

Association of State Dam Safety  
Officials  
450 Old Vine Street  
Lexington, KY 40507

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**REGISTER NOW FOR TAILING  
DAMS 2000**

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# TAILING DAMS 2000

## Registration Packet

**March 28 - 30, 2000  
Flamingo Hilton Hotel  
Las Vegas, Nevada**

*A specialty conference focusing on the  
safety of tailing structures.*

Jerritt Canyon Tailing Dam, Elko, Nevada

# TAILING DAMS 2000

March 28-30, 2000

Flamingo Hilton Hotel

Las Vegas, Nevada

## Conference Registration

To pre-register for the conference, please mail the enclosed registration form to:

ASDSO  
450 Old Vine St. 2nd Floor  
Lexington, KY 40507

or Fax To: (606) 323-1958

You may also register via the Internet at ASDSO's web site:

[www.damsafety.org](http://www.damsafety.org)

## What You Will Get at the Conference

- More than 12 hours of educational instruction conducted by experts in several technical fields related to engineering, dam safety, and tailing structures. Conference participation will qualify you for professional development hours (PDH's).
- Opportunities to network with over 300 dam safety professionals from the U.S. and several foreign countries.
- Admission to the exhibit show featuring the latest in technology, services and design ideas.

- Complete conference proceedings, and participants list, along with information on publications and resources for further training in the area of tailing dams and dam safety.
- Admission to all conference technical sessions and food functions, and the opportunity to sign up for the post-conference field trip.

## The Flamingo Hilton Hotel

While situated in the center of all the action and excitement that is the Las Vegas Strip, the Flamingo Hilton is a world apart, featuring an enclosed 15 acre tropical garden with meandering pools and waterfalls. Outdoor amenities include a \$30 million pool and garden complex with five swimming pools, four lighted tennis courts, landscaped walking paths, a complete Health Spa, and golf at the nearby Las Vegas Hilton Country Club. Along with the large traditional casino, the Flamingo Hilton stages two shows, the "Great Radio City Spectacular" with the Radio City Rockettes, and "Forever Plaid", a 1950's style musical production.

In-house restaurants include Italian, Chinese, Japanese, and Continental cuisines, plus a steak house, a coffee shop, and the famous Paradise Garden Buffet.

The Flamingo Hilton is offering a Tailing Dams Conference rate of **\$99 single or double** occupancy. **Please make hotel reservations by calling the Hilton directly at (702) 733-3111.** Rooms are being held for ASDSO until Friday, March 3, 2000. Reservations made after that date will be on a space-available basis.

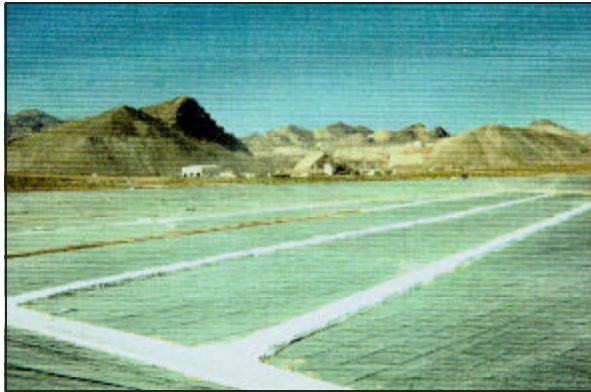
## Guest Registration

Spouses and other guests are welcome and encouraged to register for the conference and attend the nightly receptions and the luncheon on March 29. The fee for guest registration is \$40.

## Field Trip to Barrick Bullfrog Gold Mine, Beatty, Nevada

Barrick Bullfrog Mine is a gold and silver mining operation located approximately two hours northwest of Las Vegas near Beatty, Nevada and Death Valley, California. Bullfrog utilizes a mining operation using a cyanide lixiviant process for gold and silver extraction. The mine will begin closure and reclamation during 2000.

On the field trip, you will be visiting the lined tailings impoundment, lined reclaim ponds and portions of the mill. The tailings facility is a 4-celled, 75 foot high, geomembrane lined structure. The total capacity of the tailing facility is approximately 20,000 acre-feet. Along with viewing the dams and mill, there will be an informal presentation on how the gold and silver are mined and processed.



Barrick Bullfrog Gold Mine Tailings Dam

Thursday, March 30, from 9:00 am to 3:00 pm. Cost: \$40 per person includes deluxe round trip transportation, guided tour, and a box lunch.

## Exhibit and Sponsorship Opportunities

Thirty-six 8 X 10 exhibit spaces are available for the Tailings Dams 2000 Conference. The \$475 exhibit fee includes one fully equipped 8 x 10' exhibit space and one free registration to the conference.

Sponsorships are also available for this first annual specialized ASDSO conference. Sponsors who contribute a minimum of \$350 will receive name recognition throughout the conference, as well as one free meeting registration.

