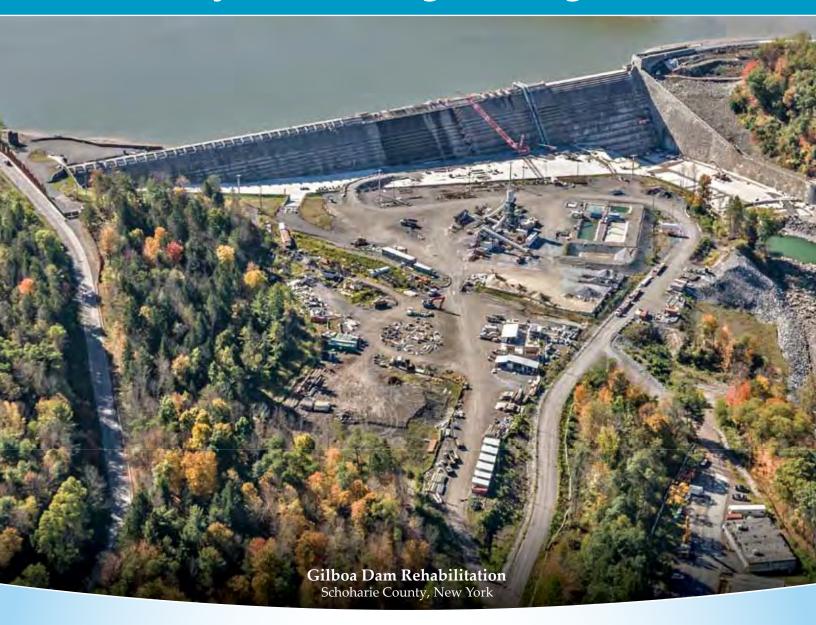
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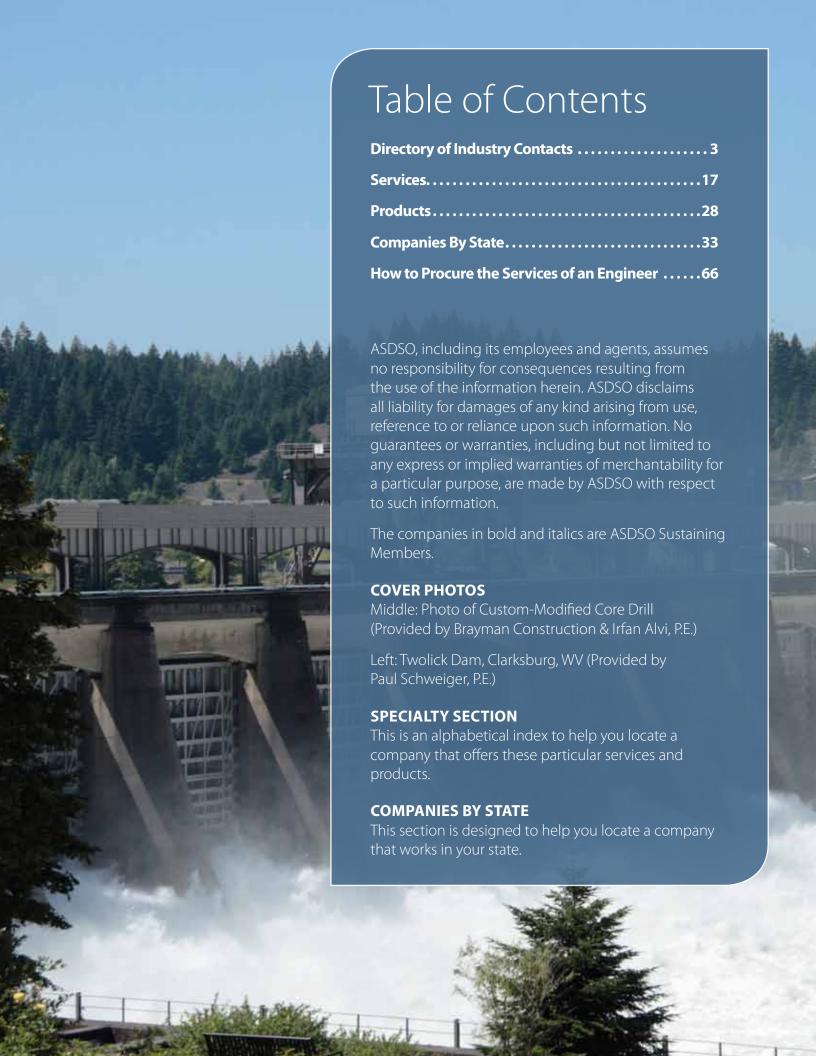
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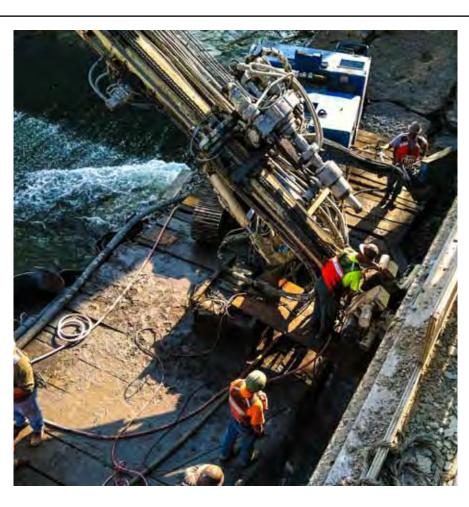
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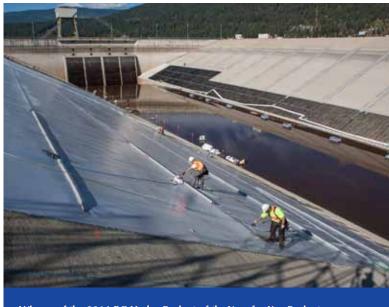
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VDV is an all included software for monitoring instrumentation data and manage it. VDV stores and handle all instrumentation data from any data loggers and other field devices. VDV offers storage of data, visualization by graphs, real-time monitoring and data tables, multiple alarm triggers, creation of calculated sensors, fast processing, configurable security access levels, automatic reports and comprehensive web. VDV can be applied to any Geotechnical or environmental project. VDV is installed in-house, lowers operational cost and software maintenance. All data is accessible through the web in real time and there is no coding needed.

