

GEONews

Newsletter of the Association of Environmental & Engineering Geologists, Carolinas Chapter
2009, 2011, 2013, 2016, and 2017 AEG Chapter of the Year

FALL 2017

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You Don't Want to Miss Vapor Intrusion II:
The Conference7

40th Anniversary Dinner Meeting in October
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Congrats to Wake Tech18



SAVE THE DATE

October 5-6, 2017 Vapor Intrusion: The Conference II, Charlotte, NC

October 21, 2017 Emerald Hollow Mine, Hiddenite, NC

October 26, 2017 40th Anniversary Meeting Greensboro, NC



GEONEWS FALL 2017
Issue Date: December 21, 2016
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Thanks to our Sponsors!

GeoNews is a publication of the Carolinas Chapter of AEG. There are four issues per year, with deadlines and issue publication dates listed below. We publish news of the profession, announcements, student member news, technical articles, and job openings.

Deadlines for submittal to AEG Carolinas GeoNews

(can be flexible depending on events)

Spring – deadline March 1, issue date March 21
 Summer – deadline June 1, issue date June 21
 Fall – deadline September 1, issue date Sept 21
 Winter – deadline December 1, issue date December 21

Deadlines for submittal for the National AEG News:

March issue – January 15
 June issue – April 15
 September issue – July 15
 December issue – October 15

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AEG Carolinas Chapter Website www.aegcarolinas.org

AEG National Website www.aegweb.org

Cover: Soil gas sampling equipment, Bronson Drilling from Google Images

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MESSAGE FROM THE CHAIR

By Madeline German, P.G., Carolinas Chapter Chair

Greetings Carolinas Chapter!

AEG Carolinas has continued rocking our 40th anniversary year. We had our 40th Anniversary Social on Saturday, August 12th in Charlotte hosted by **Ms. Rebecca Deal**. It was a pig pick'n with all the fixins, some craft beer, music, corn hole and rock ID challenge. It was a wonderful evening with all the members who could make it to Charlotte to attend.

On Friday, September 22nd AEG and ASCE members packed Habitat Brewing in Asheville, NC for our fall meeting. There were over 30 students representing, UNC Charlotte, East Tennessee State University, Clemson, Western Carolina and Appalachian State University. Plus we had a good mix of consultants, professionals and regulators representing both the geologist and engineer viewpoints. Jody Kuhne, P.E., P.G. from the NCDOT presented "Interstate 40, Harmon Den: A Case study in Recurring Rockslide Mitigation, Rock Slope Redesign and Construction Details"; which discussed the site at mile marker 7 on I-40 that had failed twice by 2013. The slope exhibits imperfect planar failure conditions and required design and construction details to deal with future rockfall, even though the primary threat was removed. **Geologic Exploration** and **Enviro-Equipment** set up tables as exhibitors and **Enviro-Equipment** provided one drink ticket per paid registration.

Also at this meeting a 50/50 raffle was held to raise money for the Carolinas Scholarship fund. \$150 was raised at the meeting because the raffle winner generously donated his winnings to the scholarship fund. Several Foundation members present matched the funds raised at the meeting, for a total of \$400 contributed to the Carolinas Scholarship fund.

At the 2018 National Meeting held in Colorado Springs September 12-16, 2017 the Carolinas Chapter was presented with the Chapter of the Year 2017 award that we shared with the San Francisco Chapter. The Carolinas membership is fantastic, congratulations to you all for your efforts over the past year. Additionally, the newest Student Chapter: Wake Tech Community College won the Best Student Chapter Award. Congratulations to the hard working students at Wake Tech.

On deck we have a trip to the **Emerald Hollow Mine in Hiddenite, North Carolina** scheduled for **Saturday, October 21, 2017 from 9:00am to 2:00pm**. The Emerald Hollow Mine in Hiddenite, NC, is the only emerald mine in the United States open to the public for prospecting. The mine has been in business since 1986, there are no caves or tunnels at the mine; all mining is done vertically by digging down into the ground or using sluice buckets filled with dirt. In addition to the mine, the property has

two streams that can be panned, sluicing stations, and a lapidary shop, where gemstones are cleaned, cut on site, and made into jewelry. Not only will we be trying to find our own gemstones, but we will be involved in an educational program which is a 3 hour session that includes an earth science lesson, creeking (which is a crowd favorite), sluicing, and surface collecting. Mike Watkins, who will be directing the program, is a geologist and gemologist who is the Lapidary Director at Emerald Hollow Mine, and he will be hosting the earth science lesson of the program. Both NC and SC Continuing Education Credits are to be determined. Sign up on the AEG Carolinas Website, <http://aegcarolinas.org>.

Vapor Intrusion: The Conference II is coming to Charlotte, NC October 5th and 6th. The conference program includes speakers from a variety of backgrounds. Regulators, environmental consultants, scientists, researchers, and attorneys from across the country will present the latest technical, regulatory and legal perspectives on VI. The aim of this program is to provide broad coverage of the current state of scientific understanding, state and national regulatory frameworks, and the direction of evolving science and policy efforts to address vapor intrusion. Due to meeting hall size constraints, please register early to ensure you can attend. The 2014 VI Conference held in Raleigh SOLD OUT! Don't be left out of this opportunity to hear from the greatest experts in the field and earn continuing education credits for your license.

Our final dinner meeting of our 2017 Anniversary year will be held in Greensboro, NC on Thursday October 22nd. Cyrus Parker with NCDOT will be presenting, so mark your calendars for this special event.

Thanks to those of you who participated in our elections. Your board for the 17-18 year will be Maddie German (Chair); Susan Avritt (Vice-Chair), Walt Plekan (Treasurer), Jen Thomas (Secretary). We are privileged to

(Continued on page 4)



(Continued from page 3)

serve the membership. Please contact us with ideas, and suggestions to help us on our ongoing quest to make the Carolinas even better.

Remember, starting July 1, 2017 North Carolina licensed geologists will be required to earn continuing education credits to maintain their license. AEG presents opportunities at quarterly dinner meetings, classes, conferences and field trips to earn some of these credits. Please be aware of this update to licensure rules and maintain a record of your hours to protect yourself in case of audit. Note the Vapor Intrusion Conference, Emerald Hollow Mine field trip and all dinner meetings earn you hours towards your license.

As AEG National progresses through the items relayed in the Needs Assessment, they are establishing small focus groups, with limited time commitments, to concentrate on issues that will be disbanded once their task is completed. There are currently four areas of focus:

- 1) Increase environmental presence within AEG,
- 2) Appeal to increase student members,
- 3) Disaster planning/response committee, and
- 4) Form new chapters and reactivate old chapters.

If you are interested in becoming more involved with the AEG leadership, the focus groups, or AEG in general, please contact me or other members of the Carolinas Board. We are in need of several people to help fill supporting chapter roles. Professionals, regulators, teachers and students are all encouraged and welcome. I am looking forward to discussing potential volunteer opportunities with our fantastic membership.

If you are not already, please follow AEG on Facebook, Twitter and Linked In.

As always, your board and I look forward to hearing from each of you regarding your suggestions and/or concerns related to our Chapter. We are here to serve the needs of our membership, so your feedback is vital and welcome.

