OREGON SECTION OF THE ASSOCIATION OF ENVIRONMENTAL & ENGINEERING GEOLOGISTS

December 2013

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The Official

OREGON SECTION AEG NEWSLETTER

http://www.aegoregon.org

Joint AEG/OAEP Meeting and Scott Burns Retirement Party

A Short History of the Shale Gas Revolution in the US

Guest Speaker: Jim Jackson

Photo courtesy of Bill Zargorski

Shale-gas production has increased in recent years, apparently changing the nature of the US fuel market. This talk discusses the nature of shale-gas resources, how it contrasts with conventional oil and gas resources, how it is produced, and why shale-gas production has increased.

Conventional oil and gas fields require (1) a source rock, (2) a reservoir rock, (3) a seal rock above the reservoir, (4) a trap, (5) maturation of the source rock, and (6) migration of the hydrocarbons from the source to the trap. A source rock is a claystone or shale that is rich in kerogen. When buried to sufficient depths, the kerogen is heated and breaks down to yield oil and gas. Once the oil and gas are liberated, they are driven buoyantly toward the surface. If they encounter a reservoir-seal pair in a trapping geometry, a deposit of oil and gas is formed.

The unconventional shale-gas and coal bed methane fields require only a mature source rock, thus reducing the exploration to a simple problem: where is a kerogen-rich claystone or potential coal buried deeply enough to convert the kerogen to gas? Once an unconventional resource is discovered, extracting the gas becomes a drilling engineering problem. Over the past 30 years a number of techniques have been developed to solve this problem, although what works in one basin may not be effective elsewhere.

Both coal-bed methane and shale-gas production began in the 1980s in response to a Federal tax incentive. When this incentive expired, unconventional exploration and production decreased. With the break up of the Soviet Union in the 1990s, gas export from Russia to Western Europe became problematic. Former client states in Eastern Europe sought to benefit from the gas pipelines that passed through their borders. The resulting conflicts with Russian authorities led to a series of gas price spikes that persisted over several winters. In this high gas price environment, several companies returned to unconventional gas production, emphasizing shale gas. This play expanded into the Appalachian Plateau, where it received a mixed reception.

Today the price of natural gas is close to $3.00 per thousand BTU. This is about $2.50 per thousand BTU below the breakeven price for producers of dry natural gas. Without a significant increase in real demand, or an artificial increase in price due to renewed political conflict in Europe, it is difficult to forecast a robust near term future of shale-gas production.

December Meeting Details

Thursday, December 12th

Location: Embassy Suites

319 SW Pine

Portland, Oregon

5:45 pm Social

6:45 pm Honoring Scott Burns

Presentation to follow

Hors d'oeuvres to be served

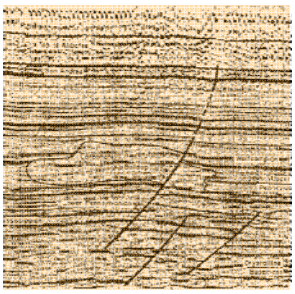
$20 Donation for Scholarship

Reservations:
mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Tues. Dec. 10

There is a $2 surcharge for those who do not reserve by the deadline

Upcoming Meetings:

Jan	21st	ASCE/AEG Meeting
Feb	18th	Brian Atwater
Mar	18th	Laura Maffei
Apr	15th	Jeff Coe
May	20th	Student Poster Night



Thank You to our December Meeting Sponsors

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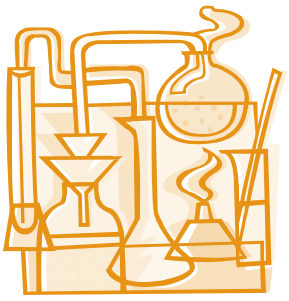
AMEC is a focused supplier of high-value consultancy, engineering, and project management services to the world's clean energy, water resources, environmental, natural resources, oil/gas, and minerals/metals sectors. In the Pacific Northwest, AMEC provides our clients with comprehensive environmental services from our offices in western Washington and Portland, Oregon. Our primary expertise focuses on environmental due diligence; industrial hygiene and health & safety training; environmental compliance and permitting; environmental investigation and remediation; and water and natural resources investigations and permitting.

