

30th Western Dredging Association Technical Conference 2010

Held with the 41st Texas A&M Dredging Seminar

**San Juan, Puerto Rico
6 – 9 June 2010**

Editors:

Robert E. Randall

ISBN: 978-1-63266-503-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2010) by Western Dredging Association
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact Western Dredging Association
at the address below.

Western Dredging Association
P.O. Box 5797
Vancouver, WA 98668-5797

Phone: (360) 750-0209
Fax: (360) 750-1445

weda@comcast.net

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

LIST OF PRESENTERS	ix
LIST OF EXHIBITORS.....	xiii
FOREWORD.....	xvii

FORTY-FIRST TEXAS A&M DREDGING SEMINAR

Monday, June 7, 2010

SESSION 1: DREDGING RESEARCH	Paper Number	Page Number
DREDGABL and GEOSITE - Knowledge-based Expert System Geotechnical Decision Support Tools for Dredging Reda Bakeer, Ardaman & Associates, Inc., Joseph Spigolon, and Timothy Welp, US Army Engineer Research and Development Center	1-1	1
Propwash Impacts on Water Quality around Dredging and other Marine Construction Activities Donald Hayes, University of Louisiana at Lafayette, Rohit Chintamaneni, Prathyusha Bommareddy, and Bhaskar Cherukuri	1-2	17
Factors Used In Estimating Throughput for Cutter Suction Dredges William J. Wetta, II, P.E. Dredging Supply Company	1-3	27
Effects on Cutter Suction Dredge Production while Dredging Simulated Debris in the Laboratory R. Randall, Texas A&M University; M. Warwick, J. Henriksen, Manson Construction; D. Young, and A. Manikantan, Texas A&M University	1-4	40
International Assessment of the Use of Confined Aquatic Disposal Facilities for Contaminated Dredged Material Linda Porebski, Environment Canada; and Craig Vogt, Craig Vogt Inc	1-5	52
SESSION 2A: ENVIRONMENTAL ASPECTS OF DREDGING - I		
Dredging Activities and the Potential Impacts of Sediment Resuspension and Sedimentation on Oyster Reefs Dara Wilber, Bowhead Information Technology Services; and Douglas Clarke, USACE ERDC	2A-1	61
Acoustic Methods for Modeling Benthic Habitat: Augmenting Sidescan Sonar Surveys with Multi-beam and Sub-bottom Profiler Systems to Map and Assess Existing Marine Communities and Estimate Potential Habitat Creation Christine Smith, Terence Cake, Nadia Lombardero, Anamar Environmental Consulting, Inc., and Aubree Hershorin, U.S. Army Corps of Engineers	2A-2	70

SESSION 2A: ENVIRONMENTAL ASPECTS OF DREDGING – I (continued)	Paper Number	Page Number
Issues Related to Entrainment of Horseshoe Crabs (<i>Limulus polyphemus</i>) by Hopper Dredges Gary L. Ray and Douglas G. Clarke, U.S. Army Engineer Research and Development Center	2A-3	82
Slowing The Swelling Seas – An In-Depth Look at the Grand Isle, LA, Hurricane Rehabilitation Project D. J. Trierweiler, P.E.; Infrastructure Alternatives, Inc.	2A-4	95
Wetland Restoration – Ecological and Engineering Considerations (Presentation Only) Ryan Davis and Ram Mohan, Anchor QEA	N/A	
Cameron Parish, LA: 9-Mile Beach Nourishment Project Challenges and Solutions V. Shepsis, H.E. Bermudez, J.D. Carter, Coast & Harbor Engineering, Inc.; and Will Feazel, Louisiana Office of Coastal Protection and Restoration	2A-6	106

