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RICHARD PERRY
 Administrator

NEVADA DIVISION OF MINERALS
REGULATION WORKSHOP
 Nevada Bureau of Mines and Geology
 Great Basin Science Sample and Records Library
 2175 Raggio Pkwy, Reno, NV 89512

Thursday, June 13, 2019

1:30 P.M.

MINUTES

ATTENDANCE

NDOM Staff	Public
Rich Perry	Mark Hanneman, Ormat
Mike Visher	Janice Lopeman, Ormat
Bryan Stockton	Zach Cesa, Ormat
Courtney Brailo	John Menghini, BLM
Lowell Price	Brian Amme, BLM
Sherrie Nuckolls	David Janney, Cyrg Energy
	John Snow, CMR
	Bill Ehni, EEI
	Tom Gallagher, NV Water Solutions LLC
	Kemba Anderson, BLM

COMMENTS BY THE GENERAL PUBLIC

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person.

Rich Perry: Opened the workshop at 1:37 pm. He thanked everyone for coming. He mentioned that this is an informal workshop to gather public comment on the NAC 534A changes that we are proposing. He asked for public comment – none.

Rich Perry: Went through the background, history and proposed changes of the regulations with a PowerPoint presentation.

Bryan Stockton: Asked everyone to state their name for the record before each comment and went over the stylistic convention of the existing language, additions and deletions to the regulations.

DEFINITIONS

Lowell Price: NAC 534A.03X explained the definition of “cement” which was added on page 1.

Bill Ehni: Suggested adding language stating the administrator can waive or approve something.

Mike Visher: We have that addressed.

Bryan Stockton: A new section was added on page 21 that allows the administrator to provide exceptions.

John Menghini: Asked where did the definition of this ratio come from?

Lowell Price: From the State Engineer.

John Menghini: Asked where did the State Engineer get it?

Lowell Price: That I don't know, we adopted it into our regulations.

Tom Gallagher: Straight from the Halliburton book.

John Menghini: What is the density at this point?

Tom Gallagher: 15.6 pounds per gallon.

John Menghini: If you vary it either way, why are we becoming specific with the 5.2 gallons of water per bag?

Tom Gallagher: Why not?

Bill Ehni: Sometimes you want to be a lot lighter.

John Menghini: So you're going to give a variance to a variance to a variance.

Tom Gallagher: There's all kind of bonafide cements depending on the application.

Tom Gallagher: This is plain-Jane cement and water with 5.2 gallons per bag.

John Snow: The purpose of this definition was to define the definition of cement as cement from Portland cement mixture water rather than cement bentonite or some other material, the additives to fast set, lighten it foam it, this is to clarify that cement is cement from the basic mixture of standard slurry mixture that's in every cement book.

Rich Perry: It states not more than 5.2 gallons; you can go below but not more than, that is if it gets more than that it gets runny and it's not cement.

Tom Gallagher: If you add other additives it changes the water requirement.

Rich Perry: That's really the main purpose.

Janice Lopeman: If we submit a drilling program with our cementing program in the appendix it states 13 lb. lead and a 15 lb. tail of resource geothermal cement does this meet the qualifications?

Lowell Price: Yes.

Janice Lopeman: We don't need a waiver as long as in the program has been approved we're okay then?

Lowell Price: That's correct.

Rich Perry: Explained the X in NAC 534A.06X means it's not developed yet, it's new, the ones with three digits numbers are existing in statute. He then went over the definition of Natural heat of the earth defined as >85F at the surface, added on page 2 in italics. This definition came from Idaho's statute.

Mike Visher: Their regulations call out low temperature geothermal as defined water as temperature 85° to 212° bottom-hole temperature. We chose to keep ours at the surface and have the 85° be the lower limit. We're not calling out low temperature.

Tom Gallagher: What do you mean "at the surface" produced at the surface, surface at the fluid level of the hole?

