

GEONews



Newsletter of the Association of Environmental & Engineering Geologists and
American Institute of Professional Geologists, Carolinas Sections

Winter 2007

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MARK YOUR CALENDAR!
AEG Carolinas Winter Meeting
to be announced soon—
check the website at AEG-Carolinas.org

*Calendar of upcoming events is on our website
<http://www.AEGCarolinas.org>
Issue date 21 Dec 2007*

MESSAGE FROM THE CHAIR

By Rick Kolb, Chair, AEG Carolinas

It was a close election, but your board was re-elected in its entirety. Thanks to Carin Kromm, Raymond Knox and Rich Lovett for volunteering to serve another year. And thanks to those officially not on the board but who have responsibilities to our section: Jane Gill-Shaler, the newsletter editor; Tami Idol, the webmaster; Jennifer Bauer and Gary Rogers, past chairs and present advisors; Angie Moore, the membership chair; and Briget Doyle, past secretary and now chair of the 2010 annual meeting in Charleston.

Having no one volunteer to run for any of the board positions made the election a foregone conclusion. Fortunately, all the present board members agreed to run again. However, the lifeblood of any volunteer organization is its members and new ideas. I encourage all of you to consider running for a position of some organization, whether it be AEG, GWPNC, or a town or school board. You can use these positions to expand your experience working with others, and to subtly advance your views, geologic or otherwise. We are always looking for volunteers to offer ideas, as are the standing committees of our national organization.

Most of you missed an excellent field trip to Eno River State Park on October 27. Typically, our section tries to hold an annual field trip. Our success in holding these annually has been spotty, usually because no one volunteers to set up the field trip, which I found really doesn't take that much effort.

This year, Phil Bradley of the North Carolina Geological Survey led the trip, which turned out to be on the first sunny, fall day after our three-day rainfall in October. It was a great trip; see the article on page 4 in this newsletter for details. If anyone is interested in putting together a

field trip next year, please contact any of the board members.

We had planned to have Dorian Kuper, president of AEG, as the speaker at our winter meeting in Charlotte. However, Dorian cancelled on short notice, so we are still searching for a speaker for the meeting. You may recall that last year's president, Terry West, spoke at our winter meeting in Columbia. This year, we have moved our winter meeting back to its usual location in Charlotte, and hope for our usual good turnout. You will receive an email once we firm up our meeting plans. It will be in January or February.

An advance note of our spring section meeting. The Jahns lecturer will again come to the Triangle. Last April, John Moylan, the 2007 Jahns' lecturer, made an afternoon presentation to students at NCSU, and an evening presentation to AEG at our section meeting at the University Club. This year, to facilitate student/geologist interaction, our section will hold our meeting jointly with UNC- Chapel Hill, and our meeting will be on April 14 (tentatively). The guest speaker will be the 2008 Jahns' lecturer, and his talk topic will be tsunamis. Details will follow in our next newsletter.

Your board has begun discussion on establishing a section scholarship (or two) for geology majors in North Carolina colleges and universities. You may have noted on the AEG website that the Texas section has established a scholarship fund. We would like to do the same, though it will not be as formal as the Texas example. We do plan to establish a separate fund for the scholarship, and may solicit donations from our already-generous sponsors to help build up this fund. In a similar advocacy-of-geology strategy, our section recently donated \$1,000, and solicited donations from other associations, to purchase the AGI earth science kits for distribution at the annual meeting of the North Carolina Science Teachers Association. See the article elsewhere in the newsletter about that lively give-away.

Rick Kolb

Chair, AEG Carolinas

CAROLINAS SECTION HOSTS SYMPOSIUM AT SE GSA

The Carolinas Section of AEG is proudly hosting the Symposium on Practical Applications of Geology in the Southeast, which will be part of the Southeastern Geological Society of America (SEGSA) meeting on April 10th and 11th, 2008 in Charlotte, North Carolina. (See page 20 for invitation letter)

AEG's mission is to contribute to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. Aligned with this mission, our Symposium will focus on case studies and practical applications of geology in the Southeast in the interest of exposing others, and especially students, to applied geology in the region.

Several speakers will be geologists practicing in environmental and engineering geology in the Southeastern United States. The applications and case studies presented will represent the type of work that graduating geologists would expect to be performing for private and government employers in the region. Anticipated subjects include groundwater remediation, groundwater-supply studies, landslide and geologic-hazard issues, geologic site investigations, geophysical applications, and foundation studies for large facilities such as dams and power plants.

The section is planning on hosting a networking event following the Symposium for students and professionals alike. This event will provide an opportunity for students to ask questions about the presentations and other practical applications of geology. At the same time, professionals will get to meet potential future employees. Please keep an eye out for more information about this event, as the details have yet to be determined.

If you are interested in presenting at this Symposium or assisting with event coordination, please contact Jennifer Bauer at jennbbauer@gmail.com or 828-296-4638 for instructions on how to do so.

Report on the Field Trip to Eno River State Park

By Jane Gill-Shaler, GEO

After several days of much-needed rain in central North Carolina, about 16 members and friends of AEG Carolinas were treated to a spectacularly beautiful crisp fall day on Saturday, October 27 as we trekked around and up Cox Mountain in Eno River State Park to see for ourselves the geologic treasures of this area of the



Photo 1. Field trip leader Phil Bradley pointing out areas of interest on geologic map of the Eno River field trip..

Piedmont. Prior to the hike, field trip leader Phil Bradley, Senior Geologist for the Piedmont Geologic Mapping – STATEMAP Project, of the North Carolina Geologic Survey (NCGS) explained the general geologic history of the area, using a series of clear and colorful diagrams. The specifics of the field trip stops were explained during the hike, with references to the field guide.

Formation of the Eno River State Park area has taken over 630 million years, and is still taking place today. From Late Proterozoic to the present, nearly every conceivable type of rock formation has taken place, and the research to interpret past geologic activity from the rocks that remain is still in progress. Rocks found at

the field trip stops illustrated some of the sources of the research findings.

