



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PHILIP D. MURPHY
Governor

SHAWN M. LATOURETTE
Commissioner

SHEILA Y. OLIVER
Lt. Governor

DIVISION OF WATER SUPPLY AND GEOSCIENCE
NEW JERSEY GEOLOGICAL AND WATER SURVEY ELEMENT
BUREAU OF WATER ALLOCATION AND WELL PERMITTING
401 E. STATE STREET – P.O. BOX 420
MAIL CODE 401-0Q
TRENTON, NEW JERSEY 08625-0420
TELEPHONE: (609) 984-6831
FAX: (609) 633-1231
www.nj.gov/dep/watersupply

New Jersey Department of Environmental Protection State Well Drillers and Pump Installers Examining and Advisory Board Conference Call Minutes for November 18, 2021

Approved by the Board on December 16, 2021

Board Members Present at NJDEP Headquarters Building: N/A

Board Members Participating Via Telephone: Art Becker (Chairman), Gary Poppe (Vice-Chairman), Joe Yost, Gordon Craig, Jeff Hoffman, Richard Dalton, and Steve Domber

Board Members Absent: Dave Lyman and Eric Hoffmann

Board Legal Representative Present: Deputy Attorney General (DAG) Jill Denyes, NJ Division of Law

NJDEP Water Supply (Bureau of Water Allocation and Well Permitting) Staff Present: Terry Pilawski, Joe Mattle, Steve Reya, and Mark Ortega

Members of the Public: Dermot Dillon; Summit Drilling/New Jersey Ground Water Association (NJGWA), Bill Buschur; Total Green

1. Call to Order-

The meeting was called to order at 9:33 am with a quorum present via telephone. This in-person meeting was held via conference call due to the COVID-19 pandemic. Notice of the meeting and instructions on how to participate by phone were listed on the Department's website.

2. Review and Certification of the October 14, 2021 Conference Call Minutes-

A motion to approve the draft minutes from October 14, 2021 as written was made by G. Poppe, seconded by J. Yost, and approved unanimously.

3. Continuing Education Application Review-

National Groundwater Association (NGWA)

S. Reya briefly discussed Groundwater Week 2021, presented by NGWA and noted that this event will be again held in-person, which is different than 2020. M. Ortega provided the Board with a

spreadsheet of the course offerings to allow for easier review of individual courses. S. Reya asked the Board if they wanted to start with the courses that they thought might be questionable as far as being directly related to the well drilling or pump industry. R. Dalton said that he had concerns about a larger number of courses than the rest of the Board members, so the decision was made to go down the list and evaluate each course in order.

Prior to reviewing the full list, the Board members discussed whether business or financial courses should be approved. R. Dalton expressed his concerns with allowing these courses because he believes it is conflict with the well rule. G. Craig explained his point of view, which was that these courses should be allowed and are beneficial to well driller and pump installers, especially those who own businesses or are looking to be future business owners. In general, he felt that a driller who understands how to run a successful business is more apt to follow applicable regulations and not “cut corners” to keep their business operational.

A. Becker asked J. Denyes if recommending business/financial courses for approval goes against the well rule. He wanted to know if every course within the technical category needs to be about the technical aspects of well drilling and pump installation or if it was acceptable to recommend courses that are about the industry on a global level. J. Denyes said that N.J.A.C. 7:9D-1.9 is written very broadly, noting that courses cannot be about sales of particular products. She said that the Board has discretion in this instance. A. Becker confirmed that the Board has the latitude to approve courses of the business/financial nature and J. Denyes agreed.

G. Craig brought up creating a separate category for business classes. A. Becker asked S. Reya if it is possible to do this. S. Reya advised the Board that it would not be wise to add another category in the middle of a cycle and that adding a third category would be challenging for the Department to manage and would likely be overly complex to have so many caveats to the categories in which the 21 total CEPs must fall.

