

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
Regulation Hearing for Geothermal Resources
Thursday, November 21, 2019 – 1:00 p.m.
Legislative Building, Room 3138
401 South Carson Street, Carson City, NV 89701

MINUTES

COMMISSIONERS IN ATTENDANCE:

Richard DeLong
Randy Griffin
Bob Felder
Josh Nordquist
Nigel Bain
Mary Korpi

STAFF IN ATTENDANCE:

Rich Perry - Administrator (NDOM)
Mike Visher (NDOM)
Lowell Price (NDOM)
Sherrie Nuckolls (NDOM)
Courtney Brailo (NDOM)
Greg Ott- (AG)

PUBLIC IN ATTENDANCE:

Dale Bugenig
Jordan Hosmer
Shannon McDaniel
Tim Wilson
Jocelyn Moran
Deborah Goetz

CALL TO ORDER

Richard DeLong: Meeting started at 1:00 pm.

I. Comments by the General Public

Richard DeLong: asked for comments from the Public. There were none.

II. PUBLIC HEARING

The Commission on Mineral Resources will consider written and oral comments and may adopt amendments to regulations for Geothermal Resources as set forth in Chapter 534A of the Nevada Administrative Code.

Richard DeLong: I'd like to give the Commissioners the opportunity to disclose anything in relationship to their evaluation discussion or thoughts on the regulations. I will start, the company I work for, EM Strategies, does permitting in the State of Nevada as well as other western states, we have done work with the geothermal industry in Nevada in

the past, we currently are not but may in the future, given that, I don't see that effecting my ability to appropriately consider and vote upon these regulations.

Josh Nordquist: I'm currently employed at Ormat Technologies, have been for 11 years and Ormat is a geothermal developer in the State of Nevada whose activities fall under these proposed regulations. My responsibilities are focused on geothermal resource operations, exploration and development throughout the United States and internationally, though as an employee we all have the duty to comply with all laws, rules and regulations. My primary focus is not regulatory compliance and is not focused solely on Nevada, as part of my compensation I may receive bonuses based on the total performance of our projects some of which include Nevada projects; however, for these reasons the regulatory changes currently do not impact me or my employment. I believe my ability to discuss or vote on these proposed regulation changes I'll retain the best interest for the State of Nevada will not be impacted. I have discussed and confirmed this position with both counsel for my employer and the Board, accordingly I intent to participate and vote in this matter.

Richard Perry: Gave a PowerPoint presentation. He gave a history of regulations and a proposed update of the code and fees. He explained that the red lettering is eliminated language; blue is proposed new language, green are changes after the public workshop, pink are workshop comments or staff clarifications, and purple is omitted material.

He provided a summary of changes to:

Sec. 2 – definition of "cement" added to Section 32.

Sec. 3 – definition and description of "well bore" added.

Sec. 4 – natural heat of the earth defined as >85 F at surface.

- Helps define the difference between a warm water well and a geothermal well. Eliminates loophole of cold water being permitted as geothermal wells for domestic heating and cooling.

Richard Delong: Sec. 4, was the 85 F number set to try and limit the number of domestic geothermal wells or heat exchange domestic systems?

Rich Perry: It was set to eliminate the permitting of a cold ground water well as a geothermal well which under the existing regulations can happen and that was happening.

Sec. 5 clarifies that a NV Licensed water well driller is required to drill a geothermal domestic well and any well that has a water right to appropriate waters. Not required for any Industrial or Commercial geothermal well where water is not appropriated.

Sec. 6 – notifications. 48 hours before spudding, 24 hours before testing.

Sec. 7 – inactive wells – 2 year limit – show cause – plug and abandon. Note change in 7.4 from workshops.

Sec. 8 – filings with Division – drill logs-producing or injection wells, volumes, pressures, temperatures.

Sec. 9 – excerpt for fees and requirement to permit, Administrator can grant an exception for good cause shown.

Sec. 10 – definition reference.

Sec. 11 – description of "aquifer" term.

Sec. 12 – "observation" well, not observational well.

Sec. 13 – elimination of address of driller registered on State Contractor Board.

Sec. 14 – definitions of geothermal domestic, commercial and industrial wells. Elimination of 1800 gpd for geothermal domestic well, as it was being confused with a domestic well under State Engineer statutes. Clarification of Commercial and Industrial wells.

