TECHNICAL LIBRARY

February 8, 2008

Current Journal Contents
of the
OSM-WR Technical Library
1999 Broadway, Suite 3410
P.O. Box 46667
Denver, CO 80201-6667

This is the current compilation of the table-of-contents pages for journals received during the month of January in the Library. Individuals may have copies of specific articles by notifying the librarian either by phone, e-mail, or regular mail service. **(If you have more than one or two articles you want, please send a written or e-mail request.)**

Deborah K. McGinnis, Librarian Tele: (303) 844-1436
FAX (303) 844-1545 E-mail: dmcginni@osmre.gov
OSM Library Catalog: http://www.wrcc.osmre.gov/glas/

NOTICE OF WARNING CONCERNING COPYRIGHT RESTRICTIONS

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

Agronomy Journal January–February 2008 Volume 100, No. 1

p. 1 of 2

Table of Contents

Centennial Papers

Agronomy Journal Turns One Hundred
Calvin H. Pearson, Susan M. Ernst, Ken A. Barbarick, Jerry L. Hatfield, Gary A. Peterson, and Dwayne R. Buxton 1

History, Achievements, and Current Status of Genetic Resources Conservation
Adi B. Damania 9

After 10,000 Years of Agriculture, Whither Agronomy?
Fred P. Miller 22

Cotton

Yield, Quality, and Fruit Distribution in Bollgard/Roundup Ready and Bollgard II/Roundup Ready Flex Cottons
Cory I. Mills, Craig W. Bednarz, Glen L. Ritchie, and Jared R. Whitaker 35

Economic Comparison of Transgenic and Nontransgenic Cotton Production Systems in Georgia
P. Jost, D. Shurley, S. Culpepper, P. Roberts, R. Nichols, J. Reeves, and S. Anthony 42

Site-Specific Analysis & Management

Profitability Maps as an Input for Site-Specific Management Decision Making
Raymond E. Massey, D. Brenton Myers, Newell R. Kitchen, and Kenneth A. Sudduth 52

Normalized Difference Vegetation Index and Soil Color-Based Management Zones in Irrigated Maize
D. Inman, R. Khosla, R. Reich, and D.G. Westfall 60

Nitrogen Management

The Ecologically Optimum Application of Nitrogen in Wheat Season of Rice–Wheat Cropping System
X.Q. Liang, H. Li, M.M. He, Y.X. Chen, G.M. Tian, and S.Y. Xu 67

Effect of Nitrogen Application on Yield and Quality of Silage Corn after Forage Legume-Grass
J.R. Lawrence, Q.M. Ketterings, and J.H. Cherney 73

Phosphorus Managment

Relationship between Phosphorus and Nitrogen Concentrations in Spring Wheat
Noura Ziadi, Gilles Bélanger, Athyna N. Cambouris, Nicolas Tremblay, Michel C. Nolin, and Annie Claessens 80

Modeling

Sequence Analysis of DSSAT to Select Optimum Strategy of Crop Residue and Nitrogen for Sustainable Rice-Wheat Rotation
Reshmi Sarkar and Sandipta Kar 87

Modeling Olive Crop Yield in Andalusia, Spain
C. Galán, H. García-Mozo, L. Vázquez, L. Ruiz, C. Díaz de la Guardia, and E. Domínguez-Vilches 98

Economic Analysis

The Profitability and Risk of Long-Term Cropping Systems Featuring Different Rotations and Nitrogen Rates
Trenton F. Stanger, Joseph G. Lauer, and Jean-Paul Chavas . . 105

Pasture Management

Assessment of Pasture Biomass with the Normalized Difference Vegetation Index from Active Ground-Based Sensors
E. Scott Flynn, Charles T. Dougherty, and Ole Wendroth . . 114

Effect of Defoliation Management on Water-Soluble Carbohydrate Energy Reserves, Dry Matter Yields, and Herbage Quality of Tall Fescue
D.J. Donaghy, L.R. Turner, and K.A. Adamczewski 122

Triticale

Forage Pasture Production, Risk Analysis, and the Buffering Capacity of Triticale
William M. Clapham, James M. Fedders, A. Ozzie Abaye, and Edward B. Rayburn 128

Cropping Systems

Effect of Implementing Organic Farming on Chemical and Biochemical Properties of an Irrigated Loam Soil
Sebastiana Melero, Engracia Madejón, Juan Francisco Herencia, and Juan Carlos Ruiz 136

Management Practices to Minimize Tan Spot in a Continuous Wheat Rotation
M. Carignano, S.A. Staggenborg, and J.P. Shroyer 145

(cont.)

RECEIVED 2008 JUN 24 AM 11:00 CO-JRAPO

Cover: Mark Alfred Carleton (1866–1925) was the key founding member and first president of the American Society of Agronomy. The American Society of Agronomy was formed in 1907 through his vision, enthusiasm, and leadership for the newly identified field of agronomy, the purpose being to "increase dissemination of knowledge of soils and crops, and the conditions affecting them." As a USDA scientist, Mark Carleton greatly influenced U.S. agriculture by introducing hard red and durum wheat germplasms to the North American Great Plains and identifying the physiological races of wheat rust. We recognize his incalculable scientific and leadership contributions on the 100th anniversary of the founding of the American Society of Agronomy.

Agronomy Jrnl. vol. 100, no. 1 (Jan.-Feb. 2008) p. 2 of 2

Dryland Cropping Systems

Tillage Effects on Water Use and Grain Yield of Winter Wheat and Green Pea in Rotation
Stephen Machado, Steve Petrie, Karl Rhinhart, and Robert E. Ramig 154

Crop Residues

No Differences in Decomposition Rates Observed between *Bacillus thuringiensis* and Non-*Bacillus thuringiensis* Corn Residue Incubated in the Field
R. Michael Lehman, Shannon L. Osborne, and Kurt A. Rosentrater 163

Disease Management

Winter Wheat Blends (Mixtures) Produce a Yield Advantage in North Carolina
Christina Cowger and Randy Weisz 169

Biofuels

The Charcoal Vision: A Win–Win–Win Scenario for Simultaneously Producing Bioenergy, Permanently Sequestering Carbon, while Improving Soil and Water Quality
David A. Laird 178

Intercropping

Forage Potential of Intercropping Barley with Faba Bean, Lupin, or Field Pea
Sheri M. Strydhorst, Jane R. King, Ken J. Lopetinsky, and K. Neil Harker 182

Alfalfa

Yield, Yield Components, and Forage Nutritive Value of Alfalfa as Affected by Seeding Rate under Irrigated Conditions
Jaume Lloveras, Cristina Chocarro, Oscar Freixes, Ezequiel Arqué, Alberto Moreno, and Francisca Santiveri 191

Weed Management

Variation in Characteristics and Imazamox Tolerance of Feral Rye
Thomas F. Peeper, John R. Roberts, Deborah A. Solie, and Amanda E. Stone 198

Remote Sensing

A Simple Spectral Index Using Reflectance of 735 nm to Assess Nitrogen Status of Rice Canopy
Yuh-Jyuan Lee, Chwen-Ming Yang, Kuo-Wei Chang, and Yuan Shen 205

Forages

Dietary Cation–Anion Difference and Tetany Index of Timothy Forage Fertilized with Liquid Swine Manure
Sophie Pelletier, Gilles Bélanger, Gaëtan F. Tremblay, Martin H. Chantigny, and Guy Allard 213

Arrowleaf, Crimson, Rose, and Subterranean Clover Growth with and without Defoliation in the Southeastern United States
Gerald W. Evers and Yoana C. Newman 221

Instrumentation

Sample Size and Heterogeneity Effects on the Analysis of Whole Soybean Seed Using Near Infrared Spectroscopy
Seth L. Naeve, Rob A. Proulx, Brent S. Hulke, and Tracy A. O'Neill 231

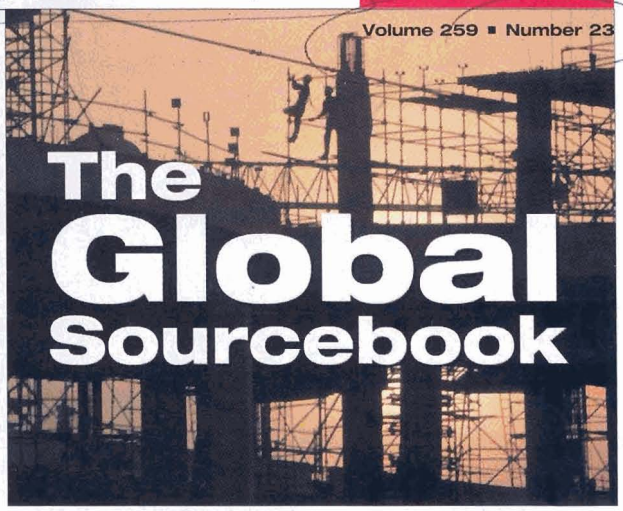
Other Items

Instructions to Authors iii
ASA Statement of Ethics v
Important Notes to Authors. v
SI Unit Conversion Table vi
Erratum 235
Letter from the Editor. 236

ENR
December 24/31, 2007

Contents

Volume 259 ▪ Number 23



COVER STORY ▸ High-Speed Links

90 Spain and France are building high-speed rail networks that use a common gauge, allowing faster travel times. A Pyrenees tunnel now connects the two countries.

Cover photo and photos courtesy of ADIF

SOURCEBOOK ▸ Global Growth

7 International contractors and design firms are finding money-making opportunities in various markets as developing nations begin to build up infrastructure.

NEWS

▸ Business & Economics

80 **Ergonomics:** Employers take aim at planned voluntary standard

New York looks at cranes. Page 82

81 **Investigations:** Iraq rebuilding monitor targeted

▸ Equipment

82 **Cranes:** New York state watchdog probes licensing methods

▸ Transportation

84 **Roads:** Indiana firm settles fraud claims

▸ Buildings

83 **Curtain Walls:** N.Y. Times takes no action to stop tower's "ice storms"

Tower sheds ice. Page 83

DEPARTMENTS

5 Update
77 Construction Week
79 Washington Observer
85 People
88 Construction Economics
115 Products
116 Pulse
123 Official Proposals (cont. on pp. 124-125)
128 Editorials

RECEIVED
2008 JAN -7 AM 10:06

▸ **For subscriber services call:** (877) 876-8208 or (515) 237-3681

▸ GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS.

▸ **Not getting ENR Insider and News Alerts?** Please call (877) 876-8208

enr.com/more/
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
SERVING THE INDUSTRY SINCE 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one week in January, April, May, July, September, October and December; 46 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 2-7496 Bath Road, Mississauga, ON L4T 1L2. Email: enrcustserv@cdsfulfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2007 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglase, Senior Vice President, Treasury Operations. **McGraw-Hill Construction:** Norbert W. Young, Jr., FAIA, President; Howard Mager, Sr. VP., MH Construction; Nilo Ramos, Sr. Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, *www.copyright.com*, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. ENR Construction Economics, Top Rankings and Sourcebooks available for a fee in downloadable PDF format at www.ENR.com. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $5 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

PHOTO LEFT COURTESY OF NATIONAL COMMISSION FOR THE CERTIFICATION OF CRANE OPERATORS; RIGHT BY TOM SAWYER FOR ENR

"ENR"

Contents

Volume 260 ■ Number 1

RECEIVED 2008 JAN 16 PM 12: 0

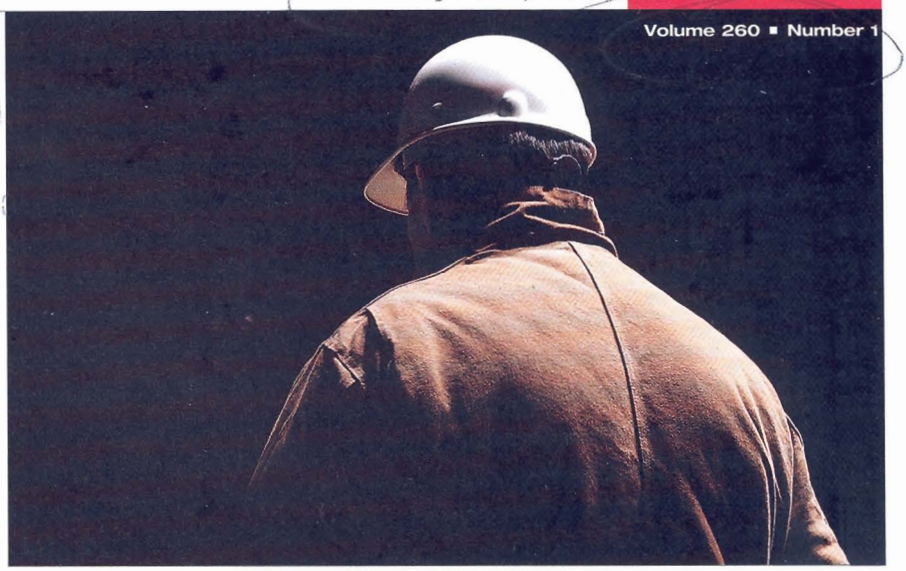
COVER STORY

▶ Editors' Choice

22 ENR's 2007 construction photography contest is history but by no means past. The editors' top picks are showcased here, and the door is open on ENR.com to all the rest.

Cover Photographer: *Keith Philpott*
Submitter: *Chad Pulley, Black & Veatch Corp., Kansas City*

Philpott, a Kansas City-based freelance photographer, says he looks for "people, light and composition" in his work. This shot of coal-boiler equipment being prepared for installation by Nebraska City Power Partners at the Omaha Public Power District's Nebraska City Station Unit No. 2 is a study in exactly that.



▲ **Photographer and Submitter:** *Thiel Harryman, project engineer, Underground Construction Co., Benicia, Calif.*

A previous contest winner, Harryman says construction photography gives him a much-needed chance to exercise "the other side of my brain." He shot this on a shoring installation at a Southwest Airlines' operations and maintenance facility in Dallas. "There is art in everything," Harryman says. "People overlook that within our industry."

