

MINUTES

November 17, 2017 Well Constructors
Continuing Education Committee Meeting
And Teleconference

Committee Members Present: Joel Jeffery

Committee Members Teleconferencing: Kevin Gill, James (Jim) Mack, Ryan Galbreth

Others Present: Nancy Sippel, OGWA, Laurie Norton (OWRD)

A) Introductions and Acknowledgements:

B) Review of June 23, 2017 Continuing Education Committee Meeting Minutes.

The Cont. Ed Committee reviewed the courses that comprised the **Oregon Ground Water Association (OGWA Fall Convention held Friday, October 27 – Saturday, October 28, 2017, Eagle Crest Resort, Redmond, Oregon.** The courses were reviewed as follows:

- **“Water Law and How It Impacts the Industry”, one (1.0) hour, October 27, 2017.** The Instructor was Jerry Schmidt, Oregon Water Consultants. (KG) motioned to assign **(1.0 credit)** in the **(rules)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Proper Pump Test Procedure and Well Performance Evaluation”, one (1.0) hour, October 27, 2017.** The Instructor was Justin Iverson, Manager, Groundwater Section, Oregon Water Resources Department. (KG) motioned to assign **(1.0 credit)** in the **(rules)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Harney County Oregon Groundwater Case Study”, one (1.0) hour, October 27, 2017.** The Instructor was Justin Iverson, Manager, Groundwater Section, Oregon Water Resources Department. (JM) motioned to assign **(1.0 credit)** in the **(rules)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Drill Rig and Support Vehicle Setup and Operation to Prevent Hazards”, one (1.0) hour, October 27, 2017.** The Instructor was Steve Kaser, Forge Pacific. (JM) motioned to assign **(1.00 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Pump Hydraulics and Motors 101”, one (1.0) hour, October 27, 2017.** The Instructor was Jeremy Corbin, Franklin Electric. (KG) motioned to assign **(0.50)** in the **(pump)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Principles of Oregon Water Law”, one (1.0) hour, October 28, 2017.** The Instructor was Sarah Jiljefelt, Schroeder Law Offices P.C. (KG) motioned to assign **(1.0 credit)** in the **(rules)** category. (JJ) seconded the motion. The motion carried all in favor.

- **“Basic Business Financial Management”, one (1.0) hour, October 28, 2017.** The Instructor was Maureen Quinn, Central Oregon Community College Small Business Development Center. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Groundwater & Quality Business Potential and Opportunity”, one (1.0) hour, October 28, 2017.** The Instructor was Richard Mest, Master Water Conditioning Corp. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Roundtable Discussion – Essential Drilling Equipment Technology/Features”, one (1.0) hour, October 28, 2017.** The Presenters were Jon Newsom, Western Region Sales Manager, GEFCO; Kevin Gill, owner, Clouser Drilling; John Stadel, owner, Arrow Drilling; Garry Zollman, owner, Zollman’s Larry Burd Well Drilling. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- ***“Considerations When Using a Variable Frequency Drive for a Residential Application”, one (1.0) hour, October 28, 2017. The Instructor was Shawna Andrews, Pentair. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor. This course was not presented. The course described below was substituted and presented.***
- **“Oxidizing Filtration Systems”, one (1.0) hour, October 28, 2017. The Instructor was Dave Smith, Pentair.** (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Drill Cuttings On-Site”, one (1.0) hour, October 28, 2017.** The Instructor was Dwayne Person, owner/operator, Person Pump & Well Drilling. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Rehab and Down Hole Camera Technology”, one (1.0) hour, October 28, 2017.** The Instructor was Eric Hadden, Laval Underground Surveys. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **NGWA 2017 Ground Water Week, held December 5-7, 2017, Nashville, Tennessee.** The courses were reviewed as follows:

- **“Excavation Safety in Drilling Operations”, one (1.0) hour, December 5, 2017.** The Instructor is David Bowers, holds a NGWA CVCLD – (Certified Vertical Closed Loop Driller Designation). (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Mud Rotary Drilling”, one (1.0) hour, December 5, 2017.** The Instructor is Roger E. Renner, MGWC, NGWAF, President of E.H. Renner & Sons Inc. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Next Generation Water Treatment – Simple, Eco-Friendly, Legal and Good for Business”, one (1.0) hour, December 5, 2017.** The Instructor is Gabe Ergler, presenter/teacher to large variety of water system management companies and whole sale distributors at regional, national, and international level. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