WatershedGeo

Contact: Curt Boling 11400 Atlantis Place Alpharetta, GA 30022 US (770) 777-0386 FAX: (770) 777-0387 cboling@watershedgeo.com www.watershedgeo.com

Worthington Products, Inc.

Contact: Paul S. Meeks 3405 Kuemerle CT NE Canton, OH 44705 US (330) 452-7400 FAX: (330) 452-7495 sales@tuffboom.com www.tuffboom.com



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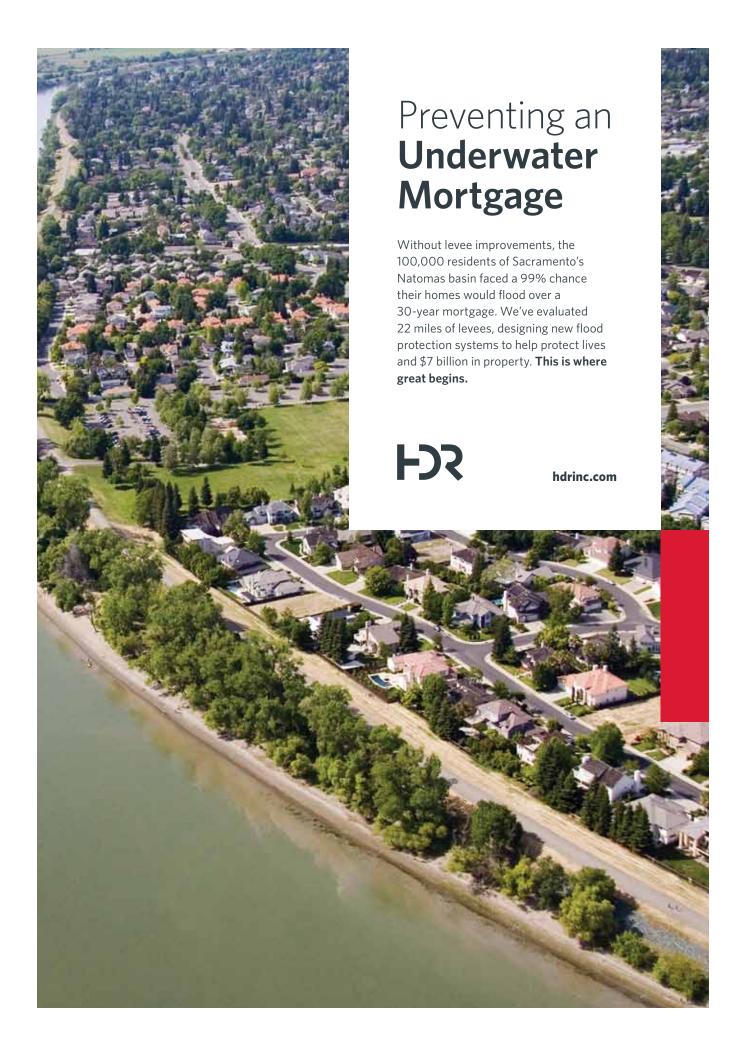
more. Bottom line: You can trust Worthington for all of your waterway barrier needs before, during and long after the sale. Visit us online at www.tuffboom. com or contact us by phone.

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Contact: Allan Estivalet, PE 555 Pleasantville Road, South Building Briarcliff Manor, NY 10510 US (914) 747-1120 FAX: (914) 747-1956 allan.estivalet@wspgroup.com www.wspgroup.com/usa



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SPECIALTY SECTION

This is an alphabetical index to help you locate a company that offers these particular services and products.

Services

Automated Data Acquisition – Geotechnical Instrumentation

AECOM

BDI

Brayman Construction Canary Systems, Inc. D'Appolonia

Earth Reinforcement Testing, Inc. (ERTesting)

Fugro Consultants Inc.

Henley-Johnston & Associates, Inc. hydroGEOPHYSICS Inc.

Mueser Rutledge Consulting

Engineers

RST Instruments Ltd.

Stantec Consulting Services Inc.

Vista Data Vision

Camera Inspection – Pipes

ASI Constructors, Inc.

DYWIDAG Systems International (DSI)

FENSTERMAKER
Pro-ROV Services
Vertical Access LLC

Computer-Aided Design & Engineering

Andrzejewski Engineering CME Engineering Parsons Brinckerhoff S&ME, Inc. T.Y. Lin International Tata & Howard, Inc. WSP

Concrete Inspection/Repair

ASI Constructors, Inc.

