# SPIŚ TREŚCI

nr 1

## PEER REVIEWED

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors/Contributors</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Land use effects on stream nutrients at Beaver Lake Watershed</td>
<td>Josh Giovannetti, Leslie B. Massey, Brian E. Haggard, Robert A. Morgan</td>
</tr>
<tr>
<td>33</td>
<td>Fire sprinklers: Protecting lives, property and assisting water conservation efforts</td>
<td>Maria Figueroa</td>
</tr>
<tr>
<td>35</td>
<td>Modeling temperature in the drinking water distribution system</td>
<td>E.J. Mirjam Blokker, E.J. Pieterse-Quirijns</td>
</tr>
<tr>
<td>37</td>
<td>Contaminant intrusion in water distribution systems: An ingress model</td>
<td>Saheb Mansour-Rezaei, Gholamreza Naser</td>
</tr>
</tbody>
</table>

## FEATURES

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors/Contributors</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>One year later: Utility transfer delivers value to Indianapolis residents</td>
<td>Jeff Harrison, David Sherman</td>
</tr>
<tr>
<td>44</td>
<td>Research findings: What utility managers need to know</td>
<td>Vanessa Speight</td>
</tr>
<tr>
<td>51</td>
<td>Committee Report: Getting Information to small systems: Information dissemination survey of engineers and regulators</td>
<td>Small Systems Research Committee</td>
</tr>
<tr>
<td>60</td>
<td>West Virginia utility responds to the storm of the century</td>
<td>Jeffrey L. McIntyre</td>
</tr>
</tbody>
</table>

## SPECIAL THIS MONTH

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>Workforce Diversity</td>
</tr>
</tbody>
</table>

## COLUMNS AND DEPARTMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Inside Insight</td>
</tr>
<tr>
<td>6</td>
<td>Open Channel</td>
</tr>
<tr>
<td>8</td>
<td>People in the News</td>
</tr>
<tr>
<td>12</td>
<td>DC Beat</td>
</tr>
<tr>
<td>16</td>
<td>Security and Preparedness</td>
</tr>
<tr>
<td>20</td>
<td>Money Matters</td>
</tr>
<tr>
<td>26</td>
<td>AWWA/AMTA Membrane Technology Conference &amp; Exposition</td>
</tr>
<tr>
<td>28</td>
<td>Biological Treatment Symposium</td>
</tr>
<tr>
<td>29</td>
<td>Future AWWA Events</td>
</tr>
<tr>
<td>67</td>
<td>Workforce Diversity</td>
</tr>
<tr>
<td>69</td>
<td>Industry News</td>
</tr>
<tr>
<td>73</td>
<td>Section Meetings</td>
</tr>
<tr>
<td>74</td>
<td>Media Pulse</td>
</tr>
<tr>
<td>76</td>
<td>Product Spotlight</td>
</tr>
<tr>
<td>77</td>
<td>Buyers’ Guide</td>
</tr>
<tr>
<td>78</td>
<td>Consultants Directory</td>
</tr>
<tr>
<td>80</td>
<td>Service Providers</td>
</tr>
<tr>
<td>104</td>
<td>Advertisers</td>
</tr>
</tbody>
</table>
PEER REVIEWED
37  Projecting demand extremes under climate change using extreme value analysis / Erik Haagenson, Balaji Rajagopalan, R. Scott Summers, J. Alan Roberson
39  A crosscutting review of plumbing products-related water efficiency and conservation / Alison Williams, Camilla Dunham Whitehead, James Lutz
41  Offsetting water conservation costs to achieve net-zero water use / Kendra C. Olmos, Frank J. Loge
43  Behavioral economics and the design of a dual-flush toilet / Jade S. Arocha, Laura M.J. McCann