- **“Permanent Magnet Motors: Utilizing Efficiency to Appeal to the Market”, one (1.0) hour, December 5, 2017.** The Instructor Mike Stockman, Senior Portfolio Manager for motors, Franklin Electric. (KG) motioned to assign **(0.5 credit)** in the **(pump)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Water Systems Primer Express”, one (1.0) hour, December 5, 2017.** The Instructor is Jim Hartmann, Franklin Electric Co. (JM) motioned to assign **(0.50)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Well Rehabilitation & Maintenance Solutions – Better Life Through Chemistry”, one (1.0) hour, December 5, 2017.** The Instructor are Kevin McGinnis, President of Coty Chemical Corp.; Jeff Wellen; Amtrol, and Richard A. Mest, President, Master Water Conditioning Corporation. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG&JM) seconded the motion. The motion carried all in favor.
- **“Air Rotary Drilling”, one (1.0) hour, December 5, 2017.** The Instructor is Richard Thron, MGWC, currently with Mantyla Well Drilling Inc., Lakeland Minnesota. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG&JM) seconded the motion. The motion carried all in favor.
- **“Difficult Well Problems May Require Well Forensics”, one (1.0) hour, December 5, 2017.** The Instructor is Roger Miller, Chemistry, Biology degrees from University of Central Missouri, serves as technical consultant for Water Systems Engineering Inc. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Interpreting Financial Statements: It’s More Than Just the Numbers”, one (1.0) hour, December 5, 2017.** The Instructor is Daniel T. Meyer, CPA, MGWC, CVCLD. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Water and its Effects: Importance of Well Tanks, Filtration Systems for the Home”, one (1.0) hour, December 5, 2017.** The Instructor is Joel Voytek, fiberglass pressure vessels product manager, Pentair. (JM) motioned to assign **(0.50 credit)** in the **(pump)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Electronic Logging Devices”, Complying With the New Federal Law”, one (1.0) hour, December 5, 2017.** The Instructor is Wayne Sinclair, former Connecticut Department of Motor Vehicles; former instructor for Connecticut Police Officer Standards and Training Council; now with Northeast Transportation Safety Consultants. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Introduction to Well Asset Management: Not Just for Utility Water Supply”, one (1.0) hour, December 5, 2017.** The Instructor is Stuart A. Smith, with Ground Water Science; author and coauthor of numerous studies and publications on well and drain biofouling, well maintenance and rehabilitation and well construction. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (JM&RG) seconded the motion. The motion carried all in favor.
- **“Pump Curve Basics”, one (1.0) hour, December 5, 2017.** The Instructor is Daniel Featherstone, trainer with Pentair Flow Technologies. (KG) motioned to assign **(0.50 credit)** in the **(pump)** category. (RG&JM) seconded the motion. The motion carried all in favor.
- **“Reverse Circulation Drilling”, one (1.0) hour, December 5, 2017.** The Instructor is Thomas (Tom) Downey, CWD/PI, President of Downey Drilling Inc.; licensed water well driller and pump installer. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG&JM) seconded the motion. The motion carried all in favor.

- **“Solar Water Pumping: Strategic Partnerships on Untapped Markets”, one (1.0) hour, December 5, 2017.** The Instructor is Jeff Frank, Senior Portfolio Manager, Franklin Electric; associated with the Solar Certified Contractor Program. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ&JM) seconded the motion. The motion carried all in favor.
- **“Understanding Coliform and E-Coli Bacteria”, one (1.0) hour, December 5, 2017.** The Instructor is Michael Hanten, Lab Director of Clean Water Testing in Appleton, Wisconsin for past 14 years. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Borehole Geophysical Logging”, one (1.0) hour, December 5, 2017.** The Instructor is W. Richard Laton, Ph.D., PG, NGWA Scientists and Engineers Section member; currently an associate professor of hydrogeology in the Department of Geological Sciences, California State University, Fullerton. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Electrical Safety in the Water Well Drilling and Pump Service Industry – or How to Not be ‘Electrified’ ”, one (1.0) hour, December 5, 2017.** The Instructor is Jim Wright, Director of Safety for WDC Exploration & Wells. (JM) motioned to assign **(1.0 credit)** in the **(safety)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Leaving Your Business on Your Terms – Know Your Options”, one (1.0) hour, December 5, 2017.** The Instructor is Tim McDaniel, director of business valuations at Rea & Associates, Columbus, Ohio. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Monitoring Well Construction”, one (1.0) hour, December 5, 2017.** The Instructor is Arthur E. Becker, MGWC, NGWAF, a Certified Professional Geologist; an executive at SGS North America Inc.-Environmental Division, currently chairman of New Jersey State Well Drillers and Pump Installers Licensing and Examining Advisory Board. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Tips and Tricks to Minimize Callbacks on VFD Systems”, one (1.0) hour, December 5, 2017.** The Instructor is Tom Stephan, manager of all Xylem residential and commercial water training programs, which includes Goulds Water Technology, CentriPro, and Red Jacket Water Product brands. (JM) motioned to assign **(0.50 credit)** in the **(pump)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Well Water – Best Testing Practices for the 21st Century”, one (1.0) hour, December 5, 2017.** The Instructor is George Bailey, Vice President of Sales & Marketing, Industrial Test Systems Inc. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“2018 Federal Tax Update”, one (1.0) hour, December 5, 2017.** The Instructor is Brent Ardit, CPA and Senior Manager at Rea & Associates, Dublin, Ohio. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Drilling in Developing Nations: Contractor and Equipment Challenges”, one (1.0) hour, December 5, 2017.** The Instructor is Dwight Hanson, M.S. in Ag and Biological Systems Engineering, owns H2Optimal Inc. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.

