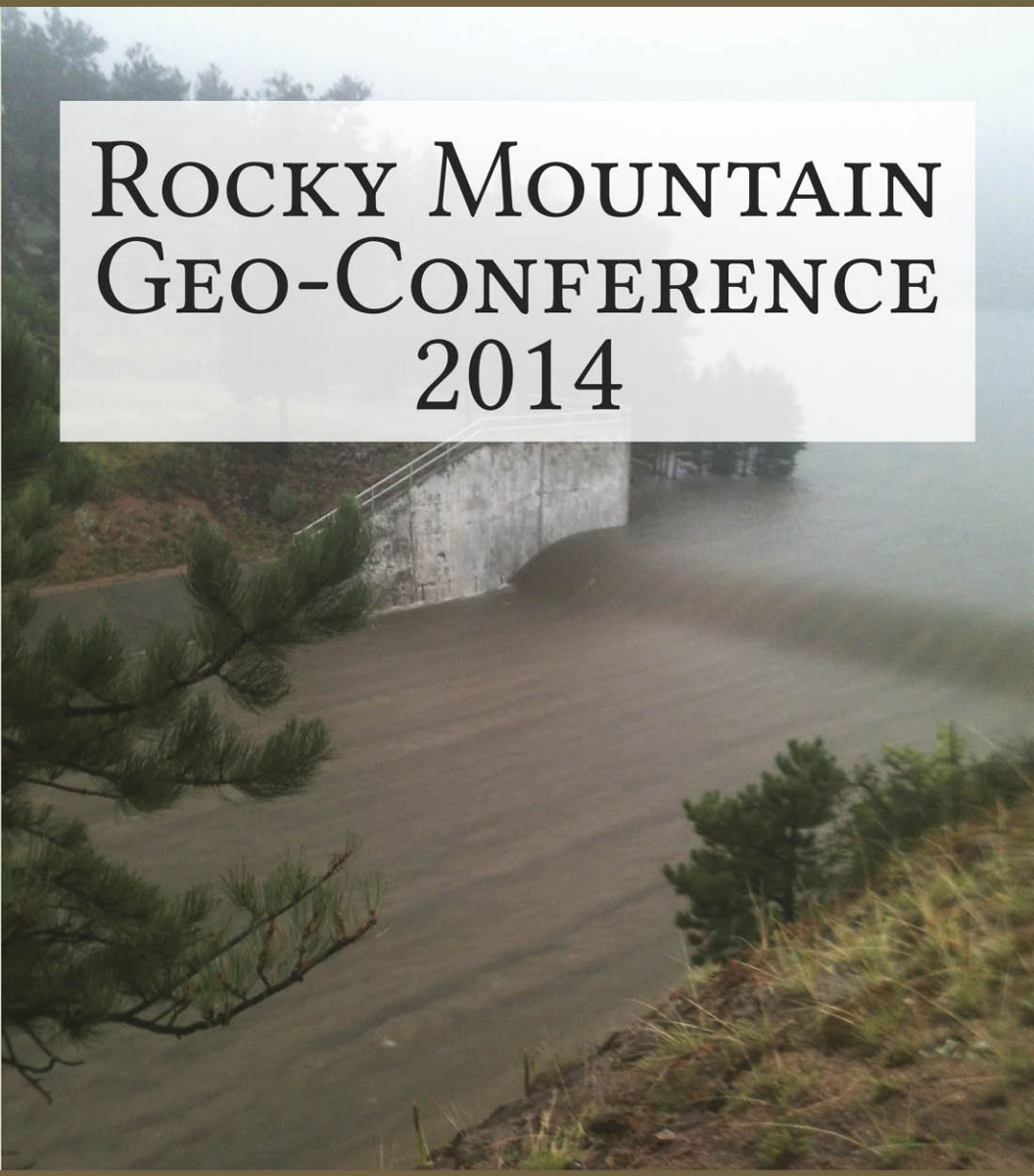
GEOTECHNICAL PRACTICE PUBLICATION NO. 9

Rocky Mountain Geo-Conference 2014



Edited by
Jere A. Strickland, P.E.
Richard L. Wiltshire, P.E.
Christoph M. Goss, Ph.D., P.E.

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ROCKY MOUNTAIN GEO-CONFERENCE 2014

PROCEEDINGS OF THE 2014 ROCKY MOUNTAIN GEO-CONFERENCE

November 7, 2014
Lakewood, Colorado

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Preface

As geo-professionals, we are called to provide solutions for the many challenges that our earth presents in the areas we choose to work, play and live. From nature's geological features to our world's aging infrastructure, we are presented with the challenge of developing in areas and in ways that many thought were unbuildable or un-attainable. Yet, through the use of new technologies, modeling methods and visual mapping, geo-professionals have answered these many challenges by providing viable solutions. This book provides examples of how some in our profession have overcome these types of challenges in mining applications, tunneling, geological anomalies, alternative energy resources and infrastructure. This will highlight, again, how the geo-professional community provides solutions to the most challenging applications.

Since 1984, the Geotechnical Institute Chapter of Colorado (formally known as the ASCE Colorado Section's Geotechnical Group) in collaboration with the Rocky Mountain Section of the Association of Environmental and Engineering Geologists and the Colorado Association of Geotechnical Engineers, has organized a biennial series of geotechnical seminars on a wide variety of themes that have been attended by as many as 270 civil/geotechnical engineers, geologists, and other geo-professionals. The geotechnical seminars have been held at area universities or hotels and have offered the opportunity for sharing ideas and experiences among Colorado's diverse geo-disciplines. Since 2004, ASCE's Geo-Institute has published the papers of these seminars in Geotechnical Practice Publications, allowing the experiences to be shared with a worldwide audience.

The Geo-Influence Steering Committee convened in August 2013 and held monthly meetings to plan for the 2014 Rocky Mountain Geo-Conference. The Steering Committee members included Christoph Goss (Conference Chair), Sam Adettiwar, Dustin Bennetts, Mark Brooks, Laura Campbell, Robin Dornfest, Darin Duran, Julia Frazier, Evan Friedman, Joseph Kerrigan, Joels Malama, Bill McCarron, Minal Parekh, Becky Roland, Jere Strickland, Lindsay Tita, Mark Vessely, Chris Wienecke, Richard Wiltshire, and John Worthen.

Jere Strickland, Richard Wiltshire, and Christoph Goss

Acknowledgments

The GeoChallenges Steering Committee wishes to take this opportunity to thank all of the authors and reviewers of our papers, which are herein presented as Geotechnical Practice Publication No. 9. The authors have spent many hours in preparing and finalizing their papers, which will be presented at the 2014 Rocky Mountain Geo-Conference on November 7, 2014. These papers have been reviewed by a volunteer group of Denver area geo-professionals who put in their valuable time and helped make these papers even better. The Geo-Institute's Committee on Technical Publications completed its review of our papers in a very timely manner and their adherence to our aggressive publication schedule is greatly appreciated. We would also like to acknowledge the assistance of Donna Dickert of ASCE's Publications Division for putting this publication together.

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