Late Proterozoic plate convergence (about 630 million years before present, or MYBP) forced the older and heavier oceanic crust of the two converging plates beneath the lighter, younger crust, forming a subduction trench. As the subducted crust carried quantities of water to a depth of several miles, the great heat and pressure caused the subducted crust to melt. The hot magma rose toward the surface, emerging as volcanic eruptions (ash tuff and breccia –stops 1 and 7); other rising magma coalesced before reaching the surface, forming magma chambers from 2 to 6 miles below the

(Continued on page 4)

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

Deadlines 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 September 21
- Winter – deadline December 1, issue date December 21

Deadlines for submittals for the National AEG News:

- March issue – January 21
- June issue – April 30
- September issue – July 31
- December issue – October 31

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(Continued from page 3)

surface. Some of this mafic magma cooled slowly to form diabase and granodiorite—stop 2.

During several intervals of active volcanism, billions of tons of lava and ash erupted from undersea volcanoes, eventually piling up to form volcanic islands on the surface in the shape of an island arc. It is believed that this island arc, called Carolina, was approximately 600 miles long. About 440 to 450 MYBP the island arc collided with the proto-American continent, and in another 150 million years, the continued collision of plates brought in the proto-African continent, forming the supercontinent Pangaea.

North Carolina was in the center of Pangaea for nearly 70 million years, until the middle of the Triassic, when continued plate movements caused Pangaea to break up. This was not a simple affair, but occurred in fits and starts, with some of the rifts failing to open while oth-

.....the book contains trail guides for three other field trips at Eno River State Park.....

ers opened widely enough for the Atlantic Ocean to form. The failed rifts, or rift valleys (Triassic Basins), quickly filled with sediments. Rifting caused faulting throughout the area, and silica-rich fluids traveled through them, precipitating out to form quartz (stops 3 and 4). During the Jurassic, mafic magma intruded the sediments, and solidified as diabase and granodiorite. Subsequent uplift caused these brittle rocks to crack, forming joints (stop 5). Some of the magma collected pieces of the existing rock it passed through as xenoliths (stop 6).

The field trip was nearly 5 hours long, and included an eye-opening walk across a hanging bridge, steep climbs down to some of the stops, and a short respite for lunch by the side of the Eno River, where we were treated to the sight of two intrepid adventurers practicing with their kayaks in the rapids at Few's Ford. We also saw the ruins of several historic mill buildings, and the remains of a mill dam destroyed by a flood early in the 20th century.



Photo 2. Xenolith of mafic tuff. Note boot in upper left for scale.

The Field Trip organizer was AEG Carolinas Chair Rick Kolb. The NCGS field trip guide, “A Geologic Adventure Along the Eno River,” is nearly 70 pages long, in full color, and tailored to upper grade school science students or interested amateurs. In addition to the guide for the AEG sponsored trip, the book contains trail guides for three other field trips at Eno River State Park, and is for sale at the NCGS.

For more information, or to purchase guides, please contact trip leader Phil Bradley at pbradley@ncmail.net, or by snail mail at 1620 Mail Service Center, Raleigh, NC 27699-1620.



Photo 3. Field trip leader Phil Bradley, NCGS, describing lithic tuffs and breccias.



Photo 4. Kayak Practice at Few’s Ford on the Eno River.



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SUMMARY OF AEG ANNUAL MEETING, SEPT. 26-28, 2007 IN LOS ANGELES

By Rick Kolb, AEG Carolinas Chair

The annual meeting was very successful, having paid attendance by over 750 geologists from all over the United States and at least one from our South Africa Section. This was the third-largest meeting in the 50 years of AEG. Jennifer Bauer, Gary Rogers, Briget Doyle, Dr. Welby and Rick Kolb were the attendees from the Carolinas Section. The meeting hotel -- the Sheraton Universal in Universal City, CA -- met our needs perfectly. The meeting was held in the conference center on the lowest floor, segregated from the hotel lobby. The hotel was within walking distance to CityWalk, an in-town shopping mall with specialty shops and many restaurants. Talks were held in six rooms, and the center of activity, outside the registration desk, was the vendor display area. Brian and Denise Chew, and son Evan of Enviro-Equipment in Charlotte and platinum sponsor of the Carolinas Section, made the trip and were very happy with the number of visitors to their booth. The Carolinas Section thanks them for their support at both the section and national levels.

Talk topics were wide-ranging. If you haven't already, look over the July 2007 issue of the AEG News Program with Abstracts, which includes all the abstracts; talks were not limited to just engineering or environmental geology. I found many thought-provoking and informative talks, and couldn't find time or work out the schedule to go to all that I wanted to hear. There was a lot of follow-up discussion on the state of our profession, and the future of geology, a topic

of great interest to me.

The Southern California Section offered many field trips and extracurricular activities, starting on the Monday before the meeting. This section has over 500 members, reflecting the 50 years of AEG's existence, which began in southern California. That section had a display of 50 front pages of the Los Angeles Times, and each front page highlighted some aspect of geology -- earthquakes, landslides, tsunamis, contamination. It was really interesting to read not only these geology articles but also the non-geology articles of each edition, tracing the past 50 years. Most sections had posters about the history of their sections. The Carolinas Section poster will be displayed at upcoming meetings and will be posted to the AEG website.

I encourage every member to make it a priority to get to a national meeting. It was stimulating meeting so many geologists of widely varying backgrounds. As expected, most of the attendees were from the Rockies and west.

However, next year the annual meeting will be in New Orleans, hosted by the Lower Mississippi Valley Section. New Orleans is a 2½-hour non-stop flight from Raleigh. I can vouch for the hotel that will be used. It is very nice and centrally located.

You owe it to yourself as a geologist to go and see what Katrina wreaked on the city and Gulf Coast. I feel certain that at least one field trip will be out onto the levees, and probably up to the Mississippi coastline. I was in New Orleans in July, and the signs of devastation are still plainly visible, and expect next year won't be much different. However, I can guarantee that the festive atmosphere remains, and you will have a good time.



AEG Carolinas History Poster

**AEG FOUNDATION
ANNOUNCES NEW FUNDS**
AEG Email Announcement

The AEG Foundation celebrated its 15th Anniversary during AEG’s 50th Anniversary Annual Meeting in September. We’d like to tell you some exciting news about both people and their generosity to the Foundation. Students and practicing professional alike will soon see the outcomes of our growing programs.

