Annual Non-potable Water Customer Information Seminar

February 11, 2020
Welcome

Please silence cell phones

Attendance Sheet – please complete all columns & ensure name and email are legible

If you require proof of attendance for professional training units or for other reasons, please be sure to circle Yes and include a current email. Training certificates will ONLY be emailed to individuals who have circled Yes in the appropriate attendance sheet column.
1. Welcome
2. Safety Moment
3. Non-potable Water Overview
4. 2020 Waster Wise Rules

Short Break

5. Colorado Springs Utilities Non-potable Water System
6. Requirements for Non-potable Water Treatment & Use
7. Final Questions & Closing
Safety Moment

Please sign out if you need to leave the seminar early.

The sign out sheet can be found on the back table.

If we need to evacuate:

• Follow a Colorado Springs Utilities employee to the designated safe area.
• Stay together.
• Do NOT leave the designated safe area.
Non-potable Water Overview
What is Non-potable Water?

Simply put...

water not suitable
or
not intended for human consumption.

Human consumption encompasses more than drinking, the term includes cooking, hand washing and bathing.
Terminology Confusion

Water reuse terminology varies within the US and globally and is becoming even more varied as new reuse options gain acceptance.

No matter the terminology utilized, water industry professionals can agree on one thing, we must use the right water for the intended use!
Wastewater

Non-potable water

Raw water

Reclaimed water

Recycled water

Water reuse

Purified water
How The Water System Works

Arkansas River Basin Systems

Raw Water Pump Station

Mountain Collection System

Transmission Pipeline

Regulatory Storage

Nonpot

Distribution System

Gravity Interceptor

Waste Water Collection System

Lift Station

Force Main

Waste Water Treatment Plant

Water Treatment Plant

Terminal Storage

Distribution Storage

Nonpot

Customers

Nonpot

Customers

Land Application Sludge Disposal

Sludge Line

Discharge to Stream System

Exchange

Pacific Storms & snow

Exchange

Exchange
Use of reclaimed water

- Nationally at least 36 states use reclaimed water with California and Florida being the largest users (per 2013 US GAO report)

- Colorado has 26 reclaimed water treatment systems with 532 reclaimed water users.
Let’s review

Non-potable Water

• Any source of water that is not suitable or not intended for human consumption.

Reclaimed Water

• Domestic wastewater that has received secondary treatment by a domestic wastewater works and such additional treatment as to enable the wastewater to meet the standards for approved uses.
2020 Water-Wise Rules
Water-Wise Rules

• A regulatory means to curtail the waste of water (not restrictions)

• Makes permanent the long-standing voluntary 3-days-per-week

• While many customers take water use seriously, others do not respond to recommendations and incentives

• We all share the same supply. Setting an upper limit establishes parity for our customers’ respective use
Water-Wise Rules Effective 2020

- Water with sprinklers before 10AM and after 6PM from May 1 to October 15

- Irrigation with potable water not to exceed 3 days/week

- Do not irrigate so that water pools or flows across the ground

- Repair within ten (10) calendar days leaking or damaged irrigation system
Water-Wise Rules (cont’d)

• Do not use water to clean outdoor surfaces except if for public health/safety or impractical

• Wash motor vehicles and equipment only with active positive shutoff nozzle

In addition to the rules,
• Post a sign when performing maintenance
Non-Potable Customers and Water-Wise Rules: What Applies?

• Limit of 3 days/week = No

• Other water-wise practices = Yes

• In times of drought/shortage = Yes

• Non-potable customers are maximizing water use in our community and eliminating waste is always important
When are Non-Potable Customers Affected in Drought/Shortage?

- **Stage 1 (Watch)**
  - Non-potable customers must curtail landscape irrigation to 4 days/week/zone or area

- **Stage 2 (Warning)**
  - Level A - restricted to 3 days/week/zone or area
  - Level B - restricted to 2 days/week/zone or area
When are Non-Potable Customers Affected in Drought/Shortage? (cont’d)

Golf courses may irrigate under a best water management practices plan

(Unless emergency water shortage measures must be enacted)
Programs for Success

- **Water Allocation Plans** (only applies to non-pot customers during drought/shortage)
  - Flexibility on number of days per week watering limit
  - Volumetric limit of water associated with specific site

- **Establishment Permits**
  - Required for new landscape installations

- **Enforcement**
  - 2020: Education and awareness
  - 2021: Education and fines possible
Why these changes and why now?

