

88th Annual Convention of the Gas Processors Association 2009

2009 GPA Convention – Enhancing Midstream's Voice

**San Antonio, Texas, USA
8-11 March 2009**

Volume 1 of 2

ISBN: 978-1-61567-672-9

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© (2009) by the Gas Processors Association
All rights reserved.

Printed by Curran Associates, Inc. (2009)

For permission requests, please contact the Gas Processors Association
at the address below.

Gas Processors Association
625 East 60th Street
Tulsa, Oklahoma 74145

Phone: (918) 493-3872
Fax: (918) 493-3875

gpa@gpaglobal.org

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

Volume 1

INTERNATIONAL DELEGATES BREAKFAST

China - Threat Or Opportunity?	1
<i>Colin Woodward</i>	

TECHNICAL SECTION M – OPERATIONS AND MAINTENANCE MEETING & FORUM

Occidental of Elk Hills Reliability Program Tracking Systems	12
<i>Mike Philpott</i>	
Installation and Operation of Turboexpanders for Improved Reliability	17
<i>Joseph K. Lillard, Behrooz Ershaghi</i>	
Williams Operator and Technician Training Program Develops Employees to Safely and Reliably Operate Its Gas Gathering and Processing Assets	72
<i>Frank Fort</i>	

PIPELINE SAFETY FORUM: COMPLYING WITH DOT, HOMELAND SECURITY, AND STATE REGULATIONS – ISSUES & INDUSTRY PRACTICES

DHS Pipeline Security Initiatives	86
<i>Jack Fox</i>	
Control Room Management	112
<i>Wallace B. McGaughey Jr.</i>	
In-line Inspection: An Integral Part of Pipeline Integrity Management	133
<i>Bryce Brown</i>	
Evaluating, Customizing and Improving DCP Midstream's Public Awareness Program	181
<i>Jeannette A. Jones, David L. McAtee</i>	

TECHNICAL SECTION F – TECHNICAL DATA DEVELOPMENT MEETING & FORUM

Experimental Measurements and Thermodynamic Modeling (Using a Group Contribution Associating Equation of State) of Hydrocarbon + Amine + Water System	205
<i>Amir H. Mohammadi, Salim Mokraoui, Alain Valtz, Christophe Coquelet, Dominique Richon, Francisco A. Sanchez, Selva Pereda, Esteban Brignole</i>	
Modeling Direct Injection of H₂S Scavenger in Pipelines: Laboratory Investigations and Improved Computer Model	253
<i>Dennis Leppin, Kevin Fisher, Diana Matonis</i>	
Prediction of BTEX Emissions and Water Content in TEG Dehydration Units	271
<i>James L. Holoboff, Mohammad Khoshkbarchi</i>	
Generalized Graphical Method to Determine the Required MEG and Methanol Injection Rate for Natural-gas Hydrate Inhibition	294
<i>Mahmood Moshfeghian, Roohallah Taraf</i>	
"Vapor-liquid" Equilibrium and Partition Coefficients of n-propylmercaptan, n-butylmercaptan and Dimethylsulfide in MDEA / DEA Aqueous Solutions	315
<i>Javeed A. Awan, Christophe Coquelet, Dominique Richon, Scott Northrop</i>	
The New GPA Data Bank - Fifth Edition: Providing Electronic Access to All GPA Experimental Thermophysical Property Data	330
<i>Todd J. Willman</i>	

TECHNICAL SECTION A – FACILITIES DESIGN FORUM

Tray Hydraulic Operating Regimes and Selectivity	340
<i>Ralph H. Weiland</i>	

How to Treat Refinery Gases and Make Them Suitable to Recover Valuable Liquids	350
<i>Zaheer I. Malik, John W. Slack</i>	
Budget Estimate Capital Cost Curves for Gas Conditioning and Processing - Updated	371
<i>Carter Tannehill</i>	
PEMEX Burgos Gas Processing Complex Operating and Design Recommendations	377
<i>Gaby G. Villegas, David A. Jelf, Spencer George, José González Pérez Sandi, Gaspar Dávila González</i>	
Low CO₂ Slip at a Northern Alberta Gas Sweetening Plant Using MDEA	392
<i>Ed Lata, Chris Lata</i>	
A Success Story: Extending Molecular Sieve Life by Double	416
<i>Ahmed A. Al-Harbi, Mohammed J. Al-Khamis</i>	

LEGISLATIVE, REGULATORY & SAFETY ISSUES FORUM

Washington, DC Update of Legislative and Federal Regulatory Policy	423
<i>Mark W. Menezes</i>	
Importance of Processing Plant Information	444
<i>Barbara Mariner-Volpe</i>	
81st Texas Legislature Status of the Gas Service Division	463
<i>Bill Geise</i>	
Greenhouse Gas Regulatory Issues Related To Operations	475
<i>Dennis J. Champion</i>	

