



# State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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## New Jersey Department of Environmental Protection NJ State Well Drillers and Pump Installers Examining and Advisory Board Meeting Minutes for September 19, 2019

*Approved by the Board on November 21, 2019*

### Board Member Attendance:

Present	Absent
<b>Art Becker (Chairman)</b> <b>Gary Poppe (Vice-Chairman)</b> <b>Gordon Craig</b> <b>Joe Pepe (left at 11:32)</b> <b>Carol Graff</b> <b>Jeff Hoffman (left early/later returned)</b> <b>Richard Dalton</b> <b>Steve Domber</b>	<b>Joe Yost</b>

**NJDEP Bureau of Water Allocation & Well Permitting Staff Present:** Terry Pilawski, Joe Mattle, Julia Altieri, Steve Reya, Mark Ortega, Rebecca McCullic, Sabrina Hill, and Jeremy Wick

**Members of the Public Present:** Dermot Dillon, New Jersey Ground Water Association (NJGWA) Secretary/Summit Drilling Co.; Wesley Eichfeld, SGS; Bill Buschur, Total Green; Patrick Casselman, Total Green

### 1. Call to Order and Opening Statement-

The meeting was called to order by Chairman Art Becker at 9:31 am with a quorum present.

Wes Eichfield of SGS and Dermot Dillon of Summit Drilling and the NJGWA, introduced themselves to the Board and Department staff. T. Pilawski introduced Rebecca McCullic, Well Permitting’s newest staff member, to the Board. Rebecca will be assisting S. Reya and M. Ortega with continuing education and will be assisting the Permitting Unit.

### 2. Review and Certification of Draft Meeting Minutes-

It was noted that G. Craig and J. Pepe were erroneously listed in the minutes as being present though they did not attend the meeting. A motion to approve the July 18, 2019 draft minutes

pending this correction was made by G. Poppe, seconded by S. Domber, approved by all except for J. Pepe, G. Craig and J. Hoffman who abstained as they did not attend the meeting.

3. **Review and Certification of July 18, 2019 Draft Executive Session Minutes-**  
It was again noted that G. Craig and J. Pepe were erroneously listed in the minutes as being present. A motion to approve the draft minutes pending this correction was made by G. Poppe, seconded by S. Domber and approved by all except for J. Pepe, G. Craig, and J. Hoffman who abstained as they did not attend the meeting.
4. **Review and Certification of August 15, 2019 Draft Conference Call Minutes-**  
A motion to approve the draft conference call minutes from August 15, 2019 was made by R. Dalton, seconded by C. Graff and approved by all expect for J. Hoffman, G. Poppe, and A. Becker who abstained as they did not participate in the call.
5. **Remaining Calls and Conference Calls-**  
The Board will physically meet at NJDEP Headquarters (401 E. State St. in Trenton) on the following dates beginning at 9:30 am:

**November 21**

Board telephone conference calls will be held during the intervening months to review continuing education course applications and candidates for NJ driller or pump installer licenses. The calls will be held at 10:00 am on the following schedule:

**October 17, December 19**

6. **Board Meeting Schedule for 2020-**  
The Board members were presented with a list of potential 2020 Board meeting dates. After review of the proposed dates the Board members decided to meet on the following dates at NJDEP Headquarters in Trenton beginning at 9:30 am:

**January 23, March 26, May 21, July 23, September 24, November 19**

The following dates were selected to hold telephone conference calls to begin at 10:00 am:

**February 13, April 16, June 18, August 13, October 15, December 15**

7. **Board Correspondence-**  
S. Reya brought two letters to the Board's attention. The first letter was sent by Board Chairman, Art Becker, to Mr. Kevin Blumhagen. This letter, dated August 23, 2019, approved Mr. Blumhagen's request to postpone the hearing scheduled for potential sanctions against his NJ Pump Installers license to the November 21, 2019 Board meeting. The letter noted that he has until 30 days before the November meeting (October 22, 2019) to confirm his attendance with or without counsel and to provide the Board with any evidence, materials, documents or information to assist the Board in making its recommendation. The second letter was sent to the Board by the NJGWA President, Denis Crayon, regarding a Department of Labor Regulation/Public Works Contractor Registration and

apprenticeship requirements that are currently being implemented. A. Becker noted that no additional action is required from the Board on either of these topics.