The Silent Auction at AEG 2007 benefited the Martin L. Stout Scholarship Fund and helped raise the Fund balance to over \$50,000! Thank you to everyone who donated or participated in the bidding. We even met Director Tom Kuper’s goal of \$50K by the 50th Anniversary of AEG.

The Foundation welcomed Marliave family members to the meeting. Jacqueline Marliave Mitchell, Carol Marliave Hehmeyer, and Paxton Hehmeyer all joined the AEG Foundation Directors and previous Marliave Scholars in honoring this year’s Marliave Scholar, Adam Prochaska. In a surprise move, Carol Hehmeyer challenged the banquet attendees to raise \$1,000 for the Marliave Fund by October 31, and she would match it. By the end of the meeting, AEG members had matched her challenge! Many members added a contribution to their AEG membership renewals. Special thanks to the AEG Board of Directors who contributed to help meet Carol Hehmeyer’s challenge and who more than matched Foundation President Robert Tepel’s \$1,000 gift to the Foundation.

The Foundation also honored the following scholarship recipients:

- Shaina M. Forsyth – Undergraduate, Tilford
- Scott Braunsten – Masters, Tilford
- Christopher Hein – PhD, Tilford
- Sherry Marie McGee – Undergraduate, Stout
- Adam J. Campbell – Graduate, Stout

The AEG Foundation, in cooperation with the AEG Texas Section, has established the AEG Texas Section Scholarship Fund, which supports geologic studies by Texas students at the undergraduate and graduate levels. The Fund is established with the proceeds from a very exciting event – a lecture by Dr. Johansen and a viewing of the Lucy Bones at the Houston Museum of Natural Science in February, 2008. For more information, go to www.aegfoundation.org.

Saving the biggest news for last...the AEG Foundation received a tremendous gift from John and Nancy Peck, who donated \$50,000 to establish the AEG Foundation Research Fund. Grants from this fund will support small research projects performed by consultants, retired geologists, university professors, or graduate students. Application forms will be on the Foundation’s web site by the end of 2007.

The Foundation’s growth plan calls for doubling our scholarship funding and increasing the number of awards and their value. We also want to increase our support of the Richard H. Jahns Distinguished Lecturer, fund more Roy J. Shlemon Specialty Conferences, and support publications and an Internet Library through the Legget Fund. Your gifts make it happen, so thanks again for your generosity in supporting the AEG Foundation. You can donate online at www.aegfoundation.org or download a donation form to send with a check.

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GEORAMBLINGS

By Dr. Charles W. Welby

With the current drought continuing in the southeast, the questions related to global warming and climate variations (change) are much in the public eye. So thoughts turn to what the geologic record might tell us --- and to the proposed “Blue Line” in parts of Santa Barbara, CA. But first I would like to turn your attention to a sample or two of ideas about global warming and climate change.

An article in EOS (vol. 88.44), the AGU weekly publication, discusses the Sun-Earth System variations and notably the 11-year solar cycle. The peak of the cycle coincides with global warming of the earth’s atmosphere. The time-scales of the sun-climate association are apparently decadal. A report in Science (vol. 316, p. 1295) describes the use of geochemistry and micropaleontology in recognizing climate changes related to the behavior of the West African monsoon. The data from a core in the Gulf of Guinea support changes in the discharge of the Congo River on a millennium scale and tie the data to atmospheric events occurring in the northern hemisphere.

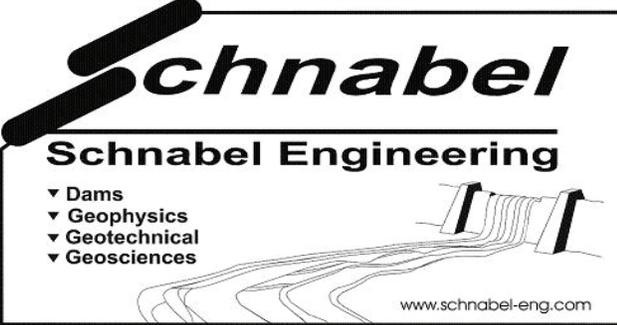
One session at the recent GSA meeting, in particular, was devoted to the “Cause of Global Warming.” Don J. Easterbrook (Abstract 187-4) pointed out that multiple lines of evidence exist for climate fluctuations (e.g., glacier retreat, tree rings, oxygen isotope ratios, historic observations, etc.) during the Pleistocene and Holocene. Certainly most of the readers of this column are aware of the “Dust Bowl”

event in the continental United States during the 1930s.

And so the rise of sea level associated with climate change becomes a problem to be addressed, and the causes of the change in climate appear to be multitudinous. Mathematical modelers have been busy constructing models which predict sea level rise. The lay public has limited skills with which to judge the accuracy of the predictions made with the models (See Useless Arithmetic by Orrin H. Pilkey and Linda Pilkey-Jarvis and the review in the American Scientist (vol. 95, p. 171, March-April, 2007, by Carl Wunsch). In determining the extent of flooding, do not forget the tidal effects and especially the storm surges (aka the Katrina effect in the future, possibly).

Now we come to the “Blue Line” proposed in Santa Barbara, CA. My first encounter with the concept was when I saw bumper stickers in Santa Barbara reading, “STOP THE BLUE LINE,” following the conclusion of the AEG 50th Annual Meeting in Burbank. I was told that the proposed Blue Line (originally proposed as the “Light Blue Line, or LBL) was to demark the position of the shoreline at sometime in the future when the changes in climate had raised sea level to a new elevation relative to its present position. I later found out that the new proposed position of sea level was 23 feet above the present position of sea level.

The Santa Barbara News-Press in an editorial dated September 18, 2007, suggested that the project offered as an “Art Project” was based upon the speculation of one person who could not be considered an “expert” in the matter. Another source indicated that the idea was initially



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based upon a new “accurate” model of the effects of a warming climate. The model reportedly was developed in an academic environment which made it in some peoples’ minds sacrosanct. The theoretical new sea level was based upon the assumption that the Greenland Ice Cap would be completely melted. In any event, the political supporters of the idea held numerous closed meetings and tried to bypass the Santa Barbara Historical Landmarks Committee but was eventually through court action forced to present the proposal to the Committee which approved it.