CME Engineering Dewberry

DYWIDAG Systems International (DSI)

Engineered Restorations, Inc. Fugro Consultants Inc.

Fuss & O'Neill, Inc.

Gomez and Sullivan Engineers, DPC

Hutton Construction

hydroGEOPHYSICS Inc.

McCormick Taylor

Mead & Hunt, Inc.

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Parsons Brinckerhoff
Stanley Consultants, Inc.
T.Y. Lin International
Tata & Howard, Inc.
Vertical Access LLC
WSP

Construction

AECOM

ASI Constructors, Inc. Barnard Construction Company,

Inc.

Brayman Construction
DYWIDAG Systems International
(DSI)

Hayward Baker Inc.

Hutton Construction Moretrench

Construction Inspection

CDM Smith

Civil Dynamics
CME Engineering
DOWL

Fugro Consultants Inc.

Gomez and Sullivan Engineers, DPC Henley-Johnston & Associates, Inc. McMahon & Mann Consulting

Engineers, P.C.

Michael Baker International

OBG

Princeton Hydro
S&ME, Inc.
Stanley Consultants, Inc.
T.Y. Lin International
Tata & Howard, Inc.
Tectonic Engineering & Surveying
Consultants P.C.

Construction Management

Amec Foster Wheeler
ASI Constructors, Inc.
Barnard Construction Company,
Inc.

Brayman Construction CME Engineering D'Appolonia Dewberry DOWL

Gannett Fleming HDR

Hutton Construction *Kleinfelder*

Michael Baker International WSP

Construction Testing

CME Engineering DOWL Fugro Consultants Inc. Henley-Johnston & Associates, Inc. *Kleinfelder*

Tectonic Engineering & Surveying Consultants P.C.

Dam Break Studies

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Andrzejewski Engineering Barr Engineering Co.

CDM Smith

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Dewberry **DOWL**

Flo-2D Software, Inc.

Gomez and Sullivan Engineers, DPC

McCormick Taylor Mead & Hunt, Inc.

OBG

Parsons Brinckerhoff **SAGE Engineers**

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Stanley Consultants, Inc.

T.Y. Lin International

Tata & Howard, Inc.

Tectonic Engineering & Surveying Consultants P.C.

WSP

Dam Design

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Andrzejewski Engineering Aubian Engineering Inc. Barr Engineering Co.

CDM Smith

Civil Dynamics

CME Engineering

D'Appolonia

Dewberry

DOWL

Dyrhoff Inc.

Fuss & O'Neill, Inc.

Gannett Fleming

Gomez and Sullivan Engineers, DPC

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Kleinfelder

McCormick Taylor

McMahon & Mann Consulting

Engineers, P.C.

Michael Baker International

Mueser Rutledge Consulting

Engineers

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Princeton Hydro

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Stanley Consultants, Inc.

Stantec Consulting Services Inc.

T.Y. Lin International

Tata & Howard, Inc.

Tectonic Engineering & Surveying

Consultants P.C.

WatershedGeo

WSP

Dam Inspection/Monitoring

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Andrzejewski Engineering

Aubian Engineering Inc.

Barr Engineering Co.

Canary Systems, Inc.

Civil Dynamics

CME Engineering

COH Inc.

D'Appolonia

DOWL

Dyrhoff Inc.

DYWIDAG Systems International

Earth Reinforcement Testing, Inc.

(ERTesting)

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Gannett Fleming

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Mead & Hunt, Inc.

Michael Baker International

Mueser Rutledge Consulting

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Schnabel Engineering, Inc.

Stanley Consultants, Inc.

T.Y. Lin International

Tata & Howard, Inc.

Vertical Access LLC

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Dam Operations & Maintenance

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Applied Weather Associates, LLC

ASI Constructors, Inc.

Aubian Engineering Inc.

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COH Inc.

Dyrhoff Inc.

DYWIDAG Systems International

(DSI)

Emagineered Solutions, Inc.

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McCormick Taylor

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Schnabel Engineering, Inc.

T.Y. Lin International

WatershedGeo

WSP

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Andrzejewski Engineering

ASI Constructors, Inc.

Aubian Engineering Inc.

Avanti International

Barnard Construction Company,

Brayman Construction

CDM Smith

Center Rock Inc.

Civil Dynamics

CME Engineering

D'Appolonia

Dewberry

Dyrhoff Inc.

DYWIDAG Systems International

Emagineered Solutions, Inc.

Engineered Restorations, Inc.

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Gannett Fleming

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CDM Smith

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Dewberry

DOWL

Dyrhoff Inc.

DYWIDAG Systems International

Earth Reinforcement Testing, Inc.

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T.Y. Lin International Tata & Howard, Inc.