Sec. 15 – clarifies what sections of regulations are relevant to geothermal domestic wells only, commercial wells and industrial wells.

Sec. 16 – eliminates requirement to tie location to a landmark, replaces with a GPS coordinate. Defines what GPS coordinates are required, and requires SOS business ID of application.

Sec. 17 – clarifies that an injection permit from NDEP is required before any reinjection of fluids.

Sec. 18 – adds "geographic" characteristics for consideration of the 100-foot setback exception.

Sec. 19 – merges observation wells into one fee category instead of two.

Sec. 20 – merges observation wells in a "project area" into one fee category instead of two.

State of Nevada

Division of Minerals

November 21, 2019 Geothermal Resources Hearing

Sec. 21 – “observation” well, not observational well.

Sec. 22 – “observation” well, merged into one category and fee.

Sec. 23 – new bonding requirements for wells, an increase from current regulations - \$10,000 for the first thermal gradient well, \$25,000 (currently \$10,000) for the first commercial or industrial well, \$100,000 for a blanket bond to cover an entire project area (currently \$50,000). Reason: current minimum bonding amount is not enough to cover plugging of an abandoned well. Does not affect existing wells or bonding, and is not applicable on Federal lands where BLM holds bond. Applicable only to a new operator permitting wells which are not already within an existing bonded project area on non-Federal lands. However a transfer or ownership will trigger a review of bond amount.

Richard DeLong: Where is the language about this only being applicable to new wells?

Rich Perry: There isn't language there but by definition it would not be applicable to past wells because they were permitted under the old regulations.

Richard DeLong: There's another regulation that says the existing operations are grandfathered?

Rich Perry: We did not specifically say that in there, we interpreted it as that.

Mike Visser: Because the bond is tied to the application it's only applicable to new wells.

Sec. 24 – casing requirements. New requirement for surface casing, 10% of TD or 200 feet minimum, 2nd casing string required cemented if first string is not cemented in a competent geological formation. Use of centralizers on casing strings, design of cellars. Administrator may specify alternate requirements to protect fresh water and ensure blowout control. Note change in Sec 24 3e, “differential” pressure.

Sec. 25 – update of where to purchase a Well Control manual. BOP's required if well temperatures exceed 200 F (previously 250 F).

Sec. 26 – mud temperature in well bore must be less than 125 F, or mud cooling equipment is required (currently 200F). Note Sec. 26.2 strikeout, from workshop comments.

Richard DeLong: More of a procedural thing, sub item 1 mud temperature and then stricken below that (a) and then just have (b), is that correct?

Rich Perry: That's correct.

Richard DeLong: Since (a) is stricken out is the reason to have a (b)?

Rich Perry: Because we're editing an LCB version we don't try and change the (a) and the (b) because if Commission approves it with these changes we would submit it like this otherwise we'd confuse the issue.

Sec. 27 – clarifies two sets of cuttings or a split of core every 30 feet, submitted to NBMG within 90 days.

Sec. 28 – well location sign within 100 feet (currently 30 feet) of well; requirements for what goes on sign. Note change in Sec 28 c (4).

Sec. 29 – requirement for calibration of equipment used to measure flows, temperatures and pressures.

Sec. 30 – “to” replaces “at” for clarification.

Sec. 31 – owner shall file application to plug a well, substantial compliance if the regulations are impossible to meet.

Sec. 32 – requirements of backfilling of well bore that does not penetrate water; requirements for plugging of well bore that penetrates water, plugging material approved by the Division. Note change in Sec 32.3 from workshops.

Mary Korpi: In Section 32 number 3 in green, I think there is a typo, “ration” should be “ratio”.

Rich Perry: Yes, that is correct, good catch, Mary. We will make that change.

Sec. 33 – observation well and well bore (vs. observational well and hole) Also surface restoration exception requested by owner of land.

Sec. 34 – activities which require notice to Division; “conducting a flow test” and “pulling or replacing a pump” are removed. Notice to Division 5 days before initiation of activity.

Sec. 35 – “well bore” replaces “hole”.

Sec. 36 – list of reports required to submit to Division within 30 days of completing well, in table format. Plugging report submitted to Division within 30 days after well is plugged. 2 paper copies, 1 digital copy for electric logs, and one copy in LAS format.

Sec. 37 – records required to be at site of well or nearest office: Monthly report, lithologic log, record of core, history of well, summary of well. Division may require additional reports and inspect records.

