Ohio Section
American Institute of Professional Geologists
Chartered 1965
February 2023 Newsletter

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AIPG Ohio Section Winter Meeting

Hydrogeology of Flowing Artesian Wells in Northwest Ohio

Presenter: **Mr. Curtis J. Coe**
Lead Hydrogeologist for the Ohio Department of Natural Resources' Ohio Observation Well Network

Date: Wednesday, February 22, 2023

Location: Smokehouse Brewing Company,
1130 Dublin Rd, Columbus, OH 43215

Schedule: Social hour begins at 5:00 pm followed by
Dinner at 6:00 and Presentation at 7:00

Event Registration Payment: https://www.aipg-ohio.org/eventdetails.php

See Page 11 for event details

Also In This Issue:

	PAGE
Message from the President, Dave Follett, *CPG-12034*	2
Ohio Section 2022 Annual Meeting Recap	4
Attention Students and Early Career Professionals!	8
Ohio Section 2023 Winter Meeting Abstract	11
Calendar of Upcoming Events	15
Letters to the Editor and Editorial Submittal Guidelines	16

Message from the President

Dave Follett, CPG- 12034

Fellow AIPG Ohio Section members,

I am thrilled to serve as your President for 2023. Before I introduce the rest of this year's Executive Committee and discuss the exciting things planned for 2023, I would like to thank Robert Andrews for serving as the Ohio Section President in 2022. He did an outstanding job leading the section last year. For those who do not already know me, I currently work as an Environmental Compliance Manger for WIN Waste Innovations where I handle environmental compliance for several solid waste facilities throughout Ohio. I earned a Bachelor of Science degree from the University of Wisconsin-Oshkosh. I became a member of AIPG in 2019 and have been active with the Ohio Section since. The rest of my biography can be found on the section's web page at www.aipg-ohio.org by selecting Officers under the AIPG Ohio Section pull down menu.

For 2023, the Members-At Large for the Section's Executive Committee will be Paul Chasco, Adam Flege, and Bridgette Petras. Both Paul Chasco and Adam Flege are new to the Executive Committee. Michael Friedhoff will serve as President-Elect for 2023 and Tim Brown will serve as Secretary. Hugh Downer will serve as Treasurer and Robert Andrews will serve as Past President. I look forward to working with all of these individuals along with the following committee chairs in 2023: Nelson Novak (Newsletter Editor), Brent Huntsman (Section Historian), Tom Jenkins (Membership Chair), and Brent Smith (Website Manager).

Looking at the schedule for 2023, the Section plans to host four regular dinner meetings this year. The Section will host the February and Annual meeting in Columbus along with plans to host meetings in other regions of the State, more to come on that. The Section's first dinner meeting will be held at Smokehouse Brewing Company in Columbus on February 22nd. More details on this meeting can be found on page 11 of this newsletter. It should be noted that over the past year, the Executive Committee previously established a committee to find a new web service provider. For 2023, the Section is anticipating a new Section website which should be up and running in the upcoming months. This new site will provide a lot more functionality for members. Final details on the site will be forth coming soon.

With the marked success of the Section's Charity Golf Scramble over the past 4 years having raised over $8,500 for our Student Chapters, the Section will once again a host charity golf scramble in Central Ohio in June. More details on the exact date and location of this year's golf scramble will be forthcoming in the coming months. Finally, 2023 will of course be a big year for the Ohio Section as we will be helping to host National's 60th Annual Conference in Covington, Kentucky, September 16th through 19th. We're excited that members of the Ohio Section will be leading two field trips during the conference. The schedule of the conference can be found at https://aipg.org/page/202360thAnniversaryConference with sponsorship and exhibit opportunities. Lots of great stuff planed for the Ohio Section in 2023.

Again, I am looking forward to serve as your President in 2023. If you have any questions or concerns about activities of the Ohio Section, do not hesitate to contact me.

