



Pat O'Dell

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MDT

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cc: Lisa Norby/DENVER/NPS@NPS, Linda
Dansby/SANTAFE/NPS@NPS, Jim C Woods/DENVER/NPS@NPS
Subject: LEMON EA...of Water Wells, Blowdowns, and other Noise

Hi Arlene,

Here are my comments on the EA sections that were given to me to look at.

Use of Water

It looks like our earlier work on the water well - casing setting depth issue slipped through the cracks and didn't make it into the EA. Basically, that table on kick tolerances confuses the issue and needs to be removed (see comments below). I suggest replacing the language of the "Use of Water for Drilling" section as described in the original message to you. (12/26/01 email - subject Format of BNP Table in EA)

For your convenience, I have copied the text of that message below:

The main reason for setting the casing deeper is to provide separation between the casing shoe and the water well. As BNP's table illustrates, the deeper setting depth is not going to appreciably change the "kick tolerance" as BNP puts it. Basically, the table shows that should a kick occur, surface pressures cannot be allowed to build up much without risking breakdown of formations just below the casing shoe. Formations fracturing and taking fluids during a well control situation could result in an "underground" blowout (one zone blowing out and another zone taking fluids). The shallowest zones exposed in the wellbore are generally going to breakdown first. If communication developed from a fracture below the casing shoe to the water well, you could end up with a surface blowout through the water well. Without going into details, that would be BAD. Given that BNP expects to encounter gas and that pressures could be abnormally high, vertical separation between the casing shoe and the water supply well is prudent.

A similar thought process applies to annular injection. In that case, you purposely subject formations to pressures that will fracture them and allow you to pump drilling mud waste into them. However, you don't want those fractures to communicate into your usable quality water zones, so you provide vertical separation. That's why BNP will be required to set casing deeper for purposes of annular injection.

I suggest omitting language about BNP's table and using the following edits to replace everything up to the paragraph beginning with "The successfulness of drilling..." [now begins "The potential for a successful drilling..."]

Use of Water for Drilling: BNP proposes to drill a temporary water well on the well pad to deliver approximately 1,302,000 gallons of water needed to drill the wells. BNP will provide a means for metering water volume at PINS request. The water well would be drilled into the Goliad formation, between 1400 feet and 1700 feet (see Appendix A). Providing this well has sufficient volume, BNP would not have to purchase water from the park. If a water supply well is maintained at the location, BNP will adjust the surface casing setting depth for Well #1008S as a precautionary well control measure to minimize the risk of communication developing to the water supply well. Instead of setting the surface casing at 1750 feet, the operator will set surface casing at approximately 2200 feet, thereby providing nearly 500 feet of vertical separation between the casing shoe and the total depth of the water supply well.

Plugging the Water Well After Drilling Ends

There is a statement in the EA (page 17) that says "Once the wells have been drilled and placed in production, the water well would be plugged." Does BNP want to plug the water well, or do they think we want them to plug it?

I see no reason to plug the water well once the well is drilled and placed into production. The **beneficial purposes of the water well (to minimize water hauling to the wellsite)** should be maintained throughout the life of the well including plugging. Once production casing is set and

cemented, the chances of having any problems with gas well to water well communication are essentially removed.

Impacts on Natural Soundscapes

The person from NPCA commenting on "blowdown" seems to be misinformed about the normal operation of a natural gas well. The process described (and the reason for doing it) does not occur at Padre Island as part of routine operations or anywhere else that I am aware. Including any specific discussion about "blowdown" as described in NPCA comments would only serve to confuse readers. I suggest beefing up the detail on possible noise from production operations.

During drilling, rig traffic is also a source of noise. During gas well production, traffic is substantially reduced to perhaps one personal pickup truck per day and maybe a periodic tanker truck hauling produced liquids (brine and/or condensate). Periodic well workover or well servicing is also a short-term source of noise, perhaps once every 5 to 10 years for a period of one to two weeks. Gas well production (in the absence of compressors) might generate noise from gas moving through lines or liquids dripping into a tank. In most instances, you can be standing in the middle of the production site and not hear any production sounds.

Lastly, the use of a diesel electric rig in and by itself does not "substantially" reduce noise from the location. There is some noise reduction just by removing all the belts, pulleys, and chains used to drive a mechanical rig, but the biggest source of noise are the diesel engines. I would remove the word "substantially" when talking about the diesel-electric rig, UNLESS BNP tells us they are contracting a rig that includes additional sound reduction from the diesel engines (enhanced mufflers or sound barriers). The rig contracted to drill the Dunn-Murdock No. 1 did not include any noticeable sound reduction measures on the diesel engines.

I hope this helps, Arlene. Please give me a call if you have any questions, comments, or need anything else.

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