- **“Toxic Levels of Lead and Copper in Groundwater Can Be Caused by Stray Electrical Current”, one (1.0) hour, December 5, 2017.** The Instructor is Todd Giddings, Ph.D., PG, registered geologist and principal hydrogeologist and president of Todd Giddings and Associates Inc. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Uncovering the Mystery of VFD Filters – How, Why, and When?”, one (1.0) hour, December 5, 2017.** The Instructor is Matt Clark, Portfolio Manager, Water System Electronics, Franklin Control Systems. (JJ) motioned to assign **(0.50 credit)** in the **(pump)** category. (KG) seconded the motion. The motion carried all in favor.
- **“A New Type of Hybrid Groundwater Energy System”, one (1.0) hour, December 5, 2017.** The Instructor is Todd Giddings, Ph.D., P.G., principal hydrogeologist and president, Todd Giddings and Associates, Inc. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Flowing Artesian Wells: Control and Closure in British Columbia”, one (1.0) hour, December 5, 2017.** The Instructors are Thierry Carriou, PE, Professional Engineer and hydrogeologist in British Columbia; direct experience with high-capacity flowing wells, and decommissioning out-of-control flowing wells; and Richard Cronin, Qualified Driller (British Columbia and Alberta); a senior well driller in several Canadian regions, employed as Well Control Specialist with BC Groundwater Consulting Services Ltd. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Groundwater Rule – Using UV to Achieve Virus Treatment Compliance”, one (1.0) hour, December 5, 2017.** The Instructor is Anthony Oosterveld, Business Development Manager, Viqua, a Trojan Technologies Company. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Leveraging Application-Based Sizing Software”, one (1.0) hour, December 5, 2017.** The Instructor is Jeff Frank, Senior Portfolio Manager, Franklin Electric, solar products and packaged systems. (KG) motioned to assign **(0.50 credit)** in the **(pump)** category. (RG) seconded the motion. The motion carried all in favor.
- **“NSF (National Sanitation Foundation) Certification and the Responsible Groundwater Steward”, one (1.0) hour, December 5, 2017.** The Instructor is Douglass Keller, Baroid Industries. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Boosting Your Water Supply Earning Potential with Aeration Systems”, one (1.0) hour, December 5, 2017.** The Instructor is Jim Hartmann, Regional Manager of Technical Services, Franklin Electric. (KG) motioned to assign **(1.00 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Managing Your Data in the 21st Century”, one (1.0) hour, December 5, 2017.** The Instructor is William (Bill) Mann, Western Sales Manager for In-Situ Inc., member of American Association of Petroleum Geologists, and member of NGWA’ Scientists and Engineers Section. (RG) motioned to assign **(1.00 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Introduction to Drilling Fluids, Back to Basics”, one (1.0) hour, December 5, 2017.** The Instructor is Jeff Blinn, Training Manager for Baroid Industrial Products. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.

- **Update: Water Supply Cost Savings Act Law and Other Important Legislative Legal Issues”, one (1.0) hour, December 5, 2017.** The Instructors are Margaret Martens, Executive Director of Water Systems Council (WSC), and Program Director for the Water Well Trust; and Jesse J. Richardson Jr., J.D., Lead Land Use Attorney at the Land Use and Sustainable Development Law Clinic and Associate Professor of Law, West Virginia University College of Law et al. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Darcy Lecture Series in Groundwater Science A Tale of Two Porosities: Exploring Why Transport Doesn’t Always Behave the Way it Should”, one (1.0) hour, December 6, 2017.** The Instructor is Kamini Singha, Ph.D., professor of Geology and Geological Engineering; Associate Director of Hydrologic Science and Engineering Program at Colorado School of Mines. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Anatomy of a Groundwater War: Mississippi vs. Tennessee,” one (1.0) hour, December 6, 2017.** The Instructor is Jesse J. Richardson Jr., J.D., Lead Land Use Attorney at the Land Use and Sustainable Development Law Clinic, Associate Professor of Law, West Virginia University College of Law. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Groundwater Contaminants - What Does the Future Hold?”, one hour, December 6, 2017.** The Instructor is Peter Cartwright, PE, owner of his consulting engineering firm since 1980, has a degree in Chemical Engineering, University of Minnesota, registered Professional Engineer in Minnesota. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. Joel Jeffery opposed.
- **“Introduction to Geophysics: Resistivity 101”, one (1.0) hour, December 6, 2017.** The Instructor is Dwight Hanson, M.S. in Ag and Biological Systems Engineering, University of Nebraska, Lincoln; H2Optimal Inc. is his consulting business. (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Small Water Systems Business Opportunities”, one (1.0) hour, December 6, 2017.** The Instructor is Chuck Job, Regulatory Affairs Manager for National Ground Water Association; he also addresses groundwater resource sustainability. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“The Biogeochemical Toolbox: Enhancing Natural Remedial Processes”, one (1.0) hour, December 6, 2017.** The Instructor is Karen Kinsella, Ph.D., biogeochemist at GZA GeoEnvironmental Inc., Glastonbury, Connecticut; more than 40 years’ experience in agricultural, analytical, construction, energy, environmental, radionuclide sectors. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Variable Frequency Drives . . . Selling Value & Protection”, one (1.0) hour, December 6, 2017.** The Instructor is Dan Painter, CSP, involved with well/water industry for 40 years; experience at all levels of market chain; has provided CEU seminars for various state water well associations. (KG) motioned to assign **(0.50 credit)** in the **(pump)** category. (JM) seconded the motion. The motion carried all in favor.

