to affected parties, the only other reference in the rules to an affected party is under the unorthodox location rule, which gives us some guidance. So that's what I have done in terms of notifying mineral interest owners. Will that satisfy the Division?

MR. BROOKS: I would assume so. You notified everybody within the two-mile area of review?

MR. HALL: All surface owners for mineral interest owners, it was the offsetting operators.

MR. BROOKS: Okay. Well, I'm not sure who you notified from that, but what I understand that Rule 701, as it is presently stated, requires for an area of review and you need to notify affected persons in any tract that is all or part within the area of review, which, of course, is going to create something -- it could go beyond offsets, depending on land ownership.

MR. HALL: It's my understanding we have done that.

MR. BROOKS: Okay.

MR. HALL: In fact, I have more operators than were testified to today. Plus I think I've notified this case two ways before Sunday. That it's been advertised in the Hobbs newspaper twice already. That will be done again, and then we'll send out written again with the amended application.

MR. BROOKS: And you'll file a Notice of Affidavit when you've done your new notice, right?

MR. HALL: Right. I can give you what we have today, but I don't know see the need --

MR. BROOKS: If you're going to notice over again, I guess it doesn't really matter.

MR. JONES: So that will include the operators? Since there are no operators in the Devonian or the Fusselman, you'll be the lessees.

MR. HALL: Right. Chevron, as we understand it, who is the partner in the project --

MR. JONES: Okay. And the McKee people will also be included in that just because they -- I'm kind of interested in having them included.

MR. WHITE: I've had discussions with Apache because they protested, and I asked them specifically about this formation and discussed what we were doing specifically to see if they had any problem. And they gave us -- obviously, they didn't protest.

MR. JONES: The only thing that I can say is the drill stem test data, if you could get a hold of one of those, or two of those charts -- and actually look at those. Now, what you've got now is Mike's looking at drill stem tests there to see permeability. But you are still at risk of drilling into something that you can't inject into. But it's a pretty high likelihood that you'll be okay, but not only could you see -- interpret some kind of permeability from your analysis of a drill stem test, but you could also possibly look for boundaries. And you don't have to, but that's what I would caution.

And another thing is, if you're going to show up in another month or six weeks, maybe you can have a well bore diagram of the tubing in it and the packer in it, and a little more detail about the locations of all the safety devices and the coatings on the packer and that kind of stuff.

Okay.

MR. HALL: We'll do that. Mr. Examiner, with that, we ask that this case be continued to the September 18th Examiner hearing docket.

MR. JONES: Thank you. We'll take Case No. 14161 and continue it to the September 18th docket.

And let's take a 15-minute break.

[Hearing concluded.]

* * *

REPORTER'S CERTIFICATE

I, JOYCE D. CALVERT, Provisional Court Reporter for the State of New Mexico, do hereby certify that I reported the foregoing proceedings in stenographic shorthand and that the foregoing pages are a true and correct transcript of those proceedings and was reduced to printed form under my direct supervision.

I FURTHER CERTIFY that I am neither employed by nor related to any of the parties or attorneys in this case and that I have no interest in the final disposition of this proceeding.

DATED this 7th of August, 2008.

Joyce Calvert

JOYCE D. CALVERT
New Mexico P-03
License Expires: 7/31/09

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

I, JOYCE D. CALVERT, a New Mexico Provisional Reporter, working under the direction and direct supervision of Paul Baca, New Mexico CCR License Number 112, hereby certify that I reported the attached proceedings; that pages numbered 1-62 inclusive, are a true and correct transcript of my stenographic notes. On the date I reported these proceedings, I was the holder of Provisional License Number P-03.

Dated at Albuquerque, New Mexico, 7th day of August, 2008.

Joyce Calvert

Joyce D. Calvert
Provisional License #P-03
License Expires: 7/31/09

Paul Baca

Paul Baca, RPR
Certified Court Reporter #112
License Expires: 12/31/08

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. 14161

AMENDED APPLICATION OF TARGA MIDSTREAM SERVICES, LP, FOR APPROVAL OF AN ACID GAS INJECTION WELL, LEA COUNTY, NEW MEXICO

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID K. BROOKS, Legal Examiner
WILLIAM V. JONES, Technical Examiner
TERRY WARNELL, Technical Examiner

August 7, 2008

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID K. BROOKS, Legal Examiner, WILLIAM V. JONES, Technical Examiner, and TERRY WARNELL, Technical Examiner, on Thursday, August 7, 2008, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico.

REPORTED BY: JOYCE D. CALVERT, P-03
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