SESSION 2B: DREDGING & CAPPING PROJECT CASE STUDIES	Paper Number	Page Number
Applications of the Regional Sediment Management Approach Lynn R. Martin, U.S. Army Institute for Water Resources	2B-1	121
Reclamation of Virgin-Cut (clay) Hydraulic Dredge Material for Structural Fill Troy Smith, Great Bear Construction Company	2B-2	132
Development and Implementation of a Subaqueous Capping Technology for High Precision Placement of Various Aggregates & Media D.J. MacDougall, D.A. Collins Environmental Services LLC	2B-3	137
Environmental Dredging Using Geotextile Tubes - Lessons Learned – Brian J. Mastin, Ph.D.; MAST Environmental Solutions, Inc	2B-4	152
Dredging in South America Mining Industry Juan Rayo, JRI Ingenieria SA, Chile	2B-5	166
US Coastal Engineering Capabilities - A Critique (Presentation Only) William Hanson, Great Lakes Dredge & Dock Company	N/A	

**WESTERN DREDGING ASSOCIATION
THIRTIETH ANNUAL TECHNICAL CONFERENCE**

Tuesday, June 8, 2010

SESSION 3A: NAVIGATIONAL DREDGING	Paper Number	Page Number
An Evolution in the Designs of Small Scale Cutter Suction Dredges, Economical Benefits of Modern Equipment Damon J. Gonzales, Dredging Supply Company	3A-1	172
An Evolution in the Design of the Deepest Mining Dredge in the Western Hemisphere Nick J. Picou, P.E. and Robert Wetta, , Dredging Supply Company	3A-2	181
Role of Dredging in a Sustainable Louisiana Coastline <i>(Presentation Only)</i> Donald Hayes, University of Louisiana at Lafayette	N/A	
Cabrillo Way Marina Dredging, Port of Los Angeles, California, U.S.A: Part 1 - Sediment Plume Monitoring Kathryn Curtis, Port of Los Angeles; Brent Mardian, AMEC; and Ying Poon, D. Sc, P.E., Everest International Consultants, Inc.	3A-4	192
Cabrillo Way Marina Dredging, Port of Los Angeles, California, U.S.A: Part 2 - Sediment Plume 3-D Modeling Ying Poon, Sherilyn Kimura, Everest International Consultants, Inc; and Kathryn Curtis, Port of Los Angeles	3A-5	208
Beneficial Uses of Dredged Material – Is it Worth the Hassle? – A Case Study from Cape Cod, MA <i>(Presentation Only)</i> Russ Zimmerman and Bill Hanson, Great Lakes Dredge & Dock Company	N/A	
SESSION 3B: ENVIRONMENTAL DREDGING	Paper Number	Page Number
Environmental Dredging in the Great Lakes – Techniques, Technologies, and Performance <i>(Presentation Only)</i> Scott Cieniawski, U.S.EPA - Great Lakes Program	N/A	
Use of Custom Caisson to Manage Environmental Impacts from Dredging of MGP Sediments – A Case Study Christopher R. Torell, P.G., Anchor QEA, LLC; Thomas S. Wang, P.E.; John P. Laplante, P.E., Anchor QEA, LLC; Joseph R. Pursley; Rob MacDonald, Transport Canada; Scott Tomlinson, MAsc, PGeo, Public Works and Government Services Canada; James Mair ASCT, PMP; Anju Wicke, M.S.	3B-2	224
Update on the Fox River, Green Bay, Wisconsin: The Largest Sediment Remediation Project in the World <i>(Presentation Only)</i> Glenn Green, J.F. Brennan Co., Inc.	N/A	

SESSION 3B: ENVIRONMENTAL DREDGING (continued)	Paper Number	Page Number
Kalamazoo River Plainwell Impoundment Time-Critical Removal Actions <i>(Presentation Only)</i> Stephen Garbaciak Jr., Eric Hritsuk, Michael Erickson, E.J. Suardini and Matthew Bowman, ARCADIS	N/A	
Village Harbor Sediment Removal and Residuals Cover Project Summary Eric J. Hritsuk, P.E.; Michael J. Erickson, P.E.; Daniel O'Neill; Matthew Bowman; and Stephen D. Garbaciak Jr., P.E. ARCADIS	3B-5	242
Design Update for Whatcom Waterway Cleanup and Marina Development, Bellingham Washington <i>(Presentation Only)</i> Tom Wang and Mark Larsen, Anchor QEA, LLC	N/A	