Please consider this opportunity to participate in the Tailing Dams 2000 conference and showcase your company's products or services, sponsor a conference event, and make valuable contacts among the growing dam safety community. If you would like to reserve an exhibit space or sign up as a conference sponsor, please contact Susan Sorrell, Conference Coordinator at 606/257-5146.

## Special Needs

ASDSO welcomes participants with special needs. Please call Susan Sorrell, Conference Coordinator at (606) 257-5146 to discuss arrangements.

## Questions?

Call ASDSO at (606) 257-5146  
E-Mail to [info@damsafety.org](mailto:info@damsafety.org)

# TAILINGS DAMS 2000 AGENDA

**Tuesday, March 28, 2000**

8:30 am – 10:00 am

## **General Session**

Chair: Terry Arnold, URS Greiner  
Woodward-Clyde, Denver, CO

### *Welcome/Nevada Perspective*

Jason King, P.E., Chief, Engineering & Dam  
Safety, NV Division of Water Resources,  
Carson City, NV

### *Thirty Years of Tailings Experience – What Have We Learned?*

George H. Glos, P.E., District Manager, PSI,  
Tempe, AZ

### *Keynote: Tailing Dams Safety*

Steven G. Vick, Geotechnical Consultant,  
Bailey, CO

10:30 am – 12:00 nn

## **Concurrent Session A: Seismic Issues**

Chair: John Fredland, Mine Safety & Health  
Administration, Pittsburgh, PA

### *Selection of Hydrologic and Earthquake Design Criteria for Tailings Dams*

Dr. Maciej Szymanski, Vice President;  
AGRA Earth & Environmental, Mississauga,  
Ontario; Todd E. Martin, Senior  
Geotechnical Engineer; and Dr. Michael P.  
Davies, P.Eng., P. Geo, Senior Geotechnical  
Consultant, AGRA Earth & Environmental,  
Burnaby, British Columbia.

### *Steady-State Liquefaction Susceptibility of High Hazard Upstream-Constructed Coal Refuse Disposal Facilities*

Blaise E. Genes, Geotechnical Engineering  
Manager, Almes & Associates, Inc., Export,  
PA

### *Predicting the Deformation of Tailings Dams Resulting From Earthquake Liquefaction Using Real-Time Numerical Modeling*

Rod N. Kostaschuck, M. Eng., P.Eng., and

Mr. John M.T. Wilkinson, M.A.Sc., P.Eng.,  
Knight Piesold, Ltd., Vancouver, British  
Columbia; and Dr. Peter M. Byrne, P.Eng.,  
Professor of Civil Engineering, University of  
British Columbia, Vancouver, British  
Columbia

10:30 am – 12:00 nn

## **Concurrent Session B: Reclamation Part I**

### *Disturbance + Tailing + Reclamation = An Oasis*

Stephen G. Shetron, Ph.D., CPSSc,  
Professor Emeritus, Michigan Technological  
University, Houghton, MI; and Gary J.  
Goodman, Senior Civil Engineer, Cleveland  
Cliffs Co., Ishpeming, MI

### *Mining Legacy Restored: Key to Success of the Bradley Tailing Diversion and Reclamation Project*

Christopher N. Hatton, P.E., Project  
Engineer, and William S. Eaton, Ph.D.,  
Project Manager, URS Greiner Woodward  
Clyde, Denver, CO; David Morrey, Ph.D.,  
President, DMA LLC, Englewood, CO; and  
Dan Burnham, Super Fuel Response  
Consultant, Business Resource  
Corporation, Fairfax, VA

### *Reducing Dam Rehabilitation and Reclamation Costs: Innovative Contract Methods*

Dale Evans, Envirocon, Golden, CO

1:30 pm – 3:00 pm

## **Concurrent Session C: Design, Construction, & Operation, Part I**

Chair: Jerald LaVasser, Washington  
Department of Ecology, Olympia, WA

### *Overview of Current Technical Issues in Tailings Dam Design*

George H. Gardner, Jr., Professional Civil  
Engineer, and Kelvin Wu, Chief, Mine  
Waste/Geotechnical Engineering, Mine  
Safety and Health Administration,  
Pittsburgh, PA

### *Tailing Dams & Tailing Basin Management*

Philip B. Solseng, Vice President, Barr  
Engineering Co., Minneapolis, MN

*Perimeter Embankments to Increase Capacity, Mitigate Subsidence Impacts, and Abandon Coal Refuse Impoundments*  
Barry K. Thacker, P.E., Geo/Environmental Associates, Inc., Knoxville, TN

1:30 pm – 3:00 pm

**Concurrent Session D: Better Dams Through Chemistry**

*Using Stabilized Fly Ash Liners to Neutralize Acidic Leachate*  
Andrew D. Spear, P.E., Senior Engineer, PP & L, Inc., Allentown, PA