Apex Companies

Apex offers comprehensive professional and field services to assess, prevent and cure environmental issues related to water, ground, facilities and air quality. Blending superb technical skills with creativity and business savvy, we focus on how to reduce or eliminate environmental risks and liabilities economically and expediently.

Apex Laboratories, Tigard, Oregon



Apex Laboratories is a privately owned, independent, full-service environmental laboratory offering unprecedented personalized service and analytical expertise. It's establishment in 2006 brought together personnel with decades of experience and a common goal to rise above the mass-production approach of large laboratory chains.

DGSI

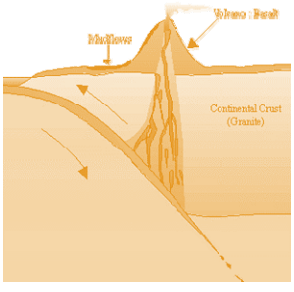
Slope Indicator instrumentation is deployed on projects worldwide to monitor deformation, displacement, tilt, pressure, and strain. The company also supplies complete data acquisition solutions using wired and wireless loggers and instant access to data and plots via the Atlas web-based monitoring service.

Pacific Soil and Water

Pacific Soil & Water was founded in 2007 as a direct-push drilling company providing specialty contracting services for environmental consulting firms. From our location in the Portland metro area, we provide drilling services throughout Oregon and Washington.

Tonkon Torp, LLP

In 1974, three of Portland's best known business lawyers, Moe Tonkon, Morris Galen and Fred Torp came together to create a new, nine lawyer firm. Today Tonkon Torp is one of the largest firms headquartered in Oregon, with over 85 lawyers dedicated to a sophisticated business practice. Though the firm's size and practices have grown over the past 39 years, our core values of excellent legal work, leadership, client service and community involvement remain unchanged.



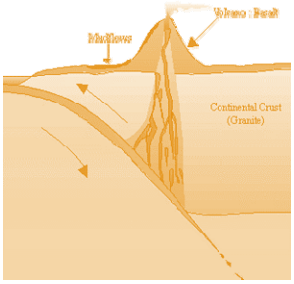
Terra Hydr

Terra Hydr Inc is a general contractor specializing in a wide variety of civil and environmental services. We are based in the Portland Metropolitan Area and pride ourselves in serving the regions premier consultants and quality-conscious industrial clients. A majority of our work is environmentally related including heavy equipment operation, mechanical services, the design, construction and maintenance of remediation systems, waste management and general environmental support.

Bio: Jim Jackson

Jim is an adjunct professor in the PSU Geology Department, a consultant petroleum geologist, and a co-author with Dan Mathews of *America from the air: A guide to the the landscape along your route* (HoughtonMifflin 2007). He teaches a course in economic and petroleum geology, as well as courses in regional geology. Prior to moving to Portland in 1999, Jim worked as a petroleum geologist for Atlantic Richfield Company. After a few years in Midland, Texas and Anchorage, Alaska working on development geology, he moved to the international side of the company. For several years he worked in the London office on new venture projects in Norway, the United Kingdom, the Netherlands, and Germany. Moving to Plano, Texas in 1989, he continued to work in new venture exploration in South America, North Africa, Western Europe, the Middle East, and East Asia. Jim holds degrees from Reed College and Portland State University.

Message from the Chair



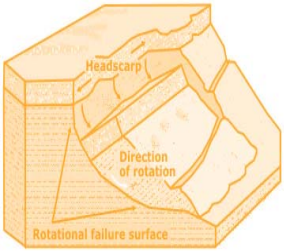
Thank you to all those that attended our November meeting where Bill Steele of the Pacific Northwest Seismic Network spoke on earthquake early warning systems. These warning systems have been in use in Japan and have notified thousands of earthquakes prior to the arrival of P-waves many seconds or minutes (depending on distance from the epicenter) so that people can reach shelter and shut down equipment. Many thanks to Bill for coming down from the University of Washington to present this great topic we geologists should be behind.

