


**More Changes to Reg. 84!**  
**Expanding Reuse in Colorado**

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**Joint Water Reuse Committee**

**Water Quality Forum**  
**January 24, 2005**



**RMWEA/RMSAWWA Joint Water Reuse Committee /**  
**Regulation No. 84 Work Group**

## Presentation Overview



- ◆ **Reg. 84 background**
- ◆ **Current Work Group activity**
  - ◆ Drivers for changing Reg 84
  - ◆ Work Group participants
  - ◆ Proposed changes
- ◆ **Schedule information & how you can participate**

## Reuse Regulation in Colorado: Background

- ◆ Original Reg. 84:  
Adopted October 2000
  - ◆ Landscape irrigation only
  - ◆ Excludes single family residential irrigation
- ◆ Unprecedented demand for reuse in 2002
- ◆ Significant interest in additional nonpotable uses
- ◆ Reg. 84 amended May 2004 to add commercial / industrial uses and clarify language

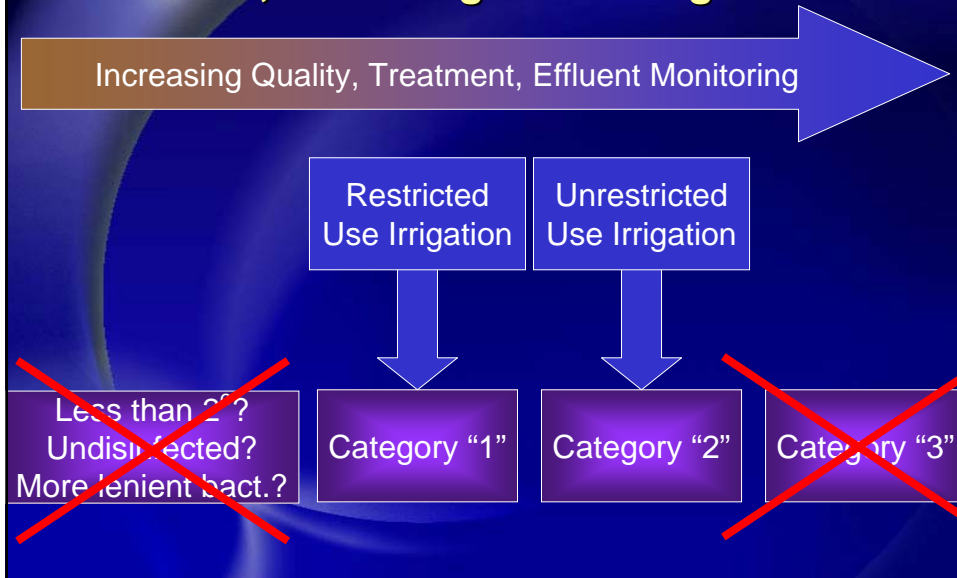


## Goals

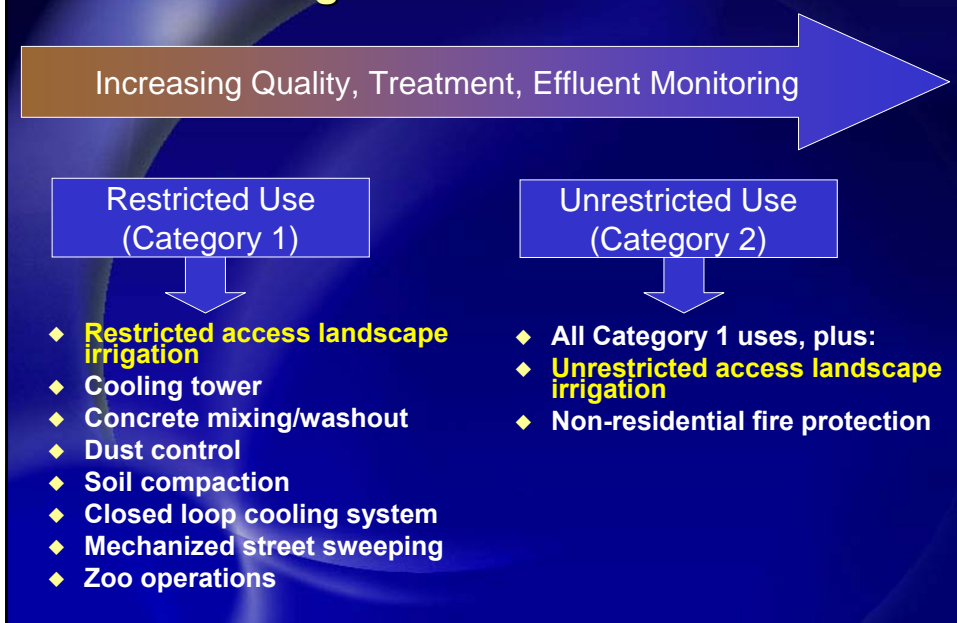
- ◆ Protect public health and environment
- ◆ Prioritize authorization of those uses that are most likely to be widely implemented
- ◆ Establish sensible, clear, and consistent requirements for authorized uses
- ◆ Establish and maintain confidence in reuse
- ◆ Keep reuse viable and attractive to both treaters and users