- **“McElhiney Lecture Series in Water Well Technology: Redefining Life Expectation of New Wells Through and Analysis of Past Failures”, one (1.0) hour, December 6, 2017.** The Instructor is Michael Schnieders, PG PH-GW, principle hydrogeologist and president of Water Systems Engineering Inc. in Ottawa, Kansas. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Direct Push Technology – As Useful As Ever . . . and Cost Effective Too”, one (1.0) hour, December 7, 2017.** The Instructors are Bruce Manchon, PG, California, Nebraska, and Texas Professional Geologist with more than 35 years professional experience in the environmental and petroleum industries; and John Sciacca, PG, California Professional Geologist with more than 30 years professional experience, holds an M.S. in Geology from University of California, Davis and is principle hydrogeologist for AEC OM in northern Nevada. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Biological Testing – Relationships, Occurrences, and Trends of Groundwater Bacteria in Potable Wells”, one (1.0) hour, December 7, 2017.** The Instructor is Eric Duderstadt, environmental biologist with Water Systems Engineering Inc., Ottawa, Kansas, where he is a consultant.(JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Operational States of the Well: Evaluating the Forms of Water Well Deterioration”, One (1.0) hour, December 7, 2017.** The Instructors are **Thom M. Hanna, RPG**, hydrogeologist for Johnson Screens where he works in well design; **Michael J. Schnieders, PG, PH-GW**, hydrogeologist and president of Water Systems Engineering, Ottawa, Kansas, 2017 NGWA McElhiney Distinguished Lecturer; and **John Schnieders Ph.D.**, Certified Professional Chemist, 2002 NGWA EcElhiney Distinguished Lecturer. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Roundtable on ELDs”, one (1.0) hour, December 7, 2017.** The Instructor is Jim Wright, Director of Safety for WDC Exploration & Wells; holds a Bachelor’s in Chemistry and Master’s in Industrial Hygiene, has designed and implemented safety systems for international drilling operations; MSHA certified underground/surface instructor; American Red Cross certified child/adult first aid/CPR instructor; OSHA 10/30 hour construction safety trainer etal; NGWA Professional Development, Safety Subcommittee. (RG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Selecting Pump Control Solutions: Residential and Light Commercial Applications”, one (1.0) hour, December 7, 2017.** The Instructor is Jeff Frank, Senior Portfolio Manager at Franklin Electric. (KG) motioned to assign **(0.50 credit)** in the **(pump)** category. (RG) seconded the motion. The motion carried all in favor.
- **“U.S. Construction Spending: Labor and Materials Forecast”, one (1.0) hour, December 7, 2017.** The Instructor is Ken Simonson, chief economist of the Associated General Contractors of America; his weekly, The Data IDGest goes to 43,000 subscribers; currently is an appointed member of the Census Scientific Advisory Committee and the Bureau of Labor Statistics’ Data User Advisory Committee. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Excelling in the Groundwater Industry Panel: How the Professionals Rise to the Challenge”, one (1.0) hour, December 7, 2017.** The Presenters are **Roger E. Renner, MCWC**, NGWAF, president of E.H. Renner & Sons Inc.; 37-year member of NGWA, past president of NGWA, past president of Minnesota Water Well Association, Chair of Minnesota Department of

Health Advisory Council on Wells and Borings; W. **Richard Laton Ph.D., PG** an NGWA Scientists and Engineers Section member; currently and associate professor of hydrogeology in the Department of Geological Sciences, California State University, Fullerton; **Thomas (Tom) Downey**, CWD/PI, President and CEO of Downey Drilling Inc., and Managing Partner of Downey Leasing LLC and Downey Associates LLC; **Daniel T. Meyer, CPA, MGWC, CVCLD**, was chief financial officer for Gregg Drilling & Testing Inc., Signal Hill, California, was named 2012 Contractor of the Year by California Groundwater Association; former 2013 NGWA President; **Arthur E. Becker, MGWCm NGWAF**, is a certified Professional Geologist; he holds drilling licenses in 11 states; currently employed as executive at SGS North America Inc. Environmental Drilling Division, also currently chairman of New Jersey State Well Drillers and Pump Installers Licensing and Examining Advisory Board. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.

- **“Maximizing Your Return on Investment from a Down-Hole Camera System”, one (1.0) hour, December 7, 2017.** The Instructor is Eric Hadden, Vice President of Sales and Marketing for Laval Underground Surveys, has history of working in the camera and electronic manufacturing industry. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Private Well Issues”, one (1.0) hour, December 7, 2017.** The Instructors are **Steve D. Wilson**, groundwater hydrologist at Illinois State Water Survey, University of Illinois. He manages WaterOperator.org, which provides free resources and support for small water and wastewater system operators; and PrivateWellClass.org, a free online class and education program for private well owners and very small water systems; and **Jennifer Wilson**, has a M.S. in soil and water science from University of California, Riverside; is the lead for WaterOperator.org and PrivateWellClass.org’s online communication and social media marketing activities. She has expertise in developing programs for sustainable small systems with the U.S. EPA’s drinking water program.(JM) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **American Ground Water Trust, held October 24, 2017, Holiday Inn, Wilsonville, Oregon. The Course Title for this particular day-long program given on October 24, 2017 is “Groundwater and Well Issues in Oregon”**

The morning session in Wilsonville is broken out as follows:

- **“Opening Remarks – Program Objectives”, fifteen (15) minutes, October 24, 2017.** The Presenter was Andrew Stone, Executive Director, American Groundwater Trust, MSc in hydrogeology, University College, London. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Aquifer Storage Recovery (ASR) in the Northwest”, forty (40) minutes, October 24, 2017.** The Instructor was Dave Nazy, Senior Hydrogeologist, EA Engineering, Science and Technology Inc., Portland, Oregon. (JJ) motioned to assign **(0.50 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.