Mike Visher: The temperature of the fluid or the mud as it's being drilled and coming to the surface as it's going to be used, if you're going to be putting it through a surface heat exchanger, we're trying to separate the trombone systems from geothermal systems where they're using it for both heating and cooling and residential settings.

Rich Perry: This is a change driven by history, in our chapter there isn't a real definition of geothermal resources other than it's the heat of the earth in the Statute. It needs to have a temperature associated with it that says it has a geothermal component to it.

Bill Ehni: Shared his concerns about the surface and 85° at the surface and in the future it could be a problem.

Lowell Price: This would be an outflow temperature.

Bill Ehni: Maybe the language can be changed to the static bottom-hole temperature of the well.

Lowell Price: That may cause an issue because in order for them to drill we would have to issue a permit and if it fails the temperature test we would retract the permit, I think we should have it up front unless the outflow temperature of >85F can be established.

Bill Ehni: I'd like to go back to something that wasn't changed and that's the definition of a "hole" NAC

534A.050 on page 2. I would suggest adding “and deeper than 10ft below ground level”. The way this reads is a hole needs to be permitted, right?

Rich Perry: Right.

Tom Gallagher: That needs a bit of work, keeping the “hole” definition there isn’t a definition of a geothermal well. So the question is, is the Division of Minerals going to continue to refer to that “hole” and “hole drilled”? Is there a definition of each type of well that requires a permit?

Mike Visher: Yes.

Tom Gallagher: Does a hole require a permit?

Mike Visher: I’ll have to look to see if “hole” is used somewhere else and we needed the definition because it was in one of the regulations, we’ll have to re-visit that.

Rich Perry: I don’t think we need that definition because we’ve removed everything that references holes. Geothermal wells are not included in the definitions; they’re under Types of Wells. Do we need a definition of a geothermal well?

Courtney Brailo: I think if you get too far into what the definition means as far as a permit before you’ve read the rest of the regulations you’re going to get lost because a lot of these are just definitions that are used in the rest of the regulations. I think we should revisit the definitions at the end so that we might have a better idea of what words we’ve used and what we haven’t used.

Tom Gallagher: I’m looking at the statutory definition on page 2 of the new section “Natural heat of the Earth” perhaps we can pull a little more language from the statute as it refers to the natural heat “that may be obtained from the medium used to transfer the heat”. So if this is used it may clarify “at the surface”.

Mike Visher: In the new definition, the last part of the temperature of which and which refers to the medium. we’re just trying to clarify that part without overstepping our statute we took one component of the statute that was not defined or nailed down and better refined that one.

Tom Gallagher: If you look at the statute and add to the definition of the statute which is >85F.

Lowell Price: temp below 85° are your drilling water wells they’re not drilling geothermal wells and they’re best suited to be regulated by Division of Water Resources and Division of Environmental Protection vs NDOM.

Rich Perry: We looked at a lot of different things when we came up with this number, the geothermal utility districts in southwest Reno are about 170° to 200° we didn’t find anything that doesn’t impact a company coming in doing observation wells, or an exploration well, it’s really a production well.

John Snow: We came up with 85° and we figured we would discuss it today, we thought it was a reasonable number.

Tom Gallagher: Asked if NDOM will only be permitting wells >85°, where does that leave < 85° for the purpose of the well is to extract heat and did you get an answer from the state engineer? Is it going to be regulated?

Rich Perry: It will fall under chapters 533 and 534 as a water right. If there’s a low temperature, it essentially can’t be used for geothermal purposes, it can be a water well.

John Snow: Potentially in an urban setting or domestic setting it would be through the building permit and or NDEP and the State Engineer if they were using the water in a matter of needed reinjection.

Tom Gallagher: Did the State Engineer weigh in on regulating these wells and how are they going to regulate them?

Rich Perry: Yes, because Shannon McDaniel, NDWR, is part of the team that did the draft, it was discussed and would be regulated under chapters 533 and 534 under water and wells.

John Menghini: Are you trying to align the geothermal program with the State Engineer water well drilling program?

Rich Perry: No.

John Menghini: I see a lot of the definitions coming from State Engineers.

