Potable Reuse: Looking Back, Moving Forward

DPR Advisory Panel Meeting
February 20, 2015

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Why Water Reuse?

Historical Water Sources
De facto Potable Reuse
Indirect Potable Reuse (IPR)

Source Control

WWTP

Advanced Water Treatment

Aquifer Injection / Spreading

Surface Water Augmentation

WTP / Distribution
Direct Potable Reuse (DPR)

Existing surface water supply

Raw (or Source) Water Augmentation

Source Control

WWTP

Advanced Water Treatment

WTP / Distribution

Flange-to-flange
Current CA Potable Reuse Projects

- All are IPR projects doing groundwater recharge
- 7 existing projects
Montebello Forebay
Groundwater Recharge: Subsurface Injection

Diagram showing the process of groundwater recharge using subsurface injection. The process includes:

1. Biological Treatment
2. Membrane Filtration
3. Reverse Osmosis
4. UV/H₂O₂ Treatment

The diagram illustrates how treated wastewater is injected into the ground, replenishing groundwater resources.
Ground Water Replenishment System
Orange Co., CA
Other Groundwater Recharge Projects

- West Coast Basin Barrier
- Alamitos Barrier
- Dominguez Gap
Tertiary Treatment

Long retention times
Evolution of Potable Reuse

Retention Time

- Years
- Months
- Hours

Treatment
- Moderate
- Advanced
The Big Question
WRRF 14-12 Demonstrating Redundancy and Monitoring to Achieve Reliable Potable Reuse

1 MGD Demonstration Scale Project for DPR
Project Goal

Leverage industry experience and recent DPR research to demonstrate that we can safely implement potable reuse without an environmental buffer.
Funding Entities

State of California  
Dept. of Water Resources  
Prop. 84 Grant  
with Administrative Support from  
SDCWA and WRRF $2,113,000

Funding Match $975,313
(WRRF 11-02, which included contributions from 23 agencies, utilities, and companies*)

Total Project Cost $3,088,313

*California DDW, Carollo, City of SD, Econity, El Paso Water Utilities, GE Water, H2O Engineering, Helix WD, IBL Solutions, Xylem, LACSD, LADWP, MRWPCA, OCWD, Padre Dam MWD, Pinellas County Utilities, Trussell Tech, Univ. of Arizona, Upper Occoquan Service Authority, Upper San Gabriel Valley MWD, WateReuse, West Basin MWD
The Transition to DPR from Groundwater
Treatment and Pathogens

Toxic Chemicals
- Carbamazepine
- PFOS

NDMA

Pathogens

Question
Conclusions

- Potable reuse can be done safely
- Multiple solutions must be pursued
- Need to ensure public health protection
- Public acceptance is critical
Thank you for your attention