Cheers,



Maddie German, PG
maddie@smithgardnerinc.com
AEG Carolinas Chapter Chair



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AEG CAROLINAS CHAPTER 2Q TREASURER'S REPORT

By Eric Cross, Outgoing Chapter Treasurer



AEG Carolinas Section Treasurer's Quarterly Report

April 1 - June 30, 2017

BALANCE As Of April 1, 2017

Checking Account	\$3,809.06
Savings Account	\$15,703.70
	<u>\$19,512.76</u>

INCOME

Meetings

April field trip	\$1,276.07
Museum field trip	\$935.00
April meeting	\$360.00
Summer meeting	\$290.00
January meeting	\$896.18
Winter field trip	\$45.00

Sponsors

Sponsorship payments	\$1,900.00
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Interest

Interest from savings	<u>\$1.96</u>
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SUBTOTAL - INCOME

\$5,704.21

EXPENSES

Banking Fees

Card reader fees	\$7.27
Paypal fees	\$113.80

Meeting Expenses

April field trip	\$491.80
April Raleigh meeting	\$2,146.78

Additional Expenses

Donation to AEG Carolinas Scholarship fund	\$1,000.00
AEG National Board Meeting reimbursement	\$464.68
Jahns Lecturer expenses	\$562.73

SUBTOTAL - EXPENSES

\$4,787.06

BALANCE As Of June 30, 2017

Checking Account	\$4,724.25
Savings Account	\$15,705.66

TOTAL

\$20,429.91

Editor's Note

By Jennifer Thomas

Cortney Cameron was set to take over my duties as newsletter editor. However, she has accepted a position in Florida. I want to congratulate her and expect that she will bring her enthusiasm to her new job and the local AEG chapter.

It looks like Josh Hanks of Dunklee & Dunham will be my successor. Josh puts together the calendar of events every issue so everyone can know about AEG and other professional events in our area.

Rick Kolb is leading the planning for our Vapor Intrusion Conference. I am helping put it on along with Walt Plekan, Rohit Warriar, Paul Konnik, Rebecca Deal, Grady Shields, and Adam Phillips. Brian Smith is now in Nashville but is still helping out and will come visit us in Charlotte for the conference. We are also getting some out of town help from Angie Frizzell.

I'm seeing demand from my clients for vapor intrusion services and am looking forward to learning more about the topic. I'm including highlights of some of the speakers and registration forms.



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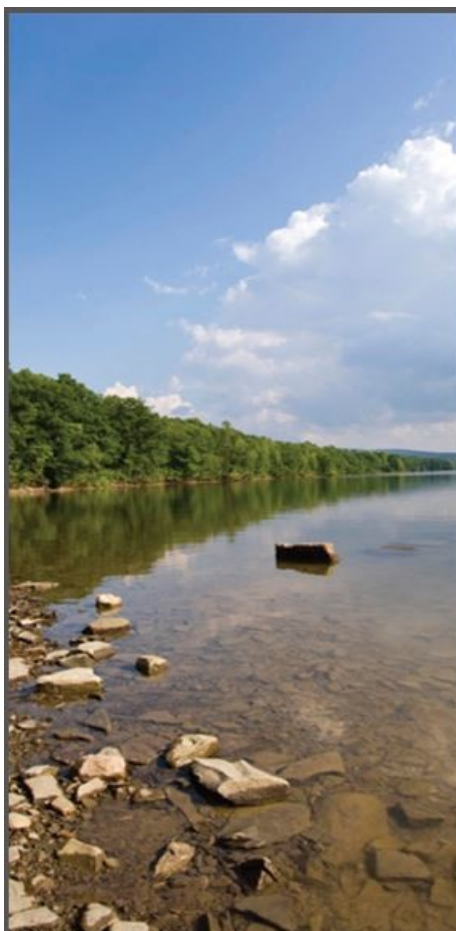
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Coming in Two Weeks!

Vapor Intrusion: The Conference II Legal, Technical and Regulatory Perspectives

It's only two weeks until Vapor Intrusion: The Conference II begins. It will be held at the Hilton University Charlotte Place on October 5 and 6, 2017. We have a list of 23 presenters from all over the U.S., many of whom are known nationally known in the vapor intrusion field. Registration forms are on the AEG Carolinas website (link below).

Our keynote speakers will be Henry Schuver of the U.S. EPA and Rod Thompson of August Mack Environmental (both presented in 2014), and Blayne Hartman of Hartman Environmental Geoscience. Recently we added **Matt Lahvis of Shell Projects and Technology in Houston**. He will speak on his recent research on screening distances for assessing VI risk from total petroleum hydrocarbons.

The planners have pre-applied for continuing education credits. Twelve hours of CE credits will be available for geologists registered in North Carolina (**now required for licensees**), South Carolina and Alabama. We have received approval for CLE credits for attorneys in South Carolina, and expect similar approval for attorneys in North Carolina, Georgia, Alabama, and Tennessee.

Over 200 environmental scientists, attorneys, developers, regulators, and researchers attended the VI conference in Raleigh in 2014 and we anticipate a similar if not larger audience for this year's conference. We'll see you there!!

Visit us at www.aegcarolinas.org/vapor-intrusion-the-conference-ii-oct-5-6-2017 for complete details and be sure to **register today!**

Vapor Intrusion: The Conference II

Legal, Technical and Regulatory Perspectives

October 5-6, 2017; Hilton University Place, Charlotte, North Carolina



AEG Carolinas Chapter

Conference cost:

- General registration (non-member)..... ☐ \$329
 AEG member ☐ \$279
 New AEG member (\$50 discount with membership)..... ☐ \$229
 Government employee (ID required at check-in) ☐ \$159
 Booth/exhibit table (registration also required) Available; information to follow
 Total for all checked boxes \$_____

Registration includes continental breakfasts, lunches and breaks on both days, and an evening social with light appetizers on Thursday. Cancellation policy: fully refundable up to one week prior to the event, less an administrative fee of \$25.

Registration information:

Attendee Name _____
 Title/Position _____
 Company/Organization _____
 Address _____
 City/State/Zip _____
 Phone _____
 Email _____

Payment method:

Check (payable to AEG) _____

To pre-register:

Mail: Attn: Walt Plekan,
 1600 Perimeter Park Drive,
 Suite 400
 Morrisville, North Carolina 27560
 Phone: (919) 917-5724
 Email: Send scanned form to
 Walt.Plekan@aecom.com

Hotel Information:

The conference will be held at the Hilton University Place at 8629 JM Keynes Drive in Charlotte, NC (<http://www3.hilton.com/en/hotels/north-carolina/hilton-charlotte-university-place-CLTHUHF/index.html>). The hotel is 15 minutes from the Charlotte Douglas International Airport and easily accessible via major Interstates 77 & 85 & 485. A block of rooms has been reserved at a discounted rate of \$139 per night.