Numerous “letters to the editor” and opinion columns of the News-Press panned the idea of spending \$12,000 to paint the Blue Line. One correspondent noted that all reputable computer models show a range of possible new sea levels. The probable decline in property values seaward of the Blue Line was an important item in several comments. Other correspondents suggested in effect that for all of the area seaward of the Blue Line land-use rules should be changed, development stopped, and demolition of existing buildings should be encouraged. (There goes the campus of the University of California at Santa Barbara and other well-known features of the Santa Barbara Landscape.) The mayor of Santa Barbara claimed in a letter to the editor on August 24, 2007, that Esquire Magazine “got it all wrong” when in the September issue the magazine quoted the mayor as saying that the Blue Line project was the mayor’s greatest achievement; the mayor claimed that the statement was that it was the greatest controversy.

One writer, in panning the idea, suggested that green lines should also be painted in

the streets to delineate the existence and position of faults which could cause earthquakes. (They still remember the 1925 Santa Barbara Earthquake!) Others suggested red lines around fire danger areas with implied more rigid control on land use and buildings. A few writers noted that the development and passage of the proposal by the Council was an example of a bad idea in terms of the way it was handled politically; i.e., there should have been more open discussion about the proposal rather than the railroading of the proposal through the Council. On August 24, 2007, the creator of the Blue Line idea withdrew his support of the project.

In all fairness there were supporters of the idea, and they tied their support to the concept of alerting the citizens of Santa Barbara to the dangers arising from the warming of the climate and to what might be termed “politically correct” ideas.

The controversy continued until the November 6, 2007, municipal election in which the Council members supporting the Blue Line were decisively voted out of office despite their claims that the idea was to arouse public discussion of the issue of global warming through the development of an “Art Project.” The matter was settled finally, and any threats of a reactivation of the idea were delivered a “death blow” when it was disclosed that under various rules found in the Manual for Uniform Traffic Control from the Federal Highway Administration that the whole Blue Line idea was illegal. Two points were made: (1) the Blue Line could confuse drivers and control of traffic and (2) Blue is

Continued on page 10

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the color reserved solely for designating handicapped parking spaces. If you should be piqued by this event, try going to the Santa Barbara News-Press web site and search the Archives for "Blue Line." There are some interesting tidbits there. The web site is www.newspress.com.

So what can we learn from this event? Well, I guess it is that people serving the public as elected officials should understand that there are limits to mathematical models when used to describe complex events and that geologic evidence can and should play a role in land-use management.

Perhaps more importantly, we as professional geologists, whether working away from the academic world or in the academic world, bear a professional responsibility to assure that the political part of our society does not seize upon what is only partial evidence or a model of limited capability to provide answers to an ill-posed question from the political world. Most importantly, we should not bastardize ourselves by pushing our favorite hypothesis about an event without indicating something about how it should be tested and converted to a theory which can then be tested even more stringently.

An Education Source: EOS for October 2, 2007, has a short article describing the exis-

tence of a Digital Library for Earth System Education which is available through the WEB. The WEB site for the library (DLESE) is at <http://www.dlese.org>. Direct your WEB browser to <http://www.dlese.org/library/query.do?ky=0lj>, and click on "choosing and using this resource" and follow the links from there.

Then there is the fearsome picture on the cover of the December 2007 (current) issue of The National Geographic. Fearsome enough to make some people want to hide under their bed, I suppose. Maybe there was a "Blue Line" for it.

Charles W. Welby

Dr. Charles W. Welby is a former section chair for AEG Carolinas, and a regular contributor to this newsletter. He may be reached at cww_raf@hotmail.com



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TEX GILMORE RECEIVES PUBLIC SERVICE AWARD

AIPG Announcement

The John T. Galey Memorial Public Service Award was presented to Ivan K. “Tex” Gilmore by the AIPG during their annual meeting in Traverse City Michigan on October 9, 2007.

Tex got his BA in Geology at Kent State in Ohio in 1976, and conducted additional post-graduate studies in hydrogeology. He has worked for a variety of mining companies specializing in mine geology, and is currently Superintendent and Chief Geologist at PCS Phosphate, Aurora NC.

Over the past 25 years Tex has coached Science Olympiad students, and served on the Aurora Fossil Museum Board of Directors in Aurora, North Carolina. The museum opens the door to the exciting world of earth science exploration through hands-on paleontology and rare exhibits on prehistoric life. A “Must See” attraction in eastern North Carolina, the Mu-

seum addresses one of the nation’s most urgent educational priorities – basic science education. Visitors hunt for finders-keepers in mounds of fossil rich tailings from the PCS Phosphate mine, world-famous for its rare fossil abundance. The opportunity to learn by doing is enhanced by the Museum’s impressive collections of fossil shark teeth and marine fossil exhibits from the mine along with an extensive collection of classic fossils from worldwide sources. The Museum is especially proud to be one of the most accessible in North Carolina. Admission has always been free. The Museum opened its new learning center in 2006, and estimates that close to 40,000 visitors have either attended or been reached by school outreach programs.

For his exemplary record of distinguished service to the profession and to AIPG, Tex was selected as recipient of the John T. Galey, Sr., Memorial Public Service Award. Tex Gilmore is a long time member of AEG. For more information on the Aurora Fossil Museum, go to www.aurorafossilmuseum; for more on this award or on AIPG, go to www.aipg.org.



Mark Sweatman, Tex Gilmore, and Kel Buchanan at the AIPG awards ceremony.

SPONSOR NEWS AND ANNOUNCEMENTS

AE Drilling, Inc., an AEG Carolinas Silver Sponsor, has been busy as of late working on Duke Power's Linville Dam and Lee Steam Station projects, in addition to several large landfill expansion projects in South Carolina with Waste Management and Geosyntec. AE Drilling has teamed with Janod Contractors to install new rock bolts in several areas of the Confederate Memorial carving on Stone Mountain, GA in early 2008. The work will have to be done via rope access due to the sensitive nature of the monument. AE continues to be very active in numerous deep bedrock chlorinated solvent investigations & remedial actions across the southeast. In conjunction with mobile laboratory partners KB Labs (also an AEG Silver Sponsor), several MIP (membrane interface probe) investigations have been completed recently, as the demand for this plume mapping technology increases. AE Drilling Services, Inc. has conducted environmental, geotechnical and mineral exploration drilling since 1969. Mark Lassiter of AE may be contacted at 864 288 1986; his website is www.aedrilling.com.