NGL MARKETING FORUM

NGL Infrastructure: Will We Hit the Wall in 2008? 2010? 2012? Never?	502
<i>Daniel L. Lippe</i>	
Shifting Sands: The Canadian Industry in Transition	511
<i>Gerry Goobie</i>	

WORLDWIDE DEVELOPMENTS FORUM

Nitrogen Removal from Natural Gas with the Molecular Gate[™] Adsorption Process	544
<i>Michael Mitariten</i>	
Design, Fabrication and Startup of an Offshore Membrane CO₂ Removal System	556
<i>William Echt, Peter Meister</i>	
The Challenges of Establishing and Managing an Office in Angola	571
<i>Derek K. Hansen</i>	
Marrying Two Facilities Engineering Cultures	578
<i>George Cheriyan, William Mera, Yan Shevinskiy, Vasiliy Malitsky, Alexander Elaev, Andrey Medvedev</i>	

Volume 2

Sulfinol-X – Leveraging the Advantages of Well-proven and Established Technologies in a Single Acid Gas Removal Process	590
<i>Craig Taylor, Gerard Van Der Zwet, Mark Claessen, Renze Wijntje, Prashant Patil, Armin Schneider</i>	

COMPUTER TECHNOLOGY FORUM

Applications of Dynamic Simulation for Brownfield Engineering Design	601
<i>Adam W. Wood</i>	
Best Simulation Practices for LNG Terminals	613
<i>Eric Kowalewski, Peter Henderson, Sylvain Castonguay</i>	
Asset Optimization - Getting the Most from Your Production Facilities - the BP Trinidad Field Optimizer Case	622
<i>Annessa Ramdial, Natasha Hudson, Juan Carlos Rodríguez, Sergi Sama, Mike Strathman</i>	

Integrating GIS with Pipeline Simulation Software	636
<i>Clay Noble, Michael L. Istre</i>	

LGN TECHNOLOGY FORUM

Floating LNG Plants - Scale-up of Familiar Technology.....	660
<i>Adrian J. Finn</i>	
Simple and Versatile Methods for Modeling LNG-related Systems.....	706
<i>Stanley Huang, Nancy Tsai, Scott Oliver</i>	
LNG Conceptual Design Strategies	717
<i>Arif Habibullah, Peter Lardi, Matthew Passmore</i>	
Liquid Expanders Based on the Radial Inflow Turbine Technology	733
<i>Roger Dambach, Josef Pozivil</i>	
Producing High Purity LNG for UK Markets.....	746
<i>Shawn Hoffart, Randal Winkler, Dominic Feenan</i>	

MAINTENANCE FORUM

The Last 20 Years	768
<i>Fred G. Van Orsdol</i>	
Best Practices for the Design, Operation and Maintenance of Natural Gas Compression.....	775
<i>Kevin A. Lawlor, Don O'Neal</i>	
What is a Safety Instrumented System?	790
<i>Gregory A. Rogers</i>	
Static Electricity in the Propane Industry	822
<i>Ron J. Zezulka</i>	
Hunting for Fugitive Emissions - Optical Infrared Leak Detection and Measurement.....	840
<i>Terence Trefiak</i>	

TECHNOLOGY TO IMPROVE OPERATIONS FORUM

What Tools Are Available to Help Maintain a Code Compliant Maop for a Highly Complex and Changing Gas Pipeline System?	879
<i>Larry C. Decker</i>	
Use of Modeling to Optimize Severe Duty Natural Gas Dehydrators	895
<i>Henry Rastelli, Julie Stiltner Shadden</i>	
Advanced Leak Detection and Measurement Technologies	907
<i>Milton W. Heath III</i>	
Improved Production Efficiency and Water Conservation Using Closed-loop, Evaporative Cooling Systems	929
<i>Peter G. Demakos</i>	
Lean Burn Engine Technologies Meet Gas Compression Emissions Challenge.....	937
<i>Victor L. Sheldon Jr.</i>	

TECHNOLOGY DEVELOPMENTS IN GAS PROCESSING FORUMS

Processing Technologies for CO₂ Rich Gas	958
<i>Jane L. V. Nichols, Barry M. Friedman, Allison L. Nold, Shawn McCutcheon, Al Goethe</i>	
Hydrate Gas Separation - a New Technology for Removing Nitrogen from Natural Gas.....	983
<i>Arthur Johnson, John P. Osegovic, Michael D. Max</i>	
Contaminant Removal from Natural Gas Using Dual Hollow Fiber Membrane Contactors	989
<i>Jingjing Cai, Kelly Hawboldt, Majid A. Abdi</i>	
Strategic Technology Options for Recovery and Monetization of Flared Associated Gas	1000
<i>Praveen Gunaseelan, Mark Landrum</i>	
Continuous Measurement of Rich and Lean Loading for Improved Amine Plant Operation.....	1041
<i>Hongqi Yuan, Allan Chambers, John Woolley, Dean Richardson</i>	
Advances in Renewable Energy.....	1067
<i>Ed Bowles</i>	
Author Index	