Rich Perry: And most of them as you go through you’ll find some of the definitions are there but maybe we missed that, most of the obsolete portions of the State Engineers have been removed.

David Janney: To Courtney’s point, perhaps we should get to where these definitions are referred to in the texts and look at it there.

Rich Perry: On page 3 - NAC 534A.070; 534A.080, 534A.090, 534A.100 are definitions that were from the State Engineers code in 1985 and were determined are not needed in the geothermal code.

Lowell Price: Page 4 - NAC 534A.110 the State Contractors' Board address was removed as they have moved several times and an internet search would be more efficient to find the correct address or contact our office.

Courtney Brailo: Page 4 - NAC 534A. 120-130 and page 5 NAC 534A.140 none of these apply to us and should be removed. On page 17 we've consolidated anything that has to do with notices, log information and filing of reports which are now in one section.

Lowell Price: Page 5 - NAC 534A.150 "Sealing of holes" has been eliminated, page 11 NAC 534A.260 #3 and .480 on page 15 wording was revised.

Rich Perry: Page 5 - NAC 534A.160 "Waiver of provisions by State Engineer." was removed.

Lowell Price: Page 5 - NAC 534A.170 added geothermal to domestic well; fluids are supposed to be utilized for heating purposes. Also, commercial well definition clarified.

Rich Perry: One major change on NAC 534A.170 1(a) red strike out definition of a domestic well, which caused a lot of confusion. There isn't any reason a geothermal well and a domestic well should be limited to the number of gallons of water a day.

Tom Gallagher: Consistent with the Statute, any consumptive use at the surface has to comply with 533 and 534, the 1800 gallons a day doesn't mean anything?

Bryan Stockton: If there's a consumptive use they have to have water rights, there's no consumptive use allowed except for the de-minimus spills allowed in the geothermal regulations.

Tom Gallagher: Is there a permit required for a geothermal domestic well?

Rich Perry: Yes.

Courtney Brailo: Section .180 on page 6 was edited to reflect the changes.

Mike Visher: Section .190 on page 6, added introduction of GPS coordinates.

Bryan Stockton: Section .180 2(a) should be stricken.

FEES NAC 534A.210 - Page 8

Lowell Price: Changed fees for observation wells to a standardized \$300.

Tom Gallagher: Wanted to go back to GPS coordinates, I think you need the datum.

Bill Ehni: I think datum needs to be specified.

Lowell Price: Can we add specified by on the division's forms?

Courtney Brailo: Yes.

Mike Visher: We'll add "specify the format, datum" and give options, they'll be our options and they can pick one.

BONDING NAC 534A.250

Lowell Price: NAC 534A.250 proposed bond increase for new wells on fee land from \$10,000 to \$25,000 and blanket bond amount increases from \$50,000 to \$100,000 limited to a new defined project area.

Kemba Anderson: Asked to clarify fee lands or State wells vs Federal wells I can see a gray area when we're trying to enforce in the case when someone walks away given the option if they're going to use a Federal bond because the BLM has their own reclamation and process we have to do in order to take that bond.

Courtney Brailo: We haven't changed that in the regulations, Section .250 #4 does mention an operator's deposit of performance bond with the federal government for wells drilled on federal land shall file a copy of that bond with the Division.

Lowell Price: It would be a bond number.

Rich Perry: We can craft a sentence to clarify that bonding for federal wells remains with the BLM and bonding on private or non federal lands is maintained by the state.

John Menghini: Why accept the bond if you can't have it?

Lowell Price: We accept that bonding is maintained through the BLM.

John Menghini: Stated he believes the State needs to force federal operators to be in compliance with the wells because they receive revenue from the operators. Can you make that decision?

Rich Perry: In the geothermal chapter we can because it's not specifically excluded in the statute.

Bryan Stockton: Asked if BLM is envisioning they'll have a federal bond whatever your federal requirement is and the State would require an additional bond to ensure the proper plugging.

John Menghini: Unless you can enforce idle wells based on depth.