AEG QUARTERLY JOURNAL SEEKS ARTICLES

Environmental & Engineering Geoscience (E&EG), a quarterly journal copublished by the Association of Environmental & Engineering Geologists and the Geological Society of America, is seeking new manuscripts. *E&EG* publishes peer-reviewed contributions, based on original work, in the broadly defined areas of environmental and engineering geosciences (including geomorphology, hydrogeology, low-temperature geochemistry, neotectonics, and other earth surface processes).

Both theoretical and empirical contributions related to these areas are welcome, although preference will be given to papers of

an applied nature. Specifically, *E&EG* encourages the submission of the following kinds of papers.

- Results of original research in the environmental and engineering geosciences.
- Case histories describing the solution of new or unusually difficult problems in the applied geosciences.
- Review papers that summarize the state of the science or professional practice in a branch of the applied geosciences, including contributions describing relevant aspects of local or regional geology or the history of environmental and engineering geosciences.
- Short technical notes (six published pages or less) describing new techniques, novel case histories or other topics in the environmental and engineering geosciences.
- Brief critical discussions of papers and technical notes published in *E&EG*.

As of August 1, 2006, all manuscript submissions are now electronic via AllenTrack. Authors should visit the AEG website at www.aegweb.org and click on Publications under the Professionals tab for details on submission, and for a link to AllenTrack.

For more information, contact Co-Editor **Abdul Shakoor**, ashakoor@kent.edu, (330) 672-2968, or Co-Editor **Ira Sasowsky**, ids@uakron.edu, (330) 972-5389.

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EDUCATION SECTION

Carolinas Section hands out AGI Earth Science Week Kits

The Carolinas Section collected \$2,160 and purchased 410 AGI Earth Science Week packets to hand out at the North Carolina Science Teachers Association Professional Development conference that was held in Greensboro on November 14-16. Our Section donated \$1,000, and we solicited and received donations for the remainder from Section members, sponsors, other organizations and engineering companies. This is the second year in a row we have purchased these kits, which are given away to the teachers. They go FAST!!



Rich Lovett handing out Earth Science Kits at the NCSTA Professional Development conference.

And a very nice thank-you note from the NCGS Education Coordinator, Randy Bechtel:

Hi Jennifer,

November 2007 was the second successful year of distributing Earth Science Week kits at the annual North Carolina Science Teachers Association Professional Development Institute (NCSTA PDI) in Greensboro. The [more than] 400 kits were all distributed and well received by the teachers. Over 1,700 teachers attended the event this year.

Thank you to everyone involved for your time and monetary donation including: Carolinas Section of the AEG, Ground Water Professionals of North Carolina, American Institute for Professional Geologists, Jane Gill-Shaler, Dr. Charles Welby, and Enviro-Equipment .

I hope this generous donation of materials can continue at the next NCSTA PDI in 2009. There will not be a NCSTA PDI in 2008, instead, the National Science Teachers Association (NSTA) Conference will be held in Charlotte.

I would also like to thank Rich Lovett for handing out the kits at the NC Geological Survey booth - see attached photo. His assistance was much appreciated. The NCGS staff was immersed in distributing thousands of topographic maps this year. We were focused on assisting the teachers with the maps and Rich was able to focus on the kits.

And...Thank you to Jennifer Bauer for coordinating much of this and being my point of contact.

Randy Bechtel
Education/Public Outreach Geologist
North Carolina Geological Survey
1612 Mail Service Center
Raleigh, NC 27699-1612

AGI Tracking Earth Science Education

“The Pulse of Earth Science” is not only the theme of Earth Science Week 2007, but also the name of AGI’s new website tracking Earth science education nationwide. The site, which launched earlier this month, offers detailed, up-to-date information on the status of geoscience education in every state, as well as guidance for advocates.

For each state, AGI provides the most recent available data on:

- Teacher certification requirements and num-

(Continued from page 13)

- bers teaching related subjects;
- Relevant courses that middle and high school students must take;
- K-12 enrollment levels in Earth science and related subjects;
- Coverage of Earth science within state science standards;
- State assessment of students in Earth science;
- Textbooks adopted and relevance of relevance to Earth science; and
- Contact information for state education agencies.

The website features findings that many are likely to find surprising. While every state but Iowa includes Earth science in education standards, this priority seldom carries through to curriculum requirements or high school exit exams, for example. Only about one in five states offers Earth science as an elective within overall science requirements, and **North Carolina is the only state requiring an Earth science**

course for graduation.

“The Pulse of Earth Science” also offers an Advocacy Guide, including recommendations for taking action within your state and local school systems. The information presented is based on available data collected from numerous sources. Viewers are invited to help update information by contacting AGI at aeb@agiweb.org.

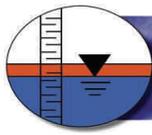


The Carolina Geological Society held its annual field trip and meeting on November 9-11, including fossil collecting at the Lee Creek phosphate mine in Aurora, NC. Details are on the CGS website at www.carolinageologicalsociety.com.

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WINTER 2008 REVIEW COURSES for the ASBOG GEOLOGY LICENSING EXAM

The Association of Engineering and Environmental Geologists is pleased to announce the Winter 2008 series of review courses for the ASBOG geology licensing exam taught by REG Review, Inc. AEG and REG Review, Inc. have partnered to provide these courses since 1992. In the Winter of 2008, review courses will be offered US-wide in Portland, OR, Baltimore - DC area, MD, Charlotte, NC, Jacksonville, FL, St Louis, MO, Dallas, TX, Denver, CO, and three locations in California (San Diego, Burbank, and Oakland). The California courses have an extra hour devoted to the California Supplemental exam. We have reinstated the CEG and CHG courses in California and these will be held in Oakland and Santa Ana CA each November.

Winter 2008 course dates and locations for the Eastern US are as follows, please visit the REG REVIEW website (<http://regreview.com>) for more details, and for courses in other areas:

2008 NEUS-1 - Baltimore-Washington Area,
MD, Friday, January 11, 2008, 8am - 4pm

2008CEUS-1 - Charlotte, NC

Saturday, January 12, 2008, 8am - 4pm

2008SEUS-1 - Jacksonville, FL

Sunday, January 13, 2008, 8am - 4pm

Courses in California are \$465, all other course locations are \$415. There is a \$15 discount for AEG Members, be sure to ask for it. Books are included in the course prices, flash

cards are not.