#### **8. Testing and Licensing-**

The Bureau received two (2) license applications for the environmental resource and geotechnical license and three (3) for the pump installer license. S. Reya summarized the license applicant list:

**Environmental Resource & Geotechnical** – Nicholas Lippincott and Leon Ellis  
**Pump Installer** – Ryan Schinella, Nicholas Schinella, and Edward A. Woolf

The applicants were found to meet the regulatory requirements of N.J.A.C. 7:9D-1.8. A. Becker asked if there was any discussion regarding the license applicants. No further discussion was needed.

**A motion to approve all five license applicants was made by G. Poppe, seconded by C. Graff, and approved unanimously.**

#### **9. Continuing Education Program-**

A table summarizing one (1) administratively complete course, along with the supporting documentation, was provided to the Board members prior to the meeting for review. The course provider requested two (2) technical continuing education points (CEPs) for the course. Below is the course information:

**New Jersey Ground Water Association (NJGWA) September Membership Meeting including Environmental Drilling Methods and Procedures Presentation – 2 Technical CEPs**

S. Reya discussed the list of courses that were originally sent out to the Board via email. Two courses were submitted to the Department, but only one was administratively complete. A. Becker confirmed that if a course provider adds a date to an identical course then a separate application would not need to be submitted. R. Dalton brought up that he does not think that this course should count for the full two points; only one and a half (1.5) points. There was a discussion about changing the amount of points issued for these meetings for the next licensing cycle. S. Reya said that at the end of each licensing cycle the Board can reevaluate the courses and points that were issued, as prescribed in the well rule (N.J.A.C. 7:9D). A. Becker brought up the one and a half (1.5) credit recommendation noted by R. Dalton and asked for the opinion of other Board members. J. Pepe, G. Craig, and G. Poppe said that they feel that it should be two (2) points. S. Domber said that he is sympathetic to what R. Dalton is saying, but that he has not been to a meeting to directly evaluate whether or not two (2) full training hour credits are warranted based on the supplied agenda. A. Becker discussed the history of the meetings and said he believes they are very good, professional, and informative.

**A motion to recommend the approval of the NJGWA September Membership Meeting including Environmental Drilling Methods and Procedures Presentation for two (2) technical CEPs was made by G. Poppe, seconded by G. Craig, and approved by all except for R. Dalton who was opposed.**

M. Ortega discussed the progress made among licensees obtaining CEPs for their license renewals. He stated that, as of September 17, 2019, 11 percent of licensees have completed the CEP requirement needed for their renewal in 2020. He said that about 26 percent of licensees have started obtaining CEPs but have not completed the seven (7) CEPs needed for their renewal. The remaining 63 percent have not yet started to obtain CEPs. M. Ortega noted that there are a few classes coming

up that a lot of pump installers will likely attend. He also pointed out that he had been receiving a lot of certificates and inquires after the Department recently sent out a mass mailing about continuing education. He told the Board that he will be able to provide a clearer picture at the January meeting because the licensees that are relying solely on NJGWA for their CEPs will have obtained the necessary amount of points.

#### **10. Update on Closed Loop Geothermal Test Well Installation at Princeton University-**

S. Reya discussed the Princeton geothermal project with the Board. He recapped the purpose of the project and the original specifications of the proposed closed loop geothermal test well. American Augering and Ditching Co., Inc. (American) was subcontracted to drill this well. A New Jersey licensed well driller of the proper class was on site while drilling activities were taking place. American's polycrystalline diamond compact (PDC) bit was used for the first 100 or so feet of drilling before it became damaged by the formation. It was decided to switch to an air hammer and reduce the size of the borehole diameter, so a new well design was submitted to the Department. The revised design used the smaller size Rygan pipe and included a seven (7) inch, 380-foot temporary casing intended to case off a highly productive water bearing zone.

