

Speaker: Dr. Jack R. Harrison
Title: President and Principle Engineer
Organization: HyQual, P.A.

Session Title: A Proactive Approach: reuse and direct discharge in an agricultural setting

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Abstract:

The City of Greenleaf has recently been issued a Reuse Permit for seasonal land application of municipal effluent on City owned agricultural fields. The City has also applied for an NPDES permit to discharge the treated effluent into the West End Drain, which drains into Riverside Canal. During planning meetings conducted with local interests, the Riverside Irrigation District expressed concerns related effluent discharge to the West End Drain. To address these concerns, the City decided to upgrade effluent pathogen reduction to “Class B” levels, which in Idaho are deemed suitable of application on food crops.

In this presentation, an overview of Greenleaf’s planning and permitting efforts will be presented to illustrate a proactive approach used during the reuse and discharge permitting processes. Then we will present some of the broader issues and concerns regarding discharge into surface water used for irrigation. For example, the treatment requirements for direct reuse at a permitted municipal recycle site in Idaho will be compared to the treatment requirements prior to discharge to surface water and downstream “indirect” reuse on agricultural fields and urban landscapes.

Professional Background:

Education

- PhD Civil Engineering in 2005 with focus on surface water quality at Center for Ecohydraulics, University of Idaho, Boise Center; Research focuses on modeling carbon cycling in the Snake River
- M. S. Civil and Environmental Engineering in 1985, with focus on groundwater quality at Utah State University
- B. S. Agricultural Engineering in 1981, with focus on soil and water at University of Idaho

Professional Registrations

- Professional Engineer: Idaho Civil Engineer
- Professional Hydrologist-Groundwater: American Institute of Hydrology

Experience

- 2000 to Current: President and Principle Engineer at HyQual PA; Clients have included utilities, corporations, local governments and engineering firms
- 1997 to 2000: Senior Project Manger with HDR Engineering, Boise
- 1997 to 1985: Project Engineer with CH2M HILL, Boise

Selected Reuse/Water Quality Experience

- Reuse: over 25-years of experience in Pacific Northwest serving industries, municipalities, planned communities and agencies; participated in Idaho Reuse Rule and Guidance development beginning in early 1990's
- Water quality modeling: over 30-years of experience in developing water quality models for rivers and reservoirs including: Brownlee, Hells Canyon, Oxbow and CJ Strike Reservoirs, Snake River, Boise River, and Indian Creek
- Water quality planning: participated in development and implementation of a TMDL/water quality plans for the Idaho, Washington, Colorado, Florida