- **Stewardship**
  - Taking care of water is important in wet years and dry

- **Foundational**
  - All Front Range communities employ these rules

- **Future Supply**
  - 2020 savings = 375 – 450 AF
  - Need 11,000 – 13,000 AF by 2070
What’s Next

Share information with your neighbors and friends

Learn more about the challenging work of water supply and demand

Upcoming events:
• ProSeries: The Value of Trees, March 6th
• Upcoming Certified Landscape Irrigation Auditor class March 9th & 10th

Ask me anything—you deserve answers
Resources Available

• https://www.csu.org/Pages/waterwiserules.aspx
  • Water Allocation Page
  • Establishment Page
  • FAQ’s
  • Water Shortage Ordinance Document

• CEC staff available M-F 8-5pm
  • 2855 Mesa Rd., Colorado Springs, CO, 80904

• Rebates
  • https://www.csu.org/Pages/irrigation-b.aspx
Break

Help yourself to more coffee and/or food.

If you haven’t already…please complete the attendance sheet

If you require proof of attendance for professional training units or for other reasons, please be sure to circle Yes and include a current email.

Training certificates will ONLY be emailed to individuals who have circled Yes in the appropriate attendance sheet column.
Colorado Springs Utilities’ Non-potable Water System
A bit of history

1955
Blue River Decree

1960ish
Installation of the west loop

1964-1965
Early 1960’s Kissing Camels receives NP.
Patty Jewett receives reclaimed water

1967
Colorado College ties into West Loop

1967-2003
Moderate system growth

2003-2005
Built dedicated line to Drake PP

2007
JDPWRRF online

Present
32 Customers
System underused

Colorado Springs water project

Colorado Springs water wagons
Why offer non-potable water for use?

Source of supply

Legal / Decree compliance

Environmental benefits

Customer benefits
Why offer non-potable water?

Source of Supply/Water System Optimization

1. Many raw water sources can supply either potable or non-potable uses
2. Conserves potable water
3. Allows for optimal and efficient use of supplies
4. Extends capacity life of potable water infrastructure
5. Reduces the risk of lost of water exchange
Why offer non-potable water?

Legal / Decree compliance
Why offer non-potable water?

**Environmental Benefits**
- Slows drawdown of our surface and groundwater supplies
- Less treatment (raw water sources)

**Benefits for our customers**
- Cost savings
- Water may have higher nutrient values
- Reliability
Profile: Colorado Springs Utilities’ Non-potable System

Supplies users with

- Reclaimed Water (treated wastewater)
- Untreated Surface Water - creeks, reservoirs (raw water)
- Untreated groundwater – wells (raw water)
- Blend of the 3
Profile: Colorado Springs Utilities’ Non-potable System

Central System components –
• 2 treatment plants producing reclaimed water
• 2 pump stations
• 26 miles of pipeline
• 2 dedicated pipelines
• 6 storage facilities
Profile: Colorado Springs Utilities’ Non-potable System

Stand Alone Systems – raw water

Pikeview-Kissing Camels System
- This system can supplement the central system if needed
- Includes:
  - 1 pump station
  - 2 storage facilities

Rosemont/South Sub/Broadmoor Systems
- Backup supply to non-pot customers in the southwest section of the central system
- Includes:
  - 1 pump station
  - 3 major pipelines
  - 4 storage facilities
Profile: Colorado Springs Utilities’ Non-potable System

Other Stand Alone Systems within our service territory

• Reclaimed water system at Fort Carson
• Individual, non-residential, raw water customers
Profile: Colorado Springs Utilities’ Non-potable System