R. Dalton posed the question to the Board if they would be comfortable if a licensee met their technical point requirement by taking all business-related classes. Most of the Board members said that they would not be comfortable with that situation since there would be little benefit for licensees to primarily learn about business practices. G. Craig argued that since he primarily does geotechnical and geothermal work, most of these courses have no benefit to him, but are overall beneficial to having a better understanding of the industry.

The Board discussed the individual courses since there were differing opinions on many of the offerings. The following courses were recommended for approval by majority vote:

Course Name	Continuing Education Points (CEPs) Awarded
PFAS: Educating the Contractor to Provide Superior Service	1 Technical
Improving Pumping Performance of Variable Frequency Drives	1 Technical
Construction and Design of a Well Providing Good Value to the Owner	1 Technical
Field Troubleshooting Common Issues with VFDs in Water Systems	1 Technical
Fundamentals of Dual Tube Flooded Reverse (DTFR) Drilling and its Increasing Popularity	1 Technical
Friction Loss Defined and Basic Friction Loss Calculations	1 Technical
Pressure Hazards	1 Safety

Using a Different Perspective to Lessen the Impact of our Industry's CDL Driver Shortage	1 Technical
How to Attract Good Employees to Your Business	1 Technical
How to Utilize Permanent Magnet Motor Technology with VFDs	1 Technical
Optimizing Well Rehabilitation Operations	1 Technical
Troubleshooting Problems with a Vertical Turbine Pump	1 Technical
Well Design for More Than One Stakeholder	1 Technical
Fall Prevention and Fall Protection: Understanding the Difference	1 Safety
Honing Your Submersible Pump Troubleshooting Skills	1 Technical
Water Well Development and Rehabilitation	1 Technical
Hydrology in the Supercomputing Age: How Computational Advances Have Revolutionize Our Field, and What Big Data and Massively Parallel Simulations Mean for the Future of Hydrologic Discovery	1 Technical
Monitoring Nitrate Contamination in Aquifers	1 Technical
Heavy Equipment Ownership: Annual Costs and Predictive Maintenance	1 Safety
Irrigation Control Systems that Automatically Adjust for Changes with Pumping Conditions	1 Technical
RO POE from A to Z - From the Trenches to Your Tumbler	1 Technical
Hydrogeochemistry: Recent Advances and Opportunities and Challenges Ahead	1 Technical
Innovative Tools and Techniques for Monitoring Karst Groundwater Systems	1 Technical
The Good, The Bad, and The Ugly: Innovative Treatment Options for Established Emerging Water Quality Challenges	1 Technical
Surface Water and Groundwater Interaction - An Examination of the Natural and Man-Made Ties that Bind Them	1 Technical
Hiring, Training, and Retraining the Next Generation of Drillers	1 Technical
Plastic Piping Materials for Ground Source Geothermal Systems	1 Technical
Single Phase Motor and Control Troubleshooting	1 Technical
Family Business Succession: Business Entities and Business Agreements	1 Technical
VFDs - "The Magic Pill Myth" - Misapplication of VFDs	1 Technical
Working in a Surface Mine	1 Safety

The following courses were voted on and were found to be not recommended for approval:

Course Name
Finance - Not Just for the Numbers Nerds
Social Media & Your Business
Running a Business or Doing a Job: Combining Professional Expertise with Business Savvy
Washington Year in Review: Federal Policy and Regulatory Update

Please see pages 7 and 8 for a detailed account of how the Board members voted on each course.

NJGWA

A. Becker introduced the NJGWA course to the Board, which he noted would be in the same format as past meetings. NJGWA requested two CEPs for this course: one for the meeting and one for the

instructor-led course. The name of the course is *Surviving a Roadside DOT Inspection*. A. Becker asked if there was any further discussion needed.

R. Dalton recommended only giving a half CEP for the meeting, but a full CEP for the instructor-led course, for a total of one and a half CEPs for this course.