*Aging in Tailing Dams*  
Len Murray, Klohn Crippen Consultants, Richmond, British Columbia

*Tailings: To Flood Or Not To Flood*  
Peri Mehling, Mehling Environmental Management, Vancouver, British Columbia; Franco Oboni, Oboni and Associates, Inc., Vancouver, British Columbia; and Iain Bruce, Bruce Geotechnical Consultants, Inc., Vancouver, British Columbia

3:30 pm – 5:30 pm

**Concurrent Session E: Design, Construction, & Operation: Part II**

*Alumbrera Mine Tailings Management System – Design and Construction, Challenges and Achievements*  
Bruce S. Brown, PhD., Director and Rod N. Kostaschuck, M. Eng., P.Eng., Senior Engineer, Knight Piesold Ltd., Vancouver, British Columbia; Mr. Leo R. Flanigan, Engineering and Services Manager, and Mr. Adrian D. Storey, Environmental Manager, Minera Alumbrera Ltd.

*Stabilization of Landslide at McElroy's Run Impoundment Using Auger Cast Grout Columns*

F. Barry Newman, Geotechnical/Structural Group Manager, Thomas R. Gowers, Staff Geologist, and Bruce L. Roth, Lead Engineer, GAI Consultants, Inc., Monroeville, PA; and Ralph E. Curtiss, Engineer, Allegheny Energy, Greensburg, PA

*Foundation Treatment of Stress Relief Fractures and Other Geologic Anomalies in a Tailings Embankment Cutoff Trench*  
Richard J. Perin, P.E., Consol, Inc., Pittsburgh, PA

*Design and Operational Practice to Aid Closure of Mine Processing and Waste Disposal Facilities*  
Dave Bentel, Pr.Eng. (SA), Dale Ortman, P.E., and Jeff Parshley, R.G., SRK Consulting, Reno, NV

3:30 pm – 5:30 pm

**Concurrent Session F: Stakeholders' Perspectives: Owner/Regulator/Engineer**

*Design and Construction of Hydraulically-Placed Beneficiation Sand Tailings Dams for Florida Phosphate Clay Settling Areas*  
Deedra M. Allen, J.D., P.E.; IMG-Agrico of Florida, Jeffrey A. Beriswill, P.E. and Thomas J. Leto, P.E., Ardaman & Associates, Bartow, FL

*Waste Clay Ponds in Florida – Regulatory Status*  
Stephen H. Partney, P.E., Professional Engineering Admin., Dept. of Environmental Protection, Tallahassee, FL

*A New Concept for Tailings Dams*  
Alberto M. Scuero, General Manager, and Gabriella L. Vaschetti, Manager, CARPI TECH S.A., Switzerland; and John A. Wilkes, President, CARPI USA, Roanoke, VA

*California Experience with Dams for Storing Mine Tailings*  
Ronald E. Delparte, Chief, Field Engineering Branch, and John H. Wright, Senior Engineer, Division of Safety of Dams, Sacramento, CA

5:30 pm – 6:30 pm

Reception in the Exhibit Area

**Wednesday, March 29, 2000**

8:30 am – 10:00 am

**General Session**

*Mine Tailings Dams: When Things Go Wrong*

Dr. Michael P. Davies, P.Eng., P. Geo., Todd Martin and Peter Lightall, AGRA Earth & Environmental, Burnaby, B.C.

*Closure and Reclamation of a Gold Tailings Impoundment In an Arid Climate: A Case History*

David A. Kidd, P.E., Golder Associates, Inc., Tucson, AZ; and Dan Kump, P.E., Barrick Bullfrog, Inc., Beatty, NV

*Wednesday Keynote: Design, Construction and Operation Considerations*

Anwar Wissa, Ardaman and Associates, Orlando, FL

10:30 am – 12:00 nn

**Concurrent Session A: In-Situ Testing and Site Assessment**

Chair, Jason King, Nevada Division of Water Resources, Carson City, NV

*Preliminary Geotechnical Investigation for Potential Commercial/Residential Development of Gold Hills Mesa, Colorado Springs, Colorado*

Ronald Tanenbaum, Ph.D. and Steven McCullough, Dames & Moore, San Diego, CA

*Rapid Piezocene Dissipation Testing for Tailings Investigations*

Kimberly Finke and Christopher N. Hatton, URS Greiner Woodward Clyde, Denver, CO; and Teresa Speigl, Phelps Dodge Morenci, Inc., Morenci, AZ

*Consolidation Assessment of Mine Tailings Deposits*

Graham R. Greenaway, Knight Piesold, Ltd., Vancouver, British Columbia

10:30 am – 12:00 nn

**Concurrent Session B: Reclamation Part II**

Chair: Stephen H. Partney Florida Department of Environmental Protection, Tallahassee, FL

*Snip Mine Tailings Impoundment Closure and Reclamation*

Raj Anand, Senior Project Engineer, and Tom Colbourne, Manager, Homestake Canada Inc., Vancouver, BC; and Robert Chambers, Manager of Environmental Affairs, Klohn-Crippen, Richmond, B.C.