The pre-registration deadline for the Winter 2008 courses is December 13, 2007 for West Coast courses and December 20, 2007 for all other courses.

REG Review, Inc. has been teaching these courses in California since 1985. In March 2000, we began to direct our teaching towards the ASBOG geology licensing exam. The pass rate for students in classes since converting to the ASBOG course has ranged from 85 to 99%. The courses are taught by Patti Sutch, California PG 3949, CEG 1641, and CHG 25, and Lisa Dirth, California PG 3951, CEG 1240, and North Carolina RG by ASBOG exam.

To contact REG REVIEW Inc.:

regreview@aol.com

37 Rosewell Road, Bedford, NH 03110

telephone - East Coast call Lisa Dirth at 603-472-3050, (fax) 603-471-1969.

West Coast (evenings) Patti Sutch at 916-456-4870.

Please pass this information on to any geologist that you know is taking the state licensure examinations and could benefit from a little help in focusing on the most important elements.

Thanks

Lisa Dirth

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THE CAROLINA BAYS*By Harry E. LeGrand, Sr.*

The Carolina Bays are a geologic wonder.
 Of their origin we can only ponder.
 Beautiful landscape scars seen from the air
 Elegant oval sags, they lie on land with a flair.

In parts of the Coastal Plain that are flat and low
 Their abundance and southeast orientation show
 Geologic characteristics here are unusual on earth,
 But questionable thoughts arise about their birth.

An early theory focused on a shower of meteorites
 Postulated as having hit the earth in angular flights
 Another geologist visualized Neptune's racetrack
 With lakes and eddies for wind currents to pack.

Effort has been directed to artesian springs
 In a complex hypothesis that also brings
 Solution that produced basins occupied by lakes
 With a beach and sand ridge that a current makes

New ideas and questions arise each year,
 And better knowledge of their origin is near.
 The theory I expressed 50 years ago failed
 But the thoughts here might be nearly nailed.

Focus is on compaction and subsidence of clay beds.
 The sequence of events holds tightly on strong
 threads.
 Compound actions occurred that were elsewhere rare
 To consider them carefully is only fair.

The impacts of Pleistocene sea level fluctuations
 Need more emphasis and deliberations.
 As the Pleistocene seashore moved out more,
 The bays began their life inland from the shore.

Sand and clay beds are interlayered closely.
 The beds increase and tilt southeastward mostly.
 The fluid pressure in the aquifer system declined,
 And compaction of clay beds was not far behind.
 The compaction of a clay bed led to subsidence
 Slightly at local haphazard spots, and hence
 Another subsided clay bed above or below,
 Combined subsidence in the ground would grow.

The shape of the bay would not be round at land sur-
 face

But would be oval because of tilted beds in place.
 Upper or lower local subsidence would be in laps
 Which cause coastward migration of collapse.

Elsewhere big sand aquifers are pumped steadily
 And widespread fluid pressures decline readily.
 The clay bed subsidence is even but not evident,
 Contrasting here with multiple beds being prevalent.

Another reason the land has subsided sporadically
 The fluid pressure had declined emphatically.
 The briny aquifer water that before was dense,
 Was pushed seaward by fresh and light water since.

Dampness and near-surface water table in the bays
 Result in color and plant contrasts in several ways.
 The darker bay soil and surrounding white sand
 Have much to say about the Carolina Bay brand

Here and there, overlapping of bays on the land
 Depend on sporadic subsidence of the clay and sand.
 Predicting actions at a specific time is only a game
 And specific spots for bays we cannot name.

Bays and humans have wrinkles somewhat akin
 Both with a period of dehydration under the skin.
 The underlying soft watery foundation is within.
 Are bays' wrinkles prettier than those of women?

Of the origin we have long waited for news.
 In the poem there may be likely clues
 For someone to intellectually pursue
 The makings of Carolina Bays as they grew.

Bay development will not likely be repeated
 For thousands of years until the sea has retreated.
 We may leave the bays as features of mystery.
 They are a part of nature's elegant history.

Harry E. LeGrand, Sr.
 (October 31, 2007)

Harry E. LeGrand, Sr., is a retired geologist in North Carolina. He is 90 years old, and still very active. This note accompanied the poem: "I have been very much interested in the Carolina Bays since 1938. As anyone who has studied the Bays knows, the details of their origin have not totally been defined. I would like to pursue the preparation of another paper about them, but at age 90, I don't have the energy and stamina to go much further. "



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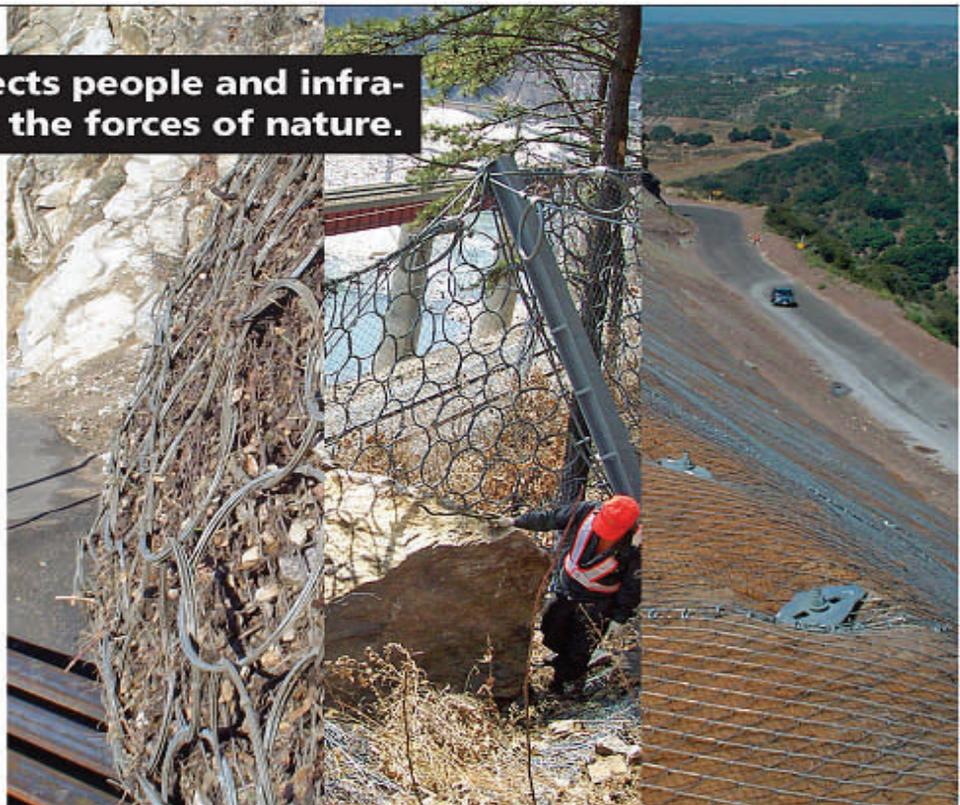
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AGI FELLOWSHIPS, INTERNSHIPS, AND CONGRESSIONAL VISITS DAY