A motion to approve the NJGWA November 2021 Membership meeting with Surviving a Roadside DOT Inspection course for two technical CEPs was made by J. Yost. The motion was seconded by G. Poppe and approved by all except for R. Dalton and S. Domber.

A. Becker asked Mr. Dermot Dillon if the meeting would be held at O'Connor's. Mr. Dillon confirmed the location and noted that NJGWA was searching for a location in northern New Jersey to host another meeting either in December or January.

Rutgers

A. Becker introduced the course offered by Rutgers, *Bridging the Gap: NJDEP and Municipal UHOT Regulations*. Rutgers requested three CEPs for this course. A. Becker asked if any discussion was needed for this course.

J. Hoffman, G. Craig, and R. Dalton all noted that this course does not apply to well drillers or pump installers and said that it should not be approved. The rest of the Board agreed with their assessment.

A motion to not recommend "Bridging the Gap: NJDEP and Municipal UHOT Regulations" was made by J. Hoffman. This motion was seconded by G. Craig and approved unanimously.

Sean Pepling – Geoprobe Course

A. Becker introduced the course, Principles of MiHPT Logging, provided by Geoprobe Systems. This was a 32-hour course and Mr. Sean Pepling, has requested 17 technical credits for this course. A. Becker asked if any discussion was needed for this course.

R. Dalton recommended that the applicant should only receive three or four CEPs for this class, instead of 17, due to the applicability of the course materials.

A motion to accept Principles of MiHPT Logging for 17 technical CEPs was made by G. Craig. This motion was seconded by J. Hoffman and approved by all except for R. Dalton and S. Domber who were opposed.

After the motion, R. Dalton questioned the ability of licensees to obtain the maximum amount of technical/safety points from a single class. It was explained that this is acceptable because one hour of training equal one CEP. There is no cap on how many CEPs can earn per year, only that they obtain 21 total points, with a minimum of 10 technical and 4 safety points, over the course of the three-year cycle.

Before departing, Mr. Dillon asked if the Department had received an application from Aquaflo for an upcoming course in January. M. Ortega said that he had spoken with Aquaflo and informed them that they did not need an application because they were using two instructors with previously approved courses. He provided them with instructions to submit their course completion documentation to the Department at the conclusion of the training. Mr. Dillon thanked the Board for their time and departed the call.

4. Total Green Direct Exchange (DX) Geothermal Demonstration-

S. Reya recounted drilling and grouting activities conducted by Environmental Technical Drilling (ETD) and Total Green Manufacturing on Monday, October 25th. He said that Department staff observed ETD and Total Green drill and grout one DX geothermal well on this day. All work was completed according to the approved submittal documents which were submitted by Total Green. S. Reya and M. Ortega were on site for the complete construction of this well, including observing the copper pipe be grouted in the PVC line. T. Pilawski and J. Mattle observed portions of the well construction process. R. Dalton observed the construction for a short period of time in the early afternoon.

S. Reya made note that Total Green only used one of the grout mixtures for which they submitted permeability data. In their original proposal, Total Green was going to test two grouts with different thermal conductivity. However, they decided to only use the grout with the higher thermal conductivity of the two (1.1). S. Reya informed the Board that four samples were taken, one from the grout mixer, one from the annular space between the 2-inch PVC casing and copper piping, and two from the annular space between the 2-inch casing and borehole. He further discussed the construction of the wells, noting that they were all drilled to 95 feet and that ETD and Total Green drilled four wells over the course of five days. Prior to the meeting he also provided Board members with an inspection report of the installation, site photos of the drilling/well installation and photos later submitted by Total Green that showed the manifold/wellhead completions of the wells.

A. Becker asked some questions about some of the photos that were provided to the Board. S. Reya referred to Mr. Bill Buschur of Total Green, who was on the call. Mr. Buschur answered the Board's questions about how the system works now that the wells have been installed. A. Becker raised a concern about not having a visible structure at the surface to indicate where the system is installed. This could lead to someone accidentally digging in this area in the future.