FEATURE

▶ The Top 25 Newsmakers of 2007

37 In recognition of those who serve the best interest of the construction industry, ENR editors have chosen 25 individuals for their innovations and achievements featured in ENR and ENR.com in 2007.

NEWS

▶ Environment

10 **Levees:** Failure illustrates growing problem

11 **Flood Protection:** Levee officials in New Orleans select consultants for master drainage plan

▶ Power & Industrial

12 **Petroleum:** $750-million contract boosts gulf hurricane cleanup work

13 **Pipelines:** Alaska likes TransCanada's proposal for Prudhoe Gas Line

13 **Wave Energy:** 'Landmark' license issued for wave-energy project

21 **Electric Transmission:** Longest, most powerful line will apply new technology

17 **Demolition:** American firm carefully clears bombed-out bridge

▶ Business & Economics

19 **Corruption:** Federal regulators detail United Rentals fraud scheme

▶ Transportation

14 **Bridges:** Historic cable-stayed link taking shape in Louisiana

Offshore Platforms. Page 14

DEPARTMENTS

5 Calendar
7 Construction Week
9 Washington Observer
28 Construction Economics
54 Products
56 Pulse
60 Editorials

▶ **For subscriber services call:** (877) 876-8208 or (515) 237-3681

▶ GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS.

▶ **Not getting ENR Insider and News Alerts?** Please call (877) 876-8208

enr.com
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
SERVING THE INDUSTRY SINCE 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one week in January, March, April, May, July, August, September, October, November and December; 42 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 2-7496 Bath Road, Mississauga, ON L4T 1L2. Email: enrcustserv@cdsfulfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2008 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglase, Senior Vice President, Treasury Operations. **McGraw-Hill Construction:** Norbert W. Young, Jr., FAIA, President; Howard Mager, Sr. VP., MH Construction; Nilo Ramos, Sr. Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, *www.copyright.com*, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. ENR Construction Economics, Top Rankings and Sourcebooks available for a fee in downloadable PDF format at www.ENR.com. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $9.95 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copoies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

PHOTO BY ANGELLE BERGERON FOR ENR

"ENR"

RECEIVED
2008 JAN 28 AM 11:06
DENVER, COLORADO

January 21, 2008

Contents

Volume 260 ▪ Number 2

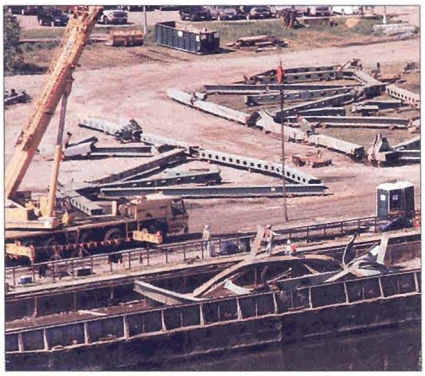
COVER STORY

▶ High Performer

22 A performance-based seismic design allowed the builders of the 590-ft-tall One Rincon Hill in San Francisco to break the speed record for concrete construction on the West Coast, achieving a three-day-per-floor cycle in the tower portion.

Cover photo courtesy of Bovis Lend Lease; photo right courtesy of Webcor

NEWS



NTSB points to gusset plates. Page 10

▶ Transportation

10 **Bridges:** NTSB finds fractured gussets in I-35 span

15 **Roads:** Public-private deal brings peace to Fort Bliss

▶ Environment

11 **Nuclear Waste:** DOE picks Fluor at Savannah River

12 **Flood Control:** Outside experts warn about grim California levee risk

14 **Wetlands:** Official commitments buoy Everglades restoration hope

▶ Business & Economics

13 **Accidents:** Bovis' New York jobs face challenges

▶ Power & Industrial

16 **Nuclear Power:** U.K. prepares to permit new fleet of reactors

Baby articulated trucks. Page 17

DEPARTMENTS

5 Online
7 Construction Week
9 Washington Observer
17 Equipment Tracks & Trends
20 Construction Economics
58 Products
59 Continuing Education
66 Pulse
70 Official Proposals (cont. on pp. 71)
72 Editorials

▶ **For subscriber services call:** (877) 876-8208 or (515) 237-3681

▶ GO TO MY.ENR.COM FOR PASSWORD-PROTECTED ONLINE ACCESS.

▶ **Not getting ENR Insider and News Alerts?** Please call (877) 876-8208

enr.com
ADDITIONAL CONTENT ONLINE

Engineering News-Record
The McGraw-Hill Companies
SERVING THE INDUSTRY SINCE 1874

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one week in January, March, April, May, July, August, September, October, November and December; 42 weeks a year by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw (1860-1948). **Executive, editorial, circulation, advertising offices:** Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. **Postmaster:** Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 5730, Harlan, IA 51593. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No.40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 2-7496 Bath Road, Mississauga, ON L4T 1L2. Email: enrcustserv@cdsfullfillment.com. **Copyright, printing and reprinting:** Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2008 by The McGraw-Hill Companies. All rights reserved. **Officers of The McGraw-Hill Companies, Inc.:** Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer; Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglase, Senior Vice President, Treasury Operations. **McGraw-Hill Construction:** Norbert W. Young, Jr., FAIA, President; Howard Mager, Sr. VP., MH Construction; Nilo Ramos, Sr. Director, Finance. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, *www.copyright.com*, to photocopy any article herein for personal or internal reference use only for the flat fee of $1.20 per copy for each article. ENR Construction Economics, Top Rankings and Sourcebooks available for a fee in downloadable PDF format at www.ENR.com. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. **Printed in the USA. Subscription rates for individuals in the field of the publication:** U.S. and possessions, $82 per year (single copies $9.95 in U.S.); Canada and Mexico, $89 per year; outside North America, $195 per year. Please allow four to six weeks for shipment. **Subscriber service and single copoies:** (877) 876-8208 or (515) 237-3681. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 5730, Harlan, IA 51593. If possible, attach address label from a recent issue. **Please contact customer service to change your name or address.** If the postal authorities alert us that your magazine is undeliverable, we have no further obligation unless we receive a corrected address within two years. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

PHOTO LEFT BY TUDOR VAN HAMPTON FOR ENR; RIGHT COURTESY OF HYDREMA

Volume 28, Issue 1, January 2008

ISSN 0195-9255

ELSEVIER

Environmental Impact Assessment Review

EIA PROCEDURE

The hazardous priority substances in Italy: National rules and environmental quality standard in marine environment 1
Chiara Maggi, Fulvio Onorati, Claudia Virno Lamberti and Anna Maria Cicero

ASSESSMENT METHODS

Management of complex knowledge in planning for sustainable development: The use of multi-criteria decision aids 7
Jaan-Henrik Kain and Henriette Söderberg

Thresholds and criteria for evaluating and communicating impact significance in environmental statements: 'See no evil, hear no evil, speak no evil'? 22
Graham Wood

Environmental damage costs from airborne pollution of industrial activities in the greater Athens, Greece area and the resulting benefits from the introduction of BAT 39
S. Mirasgedis, V. Hontou, E. Georgopoulou, Y. Sarafidis, N. Gakis, D.P. Lalas, A. Loukatos, N. Gargoulas, A. Mentzis, D. Economidis, T. Triantafilopoulos, K. Korizi and G. Mavrotas

SOCIAL IMPACT ASSESSMENT

Social impact assessment and public participation in China: A case study of land requisition in Guangzhou 57
Bo-sin Tang, Siu-wai Wong and Milton Chi-hong Lau

2008 JAN 28 AM 11:05
RECEIVED

THE GEOLOGICAL SOCIETY OF AMERICA®

BULLETIN

VOL. 120 ▪ NO. 1/2 JANUARY/FEBRUARY 2008

RECEIVED 2008 JAN -7 AM 8:46 GEOLOGICAL SOCIETY OF AMERICA DENVER, COLORADO

The Geological Society of America Bulletin *is a leading international journal for major scholarly research in all branches of the earth sciences. Published continuously since 1890.*

TABLE OF CONTENTS

PALEONTOLOGY

3–12 **A Paleogene calcareous microfossil Konservat-Lagerstätte from the Kilwa Group of coastal Tanzania**
P.R. Bown, T. Dunkley Jones, J.A. Lees, R.D. Randell, J.A. Mizzi, P.N. Pearson, H.K. Coxall, J.R. Young, C.J. Nicholas, A. Karega, J. Singano, and B.S. Wade

STRATIGRAPHY

13–33 **The Chuska erg: Paleogeomorphic and paleoclimatic implications of an Oligocene sand sea on the Colorado Plateau**
Steven M. Cather, Sean D. Connell, Richard M. Chamberlin, William C. McIntosh, Glen E. Jones, Andre R. Potochnik, Spencer G. Lucas, and Peggy S. Johnson

34–53 **Eocene-Oligocene global climate and sea-level changes: St. Stephens Quarry, Alabama**
Kenneth G. Miller, James V. Browning, Marie-Pierre Aubry, Bridget S. Wade, Miriam E. Katz, Andrew A. Kulpecz, and James D. Wright

54–84 **Synoptic reconstruction of a major ancient lake system: Eocene Green River Formation, western United States**
M. Elliot Smith, Alan R. Carroll, and Brad S. Singer

LIMNOGEOLOGY

85–95 **Watershed reconstruction of a Paleocene-Eocene lake basin using Sr isotopes in carbonate rocks**
E.H. Gierlowski-Kordesch, A.D. Jacobson, J.D. Blum, and B.L. Valero Garćes

REMOTE SENSING/GIS

96–105 **Remote sensing and geochemistry for detecting hydrocarbon microseepages**
Shuhab D. Khan and Sarah Jacobson

QUATERNARY GEOLOGY/GEOMORPHOLOGY

106–126 **Geochemical evidence for airborne dust additions to soils in Channel Islands National Park, California**
Daniel R. Muhs, James R. Budahn, Donald L. Johnson, Marith Reheis, Jossh Beann, Gary Skipp, Eric Fisher, and Julia A. Jones

127–141 **Where do floodplains begin? The role of total stream power and longitudinal profile form on floodplain initiation processes**
Vikrant Jain, Kirstie Fryirs, Gary Brierley

142–155 **Coupling of rock uplift and river incision in the Namche Barwa–Gyala Peri massif, Tibet**
Noah J. Finnegan, Bernard Hallet, David R. Montgomery, Peter K. Zeitler, John O. Stone, Alison M. Anders, Liu Yuping

TECTONICS

156–178 **Evolution of the offshore western Gulf of Corinth**
Rebecca E. Bell, Lisa C. McNeill, Jonathan M. Bull, and Timothy J. Henstock

179–194 **Contrasting early and late Mesozoic petrotectonic evolution of northern California**
W.G. Ernst, Cameron A. Snow, and Hannah H. Scherer

SEDIMENTARY GEOLOGY-SILICLASTICS

195–206 **Fluid flow due to the advance of basin-scale silica reaction zones**
Richard J. Davies, Neil R. Goulty, and David Meadows

207–224 **Latest Cretaceous forearc basin development along an accretionary convergent margin: South-central Alaska**
Jeffrey M. Trop

HYDROGEOLOGY

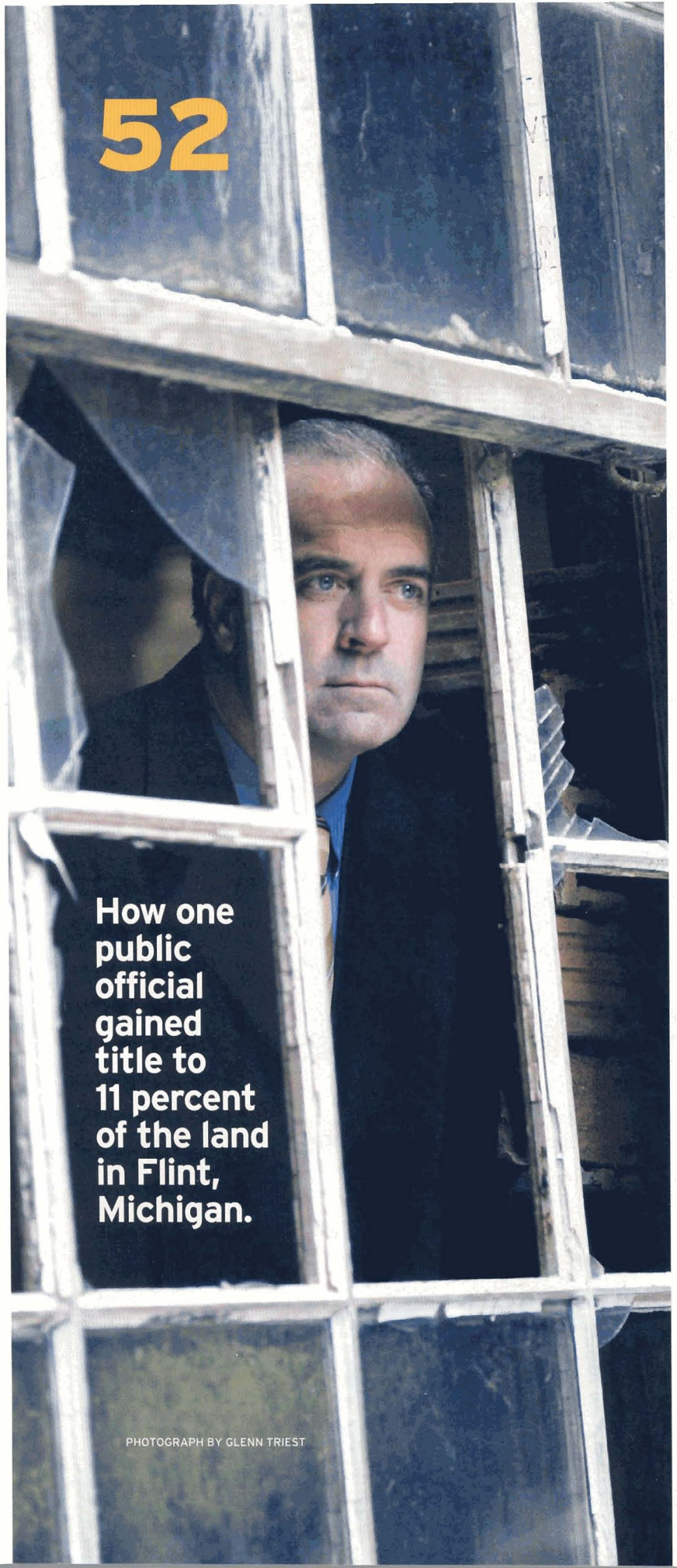
225–237 **Quantifying heterogeneity in variably fractured sedimentary rock using a hydrostructural domain**
Megan J. Surrette and Diana M. Allen