## May 2004 Modifications: New Uses, No Changes to Categories



## Current Categories & Uses



## Current Quality & Treatment Requirements

Increasing Quality, Treatment, Effluent Monitoring

### Restricted Use (Category 1)

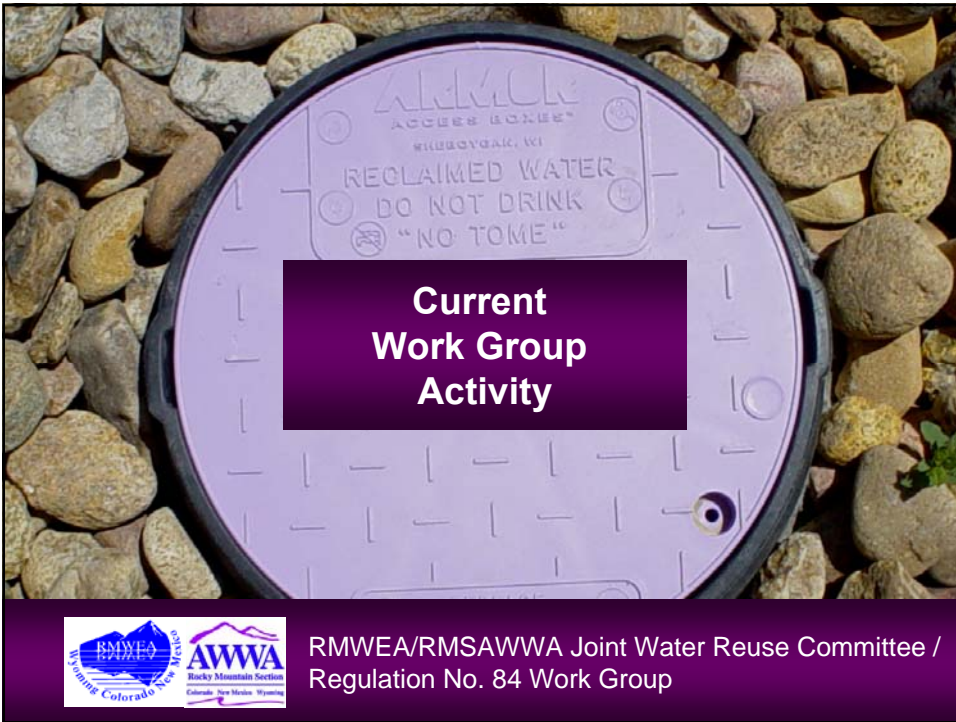
- ◆ E. coli:  
 $\leq 126 / 100 \text{ mL}$  (mo. geo. mean)  
 $\leq 235 / 100 \text{ mL}$  (single max.)
- ◆ TSS:  
 $\leq 30 \text{ mg/L}$  (mo. average)
- ◆ Secondary + Disinfection

