



# Association of Environmental and Engineering Geologists

## September Section Meeting

**Jonathan L. White**  
**Matthew L. Morgan**

### *The May 2014 West Salt Creek rock/debris avalanche in Mesa County, Colorado*

#### Abstract

On May 25th near the town of Collbran a very large rockslide rapidly moved almost 3 miles down the West Salt Creek valley. The site is within the Plateau Creek basin below the northern flank of Grand Mesa, about 38 miles east of Grand Junction. Earlier the morning of the 25th, smaller precursor landslides occurred that blocked the flow of irrigation water. Tragically, while investigating the initial slide, three local men were killed when the main failure occurred at 5:45 pm. Their remains have not been recovered from landslide deposits that are up to 125 feet deep at the valley floor. Properly described as a sturzstrom rock avalanche, shale and marlstone rock from the Green River Formation was pulverized and deposited in discrete avalanche pulses. The initial and most rapid avalanche pulse overtopped a 250-foot high ridgeline at an outside bend on the west side of the West Salt Creek valley. Preliminary estimates of maximum landslide velocity at that location, based empirically on the overtopped height, is about 75 miles per hour. The avalanche moved almost 40-million cubic yards of rock and soil down 2,000 feet of elevation and caused a 2½-minute seismic wave train that had a 2.8 magnitude. Currently, a 1,600 by 700 by 500-foot block of highly disturbed and potentially unstable rock remains immediately downslope from the headscarp. It has rotated and back-tilted, forming a large depression beneath the headscarp that has filled to form a small lake. The spill-over elevation is 15 feet above the current level, at which point the total capacity of the lake will be about 450 acre-ft. This raises concerns about the potential of a catastrophic breach during next year's spring runoff, as well as mini-tsunamis when rock blocks fall from the headscarp into the water.

This presentation will discuss the timeline of the slide, the initial emergency response and on-going landslide study, the geology of the area (and evidence of geologically recent and historic landslide activity), UAV photogrammetry and LiDAR imagery, and a preliminary assessment of the deposit and slide mechanics, as well as the future long-term hazards in the area where this valley-constrained rock avalanche occurred.

#### MEETING DATE

Thursday  
September 11<sup>th</sup>,  
2014

#### TIME

5:45 pm Social Hour  
6:30 pm Dinner  
7:00 pm Presentation

#### LOCATION

Friedhoff 3, Green  
Center, Colorado  
School of Mines  
924 16th St.  
Golden, CO 80401  
See Map Below (see  
website for parking  
details)

#### COST

**\$25 Members**  
**\$30 Non-members**  
**\$10 Retired  
members**  
**\$10 Students** (first  
meeting free)

#### RESERVATIONS:

click:

[aegrms.org/rsvp](http://aegrms.org/rsvp)

or email:

[meetings@aegrms.org](mailto:meetings@aegrms.org)

**\*\*\*BY NOON,  
MONDAY  
September 8<sup>th</sup>\*\*\***

# Rocky Mountain Geo-Conference

Save the date for the next Rocky Mountain Geo-Conference! The Rocky Mountain Section of AEG, the Geo-Institute Chapter of the Colorado Section of the American Society of Civil Engineers (ASCE), and the Colorado Association of Geotechnical Engineers (CAGE), are sponsoring the 15th biennial Rocky Mountain Geo-Conference. The conference this year is titled "Geo-Influence" and will cover topics related to the interacting (and counteracting) influences of nature, geology, and the geoscientist. Topics related to the influences of water, infrastructure design, classic geotechnical practices, and geologic hazards will be covered. Presentations will focus on flood repairs for the Great Front Range Flood of 2013, GIS modeling of economic risk associated with post-fire debris flow flooding, construction, evaluation and remediation for dams and levees, mountain tunnel rehab, and certain recent influences on classic geotechnical techniques and standards. Talks will also cover techniques and strategies for handling certain geologic hazards, including a landslide rating system for Colorado highways, a launched soil nail technique, and full-scale rockfall barrier testing in Colorado. The keynote speaker this year will be William McCormick with "Fires and Floods and Dams....Oh My!" The conference also includes multiple exhibitors, breakfast, lunch, refreshment breaks, and a sponsored after-conference reception.