STRUCTURAL GEOLOGY

238–255 **Rheological implications of heterogeneous deformation at multiple scales in the Late Cretaceous Sierra Nevada, California**
Eric Horsman, Basil Tikoff, and Dyanna Czeck

ERRATA

256



PHOTOGRAPH BY GLENN TRIEST

JANUARY 2008, VOL. 21, NO. 4

GOVERNING

www.governing.com

p. 1 of 2

Features

20 Growth & Taxes
Why outdated state tax systems undercut economic vitality, and what states can do about it.
By Katherine Barrett and Richard Greene

38 Private Instigator
Indiana Governor Mitch Daniels is the foremost proponent of privatization—even at his political peril.
By Alan Greenblatt

46 Issues to Watch
In 2008, state legislatures will tackle emerging concerns such as water shortages, as well as perennial hot-button issues such as illegal immigration.
By Josh Goodman

52 The Man Who Owns Flint
Michigan's most depressed auto town is full of vacant buildings. One local official has made their redevelopment his personal crusade.
By Christopher Swope

58 Delete at Your Own Risk
Governments need a system for managing their mountains of e-mail. Very few have one.
By Ellen Perlman

GLIMPSE

76 Glass Menagerie
Sleek-looking buildings are back in style with a vengeance.
By Alan Greenblatt

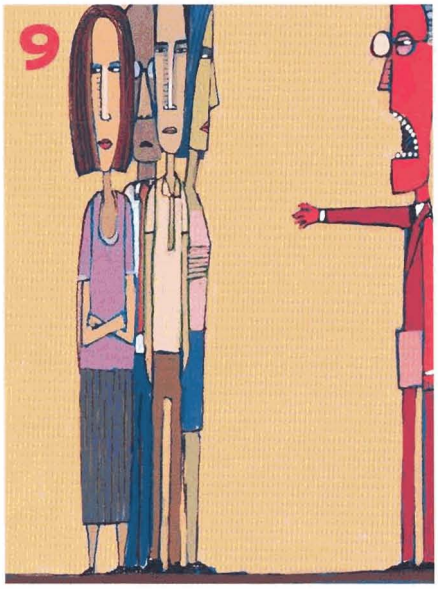
(cont.)

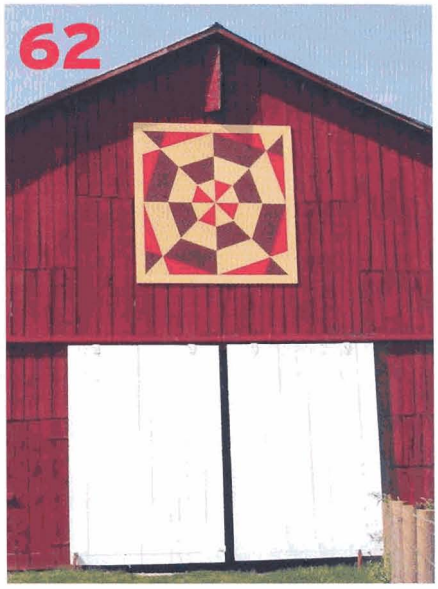
COVER ILLUSTRATION BY DAVID PLUNKERT

(p. 2 of 2)

Vol. 21, no. 4 (Jan. 2008)

GOVERNING The Magazine of States and Localities





Up Front

6 Publisher's Desk

9 Assessments
Alan Ehrenhalt on the irritable centrism of suburbia.

11 Dialogue
Letters from readers.

13 Observer
Immigration fizzles at the polls, therapeutic work for firefighters, and treasurer power.

15 Urban Notebook
Subway shame, filming an urban transformation, and the beet-juice solution.

17 Player
Ross Johnson: Unruly reformer.

18 Potomac Chronicle
It's not that someone was asleep at the switch on mortgage lending. It's that everyone was.

The Business of Government

LEAD STORY

61 Signs of Hard Times
Tax revenues are shaky, and some states are cutting budgets to close billion-dollar gaps.

ECONOMIC DEVELOPMENT

62 **Briefing:** Kentucky artists are painting quilt patterns on rural barns.

TECHNOLOGY

64 Mark Stencel on the end of the Wi-Fi boom.

MANAGEMENT

66 Katherine Barrett and Richard Greene on managing meetings.

68 **Conference Report:** A new crop of elected leaders is focusing on measurable results. *By Zach Patton*

HEALTH

70 Penelope Lemov on data-mining of Rx information for marketing purposes.

ENVIRONMENT

71 **Briefing:** Three multistate projects are underway to stash CO_2 underground.

FINANCE

72 John E. Petersen on tax-collection efficiency and the real cost of government.

TRANSPORTATION

73 **Briefing:** Denver's parking enforcement agency is deploying high-tech boots.

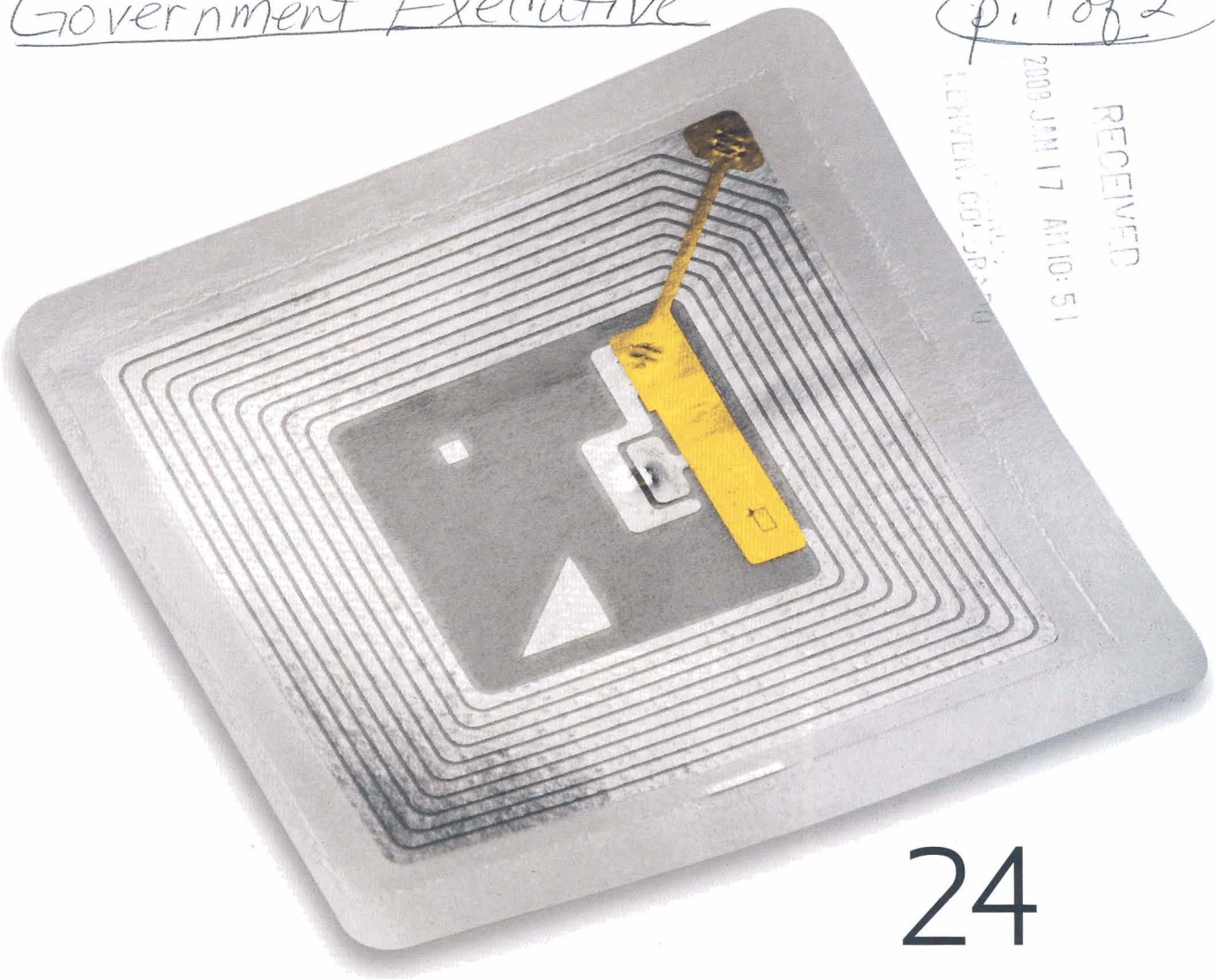
Contents

JANUARY 2008 VOL. 40 NO. 1

Government Executive

p. 1 of 2

RECEIVED
2008 JAN 17 AM 10: 51



24

FEATURES

Freedom To Manage 18
Under the new Defense personnel system, the cost of liberty is high.
By Brittany Ballenstedt

Tag Lag 24
For the past five years, radio frequency identification has been *the* hot technology. So far, RFID hype has outpaced delivery.
By Jill R. Aitoro

Girding For Battle 30
The Pentagon and military services are gearing up for a bruising quadrennial review that could reshape the way we fight.
By Greg Grant

Cover photograph by David Hills

Government Executive p. 2 of 2

Vol. 40, no. 1 (Jan. 2008)

Contents

NEWS+ANALYSIS

The Game Changer 9
If the Iraqi government repeals immunity for American contractors, all bets are off.
By Robert Brodsky

For Future Reference 11
Space center beefs up knowledge database as experienced staffers ready to retire.
By Alyssa Rosenberg

Buying Support 13
Can the Army reform procurement in time for the next war? *By Elizabeth Newell*

Behind the Wheel 16
The perils of letting short-term planning drive major weapons programs. *By Greg Grant*

ADVICE+DISSENT

Making Up For Lost Time 35
Managing Technology Agencies failed to meet the first deadline for HSPD-12. Now they need to get on the ball. *By Jill R. Aitoro*

The Patriot Principle 38
Intelligence File Is helping the government hunt terrorists a civic duty or a business decision?
By Shane Harris

Fixing the Future 40
Viewpoint The next president must be ready to take on inescapable management problems.
By Donald F. Kettl

IN EVERY ISSUE

Editor's Notebook 6
And now, a new steward of *Government Executive's* mission.

TOP TO BOTTOM: ALBERTO RUGGIERI/CORBIS; JON KRAUSE; SHUJI KOBAYASHI/GETTY

ELSEVIER

Available online at www.sciencedirect.com

ScienceDirect

International Journal of Coal Geology 73 (2008) iii–iv

International Journal of COAL GEOLOGY

www.elsevier.com/locate/ijcoalgeo

Special Issue

p. 1 of 2

TSOP 2006
Papers from the 23rd Annual Meeting of TSOP

edited by

Shifeng Dai[a] and Chen-Lin Chou[b]

[a]*State Key Laboratory of Coal Resources and Safe Mining, China University of Mining and Technology (Beijing), Beijing, China*
[b]*Illinois State Geological Survey (Emeritus), Champaign, IL, USA*

TSOP

The Society for Organic Petrology

RECEIVED
2008 JAN 28 AM 11:05
LIBRARY, COLORADO

CONTENTS

Proceedings of the 23rd annual meeting of The Society for Organic Petrology 1
Composition and mode of occurrence of mineral matter in some Colombian coals
I.C. López and C.R. Ward 3
Abundance and modes of occurrence of mercury in some low-sulfur coals from China
L. Zheng, G. Liu and C.-L. Chou 19
Fractal characterization of adsorption-pores of coals from North China: An investigation on CH_4 adsorption capacity of coals
Y. Yao, D. Liu, D. Tang, S. Tang and W. Huang 27
Leaching experiments to study the release of trace elements from mineral separates from Chinese coals
M. Yue and F. Zhao 43

(cont.)