### Unrestricted Use (Category 2)

- ◆ E. coli:  
 $\leq 126 / 100 \text{ mL}$  (mo. geo. mean)  
 $\leq 235 / 100 \text{ mL}$  (single max.)
- ◆ Turbidity:  
 $\leq 3 \text{ NTU}$  (mo. average)  
 $\leq 5\%$  of samples can be  $>5 \text{ NTU}$
- ◆ Secondary + Filtration + Disinfection

## Basis for Standards

- ◆ Research evidence shows E. Coli is the most appropriate surrogate indicator organism for pathogens – does not re-grow when released into the ambient environment
- ◆ Swim beach standard for E. Coli
  - ◆ criteria developed to protect swimmers will be more protective of people casually exposed to reclaimed water
  - ◆ swim beach standard was developed based on ingestion of 100 mL of water
- ◆ Category 1: 30 mg/L TSS indicates well-operated secondary system
- ◆ Category 2: 3 NTU indicates filtration working to facilitate particulate removal & disinfection



**Current Activity**

## Reg. 84 Work Group

*Broad representation to bring together diverse interests*

CDPHE / WQCD

Municipal utilities currently providing reclaimed water

Municipal utilities not currently providing reclaimed water

Consulting engineers and attorneys

Current and potential future users of reclaimed water


- ◆ 77-person distribution
- ◆ Monthly meetings
- ◆ Subcommittees

## Drivers for Additional Reg. 84 Changes

- ◆ Interest in authorization for Single Family Residential Irrigation (SFRI) reuse
- ◆ Interest in authorization for reuse fire hydrants in residential areas
- ◆ Overlapping or inconsistent requirements between Reg. 61 and 84

## Proposed Authorization for Increased Use in Residential Areas: New Issues

- ◆ Increased cross-connection potential
- ◆ Increased potential for personal contact

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- ◆ Work Group recognized need for more stringent requirements (“Category 3”)
  - ◆ Now developing proposed requirements
  - ◆ Category 3 to include SFRI and fire hydrants in residential areas

### Category 3: Draft Proposal for E. coli

- ◆ E. coli as proposed indicator organism
  - ◆ Consistent with existing Cat. 1 and 2
  - ◆ Consistent with CDPHE and EPA switch to E. coli in discharge permits
  - ◆ More rapid lab results than total/fecal coliforms
  - ◆ Specifics in 84.21 (E) Basis & Purpose section
- ◆ Draft proposed E. coli limits for Category 3
  - ◆ Non-detect in at least 75% of samples
  - ◆ Single sample max 126 / 100 mL

### Category 3: Rationale for Draft E. coli Proposal

- ◆ Non-detect in 75% of samples
  - ◆ Goal of non-detect: appropriate policy given higher potential for contact / cross connection
  - ◆ Many facilities indicated non-detect E. coli is generally achievable
  - ◆ Use of averages incompatible with non-detect goal
  - ◆ 100% non-detect – impractical
  - ◆ 75% non-detect – more stringent than median (51%)
  - ◆ Florida: Significant experience with 75% approach for SFRI
- ◆ Single sample max 126 / 100 mL
  - ◆ 126 / 100 mL designed to protect health for incidental ingestion, more restrictive than Cat. 1 & 2 limits (235)

## Category 3: Draft Proposal Details

- ◆ Cross-connection
  - ◆ Protection provided through existing Reg. 84 language
- ◆ Treatment & quality requirements:
  - ◆ More stringent E. coli limits than Cat. 1 or 2
  - ◆ Same treatment as Cat. 2 (includes filtration)
  - ◆ Same turbidity limits as Cat. 2
  - ◆ Chlorine residual at WWTP or point of compliance, or equivalent disinfection cross-check
- ◆ Additional conditions of use
  - ◆ Currently under development by Work Group

## Coordination Between Regs 61 and 84

- ◆ Reg. 61: Permit not required where application is at evapotranspiration rate
- ◆ Raises salinity concerns with reuse
- ◆ Reg. 84 includes measures to protect groundwater
  - ◆ Agronomic rate limitation
  - ◆ No surface ponding allowed