FEATURES
46  Pushing the conservation envelope through the use of alternate water sources / Paula Kehoe, Sarah Rhodes
51  New Mexico utility rolls out smart grid infrastructure / Norm Daigle, Anna Jackson
54  Project outcomes: Evaluating predicted benefits for field force mobilization / Chris Dermody, Phil Ragsdale, Mark Aragon
58  It isn't real, until it's on TV: Media and the water industry / Brandy Lellou
65  Committee Report: Metrics & methods for MF/UF system optimization / Membrane Processes Committee of the Technical and Educational Council, Water Quality and Technology Division

SPECIAL THIS MONTH
14  Up Close with
24  Young Professionals

COLUMNS AND DEPARTMENTS
2  Inside Insight
6  Open Channel
8  People in the News
14  Up Close with
20  Sustainable Water Management Conference
21  Future AWWA Events
24  Young Professionals
28  Law & Water
34  Industry News
80  Media Pulse
83  Product Spotlight
84  Section Meetings
85  Buyers' Guide
86  Consultants Directory
88  Service Provider Directory
112  Advertisers
PEER REVIEWED
41 MIEX® and PAC for removal of hydrophilic DBP precursors / David Hanigan, Enos Inniss, Thomas E. Clevenger
43 Chlorate, perchlorate, and bromate in onsite-generated hypochlorite systems / Benjamin D. Stanford, Aleksey N. Pisarenko, Deborah J. Dryer, Janie C. Ziegler-Holady, Sujanie Gamage, Oscar Quinones, Brett J. Vanderford, Eric R.V. Dickenson
45 An improved chloroform surrogate for chlorine dioxide- and alum-treated waters / Corey W. Granderson, Ashley D. Pifer, Julian L. Fairey
47 Using community economics to compare arsenic compliance and noncompliance / Emily McGavisk, J. Alan Roberson, Chad Seidel
49 Electronic delivery of consumer confidence reports / Adam T. Carpenter, J. Alan Roberson
51 Evaluating violations of drinking water regulations / Scott J. Rubin
53 Structural changes in the water industry from 2001 to 2011 / Scott J. Rubin

FEATURES
56 Water and hydraulic fracturing / Adam T. Carpenter
60 It's a numbers game: The psychology behind rate pricing and the argument for rounding / Melanie Goetz
63 California water rate trends / Sanjay Gaur, Bryan Lim, Khanh Phan
72 The power of smart water networks / Colin Walsby

SPECIAL THIS MONTH
12 DC Beat
26 Market Outlook
78 Water Worldwide

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
10 Erratum
12 DC Beat
18 Money Matters
26 Market Outlook
34 Law & Water
38 Security and Preparedness
78 Water Worldwide
83 Industry News
87 Media Pulse
89 Product Spotlight
90 Section Meetings
91 Buyers' Guide
92 Consultants Directory
94 Service Provider Directory
118 Official Notice: Standards
120 Future AWWA Events
120 Advertisers
PEER REVIEWED

47 Proposed nutrient criteria for water supply lakes and reservoirs / Clifford W. Callinan, John P. Hassett, James B. Hyde, Ronald A. Entringer, Raphael K. Klake

49 Spectral evaluation of watershed DOM and DBP precursors / Katherine M.H. Beggs, Judith A. Billica, Julie A. Korak, Fernando L. Rosario-Ortiz, Diane M. McKnight, R. Scott Summers

51 Acceptable microbial risk: Cost-benefit analysis of a boil water order for Cryptosporidium / Michael O. Ryan, Patrick L. Gurian, Charles N. Haas, Joan B. Rose, Phillip J. Duzinski

53 MIEX® treatment of an effluent-impacted stream / Xiaojie Gan, Daekyun Kim, Tanju Karanfil

55 Demonstration testing of nitrification control using chlorite in Irvine, Calif. / Nicole Blute, David W. Pedersen, Xueying Wu, Edward Means

57 Integrated water quality-water supply modeling to support long-term planning / W. Joshua Weiss, Grantley W. Pyke, William C. Becker, Daniel P. Sheer, Rakesh K. Gelda, Paul V. Rush, Tina L. Johnstone