S. Reya continued to inform the Board that while drilling, American encountered approximately 400 to 600 GPM in the first 200 feet. The water was contained in baker tanks. Upon completion of the well, American was able to successfully retrieve the temporary casing with no issues. Once the temporary casing was installed, there were no issues with the quantity of water. S. Reya noted that after American switched their PDC bit to an air hammer, they drilled to a total depth of 1,440 feet; the original intended depth of the project was 1,500 feet.

S. Reya stated that the United States Geological Survey logged the well. The well was logged with the temporary casing in place, so there is no information for the first 380 feet. A drift interpretation shows that the borehole goes 140 feet to the south, toward Route 1. A. Becker said that something like that can be better managed by using different tooling and approaches. S. Reya discussed his concerns about the project. He said that when the temporary casing was retracted about 80 feet of the hole was filled in due to the cuttings that fell back into the borehole.

S. Reya talked about the issues that were encountered with grouting. He indicated that no issues were encountered while grouting shallower than 1,000 feet. While grouting deeper than 1,000 feet, American had several issues with the grout line. He said that the site engineers are considering a 1,100-foot target depth moving forward. The site engineers are thinking about doing four (4) more test wells, based on the latest information he has been given. A. Becker asked who the construction manager. S. Reya said that Whiting Tuner was the company. G. Craig asked if the Board could request that a geothermal expert be out on site as a permit condition. He recommended that a geothermal inspector certified by the International Ground Source Heat Pump Association (IGSHPA) be out on site for the duration of the project. A. Becker agreed with G. Craig and expressed that this entity should only be interfacing with the Department. G. Poppe said that he agrees with G. Craig and A. Becker. Based on the scope of the project that has been noted as involving as many as 1,000 wells that are drilled over 1,000 ft. Board members felt there was no way the Department would adequately be able to oversee the drilling and grouting operations and that the potential to negatively impact groundwater necessitates direct oversight of the project.

**G. Craig made a motion to require that a special condition be put on well permits associated with the Princeton geothermal project. The special condition should require that an IGSHPA certified geothermal inspector should be on site for each well installation and report their**

**findings directly and only to the Department. G. Poppe seconded the motion and it was approved unanimously.**

S. Reya then showed the Board members photos for the days when he was on-site, which included some of the drilling and all of the geothermal pipe/tremie line installation and grouting. S. Reya said that the well record containing the driller's log has not yet been submitted. G. Craig and A. Becker discussed their concerns about the wells intersecting based on the vertical drift encountered when drilling the first well and the ramifications of the large volume of water potentially disturbing the grout.

J. Wick arrived at 10:29

### **11. Direct Exchange Geothermal Presentation-**

A. Becker opened this topic by noting that Direct Exchange (DX) geothermal systems have never been approved in the state and that although he realizes the time sensitivity of reviewing supplied documentation, the Board would need time to ask questions and evaluate all of the documentation and answers provided by the product representatives in attendance. Bill Buschur and Patrick Casselman of Total Green Manufacturing (Total Green) were introduced to the Board and staff members. Mr. Casselman provided some background information for DX geothermal systems including specifics on the different refrigerants used over the years. He said that they use copper loops that their maximum depth is 100-feet. These systems typically use a use a two (2) to three (3) inch borehole. Patrick acknowledged that their company is aware the Board and Department staff has expressed concerns with the pH of water in New Jersey and how it would react with the copper pipe. He said that they can sleeve the copper in PVC to address the concern that the copper piping would corrode and release the refrigerant. They also noted that they employ cathodic protection systems to protect the horizontal copper pipe components from corrosion. Patrick said these wells are good for small properties because the wells are installed diagonally about seven (7) feet apart, which means DX systems can be installed within a small footprint.

A. Becker asked how the wells were constructed. The Total Green representatives explained that there are two methods of constructing these wells. The first method is to drill vertical wells to approximately 100-feet. This method requires less loops to be installed. The second method is to drill diagonal wells to approximately 70-feet.

G. Poppe asked about grouting specifications for the product. Bill Buscher said that their grout is very fluid and can be pumped down a half inch tremie pipe. A. Becker asked R. Dalton to review the grout information thoroughly when he has a chance. Bill said that there is Portland cement in the mix as well as a variety of other products for which he provided the Safety Data Sheets.