- **“Update on Latest Well Construction Issues”, forty (40) minutes, October 24, 2017.** The Instructor was Joel Jeffery, Well Construction Coordinator, Oregon Water Resources Department; licensed Monitoring Well Constructor. (JJ) motioned to assign **(1.0 credit)** in the **(rules)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Update on USGS Groundwater Projects and Research in Oregon”, forty(40) minutes, October 24, 2017.** The Instructor was Steve Gingerich, Groundwater Specialist, USGS Oregon Water Science Center, Portland, Oregon. (KG) motioned to assign **(0.50 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Deep Well Drilling and Installation Challenges”, forty (40) minutes, October 24, 2017.** The Instructor was Robert Stadel, Rotary Division Manager, Holt Drilling Services, Edgewood Washington. (KG) motioned to assign **(0.50 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Monitoring, Managing, and Maintaining 700 Wells: Sole Source of Supply for the City of Berlin, Germany”, fifty (50) minutes, October 24, 2017.** The Instructor was Andreas Wicklein, Manager, Certified Hydrologist, pigadi GmbH, Berlin, Germany; has worked last 30 years in different capacities for the city of Berlin’s water supply system. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.

The Afternoon Session – Wilsonville Program Option 1 is broken out as follows:

- **“Using Standard Water Quality Parameters as Predictors of Future Well Performance”, forty (40) minutes, October 24, 2017.** The Instructor was Jim Bailey MS hydrogeology, registered professional geologist, National Well Services Director, Shannon & Wilson Inc., Seattle, Washington. (JJ) motioned to assign **(0.50 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Portland Harbor Source Control: 100 well Hydraulic Control and Containment System to Maintain Reversed Groundwater Gradients” forty (40) minutes, October 24, 2017.** The Instructor was Benjamin Johnson, Senior Geologist, ANCHOR QEA LLC, Portland, Oregon; water quality professional with 10 years’ experience in water quality, hydrogeology, aquatic ecology, toxic pollutants, federal water quality programs. (RG) motioned to assign **(0.50 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Numerical Modeling to Support Expansion of Wellfield Adjacent to Willamette River, Eugene, Oregon”, forty (40) minutes, October 24, 2017.** The Instructor was Stephen Thomas, BSc in Geology, Cardiff University, MSc in hydrogeology, Birmingham University, Kentucky; Hydrogeologist, Shannon & Wilson Inc., Seattle, Washington. (JM) motioned to assign **(0.50 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Groundwater Supply Asset Management”, forty (40) minutes, October 24, 2017.** The Instructor was Chris Augustine, Hydrogeologist, 15 years’ experience with groundwater issues, employed with Aspect Consulting, Portland, Oregon. (RG) motioned to assign **(0.50 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.

- **“Groundwater Sustainability: What Does It Mean? Can It Be Achieved?”, thirty (30) minutes, October 24, 2017.** The Instructor was Andrew Stone, Executive Director, American Groundwater Trust, MSc in hydrogeology, University College, London. (KG) motioned to assign **(0.50 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.

The Afternoon Session – Wilsonville Program Option 2 is broken out as follows: **(Not presented)**

- **The Basics of Well Hydraulics (from Aquifer to Well to Pump) Selection and Maintenance of Pumps for Maximizing Well Yield/Costs Benefits”, one hour and twenty minutes (1.3).** The Instructor was David Kill, Registered Professional Engineer (PE), BS in Agricultural Engineering, University of Minnesota; Training Consultant, Xylem Goulds Water Technology, St. Paul, Minnesota. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Intelligent Pump Variable Frequency Drives Maximize Production and Efficiency”, fifty (50) minutes, October 24, 2017.** The Instructor was Dan Peters, Applications Engineer, Yaskawa America, Cypress, California; 20 years’ experience in applying variable frequency drives (VFD’s) to a variety of commercial and industrial applications. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Methods For Improving Well Performance”, one (1.0) hour, October 24, 2017.** The Instructor was Jim Bailey, National Well Services Director, Shannon & Wilson, Seattle, Washington. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **National Drilling Association (NDA) 2017 Convention, held September 22, 2017, in Marlborough Massachusetts.** National Drilling Association 2017 Convention course offerings were reviewed as follows:

- **“SPT Drilling and Sampling: Best Practices”, one (1.0) hour, September 22, 2017.** The Instructor was Benjamin Halada, Stantec Consulting Services, Inc. . (JJ) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“The Case for Embracing Electronic Logging Devices”, one (1.0) hour, September 22, 2017.** The Instructor was Jim Howe, Vice President of Operations for Geotechnology, Inc., a 300-person firm practicing geotechnical and environmental engineering drilling services, geophysics, and construction materials testing. . (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Core Drilling 101”, one (1.0) hour, September 22, 2017.** The Presenters were **Rich Hutchings**, Field Representative for Central Mine Equipment (CME) Company; **Dennis Duty**, Account Representative with Baroid Industrial Drilling Products, experience as drill helper, drill operator as well as Engineering Technician and Geologist in Engineering, Geotechnical, Environmental drilling; and **Eric Hajek**, President of Terra Testing, Inc.; as constructed horizontal degasification borings inside a coal mine for Consol Energy. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

- **“Borehole Extensometers”, one (1.0) hour, September 22, 2017.** The Instructor was Michael Eno, GEOKON Inc., has a Civil Engineering Degree. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Rig Safety & Maintenance 101”, one (1.0) hour, September 22, 2017.** The Instructor was Rob Caho, Director of Sales and Marketing for Deidrich Drill; past President of Minnesota Groundwater Association, Chapter President Minnesota National Drilling Association, and other posts in drilling industry. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Safety Round Table”, one hour and fifteen minutes (1.25), September 22, 2017.** The Moderators were **Todd Bromley**, began drilling career at R&R International, 19688; in 1993 started own company, H.A.D., Inc.; certified by National Drilling Association, NGWA; currently Business Development Manager Buckeye BOP; and **Rick Hutchings**, Field Representative for Central Mine Equipment Company. (JJ) motioned to assign **(1.0 credit)** in the **(safety)** category. (RG) seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **California Groundwater Association 2017 Annual Convention, held October 19, 20, and 21, 2017 in Reno, Nevada.** California 2017 Annual Convention course offerings were reviewed as follows:

- **“Nevada Regulations”, four (4.0) hours, October 19, 2017.** The Instructor was Jacob Echeverria, Nevada Division of Water Resources. (KG) motioned to assign **(0.0 credit)** in the (X) category. (JM) seconded the motion. The motion carried all in favor.
- **“Federal DOT Regulations”, one (1.0) hour, October 19, 2017.** The Instructor was Sara Gardner, Wells Fargo Insurance Services and is responsible for providing Federal Motor Carrier Safety compliance for DOT clients with Fleet Team Services that have Department of Transportation needs. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Flowmeter Technologies for Groundwater Applications Session Description”, two (2.0) hours, October 19, 2017.** Instructors were **Pascual Espinoza**, Technical Sales Manager, Badger Meter, has 15 years’ experience with volumetric and mass flow instrumentation’ **Jeff Learned**, Badger Meter – no other information about Mr. Learned. (JM) motioned to assign **(2.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“Solar Pumps”, two (2.0) hours, October 19, 2017.** The Instructor was Aaron Dretel, Lorentz; past vice-president of California Groundwater Association (CGA), past chair for several state and national associations including the Water Systems Council. (KG) motioned to assign **(1.0 credit)** in the **(pump)** category. (JM) seconded the motion. The motion carried all in favor.
- **“McElhiney Lecture: Defining the Operational Age of a Well: Predicting Maintenance Issues in Advance of Failure”, one hour forty-five minutes (1.75), October 19, 2017.** The Instructor was Michael Schnieders , NGWA, PG, principle hydrogeologist for Water Systems Engineering, Ottawa, Kansas. (JJ) motioned to assign **(2.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Keynote Presentation”, forty-five (45) minutes, October 20, 2017.** Instructor was Jesse J. Richardson, Jr.; Professor of Law and Lead Land Use Attorney, Land Use and Sustainable Development Law Clinic, West Virginia University College of Law. (JJ) motioned to assign **(0.0 credit)** in the (X) category. (KG) seconded the motion. The motion carried all in favor.

- **“Legislative Process in California”, one (1.0) hour, October 21, 2017.** The Instructor was Pete Conaty, governmental advocacy firm Conaty and Associates; he has represented California Groundwater Association at state government level since 2008. (KG) motioned to assign **(0.0 credit)** in the (X) category. (RG) seconded the motion. The motion carried all in favor.
- **“How Using a Mud Balance During Well Construction Can Improve Pump Life”, one (1.0) hour, October 21, 2017.** The Instructors were **Ron B. Peterson**, Baroid Industrial Drilling Products; and **Bill Douvilles**, Baroid Industrial Drilling Products. (KG) motioned to assign **(1.0 credit)** in the (**general**) category. (RG) seconded the motion. The motion carried all in favor.
- **“Engines and Emission Regulations – How to Survive in 2018”, one (1.0) hour, October 21, 2017.** The Instructors were **Rich Neet**, Smith Power Products; BS in Industrial Technology and Mechanized Agriculture; **John Dela Hunt**, Branch Manager, Smith Power Products, Sparks, Nevada; graduate of Lassen College, Automotive Technology, 30 years’ experience with industrial engines, diesel and natural gas engines; and **Greg Tremaine**, Deutz Product Manager, Smith Power Products, Sparks, Nevada; graduate of UTI College, Diesel and Automotive Technology; 30 years’ experience diesel and natural gas engines. (KG) motioned to assign **(1.0 credit)** in the (**general**) category. (JM) seconded the motion. The motion carried all in favor.
- **“Well Destruction Using Explosives”, one and one-half (1.5) hour, October 21, 2017.** The Instructor was Tylor McMillan, owner/operator of only California based company dedicated strictly to explosive uses and services for the water well industry; OSHA certified blaster for water well service, is ATF federal explosive license holder. (JJ) motioned to assign **(0.0 credit)** in the (X) category. (KG) seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the course that comprised **Holt Services Field Expo, held August 25, 2017, in Edgewood, Washington, from 10:00 a.m. to 2:00 p.m.**