Dave Follett, CPG- 12034
2023 AIPG Ohio Section President

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Ohio Section 2022 Annual Meeting Recap

Feature Presentation: Assembling Records of Environmental Change from Tree Rings

Presented By: Dr. Greg Wiles, Department of Earth Sciences at the College of Wooster

By Robert Andrews, CPG-11975

On November 19, 2022, the Ohio Section held its Annual Meeting at the Boat House Event and Conference Center at Confluence Park in Columbus, Ohio. The event was decently attended, with a nice crowd of members, spouses, and students from the College of Wooster and Wright State University. The evening began with a social hour featuring a cash bar. During this time, a member of the Executive Committee oversaw a 50/50 raffle, selling tickets to raise money for our Student Chapters.

Prior to the dinner being served, President Robert Andrews (CPG-11975), addressed the attendees with welcoming remarks and provided a summary of the Section's accomplishments during 2022. Brent Smith (CPG-11130), 2022 National Advisory Board Member, updated the audience on activities on a National level. In addition, Robert recognized the generous contributions of our meeting sponsors Alpha Analytical, ALS, Buckeye Elm Contracting, Environmental Remediation Contractors, ERIS – Environmental Risk Information Services, K3 Complete, Mannick & Smith Group, Ohio Soil Recycling, Terran Corporation, and White Oak Environmental. Being Gold Level Sponsors of the event, Joel Miller with Buckeye Elm and Brent Huntsman with Terran Corporation provided remarks to the audience about their respective companies.

Brent Smith updating audience members about activites on a National level

Dr. Wiles presenting to the audience

At the conclusion of the meal, President Andrews introduced the evening's guest speaker, Dr. Greg Wiles, from the College of Wooster, Robert's undergraduate alma mater. Dr. Wiles serves as the Ross K. Shoolroy Chair of Natural Resources in the Earth Sciences Department and co-director of the Wooster's Tree Ring Lab. The title of his presentation was Assembling Records of Environmental Change from Tree Rings.

Dr. Wiles began his presentation by summarizing the known data of global climate change. From the data collected at the Mauna Loa Observatory in Hawaii, carbon dioxide levels have been increasing since 1960. Using a graph of precipitation

data recorded in Wayne County, Ohio, Dr. Wiles made the point that annual precipitation levels in northeast Ohio have been increasing since 1988 and are expected to increase. Urban areas like Greater Cleveland are preparing for this increase by installing concrete tunnels under ground to collect and store storm water during heavy rain events so as to delay its release back into the environment and lessen the effects of flooding.

According to Dr. Wiles, the analysis of tree rings is one of the tools scientists have to provide proxy records of climate change. Other tools available include the analysis of ice cores, lake sediments, and coral reefs. Tree rings can indicate seasons of wind, insect outbreak, drought, forest fires, and lack of light for tree growth. Wooster's Tree Ring Lab collects and analyzes wood samples from historical wooden structures, archeological sites, soil cores, and retreating glaciers as well as living trees.

From the Columbia Glacier in Alaska, Dr. Wiles and his team of students have collected numerous samples from this glacier as it retreats. Their last round of samples were collected this past summer. So far their collected data indicates that while it took a little over 800 years for some of the ice from this glacier to advance about 12 miles, it has taken only 32 years for it to retreat over the same distance and it is still retreating.

Dr. Wiles receiving the plaque with the plaque bearing the Ohio State Fossil,

Dr. Wiles concluded his presentation by talking about how tree rings are being used to reconstruct the historical water levels of Lake Erie.

After questions from the audience, President Andrews presented Dr. Wiles with a plaque bearing the Ohio State Fossil, the Isotelus Maximus, as a token of appreciation for speaking.