The conference will be on Friday November 7, 2014, from 8:00am to 4:30pm at the Sheraton Denver West Hotel (360 Union Blvd, Lakewood, CO 80228) and will cost \$150 per person. Registration details coming soon!

## Seismic Hazards Summit III

See the attached preliminary announcement and call for papers/posters for the Basin and Range Province Seismic Hazards Summit III to be held on January 12-17, 2015 in Salt Lake City, UT.

## Water Well Construction Rules

Please see attached announcement and calendar for comment deadlines and stakeholder meetings for public comment and review of Colorado's Water Well Construction Rules. The geotech community in our area may not be in full compliance with these rules and might disagree with them in part. Deadline for first round of comments/suggestions is Sept 3 and the first stakeholder meeting is Sept 10.

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# PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS/POSTERS

## BASIN AND RANGE PROVINCE SEISMIC HAZARDS SUMMIT III

UTAH GEOLOGICAL SURVEY AND WESTERN STATES SEISMIC POLICY COUNCIL

January 12 – 17, 2015

Utah Department of Natural Resources Building, Auditorium  
Salt Lake City, Utah



The Utah Geological Survey (UGS) and the Western States Seismic Policy Council (WSSPC), in conjunction with the Utah Division of Emergency Management, the Utah Professional Geologists Licensing Board, the Utah Professional Engineers and Land Surveyors Licensing Board, the United States Geological Survey, the Intermountain Section of the Association of Environmental and Engineering Geologists, and the University of Utah Seismograph Stations will convene a Basin and Range Province Seismic Hazards Summit III (BRPSHSIII) to bring together geologists, seismologists, geodesists, engineers, emergency managers, and policy makers to present and discuss the latest earthquake-hazards research, and to evaluate research implications for hazard reduction and public policy in the Basin and Range Province.

Major Basin and Range Province seismic-hazard topics to be explored at BRPSHSIII by more than 30 invited experts will include:

- Perspectives and User Needs
- $M_{max}$  Issues in the Basin and Range Province
- Ground Motions from Normal-Faulting Earthquakes
- Fault Segmentation and Rupture Patterns in the Basin and Range Province
- Earthquake Engineering and Risk Mitigation
- Emergency Management and Public Policy
- Using Geodesy to Characterize Seismic Hazard in the Basin and Range Province



San Marin Hotel following the 2008 M 6.0 Wells, Nevada earthquake

A one-day pre-meeting short course and post-meeting field trip are planned:

- Short Course – Characterizing Hazardous Faults—Techniques, Data Needs, and Analysis
- Field Trip – Salt Lake City's Earthquake Threat and What Is Being Done About It



BRPSHSIII will include a proceedings volume and a poster session. The papers contributed to the proceedings volume will be published digitally by the UGS, and digital versions of posters can also be included in the volume. Manuscripts are due to the proceedings volume editor by November 31, 2014. If interested in contributing a paper or poster on Basin and Range seismic-hazard research or public policy, please submit a title by September 30, 2014 to:

William Lund, Proceedings Volume Editor | Utah Geological Survey  
billlund@utah.gov | tel 435-865-9034 | fax 435-865-9037

For additional information and online registration, see the BRPSHSIII webpage at <http://geology.utah.gov/ghp/workgroups/brpshts.htm>.



Board of Examiners of Water Well and Pump Installation Contractors  
1313 Sherman Street, Room 821  
Denver, CO 80203  
P 303.866.3581 F 303.866.3589 www.water.state.co.us

**All interested parties:**

The Colorado Water Well Construction Rules (Rules) are open for revisions in 2015 and the rulemaking process has begun! The Board of Examiners of Water Well Construction and Pump Installation Contractors (BOE) is interested in hearing from people involved in all areas of the ground water community. Continue reading below to see how you can participate.