Wednesday, June 9, 2010

SESSION 6A: MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY	Paper Number	Page Number
Masonville Dredged Material Containment Facility: MPA's Innovative Approach to DMCF Implementation Frank L. Hamons, Maryland Port Administration, and Daniel A. Wilson, Wilson Engineering Services, PC	6A-1	260
Masonville Dredged Material Containment Facility: The Role of the Public and Regulator Outreach Process Melissa Slatnick, Stephanie Lindley, Maryland Environmental Service; Paul Massicot, EcoLogix; George Chmael, Council Fire; Katrina Jones, Maryland Port Administration; Carol Eshelman, Brooklyn and Curtis Bay Coalition, Inc.	6A-2	268
Masonville Dredged Material Containment Facility: Environmental Planning, Compliance and Compensatory Mitigation Kaitlin E. McCormick, Peggy A. Derrick, EA Engineering, Science, and Technology, Inc.; Nathaniel K. Brown, Maryland Port Administration; George H. Harman, Phoenix Engineering, Inc.; and Jane A. Boraczek, EA Engineering, Science, and Technology, Inc.	6A-3	276
Masonville Dredged Material Containment Facility: Dredging Engineering Design Steven C. Shaw, P.E., Colleen M. Roche, Martan R. Snow, Gahagan & Bryant Associates, Inc.; and Stephen E. Storms, Ph.D., Maryland Port Administration	6A-4	292
Masonville Dredged Material Containment Facility: Dike Construction and Contracting Joseph B. Chaison, P.E., Maryland Environmental Service; and Stephen E. Storms, Ph.D., Maryland Port Administration	6A-5	302
Masonville Dredged Material Containment Facility: Mitigation Design and Implementation Including Upland Remediation and Community Access Peter W. Kotulak, P.E., Moffatt & Nichol; James Hulbert, EA Engineering, Science and Technology, Inc.; Kristen Piggott, P.E., Moffatt & Nichol	6A-6	310

SESSION 6A: MASONVILLE DREDGED MATERIAL CONTAINMENT FACILITY (continued)	Paper Number	Page Number
---	-------------------------	------------------------

Dredging in Sediment Containing Munitions and Explosives of Concern (MEC)
(Presentation Only)
 Tim Holland, U.S. Army Corps of Engineers, Baltimore

N/A

SESSION 6C: DREDGING & CAPPING PROJECTS	Paper Number	Page Number
--	-------------------------	------------------------

**How Prospective Restoration and Planning can be used in the Settlement of
 Dredging Natural Resource Damage Cases**

Stephen K. Davis, P.E.; Lawrence D. Malizzi, P.G., Matrix New World Engineering and Neil Yoskin,
 Esq., Sokol, Behot & Fiorenzo

6C-1

320

Challenges of Dredging and Permitting Marinas in Georgia, USA

Abram J. Nicholson, P.E., WRScompass, Inc.

6C-2

333

**Manson/Dutra J.V., A Joint Venture Oakland Deepening, Phase 3E Hamilton Wetlands
 Restoration Project**

T. Hammerwold, Manson/Dutra J.V.

6C-3

340

Turn-Key Dewatering Management; Design, Feasibility and Operations

M. Groh, Geo-Synthetics, Inc. and B. J. Mastin, MAST Environmental Solutions, Inc.

6C-4

347

Transport and Fate of Winter Flounder Eggs Near Dredging Operations

Tahirih Lackey, Sung-Chan Kim, Douglas Clarke, and Jarrell Smith, U.S. Army Engineer Research and
 Development Center

6C-5

367

Carving Sand – Precision - Dredging to Make a Mold for a Low-Permeability Cap

E. McLinn, J. Rice, H. Hinke, and M. Macri, RMT Inc.

6C-6

379