FEATURES

60 Think globally: Replace disaster response with risk management / Les Lampe, Klint A. Reedy

64 Helping customers connect tiered rates with actual water use / Melanie K. Goetz

67 Reducing electric power costs in small water systems / John E. Regnier, Richard Winters

SPECIAL THIS MONTH

16 EPA Communiqué

21 Committee Connection

31 ACE13 Coverage

COLUMNS AND DEPARTMENTS

2 Inside Insight

6 Open Channel

8 People in the News

12 Law & Water

16 EPA Communiqué

21 Committee Connection

26 Security and Preparedness

31 ACE13 Coverage

73 Industry News

78 Media Pulse

79 Future AWWA Events

80 Section Meetings

81 Product Spotlight

83 Buyers’ Guide

84 Consultants Directory

86 Service Provider Directory

110 Official Notice: Standards

112 Advertisers
nr 5

PEER REVIEWED
51 Technical, managerial, and financial capacity among small water systems / Christopher S. Blanchard and W. David Eberle
53 Homeowners' decision-making in a premise plumbing failure-prone area / Juneseok Lee, Ewa Kleczyk, Darrell J. Bosch, Andrea M. Dietrich, Vinod K. Lohani, and G.V. Loganathan (deceased)
55 Simulated distribution nitrification: Nitrification Index evaluation and viable AOB / Karen A. Schrantz, Jonathan G. Pressman, and David G. Wahman
57 Consumer ability to detect the taste of total dissolved solids / Andrea M. Dietrich and Conor D. Gallagher
59 A joint water diversion plan for China / Shumin Liang

FEATURES
62 Strategies for assessing optimized corrosion control treatment of lead and copper / Richard A. Brown, Nancy E. McTigue, and David A. Cornwell
76 Thirsty for gold! Slaking the diggings from California to Bendigo / Geoff Russell
86 Asset management: How US utilities can leverage international experience / Will Williams, Martin Jones, and Jeff Stillman
92 Wastewater treatment in Norway: An overview / Govindarajan Venkatesh
99 Wastewater management training critical to future success of utilities in US-Mexico border region / Juan Antonio Flores and Sharon Garcia
104 The qanat of the Greatest Western Erg / Boualem Remini and Bachir Achour
108 How to get real innovation flowing in the water industry / Jim Matheson

SPECIAL THIS MONTH
12 DC Beat
31 ACE13 Coverage

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
12 DC Beat
18 Law & Water
24 Security and Preparedness
31 ACE13 Coverage
118 Industry News
124 Media Pulse
128 Product Spotlight
132 Future AWWA Events
133 Buyers' Guide
134 Consultants Directory
136 Service Provider Directory
162 Official Notice: Standards
163 Section Meetings
164 Advertisers
PEER REVIEWED
31 Contaminant intrusion in water distribution systems / Saheb Mansour-Rezaei, Gholamreza Naser, Ahmad Malekpour, Bryan W. Karney
33 Using a water quality index to determine and compare creek water quality / Annie Berlemann
35 Pilot-testing of electrolysis for bromide removal from drinking water / David Eugene Kimbrough, Lina Boulos, Sirikarn Surawanvijit, Adam Zacheis, Yoram Cohen
37 Total chromium and hexavalent chromium occurrence analysis / Chad J. Seidel, Christopher J. Corwin
39 National and California treatment costs to comply with potential hexavalent chromium MCLs / Chad J. Seidel, Issam N. Najm, Nicole K. Blute, Christopher J. Corwin, Xueying Wu

FEATURES
42 Defining rates by the gallon makes water worth the price / Melanie Goetz
45 Eleven myths about social media every utility manager should know - and how to overcome them / Samantha Villegas
53 Cleaning urban waters using collaboration and science / Michael P. Slevin III
61 Information engineering: An integrated approach to water system management / Peter Williams
67 California's sustainable future: Understanding the water-energy nexus vital to resource management / Amul Sathe
72 Comprehensive renewal program addresses aging water and sewer infrastructure / Ralph Terrero, Vincente E. Arrebola, Luis Aguiar, Rod J. Lovett, Richard A. Coates
78 Every drop counts: How water utilities are putting water efficiency first / Dave Hanes