Trace element emissions from spontaneous combustion of gob piles in coal mines, Shanxi, China
Y. Zhao, J. Zhang, C.-L. Chou, Y. Li, Z. Wang, Y. Ge and C. Zheng 52
Fly ash–airborne particles from Ptolemais–Kozani area, northern Greece, as determined by ESEM-EDX
A. Iordanidis, J. Buckman, A.G. Triantafyllou and A. Asvesta 63
CO_2 storage potential of South African coals and gas entrapment enhancement due to igneous intrusions
A. Saghafi, K.L. Pinetown, P.G. Grobler and J.H.P. van Heerden 74
Hydrocarbon potential of Pennsylvanian coal in Bohai Gulf Basin, Eastern China, as revealed by hydrous pyrolysis
R. Li, K. Jin and D.J. Lehrmann 88

International Journal of Coal Geology
p. 2 of 2 Vol. 73, no. 1 (1/7/08)

International Journal of
COAL GEOLOGY

ELSEVIER

Volume 73 – issue 2 | 21 January 2008

CONTENTS

(Abstracted/Indexed in: Chemical Abstracts; Current Contents Physical, Chemical and Earth Sciences; Geo Abstracts; PASCAL/CNRS; PROMIS; and the Science Citation Index. Also covered in the abstract and citation database SCOPUS®. Full text available on ScienceDirect®)

Research Papers

Adapting palynological preparation methods in subbituminous and bituminous coals from Colombia to improve palynofacies and hydrocarbon source rock evaluations
A. Blandon, N. Parra, G.E. Gorin and F. Arango 99

Predictions of the adsorption equilibrium of methane/carbon dioxide binary gas on coals using Langmuir and ideal adsorbed solution theory under feed gas conditions
H. Yu, L. Zhou, W. Guo, J. Cheng and Q. Hu 115

Studies of the relationship between petrography and grindability for Kentucky coals using artificial neural network
A.H. Bagherieh, J.C. Hower, A.R. Bagherieh and E. Jorjani 130

The use of sequential extraction to determine the distribution and modes of occurrence of mercury in Permian Huaibei coal, Anhui Province, China
L. Zheng, G. Liu, C. Qi, Y. Zhang and M. Wong 139

A preliminary laboratory experiment on coalbed methane displacement with carbon dioxide injection
H. Yu, J. Yuan, W. Guo, J. Cheng and Q. Hu 156

Generation and expulsion of petroleum from coal macerals visualized *in-situ* during DAC pyrolysis
H.-J. Mo, W.-L. Huang and H. Machnikowska 167

Applicability of Hilt's law to the Czech part of the Upper Silesian Coal Basin (Czech Republic)
M. Sivek, M. Čáslavský and J. Jirásek 185

Comment

Comment on "Influence of a basic intrusion on the vitrinite reflectance and chemistry of the Springfield (No. 5) coal, Harrisburg, Illinois" by Stewart et al. (2005)
D. Wang, X. Lu, S. Xu and W. Hu 196

RECEIVED
2008 JAN 24 AM 11:00
OSM-WRO
DENVER, COLORADO

0166-5162(20080121)73:2;1-1

http://www.elsevier.com/locate/ijcoalgeo

International Journal of Mining, Reclamation and Environment

Volume 21 Number 4 December 2007

CONTENTS

Editor's Page 241

Announcement 242

Spatial variability of shovel dig performance
R. A. Halatchev and P. F. Knights 244

Match factor for heterogeneous truck and loader fleets
C. N. Burt and L. Caccetta 262

Modelling of groundwater recovery process for prediction of land settlement in surface mines
F. Doulati Ardejani, E. Y. Baafi and S. Z. Shafaei 271

Evaluation of artificial neural networks and kriging for the prediction of arsenic in Alaskan bedrock-derived stream sediments using gold concentration data
D. Misra, B. Samanta, S. Dutta and S. Bandopadhyay 282

Preliminary simulation of the GAP mechanical system for oil sands haulage
Y. Li, J. Szymanski and S. Frimpong 295

RECEIVED
2008 JAN 18 PM 2:50
DENVER, COLORADO

p. 1 of 2

Journal of Environmental Quality

RECEIVED

January–February 2008, Volume 37, Number 1

ENVIRONMENTAL ISSUES

186–195 A Whole-Farm Strategy to Reduce Environmental Impacts of Nitrogen *by M.P. W. Sonneveld, J.C. Schröder, J.A. de Vos, G.J. Monteny, J. Mosquera, J.M.G. Hol, E.A. Lantinga, F.P.M. Verhoeven, and J. Bouma*

TECHNICAL REPORTS

Atmospheric Pollutants and Trace Gases

1–6 Equilibrium Sampling Used to Monitor Malodors in a Swine Waste Lagoon *by John H. Loughrin, Nanh Lovanh, and Rezaul Mahmood*

7–15 Season and Bedding Impacts on Ammonia Emissions from Tie-stall Dairy Barns *by J.M. Powell, T.H. Misselbrook, and M.D. Casler*

Bioremediation and Biodegradation

196–206 Bioremediation of Atrazine-Contaminated Soil by Forage Grasses: Transformation, Uptake, and Detoxification *by C.H. Lin, R.N. Lerch, H.E. Garrett, and M.F. George*

Ecological Risk Assessment

16–21 Bioassays with Unicellular Algae: Deviations from Exponential Growth and Its Implications for Toxicity Test Results *by Rolf Altenburger, Mechthild Schmitt-Jansen, and Janet Riedl*

207–218 Environmental Risk Assessment of Genetically Engineered Herbicide-Tolerant *Zoysia japonica* *by T.W. Bae, E. Vanjildorj, S.Y. Song, S. Nishiguchi, S.S. Yang, I.J. Song, T. Chandrasekhar, T.W. Kang, J.I. Kim, Y.J. Koh, S.Y. Park, J. Lee, Y.-E. Lee, K.H. Ryu, K.Z. Riu, P.-S. Song, and H.Y. Lee*

Ecosystem Restoration

22–29 Ecological Effects after an Alum Treatment in Spring Lake, Michigan *by Alan D. Steinman and Mary Ogdahl*

219–228 Influence of Prairie Restoration on CT-Measured Soil Pore Characteristics *by Ranjith P. Udawatta, Stephen H. Anderson, Clark J. Gantzer, and Harold E. Garrett*

Ground Water Quality

30–46 Determination of Dominant Biogeochemical Processes in a Contaminated Aquifer-Wetland System Using Multivariate Statistical Analysis *by Susan E. Báez-Cazull, Jennifer T. McGuire, Isabelle M. Cozzarelli, and Mary A. Voytek*

Heavy Metals in the Environment

47–56 Phosphate Treatment of Firing Range Soils: Lead Fixation or Phosphorus Release? *by Dimitris Dermatas, Maria Chrysochoou, Dennis G. Grubb, and Xuanfeng Xu*

229–233 Geochemical Parameters Influencing Tungsten Mobility in Soils *by A.J. Bednar, W.T. Jones, R.E. Boyd, D.B. Ringelberg, and S.L. Larson*

Landscape and Watershed Processes

57–68 A Basin-Scale Approach to Estimating Stream Temperatures of Tributaries to the Lower Klamath River, California *by Lorraine E. Flint and Alan L. Flint*

69–78 Phosphorus Concentrations in Soil and Subsurface Water: A Field Study among Cropland and Riparian Buffers *by Eric O. Young and Russell D. Briggs*

79–89 Empirical Models Based on the Universal Soil Loss Equation Fail to Predict Sediment Discharges from Chesapeake Bay Catchments *by Kathleen B. Boomer, Donald E. Weller, and Thomas E. Jordan*

234–244 Predicting Estuarine Sediment Metal Concentrations and Inferred Ecological Conditions: An Information Theoretic Approach *by Jeffrey W. Hollister, Peter V. August, John F. Paul, and Henry A. Walker*

Organic Compounds in the Environment

90–97 Reactivity of the Plant Growth Regulator Paclobutrazol (Cultar) with Two Tropical Soils of the Northeast Semiarid Region of Brazil *by Mônica Lúcia Milfont, Jean Manuel Fonseca Martins, Antonio Celso Dantas Antonino, Ester Ribeiro Gouveia, André Maciel Netto, Véronique Guiné, Hélène Mas, and Maria Betânia Galvão dos Santos Freire*

Plant and Environment Interactions

98–106 Soil Carbon Dioxide Emission and Carbon Content as Affected by Irrigation, Tillage, Cropping System, and Nitrogen Fertilization *by Upendra M. Sainju, Jalal D. Jabro, and William B. Stevens*

Surface Water Quality

107–113 Agricultural Drainage Ditches Mitigate Phosphorus Loads as a Function of Hydrological Variability *by R. Kröger, M.M. Holland, M.T. Moore, and C.M. Cooper*

114–124 Water Quality Effects of Clearcut Harvesting and Forest Fertilization with Best Management Practices *by Matthew W. McBroom, R. Scott Beasley, Mingteh Chang, and George G. Ice*

125–137 Effect of Liquid Swine Manure Rate, Incorporation, and Timing of Rainfall on Phosphorus Loss with Surface Runoff *by Brett L. Allen and Antonio P. Mallarino*

Vadose Zone Processes and Chemical Transport

245–258 Developing Risk Models of *Cryptosporidium* Transport in Soils from Vegetated, Tilted Soilbox Experiments *by Thomas Harter, Edward R. Atwill, Lingling Hou, Betsy M. Karle, and Kenneth W. Tate*

This issue's cover: Waste organic matter sampling at a landfill site in southern Germany. See Baeumler and Kögel-Knabner, "Spectroscopic and Wet Chemical Characterization of Solid Waste Organic Matter of Different Age in Landfill Sites, Southern Germany," p. 146–153. Image by Rupert Baeumler.

Continued...

Jrnl. of Environmental Quality, vol. 37, no. 1 (Jan.-Feb. 2008)
p. 2 of 2

138–145 Evaluation of Cover Crop and Reduced Cultivation for Reducing Nitrate Leaching in Ireland *by K.V. Hooker, C.E. Coxon, R. Hackett, L.E. Kirwan, E. O'Keeffe, and K.G. Richards*

Waste Management

146–153 Spectroscopic and Wet Chemical Characterization of Solid Waste Organic Matter of Different Age in Landfill Sites, Southern Germany *by Rupert Bäumler and Ingrid Kögel-Knabner*

259–265 Runoff and Leachate Losses of Phosphorus in a Sandy Spodosol Amended with Biosolids *by Luis R.F. Alleoni, Scott R. Brinton, and George A. O'Connor*

266–271 EPA Worst Case Water Microcosms for Testing Phage Biocontrol of *Salmonella by Michael R. McLaughlin and John P. Brooks*

272–279 Reduction of Pathogen Indicator Organisms in Dairy Wastewater Using an Ecological Treatment System *by Jennifer A. Morgan, Armando E. Hoet, Thomas E. Wittum, Clifton M. Monahan, and Jay F. Martin*

154–163 Phosphorus and Nitrogen Sorption to Soils in the Presence of Poultry Litter-Derived Dissolved Organic Matter *by Keith W. Goyne, Hee-Joong Jun, Stephen H. Anderson, and Peter P. Motavalli*

280–286 The Fate of Sulfate in Acidified Pig Slurry during Storage and Following Application to Cropped Soil *by Jørgen Eriksen, Peter Sørensen, and Lars Elsgaard*

Wetlands and Aquatic Processes

164–173 Hydro-geochemical Aspects of Mediterranean Temporary Ponds in Western Crete *by Fotini Stamati, Nikolaos Nikolaidis, Elias Dimitriou, and Theodore Koussouris*

174–181 Phosphorus Sorbing Materials: Sorption Dynamics and Physicochemical Characteristics *by J.W. Leader, E.J. Dunne, and K.R. Reddy*

SHORT COMMUNICATIONS

182–185 Isotopic Discrimination as a Tool for Organic Farming Certification in Sweet Pepper *by Francisco M. del Amor, Joaquín Navarro, and Pedro M. Aparicio*

BOOK REVIEWS

287 Plantations and Protected Areas in Sustainable Forestry *reviewed by G.N. Magesan*

288 Plant Growth and Climate Change *reviewed by Paul Newton*

289 Carbon Capture and Sequestration: Integrating Technology, Monitoring and Regulation *reviewed by Jeff Obbard*

290 Kirk-Othmer Chemical Technology and the Environment *reviewed by Larry E. Erickson*

ALSO IN THIS ISSUE

iv–v Instructions to Authors

vi–x This Issue in *Journal of Environmental Quality*

The Journal of Explosives Engineering
Published by International Society of Explosives Engineers
30325 Bainbridge Road
Cleveland, Ohio 44139
www.isee.org

RECEIVED
2008 JAN 10
DENVER

Publisher
International Society of Explosives Engineers

Editor
Dede Manross
explo@comcast.net

Contributing Writers
John Brulia
Paul Downing
R.B. Hopler
S. S. "Bud" Jenkins
Bill Reisz
Jon Stiehr

Board of Directors
President
Lawrence E. Gilmore

Vice President Administration
Jerry R. Wallace

Vice President, Technical
Ron J. Elliott

Treasurer
John E. Capers

Secretary
James H. Redyke

Past President
Dale L. Ramsey

Directors
James P. Daley
Charles H. Dowding
Jack W. Eloranta
Phyllis E. Hasser
Thomas S. Jenkins
Michael J. Koehler
Randall S. May
Georg Plaschke
Roger N. Prescott
Roger G. Sprague
Alastair C. Torrance
John E. Wiegand

Executive Director & General Counsel
Jeffrey L. Dean, CAE

Assistant to the Executive Director
Arlene Chafe

Publications Manager
Liz Mikhaylov

Assistant Manager, Publications
Gloria Eppich

Meetings & Conference Manager
Lynn Mangol

Communications Manager
Dede Manross

Webmaster
Debbie Kapes

Membership Manager
Jenny LeBrun

Office Manager
Mary Spena-Bosch

The Journal of www.isee.org

EXPLOSIVES ENGINEERING

Volume 25 Number 1 *January/February 2008*

Table of Contents

FEATURES

4 **Year in Review**
ISEE's 2007 annual report to members.

8 **Optimizing Cast Blasting Efficiency Using ANFO with Liners**
This article covers three experimental cast blasts conducted at the North Antelope Rochelle Mine (NARM) site. The cast blasts were conducted to determine the influence of blast initiation sequences. Two new discoveries were made as a result of the research.

25 **Security Matters**
Procedures to follow when explosives are taken in a crime.

34 **Removal of the Top of an Aged Water Supply Reservoir Using Explosives**
The article discusses the test blasting that was conducted to determine the proper pattern size and explosive load to use for the project, the procedures implemented to control noise and any flyrock, and the final results of the tank lid demolition.

DEPARTMENTS

22 **Industry News**
News about people, companies, events, and new products.

24 **Chapter News**
News from Eastern PA, Mid-Atlantic, New England, and Western Canada Chapters of ISEE.

26 **Calendar of Events**
A list of upcoming events in the explosives industry.

28 **Explosives, 100 Years Ago, More or Less**
New fuse for shot-firing.

32 **Section News**
News from the Fragblast Section of ISEE.

42 **Blastserve: An E-mail Discussion List**
Blasting near green concrete and old tunnels.

44 **Dynamite Daze**

46 **Member News**
Member Focus on Christian Kellner, oil and gas well consultant and other member news including the winners of the 2007 membership campaign.

On the Cover: *Removal of the Top of an Aged Water Supply Reservoir... North half of the tank lid ready to shoot. The weather had turned snowy. See story, page 34.*

Copyright ©2008 Society of Explosives Engineers, Inc., dba International Society of Explosives Engineers

The Journal of Explosives Engineering, published six times per year, is the official publication of the International Society of Explosives Engineers. The Society is not responsible for opinions expressed and statements made by authors in articles or advertisements published in the Journal. ISEE assumes no responsibility for the completeness, accuracy, or conclusions reached in any of the articles or items published in this Journal.