Non-potable water customer base

Approximately 45 user accounts/sites

- Includes sites that have augmentation agreements with Springs Utilities

22 user sites have the potential to use reclaimed water
## Non-potable water use

### Comparison of Potable and Nonpotable Water Use in Colorado Springs

**Annual Delivery in AF**

<table>
<thead>
<tr>
<th>Year</th>
<th>Reclaimed</th>
<th>Nonpotable Water</th>
<th>Potable Water</th>
<th>Total Water Use</th>
<th>NP % of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>3223</td>
<td>1720</td>
<td>3997</td>
<td>8940</td>
<td>9.5%</td>
</tr>
<tr>
<td>1999</td>
<td>2506</td>
<td>1762</td>
<td>3027</td>
<td>7296</td>
<td>8.1%</td>
</tr>
<tr>
<td>2000</td>
<td>3871</td>
<td>2118</td>
<td>4077</td>
<td>10065</td>
<td>9.7%</td>
</tr>
<tr>
<td>2001</td>
<td>2959</td>
<td>3155</td>
<td>4060</td>
<td>10174</td>
<td>9.8%</td>
</tr>
<tr>
<td>2002</td>
<td>3035</td>
<td>1531</td>
<td>4548</td>
<td>9113</td>
<td>9.8%</td>
</tr>
<tr>
<td>2003</td>
<td>3164</td>
<td>1915</td>
<td>4483</td>
<td>9561</td>
<td>11.3%</td>
</tr>
<tr>
<td>2004</td>
<td>3519</td>
<td>1799</td>
<td>4665</td>
<td>9983</td>
<td>12.1%</td>
</tr>
<tr>
<td>2005</td>
<td>5466</td>
<td>1834</td>
<td>4855</td>
<td>12156</td>
<td>13.1%</td>
</tr>
<tr>
<td>2006</td>
<td>5536</td>
<td>1751</td>
<td>4830</td>
<td>12116</td>
<td>13.0%</td>
</tr>
<tr>
<td>2007</td>
<td>4591</td>
<td>1790</td>
<td>4508</td>
<td>10888</td>
<td>12.2%</td>
</tr>
<tr>
<td>2008</td>
<td>4759</td>
<td>1988</td>
<td>5124</td>
<td>11871</td>
<td>12.3%</td>
</tr>
<tr>
<td>2009</td>
<td>4821</td>
<td>1350</td>
<td>4538</td>
<td>10710</td>
<td>12.8%</td>
</tr>
<tr>
<td>2010</td>
<td>4521</td>
<td>2282</td>
<td>4017</td>
<td>10820</td>
<td>11.7%</td>
</tr>
<tr>
<td>2011</td>
<td>5047</td>
<td>1728</td>
<td>4541</td>
<td>11316</td>
<td>12.2%</td>
</tr>
<tr>
<td>2012</td>
<td>4514</td>
<td>2174</td>
<td>4510</td>
<td>11198</td>
<td>11.3%</td>
</tr>
<tr>
<td>2013</td>
<td>3681</td>
<td>1409</td>
<td>4156</td>
<td>9246</td>
<td>12.2%</td>
</tr>
<tr>
<td>2014</td>
<td>3401</td>
<td>1383</td>
<td>4235</td>
<td>9018</td>
<td>11.4%</td>
</tr>
<tr>
<td>2015</td>
<td>3715</td>
<td>1025</td>
<td>4170</td>
<td>8910</td>
<td>11.7%</td>
</tr>
<tr>
<td>2016</td>
<td>2879</td>
<td>1274</td>
<td>3808</td>
<td>7962</td>
<td>9.9%</td>
</tr>
<tr>
<td>2017</td>
<td>2986</td>
<td>1129</td>
<td>4057</td>
<td>8173</td>
<td>10.1%</td>
</tr>
<tr>
<td>2018</td>
<td>3281</td>
<td>1431</td>
<td>4546</td>
<td>9259</td>
<td>10.8%</td>
</tr>
<tr>
<td>2019</td>
<td>2793</td>
<td>1193</td>
<td>3945</td>
<td>7932</td>
<td>10.1%</td>
</tr>
</tbody>
</table>

In 2019, about 10% of the total amount of water used in Colorado Springs was non-potable.
Non-potable water use

2019 Nonpot Usage

- Nonpot Groundwater
- Nonpot Raw
- Nonpot Reclaimed (excl. Drake)

Acre-Feet

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Let’s review

Colorado Springs Utilities:

• Supplies both reclaimed water and raw water for non-potable use.
• Produces reclaimed water at both of its water resource recovery facilities.
• Supplies reclaimed water through a central loop.
• Offers non-potable water for 4 main reasons; is a source of supply, legal/decree compliance, environmental benefits, and customer benefits.
Requirements for Non-potable Water Treatment & Use
What type water does your site receive?
## Who Regulates Use?

<table>
<thead>
<tr>
<th>Reclaimed Water Users</th>
<th>All Non-potable Water Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Colorado Department of Public Health and Environment (CDPHE)/Water Quality Control Division (WQCD)</td>
<td>• Colorado Springs Utilities</td>
</tr>
<tr>
<td>• Colorado Reclaimed Water Control Regulation (Reg. 84) (effective 1/14/2020)</td>
<td>• City Code</td>
</tr>
<tr>
<td>• The Notice of Authorization (NOA) for individual Treaters and Users (along with individual certifications)</td>
<td>• Chapter 8 of the Water Line Extension and Service Standards – 2019 Edition</td>
</tr>
<tr>
<td>• US Environmental Protection Agency</td>
<td>• No federal regulations, only <em>Guidelines for Water Reuse</em> published by the EPA (2012 update)</td>
</tr>
<tr>
<td>• No federal regulations, only <em>Guidelines for Water Reuse</em> published by the EPA (2012 update)</td>
<td>• 2017 Potable Reuse Compendium</td>
</tr>
</tbody>
</table>
**CDPHE Approved Uses of Reclaimed Water**

1. Evaporative & non-evaporative industrial processes
2. Non-discharging construction and road maintenance
3. Landscape irrigation (non-resident controlled)
4. Zoo operations
5. Vehicle washing – non public or automated
6. Commercial laundries
7. Wash water applications
8. Non-food crop irrigation
9. Fire protection
10. Toilet & urinal flushing