The public process for this rulemaking is designed to give stakeholders – all who may be affected by a change in the rules – the opportunity to present their thoughts, ideas, and reasoned opinions on any proposed changes. A series of public meetings are planned to make sure your voice is heard and to identify the areas of the rules that are in need of change to ensure the protection of public health and the preservation of ground water resources. The statutory guidelines for the rulemaking process are contained in the Administrative Procedure Act (APA) found in the Colorado Revised Statutes Title 24, Article 4. (C.R.S. 24-4-103)

Any comments submitted will be compiled and reviewed by BOE staff for consideration at public meetings, where the pros and cons of potential rule changes, additions, or deletions can be discussed by attendees. The goals of the public meetings are to

- (1) communicate with the ground water community at large,
- (2) identify specific rules that are in need of change, addition, or deletion, and
- (3) to the greatest extent possible, develop consensus for proposed changes.

Please refer to these helpful links for more information.

- 2014-2015 BOE Rulemaking Process Webpage
  - Go to: <http://water.state.co.us/groundwater/BOE/Pages/BOERules.aspx>
  - You will find a link to upcoming meetings on the [RULEMAKING MEETINGS CALENDAR](#)
  - Many more informational links including presentations and timelines

The following information can all be found on the above, Rulemaking Process Webpage

- Sign up for our email listserv to receive notices on upcoming meetings, drafts of proposed rules changes, and other information related to the rulemaking proceedings.
  - Go to: <https://www.dwr.state.co.us/OnlineTools/NotificationServices/Login.aspx>
  - You may need to create a New Notification Online Account
  - Once you have created an account or signed in you will need to select “Water Well Construction Rulemaking 2014-2015”
- Provide comments by following the directions on the webpage or
  - Download, Save and Complete the PDF fill-able form at <http://water.state.co.us/DWRIPub/Documents/Rulemaking%20Comment%20Form.pdf>
  - Enter your Name, Phone Number and Email Address on the [AskDWR Request Page](#). All other fields should populate for you.
  - Click Browse (in the Attachment line) to find and attach the PDF form you completed.
  - Click Submit Request.

Sincerely, BOE Staff



STATE OF COLORADO  
BOARD OF EXAMINERS OF WATER WELL CONSTRUCTION  
AND PUMP INSTALLATION CONTRACTORS

Calendar Year 2014 BOE Rulemaking - Draft Timeline

**Rules and Regulations for Water Well Construction, Pump Installation, Cistern Installation, and  
Monitoring and Observation Hole/Well Construction ("Construction Rules")  
2 CCR 402-2**

The following timeline is intended to guide Staff of the Board of Examiners, and participating stakeholders, in the drafting and deliberation process prior to completion of a final draft of proposed revisions, additions, and deletions to the Board's Construction Rules.

Due to any delay or unforeseen issues in meeting these rough deadlines, this timeline will be revised in accordance with Staff's progress.

**September 3, 2014**

- Deadline to submit [BOE Rulemaking Comment Forms](#) identifying an issue with the current rules and an initial proposal to address the issue for consideration at the 1<sup>st</sup> Stakeholder Meeting.

**September 3-10, 2014**

- Representative Stakeholders meeting to create an agenda and narrow the focus for the first public Stakeholder Meeting

**September 10, 2014**

- 1<sup>st</sup> Stakeholder Meeting, Open to Public
- 4:30 - 6:00 pm 1313 Sherman Street, Room 318, Denver, CO 80203
- Telephone call-in information will be announced at least 7 days prior to the meeting.

**October 7, 2014**

- Board of Examiners Meeting
- Summarize the first Public Stakeholders Meeting and provide updated Rulemaking timeline for completion of the drafting process.

**By November 7, 2014:**

- Circulate to the email list an initial summary of the process to date, including an initial cursory draft of rules changes
- Reminder of second Public Stakeholder meeting, and deadline for written proposals to be discussed at meeting.

**Week of November 10, 2014:**

- Deadline to submit additional written proposals for specific rules changes that will address an identified issue with the current rules, to be discussed at the 2<sup>nd</sup> Public Stakeholder meeting.

**Week of November 17, 2014**

- 2<sup>nd</sup> Public Stakeholder Meeting. Time/Location TBD.
- Discuss specific rules proposals, solicit input, ideas on revision to Rules
- Review formal written proposals submitted to Board Staff.

**December 19, 2014**

- BOE Staff publishes and provides notice to email list of an initial draft of proposed rules changes.

# AEG-RMS Board

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Eileen Dornfest  
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## September 2014 AEG-RMS Section Meeting Location

