



NACE
INTERNATIONAL

SAN FRANCISCO
SECTION

Join Us... May 13, 2014

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Date	Location
Tuesday, May 13th	Zio Fraedo's Restaurant 611 Gregory Lane, Pleasant Hill, CA. (925) 933-9091

Time: No Host Bar 5:30 pm • Dinner 6:30 pm • Program 7:15 pm
Cost: \$15 NACE members, NACE retirees and students
\$25 non-members

Please RSVP by Thursday, May 8th by email to Michelle Anderson at mlanderson@corrpro.com, or by phone at (510) 381-1414.

To insure affordable gatherings, please plan to pay the dinner fee when you attend the no-host bar portion of our program.

Cancellation deadline is Friday, May 9th. No shows will be billed!

Meeting Location / Directions: Please see attachment

Effects of Application Techniques and Environmental Exposure to Polyurethanes applied per AWWA C222

Dr. Graham E.C. Bell

**Senior Vice President, Condition Assessment & Rehabilitation,
HDR Engineering, Inc.**

Polyurethane for coating steel water pipe is used as an effective corrosion control system in the water and wastewater markets. As use has increased, questions have arisen regarding the ability of polyurethane to maintain its integrity for buried application while stored above-ground and exposed to the elements. Aromatic polyurethanes per AWWA C222 can however be susceptible to surface degradation from ultraviolet rays and can chalk or discolor when left in the sun for long periods. Possible changes in coating film mechanical and chemical properties by thermal cycling above and below the material glass transition temperature during the exposure are of greater interest.

Testing was performed on samples of polyurethane applied to steel pipe manufactured and coated per AWWA C222 and exposed to thermal and UV in the Texas sun for up to 2 years. Recommendations to address extended exposure of buried aromatic polyurethane coatings will also be discussed.

Dr. Graham E.C. Bell, P.E. is a Principal Professional Associate/Senior Vice President and Business Class Director for Condition Assessment and Rehabilitation at HDR Engineering, Inc. Prior to merging with HDR, Dr. Bell was the President and Principal of Schiff Associates, a California independent consulting firm for over 50 years which specialized in corrosion engineering and condition assessment for civil engineering structures. Graham received his Engineering degrees from the UCLA School of Engineering and Applied Sciences. Dr. Bell has more than 30 years of experience in designing and testing corrosion control facilities, and in the forensic evaluation of corrosion damage on buried and submerged structures. He is past Chairman of AWWA's Corrosion Committee and of the NACE International Committee on Corrosion Control for Ductile Iron Pipe. Dr. Bell has been the co-principal investigator for nine AWWA/Water RF Research Projects related to corrosion and water quality. Graham has also spent seven years in basic corrosion research at Oak Ridge National Laboratory. Dr. Bell is a registered California Corrosion Engineer and a registered Mechanical Engineer in Tennessee, Nevada, Colorado, Oregon, Ohio, Alaska, and Arizona. He is a NACE certified Corrosion and Cathodic Protection Specialist.

NACE International – The Corrosion Society

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