The Board had asked Mr. Buschur about the different diameters of the copper pipe. Mr. Buschur explained that a DX well contains U-bend at the bottom just like a conventional water-based closed loop geothermal well. The one in a DX well, however, contains a component that acts as a phase changer for the liquid refrigerant. This is the reason the diameter of the copper pipe on each side of the "loop" is different. G. Craig asked if there were concerns over pitting of the copper. Mr. Buschur explained that titanium anodes and alarms are installed to help ward against pitting and to warn the user if there are any issues.

R. Dalton relayed to the Board that he was very impressed by what he witnessed from ETD and Total Green while he was on site. S. Reya reminded the Board that the Department's biggest concern was the grouting of this well. However, everything went very smoothly and 3/4" diameter PEX pipe was used as a tremie and the grout was mixed in accordance with provided specifications. Mr. Buschur noted that the well was grouted with a 5/8" ID tremie and that the grout was designed around pumpability.

Mr. Buschur thanked the Board and the Department and said that he will send S. Reya the permeability results as soon as he receives them. Mr. Buschur left the call.

5. Disinfection of Potable Water Wells by Unlicensed Individuals-

T. Pilawski informed the Board that with the help of DAG, J. Denyes and the Bureau of Safe Drinking Water, the disinfection guidance document previously posted on the Department's website has been replaced. A. Becker asked if he could receive a copy of the updated guidance document. T. Pilawski agreed and asked S. Reya to send the Board the revised document. It is located on the following site: https://www.state.nj.us/dep/watersupply/pw_general.html

J. Denyes apologized to the Board for missing the October meeting. She informed the Board that her office is still working on a formal response to the disinfection question, which was originally brought up during the June conference call.

6. Enforcement-

J. Mattle informed the Board that program staff is in the process of investigating 71 different instances of perceived violations. These potential violations include, but are not limited to, insufficient reported grout volume to seal the well/annular space, drilling without a permit, and not casing a monitoring well 10 feet into competent bedrock. Over 50 different well drillers have been identified for potential enforcement action.

7. New Items/Comments from the Public-

S. Reya informed the Board that the Department made a full return to the office on November 8th. Previously, most Department staff had been working in the office two days a week since the beginning of August. He explained that the messaging system that the Department had been using was disabled and that administrative staff would resume answer the phone calls as they were placed.

M. Ortega informed the Board of upcoming changes to the Division's webpage. He explained that earlier in 2020, program staff in the Division of Water Supply and Geoscience had started creating new pages, with the same information, but presented in a cleaner format. After some logistical challenges, the Department is ready to proceed with these changes. M. Ortega said that the changes to the Division's page should be live by either the first or second quarter of 2022. He asked the Board to keep an eye out for any broken links or issues with the new website.

M. Ortega continued by saying that program staff created a new email address to for licensing, examinations, and continuing education, which will be monitored by M. Ortega and S. Reya. This email address was created to avoid overwhelming the main Well Permitting email address, especially during the license renewal period. Program staff will notify well drillers and pump installers of the new email address via a letter in the coming weeks. This letter will serve as a CEP reminder for the licensees, provide licensees with the new email address, and inform licensees of the upcoming website changes.

8. Adjournment-

A. Becker thanked the Board members for their attendance and participation. The next meeting will be held on Thursday, December 16, 2021, via conference call.

At 11:04 am, a motion to adjourn the meeting was made by G. Craig, seconded by G. Poppe, and approved unanimously.