SPECIAL THIS MONTH
26 Young Professionals

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
12 Law & Water
18 Security and Preparedness
26 Young Professionals
83 Future AWWA Events
84 Industry News
92 Media Pulse
96 Product Spotlight
100 Section Meetings
101 Buyers' Guide
102 Consultants Directory
104 Service Provider Directory
132 Official Notice: Standards
132 Advertisers
PEER REVIEWED
39 Effect of connection methods on lead release from galvanic corrosion / Yin Wang, Vrajesh Mehta, Gregory J. Welter, Daniel E. Giammar
41 Quantifying the effect of buffer strips for pathogen removal / Kathy Cinque, Niranjali Jayasuriya
43 Calculating the greenhouse gas emissions of water utilities / Anthony H. Johnston, Tanju Karanfil
45 Predicting and managing residential potable irrigation using parcel-level databases / Kenneth Friedman, James P Heaney, Miguel Morales, John E. Palenchar
47 PCCP risk management - State of the art and strategy optimization / John J. Roller

FEATURES
50 Envision: A sustainability guide for water professionals / William J. Bertera
54 Using technology to meet the demands of replacing aging infrastructure / Sergio R. Aranda, Ashley Garcia
60 Committee Report: Defining model calibration
64 An economical and sustainable alternative to open-cut construction for small-diameter water main rehabilitation / David S. Pyzoha
78 Tank management 101 / Erika N. Henderson
82 The irrationality of rational numbers / Melanie Goetz

SPECIAL THIS MONTH
12 DC Beat
27 Committee Connection
29 Tech Talk
34 Distribution systems Symposium and Emergency Preparedness & Security Conference and Exposition
36 Manager to Manager

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
12 DC Beat
18 Law & Water
22 Security and Preparedness
27 Committee Connection
29 Tech Talk
34 Distribution systems Symposium and Emergency Preparedness & Security Conference and Exposition
36 Manager to Manager
87 Errata
88 Industry News
96 Media Pulse
97 Future AWWA Events
98 Product Spotlight
100 Section Meetings
101 Buyers' Guide
FEATURES
26 Recruiting and retaining staff in a rebounding economy and employment market / John C. Robak
29 Committed to success: New CIS and CMMS integration net huge benefits for utility / Melanie Rettie
34 Invisible peril: Managing rate issues through public involvement / Melanie Goetz
38 Emergency response or long-term resilience? Extreme events challenge water utilities and their communities / Erica Brown, Claudio Ternieden, Karen Metchis, Nancy Beller-Simms, Lauren Fillmore, Kenan Ozekin
41 Water and wastewater rates on the rise / Rocky Craley, Catherine Noyes

SPECIAL THIS MONTH
16 Money Matters

PEER REVIEWED
47 Large utilities’ use of the microbial toolbox for LT2ESWTR compliance / Nancy E. McTigue, David A. Cornwell
49 Round 1 LT2ESWTR Cryptosporidium monitoring results / Alexa Obolensky, Michael Hotaling
51 Role of the water main in lead service line replacement: A utility case study / Eliman Camara, Krysta R. Montreuil, Alisha K. Knowles, Graham A. Gagnon
53 Marcellus Shale drilling and brominated THMs in Pittsburgh, Pa., drinking water / Stanley States, Georgina Cyprych, Mark Stoner, Faith Wydra, John Kuchta, Jason Monnell, Leonard Casson
55 Customer perspectives on water quality, safety, and service failure risks / Ali Chalak, Scott Reid, Martin Silcock, Mohamad G. Abiad
57 Parcel-level modeling of end-use water demands in public supply / Miguel Morales, Jacqueline Martin, James Heaney, Kenneth Friedman