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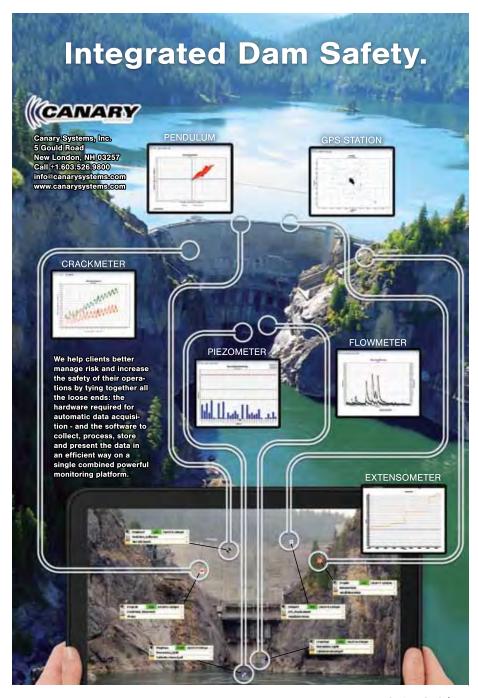
Emergency Action Plan/ Emergency Response Plan

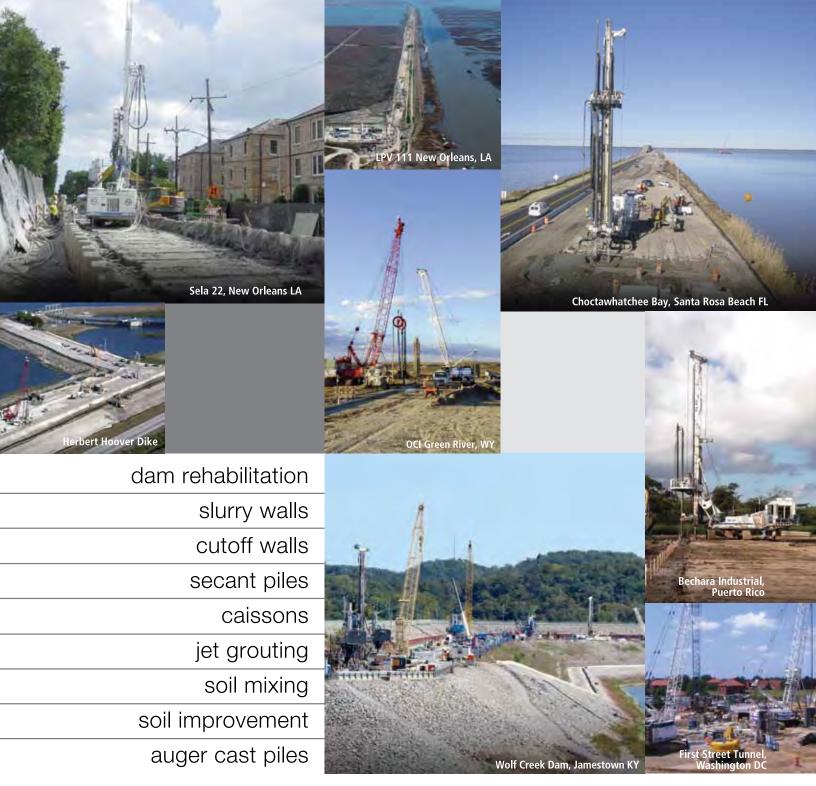
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FENSTERMAKER
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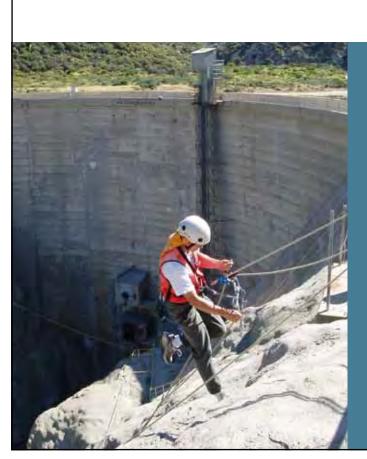
HDR

Hutton Construction Parsons Brinckerhoff Pro-ROV Services SAGE Engineers Stanley Consultants, Inc.

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WatershedGeo

Slurry Wall Cutoffs for Dams

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Moretrench

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SAGE Engineers

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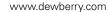




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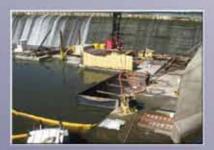
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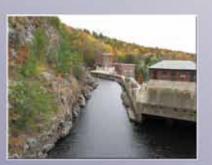
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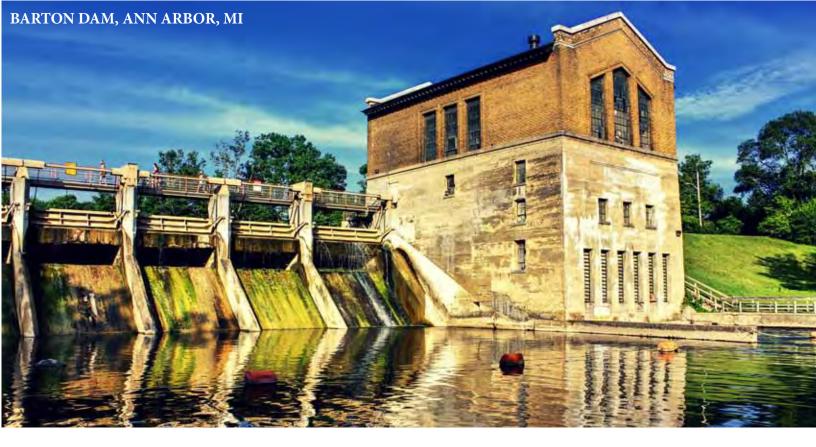
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- West Regional Conference, March 9-11, 2016; Sacramento, CA
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2016 Classroom Seminars: Watch DamSafety.org for dates!

- Seepage Through Earthen Dams
- HEC-RAS
- Fundamentals of Reinforced Concrete Design of Hydraulic Structures
- Stability Analysis of Embankment Dams
- Inspection and Assessments of Dams

Webinars: Watch DamSafety.org for the 2016 schedule to be announced!