*Wind Erosion of Lead Mine Tailings*

Richard W. Stephenson, P.E., Ph.D., University of Missouri-Rolla, Rolla, MO

*Closure of Boliden Apirsa's Failed Tailings Pond*

Charles Voss, Golder Associates, Inc., Redmond, WA

12:00 nn – 1:30 pm - Luncheon (Provided)

1:30 pm – 3:00 pm

**Concurrent Session C: Design, Construction, and Operation Part III**

Chair: Chris Veesaert, U.S. Bureau of Reclamation, Denver, CO

*Tailings Dams Defined, Described and Compared to Water Dams*

Allen H. Gipson, Jr., P.E., P.G., Principal, Knight Piesold & Co., Denver, CO

*Confessions of a Mine Regulator*

Peter Werner, Department of Environmental Quality, Helena, MT

*Experience with Tailings Dams in the Georgia Kaolin Belt*

A. Terry McClean, Rich Humphries, Tom Francis, and Jim Daly, Golder Associates, Inc., Atlanta, GA

1:30 pm – 3:00 pm

**Concurrent Session D: Instrumentation and Monitoring**

*Development and Review of Surveillance Programs for Tailings Dams*

Todd E. Martin, Senior Geotechnical Engineer; and Michael P. Davies, P.Eng., P. Geo, Senior Geotechnical Consultant, AGRA

Earth & Environmental, Burnaby, British Columbia; and Maciej Szymanski, Vice President; AGRA Earth & Environmental, Mississauga, Ontario

*Precise Automated Monitoring for Deformation of Dams Using the Global Positioning System (GPS)*  
Barry Hillman, Ph.D. and David Rutledge, Condor Earth Technologies, Sonora, CA

*Performance of an Upstream Constructed Slurry Disposal Reservoir During Abandonment by Covering with a 700 Ft High Durable Rock Fill*  
David C. Cowherd, CEO and Chief Engineer, and Ioan J. Corda, Senior Engineer, DBC Engineers & Associates, Ltd., Centerville, OH; and Stephen Hatfield, Performance Coal Company, Whitesville, WV

3:30 pm – 5:00 pm

### **Concurrent Session E: Design, Construction and Operation Part IV**

Chair: Kelvin Wu, Mine Safety & Health Administration, Pittsburgh, PA

*Advances in the Design, Planning, Construction and Operation of Tailings Storage Facilities*  
Steve Rice, P.Eng., Harvey McLeon, P.Eng., and Robert Chambers, Manager of Environmental Affairs, Klohn-Crippen Consultants, Ltd., Richmond, B.C.

*Pennsylvania Technical Guidance for Declassification of Tailings Dams*  
David B. Wilson, P.E., Vice President, Geotechnical Section, Gannett Fleming, Inc.; and Dennis Dickey, P.E., Chief-Project Review Section, and Larry R. McCauley, P.E., Senior Civil Engineer, Division of Dam Safety, Harrisburg, PA

*Re-mining Coal Preparation Plant Slurry Ponds*  
S.R. Michalski, and T.A. Gray, GAI Consultants, Inc., Pittsburgh, PA; J.W. Parkinson, CQ Inc., Homer City, PA; and D.F. Dargie, Pelletco Corp., Cohasset, MA

3:30 pm – 5:00 pm

### **Concurrent Session F: Risk Based Management**

*Two Decades of Dam Safety Office Experience in Applying a Risk Based Approach to Mine Impoundments*  
Jerald LaVassar, M.S., P.E., Department of Ecology, Olympia, WA

*Tailings Management Using Quantitative Risk Assessment*  
Iain Bruce, Bruce Geotechnical Consultants, Inc., Vancouver, British Columbia and Franco Oboni, Oboni Associates, Inc.

*Dewatering Strategies at Clay-Lined Tailings Impoundments to Reduce Environmental Risk*  
John Kramer and Robert Hoagland, Condor Earth Technologies, Inc., Sonora, CA

5:00 pm – 6:00 pm - Reception

### **Thursday, March 30**

9:00 am – 3:00 pm

Field Trip to Barrick Bullfrog Mine

#### ***Exhibitors and Sponsors***

Exhibitors and sponsors must complete a registration form and indicate that their conference registration fees (not including fees for extra activities) are covered by exhibit or sponsorship fees. Submit the completed form (with additional payments if applicable) to ASDSO in order to receive proper credit. If you are interested in sponsoring or exhibiting at the Conference, please contact ASDSO for the necessary information: [sasorell@damsafety.org](mailto:sasorell@damsafety.org)