Since the information is unique and because each job site is different, information presented in this Journal may not apply to your specific field situation. Readers are cautioned to carefully consider ideas presented and decide for themselves if the procedures described are safe and appropriate for the intended use. The International Society of Explosives Engineers cannot be responsible for the specific application of the information presented. Also, remember to always consult the manufacturer of the product(s) you are using for recommended practices.

Mention in this publication of a commercial or proprietary product does not constitute an endorsement or recommendation for its use. Registered names, trademarks, logos, artwork, photographs, etc., used in this publication, even without specific indication thereof, are to be considered protected by law.

Yearly subscription rates: $55 U.S.A., $70 all others (International Air Mail). All members of the Society receive a complimentary subscription.

All correspondence should be directed to: International Society of Explosives Engineers, 30325 Bainbridge Road, Cleveland, Ohio 44139. Telephone: (440) 349-4400. Fax: (440) 349-3788. E-mail: isee@isee.org WebSite: www.isee.org

JANUARY/FEBRUARY 2008
VOLUME 63, NUMBER 1

JOURNAL OF SOIL AND WATER CONSERVATION
The art and science of natural resource management for sustainability

RECEIVED
2008 JAN 22 AM 11:06
DENVER, COLORADO

p. 1 of 2

CONTENTS

EDITOR'S DESK
4A **Rising expectations for conservation in water-scarce times**
Mark Anderson-Wilk, editor

YOUR LETTERS
Readers' Forum

HOME FRONT
6A **Resilience**
Craig A. Cox, executive director of the Soil and Water Conservation Society

VIEWPOINT
7A **Answers and analysis needed to guide the use of biofuels as a renewable energy source**
Jean L. Steiner

CONSERVATIONIST PROFILE
8A **Jonathan May, Timberville, Virginia**

IN THE NEWS
9A **Protecting southern Quebec's last wild watershed**
John McDonnell

CONSERVATION IN ACTION
10A **Wyoming ranch welcomes National Grazing Lands Conservation Initiative**
Kindra Gordon

IDEAS & INNOVATIONS
11A **New technology to increase irrigation efficiency**
Kirk T. Taylor

12A **High-quality fiber and fertilizer as co-products from anaerobic digestion**
Chad Kruger, Shulin Chen, Craig MacConnell, Joe Harrison, Richard Shumway, Tianxi Zhang, Kay Oakley, Clark Bishop, Craig Frear, Debra Davidson, and Keith Bowers

CONSERVATION IN PRACTICE
14A **Treatment wetlands: Cost-effective practice for intercepting nitrate before it reaches and adversely impacts surface waters**
Richard Iovanna, Skip Hyberg, and William Crumpton

FEATURES
16A **Collecting and monitoring on-farm water data using satellite data collection technology in the Arkansas Delta**
Dennis K. Carman

19A **Soil health and productivity benefits of low-tillage organic systems: The common ground between organic and no-till farming practices**
Cheryl Rainford

CONSERVATION PARTNERSHIPS
22A **US-China collaboration on conservation**

(cont.)

On the Cover
Snow and field.
Photo by S. Coffman.

Jrnl. of Soil + Water Conservation vol. 63, no. 1 (Jan-Feb '08)

p. 2 of 2

TECH TRANSFER BRIEFING

24A **Nutrient supplement placement best management practice for changing beef cow distribution**
Melvin R. George, Neil K. McDougald, Wayne A. Jensen, Royce E. Larsen, David C. Cao, and Norman R. Harris

25A **A sinkhole filter for protection of karst groundwater**
Douglas G. Boyer

26A **Conservation within the Big Walnut Watershed of Ohio: Potential for rural/urban conflict**
Ted L. Napier, Kelly McCutcheon, and Jennifer Fish

IMPLEMENTATION UPDATE

27A **Managing pine straw harvests to minimize soil and water losses**
Daniel H. Pote and Tommy C. Daniel

APPLIED RESEARCH

1 **Geographical information system erosion assessment at a military training site**
R.L. Gaffer, D.C. Flanagan, M.L. Denight, and B.A. Engel

11 **Effectiveness of nutrient supplement placement for changing beef cow distribution**
M.R. George, N.K. McDougald, W.A. Jensen, R.E. Larsen, D.C. Cao, and N.R. Harris

18 **Factors affecting natural resource conservation investments of residents in the Lower Big Walnut Creek watershed, Ohio**
T.L. Napier, K. McCutcheon, and J. Fish

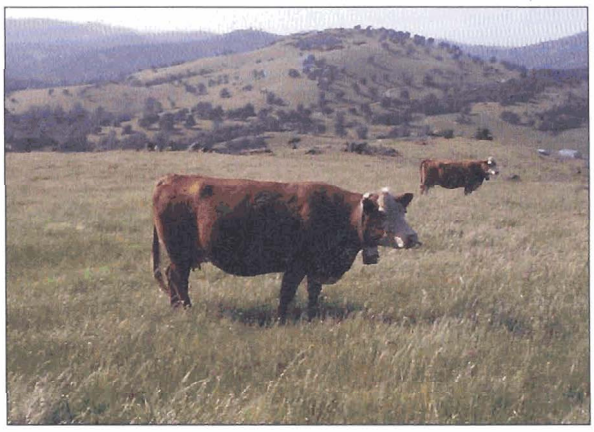
28 **Evaluating a crop residue cover index for determining tillage regime in a cotton-corn-peanut rotation**
D.G. Sullivan, D. Lee, J. Beasley, S. Brown, and E.J. Williams

37 **Patterns of water and tillage erosion on topographically complex landscapes in the North American Great Plains**
S. Li, D.A. Lobb, M.J. Lindstrom, and A. Farenhorst

47 **Assessment of a sinkhole filter for removing agricultural contaminants**
D.G. Boyer

Recent research demonstrates that strategic placement of nutrient supplements can be an effective tool for altering beef cow distribution during the dry season, thus minimizing the environmental impacts of grazing livestock.

For a summary, see page 24A.
For the full paper, go to page 11.



Printed on 100% recycled paper with vegetable-based inks.

Journal of Wildlife Management Vol. 72, no. 1 (Jan. 2008)

p. 1 of 2

RECEIVED
2008 JAN 24 AM 11:01
WRC
DENVER, COLORADO

Contents:

■ **EDITOR'S MESSAGE (PAGE 1)**

■ **MANAGEMENT AND CONSERVATION**

○ Special Section: Observational Studies

4 Ways of Learning: Observational Studies Versus Experiments, *Terry L. Shaffer and Douglas H. Johnson*

14 Structural Equation Modeling for Observational Studies, *James B. Grace*

23 Statistical Modeling of Observational Data With Spatial Dependencies, *Mary C. Christman*

34 Analysis of Covariance Models for Data From Observational Field Studies, *Michael R. Riggs, Kurt J. Haroldson, and Mark A. Hanson*

44 Combining Breeding Bird Survey and Christmas Bird Count Data to Evaluate Seasonal Components of Population Change in Northern Bobwhite, *William A. Link, John R. Sauer, and Daniel K. Niven*

52 Sampling Considerations for Disease Surveillance in Wildlife Populations, *Sarah M. Nusser, William R. Clark, David L. Otis, and Ling Huang*

○ Invited Paper

61 Patterns of Bat Fatalities at Wind Energy Facilities in North America, *Edward B. Arnett, W. Kent Brown, Wallace P. Erickson, Jenny K. Fiedler, Brenda L. Hamilton, Travis H. Henry, Aaftab Jain, Gregory D. Johnson, Jessica Kerns, Rolf R. Koford, Charles P. Nicholson, Timothy J. O'Connell, Martin D. Piorkowski, and Roger D. Tankersley, Jr.*

○ Mammals

79 Hunting Patterns, Ban on Baiting, and Harvest Demographics of Brown Bears in Sweden, *Richard Bischof, Rikako Fujita, Andreas Zedrosser, Arne Söderberg, and Jon E. Swenson*

89 The Effects of Breeder Loss on Wolves, *Scott M. Brainerd, Henrik Andrén, Edward E. Bangs, Elizabeth H. Bradley, Joseph A. Fontaine, Wayne Hall, Yorgos Iliopoulos, Michael D. Jimenez, Elizabeth A. Jozwiak, Olof Liberg, Curt M. Mack, Thomas J. Meier, Carter C. Niemeyer, Hans C. Pedersen, Håkan Sand, Ronald N. Schultz, Douglas W. Smith, Petter Wabakken, and Adrian P. Wydeven*

99 Cougar Prey Selection in a White-Tailed Deer and Mule Deer Community, *Hilary S. Cooley, Hugh S. Robinson, Robert B. Wielgus, and Catherine S. Lambert*

107 Bobcat Spatial Distribution and Habitat Use Relative to Population Reduction, *Gregory S. Lynch, Jordona D. Kirby, Robert J. Warren, and L. Mike Conner*

113 Ecology and Translocation-Aided Recovery of an Endangered Badger Population, *Trevor A. Kinley and Nancy J. Newhouse*

123 Behavioral Responses of Bats to Operating Wind Turbines, *Jason W. Horn, Edward B. Arnett, and Thomas H. Kunz*

133 Fox Squirrel Survival in Urban and Rural Environments, *Robert A. McCleery, Roel R. Lopez, Nova J. Silvy, and Daniel L. Gallant*

138 Using Fecal Glucocorticoids to Assess Stress Levels in Captive River Otters, *Devon M. Rothschild, Thomas L. Serfass, William L. Seddon, Laxman Hegde, and R. Scott Fritz*

○ Game and Nongame Birds

143 Constructed Wetland Habitat for American Avocet and Black-Necked Stilt Foraging and Nesting, *Douglas E. Davis, Charles H. Hanson, and Robert B. Hansen*

152 Recovery of the Chesapeake Bay Bald Eagle Nesting Population, *Bryan D. Watts, Glenn D. Therres, and Mitchell A. Byrd*

159 Winter Fidelity and Apparent Survival of Lesser Snow Goose Populations in the Pacific Flyway, *Christopher K. Williams, Michael D. Samuel, Vasily V. Baranyuk, Evan G. Cooch, and Don Kraege*

168 Building Hierarchical Models of Avian Distributions for the State of Georgia, *Jay E. Howell, James T. Peterson, and Michael J. Conroy*

179 Survival, Movements, and Reproduction of Translocated Greater Sage-Grouse in Strawberry Valley, Utah, *Rick J. Baxter, Jerran T. Flinders, and Dean L. Mitchell*

(cont.)

Jrnl. of Wildlife Management Vol. 72, no. 1 (Jan. 2008) p. 2 of 2

187 Greater Sage-Grouse Winter Habitat Selection and Energy Development, *Kevin E. Doherty, David E. Naugle, Brett L. Walker, and Jon M. Graham*

196 Density-Dependent Harvest Modeling for the Eastern Wild Turkey, *Jay D. McGhee, Jim Berkson, David E. Steffen, and Gary W. Norman*

204 A Hierarchical Model for Estimating Change in American Woodcock Populations, *John R. Sauer, William A. Link, William L. Kendall, James R. Kelley, and Daniel K. Niven*

215 Bird Mortality in the Altamont Pass Wind Resource Area, California, *K. Shawn Smallwood and Carl Thelander*

224 Social Indices of Breeding Productivity in Parkland Mallards, *Todd W. Arnold, Anthony M. Pagano, James H. Devries, Robert B. Emery, David W. Howerter, and Brian L. Joynt*

231 Impacts of El Niño–Southern Oscillation Events on the Distribution of Wintering Raptors, *Daniel H. Kim, R. Douglas Slack, and Felipe Chavez-Ramirez*

240 Blood Lead Levels of Common Ravens With Access to Big-Game Offal, *Derek Craighead and Bryan Bedrosian*

246 Habitat Use by Migrant Shorebirds in Saline Lakes of the Southern Great Plains, *Adrian E. Andrei, Loren M. Smith, David A. Haukos, and James G. Surles*

○ Reptiles and Amphibians

254 Population Genetic Assignment of Confiscated Gopher Tortoises, *Tonia S. Schwartz and Stephen A. Karl*

260 Differentiating Migration and Dispersal Processes for Pond-Breeding Amphibians, *Raymond D. Semlitsch*

268 Resource Selection by Translocated Three-Toed Box Turtles in Missouri, *Chadwick D. Rittenhouse, Joshua J. Millspaugh, Michael W. Hubbard, Steven L. Sheriff, and William D. Dijak*

○ Wildlife Damage Management

276 Vulnerability of Domestic Sheep to Lynx Depredation in Relation to Roe Deer Density, *John Odden, Ivar Herfindal, John D. C. Linnell, and Reidar Andersen*

283 Wolf Depredation on Domestic Animals in the Polish Carpathian Mountains, *Roman Gula*

■ **TOOLS AND TECHNOLOGY**

○ Radiotelemetry and Applications

290 A Critical Review of Home Range Studies, *Peter N. Laver and Marcella J. Kelly*

○ Advances in Wildlife Techniques

299 Low Genotyping Error Rates and Noninvasive Sampling in Bighorn Sheep, *Gordon Luikart, Stephanie Zundel, Delpine Rioux, Christian Miquel, Kim A. Keating, John T. Hogg, Brian Steele, Kerry Foresman, and Pierre Taberlet*

305 Mammalian Visitation to Candidate Feral Swine Attractants, *Tyler A. Campbell and David B. Long*

310 Assessing the Helicopter and Net Gun as a Capture Technique for White-Tailed Deer, *Stephen L. Webb, John S. Lewis, David G. Hewitt, Mickey W. Hellickson, and Fred C. Bryant*

315 Adverse Effects of Capture and Handling Little Bustard, *Anna Ponjoan, Gerard Bota, Eladio L. García de la Morena, Manuel B. Morales, Axel Wolff, Ignasi Marco, and Santi Mañosa*

320 Diagnostic Genetic Marker That Differentiates Eastern Fox Squirrels From Eastern Gray Squirrels, *Nancy D. Moncrief, Ronald A. Van Den Bussche, Raymond D. Dueser, Dustin Loftis, Noelle E. Cockett, and Melanie Culver*

324 Estimation of Black Bear Abundance Using a Discrete DNA Sampling Device, *Dave Immell and Robert G. Anthony*

■ **COMMENTARY**

331 Conspecific Attraction is a Missing Component in Wildlife Habitat Modeling, *Andrew J. Campomizzi, Jerrod A. Butcher, Shannon L. Farrell, Amy G. Snelgrove, Bret A. Collier, Kevin J. Gutzwiller, Michael L. Morrison, and R. Neal Wilkins*

■ **BOOK REVIEW**

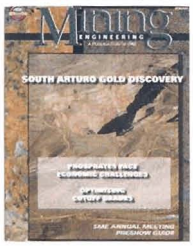
337 Predator–Prey Dynamics: the Role of Olfaction, by Michael R. Conover, *Eric M. Schauber*

■ **ERRATUM (Page 339)**

RECEIVED
2008 JAN 28 AM 11 07
DENVER, COLORADO

Mining ENGINEERING
A PUBLICATION OF SME
VOL. 60, NO. 1 JANUARY 2008

COVER STORY



CONTENTS — Barrick Gold Exploration began exploring at the Dee property on Nevada's Carlin Trend in 1998. But it was not until July 2005 that the discovery hole at the South Arturo deposit was drilled. The company had several chances to give up. The article on page 19 describes what perserverance can deliver.