Colorado Springs Utilities
New Approved Uses - Regulation 84

- Hemp cultivation
  - Non-edible
  - Edible
- Food crop cultivation
  - Commercial Operation
  - Non-Commercial Operation (e.g. community gardens)
  - Resident-Controlled (e.g. the homeowner’s backyard garden)

Colorado Springs Utilities has not currently adopted these uses
Responsibilities – All Users

• Comply with the most current versions of the Water LESS, Regulation 84, the NOA and the individual site certification requirements.
  • Correct identified deficiencies (non-compliance) in a timely manner or per a compliance schedule.

• Only use non-potable water for approved uses.
Responsibilities – All Users

• Obtain approval from Utilities for system modifications & expansions
  • This includes when planning changes in physical or operational use of reclaimed water.
  • Routine system maintenance does NOT require approval (e.g. sprinkler head replacement, valve box lid replacement, etc.)

• Inform Utilities of User site contact changes in a timely manner.

• Report cross connections and other incidents posing an immediate threat to public health or the environment to Springs Utilities and CDPHE within 24 hours.
Responsibilities – All Users

Contact Colorado Springs Utilities when

1. Draining lines and the water is not over an approved area (e.g. into a field outside the landscape area), and

2. There is a discharge or a potential to discharge non-potable water to State waters or the storm drain system.
Responsibilities – All Users

• Keep current, accurate map(s) of area(s) supplied non-potable water.
  • Map should include acreage of areas supplied with non-potable water.
• Maintain drawings of the non-potable water system for use in maintenance activities and employee training.
• Maintain records of separation of potable and non-potable water on the site.
  • Including Backflow Prevention Assembly installation and annual inspection records.
Responsibilities – All Users

• Properly maintain and promptly repair the non-potable water system.
• Apply non-potable water at agronomic rates.
• Employ BMPs to minimize public contact.
  • Minimize ponding & runoff.
  • Minimize direct & windblown spray impact on items with public contact.
  • Watering during evening/overnight/early morning hours.
  • Perform system inspections to identify issues (& correct promptly).
Responsibilities – All Users

Train all employees

- Inform employees of the potential health hazards associated with non-potable water contact or ingestion
- Educate employees in proper hygienic procedures
- Maintain training records
  - Date of training
  - Topics covered
  - Attendees and signed general waivers
- Only trained employees should operate the non-potable water system
Responsibilities – All Users

Notify the Public of non-potable water use.

- Post signage.
- Color-code, tag, or label all system appurtenances.
- Label tank trucks and other equipment used to store or distribute non-potable water (including hoses).
- Print in onsite information materials.
  - Golf score cards.
  - Cemetery plot maps.
- Provide information in newsletters, flyers or at association meetings.
Responsibilities – All Users

Have at least one system representative attend the annual Springs Utilities non-potable water customer seminar.
Additional Responsibilities – Reclaimed Water Users

• Comply with all conditions of use outlined in Regulation 84 and the site NOA.
• Track the total annual volume of reclaimed water used on site.
• Maintain a release reporting log
  • Releases due to overspray/runoff >100 gallons
  • Releases due to malfunctions/breaks >1000 gallons
Responsibilities – Springs Utilities

• Provide a quality product that is suitable for approved uses.
• Establish appropriate standards and requirements of use.
  • Educate & Enforce on these standards as necessary.
• Establish and enforce water schedules.
• Conduct site inspections.*
  • Installation of modifications or new systems
  • Periodic inspections
• Discontinue non-potable water service for non-compliance or other issues.
• Timely, accurate, and relevant communications with Users on non-potable water system issues.
Responsibilities – Springs Utilities – Regulation 84

• Submit an annual report to the CDPHE by March 31st of each year. Report includes:
  • Annual User self certifications including annual site usage volumes.
  • User violations.*
  • Treater violations.*
  • Documentation that user site inspections were performed.
Let’s review

Colorado Springs Utilities must perform site inspections and ensure deficiencies are corrected in a timely manner.

- Frequently identified inspection deficiencies:
  - System modifications not approved by Colorado Springs Utilities.
  - System contact information is not up to date.
  - Records not maintained, readily available or complete.
Water Reuse Resources

• A copy of this presentation and links to other professional water organizations will be posted to www.csu.org
Thank you for coming.

Departing thoughts...

Thirty-two billion gallons of municipal wastewater are produced everyday in the U.S. but less than 10 percent of that is intentionally reused.

It’s estimated that reuse of all the wastewater we discharge to the oceans and estuaries would increase the water available to U.S. municipalities by about 6 percent.