From AGI

The American Geological Institute is pleased to announce the William L. Fisher Congressional Geoscience Fellowship. The successful candidate will spend 12 months (starting September 2008) in Washington, DC, working as a staffer for a Member of Congress or congressional committee. The fellowship is a unique opportunity to gain first-hand experience with the legislative process and contribute to the effective use of geoscience in crafting public policy.

Minimum requirements are a master's degree with at least three years of post-degree work experience or a Ph.D. at the time of appointment. The fellowship carries an annual stipend of up to \$55,000. Support for the fellowship is provided by an endowment, established through the AGI Foundation, in honor of William L. Fisher. All application materials must be transmitted by February 1, 2008. For more details, visit www.agiweb.org/gap/csf. AGI is an equal opportunity employer.

Several of AGI's Member Societies also sponsor Congressional Science Fellowships. For further information, contact the American Geophysical Union, Geological Society of America, or Soil Science Society of America. AAAS itself also offers a number of fellowships for both Congress and the executive branch. It is acceptable to apply to more than one society and fellowship. Stipends, application procedures, eligibility, timetables, and deadlines vary.

Geoscience Student Internships in Public Policy - AGI seeks outstanding geoscience students with a strong interest in federal science policy for a semester-long internship in geoscience and public policy in Washington DC. Interns will gain a first-hand understanding of the legislative process and the operation of executive branch agencies. They will also hone their writing and Web publishing skills.

AGI is planning to accept three interns for the summer at a fixed stipend of \$4,000 apiece for twelve weeks. Deadline for applications is March 15, 2008. AGI is also planning to accept one intern for fall 2008 at a fixed stipend of \$4,500 for fourteen weeks (application deadline is April 15, 2008) and one intern for spring 2009 at a fixed stipend of \$4,500 for fourteen weeks (application deadline is October 15, 2008). More information is available at <http://www.agiweb.org/gap/interns/index.html>,

Congressional Visits Day (CVD) on March 4-5, 2008 - Join us for the 13th annual Congressional Visits Day (CVD) on March 4-5, 2008. This two-day annual event brings scientists, engineers, researchers, educators, and technology executives to Washington to raise visibility and support for science, engineering, and technology. Participants will spend the first day learning about how Congress works, the current state of the budget process and how to conduct congressional visits. The second day will consist of visits with members of Congress. In addition to the workshops and visits, participants will get to meet other scientists and engineers, meet federal science agency representatives and attend a reception and breakfast at which members of Congress will speak and meet with the audience.

Please consider participating in these visits and plan early to come to Washington DC. Many scientific societies are involved in CVD, including several of AGI's Member Societies. The American Association of Petroleum Geologists, the American Geophysical Union, the Geological Society of America and the Soil Science Society of America are very active participating societies in CVD and can help coordinate your visits. In addition, these societies and AGI will coordinate a geoscience workshop on March 4 for the geoscientists and geo-engineers who participate. Individuals interested in participating should contact the Government Affairs Program at govt@agiweb.org. More details about Congressional Visits Day (CVD) and examples of past visits are available at the Working Group web site: <http://www.setcvd.org/cvd2008/index.html>.



AEG CAROLINAS SECTION – SPONSOR INFORMATION

The Carolinas Section 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 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 customers in an informal setting.

Our sponsors provide financial support that allows us to have reasonably priced dinner meetings, host seminars, provide discounted dinner meeting costs for students, underwrites the cost of newsletters and our web site, and supports science education in our schools. All costs listed below are per year and begin on the date that your payment is received.

Silver Sponsor (\$250):

GeoNews Newsletter: Business card size ad (2” high x 3-1/2” wide), four times per year.
 Meetings: Listing on a Sponsor Poster, located at sign-in table. Name, contact information and a paragraph about services listed on the back of meeting abstracts handed out at each meeting. Verbal acknowledgement by name in Chairman’s introductory comments.
 Meeting Exhibits: Space for tabletop display at one meeting. Cost of meeting waived for one person on the exhibit date.
 Email Announcements: Listing of your company name on each AEG Carolinas Section email announcement (our email list is currently over 1,000 people)
 Web Page: Acknowledgement on the AEG Carolinas Section Web Page, www.aegcarolinas.org.

Gold Sponsor (\$375):

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 Meetings: Listing on a Sponsor Poster, located at sign in table. Name, contact information and a paragraph about services listed on the back of meeting abstracts handed out at each meeting. Verbal acknowledgement by name in Chairman’s introductory comments.
 Meeting Exhibits: Space for tabletop display at two meetings. Cost of meeting waived for one person on the exhibit date.
 Email Announcements: Listing of your company name on each AEG Carolinas Section email announcement
 Web Page: Acknowledgement on the AEG Carolinas Section Web Page, www.aegcarolinas.org.

Platinum Sponsor (\$500):

GeoNews Newsletter: Half-page ad (4-1/2” high x 7” wide), four times per year.
 Meetings: Listing on a Sponsor Poster, located at sign in table. Name, contact information and a paragraph about services listed on the back of meeting abstracts handed out at each meeting. Verbal acknowledgement by name in Chairman’s introductory comments.
 Meeting Exhibit: Space for tabletop display at three meetings. Cost of meeting waived for one person on the exhibit date.
 Email Announcements: Listing of your company name on each AEG - Carolinas Section email announcement
 Web Page: Acknowledgement on the AEG Carolinas Section Web Page, www.aegcarolinas.org.