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ALL ABOUT VAPOR INTRUSION II: THE CONFERENCE**Blayne Hartman to Give Keynote and Additional Presentation**

Keynote Abstract: Vapor intrusion has continued to be the environmental box-office blockbuster in 2017. And changes in the policies continue at a rapid pace. EPA-OSWER and EPA-OUST both released new guidance in the summer of 2015; individual EPA Regions and States have been releasing new guidances/policies since then, especially on sites with trichloroethylene (TCE) contamination. There is currently huge concern over short-term exposures of TCE to developing fetuses via the pregnant mother. ITRC has released a technical manual on petroleum vapor intrusion. The Johnson-Ettinger model has been given the boot, replaced by the ultra-conservative vapor intrusion screening level calculator (VISL).

Keeping up with all the endless changes is enough to drive a practitioner mad. But how much of these developments are “real”, meaning based upon sound science? Issues falling into this category include:

What issues in the EPA OSWER & OUST guidances are questionable?

Is the EPA’s default soil gas attenuation factor of 0.03 realistic?

Are short term exposures to TCE really harmful to developing fetuses?

And if yes, over what time period? Minutes? Hours? Days? Weeks?

Urgent response to soil gas concentrations. Really?

Are sub-slab data really useful for predicting indoor air concentrations?

Do spatial and temporal variations exist in indoor air?

And finally, the ultimate question: is vapor intrusion a threat to human health and safety?

Real news or fake news? Let the discussion begin.

Continuous Monitoring of VOCs Abstract: Due to increased attention on the vapor intrusion pathway, there is an increase in pre-emptive source remediation and building mitigation systems. A question routinely asked by regulators and consultants is how to determine the effectiveness of the system. Traditional approaches are to measure the target compound in indoor air or in the soil gas. But how many sampling events are necessary? And at what time-intervals? And for how long a period of time? Typically only a few contaminant concentration measurements are made and then the effectiveness of the system is based upon a vacuum or pressure or air flow measurement. This approach does not enable spatial or temporal variations in contaminant concentrations to be recognized.

Continuous monitoring enables the collection of a large volume of contaminant concentration data over time and allows instant recognition of concentration variations. The continuous monitoring system consists of a gas chromatograph equipped with both a photoionization detector (PID) and an electron capture detector (ECD) and an automated gas sampling valve allowing vapor inputs from 16 different locations. The system is integrated with telemetry, geographical information systems and geospatial mapping algorithms which automatically generates contour images of contaminant concentrations, moving mean concentrations, and risk exceedance alerts through a Cloud-based visualization and response platform. This system will be demonstrated.

Data from a number of sites prior to system start-up and after system start-up will be presented. The data include a site undergoing remediation using thermal resistance heating, a site with a soil vapor extraction remediation system and a residential site with a sub-slab depressurization system. Lessons learned from these data on temporal and spatial variability of indoor air concentrations and on time periods necessary to monitor contaminant concentrations will be discussed.

Chad D. Northington, PE

Southeast District Technical Manager



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ALL ABOUT VAPOR INTRUSION II: THE CONFERENCE

About Blayne Hartman



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sion to County and State regulatory agencies in over 30 states, many of the EPA regions, the DOD, ASTSWMO, and numerous stakeholder groups and consultants. He was an instructor in the EPA-OUST training, ITRC vapor intrusion training, API petroleum vapor intrusion training and ASTM vapor intrusion courses and has given vapor intrusion training in England, Australia and Brazil. He has written numerous articles on the collection, analysis, and interpretation of soil vapor data, including chapters in five textbooks. He has participated in technical work groups on soil vapor methods for EPA, CA-EPA, CA Regional Water Boards, County of San Diego, ITRC and ASTM, and has reviewed/edited instructional manuals for the EPA OUST and Superfund groups. Over the past four years, Dr. Hartman has been a contributing author/editor to vapor intrusion and soil gas guidance documents to federal EPA, CA-EPA, San Diego County, ITRC, DOD, API, and more than 25 individual State documents.

He has been involved with six research studies with EPA-ORD on soil gas methods, soil gas temporal variations and indoor air variations in 2012, 2011, 2010, 2009, 2008, & 2007.

Blayne Hartman received his Ph.D. in geochemistry from the University of Southern California in 1983. He worked for Unocal (Union Oil Company) for 4 years specializing in surface geochemical methods for petroleum exploration. In 1988 he started his own company (TEG) initially providing geochemical exploration services to the oil industry and in 1989 entered the environmental market by offering certified mobile environmental laboratory services in California. In 1998, he co-founded & operated H&P Mobile GeoChemistry, a partnership offering on-site laboratory analysis, direct push environmental sampling, and soil vapor surveys. He sold H&P in 2008 and is currently an independent consultant offering vapor intrusion, soil gas and analytical support. Dr. Hartman has over 30 years of soil gas experience and 19 years of vapor intrusion experience.

Dr. Hartman is a nationally recognized expert on soil vapor sampling, soil vapor analysis, and vapor intrusion. He has provided training on soil gas methods and vapor intru-

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ALL ABOUT VAPOR INTRUSION II: THE CONFERENCE

Matt Lahvis

Abstract: Little information is known about the occurrence, fate, and transport of specific constituents of potential concern (COPCs) for petroleum vapor intrusion (PVI), namely: lead scavengers (1,2-dichloroethane - 1,2-DCA and ethylene dibromide - EDB), hydrocarbon mixtures (total petroleum hydrocarbons - TPH, TPH fractions), and common TPH fraction indicator compounds (n-hexane and naphthalene). The uncertainty affects the ability to confidently screen sites using the vertical screening distance method recently recommended by the Interstate Technology and Regulatory Council (ITRC) and US Environmental Protection Agency (US EPA). This study helps address this gap through a statistical analysis of empirical soil-gas concentration data collected at numerous petroleum underground storage tank (UST) sites, mainly located in the US. The study focuses on vapor migration associated with light non-aqueous phase liquid (LNAPL) sources, the primary issue for PVI.

1-2 DCA and EDB, although relatively frequently detected in groundwater above risk-based screening levels (RBSLs) at petroleum underground storage tank (UST) sites, are not a common occurrence in soil gas. In part, the limited occurrence is related to method detection and reporting levels in soil gas that exceed soil-gas RBSLs. Initial estimates of vertical screening distances for 1-2 DCA and EDB are less than the 15-ft screening distance recommended for LNAPL sources. The vertical screening distances derived for various TPH fractions range between 0 and 7 ft depending largely on the soil-gas RBSL used in the analysis, which can vary by over 4 orders of magnitude. Vertical screening distances for naphthalene are generally < 3 ft, unless a very conservative soil-gas RBSL ($2.45 \mu\text{g}/\text{m}^3$) is invoked. Vertical screening distances for n-hexane are approximately 15 ft and vary little over a one-order of magnitude range in soil-gas RBSLs. Vertical screening distances for bulk TPH generally exceed 15 ft. PVI risk assessments involving bulk TPH are not recommended, however, because of challenges in quantifying vapor concentrations and soil-gas RBSLs for fuel mixtures with variable source composition, fate and transport in the unsaturated zone, and toxicity. Overall, the findings help validate the 15-ft screening distance recommended by ITRC and US EPA for application at petroleum sites with LNAPL sources.