President Andrews then recognized the following for significant membership milestones for 2022:

Recognition for 54 Years of Membership
William Shafer (CPG Emeritus)

Recognition for 45 Years of Membership
Andrew Diefendorf (CPG Emeritus), Ann Harris (CPG), and Stuart Schwotzer (CPG)

Recognition for 40 Years of Membership
Samuel Stowe (CPG)

Recognition for 35 Years of Membership
Michael Mannon (CPG) and Gary Schaefer (CPG)

Recognition for 30 Years of Membership
Thomas Berg (CPG Emeritus), David Lockerd CPG, and Joseph Sontchi CPG

Recognition for 25 Years of Membership
William Barber (CPG Emeritus), Allen Comeskey (CPG), Eva Dupuis-Nouille (CPG), David Kulikowski (CPG), Jerome Miller (CPG Emeritus), Susan Riddle (CPG), Troy Schultz (CPG), and Thomas Shalala (CPG)

Recognition for 20 Years of Membership
William Beach (CPG), Scott Blanchard (CPG), James Bugh (CPG Emeritus), Thomas Gillespie (CPG), Bruce Savage (CPG), Martin Schmidt (CPG), Brian Shadbolt (CPG), and George Stuckey (CPG Emeritus),

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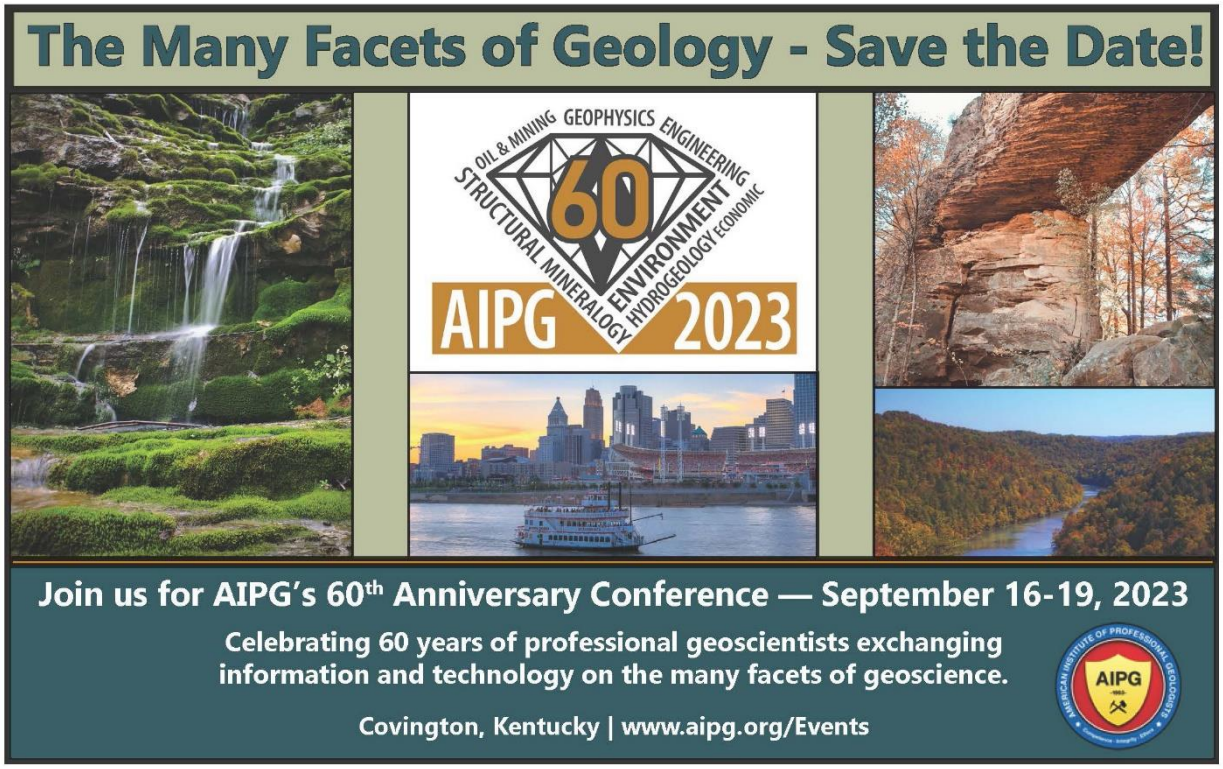

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Attention students and early career professionals!