GeoNews Newsletter Sponsorship Only

Businesses or individuals can also advertise in GeoNews without being a full sponsor. The annual rates for advertising in GeoNews are as follows:

Business Card	\$ 40.00
Quarter Page	\$ 60.00
Half Page	\$ 100.00
Full Page	\$ 200.00

Please complete the form below and mail to Raymond Knox, AEG Carolinas Treasurer. Please call or email if you have any questions (contact information below).

AEG Carolinas Section Sponsorship Form

Please begin our sponsorship of the Carolinas Section of the Association of Engineering Geologists. Our level of sponsorship is:

- _____ Platinum Section Sponsorship, \$500/year
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MEMBER BENEFITS

Networking, with colleagues at meetings, through technical publications and on the AEG web page, is a valuable professional development benefit because it allows a member to:

- Broaden and update technical, practical and business knowledge.
- Keep career paths open by assuring that the value, utility and scope of engineering geology is recognized in the scientific, technical, legal, and regulatory arenas.
- Explore numerous opportunities for career enhancement through contacts at technical meetings and in continuing education programs.
- Influence the profession of environmental and engineering geology as it serves society and as it is regulated.
- Establish the standards of the profession.

\$\$\$\$\$\$\$\$\$\$\$\$

AEG members receive our quarterly professional journal, *Environmental and Engineering Geoscience* and six-issues of the *AEG NEWS* as a regular dues benefit.

Members also enjoy a 20% "member discount" on all special publications, registration fees at meetings, short courses and field trips.

PROFESSIONAL DEVELOPMENT

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- AEG sponsors workshops and short courses for which official Continuing Education Units are offered.
- AEG encourages its members to participate in activities of mutual interest with other societies and organizations.
- The annual Richard H. Jahns Distinguished Lecturer in Engineering Geology is co-sponsored by AEG and the GSA Engineering Geology Division.
- AEG members make presentations and lead field trips for students at all levels.
- AEG's Technical and Professional Practice Committees keep the Association in a position of influence through their wide-ranging activities.
- AEG's 25 Sections and 20 Student Chapters provide educational and networking opportunities for members through regular meetings, field trips and local newsletters.
- Students compete for scholarships and awards, and interact with practicing professionals.
- Short courses, field trips, and technical sessions provide opportunities for AEG members to enhance their professional practice.
- International members are found in more than 20 countries and Designated Correspondents enhance technology transfer among more than a dozen countries.

MEMBERSHIP APPLICATION

ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS



The Association of Environmental & Engineering Geologists (AEG) is an international, non-profit scientific and technical society, whose 3,000 members include geologists specializing in engineering geology, environmental geology, and ground-water geology as well as other professionals in affiliated fields such as civil and mining engineering, land-use planning, public policy and education.

Through its technical and professional activities, AEG strives to promote the value and importance of geologic practice in:

- detecting, containing, and remediating contaminated soil and ground water;
- recognizing and mitigating hazardous geologic processes to promote public safety and welfare; and
- siting, planning, designing, constructing, and maintaining engineered works.

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MEMBERSHIP REQUIREMENTS

MEMBER: Applicants for Member Class shall hold a degree in geology, engineering geology or geological engineering, or a degree in a related professional field with 30 semester-hours of credit in the geosciences. In addition an applicant shall be practicing in the field of Engineering Geology, Environmental Geology or Hydrogeology. Annual Dues for new (first-time) Members = \$75.00 per year for the first three years of membership. Otherwise Annual Dues = \$115.00. Applicants who qualify for Member Class, but are engaged in full-time teaching at the Primary or Secondary (K-12) level are eligible for Teacher Status (Annual Dues = \$35.00).

AFFILIATE: Applicants for Affiliate Member Class shall be scientists or engineers who work with engineering geologists, teachers engaged in middle-school and high school Earth Science education, or persons interested in engineering geology. Annual Dues = \$70.00 (Teacher Dues = \$35.00)

STUDENT: Applicants for Student Member Class shall be full-time students enrolled in an academic program in the geosciences or in a related field in engineering. Annual Dues = \$25.00

INTERNATIONAL: Applicants shall hold the same requirements as for Member Class, but may select from the following dues schedule: \$35, which includes the *Environmental and Engineering Geology Journal*, \$45 with the *Journal*, the *Annual Directory* and the *Annual Meeting Abstracts*; or \$55 with the *Journal*, *Annual Directory*, *Annual Meeting Abstracts* and the *AEG News*.

AEG memberships are based on calendar year. Applications received after October 1 will be entered for following calendar year.

APPLICATION FORM

Please complete this form and mail it with your Annual Dues payment to the Association's Headquarters office for processing. New member applicants do not pay Section dues for their initial year of membership.

Name: _____ (Please print your name as you would like it shown on your membership certificate.)

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DESIRED CLASS OF MEMBERSHIP: _____ ANNUAL DUES AMOUNT: _____

CERTIFICATION: _____
(Signature)
My signature attests that, to the best of my knowledge, I meet the academic and practice requirements for the membership class I have requested and that all entries on this application are true and correct. I also authorize AEG to charge my credit card for the dues payment, if I selected the credit card payment option.

Enclosed is my check for the amount of Annual Dues of \$ _____

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SUBMISSION: Send this form with your check or credit card authorization to:
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A & D Environmental Services. 336 434-7750 Scott Pearce, Vice President, spearce@adenviro.com, <http://adenviro.com/index.html>. A&D Environmental Services, Inc. provides turn-key solutions to our client's environmental and industrial concerns.

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Golder Associates 336 852 4903 rachel_kirkman@golder.com, <http://www.golder.com> Golder provides ground engineering and environmental services worldwide to various industries, natural resource providers and government.

KB Labs 352 367 0073. Todd Romero, toddr@kbmobilelabs.com. We provide SCDHEC, NCDENR, and NELAP certified mobile laboratory services and membrane interface probe (MIP) direct-sensing technology. Our mobile labs can analyze water, soil, and soil gas samples onsite for volatiles, pesticides, or PCBs.

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