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
12 Law & Water
16 Money Matters
22 Security and Preparedness
63 Industry News
65 Media Pulse
66 Future AWWA Events
67 Product Spotlight
68 Section Meetings
69 Buyers’ Guide
70 Consultants Directory
72 Service Provider Directory
100 Advertisers
FEATURES
46  2013 State of the Water Industry: Exploring the water sector's renewed focus / Kenneth Mercer
57  The paradox of value: Water rates and the law of diminishing marginal utility / Melanie K. Goetz
60  Cloud-based computing in the forecast / Larry Combs
64  Potable reuse: Developing a new source of water for San Diego / Marsi A. Steirer, Danielle Thorsen
71  Condition assessment program essentials / Ahmad Habibian, James Strayer

SPECIAL THIS MONTH
12  DC Beat
22  Eco Logic
32  A.P. Black Research Award
38  2013 AWWA Awards Recipients
44  2013 Water Quality Technology Conference® and Exposition
92  Workforce Diversity

PEER REVIEWED
77  Virtual water from a vanishing river / Scott Kelley, Martin Pasqualetti
79  Source water and microfiltration plant manganese control study / Daniel Olin Lewis, David A. Ladner, Tanju Karanfil
81  Klang River-level forecasting using ARIMA and ANFIS models / Hadi Galavi, Majid Mirzaei, Lee Teang Shui, Nariman Valizadeh
83  Parcel-level model of water and energy end use: Effects of indoor water conservation / Miguel A. Morales, James P. Heaney, Kenneth R. Friedman, Jacqueline M. Martin
85  Aquifer plume delineation of mixed population nitrate data using ArcGIS / Avdhesh K. Tyagi, Nicholas M. Johnson
87  Innovative biological water treatment for the removal of elevated ammonia / Darren A. Lytle, Colin White, Daniel Williams, Lauren Koch, Emily Nauman
89  Web-based benchmarking of drinking water utilities in the United States / Ankur Rathor, Sunil Sinha

COLUMNS AND DEPARTMENTS
2  Inside Insight
6  Open Channel
8  People in the News
12  DC Beat
18  Law & Water
22  Eco Logic
26  Security and Preparedness
32  A.P. Black Research Award
38  2013 AWWA Awards Recipients
44  2013 Water Quality Technology Conference® and Exposition
92  Workforce Diversity
98  Future AWWA Events
99  Industry News
FEATURES

44 2013: Strategic directions in the US water and wastewater utility industry / Cindy Wallis-Lage, John Chevrette
54 Taking a holistic approach to nonrevenue water / Brian Fiut, Mark Patience
60 Diluting the inevitable: A case for decoupling water rates / Melanie K. Goetz

SPECIAL THIS MONTH

28 Young Professionals

PEER REVIEWED

63 Effect of customer satisfaction on water utility business performance / Emmanuel A. Donkor
65 Estimating stakeholder benefits of community water system regionalization / Jason K. Hansen
67 Residential landscape water use in 13 North Carolina communities / Barbara A. Fair, Charles Safley
69 Effect of connection type on galvanic corrosion between lead and copper pipes / Brandi Clark, Clement Cartier, Justin St. Clair, Simoni Triantafyllidou, Michele Prevost, Marc Edwards
71 Dynamic performance of biosand filters / Thomas J. Lynn, Pauline Wanjugi, Valerie J. Harwood, Sarina J. Ergas
73 Minimizing raw water NOM concentration through optimized source water selection / W. Joshua Weiss, Steven C. Schindler, Salome Freud, Julie A. Herzner, Katie F. Hoek, Benjamen A. Wright, David A. Reckhow, William C. Becker
75 Stainless-steel wires exclude gulls from a wastewater treatment plant / Daniel E. Clark, Kiana K.G. Koenen, Kenneth G. MacKenzie, Jillian W. Pereira, Stephen DeStefano