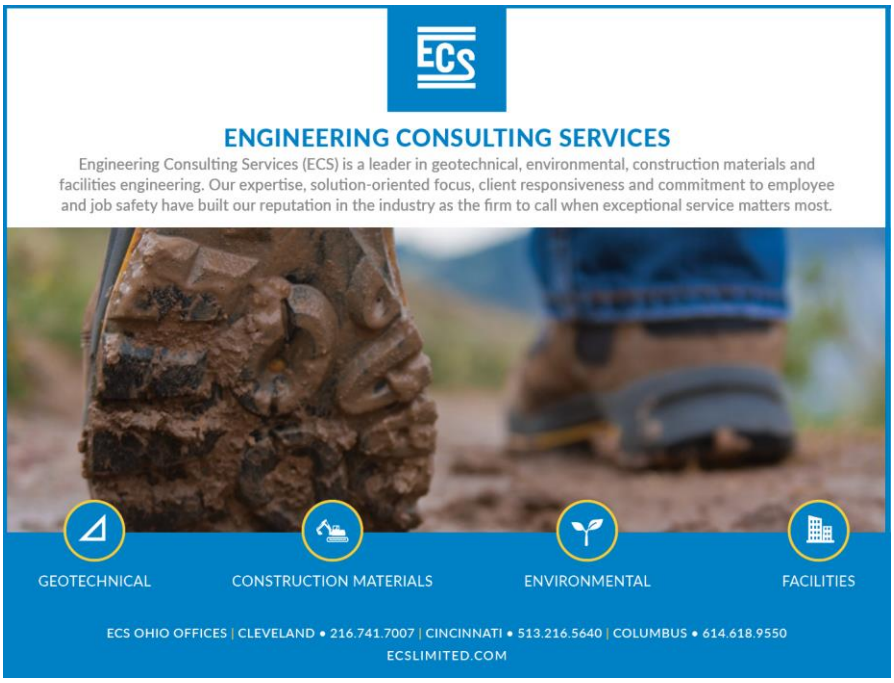
AIPG is hosting a webinar series for you to successfully transition from the classroom into the workforce and as an early career professional (ECP). During this series, you'll hear from professional geologists who will share their knowledge and experiences as employers, plus speak about their own career paths. You'll learn about techniques that can be used to stand out as a candidate, how to prepare a CV and strategies for professional development. AIPG is offering this series of webinars with no fee.

The first of the series is Licensures and Certifications, about professional licensing and certifications that can be critical in career advancement. The presenter will be our AIPG National President, Dawn Garcia, and the moderator will be Brigitte Petras, the AIPG National ECP representative and fellow Ohio Section Member-at-Large.

February 22 at 3 PM MST. Stay tuned for an email with the meeting link from AIPG National.

About the webinar leaders:

Dawn Garcia is an AIPG Certified Professional Geologist a licensed professional geologist (Arizona, Alaska and California) with over 30 years of experience in environmental compliance and hydrologic projects. She has an extensive background as a technical lead and a group leader. She currently works as a Senior Associate, Hydrogeology, for Stantec and is based in Arizona. She served as the Geologist Member of the Arizona Board of Technical Registration by appointment of the Governor. She is the 2023 national president of AIPG.



Brigitte Petras, ECP-0539, is a certified Geologist-in-Training (Pennsylvania), Ohio section Member-at-Large, and the AIPG National ECP Representative. Brigitte completed her Bachelor of Science in geology at Youngstown State University (YSU) in 2018, where she was a co-founder and president of YSU's AIPG Student Chapter. She later received her master's degree in geology at West Virginia University in 2021. She is currently a geologist in the Energy Division at Battelle Memorial Institute in Columbus, Ohio working primarily on carbon storage projects.