About: Matt holds a Bachelor's Degree in Geology from Bucknell University, a Master's Degree in Engineering Geology from Drexel University, and a PhD in Civil Engineering from Drexel University. His research focuses on quantifying fate and transport of petroleum compounds in the unsaturated zone at gasoline-spill sites. Matt joined the New Jersey District office of the U.S. Geological Survey in 1989 and served as an adjunct professor in the Civil Engineering Department at Drexel University from 1995-1999. In 2000, Matt joined Shell Projects and Technology where he serves as the principal lead for the Soil and Groundwater R&D Program. Matt has published extensively on vapor transport in the unsaturated zone and has been serving as an Associate Editor for the Ground Water Monitoring and Remediation Journal since 2005. In 2014, Matt helped co-author the Interstate Technology and Regulatory Guidance on Petroleum Vapor Intrusion and now serves as a classroom trainer.



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ALL ABOUT VAPOR INTRUSION II: THE CONFERENCE**TCE Panel Discussion**

The TCE panel will consist of four perspectives from different speakers on TCE. Start with a better understanding of what the TCE screening level numbers really mean. This is not toxicology or even hard science. It is a more a simple understanding of the Reference Concentration on which screening levels are built and the “process” used to derive the health based reference concentration. EPA allows flexibility in how one applies this number, similar to how cancer numbers can be applied with a range. Rob Thompson, Regulatory Toxicologist and Risk Assessor with August Mack Environmental will present the keynote address on TCE.

We’ll provide context on the use of the flexibility that exists and assist with understanding at what levels one should be concerned about developmental effects. In other words, how do we get from an understanding of the EPA flexibility in the Reference Concentration to actual boots on the ground thinking in the field? Ed Pfau will provide an understanding of the range, levels at which one should be concerned about developmental effects and examples of exposure levels and how to make decisions in the field based on those levels. Ed was a former regulator for Ohio EPA, speaks very practical language and is an-

other nationally recognized expert on TCE. He has spoken at many different conferences all across the country on this topic.

It is important to understand the liability position your client may be in when there is TCE exposure; hear examples of liability cases, explore potential strategies to protect the public and still minimize the liability risk to your client, and get a sense of where USEPA and the legal field is going with TCE. David Gillay has been principal in a team of people studying TCE for the last five years. He also is a national speaker on the topic, well received by his audience and a very practical individual.

Finally, you will need to provide confidence in how field decisions are made. This will come from a stronger understanding of the “fetal heart malformations and developmental risk.” Laura Trozollo has been studying TCE for many years and has great insight into how ATSDR is regulating TCE and also an in-depth understanding of how confident we can be using some flexibility in regulation. She gave a presentation in San Diego this past year on this topic that was very informative and reassuring.



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Dinner Meeting

The Carolinas Chapter of the Association of Environmental & Engineering Geologists

Guest Speaker: Cyrus Parker, LG, PE, CPM
Geoenvironmental Supervisor
North Carolina Department of
Transportation

Presentation: Greenville's Tenth Street
Connector and the Environmental
Challenges of an Urban
Transportation Project



Dinner and Talk: 5:30-9:00 PM on Thursday, October 26, 2017
The Public
433 Spring Garden Street
Greensboro, North Carolina 27401

Meeting Details

Place: The Public
433 Spring Garden Street, Greensboro, North Carolina 27401

Date: Thursday, October 26, 2017

Time: 5:30 PM socializing begins, 7:00 buffet dinner, 8:00 Cyrus' talk

Cost: AEG members \$30, non-members \$35, students free with college ID

Reservations: Please make reservations with Paul Weaver by 6:00 PM on Thursday, October 19, 2014
email: pweaver@espassociates.com

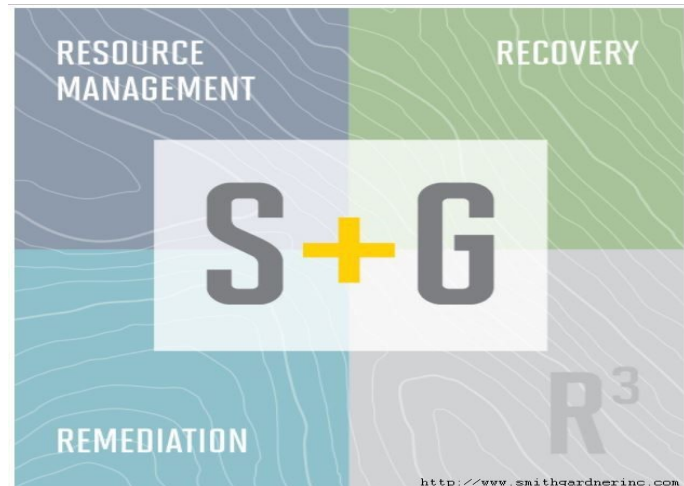
Cyrus Parker's Resume

Mr. Parker is the GeoEnvironmental Supervisor for the North Carolina Department of Transportation. He has over 20 years of experience with geoenvironmental engineering as both a consultant and with the Department of Transportation. Mr. Parker has a bachelor's degree in Geology from North Carolina State University and licenses to practice Geology and Engineering in the state of North Carolina. He is a member of AEG, chair of AASHTO's Hazardous Materials Work Group, and chair of the Transportation Research Board's Standing Committee on Resource Conservation and Recovery.

Talk Synopsis

The City of Greenville, North Carolina, had the need for a more efficient connection between the western side of the city and downtown. Their transportation plan called for extending Stantonsburg Road to Tenth Street while creating a grade separation over the CSX Railroad. This urban project crossed many environmental sites of concern with the potential for contaminated soil and ground water. This presentation will discuss the planning, design, and construction of this project and the challenges presented by a variety of soil and ground water contamination sources, a high ground water table, and large diameter storm drainage pipes needed for this new "Gate Way" to Greenville.

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Message to Past Chairs

By Madeline German, Chair

Greetings Past Chairs!

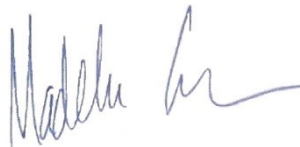
I hope this note finds you well. Thank you for your service to AEG and helping establish a wonderful, solid chapter that continues to excel both locally and at the national level. I received emails from other Carolinas past chairs.

This year marks 40 years the Carolinas has existed as a section/chapter in AEG. Related to this information I am contacting you for two reasons.

1. To ask if you will write a couple paragraphs about your time as chair. These will be included in GeoNews. Anything you would like to submit will be greatly appreciated. These can be in any style you like, from the story of one particular event, conference, or field trip; to a summary of your entire tenure or anything you would like to share from that time.
1. 2. SAVE THE DATE!!! We are planning a special 40th Dinner Meeting for Greensboro this year. Some of you are aware our very first meeting was held in Greensboro 40 years ago. I would like to get as many past chairs as possible to be present and take a photo. The date has been set for October 26. (See page 13 for details).

I have the utmost respect and gratitude for you all, for your commitment to AEG, the Carolinas Membership, and the profession.

Cheers,



Maddie German, PG
madeline@smithgardnerinc.com
AEG Carolinas Chapter Chair



My (Limited) Term of Office at AEG Carolinas (or How I Spent My Summer Vacation)

By Doug Canavella

I was involved with AEG through some of my geo cohorts in Greensboro, and I believe I was Treasurer for several years (time flies when you're having a good time). I think the event that put me into being the Chair of the org was that the then current Chair was moving and so, as the old story goes, I got up to go to the men's room, and came back as Chair.