- Rainfall and Dam Safety From PMP to the 100-Year Storm, October 13, 2015
- Human Factors in Dam Failures and Incidents, November 10, 2015
- Seepage Rehab Methods, December 8, 2015

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- Civil, Geotechnical, Environmental, and Structural Engineers
- Dam Owners & Operators
- Scientists & Technicians
- Engineering Consultants
- Service & Product Suppliers
 - •Academic Professors & Researchers
 - Students
- Hydrologists & Geologists
- Levee Safety Professionals

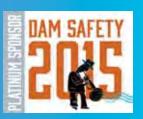
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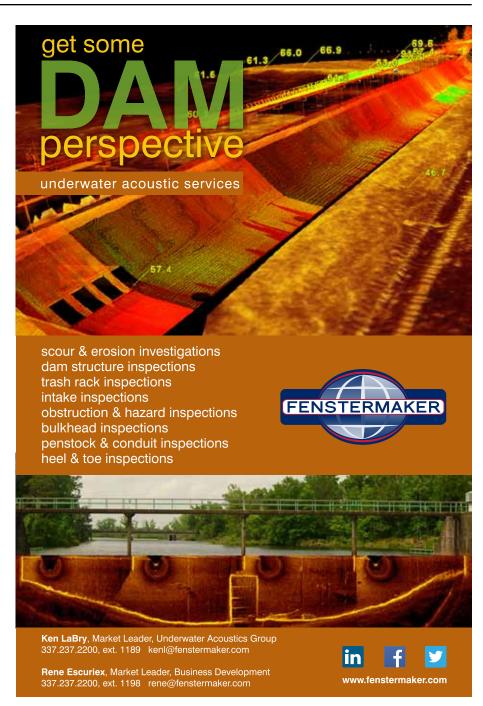
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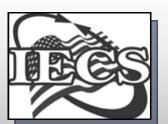
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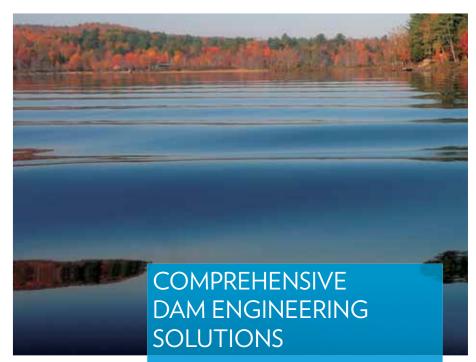
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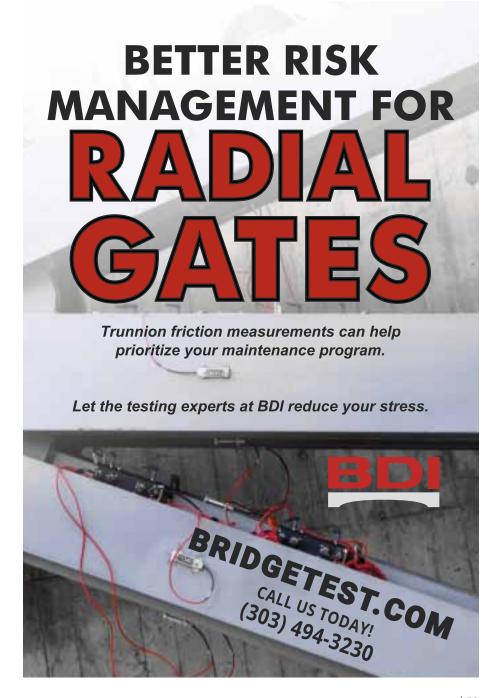