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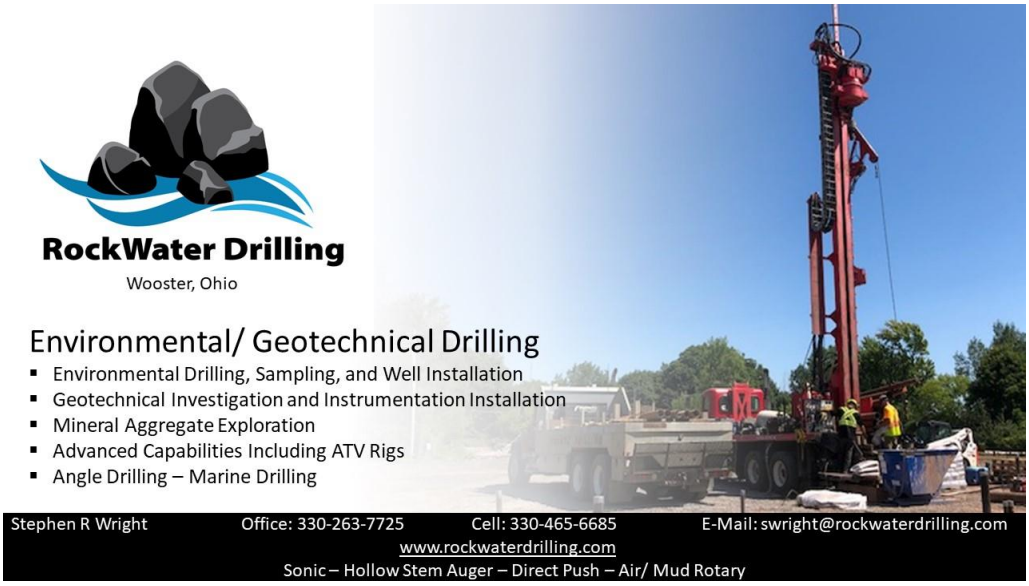
Ohio Section 2023 Winter Meeting

Feature Presentation: Hydrogeology of Flowing Artesian Wells in Northwest Ohio

Presented By: Mr. Curtis J. Coe

The Ohio Section of AIPG is pleased to host Mr. Curtis J. Coe at the Section's Winter Meeting presentation, which will take place Wednesday, February 22, 2023 at Smokehouse Brewing Company, in Columbus. Mr. Curtis Coe will be presenting: Hydrogeology of Flowing Artesian Wells in Northwest Ohio. This event is sponsored by Alpha Analytical, ALS Environmental, Buckeye Elm Contracting, Environmental Remediation Contractors, Environmental Risk Information Services, Industrial Environmental, K3 Complete, and Ohio Soil Recycling.

The event begins at 5:00 pm with social hour, followed by dinner at 6:00, and the feature presentation at 7:00. The cost is $25 for members and guests or $5 for students. Please preregister and submit payment for the event via the AIPG Ohio Section website https://www.aipg-ohio.org/payment.php. Registration closes on at end of business on February 20, 2023.