I served out the rest of the term, and then did not continue, as I think Tami Idol did.

I enjoyed the time spent with AEG, I think we were running at a relatively energized level at the time, much due to Gary Rogers being willing to push us along. But it was a satisfying position and I am always glad to hear and see the org continue to thrive and grow.

Doug Canavella



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September Meeting Well Attended

AEG and ASCE members filled Habitat Brewing in Asheville September 22 for the joint meeting featuring Jody Kuhne, PG, PE. Mr. Kuhne presented Interstate 40, Harmon Den: A Case Study in Recurring Rockslide Mitigation, Rock Slope Redesign and Construction Details.



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EDUCATION**North Carolina Education News***By Randy Bechtel*

The North Carolina Science Teachers Association Professional Development Institute (NCSTA-PDI) – www.ncsta.org - will be held on October 19-20, 2017 at the Koury Convention Center in Greensboro, N.C.

a. Pre-registration deadline in September 30th!

b. The theme this year is "Modeling STEM: Ingenuity at Work!" – Improving Science knowledge with three strands:

Strand 1: "Mastering science material through technology and innovation" will consist of promoting the best science classroom practices through technology.

Strand 2: "Science review & test-taking strategies: break through to excellence" will focus on improving learning content material

Strand 3: "The science of design: Modeling past, present and future" will provide teachers with ways to incorporate different representations of science through hands-on learning.

c. We will also be offering the annual Literacy Workshop and a Share-a-thon!

d. On a sad note, North Carolina lost one of the foremost Earth Science teachers and science education advocates, Fred L. Beyer passed away May 23, 2017.

* Fred was a leader in the process to get the Earth/Environmental Science Course adopted as a required course for graduation from N.C. high school.

From the NCSTA website:

"Fred's untimely death has left us with a hole in our hearts and in the organization. There is no way we can provide the level and quality of support that will match the example Fred has set. We can only hope that the efforts of many of us can combine to positively influence the science instruction of the children across North Carolina in a way that would make Fred proud! We will surely miss Fred Beyer!"

I encourage you to read more about Fred's efforts www.ncsta.org/fred-beyer/.



EDUCATION

(Continued from page 18)

Environmental Educators of N.C. Conference September 29 - October 1, 2017- www.eenc.org/conference

Join us at the Agapé Camp and Conference Center in Harnett County, N.C. Enjoy a weekend full of professional development, networking, learning, and field experiences that will help you expand your knowledge of Environmental Education and resources in N.C. and beyond - www.eenc.org/conferenceschedule

Want to know more about Environmental Education? Visit the N.C. Office of Environmental Education website - www.eenorthcarolina.org

The North Carolina Science Festival (NCSF) The entire month of April 2018! www.ncsciencefestival.org

- a. The 2018 NC Science Festival is going to be bigger than ever before, now with a full month of science from April 1st - 30th!

The theme for the 2018 Festival is the "science of food and drink." Not all events need to adhere to the theme. Organizations looking for event ideas or interested in proposing an event can contact ncscifest@unc.edu to consult with Festival staff.

- b. The Festival, a celebration of science, technology, engineering and math (STEM) and its impact on North Carolina, is the largest science festival in the nation and the first to encompass an entire state. In 2017, the two-week long Science Festival had a presence in all 100 N.C. counties! The NCSF had 240,139 participants and 850 events at schools, museums, community centers, libraries, parks and other venues. Two astronauts, 5,218 volunteers and 2,743 STEM professionals contributed to its success.

The North Carolina Science Festival is an initiative of Morehead Planetarium and Science Center.

2017 Carolina Geological Society Annual Meeting and Field Trip - carolinageologicalsociety.org/

"Ramping Through the Piedmont: The Hyco Shear Zone and associated hanging wall rocks in north-central North Carolina."

Headquarters: Hampton Inn, Roxboro, NC - November 3-5, 2017

"The one-and-a-half-day field trip will examine the geometry, kinematics, timing, and significance of the Hyco shear zone and the geology of associated hanging wall rocks of the Carolina terrane between Yanceyville, NC, and Virgilina, VA. The Hyco shear zone is a major mid-crustal thrust that places Neoproterozoic Gondwanan arc rocks of Carolina on Ordovician rocks of the Milton-Chopawamsic arc, formed on the Gondwanan side of Iapetus. The shear zone formed during the Carboniferous collision of North America with Africa, a stage in the formation of the supercontinent Pangea."



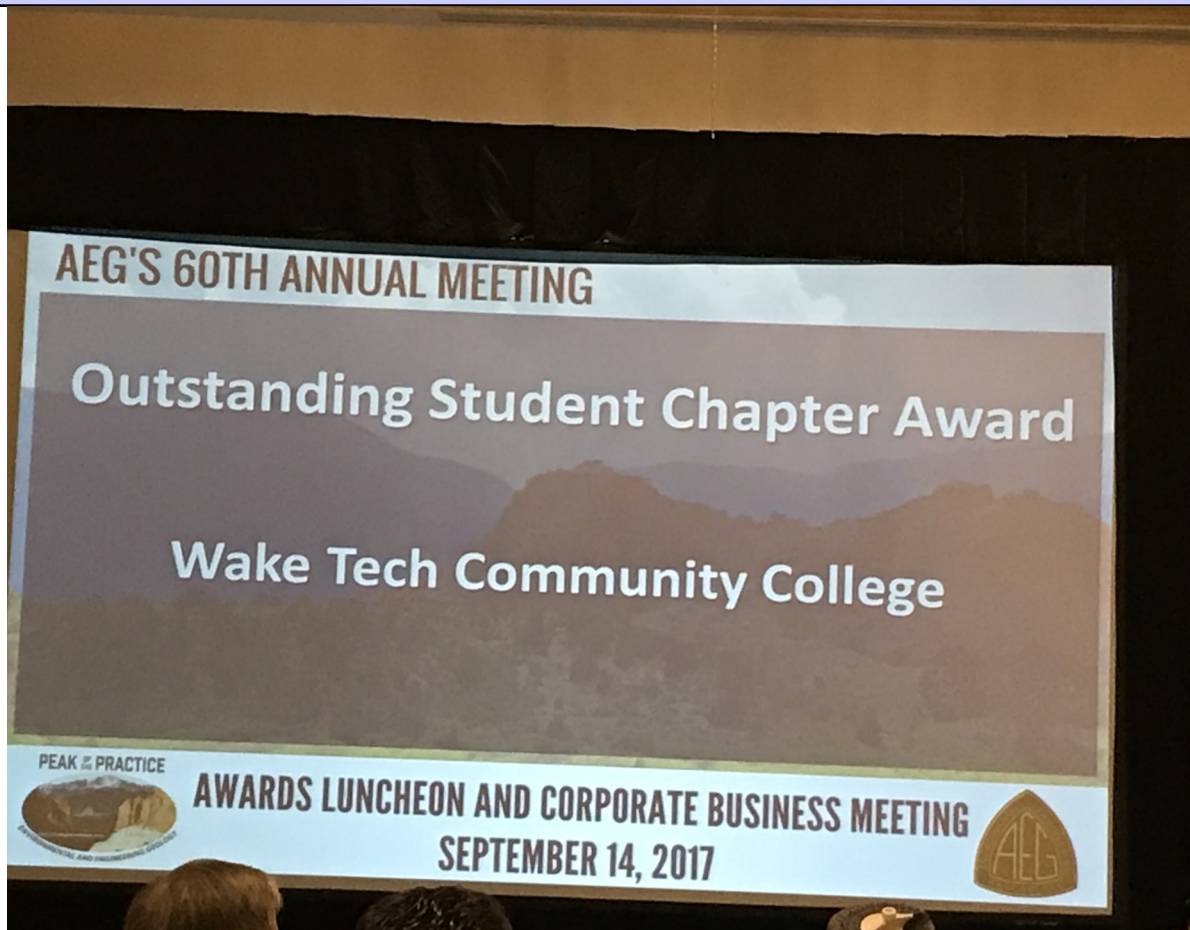
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EDUCATION**Local Student Chapter Gets National Recognition**

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ANNOUNCEMENTS

Calling All Past Chairs!