Mike Visher: We do address this on page 15 under Abandonment and Plugging there's a whole section on idle wells.

Kemba Anderson: Suggested something that is similar to oil and gas, the State requires their own bonding for operations, and the BLM requires it for federal, maybe there needs to have something coordinating with that we do pre-approval bonding together to make sure we have appropriate amount in the bucket.

Mike Visher: Agreed.

John Menghini: The definition of NAC 534A.47X #3, on page 15, it's a federal well, you're going to force to plug it, who's bond are you going to take, it's a BLM bond.

Bryan Stockton: A lien can't be placed on federal land.

Lowell Price: This would have to be modified; we addressed this as a well on fee land.

Bill Ehni: This will address what?

Lowell Price: #3, we address this as a well on fee land not on federal land. In order to collect on the bond the money would have to be with us.

Bryan Stockton: We have a State statute that says you either plug the well and if you don't we're coming after you. Can we make a claim on a federal bond?

John Menghini: You can make a claim on the \$2.50 per foot. You can make the operator pay you a State bond fee, the State keeps the bank account and the BLM doesn't get involved.

Lowell Price: Is that \$2.50 a foot annually?

John Menghini: That's what it was when I was in Wyoming.

John Snow: Explained the intent of the regulations when an independent takes over wells from a larger company then the state often takes on a huge liability.

Bryan Stockton: And the \$2.50 a foot is a bond amount?

John Menghini: That's what someone came up with based on cementing, etc.

John Snow: This should be discussed in a MOU regarding bonding.

John Menghini: Let's not wait for a disaster to exist but plan ahead, add verbiage "you may be assessed".

Rich Perry: We've had issues with single company oil exploration wells we have had a few issues with single Company geothermal wells which hadn't been used, we sent letters and went through the process, then the company paid \$10,000 but we can't plug it for that. Three different plugging contractors were all higher than \$10,000. This is for new companies.

Lowell Price: As the current operators know, we do offer a project area permit that offers lower fees for the wells that will be drilled. This is for new projects only.

Rich Perry: The Small Business Statement states this is a higher fee, it's been \$10,000 for a long time and has proven to cause problems. It does something for us in case we get a weak player that drills a well that we have the ability to plug the well.

John Menghini: The difference between the definition and the Federal governments approach is that bonding isn't for P&A it is for a good faith effort as a performance bond. The concept is taking a \$10,000 performance bond and turning it into this is no longer a good faith effort we are holding it strictly for P&A purpose.

Lowell Price: Isn't bonding money we attain, it can only be used for plugging?

John Snow: Yes, the huge difference between the State and Federal government is they're a landlord and that performance bond can also be attained for lack of payment of royalties, reclamation and other things. We've been stale for a lot of years at \$50,000 and it's time to increase the amount.

John Menghini: Does that include reclamation?

Lowell Price: Our limitation is the well itself and the pad.

Bill Ehni: On private land it's between the operator and property owner.

Rich Perry: We have no statutory authority to require reclamation on private land.

NAC 534A.490

Rich Perry: Page 16 there is a correction with #10, it should be in blue italics.

Mike Visher: This is so we had documentation which would give us the ability to release the bond if there is a bond associated with a well.

John Menghini: Page 10 #4 needs to be removed.

John Snow: 10 #4 is to use the Federal bond and not double bond.

Rich Perry: So we know there's a bond there.

Kemba Anderson: The owner's going to be first in line to receive payment, by the time BLM gets the P&A it's pennies on the dollar.

Lowell Price: I think you're having an issue with "copy of the bond", we can add shall provide the Division a copy of the bond.

John Menghini: Why would you doubt that?

Rich Perry: We actually have to have that so it's consistent with State regulations.

Kemba Anderson: Can they provide the letter that states the bond has been accepted by BLM? I'm trying to wrap around the word "copy".

Mike Visher: I think we can get away with the word "copy" and change the language. When there's an NVB number and they provide that on the application that's all we're looking for.