- The Holt Services Field Expo comprised drilling demonstrations on the following rigs:
 - Dual Rotary
 - Sonic
 - Auger
 - Direct Push
 - Vac
 - Cable Tool
 - Pump Hoist
- The following Well Constructors performed the demonstrations:
 - Robert Stadeli, Oregon Well Constructor License #1523, endorsed for Water Well and Monitoring Well Construction
 - Dale Abernathy, Washington Water Well Constructor License #1916
 - Travis Stephens, Washington Resource Protection Well Constructor License #2863
 - Dale Smith, Washington License#1229, endorsed for Water and Resource Protection

Randy Holt, Washington License#1099, endorsed for Water and Resource Protection

(KG) motioned to assign **(3.0 credit)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.

(TABLED BY COMMITTEE) The Cont. Ed Committee reviewed the courses that comprised the **Oregon Water Law Conference, held November 2 & 3, 2017, in Portland, Oregon.** The course offerings were reviewed as follows:

- **“What’s New with Oregon Water Law and Updates from the Water Resources Department”, one (1.0) hour, November 2, 2017.** The Presenters were Thomas M. Byler, Director, Oregon Water Resources Department; Racquel Rancier, Senior Policy Coordinator, Oregon Water Resources Department; and Tracy Rutten, Intergovernmental Relations Association, League of Oregon Cities. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Pros and Cons: Groundwater Studies, Mandatory Measurement, Water Right Fees”, Panel Discussion, forty-five (45) minutes, November 2, 2017.** David E. Pilippi, Moderator, Stoel Rives LLP; John DeVoe, Executive Director, WaterWatch of Oregon; April Snell, Executive Director, Oregon Water Resources Congress. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Oregon Public Records Law”, one (1.0) hour, November 2, 2017.** David E. Filippi, Moderator; Noah Ellenberg, Opinions Counsel, Oregon Dept of Justice; Mark J. Landauer, Special Districts Association of Oregon; Frank S. Wilson, Office of the Regional Solicitor, U.S. Department of the Interior. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“A Look at the Division 33 Rules”, forty-five (45) minutes, November 2, 2017.** The Presenter was Martha O. Pagel, Schwabe Williamson & Wyatt PC. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Litigation/Contested Case Update”, forty-five (45) minutes, November 2, 2017.** The Presenters were Brian J. Posewitz, Staff Attorney, WaterWatch of Oregon; and Steven L. Shropshire, Jordan Ramis PC. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Walla Walla Basin Groundwater Protection Rulemaking”, forty-five (45) minutes, November 2, 2017.** The Presenters were Justin T. Iverson, Groundwater Section Manager, Oregon Water Resources Department; and Molly Reid, Sr. Water Rights Consultant, EA Engineering, Science and Technology, Inc., PBC. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Flood Waters, Rights and Duties, thirty (30) minutes, November 2, 2017.** Kirk B. Maag, Stoel Rives LLP. () motioned to assign

() in the () category. () seconded the motion. The motion carried all in favor.

- **“Deschutes Basin Update”, two hours (2.0) hours, November 3, 2017:**

“Oregon Spotted Frog Biological Opinion, Presenter, Bridget Moran, Field Supervisor, Bend Field Office, U.S. Fish & Wildlife Service.

“Deschutes River Alliance v. PGE”, Presenters were Daniel M. Galpern, Law Offices of Daniel M. Galpern; Beth S. Ginsberg, Stoel Rives, LLP.

“Warren v U.S. Bureau of Reclamation”, Presenter was Matthew Singer, Holland & Knight LLP.

“Central Oregon LandWatch v. Connaughton”, Presenters were Ralph O. Bloemers, Crag Law Center; and Stephen J. Odell, Asst. U.S. Attorney, District of Oregon U.S Department of Justice.

() motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.

- **“Willamette River: USACE Re-Allocation of Stored Water”, one hour fifteen minutes (1.25) hour, November 3, 2017.** Moderator was **Richard M. Glick**, Davis Wright Tremaine LLP; Presenters were **Niki J. Iverson**, Water Resources Manager, City of Hillsboro; **Allyssa M. Mucken**, IWRS Program Coordinator, Oregon Water Resources Department; and **Mary Anne Nash**, Public Policy Counsel, Oregon Farm Bureau. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Water Resources Modeling 101”, thirty (30) minutes, November 3, 2017.** Presenter was Robert Annear, PhD, PE, Sr Principal Engineer, Geosyntec Consultants. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“The Role on Inchoate Tribal Rights in the Prior Appropriation Doctrine”, thirty (30) minutes, November 3, 2017.** Presenter was Renee M. Moulun, Asst. Attorney-in-Charge, Natural Resources Section, Oregon Department of Justice. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Due Diligence For Water Right Transactions”, forty-five (45) minutes, November 3, 2017.** Presenter was Adam Sussman, Principal Water Resources Consultant, GSI Water Solutions, Inc. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.
- **“Ethical Considerations”, one (1.0) hour, November 3, 2017.** Presenter was David J. Elkanich, Holland & Knight LLP. () motioned to assign () in the () category. () seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **Washington State Ground Water Association 2017 Annual Convention, held October 5 -7, 2017, in Wenatchee, Washington.** The courses were reviewed as follows:

- **“The Operational Stage of the Well”, two (2.0) hours, October 5, 2017.** The Instructor was Thom Hanna, Johnson Screens. (KG) motioned to assign **(2.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Hydrogeology of the Columbia River Basalt”, two (2.0) hours, October 5, 2017.** The Instructor was Terry Tolan, Intera Geoscience & Engineering Solutions. (JJ) motioned to assign **(2.0 credits)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Keeping Your Office, Rig & Livelihood Above Water in Difficult Terrain, one (1.0) hour, October 5, 2017.** The Instructor was Glen Smith, WSGWA Government Affairs Advisor. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Legal Issues Impacting the Water Well Industry 2017”, two (2.0) hours, October 5, 2017.** The Instructor was Jesse Richardson, Water Systems Council (Sponsored by 2M). (JM) motioned to assign **(2.0 credit)** in the **(general)** category. (KG) seconded the motion. The motion carried all in favor.
- **“Water Flow & Treatment/PI NEC Update” eight (8.0) hours, October 6, 2017.** The Instructors were Phillip Pelletier, Furrow Pump and Roger Chick, Electrical Training Institute. (KG) motioned to assign **(4.0 credits)** in the **(pump)** category. (JJ) seconded the motion. The motion carried all in favor.
- **“The Never Ending Artesian Well”, one (1.0) hour, October 7, 2017.** The Instructor was Mike Piechowski, Robinson Noble Inc. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Load Securement and Pre-Trip Inspections”, one (1.0) hour, October 7, 2017.** The Instructor was Officer Ernie Rampley, Washington State Patrol, Commercial Vehicle Division. (JJ) motioned to assign **(1.0 credit)** in the **(safety)** category. (RG) seconded the motion. The motion carried all in favor.
- **“Don’t Kill Your Golden Goose - Succession Strategies to Protect & Perpetuate Your Business”, three (3.0) hours, October 7, 2017.** The Presenter was Dale West, American Society Asset Protection, Nationally recognized speaker, author; one of America’s top asset protection experts. (KG) motioned to assign **(3.0 credit)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.
- **“Hypo Chlorination/RCW (Revised Code of Washington) WAC (Washington Administrative Code) Update”, eight (8.0) hours, October 7, 2017.** The Instructors were Roger Chick, owner/operator of Electrical Training Institute; 18 years as Electrical Inspector with Labor and Industries, past WSGWA speaker; and Chris Lee, with Blue Line Water, has 20 years working in water treatment, purification and pump industry design and install of water treatments as well as 8 years working in analytical water quality labs. (KG) motioned to assign **(6.0 credits)** in the **(general)** category. (JJ) seconded the motion. The motion carried all in favor.

The Cont. Ed Committee reviewed the courses that comprised the **Washington State Ground Water Association 2017 CEU Seminar, held November 3, 10, and 11, 2017, in Spokane, Tacoma, and Kelso, Washington.** The courses were reviewed as follows:

“The ‘Why’ Behind the Water Well Report”, two (2.0) hours, November 3, 10, 11, 2017.

The Instructor was Mike Krautkramer, Robinson Noble, Inc.; past Chair of NGWA, licensed Hydrogeologist, and Geologist, past McEllhiney speaker. (JM) motioned to assign **(1.0 credit)** in the **(general)** category. (KG&RG) seconded the motion. The motion carried all in favor.

“Environmental & Geotechnical Borings”, one (1.0) hour, November 3, 10, 11, 2017. The Instructor was Mike Piechowski, Robinson Noble, Inc.; 24 years’ experience as hydrogeologist and logging wells. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

“Well Trouble Shooting and Well Rehab”, two (2.0) hours, November 3, 10, 11, 2017. The Instructor was Mike Piechowski, Noble, Inc.; 24 years’ experience as hydrogeologist and logging wells. (JJ) motioned to assign **(1.0)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

The Never-Ending Artesian Well – A Deeper Dig”, one (1.0) hour, November 3, 10, 11, 2017. The Instructor was Mike Piechowski, Noble, Inc.; 24 years’ experience as hydrogeologist and logging wells. (KG) motioned to assign **(1.0 credit)** in the **(general)** category. (RG) seconded the motion. The motion carried all in favor.

- **“Understanding and Addressing Well Performance Issues”, five (5.0) hours, November 3, 2017.** The Instructor was Jim Bailey, Shannon and Wilson; 32 years’ experience in water supply development and ground water management. (KG) motioned to assign **(5.0 credits)** in the **(general)** category. (JM) seconded the motion. The motion carried all in favor.