If you served as the Carolinas Section or Chapter Chair we would love to honor you. We are having a special 40th anniversary Dinner Meeting in Greensboro October 19; I hope you can make plans to attend. Additionally please spend a few minutes and contribute a summary or short anecdote to the winter issue of GeoNews. Submit to jenntec14@gmail.com. I can't wait to read and hear the wonderful stories.

Continuing Education Comes to Geologists Licensed in North Carolina Rick Kolb, Chair, NCBLG

Licensed geologists should now be aware that the rules have changed: licensees are required to complete 12 hours of continuing education yearly, coinciding with the license year of July 1, 2017 to June 30, 2018. A list of pre-approved providers of CE is on the board's website, www.ncblg.org. Other providers and courses will be added as they are proposed and approved. Post-course approval is also allowed. The board established a standing CE committee of the board members who will review submittals for pre/post-approval. The revised rules also created a new status, inactive geologist, for those who no longer practice (and/or do not want to do the continuing education). Details are on the board's website.



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Below is a quick breakdown of the exciting things happening at ES:



Added Inventory / Supplies:

Along with several items added to our growing inventory, here is a quick list of those specialty items that have been requested:

- Core Drill w/ water kit
- Hammer Drills
- Diaphragm Pumps
- Air-Sparge System (Pilot Testing)
- SVE System (Pilot Testing)
- Sewer Camera w/Locator
- Downhole Camera w/DVR
- ATV / UTV Rental (Coming in April)
- Sand, Bentonite, and 55-Gallon Drums
- Large Selection of Vapor Points
- Carbon (Vapor/Water)



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- Bushhogging and Heavy Clearing (i.e. Forestry Cutter)
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- Minor Storm Water Repair
- Downhole Well Camera w/DVR Service
- Sewer Push Camera w/Locator Service
- Field Personnel Support
- AS/SVE System Support and Installation
- Equipment Calibration and Repair Services

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ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS – Carolinas Chapter

Emerald Hollow Mine, Hiddenite, North Carolina

Reservations: You can register and prepay for the field trip by (1) mail (see last pages) or (2) under the News and Events Page of our website at <http://aegcarolinas.org/>. Everyone (including online registers) must fill out the Registration and Liability Waiver Forms to attend the field trip.

THIS FIELD TRIP IS LIMITED TO 50 PARTICIPANTS.

FIELD TRIP RESERVATION DEADLINE: 5PM Monday, October 16, 2017.

Fall Field Trip

Saturday, October 21, 2017, 9:00am to 2:00pm

Meeting Location: 9:00am at Emerald Hollow Mine: 484 Emerald Hollow Mine Drive, Hiddenite, NC

Cost: Members, Public-Sector, Teachers \$50; Non-members \$60; Students with college ID \$30

Field Trip Registration and Waiver: Please fill out, sign, and date forms and send to Sue Buchanan by Monday, October 16, 2017

South Carolina Continuing Education Credits: 4 credits

North Carolina Continuing Education Credits: TBD

Once you are here – you never stop looking for stones.

Emerald Hollow Mine in Hiddenite, NC, is the only emerald mine in the United States open to the public for prospecting. The mine has been in business since 1986, and since then, has been visited by gem-seekers and rock-hounds from all 50 states and several countries. There are no caves or tunnels at the mine, all mining is done vertically by digging down into the ground or using sluice buckets filled with dirt. In addition to the mine, the property has two streams that can be panned, sluicing stations, and a lapidary shop, where gemstones are cleaned, cut on site, and made into jewelry.

Some history about Hiddenite: In the mid-1880s, a mineralogist William Hidden, was sent by Thomas Edison to explore the area for platinum needed for coating the wire filaments in electric light bulbs. William Hidden did not find any platinum, but discovered a fault line where emeralds and sapphires were found lying within 3 feet of each other. William Hidden discovered a neon-green spodumene and named it Hiddenite, as was the town.

Emeralds are not easy to find, it takes hard work and persistence, but usually two to three emeralds are found a week at the mine. About 63 other gemstones and minerals are found here and include hiddenite, topaz, and sapphires.

The largest emerald to come out of the mine weighed 1,868 carats and is on exhibit at New York's American Museum of Natural History. Another great discovery was of a pyramid-shaped smoky quartz



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Association of Environmental & Engineering Geologists – AEG

crystal weighing nearly 300 pounds. And more recently, in 2009, an emerald was found on a farm near the mine that was compared to an emerald worn by Catherine the Great of Russia.

Field Trip Activities

Not only will we be trying to find our own gemstones, but we will be involved in an educational program led by Emerald Hollow Mine staff and geologist, gemologist, and lapidary director Mike Watkins. The educational program is about a 3 to 4 hour session that includes an earth science lesson, creeking (a crowd favorite!), sluicing, and surface collecting. Activities may vary depending on availability and time.

- The **earth science lesson** will cover:
 - a geological explanation of the time frames and occurrences of rock types found at Emerald Hollow;
 - a lesson about stratification seen in the outcroppings at Emerald Hollow;
 - visiting an off-site quarry (about a ¾ mile walk from Emerald Hollow) where we can observe pyroxene shifts and granite formations (pending approval); and
 - visiting a current dig to discuss vein development and the extraction process with the claim's proprietor (this is a private claim, so we won't be collecting here).
- While **creeking**, we'll learn how density, weight, and gravity help explain why gold and gemstones are found in the creek, and then we'll put our knowledge to work by panning and gem-hunting.
- **Sluicing** includes a history lesson on the method and the story of Hiddenite while you sluice a bucket of unprocessed ore taken directly from the mine (with a chance of bearing any of the mine's precious gems!).
- **Surface collecting** explores how erosion exposes gems at the surface while we look for any of the over sixty types of gems and minerals that have been found on the "East Ridge."

Field Trip Logistics

The field trip will begin at 9:30am on at the **Emerald Hollow Mine (484 Emerald Hollow Mine Drive, Hiddenite, NC)**. Parking is available at the mine. AEG will not be supplying bus transportation for this field trip. Attendees are expected to be ready for the tour by **9:00am** so the Emerald Hollow Mine staff can give a brief summary of the tour's events and divide the group into smaller groups for the educational program which will start at 9:30am.