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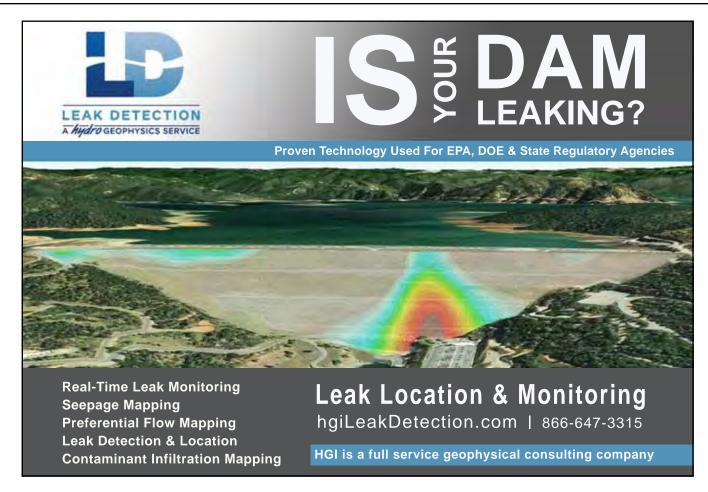
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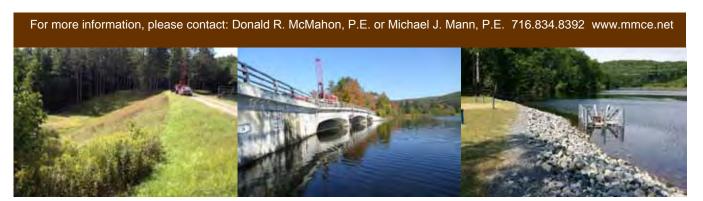
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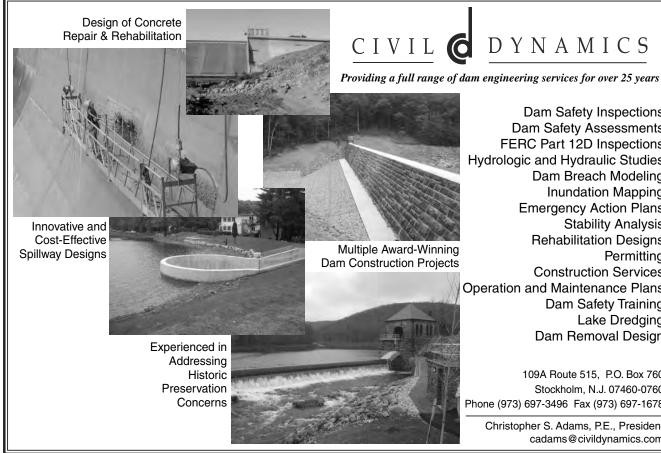
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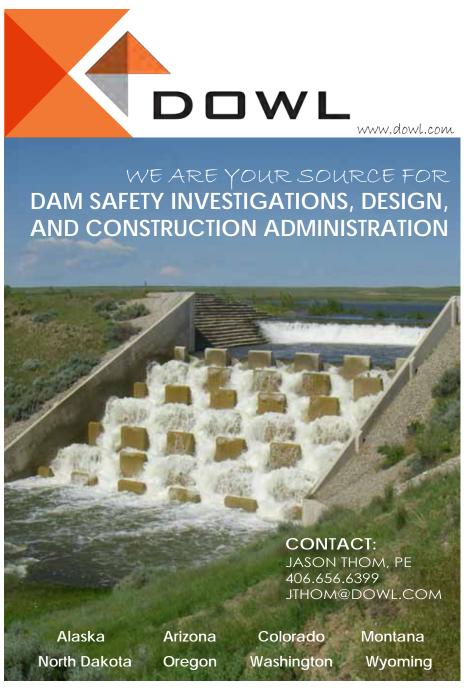
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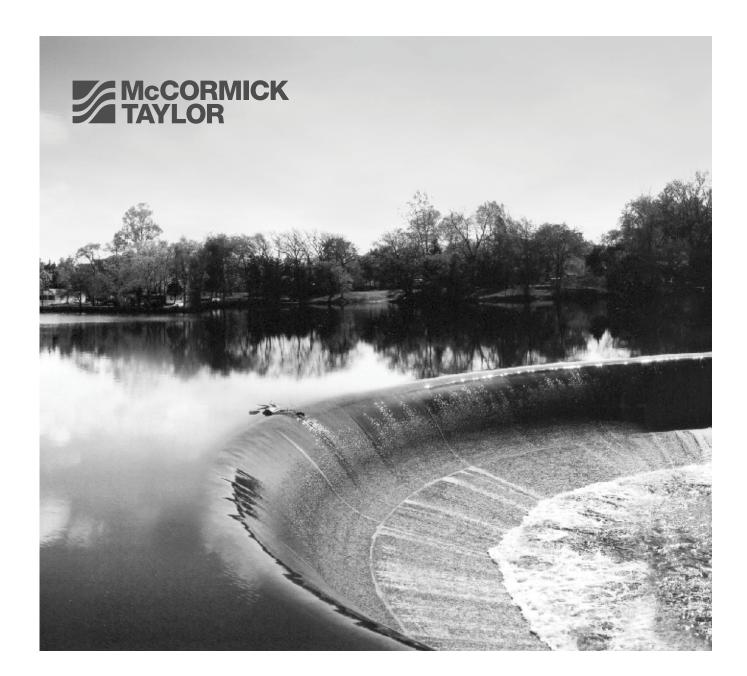
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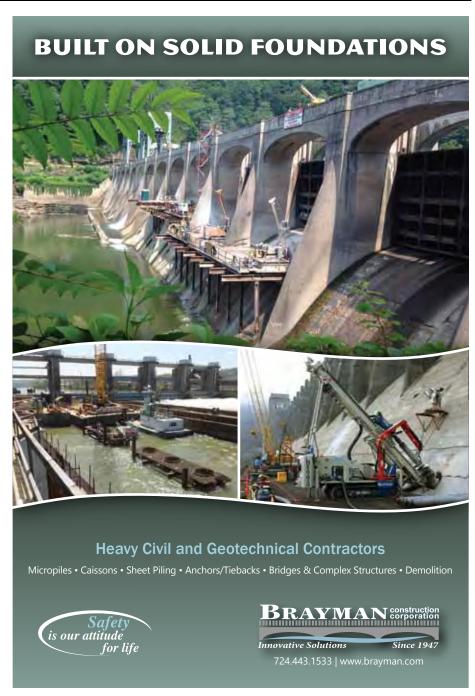
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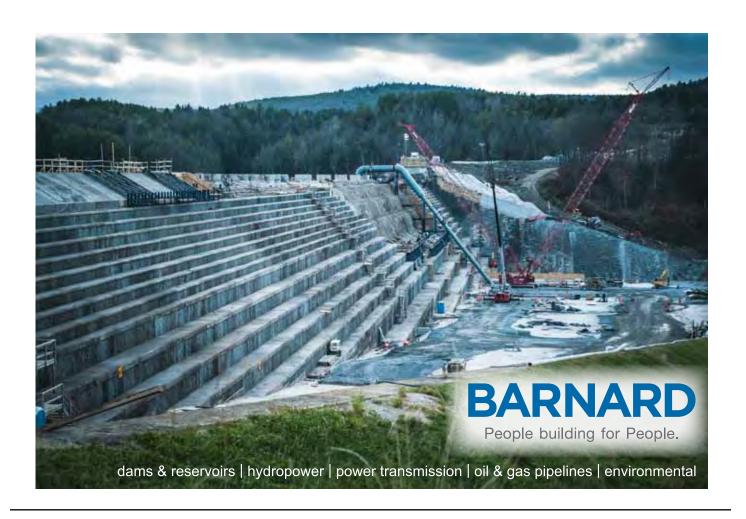
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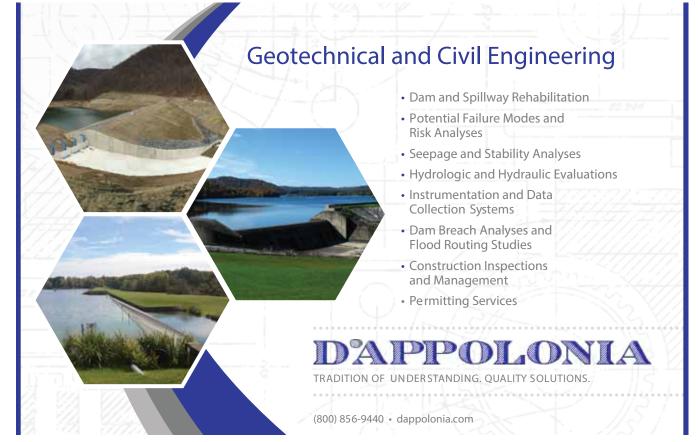
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Dam Ownership: Procuring the Services of a Professional Engineer