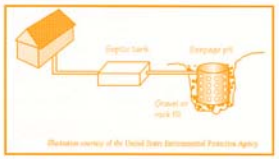
Oregon AEG and OAEP (Oregon Association of Environmental Professionals) is pleased to announce that on Thursday, December 12th we are hosting a joint meeting in honor of Scott Burns' retirement. Scott has been an instrumental member of both OAEP and AEG, and we are proud to team up to host this event in his honor. Scott has many friends who may not be members of AEG or OAEP, so please forward this to all those who may be interested in attending. Please see the meeting announcement on the front page of this newsletter for more information and consider becoming a corporate sponsor.

The Oregon State Board of Geologist Examiners (OSBGE) has begun a project of updating a series of three guidance documents addressing preparation of geology reports as well as a fourth document on professional practices. The first of these documents to be worked on is the guidelines for engineering geology reports. OSBGE anticipates opening a public comment period in late 2013 or early 2014 and AEG geologists, particularly CEGs, are encouraged to participate. They will also be seeking both a new registrant and public member of the Board in spring 2014, so if you or someone you know is interested, please contact the OSBGE Board.

Warm Regards,

Darren Beckstrand, CEG
Cornforth Consultants

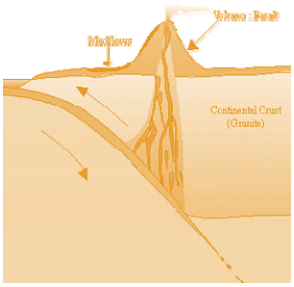



Schematic of a Seepage Pit (Dry Well)

Ralph Soule of GeoPotential is retiring! Tony Bartruff, who has worked for GeoPotential for the last three years, has demonstrated his ability and qualifications to plan and conduct future subsurface surveys and will be managing future day-to-day activities. Thank you to all of our clients over the years. Tony.Bartruff@GeoPotential.biz Cell: 360-921-7712

"Keen observation is at least as necessary as penetrating analysis"

Karl Terzaghi



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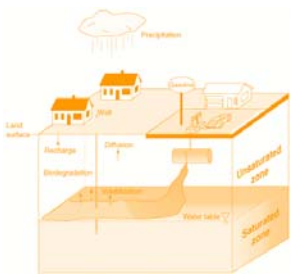

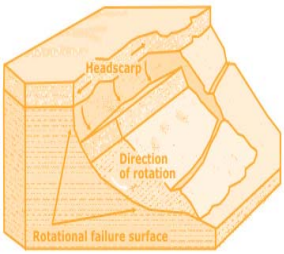

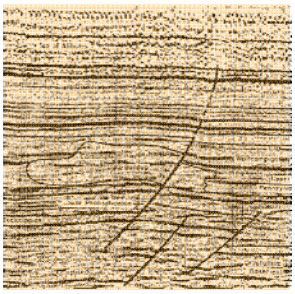

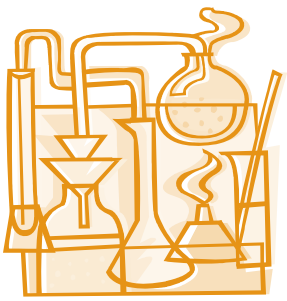

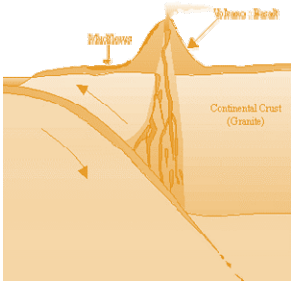

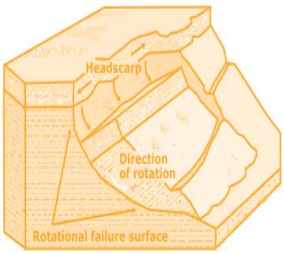

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"Keen observation is at least as necessary as penetrating analysis"

Karl Terzaghi

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The Oregon Section Newsletter

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