COLUMNS AND DEPARTMENTS

2 Inside Insight
6 Open Channel
8 People in the News
14 Law & Water
20 Security and Preparedness
28 Young Professionals
36 Industry News
77 Official Notice: Standards
80 Media Pulse
82 Product Spotlight
84 Section Meetings
85 Buyers' Guide
86 Consultants Directory
87 Future AWWA Events
88 Service Provider Directory
116 Advertisers
FEATUERS
28 An evaluation of the accuracy of on-line THM monitoring / Harmesh Saini, Michael West, Qin Wang, Jim Garvey, Rudy Mui
34 San Francisco’s race against time: Should other US cities start running? / Julie L. Labonte
44 Climate change, extreme weather, and water utilities: Preparing for the new normal / Rob Renner
52 Geologic sequestration of carbon dioxide: Implications for public water systems / Joseph A. Drago, Adam T. Carpenter

SPECIAL THIS MONTH
10 Perspectives
14 DC Beat
20 Market Outlook
25 Manager to Manager
72 Water Worldwide

PEER REVIEWED
59 From what perspective? Distributional accounting within cost-benefit analysis / Craig P. Aubuchon
61 Using work breakdown structure models to develop unit treatment costs / Rajiv Khera, Pat Ransom, Thomas F. Speth
63 Estimating seawater intrusion impacts on coastal intakes as a result of climate change / Edwin A. Roehl Jr., Ruby C. Daamen, John B. Cook
65 Low-risk cyanobacterial bloom sources: Cell accumulation within full-scale treatment plants / Arash Zamyadi, Sarah Dorner, Mouhamed Ndong, Donald Ellis, Anouka Bolduc, Christian Bastien, Michele Prevost
67 Meter-testing methods matter / Devan J. Shields, Steven L. Barfuss, Michael C. Johnson, Craig C. Hannah
69 Optimum management of cyclic storage systems: A simulation-optimization approach / Mohammad Amin Jahanpour, Abbas Afshar, Saeed Alimohammadi

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
10 Perspectives
14 DC Beat
18 Law & Water
20 Market Outlook
25 Manager to Manager
72 Water Worldwide
77 Errata
78 Industry News
82 Statement of Ownership
83 Media Pulse
85 Product Spotlight
87 Section Meetings
88 Classifieds
FEATURES
18 New water treatment plant features first dissolved-air flotation system in Illinois / Steven London
22 Water utility executive leadership, Part 1: Who our CEOs are / Manuel P. Teodoro, Travis E. Whisenant
31 Cumulative water-use impacts in the Great Lakes-St. Lawrence River Basin / Mike Piskur
35 A SMaRT future for our water infrastructure / Mike Italiano
38 Water treatment energy management / Steve Raschke

PEER REVIEWED
43 Submerged appurtenances and pipelines: An assessment of water levels and contaminant occurrence / Gabrielle Ebacher, Marie-Claude Besner, Michele Prevost
45 Nanomaterials: Removal processes and beneficial applications in treatment / Glen R. Boyd, Mary Ellen Tuccillo, Anne Sandvig, Miguel Pelaez, Changseok Han, Dionysios D. Dionysiou
47 Nongenotoxic mechanisms involved in bromate-induced cancer in rats / Richard J. Bull, Joseph A. Cotruvo
49 Life-cycle energy analysis of performance- versus age-based pipe replacement schedules / Monica E.E. Prosser, Vanessa L. Speight, Yves R. Filion
51 Improving the estimation of volumetric water sales for billing / Emmanuel A. Donkor

COLUMNS AND DEPARTMENTS
2 Inside Insight
6 Open Channel
8 People in the News
12 Law & Water
42 2013 Reviewer Recognition
56 Industry News
63 Media Pulse
65 Product Spotlight
68 Section Meetings
69 Buyers' Guide
70 Consultant Directory
71 Future AWWA Events
72 Service Provider Directory
100 Advertisers