Introduction

Dams are owned and operated by individuals, private and public organizations, and the government. The responsibility for maintaining a safe dam rests with the owner. A dam failure, resulting in an uncontrolled release of the reservoir, can have a devastating effect on persons and property downstream. Additionally, a dam failure could mean loss of a vital resource to you. As a dam owner, you are liable for the water stored behind your dam. Therefore, proper operation, maintenance, repair, and rehabilitation of a dam are key elements in preventing a failure, limiting your liability, and maintaining your water resource.

Dam Maintenance and Owner Responsibility

Dam owners receive important benefits from the reservoir impounded by the dam. The responsibility owners hold for understanding the laws and regulations associated with proper dam maintenance, and the procedures for keeping the structures safe, is significant. This understanding could determine whether an owner will reap the benefits associated with responsible dam ownership or pay the costs resulting from improper dam maintenance. One of the most important procedures for ensuring proper maintenance of the dam is procuring the services of a professional engineer. This brochure is designed to answer the most commonly asked questions about hiring an engineer.

Why Do I Need an Engineer?

All dams meeting government regulatory definitions-no mater what their size or level of engineering-will deteriorate with time. Periodic inspection, proper maintenance, and occasional repair and rehabilitation are inevitable. An owner needs the expertise of an engineer to perform inspections or evaluate and undertake corrective measures at a dam. An engineer can investigate the problem and recommend a course of action which may include the design of corrective measures and the preparation of construction plans and specifications. The engineer also can assist in selecting a contractor and will provide valuable construction inspection services.





What Type of Engineer Should I Hire?

It is essential to select someone with a professional engineer (P.E.) certification, with a background in civil engineering, who is competent in the field of dam safety. Important criteria to look for in a prospective engineer include the following:

- A licensed professional engineer;
- A minimum of 10 years experience in dam design and construction;
- A knowledge of the rules and regulations governing dam design and construction in the state where the dam is located;
- Specific experience in the problem area-e.g., hydrology, hydraulics, structural or geotechnical engineering.

SELECTION STRATEGIES

How Do I Choose an Engineer who is best For My Needs?

There are three basic strategies for selecting engineering consulting services. These selection strategies are:

- Qualification-Based
- Fee-Based
- Intermediate

Oualification-Based

Oualification-Based selection means that the knowledge, experience, and ingenuity of the engineer are the determining factors in making the selection. This strategy is advantageous when the owner is uncertain about the exact problem or the best solution to the problem.

When Oualification-Based selection is used, several engineering firms submit their technical qualifications, experience with similar projects, reputation with existing clients, and any other factors pertaining to the specific project. The owner then selects the three most qualified firms to make brief presentations outlining a cost-effective and innovative approach to the problem. Based upon these presentations, the owner chooses the most qualified engineer to develop a scope of work.



When agreement on the scope of work is achieved, the engineer and the owner negotiate a price that is fair and reasonable to both parties. If an agreement cannot be reached, negotiations start with the second-ranked engineer. In this selection process, price is the main factor, but only after the most qualified engineer has been identified.



Fee-Based

Fee-Based selection means that the engineer's fee is the only determining factor in making the selection. It is advantageous when the owner knows exactly what is needed and can clearly define the scope of work before meeting with an engineer. In this case, the engineer is requested to prepare the designs and bid documents or conduct investigations as the owner specifies. This usually means getting a job done using "cookbook" solutions-with little room for innovation.

A strict Fee-Based selection often means that the engineer selected may not be qualified to do the work, especially if the bidding is open to anyone and/or the scope of work is poorly defined.