From 9:30am to about 1:00pm, the group will be guided through the educational program. Lunch is scheduled for about 1:00pm at the mine. Pizza and soft drinks will be provided. The field trip ends after lunch (about **2:00pm**), but you are encouraged to stay at the mine and hunt for more gemstones or repeat parts of the educational program that you enjoyed the best and would like to spend more time doing. The mine closes at **4:30pm**.

Please bring plastic containers with lids or zip lock freezer bags to hold your gemstone collection; and a towel and old shoes for creeking. A change of clothes and shoes are recommended, as you should plan on getting dirty and wet. Be prepared to walk ¾ miles during the earth science lesson. Dress appropriately for the weather, as these are outdoor activities.



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Association of Environmental & Engineering Geologists – AEG

AEG Carolinas Chapter
REGISTRATION AND LIABILITY WAIVER FORMS
Field Trip, Emerald Hollow Mine, Hiddenite, NC
October 21, 2017

Instructions: Each participant will need to complete the registration form and waiver form to attend this AEG event. Payment must be made to complete your registration and reserve your spot on the field trip. After completion of the forms, send forms and payment (check) to:

Sue Buchanan (sbuchanan@schnabel-eng.com),
Schnabel Engineering, 11A Oak Branch Drive, Greensboro, NC 27407

Name of Participant: _____

Company or University: _____

Address (Street, City, State, Zip): _____

Phone (office, home, or cell): _____ Email: _____

Pizza and soft drinks from The Pizza Box will be provided for lunch and delivered to Emerald Hollow Mine.

Each participant must complete the table below for this AEG Carolinas Chapter event.

Event	Member	Non-Member	Public-Sector	Teacher	Student
Field Trip (Saturday, October 21, 2017)	\$50	\$60	\$50	\$50	\$30
Total Payment Amount:					

Payment Options:

1) CHECK:

☐ Check box if paid via check, payable to *AEG Carolinas Chapter*. Send check to Sue Buchanan.

2) PAYPAL:

☐ Check box if paid via PayPal on the AEG Carolinas Chapter website (<http://aegcarolinas.org/>) under the News & Events Page.

List participant(s) for which this payment is for: _____



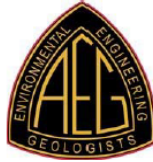
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Association of Environmental & Engineering Geologists – AEG

ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS**LIABILITY WAIVER FOR FIELD TRIP PARTICIPANTS**

The undersigned having been fully advised as to the nature and possible dangers and hazards of the field trip, hereby acknowledges and agrees this _____ day of _____, 20____, that:

1. (please print) _____ (herein referred to as "Participant") intends to participate in one or more field trips sponsored by the Association of Environmental & Engineering Geologists (herein referred to as "AEG").

The field trip for which this waiver is being made is to be held on Saturday, October 21, 2017, in Hiddenite, North Carolina.

2. Participant agrees and understands that during such field trip(s), he/she will be under the direction and control of the trip leader approved by the AEG, and specifically agrees to comply with all reasonable directions and instructions by the trip director during the course thereof.

3. Participant understands and acknowledges that there are risks of injury to person and/or property that are associated with field trips, including without limitation risks related to travel hazards, terrain, weather, eating and sleeping arrangements, and other circumstances. Participant hereby voluntarily assumes all risks connected with or arising out of his/her participation in field trip activities, and waives any claim against AEG, its officers, directors, employees, agents and members for any injury, harm, damage or other liability arising out of field trip activities.

4. Participant understands and acknowledges that the AEG assumes no liability for personal injuries or property damages to participants or to third persons arising out of field trip activities. Participant agrees to hold AEG harmless from any liability for harm arising out of the acts or omissions of AEG or Participant during any such field trip, and indemnify AEG against any and all awards or judgments against AEG in favor of third parties for losses and damages (including attorney's fees and any costs involved because of said claims), on account of injury, death or property damage, or inconvenience or loss of money due to delay that may arise, by reason of Participant's participation in field trip activities.

5. I understand that my use of alcohol or drugs would impair my judgment and coordination, and I hereby waive, and will hold the AEG harmless from, any and all claims of bodily injury or other harm arising from my use of either. I will indemnify AEG against awards or judgments in favor of third parties for losses or damages (including attorney's fees and costs), of whatever nature, arising out of my use of alcohol or drugs while participating in field trip activities.

Date: _____

Signed: _____
(Participant's Signature)

Mail waiver form to: Sue Buchanan, Schnabel Engineering, 11A Oak Branch Drive, Greensboro, NC 27407
Or email waiver form to: Sue Buchanan, sbuchanan@schnabel-eng.com



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Association of Environmental & Engineering Geologists – AEG



The Geo-Carolinas Chapter of the Geo-Institute is proud to announce the Inaugural Geo-Carolinas Conference. The event will take place October 9 and 10, 2017 in Charlotte, North Carolina. The conference will include state-of-the art technical presentations by leaders in the field of geotechnical engineering. Guest speakers will include Anne Lemnitzer, Dave Paul, Allen Marr, Tim Stark, Silas Nichols, Jimmy Martin, Tom O'Rourke, Dan Brown, John Daniels, Ken Stokoe, Rick Deschamps and George Koerner.

The conference will consist of 8 presentations followed by a reception on Monday, and 4 presentations on the following Tuesday, for a total of 12 pdh opportunities. Breakfast, lunch and hors d'oeuvres will be provided on Monday, as well as breakfast and lunch the following day.

Lodging for the event will be provided by SpringHill Suites Charlotte Uptown (www.marriott.com/cltsd). For the group discount rate, [click here](#) or call 704-439-8100 and asking for the Group Code GEO. (Note that the group code doesn't work from the regular hotel website or the Marriott app).

Onsite parking is also available at the UNC Charlotte Center City Building where the event will be held. Parking is included in your registration.

Exhibit space and sponsorships are now available. Please see exhibit layout below and registration for additional details. Take advantage of our early bird registration and exhibit discounts by registering before August 11. For additional details, please visit <https://www.eventbrite.com/e/geo-carolinas-conference-tickets-34363088924>

Thanks and we look forward to seeing you there.

Geo-Carolinas Chapter of the Geo-Institute

Conference Committee

Jesse Jacobson

Billy Camp

Ron Andrus

Duane Bents

Matt Silveston

CALENDAR OF EVENTS - 2017

Geological Events in the Carolinas

Courtesy of AEG Carolinas Chapter – www.aegcarolinas.org. Last updated July 21, 2017
 Send updates/corrections to Josh Hanks, Duncklee & Dunham, josh@dunckleedunham.com
Meeting Date, Time, and Location are Subject to Change – Please Verify Prior to the Meeting

Date: October 5-6, 2017

Event: AEG Vapor Intrusion: The Conference II
 Location: Hilton Charlotte University Place; 8629
 J. M. Keynes Drive, Charlotte, NC 28262

Costs: Non-member \$349; Members \$299; New
 Members \$249; Public Sector \$159

Details/Registration: <http://aegcarolinas.org/vapor-intrusion-the-conference-ii-oct-5-6-2017/>

Date: Friday, October 6, 2017

Event: ASBOG Geology Exam
 Details: Deadline to apply for the exam is August
 18, 2017 (and preapproval to take the exam before
 that)