## Coordination Between Regs 61 and 84

- ◆ Proposed resolution:
  - ◆ Modify Reg. 61 to exempt reuse under Reg. 84 from permitting requirement
  - ◆ Reg. 84 requirement to prepare plan for application at agronomic rates
  - ◆ Reg. 84 to require BMPs/education to minimize over-application



RMWEA/RMSAWWA Joint Water Reuse Committee /  
Regulation No. 84 Work Group



## How to Learn More and Participate



- ◆ Visit our website: [www.RMWEA.org](http://www.RMWEA.org) (Committees) or through WQF web
- ◆ Contact John Rehring: [reuse@rmwea.org](mailto:reuse@rmwea.org) (303) 298-1311
- ◆ Contact Wes Carr: [wes.carr@state.co.us](mailto:wes.carr@state.co.us) (303) 692-3613
- ◆ Participate in our meetings!



## Schedule Highlights

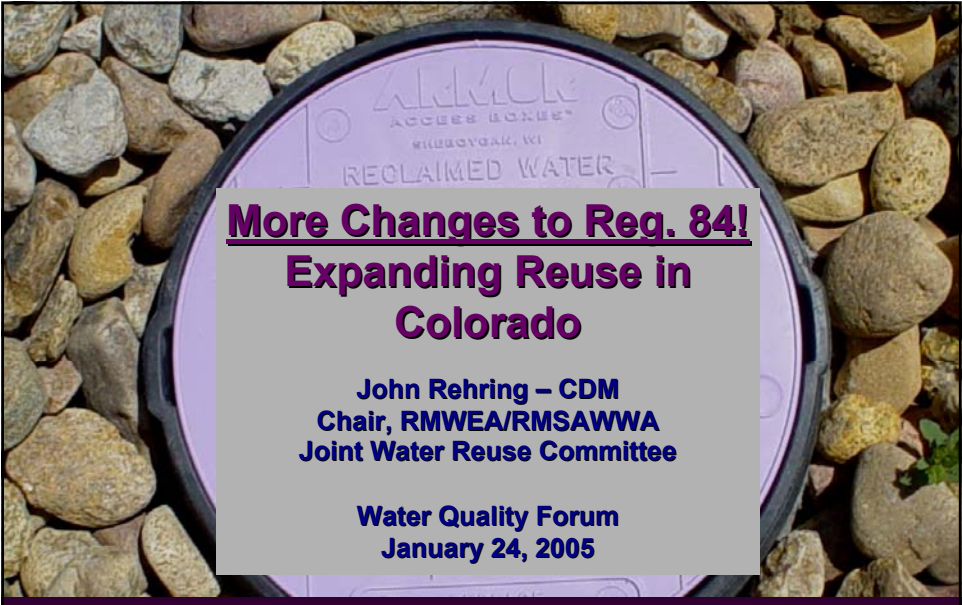
- ◆ Reg. 84 Work Group & Reuse Committee
  - ◆ Thu. February 10 – 1 pm, Highlands Ranch
  - ◆ Thu. March 10 – 1pm, Aurora
  - ◆ Thu. April 14 – 1 pm, Highlands Ranch
  - ◆ Thu. May 12 – 1pm, Aurora
  - ◆ Thu. June 9 – 1 pm, Highlands Ranch
- ◆ Prospective WQCC Schedule
  - ◆ February 2005 – Request Rulemaking Hearing
  - ◆ Late March 2005 – Submit Proposal to WQCC
  - ◆ August 2005 – Rulemaking Hearing

## Top 5 Signs that Reuse is Catching On in Colorado

- 5 Locals want to one-up California's Title 22 by creating a "Title 23"
- 4 Purple sprinkler heads and valve boxes aren't just for decoration anymore
- 3 Your elected officials know the difference between "Reuse" and "Refuse"
- 2 You find you now have competition for the "Best Purple Wardrobe" award
- 1 Someone other than the presenter attends a talk on reuse regs!

## Questions & Discussion

- ◆ Any additional high-priority uses?
- ◆ Chlorine residual (or equivalent) for Category 3
- ◆ Other questions and discussion



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