Bill said that he has concerns with the well rule in respect to the American Society for Testing and Materials (ASTM) standard which dictates how grout should be tested for permeability. He said that the United States Army Corps of Engineers standard C48 should be used for non-porous materials. He indicated that ASTM standard 5084 should only be used for porous materials, such as bentonite. R. Dalton said that he talked to the individuals at ASTM regarding these standards and the recommendations that he received were intended to cover both porous and non-porous grouts. He said that the Department has received hundreds of samples to back up the permeability data. Bill stated that he's comfortable testing their grout against ASTM standard 5084, but that no other state will allow that test because their grout is non-porous. A. Becker asked the Department staff to research the ASTM standard.

J. Pepe departed the meeting at 11:32 am.

G. Craig asked about the different sleeves that they use around the copper pipe as the supplied documentation, dated August 19, 2019, appeared to illustrate multiple methods that could be utilized and it was not clear what was being proposed for use in NJ. The Total Green staff noted that there is a plastic coating that they are currently working on and a thin wall PVC pipe that they can currently use as a casing around the loop. G. Craig brought up the four (4) inch oversized borehole requirement in the well rule. The PVC casing that was presented was one and a half (1.5) inches so the borehole would need to be at least five and a half (5.5) inches. G. Craig said that he did not believe the Department will not allow an undersized borehole. Mr. Buscher noted that they do not foresee any issues with such a requirement. A. Becker said that there would need to be centralizers if they're installing wells diagonally. Patrick said that they already use centralizers.

A. Becker asked about their installer certification process noted in the documentation. Bill explained that Total Green trains people to install the copper piping. They plan on using New Jersey licensed well drillers to drill the borehole needed for the pipes. Bill continued by stating that Total Green offers a three (3) day training program that also covers repairing existing systems.

A. Becker asked if Total Green would need to get any approval from the Department since they are proposing installing the copper in the PVC. G. Craig and S. Reya pointed out that the copper and refrigerant are not approved in the rule. The use of copper pipe, refrigerant, and grout mixture need to be approved by the Department prior to installation. A. Becker and G. Craig noted that PVC pipe sleeve proposed by Total Green addresses the significant prior concerns with this technology.

Patrick and Bill were thanked for their time by A. Becker.

A Becker asked if there was anything needed from the Board for the DX review. G. Craig said that the grout would need to be field tested before any further action can be taken. It was noted that they would have to pump down grout down a borehole using the grout mixture and tremie pipe of the dimensions specified in the product literature provided. G. Craig said that he was comfortable with such installations if they meet the four (4) inch oversized borehole requirement. It was further stated if the grout can be demonstrated to meet the permeability requirements specified in the rule and can be field tested to be emplaced in accordance with the rule, members would be that the Department approve installation of these wells within the state as at would be demonstrated to be adequately protective of groundwater. R. Dalton said that he would want to see the grout information completed before deciding. He feels that the copper would not last in South Jersey due to the pH of the groundwater, which would mean using the PVC sleeve would be a necessity. He also brought up the refrigerant and A. Becker said that what they submitted to us looks very comprehensive. C. Graff said that once everything is submitted then the Board will take a vote at an upcoming meeting.

## **12. Enforcement Update-**

J. Altieri provided the Board with a summary of field activity between July 18, 2019 and September 19, 2019 as follows:

### **Field Inspections – July 18, 2019 – September 19, 2019 (4 total)**

- Issue: Bureau staff spot checked the drilling of geotechnical borings in Princeton, Mercer County. Part of random field inspection activities.
  - Enforcement Action- No further action, boring in compliance at time of field visit. A NJ licensed driller was onsite operating the drill rig.

- Issue: Bureau staff field inspected est. 1,500-foot closed loop geothermal test well installation constructed for designing a proposed well field in Princeton, Mercer County.
  - Enforcement Action- No further action currently.