Sec. 38 to 42 – rules of practice and procedure description was updated to match new language approved by AG office, which is now adopted in other natural resource regulations.

Sec. 43 – list of repealed sections of existing code.

Rich Perry: The Division is recommending the following language be adopted with the modifications that were made by the Division to the September 11th draft based on comments from the last two public workshops.

The new language is in green lettering. On page 5 Section 7.4 we are asking the operator to respond in writing within 45 days after the written notice is mailed with a plan for plugging the well.

The next strikeout is on page 16 regarding surface casing, Section 24.2. The red strikeout states “surface casing may not be set less than 10 percent of the proposed total depth of the well or a minimum of 50 feet, whichever is greater.” The concern was 50 feet of surface seal which wasn’t adequate for a production well to ensure the safety of the well. We received a written comment from Mark Hanneman, Compliance Permitting Manager with Ormat Technologies which relates to an injection well and they’re recommending we go back to the original language.

Mike Visher: The 50 foot minimum was something that we looked at for quite some time we also looked to see what other states had done, recent changes in Idaho and California chose 200 feet as the minimum. What we’re concerned about was that an operator would think 50 feet is all they have to deal with but there are extenuating circumstances about the temperatures involved, the dynamics, and a lot of these things are the first hole into a system. Until you really know the system you don’t know what to expect so 200 feet seemed to be appropriate and as a reminder Section 9 allows for the applicant to request an exception. The process is if they felt like they understand their system well enough, and its shallow, to request that exception and that exception could be as part of the application it doesn’t have to be an additional request, it could be part of the application stating why 50 foot should be allowed but I think the Division should have the opportunity to review that on a case by case basis.

Rich Perry: Page 17 has a change adding “differential” pressure which is a more correct term that was added from the workshops.

Page 19 Section 26 where we discuss the 125°F “maintained” strikeout.

Page 20 has one minor edit in it on Section 28.1 (c) 4 “location of the well using legal land descriptions (e.g. lot, tract)”.

Rich DeLong: There are two other handouts that were given to us, are you going to touch on what is this Response to Summary of Comments on Proposed Documents and the other is an email from Bill Rickard.

Rich Perry: The Response to Summary of Comments on Proposed regulation is the responses that we put together from the workshops and those responses as we evaluated them were either addressed here with a change in the green or the pink strikeout or but this is a document that is required in the process when this goes to the Legislative Counsel Bureau and we were providing that to the Commission. The other is a comment that came in via email during the period we were going through the workshops.

Richard DeLong: Opened the floor to the public.

Tim Wilson: I’m the acting Nevada State Engineer with serves as Administrator to the Nevada Division of Water Resources and we support the adoption of the regulations as proposed in NAC 534A for geothermal resources, this action is necessary to update the regulations to more accurately reflect changes to the Nevada Revised Statutes and to modernize language within the regulations to reflect current practices. Our office was able to participate in the regulation review and drafting process through my Chief of Well Drilling and Adjudication Shannon McDaniel who is here with me today. The Nevada Division of Water Resources continues its dedication to working with the Division of

Minerals to assist where we can and crafting regulations that can be effectively implemented and we believe these regulations meet that criteria.

Richard DeLong: You said you're speaking in favor of the regulations, are you specifically talking about the LCB version dated September 11th or the ones with the more recent revisions that the Division has proposed and has discussed today?

Tim Wilson: I was able to review the ones discussed today with the revisions and those are the regulations I'm speaking in favor of.

Richard DeLong: Any other public comments?

Richard DeLong: Seeing none, we'll bring it back to the Commission, is there any discussion on these regulations?

Josh Nordquist: For clarity, Section 24, my understanding from reading the existing regulations we have 3 layers of protection, the first being that sufficient casing must be set to reach a depth below all known or reasonably estimated levels of fresh water, etc.; a second layer is 10 percent of the proposed depth of the well and the third layer is a floor and a ceiling is 200 feet up to 1,500 feet of casing. Did I understand that correctly?

Rich Perry: Yes, and if there is reason for modifying there can be a waiver.

Motion to adopt regulations as outlined under LCB R032-19 as modified by the Division and with a correction to the word "ratio" on page 22 by Nigel Bain

Seconded: Mary Korpi

Unanimously approved

III. Comments by the General Public

Richard DeLong asked for public comments. There were none.

Meeting adjourned at 1:51 pm.