Course Name	In Favor	Opposed	Approve/Deny
PFAS: Educating the Contractor to Provide Superior Service	All	N/A	Approve
Improving Pumping Performance of Variable Frequency Drives	All	N/A	Approve
Construction and Design of a Well Providing Good Value to the Owner	All	N/A	Approve
Field Troubleshooting Common Issues with VFDs in Water Systems	All	N/A	Approve
Finance - Not Just for the Numbers Nerds	G. Craig, G. Poppe, A. Becker	R. Dalton, J. Yost, J. Hoffman, S. Domber	Deny
Fundamentals of Dual Tube Flooded Reverse (DTRF) Drilling and its Increasing Popularity	All	N/A	Approve
Friction Loss Defined and Basic Friction Loss Calculations	All	N/A	Approve
Pressure Hazards	All	N/A	Approve
Using a Different Perspective to Lessen the Impact of our Industry's CDL Driver Shortage	A. Becker, G. Craig, J. Yost, G. Poppe, S. Domber	R. Dalton, J. Hoffman	Approve
How to Attract Good Employees to Your Business	G. Craig, G. Poppe, J. Yost, A. Becker	S. Domber, R. Dalton, J. Hoffman	Approve
How to Utilize Permanent Magnet Motor Technology with VFDs	All	N/A	Approve
Optimizing Well Rehabilitation Operations	All	N/A	Approve
Social Media & Your Business	N/A	All	Deny
Troubleshooting Problems with a Vertical Turbine Pump	All	N/A	Approve
Well Design for More Than One Stakeholder	All	N/A	Approve
Fall Prevention and Fall Protection: Understanding the Difference	All	N/A	Approve
Honing Your Submersible Pump Troubleshooting Skills	All	N/A	Approve
Water Well Development and Rehabilitation	All	N/A	Approve
Hydrology in the Supercomputing Age: How Computational Advances Have Revolutionize Our Field, and What Big Data and Massively Parallel Simulations Mean for the Future of Hydrologic Discovery	G. Craig, J. Yost, A. Becker, S. Domber, J. Hoffman	R. Dalton J. Yost (abstained)	Approve
Monitoring Nitrate Contamination in Aquifers	G. Poppe, G. Craig, A. Becker, J. Yost, J. Hoffman, S. Domber	R. Dalton	Approve
Heavy Equipment Ownership: Annual Costs and Predictive Maintenance	G. Poppe, G. Craig, A. Becker, J. Yost, J. Hoffman, S. Domber	R. Dalton	Approve
Irrigation Control Systems that Automatically Adjust for Changes with Pumping Conditions	All	N/A	Approve
RO POE from A to Z - From the Trenches to Your Tumbler	All	N/A	Approve
Hydrogeochemistry: Recent Advances and Opportunities and Challenges Ahead	G. Poppe, G. Craig, A. Becker, J. Yost, J. Hoffman, S. Domber	R. Dalton	Approve

Running a Business or Doing a Job: Combining Professional Expertise with Business Savvy	G. Craig, G. Poppe, A. Becker	R. Dalton, J. Yost, J. Hoffman, S. Domber	Deny
Innovative Tools and Techniques for Monitoring Karst Groundwater Systems	G. Poppe, G. Craig, A. Becker, J. Yost, J. Hoffman, S. Domber	R. Dalton	Approve
The Good, The Bad, and The Ugly: Innovative Treatment Options for Established Emerging Water Quality Challenges	All	N/A	Approve
Surface Water and Groundwater Interaction - An Examination of the Natural and Man- Made Ties that Bind Them	All	N/A	Approve
Washington Year in Review: Federal Policy and Regulatory Update	N/A	All	Deny
Hiring, Training, and Retraining the Next Generation of Drillers	G. Poppe, J. Yost, G. Craig, A. Becker	S. Domber, R. Dalton, J. Hoffman	Approve
Plastic Piping Materials for Ground Source Geothermal Systems	All	N/A	Approve
Single Phase Motor and Control Troubleshooting	All	N/A	Approve
Family Business Succession: Business Entities and Business Agreements	G. Poppe, J. Yost, G. Craig, A. Becker		Approve
VFDs - "The Magic Pill Myth" - Misapplication of VFDs	All	S. Domber, R. Dalton, J. Hoffman	Approve
Working in a Surface Mine	G. Poppe, G. Craig, A. Becker, J. Yost, J. Hoffman, S. Domber	R. Dalton	Approve