Rich Perry: We'll change the language. The intent of this is we have something in our well file if we get audited, that our regulations were followed, that there is a bond and it's not with us.

Tom Gallagher: The section on bonding, is the Division of Minerals requiring this for all wells yes or no?

Rich Perry: It depends on if the well is on Federal or non Federal land.

Tom Gallagher: The description of a well, where is it located on Federal lands or fee lands, it doesn't make a distinction if its Federal land wells and fee land wells.

Mike Visher: We can insert language in #1 and insert language "unless proof of a bond is provided to the division pursuant to #4" in front of "otherwise provided".

NAC 534A.260

Lowell Price: A statement was added on page 11 #3 regarding the requirement for surface casing.

John Menghini: If the BLM runs a temperature gradient hole, how is the Division going to permit that well?

Lowell Price: Temperature gradient wells, in most cases, would not follow these guidelines.

Zach Cesa: The 10% rule as your surface casing, as an example we're going to drill a hole that's 3000 or 4000 feet and we know we need intermediate casing string to 1500 feet, why should I need my surface casing to be 400 feet when I know that it can be 200 feet and still contain well control with this? My understanding is this can now be approved?

Lowell Price: Yes, you can alter it.

Janice Lopeman: The first paragraph states this only applies if it's only surface and there's no intermediate string". There's also a statement that "if the first string has not been cemented in a competent bed or if unusual drilling hazards exist". So that's only if we're doing surface, if we plan to set intermediate that's not an issue?

Lowell Price: The rules more or less change if you propose to us you will be running an intermediate string.

Rich Perry: Do we need to add a sentence that clarifies that?

Lowell Price: We could address the use of an intermediate string.

John Snow: It's not always that straight forward, if you're going to commit to running you've got to run it and you've got to run it to your depth, but if you don't it could cause problems.

Janice Lopeman: How do you determine if it's competent or not? Are we going to be forced to run another string that we weren't intending on?

Lowell Price: We address in the event the first string did not reach a competent material rock that a second string would have to be run once that competent material was hit.

Bill Ehni: The problem is having "competent" in here.

Rich Perry: It's in the regulations; I agree there should be something there for the average operator to look at to

read this is what the expectation is. On page 21, if it isn't, there is a waiver that state if you want to do something different and you can prove its acceptable then we can do that.

Lowell Price: On page 11 #6 the use of centralizers to ensure cement in annular area was added.

Tom Gallagher: Does the surface casing requirement apply to all wells?

Lowell Price: Temperature gradient would be case-dependent, it depends on how long they want to drill

Rich Perry: How does that fit with what's written as it doesn't say that. Do we need to have a separation section for temperature gradient wells?

Lowell Price: That would probably be best.

Rich Perry: Lets add that and we'll work on it.

NAC 534A.270

Lowell Price: Added BOPE "current edition" on page 11 #1.

Tom Gallagher: You have to tell people where to find it, it's a requirement.

Lowell Price: There's another item change on page 12 #2, reduced temperature from 250° to 200° to be conservative.

NAC 534A.280

Lowell Price: We're requiring mud cooling equipment when the outflow reaches 125°F or higher for safety.

NAC 534A.300 to .310 on page 12

Courtney Brailo: Notifications, Filings, Records, Reports and Cuttings were moved and are now included in the table in the new section on page 17 and 18 for a cleaner look.

Bill Ehni: Instead of Neutron – Gamma under log type on page 17 almost implies you have a source down there and you don't want a source down there. I would recommend removing Neutron and only having Gamma or similar log in section 2(a).

Courtney Brailo: We'll remove that.

Zach Cesa: We have two wells and decide to twin them do we need to run a log in both wells when they're 50 to 100 ft. apart?

Bill Ehni: That goes to the Administrator for their decision.

Zach Cesa: Also, is the cement bond logs required for all injection wells?

Mark Hanneman: A mechanical integrity test is required by UIC but not cement bond logs.

Lowell Price: We'll reach out to UIC for clarification.

