



United States Committee on Irrigation and Drainage

Workshop on Application of Technology to Water Measurement and Management

Wednesday, February 25, 2004

8:30 a.m. - 11:30 a.m. **Field Tour — Sponsored by The Cameron Group**

11:45 a.m. - 1:00 p.m. **Lunch with Speaker**

Moderator — **Joseph I. Burns**, President, USCID; and Consultant, Sacramento, California

Speaker — **Allen R. Dedrick**, Agricultural Research Service, USDA, Beltsville, Maryland

1:00 p.m. - 2:30 p.m. **Opening Session — Water Measurement State-of-the-Art**

Moderator — **Albert J. Clemmens**, U.S. Water Conservation Laboratory, USDA-ARS, Phoenix, Arizona

Flow Measurement and Control for Irrigation — Four Decades on the Shoulders of Giants
John A. Replode, U.S. Water Conservation Laboratory, USDA-ARS, Phoenix, Arizona

Water Measurement for Improved Irrigation Performance: Where, How, When?

Marinus G. Bos, International Institute for Land Reclamation and Improvement, Wageningen, The Netherlands

2:30 p.m. - 3:00 p.m. **Break — Sponsored by MBK Engineers**

3:00 p.m. - 5:00 p.m. **Session 2 — Water Measurement Applications: Real-World Water Measurement Problems**

Moderator — **Tony L. Wahl**, Bureau of Reclamation, Denver, Colorado

Water Measurement Needs for District Operations

Stuart Styles, California Polytechnic State University, San Luis Obispo, California

Water Measurement Needs for District Management and Water Balances

Albert J. Clemmens

Practical Application of Flumes, Weirs and Hydroacoustic Meters

Stuart Styles

5:30 p.m. - 7:00 p.m. **Reception**

7:00 p.m. - 9:30 p.m. **John A. Replode Retirement Dinner**

Moderator — **Albert J. Clemmens**

Thursday, February 26, 2004

8:00 a.m. – 9:30 a.m. **Session 3 — Interactive Working Session on Design of Flumes and Weirs with WinFlume**

Moderator — **Brian T. Wahlin**, Davey-Cairo Engineering, Inc., Tempe, Arizona

Presenters — **Tony L. Wahl, Albert J. Clemmens, Marinus G. Bos and John A. Replogle**

9:30 a.m. - 10:30 a.m. **Break in Exhibit Hall — Sponsored by Aqua Systems 2000 Inc.**

10:30 a.m. - 12 noon **Session 4 — Acoustic Flow Meters**

Moderator — **Marinus G. Bos**

Influence of Velocity Distributions on Flow Measurement

John A. Replogle

Theory and Application of Acoustic Flow Meters

Tracy Vermeyen, Bureau of Reclamation, Denver, Colorado

12 noon – 1:15 p.m. **Marinus G. Bos Retirement Lunch — Sponsored by Davids Engineering, Inc.**

Moderator — **Joseph I. Burns**

1:30 p.m. - 3:00 p.m. **Session 5 — Use of Gate Structures for Flow Measurement**

Moderator — **Stuart Styles**

Issues and Problems with Using Gates for Flow Measurement

Tony L. Wahl, Albert J. Clemmens and Brian T. Wahlin

Field Calibration of Measuring Structures

Brian T. Wahlin, Albert J. Clemmens and Stuart Styles

3:00 p.m. - 4:00 p.m. **Break in Exhibit Hall**

4:00 p.m. - 4:30 p.m. **Session 6 — Management of Flow Measurement Information**

Moderator — **John A. Replogle**

Use of Flow Measurement for Managing District Operations with SCADA

Albert J. Clemmens and Robert J. Strand, U.S. Water Conservation Laboratory, Phoenix, Arizona

4:30 p.m. - 5:00 p.m. **Workshop Discussion and Wrap-Up**

Co-Moderators — **John A. Replogle and Marinus G. Bos**

5:00 p.m. - 6:30 p.m. **Exhibitor Reception — Sponsored by SonTek/YSI Incorporated**