Copyright 2008 by the Society for Mining, Metallurgy and Exploration, Inc. All rights reserved.
MINING ENGINEERING (ISSN 0026-5187) is published monthly by the Society for Mining, Metallurgy, and Exploration, Inc., at 8307 Shaffer Parkway, Littleton, CO, 80127-4102. Phone 1-800-763-3132 or 303-973-9550. Fax: 303-973-3845 or e-mail: sme@smenet.org. Website: www.smenet.org. Periodicals postage paid at Littleton, CO and additional mailing offices. Canadian post: publications mail agreement number 0689688. **POSTMASTER:** Send changes of address to MINING ENGINEERING, 8307 Shaffer Parkway, Littleton, CO, 80127-4102. Article copies and back issues available on microfilm or microfiche from Linda Hall Library in Kansas City, Mo. Printed by Cummings Printing Co.

FEATURE ARTICLES

19
South Arturo: a recent gold discovery on the Carlin Trend
Ed Cope, Richard Hipsley, Paul Dobak, Dave Arbonies and Steve Brower

26
Arizona's mining history featured at precious metals symposium
William R. Yernberg

31
Strategic alignment: a mining industry challenge
Russell Barr and Robert E. Cook

35
Future of phosphates discussed at Florida symposium
David Gossett

37
TECHNOLOGY NEWS: P&H production drill surpasses milestone at Argyle diamond mine

73
The SME Annual Meeting Preshow Guide

TECHNICAL PAPERS
(peer-reviewed and approved)

39
Value creation through strategic mine planning and cutoff-grade optimization
K. Dagdelen and K. Kawahata

46
Prevalence and cost of cumulative injuries over two decades of technological advances: a look at underground coal mining in the U.S.
S.M. Moore, E.R. Bauer and L.J. Steiner

DEPARTMENTS

4 The drift of things
6 President's page
8 Washington survey
9 Industry newswatch
51 New media
52 New products
54 Coming events
57 SME Legion of Honor
57 25-year members
58 Membership
59 SME Foundation
61 Personal news
62 Obituaries
63 AIME scholarships
64 Classifieds
68 Professional services
72 Index of advertisers

Reproduction: More than one photocopy of an item from SME may be made for internal use, provided fees are paid directly to the Copyright Clearance Center, 27 Congress St., Salem, MA, 01970, USA. Phone 978-750-8400, fax 978-750-4470. Any other form of reproduction requires special permission from, and may be subject to fees by SME. SME is not responsible for any statements made or opinions expressed in its publications. Member subscription rate included in dues. Nonmember subscription rate, $245; in Europe, $275. Single copies $25, July directory issue, $150.

PAY DIRT MAGAZINE

A Voice For Western Mining Since 1938

RECEIVED
2008 JAN 24 AM 11:00
DENVER, COLORADO

November 2007

Cover Story: Equipment ordered for Mt. Hope moly mine 2

Mining in the West 4

Augusta is looking for high-grade at Rosemont • Aurelio keeps expanding oxide mineralization at Hill • Nord boosts reserves at Johnson Camp by 109% • U.S. Silver gets good lead, silver assays • Coronado to begin shipping Madison ore • Golden Phoenix studies Mineral Ridge feasibility

Energy 10

Uranium Resources buys Rio Algom; new production seen in 4-5 years • Energy Fuels selects CH2M Hill for Piñon Ridge uranium mill work

Governments and Mining 11

Coeur Alaska gets no relief from court on Kensington project • Canyon Resources again asking court to consider its takings case • Metal imports on the rise, study confirms

Environment 12

Court says Carlota can't have Clean Water permit • Roads and more approved for Buckhorn Mountain • Peabody's Pfannensteil is reclamationist of year

The Business of Mining 13

Barrick to acquire Cerro Casale deposit • Newmont, Miramar talk C$1.5 billion deal • Mercator to acquire ore body in Chihuahua • Yamana acquires most Meridian Gold shares • FCX net grows to $763 million in 3Q • Doubling of moly output helps boost Southern Copper net • Codelco's nine months has second-highest profit for the firm • Lower grades hold back Barrick's third-quarter profits • Royal Gold completes Battle Mountain merger • Enhanced Yamana discusses its strategic plans • Newmont has ups and downs; Phoenix fix is well under way • Thompson Creek shows expanded uses for moly • Northgate, Perseverance to create mid-tier firm • CVRD to invest $11 billion in '08

Ad Index, 4; Mexico, 5; Canada, 6; Latin America, 7; World, 8; Western Briefs, 9; Miners in the News, 21; Directory, 22; Safety, Health & Labor, 23; Low Grade, 24

On the Cover

General Moly has ordered long-lead-time equipment for its Mt. Hope moly project in central Nevada with plans to have it producing the metal by 2010. The Colorado firm hopes to become a major moly miner with its two Nevada properties.

PAY DIRT
Magazine

William C. Epler
Publisher and Editor
1968-1995

Frank Barco
Publisher

Gary Dillard
Editor

Dan Eyde • Ted Eyde
George Leaming
Clarence Ellis
Chug-A-Lug
Correspondents

Frank Barco
Production Manager

Lupe A. Silva
Production Staff

Caryl L. Larkins
Advertising Sales/Circulation

Mary Farrington
Office Staff

Doug Harris
Maintenance Manager

PAY DIRT (USPS 424-000)
P.O. Drawer 48, Copper Queen Plaza
Bisbee, AZ 85603
(520) 432-2244; FAX (520) 432-2247
E-mail: *paydirt@cableone.net*

PAY DIRT is published monthly by Copper Queen Publishing Co. Inc.

Subscription Rates

Single copy	$ 3.00
One year	$30.00
Two years	$55.00
Three years	$75.00

Canadian subscriptions add $20.00 per year; foreign subscriptions add $50.00 per year

Advertising Rates
For information call (520) 432-2244

Periodical postage paid at Bisbee, AZ 85603
Postmaster: Please send Form 3579 to:
PAY DIRT, P.O. Drawer 48, Bisbee, AZ 85603

Rangeland Ecology & Management

A Journal of the Society for Range Management

VOLUME 61 NUMBER 1 JANUARY 2008

Table of Contents

Editorials

1 **The State of REM: Perspectives of the Outgoing Editor-in-Chief**
M. Keith Owens

2 **The Future of REM: Perspectives of the Incoming Editor-in-Chief**
David D. Briske

Synthesis Paper

3 **Rotational Grazing on Rangelands: Reconciliation of Perception and Experimental Evidence**
D. D. Briske, J. D. Derner, J. R. Brown, S. D. Fuhlendorf, W. R. Teague, K. M. Havstad, R. L. Gillen, A. J. Ash, and W. D. Willms

Research Papers

18 **Prescribed Sheep Grazing to Suppress Spotted Knapweed on Foothill Rangeland**
Brian D. Thrift, Jeffrey C. Mosley, Tracy K. Brewer, Brent L. Roeder, Bret E. Olson, and Rodney W. Kott

26 **Evaluation of Low-Stress Herding and Supplement Placement for Managing Cattle Grazing in Riparian and Upland Areas**
Derek W. Bailey, Harv C. VanWagoner, Robin Weinmeister, and Delyn Jensen

38 **Sheep Spatial Grazing Strategies at the Arid Patagonian Monte, Argentina**
Mónica B. Bertiller and Jorge O. Ares

48 **Age and Body Condition of Goats Influence Consumption of Juniper and Monoterpene-Treated Feed**
Rachel A. Frost, Karen L. Launchbaugh, and Charles A. Taylor, Jr.

55 **Invertebrate Community Response to a Shifting Mosaic of Habitat**
David M. Engle, Samuel D. Fuhlendorf, Aaron Roper, and David M. Leslie, Jr.

63 **Effect of Pinyon–Juniper Tree Cover on the Soil Seed Bank**
Elizabeth A. Allen and Robert S. Nowak

74 **Infiltration, Runoff, and Sediment Yield in Response to Western Juniper Encroachment in Southeast Oregon**
Steven L. Petersen and Tamzen K. Stringham

82 **Intermountain Presettlement Juniper: Distribution, Abundance, and Influence on Postsettlement Expansion**
Dustin D. Johnson and Richard F. Miller

93 **Effect of Conifer Encroachment Into Aspen Stands on Understory Biomass**
B. R. Stam, J. C. Malechek, D. L. Bartos, J. E. Bowns, and E. B. Godfrey

98 **Responses of Chaparral and Oak Woodland Plant Communities to Fuel-Reduction Thinning in Southwestern Oregon**
Keith A. Perchemlides, Patricia S. Muir, and Paul E. Hosten

110 **Medusahead Dispersal and Establishment in Sagebrush Steppe Plant Communities**
Kirk W. Davies

116 **Defoliation Effects on *Bromus tectorum* Seed Production: Implications for Grazing**
Kara Hempy-Mayer and David A. Pyke

124 **Enhancing Native Grass Productivity by Cocultivating With Endophyte-Laden Calli**
M. E. Lucero, J. R. Barrow, P. Osuna, I. Reyes, and S. E. Duke

Research Note

131 **Method of Supplementation May Affect Cattle Grazing Patterns**
Derek W. Bailey and Delyn Jensen

RECEIVED 2008 JAN 22 AM 11:05

Front Cover Photograph: Extensive old-growth western juniper woodland in central Oregon with a twisted standing dead tree in the foreground that died around 1700 AD. Photo by Richard Miller.

SOIL SCIENCE

An Interdisciplinary Approach to Soils Research

JANUARY 2008 | CONTENTS | Vol. 173 No. 1

RECEIVED
2008 JAN 24 AM 10 7
DENVER, COLO.

From The Editor's Desk: 2006–2007 Publication Report 1
Robert L. Tate III

Competitive Sorption-Desorption Kinetics of Arsenate and Phosphate in Soils 3
Hua Zhang and H. Magdi Selim

Sorption and Leaching of Short-Term–Aged PAHS in Eight European Soils: Link to Physicochemical Properties and Leaching of Dissolved Organic Carbon 13
Lis W. de Jonge, Per Moldrup, Hubert de Jonge, and Rafael Celis

Linear Regression Models to Estimate Soil Liquid Limit and Plasticity Index From Basic Soil Properties 25
Cathy A. Seybold, Moustafa A. Elrashidi, and Robert J. Engel

Repeatability of Soil Apparent Electrical Conductivity Measured by a Coulter Sensor 35
Jay David Jabro, Robert G. Evans, William B. Stevens, and William M. Iversen

A Pulse-Chase Method to ^{13}Carbon-Label Douglas-Fir Seedlings for Decomposition Studies 46
Jennifer Moore-Kucera and Richard P. Dick

Nitrogen Mineralization Potential and Nutrient Availability From Five Organic Materials in an Atoll Soil From the Marshall Islands 54
Jonathan L. Deenik and Russell S. Yost

The Effect of Organic and Mineral Fertilization on Micronutrient Availability in Soil 69
Juan Francisco Herencia, Juan Carlos Ruiz, Esmeralda Morillo, Sebastiana Melero, Jaime Villaverde, and Celia Maqueda

Book Reviews 81

To Our Manuscript Reviewers 83

Erratum 85

p. 1 of 2

SSSAJ

Soil Science Society of America Journal

January–February 2008 • Vol. 72 • No. 1

Soil Physics

1–10 **Application of Thermal Analysis to Elucidate Water-Repellency Changes in Heated Soils**
Pavel Dlapa, Ivan Simkovic, Jr., Stefan H. Doerr, Ivan Simkovic, Robert Kanka, and Jorge Mataix-Solera

11–15 **Electrical Spectra of Undisturbed Soil from a Crop Rotation Study**
S. D. Logsdon

16–24 **Probabilistic Approach to the Identification of Input Variables to Estimate Hydraulic Conductivity**
A. Lilly, A. Nemes, W. J. Rawls, and Ya. A. Pachepsky

25–32 **Scaling Soil Water Characteristics of Golf Course and Athletic Field Sands from Particle-Size Distribution**
Lalit M. Arya, Daniel C. Bowman, Bir B. Thapa, and D. Keith Cassel

33–40 **Bimodal Zone of the Soil Textural Triangle: Common in Tropical and Subtropical Regions**
Devaraj de Condappa, Sylvie Galle, Benoit Dewandel, and Randel Haverkamp

41–49 **The Adequacy of Pressure Plate Apparatus for Determining Soil Water Retention**
H. P. Cresswell, T. W. Green, and N. J. McKenzie

50–55 **Enrichment of Organic Carbon in Sediment Transport by Interrill and Rill Erosion Processes**
W. Schiettecatte, D. Gabriels, W. M. Cornelis, and G. Hofman