Location: McKimmon Center, NC State University,
 Raleigh

Contact: www.ncblg.org

Date: October 9-10, 2017

Event: Inaugural Geo-Carolinas Conference
 Location: UNC Charlotte Center City; 320 East
 Ninth Street; Charlotte, NC 28202

Costs: General Admission \$385; Student \$95;
 Sponsor \$500-\$1,000; Exhibitor \$650-\$1,050

Information: <https://www.eventbrite.com/e/geo-carolinas-conference-tickets-34363088924>

Date: Thursday, October 19, 2017 (meetings are held on the third Thursday of the month)

Event: Meeting of South Carolina Association of
 Environmental Professionals

Presentation: TBD

Cost: Annual fee of \$25 includes pizza, beer and
 soft drinks at all meetings

Time: 6:30pm Social with Pizza & Beverages,
 7:00pm Presentation

Location: Jim Hamilton-L.B. Owens Airport –
 1400 Jim Hamilton Boulevard, Columbia, SC

Contact/RSVP: Sherri Scott at sheri.scott@tersusenv.com

Date: October 19-20, 2017

Event: North Carolina Science Teachers Association
 Professional Development Institute Conference

Location: Koury Convention Center, 3121 West
 Gate City Boulevard, Greensboro, NC 27407

Information: <https://www.ncsta.org/events/>

Date: Saturday, October 21, 2017

Event: AEG Carolinas Fall Field Trip
 Location: Emerald Hollow Mine, 484 Emerald
 Hollow Mine Drive, Hiddenite, NC

Time: 9 AM to 2 PM

Cost: Members, Public sector, Teachers \$50; Non-
 members \$60; Students with college ID \$20

Details: <http://aegcarolinas.org/fall-field-trip-emerald-hollow-mine-oct-21-2017/>

Registration Deadline: Monday, October 16, 2017

Date: October 22-25, 2017

Event: Geological Society of America Annual
 Meeting

Location: Washington State Convention Center,
 705 Pike Street, Seattle, Washington 98101

Technical Session and Short Course Proposal
 Deadlines: August 1, 2017

Registration Deadline: September 18, 2017

Information: <http://community.geosociety.org/gsa2017/home>

Date: Tuesday, October 31, 2017

Event: ASBOG Annual Meeting

Location: Portland, Oregon

Contact: ncblg@bellsouth.net

Date: Thursday, November 2, 2017

Event: Engineers Without Borders monthly meet-
 ing, Research Triangle Park Professional
 Chapter

Location: 6:30-7:45 PM at the offices of Camp
 Dresser & McKee; 5400 Glenwood Avenue,
 Suite 400; Raleigh

Details: www.meetup.com/EWB-USA-RTP-Professional-Chapter/

Date: November 3-5, 2017

Event: Annual Carolina Geological Society Meet-
 ing and Field Trip

Topic: Ramping Through the Piedmont: The Hyco
 Shear one and associated hanging wall rocks
 in north-central North Carolina

Trip Leader: Jim Hibbard, North Carolina State
 University; Phil Bradley PG, NC Geologic
 Survey for the Piedmont; Brent Owens, Col-
 lege of William and Mary

Location: Hampton Inn, Roxboro, NC

Cost: TBD

Details: http://carolinageologicalsociety.org/CGS/Next_Meeting.html

(Continued on page 30)

(Continued from page 29)

Date: Thursday, November 16, 2017 (meetings are held on the third Thursday of the month)

Event: Meeting of South Carolina Association of Environmental Professionals

Presentation: TBD

Cost: Annual fee of \$25 includes pizza, beer and soft drinks at all meetings

Time: 6:30pm Social with Pizza & Beverages, 7:00pm Presentation

Location: Jim Hamilton-L.B. Owens Airport – 1400 Jim Hamilton Boulevard, Columbia, SC

Contact/RSVP: Sherri Scott at sherri.scott@tersusenv.com

Date: Thursday, December 7, 2017

Event: Ground Water Professionals of North Carolina Dinner Meeting

Presentation: Naturally Occurring Arsenic in North Carolina Water Supply Wells and its Toxic Impacts for Human Health by Dr. Rebecca Fry

Time: Dinner meeting and speaker 5:30 - 9:00 pm
Cost: Standard \$45/Gov. Employee \$20/ Students Free

Location: NC State University JC Raulston Arboretum; 4415 Beryl Road, Raleigh, NC 27606

RSVP: groundwaterprofessionalsnc@gmail.com

Details: www.gwpnc.org

Date: Thursday, December 7, 2017

Event: Engineers Without Borders monthly meeting, Research Triangle Park Professional Chapter

Location: 6:30-7:45 PM at the offices of Camp Dresser & McKee; 5400 Glenwood Avenue, Suite 400; Raleigh

Details: www.meetup.com/EWB-USA-RTP-Professional-Chapter/

Date: Thursday, December 21, 2017 (meetings are held on the third Thursday of the month)

Event: Meeting of South Carolina Association of Environmental Professionals

Presentation: TBD

Cost: Annual fee of \$25 includes pizza, beer and soft drinks at all meetings

Time: 6:30pm Social with Pizza & Beverages,

7:00pm Presentation

Location: Jim Hamilton-L.B. Owens Airport – 1400 Jim Hamilton Boulevard, Columbia, SC

Contact/RSVP: Sherri Scott at sherri.scott@tersusenv.com

Date: September 16 – 22, 2018

Event: AEG Annual Meeting

Location: Hyatt Regency San Francisco, Five Embarcadero Center, San Francisco, California, 94111

Contact: contact@aegweb.org

Date: June 8 - 14, 2019

Event: AEG Grand Canyon Field Trip

Location: Flagstaff, Arizona

Costs: TBD

Details: <http://aegcarolinas.org/aeg-grand-canyon-field-trip-june-2019/>

Date: September 2019 (dates to be determined)

Event: AEG Annual Meeting

Location: Asheville, North Carolina



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Signature _____ ☐ Please DO NOT list my contact information in the AEG Directory

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REVISED October 2016

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The Carolinas Chapter of AEG supports many of its activities with financial assistance provided by our sponsors. Our activities include quarterly meetings, periodic field trips and seminars, a quarterly newsletter, and email announcements about our meetings and geoscience related activities. In addition, we donate large quantities of educational resources to science teachers.

We offer several levels of sponsorship, but they all have one goal: to keep the sponsor's name in front of our members and to bring you business. We have a real commitment to connecting our sponsors to potential buyers and will do all we can to help you build your business. Most of our members are practicing professionals with responsibility for selecting subcontractors, so our group is a great place to find new customers and to catch up with existing clients in an informal setting.

Our sponsors provide the financial support that allows us to have reasonably priced dinner meetings, host seminars, provide discounted dinner meeting costs for students and teachers, underwrite the cost of newsletters and our web site, provide geoscience mentors for students and young professionals, and support science education tools to our teachers and in our schools. All costs listed below are per year and end in December. New sponsorships received after October will continue to December of the following year.

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Please complete the form below and send to Jennifer Thomas, AEG Carolinas newsletter editor at jen@jenn-tecllc.com. Please call or email if you have any questions (contact information below).

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Something about your company (use back of page for more room) _____

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