**New Investigation-alleged unlicensed pump installation – August 29, 2019**

- Issue: Suspected unlicensed, well pump installation activity in Little Falls Twp., Passaic County. Staff from the NJDEP Bureau of Water Systems Engineering reported a Plumbing, Heating and Cooling Company replacing a well pump and pressure tank, allegedly without the on-site supervision of a New Jersey licensed well driller or pump installer.
  - Alleged Violations: During a review for a level 2 Assessment conducted by the Department, copies of invoices were submitted describing pump and tank work installation that would qualify as needing a license or the on-site supervision of a licensed pump installer or well driller to perform the work.
  - Enforcement Action- Bureau staff confirmed, after a review of Bureau license files that the owner of the company does not have an appropriate license. Notice of Non-compliance was issued, further investigation pending by the Department.

**Status update- Ongoing Administrative Hearings - ADR Requested by the Department**

- Issue: Administrative Hearing requests filed by well drillers and their companies to dispute five cases of improper permitting, grouting and constructing of domestic and irrigation wells. Hearing requests were granted by the Department. DEP Office of Dispute Resolution requesting affected parties to take part in Alternate Dispute Resolution (ADR) process instead.
  - Update-Second letter dated September 3, 2019 from Department’s Office of Dispute Resolution to one of the licensed well driller requesting his confirmation of ADR participation. Deadline for confirmation is September 20, 2019. If not confirmed by driller, ADR offer expires and case proceeds to full hearing process. No response received as of today.
  - Update-One NOCAPA needed to be resent, Department could not confirm individual received original document due to wrong address.

**13. Program Updates-**

T. Pilawski updated the Board regarding the Woodbury geothermal well field. She said that the compliance plan was approved by the Department on August 22, 2019. The remaining onsite well field containing approximately 78 improperly installed closed loop geothermal wells will be recommissioned using sonic drilling. Summit Drilling, the company completing the recommissioning plan, will need to obtain authorization numbers and well permits to recommission the existing wells.

T. Pilawski brought up the well rule changes. She said that the Office of Legal Affairs has the changes in hand. She said that there has been significant progress in getting the rules fixed.

T. Pilawski also welcomed Rebecca McCullic officially to the Well Permitting Section. She also informed the Board that most of the Well Permitting Section is being moved to different cubicles in the coming weeks.

**14. Soil Borer/Journeyman (Class B) License Upgrade Class-**

S. Reya talked about the future class which will be offered to currently licensed soil borers and journeyman (Class B) well drillers. He recapped why the Department needs to offer the class to these license holders. He said that the Department plans on submitting a course application to the Board for the October conference call so those in attendance can receive CEPs. This is per the discussion held during the March 21, 2019 Board meeting where it was recommended that licensees who are upgrading their license still need to obtain CEPs for their license.

Well Permitting staff will contact the soil borers and journeymen (Class B) well drillers to start scheduling their classes once the course is approved. A. Becker again volunteered to teach the technical portion of the class. Bureau staff is extremely grateful for his offer and will contact him regarding scheduling.

#### **15. Well Decommissioning in Water Purveyor Service Areas-**

S. Reya said that the Department has been receiving several complaints from well drillers and homeowners in Cape May, Atlantic, and Gloucester counties. The complaint is that if a home was served by a domestic well then New Jersey American Water reportedly will not hook the home up to public water until the original drinking water well was decommissioned and the decommissioning report was submitted and approved. S. Reya pointed out that the coordination needed to do this was unreasonable and would result in the home not having water for several days. Although clearly the Bureau agrees that abandoned wells need to be decommissioned in accordance with the rule, staff has been attempting to work with this water company on the logistics and timing associated with connecting the property to public water and decommissioning the well within a reasonable amount of time thereafter.

The Bureau was informed that New Jersey American Water recently began enforcing this. S. Reya contacted two individuals at New Jersey American Water to attempt to get a policy in writing. S. Reya said that he was told that a reduced pressure zone device backflow prevention device would need to be installed and to be tested annually if a well is to be retained and converted from domestic to irrigation. S. Reya informed the individuals at New Jersey American Water that they would not be able to capture new irrigation wells that are installed within water purveyor service areas so it seemed that backflow prevention requirement may be inconsistently applied. The Bureau will keep the Board updated as necessary.

#### **16. Adjournment-**

A motion to adjourn was made at 12:28 pm by G. Craig, seconded by G. Poppe, and approved unanimously.