Soil Chemistry

56–62 **Wien Effect Determination of Adsorption Energies between Heavy Metal Ions and Soil Particles**
Yu-Jun Wang, Cheng-Bao Li, Wei Wang, Dong-Mei Zhou, Ren-Kou Xu, and Shmulik P. Friedman

63–72 **Copper Retention Kinetics in Acid Soils**
José Eugenio López-Periago, Manuel Arias-Estévez, Juan Carlos Nóvoa-Muñoz, David Fernández-Calviño, Benedicto Soto, Cristina Pèrez-Novo, and Jesus Simal-Gándara

73–82 **The Effect of Long-Term Annual Application of Biosolids on Soil Properties, Phosphorus, and Metals**
J. L. Schroder H. Zhang, D. Zhou, N. Basta, W. R. Raun, M. E. Payton, and A. Zazulak

83–89 **Kinetics of Nonenzymatic Decomposition of Hydrogen Peroxide by Torrifluvents**
Adel M. Elprince, Wafaa H. Mohamed, and Ekhlas M. El-Wakil

90–97 **Distribution of Phosphorus Forms in Soil Following Long-term Continuous and Discontinuous Cattle Manure Applications**
Xiying Hao, Frauke Godlinski, and Chi Chang

98–110 **Evidence for Different Reaction Pathways for Liquid and Granular Micronutrients in a Calcareous Soil**
Ganga M. Hettiarachchi, Mike J. McLaughlin, Kirk G. Scheckel, David J. Chittleborough, Mathew Newville, Steve Sutton, and Enzo Lombi

Soil Biology & Biochemistry

111–118 **Soil Scarification and Wildfire Interactions and Effects on Microbial Communities and Carbon**
Aida E. Jiménez Esquilín, Mary E. Stromberger, and Wayne D. Shepperd

119–125 **A Model to Predict Soil Aggregate Stability Dynamics following Organic Residue Incorporation under Field Conditions**
Samuel Abiven, Safya Menasseri, Denis A. Angers, and Philippe Leterme

126–134 **A Subsurface, Closed-Loop System for Soil Carbon Dioxide and Its Application to the Gradient Efflux Approach**
T. M. DeSutter, T. J. Sauer, T. B. Parkin, and J. L. Heitman

135–142 **Shortcomings in the Commercialized Barometric Process Separation Measuring System**
Joachim Ingwersen, Ulrich Schwarz, Claus Florian Stange, Xiaotang Ju, and Thilo Streck

Soil Fertility & Plant Nutrition

143–150 **Evaluation of the Illinois Soil Nitrogen Test for Predicting Corn Nitrogen Needs**
Jeffrey T. Osterhaus, Larry G. Bundy, and Todd W. Andraski

Pedology

151–159 **Tropical Soils and Landmine Detection—An Approach for a Classification System**
Holger Preetz, Sven Altfelder, and Jan Igel

Soil & Water Management & Conservation

160–166 **Soil Aggregation and Biochemical Properties following the Application of Fresh and Composted Organic Amendments**
M. Bipfubusa, D. A. Angers, A. N'Dayegamiye, and H. Antoun

167–179 **Modeling Tillage-Induced Redistribution of Soil Mass and Its Constituents within Different Landscapes**
Sheng Li, David A. Lobb, Michael J. Lindstrom, Sharon K. Papiernik, and Annemieke Farenhorst

180–185 **Evaluating Soil Management Using Particulate and Chemically Labile Soil Organic Matter Fractions**
Steven B. Mirsky, Les E. Lanyon, and Brian A. Needelman

186–193 **Mapping Soil Organic Carbon Concentration for Multiple Fields with Image Similarity Analysis**
Feng Chen, David E. Kissel, Larry T. West, W. Adkins, Doug Rickman, and J. C. Luvall

(Cont.)

Soil Science Society of America Journal
Vol. 72, no. 1 (Jan.-Feb. 2008) p. 2 of 2

194–200 **Management Effects on Soil Carbon Dioxide Fluxes under Semiarid Mediterranean Conditions**
J. Álvaro-Fuentes, M. V. López, J. L. Arrúe, and *C. Cantero-Martínez*

201–211 **Detecting Soil Salinity in Alfalfa Fields using Spatial Modeling and Remote Sensing**
A. A. Eldeiry and Luis A. Garcia

212–220 **Soil Water Hysteresis in Water-Stable Microaggregates as Affected by Organic Matter**
J. Zhuang, J. F. McCarthy, E. Perfect, L. M. Mayer, and J. D. Jastrow

221–230 **Soil Organic Carbon Fractions and Aggregation in the Southern Piedmont and Coastal Plain**
Hector J. Causarano, Alan J. Franzluebbers, Joey N. Shaw, D. Wayne Reeves, Randy L. Raper, and C. Wesley Wood

231–237 **Method for Determining Coal Carbon in the Reclaimed Minesoils Contaminated with Coal**
David A. N. Ussiri and Rattan Lal

Nutrient Management & Soil & Plant Analysis Note

238–243 **Phosphorus Solubility in Response to Acidification of Dairy Manure Amended Soils**
C. J. Penn and R. B. Bryant

Soil Mineralogy

244–257 **Mineralogy and Magnetic Properties of Basaltic Substrate Soils: Kaho'olawe and Big Island, Hawaii**
Remke L. Van Dam, J. Bruce J. Harrison, Deidre A. Hirschfeld, Todd M. Meglich, Yaoguo Li, and Ryan E. North

Soil Organic Matter Symposium

258–267 **Direct Detection of Black Carbon in Soils by Py-GC/MS, Carbon-13 NMR Spectroscopy and Thermogravimetric Techniques**
J. M. De la Rosa, H. Knicker, E. López-Capel, D. A. C. Manning, J. A. González-Perez, and F. J. González-Vila

268–276 **Comparison of Solid-State Carbon-13 Nuclear Magnetic Resonance and Organic Matter Biomarkers for Assessing Soil Organic Matter Degradation**
Myrna J. Simpson, Angelika Otto, and Xiaojuan Feng

Book Reviews

277 **Clay Swelling and Colloid Stability**
Reviewed by Teamrat A. Ghezzehei

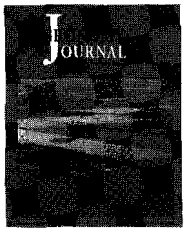
278 **Modeling Phosphorus in the Environment**
Reviewed by Thanh H. Dao

279 **Under Ground. How Creatures of Mud and Dirt Shape Our World**
Reviewed by Monika Joschko

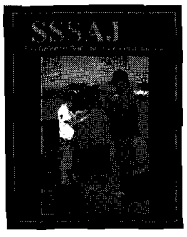
Other Items

280 **SSSA Publication policy**
283 **Instructions to Authors**

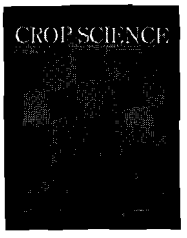
Journal Archives Available Online



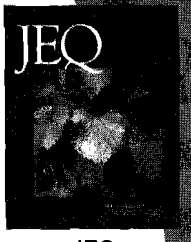
AJ
1907–1999



SSSAJ
1936–1999



Crop Science
1961–1999



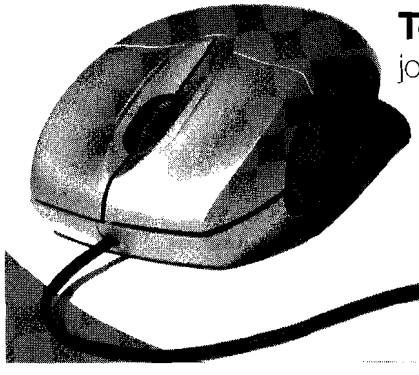
JEQ
1972–2000

All articles published in the *Agronomy Journal*, *Crop Science*, *Soil Science Society of America Journal*, and *Journal of Environmental Quality* are now available in a fully searchable online archive.

Members:
Online member subscriptions include access to the historical archive(s) of that journal. Add online access to your annual subscription today.

Institutions:
The complete online archives (AJ, SSSAJ, CS, JEQ) are available for a one time purchase cost of $2,000 with a $100 annual maintenance fee.

To subscribe email:
journals@agronomy.org



American Society of Agronomy • Crop Science Society of America • Soil Science Society of America
www.agronomy.org • www.crops.org • www.soils.org

RECEIVED
2008 JAN -7 AM 8:46
USBR WRC
DENVER, COLORADO

WATER RESOURCES RESEARCH

Volume 43 Number 11, November 2007
WRERAQ (11) W11201–W11502 (2007)
ISSN 0043-1397

The online article is the official version and may contain additional content not available in this print issue. To access the full article, including multimedia, enhanced figures, auxiliary materials, and other nonprinted content, go to http://wwwagu.org/journals/wrr.

p. 1 of 2

Rapid Communications

W11201 *Mark S. Johnson, Markus Weiler, Eduardo Guimarães Couto, Susan J. Riha, and Johannes Lehmann*
Storm pulses of dissolved CO_2 in a forested headwater Amazonian stream explored using hydrograph separation (DOI 10.1029/2007WR006359)

Regular Articles

W11401 *Somkiat Apipattanavis, Guillermo Podestá, Balaji Rajagopalan, and Richard W. Katz*
A semiparametric multivariate and multisite weather generator (DOI 10.1029/2006WR005714)

W11402 *Maya P. Bhatt and William H. McDowell*
Controls on major solutes within the drainage network of a rapidly weathering tropical watershed (DOI 10.1029/2007WR005915)

W11403 *Roseanna M. Neupauer, Ranhao Lin, and Heather O'Shea*
Conditioned backward probability modeling to identify sources of groundwater contaminants subject to sorption and decay (DOI 10.1029/2006WR005580)

W11404 *Brendan V. Brown, H. Maurice Valett, and Madeline E. Schreiber*
Arsenic transport in groundwater, surface water, and the hyporheic zone of a mine-influenced stream-aquifer system (DOI 10.1029/2006WR005687)

W11405 *Elena Toth and Armando Brath*
Multistep ahead streamflow forecasting: Role of calibration data in conceptual and neural network modeling (DOI 10.1029/2006WR005383)

W11406 *Tobias Siegfried and Thomas Bernauer*
Estimating the performance of international regulatory regimes: Methodology and empirical application to international water management in the Naryn/Syr Darya basin (DOI 10.1029/2006WR005738)

W11407 *Zepu Zhang, Dmitry Beletsky, David J. Schwab, and Michael L. Stein*
Assimilation of current measurements into a circulation model of Lake Michigan (DOI 10.1029/2006WR005818)

W11408 *Jin-Hee Lee and John W. Labadie*
Stochastic optimization of multireservoir systems via reinforcement learning (DOI 10.1029/2006WR005627)

W11409 *Lance E. Besaw and Donna M. Rizzo*
Stochastic simulation and spatial estimation with multiple data types using artificial neural networks (DOI 10.1029/2006WR005509)

W11410 *Aldo Tamburrino and John S. Gulliver*
Free-surface visualization of streamwise vortices in a channel flow (DOI 10.1029/2007WR005988)

W11411 *Anke Hildebrandt and Elfatih A. B. Eltahir*
Ecohydrology of a seasonal cloud forest in Dhofar: 2. Role of clouds, soil type, and rooting depth in tree-grass competition (DOI 10.1029/2006WR005262)

W11412 *Isaac J. Larsen and Lee H. MacDonald*
Predicting postfire sediment yields at the hillslope scale: Testing RUSLE and Disturbed WEPP (DOI 10.1029/2006WR005560)

(continued on inside back cover)

Water Resources Research
Vol. 43, no. 11 (Nov. 2007)

(continued from outside back cover)

p. 2 of 2

W11413 *G. Botter, F. Peratoner, A. Porporato, I. Rodriguez-Iturbe, and A. Rinaldo*
Signatures of large-scale soil moisture dynamics on streamflow statistics across U.S. climate regimes (DOI 10.1029/2007WR006162)

W11414 *Zachary M. Easton, Pierre Gérard-Marchant, M. Todd Walter, A. Martin Petrovic, and Tammo S. Steenhuis*
Identifying dissolved phosphorus source areas and predicting transport from an urban watershed using distributed hydrologic modeling (DOI 10.1029/2006WR005697)

W11415 *Eran Feitelson, Itay Fischhendler, and Paul Kay*
Role of a central administrator in managing water resources: The case of the Israeli water commissioner (DOI 10.1029/2007WR005922)

W11416 *In-Young Yeo, Jean-Michel Guldmann, and Steven I. Gordon*
A hierarchical optimization approach to watershed land use planning (DOI 10.1029/2006WR005315)

W11417 *Matteo Tregnaghi, Andrea Marion, and Roberto Gaudio*
Affinity and similarity of local scour holes at bed sills (DOI 10.1029/2006WR005559)

W11418 *Matteo Convertino, Riccardo Rigon, Amos Maritan, Ignacio Rodriguez-Iturbe, and Andrea Rinaldo*
Probabilistic structure of the distance between tributaries of given size in river networks (DOI 10.1029/2007WR006176)

W11419 *Guobin Fu, Stephen P. Charles, and Francis H. S. Chiew*
A two-parameter climate elasticity of streamflow index to assess climate change effects on annual streamflow (DOI 10.1029/2007WR005890)

W11420 *Orlando Silva and Jordi Grifoll*
A soil-water retention function that includes the hyper-dry region through the BET adsorption isotherm (DOI 10.1029/2006WR005325)

W11421 *V. Cvetkovic, H. Cheng, H. Widestrand, J. Byegård, A. Winberg, and P. Andersson*
Sorbing tracer experiments in a crystalline rock fracture at Äspö (Sweden): 2. Transport model and effective parameter estimation (DOI 10.1029/2006WR005278)

W11422 *J. O. Sickman, M. J. Zanoli, and H. L. Mann*
Effects of Urbanization on Organic Carbon Loads in the Sacramento River, California (DOI 10.1029/2007WR005954)

W11423 *Casey Brown and Miguel Carriquiry*
Managing hydroclimatological risk to water supply with option contracts and reservoir index insurance (DOI 10.1029/2007WR006093)

W11424 *Shiraj Khan, Gabriel Kuhn, Auroop R. Ganguly, David J. Erickson III, and George Ostrouchov*
Spatio-temporal variability of daily and weekly precipitation extremes in South America (DOI 10.1029/2006WR005384)

Technical Notes

W11501 *Ching-Min Chang and Hund-Der Yeh*
Large-time behavior of macrodispersion in heterogeneous trending aquifers (DOI 10.1029/2007WR006017)

W11502 *Luis Guarracino*
Estimation of saturated hydraulic conductivity K_s from the van Genuchten shape parameter α (DOI 10.1029/2006WR005766)

The Author Index appears at the end of the issue.