NAC 534A.320

Mike Visher: The language for setback for non-profits was deleted on page 12.

NAC 534A.330

Lowell Price: Changed the number of feet on well signage requirement and well naming nomenclature.

Also, on page 13 #2 code number was removed and US Well Number was added.

NAC 534A.340, .350, .360

Courtney Brailo: Explained replaced by section on Notifications, Filings, Records and other Reports. Section .340 moved to Other Reports on page 18 #3(a); Section .350 filing of logs and records was moved to page 18 #2(c); Section .360 directional drilling surveys was moved to page 17 #2(b), the table on page 17 is the only difference.

NAC 534A.390

Lowell Price: Added Cellar design requirement on page 14 #2. It is not required that a cellar must be utilized, if one is utilized the cellar must be constructed in a manner which it prohibits soil or standing water up against the outside casing in order to prevent corrosion.

NAC 534A.410, .460

Replaced by section on Notifications, Filings, Records and other Reports were moved to page 18 #3 (a) (b).

NAC 534A.47X

Added on page 15 under Abandonment and Plugging. 2 year limit for inactivity, letter requesting why well should remain open, also the Administrator can order well to be plugged if good cause is not found.

John Menghini: Where did the 2 years come from?

Rich Perry: One year is too short. Also, in that section is the Administrator's ability to order an owner to plug a well upon 15 days and the ability for the Division to plug the well and use the materials from the bond to do so.

Bill Ehni: I think 15 days is too short, I think it should be 45 days.

Rich Perry: I can change that to 45 days.

Tom Gallagher: To whom are you issuing the order?

Rich Perry: The owner.

Tom Gallagher: Who do you send the notice in paragraph 1?

John Snow: We can change it to responsible party.

NAC 534A.470 (2) Page 15

Allows for alternate plugging plan for fee land only.

NAC 534A.480

Updated approved materials for plugging to current practices on page 15.

NAC 534A.490 Page 16 #10

(Should be in blue italics not red strikethrough) adds Administrator's ability to approve exceptions for surface pad.

Bill Ehni: Where's the confidentiality for geothermal records?

Tom Gallagher: It's in Statute.

Bill Ehni: Can it be changed from 5 years to 6 months.

Rich Perry: It's in Statute, NRS 534A.031, so that can only be changed by the legislature.

NAC 534A.520, .530,

Section .520 moved to page 19 4, 5, 6.

Section .530 moved to page 18 other reports #1.

Section .550 moved to page 19 Filing of report of completion.

Sections .560 and .570 moved to page 18 monthly reports.

David Janney: Would you consider adding "text" under notifications in the middle of page 17 under Notifications?

Mike Visher: Probably not, we don't have the means to collect that. As technology grows there may have an app for that that we could add but right now it wouldn't be sufficient.

Richard Perry: Lets add the wording "or other approved methods".

Janice Lopeman: For clarification, under Section .550 on page 19 "within 30 days after the completion" but at the top of page 18 "copies of any and all logs must be submitted within 60 days". Is it 30 or 60 days?

John Snow: Check the form, I think it states 30.

Bryan Stockton: In looking at the Statute, 534A.031 states a geothermal project must be filed within 30 days.

Rich Perry: We'll take a look at that and make changes if necessary.

NAC 534.57X

Added a new section on page 21 exceptions can be granted for good cause from requirements of chapter by Administrator, except for fees.

NAC 534A.590 through .690

Bryan Stockton: Went over the rules of practice and procedure which included request of public hearing, docket, and order of proceedings, records depositions and petition for adoption, filing, and amendment of repeal of regulation language replaced by new language approved by LCB, which is now adopted in other natural resource regulations.

Rich Perry: Thanked everyone for their comments. We will submit this to the legal review at LCB the first or second week of July.

Bryan Stockton: The Commission will accept comments until the adoption hearing.

Rich Perry: For this draft, we'd like your comments by June 28th.

COMMENTS BY THE GENERAL PUBLIC - None

The workshop adjourned at 4:38 pm