Intermediate

The Intermediate option is a cross between the Qualification-Based selection and Fee-Based selection processes. The Intermediate option requires that the owner pre-qualify engineers that are asked to submit a fee-based proposal. This process ensures a higher certainty that the work will be superior quality, but requires the owner to clearly define the scope of work. Without a clearly defined scope of work, the owner could receive a wide range of fee proposals, depending on the consulting engineer's interpretation of the project.



FOR YOUR CONSIDERATION

Request references from the engineer. Contact the references to discuss the engineer's performance. Look at projects that have been completed under the engineer's leadership. Request to review state files of projects an engineer has undertaken to see if the process went smoothly.

Maintain an open line of communication with regulatory agencies, particularly your State Dam Safety Program. Discuss an engineer's recommended course of action to verify that regulatory requirements will be satisfied.

Educate yourself in the basics of dam safety and be knowledgeable regarding the laws you must meet. Carefully consider your selection of an engineer. A little work on your part in selecting the engineer may save you money in the future.

For information on state dam safety statutes and administrative rules, contact:

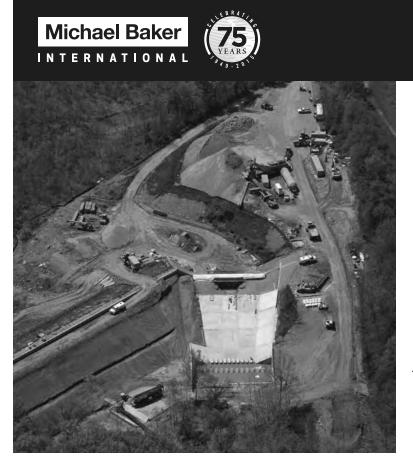
- Your State Dam Safety Office
- ASDSO
- State Attorney General

Reference Materials

How to Select and Work Effectively with Consulting Engineers, American Society of Civil Engineers Manuals of Practice. No. 45, 2012 *Qualification-Based Selection, American Consulting Engineer's Council, 2000*

Dam Safety: An Owner's Guidance Manual, FEMA 145, August 1987

Training Aids for Dam Safety: Dam Safety Awareness, Interagency Committee on Dam Safety/U.S. Bureau of Reclamation, 1994 ASDSO's tools and downloadable guidelines are available at www.damsafety.org



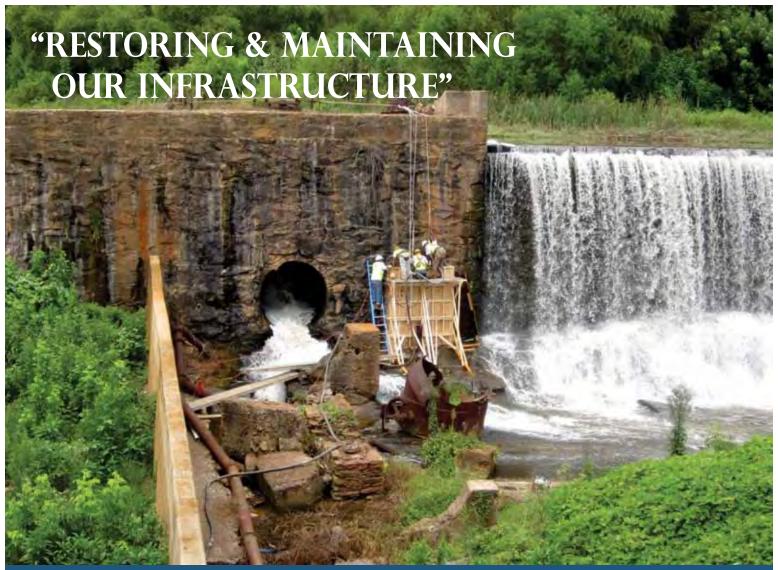
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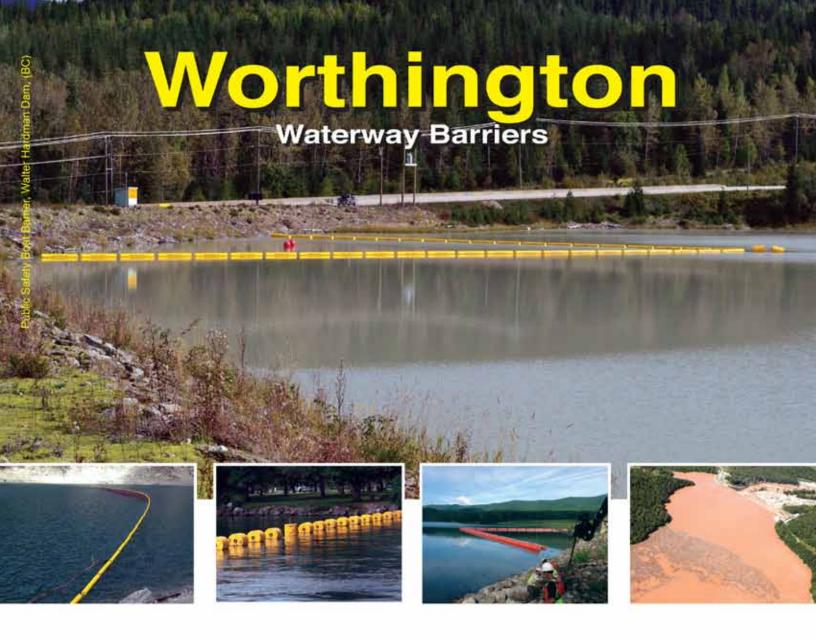




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