RECEIVED
2008 JAN 31 AM 11:

WATER RESOURCES RESEARCH

Volume 43 Number 12 December 2007
WRERAQ (12) W124301-W12604, W12S01-W12S16 (2007)
ISSN 0043-1397

The online article is the official version and may contain additional content not available in this print issue. To access the full article, including multimedia, enhanced figures, auxiliary materials, and other nonprinted content, go to http://wwwagu.org/journals/wrr.

p. 1 of 4

Opinions

W12301 *Hong Yang and Alexander Zehnder*
"Virtual water": An unfolding concept in integrated water resources management (DOI 10.1029/2007WR006048)

Regular Articles

W12401 *B. J. MacVicar and A. G. Roy*
Hydrodynamics of a forced riffle pool in a gravel bed river: 1. Mean velocity and turbulence intensity (DOI 10.1029/2006WR005272)

W12402 *B. J. MacVicar and A. G. Roy*
Hydrodynamics of a forced riffle pool in a gravel bed river: 2. Scale and structure of coherent turbulent events (DOI 10.1029/2006WR005274)

W12403 *Juliette A. Woods and Graham F. Carey*
Upwelling and downwelling behavior in the Elder-Voss-Souza benchmark (DOI 10.1029/2006WR004918)

W12404 *David Finger, Martin Schmid, and Alfred Wüest*
Comparing effects of oligotrophication and upstream hydropower dams on plankton and productivity in perialpine lakes (DOI 10.1029/2007WR005868)

W12405 *Roberto Deidda*
An efficient rounding-off rule estimator: Application to daily rainfall time series (DOI 10.1029/2006WR005409)

W12406 *R. Muneepeerakul, A. Rinaldo, and I. Rodriguez-Iturbe*
Effects of river flow scaling properties on riparian width and vegetation biomass (DOI 10.1029/2007WR006100)

W12407 *Gaisheng Liu, Chunmiao Zheng, and Steven M. Gorelick*
Evaluation of the applicability of the dual-domain mass transfer model in porous media containing connected high-conductivity channels (DOI 10.1029/2007WR005965)

W12408 *Joan B. Blainey, Ty P. A. Ferré, and Jeff T. Cordova*
Assessing the likely value of gravity and drawdown measurements to constrain estimates of hydraulic conductivity and specific yield during unconfined aquifer testing (DOI 10.1029/2006WR005678)

W12409 *G. P. Grant and J. I. Gerhard*
Simulating the dissolution of a complex dense nonaqueous phase liquid source zone: 2. Experimental validation of an interfacial area–based mass transfer model (DOI 10.1029/2007WR006039)

W12410 *G. P. Grant and J. I. Gerhard*
Simulating the dissolution of a complex dense nonaqueous phase liquid source zone: 1. Model to predict interfacial area (DOI 10.1029/2007WR006038)

W12411 *M. A. Scholl, T. W. Giambelluca, S. B. Gingerich, M. A. Nullet, and L. L. Loope*
Cloud water in windward and leeward mountain forests: The stable isotope signature of orographic cloud water (DOI 10.1029/2007WR006011)

(continued on inside back cover)

Water Resources Research
Vol. 43, no. 12 (Dec. 2007)

(continued from outside back cover)

W12412 *Gokmen Tayfur and Vijay P. Singh*
Kinematic wave model for transient bed profiles in alluvial channels under nonequilibrium conditions (DOI 10.1029/2006WR005681)

W12413 *Chuanhui Gu, George M. Hornberger, Aaron L. Mills, Janet S. Herman, and Samuel A. Flewelling*
Nitrate reduction in streambed sediments: Effects of flow and biogeochemical kinetics (DOI 10.1029/2007WR006027)

W12414 *Stephanie K. Kampf and Stephen J. Burges*
Parameter estimation for a physics-based distributed hydrologic model using measured outflow fluxes and internal moisture states (DOI 10.1029/2006WR005605)

W12415 *Gowri Srinivasan, Daniel M. Tartakovsky, Bruce A. Robinson, and Alejandro B. Aceves*
Quantification of uncertainty in geochemical reactions (DOI 10.1029/2007WR006003)

W12416 *C. Spence*
On the relation between dynamic storage and runoff: A discussion on thresholds, efficiency, and function (DOI 10.1029/2006WR005645)

W12417 *Andries J. Paarlberg, C. Marjolein Dohmen-Janssen, Suzanne J. M. H. Hulscher, and Paul Termes*
A parameterization of flow separation over subaqueous dunes (DOI 10.1029/2006WR005425)

W12418 *Athanasios N. Papanicolaou, Mohamed Elhakeem, and Robert Hilldale*
Secondary current effects on cohesive river bank erosion (DOI 10.1029/2006WR005763)

W12419 *F. J. Jiménez-Hornero, J. V. Giráldez, and A. M. Laguna*
Multifractal analysis of flow velocity simulated with the lattice model approach in idealized three-dimensional porous media (DOI 10.1029/2007WR005951)

Technical Notes

W12501 *Kuan-Chih Chen and Kuo-Chin Hsu*
A general fractal model of flow and solute transport in randomly heterogeneous porous media (DOI 10.1029/2007WR005934)

W12502 *Toshihiro Sakaki and Tissa H. Illangasekare*
Comparison of height-averaged and point-measured capillary pressure–saturation relations for sands using a modified Tempe cell (DOI 10.1029/2006WR005814)

W12503 *Ty P. A. Ferre and John S. Selker*
A glass always half full: Reconsideration of the Wales apparatus to apply constant head boundary conditions (DOI 10.1029/2007WR005889)

W12504 *Daiquan Chen, Laura J. Pyrak-Nolte, Jessica Griffin, and Nicholas J. Giordano*
Measurement of interfacial area per volume for drainage and imbibition (DOI 10.1029/2007WR006021)

Commentaries

W12601 *N. Suciu and C. Vamoş*
Comment on "Nonstationary flow and nonergodic transport in random porous media" by G. Darvini and P. Salandin (DOI 10.1029/2007WR005946)

W12602 *Shaw-Yang Yang and Hund-Der Yeh*
Comment on "Evaluation of the Hantush's $M(\alpha, \beta)$ function using binomial coefficients" by B. A. Mamedov and A. S. Ekenoğlu (DOI 10.1029/2007WR006431)

W12603 *G. Darvini and P. Salandin*
Reply to comment by N. Suciu and C. Vamoş on "Nonstationary flow and nonergodic transport in random porous media" (DOI 10.1029/2007WR006116)

(continued on facing page)

Water Resources Research
Vol. 43, no. 12 (Dec. 2007)

(continued from inside back cover)

W12604 *B. A. Mamedov*

Reply to comment by Shaw-Yang Yang and Hund-Der Yeh on "Evaluation of the Hantush's $M(\alpha, \beta)$ function using binomial coefficients" (DOI 10.1029/2007WR006590)

Special Section: Modeling of Pore-Scale Processes

W12S01 *M. I. J. van Dijke and M. Piri*

Introduction to special section on Modeling of Pore-Scale Processes (DOI 10.1029/2007WR006332)

W12S02 *Hiroshi Okabe and Martin J. Blunt*

Pore space reconstruction of vuggy carbonates using microtomography and multiple-point statistics (DOI 10.1029/2006WR005680)

W12S03 *Z. Jiang, K. Wu, G. Couples, M. I. J. van Dijke, K. S. Sorbie, and J. Ma*

Efficient extraction of networks from three-dimensional porous media (DOI 10.1029/2006WR005780)

W12S04 *P.-E. Øren, S. Bakke, and R. Held*

Direct pore-scale computation of material and transport properties for North Sea reservoir rocks (DOI 10.1029/2006WR005754)

W12S05 *M. I. J. van Dijke, M. Piri, J. O. Helland, K. S. Sorbie, M. J. Blunt, and S. M. Skjæveland*

Criteria for three-fluid configurations including layers in a pore with nonuniform wettability (DOI 10.1029/2006WR005761)

W12S06 *Marcel G. Schaap, Mark L. Porter, Britt S. B. Christensen, and Dorthe Wildenschild*

Comparison of pressure-saturation characteristics derived from computed tomography and lattice Boltzmann simulations (DOI 10.1029/2006WR005730)

W12S07 *Siyavash Motealleh and Steven L. Bryant*

Predictive model for permeability reduction by small wetting phase saturations (DOI 10.1029/2006WR005684)

W12S08 *M. Gladkikh, D. Jacobi, and F. Mendez*

Pore geometric modeling for petrophysical interpretation of downhole formation evaluation data (DOI 10.1029/2006WR005688)

W12S10 *J. O. Helland and S. M. Skjæveland*

Relationship between capillary pressure, saturation, and interfacial area from a model of mixed-wet triangular tubes (DOI 10.1029/2006WR005698)

W12S11 *Branko Bijeljic and Martin J. Blunt*

Pore-scale modeling of transverse dispersion in porous media (DOI 10.1029/2006WR005700)

W12S12 *Rasmus Jakobsen*

Redox microniches in groundwater: A model study on the geometric and kinetic conditions required for concomitant Fe oxide reduction, sulfate reduction, and methanogenesis (DOI 10.1029/2006WR005663)

W12S13 *William P. Johnson, Meiping Tong, and Xiqing Li*

On colloid retention in saturated porous media in the presence of energy barriers: The failure of α, and opportunities to predict η (DOI 10.1029/2006WR005770)

W12S14 *Qinjun Kang, Peter C. Lichtner, and Dongxiao Zhang*

An improved lattice Boltzmann model for multicomponent reactive transport in porous media at the pore scale (DOI 10.1029/2006WR005551)

W12S15 *P. C. Lichtner and Q. Kang*

Upscaling pore-scale reactive transport equations using a multiscale continuum formulation (DOI 10.1029/2006WR005664)

(continued overleaf)

Water Resources Research
Vol. 43, no. 12 (Dec. 2007)

(continued from following page)

W12S16 *Brian D. Wood*
Inertial effects in dispersion in porous media (DOI 10.1029/2006WR005790)

There is no **W12SO9** in this issue.

The Author and Subject Indexes appear at the end of the issue.

RECEIVED Western
North American Naturalist

Volume 67 No. 4 December 2007 ISSN 1527-0904

CONTENTS

Articles

Variation in ant populations with elevation, tree cover, and fire in a pinyon-juniper–dominated watershed ..... Eugénie M. MontBlanc, Jeanne C. Chambers, and Peter F. Brussard 469

Growth and demography of one population of the lizard *Sceloporus mucronatus mucronatus* ..... Angela M. Ortega-León, Emily R. Smith, J. Jaime Zúñiga-Vega, and Fausto R. Méndez-de la Cruz 492

Modeling aboveground biomass of *Tamarix ramosissima* in the Arkansas River Basin of southeastern Colorado, USA ..... Paul Evangelista, Sunil Kumar, Thomas J. Stohlgren, Alycia W. Crall, and Gregory J. Newman 503

Diatom species composition and ecology of the Animas River Watershed, Colorado, USA.... ..... Gerald. V. Sgro, John B. Poole, and Jeffery R. Johansen 510

Moistened seeds increase rodent trap success ..... John C. Tull and Michael W. Sears 520

The scotopic visual sensitivity of four species of trout: a comparative study ....Russell B. Rader, Timberley Belish, Michael K. Young, and John Rothlisberger 524

Censusing bobcats using remote cameras ..... Eveline S. Larrucea, Gianluca Serra, Michael M. Jaeger, and Reginald H. Barrett 538

Long-term vegetation dynamics in a cut western juniper woodland..... Jonathan D. Bates, Richard F. Miller, and Tony Svejcar 549

Forest health impacts of bark beetles, dwarf mistletoe, and blister rust in a Lake Tahoe Basin mixed conifer stand ..... R.F. Walker, R.M. Fecko, W.B. Frederick, D.W. Johnson, and W.W. Miller 562

Population density, biomass, and age-class structure of the invasive clam *Corbicula fluminea* in rivers of the lower San Joaquin River watershed, California..... Larry R. Brown, Janet K. Thompson, Karen Higgins, and Lisa V. Lucas 572

Large mixed-species dispersal flights of predatory and scavenging aquatic Heteroptera and Coleoptera, northern Arizona, USA..... Lawrence E. Stevens, John T. Polhemus, Richard S. Durfee, and Carl A. Olson 587

Notes

Home range size of Black-backed Woodpeckers in burned forests of southwestern Idaho ....Jonathan G. Dudley and Victoria A. Saab 593

New distribution records for the Querétero dusky rattlesnake *Crotalus aquilus* (Viperidae), with comments on morphology and habitat use..... Jesse M. Meik, Estrella Mociño Deloya, and Kirk Setser 601

Observations on an association between the weevil *Scaphomorphus trivittatus* (Say) and two *Astragalus* species on selenium-rich soils in Carbon County, Utah .... Gary R. Hooper and Boyd F. Holdaway 605

Discovery of a large population of the rare winte[redacted]*pcapnia mogila* Ricker in the Mad River, California (Plecoptera, Capniidae) . [redacted]Richard W. Baumann and Jonathan J. Lee 609

There is no valid record of cliff chipmunk (*Tamias dorsalis*) in the Sandia Mountains, New Mexico ..... Jennifer K. Frey 611

Increased willow heights along northern Yellowstone's Blacktail Deer Creek following wolf reintroduction ..... Robert L. Beschta and William J. Ripple 613

Hay piles of the mountain beaver (*Aplodontia rufa*) delay plant decomposition .... Richard Karban, Claire Karban, and Jesse Karban 618

Errata 622