Hydrogeology of Flowing Artesian Wells in Northwest Ohio

Mr. Curtis J. Coe

ABSTRACT

Historically, a line of flowing artesian wells occurs in northwestern Ohio. The flowing wells cover a four to five-mile wide band that extends from southwestern Defiance County through southeastern Williams County and into northwestern Fulton County. In recent years, the Ohio Department of Health (ODH), Bureau of Environmental Health and Radiation Protection has been increasingly concerned with the installation and upkeep of private water system wells in this area. This investigation was set up to map and study the hydrogeologic occurrence and movement of ground water in the artesian aquifer. Bedrock under the site consists of Antrim and Coldwater shales. These shales are impermeable and have a low porosity. They generally produce less than five gallons per minute (gpm) to drilled wells. As a result, they form a lower confining unit in the study area. The bedrock is covered by a complex mixture of unconsolidated glacial and lacustrine (lake) sediments. The sand and gravel outwash were deposited over the shale bedrock. Impermeable glacial and lakebed clay deposits that form an upper confining layer covers the outwash. The sand and gravel outwash deposits thicken into the Michigan Basin. The sand and gravel outwash deposits pinch out in the southwestern parts of the study area where the bedrock rises along the western limb of the Cincinnati Arch. As the ground water flows from the northwest to the southeast under the lake bottom sediments the specific capacity in individual wells declines from 17.9 to 5.02 gpm/foot. The ground water seepage velocity also decreases while the force potential of the ground water increases. This causes the pressure of the water to build up. Thus, when the potential energy builds high enough to overcome the force of gravity at the land surface, the wells will flow as observed in Defiance, Fulton, and Williams Counties. In some cases, it is possible that the ground-water stagnation point is reached where the sand and gravel pinch out against the bedrock. In Fulton County, two ground water recharge areas exist. The western recharge area is associated with sand and gravel deposits interbedded in the Williams End Moraine and Complex Aquifer Systems. The ground water recharge to the east of the flowing well zone is associated with the Oak Openings Beach Ridge Aquifer sand deposits. As a result, the ground-water flow vectors in the deeper sand and gravel aquifer converge under pressure. Thus, the trapped ground water is forced to discharge naturally under pressure to Bean Creek. Also, the value of the hydraulic potential is equal and opposite and the ground water has nowhere to go and thus forming a stagnation point in the subsurface. Therefore, when wells are drilled into the underlying sand and gravel aquifer, the force potential of the ground water causes the water to rise in the well under artesian pressure until the potential energy of the water in the aquifer matches the kinetic energy of the water rising in the well. In cases where the force potential of the water is great enough, the ground water will rise above the land surface resulting in flowing wells.

Bio: Mr. Curtis J. Coe is the lead hydrogeologist for the Ohio Department of Natural Resources' Ohio Observation Well Network. He received a Bachelor of Science Degree in Geology from The Ohio State University in 1975 and received his Master of Science Degree in Geology from Florida State University in 1978. Curtis is an AIPG Certified Geologist and registered professional geologist in Kentucky. Curtis joined the ODNR Geological Survey – Ground Water Group as a hydrogeologist in 2010. He conducts ground-water supply conflict investigations for high-yielding irrigation wells and is involved with: ground-water potentiometric surface mapping for both the bedrock and glacial aquifers throughout Ohio; GIS investigations for ground-water supply exploration and development; as well as providing technical support to the public, government, consultants, and industry.

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Calendar of Upcoming Events	
February 22, 2023	AIPG Ohio Section Winter Meeting at Smokehouse Brewing Company in Columbus Speaker: Mr. Curtis J. Coe https://www.aipg-ohio.org/eventdetails.php
April 20, 2023	AIPG Ohio Section Spring Meeting Speaker: To be determined.
June 2023	5th Annual AIPG Ohio Section Charity Golf Scramble (exact date and location TBD)
September 16-19, 2023	AIPG National Meeting - Covington, Kentucky
September 20, 2023	AIPG Ohio Section 2023 Fall Meeting Speaker: To be determined
November 16, 2023	AIPG Ohio Section 2023 Annual Meeting Speaker: To be determined.

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Letters to the Editor and Editorial Submittal Guidelines

The Ohio Section welcomes and encourages membership discourse via the Section newsletter on relevant geopolitical and geological topics, in accordance with our chartered purpose. Contributing authors are requested to abide by the following guidelines to ensure civility and professionalism.

1. Scientific interpretations should include accurate and effective references.

2. Opinion pieces should be presented with reasoning. Fellow members may choose to comment or challenge a submittal with their own contribution.

3. Authors must abide by the AIPG Code of Ethics. Any author who violates this code will not be published. Authors must be respectful to fellow members, all political parties, officials and candidates.

4. Letters to the Editor should be under one page in 12 pt. Arial font.

5. Member authors should provide their name and certification number.

6. The Ohio Section also welcomes and will consider relevant articles from non-members, provided contributions abide by the above stated guidelines.

Contributions to the Ohio Section newsletter do not necessarily reflect the opinion of the Ohio Section or the editor. We reserve the right to edit for clarity and space considerations.
Please send submittals to the editor at nnovak@eagoninc.com.

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