



WEST EXTENSION IRRIGATION DISTRICT/CITY OF HERMISTON CLASS A WATER REUSE PROJECT

Project Overview

The City of Hermiston invested years seeking a long-term solution to discharge its Class A recycled water during the summer irrigation season. New discharge regulations designed to protect salmon in the Umatilla River left the City unable to discharge to the river during this period. During the same timeframe, West Extension Irrigation District (WEID) observed flows decreasing in the Umatilla River, which limited their ability to withdraw critical irrigation supplies. Discussions between the City and the District began in 2007 to determine if a mutually beneficial arrangement could be created. WEID first had to be assured that the recycled water was compatible for their use, not create a burden to its irrigators and would provide clear benefits to its farmers and landowners. To address these concerns the City and the District worked closely with WEID's partner, the Bureau of Reclamation. They interfaced with several governmental/public agencies including the Oregon Farm Bureau, Oregon Tilth, the Confederated Tribes of the Umatilla Indian Reservation, Oregon Fish and Wildlife, the Department of Environmental Quality (DEQ), and National Marine Fisheries to perform environmental reviews and develop a regulatory framework for the process. After all processes, reviews and permits were complete, WEID began receiving water from the Hermiston Recycle Water Treatment plant in the summer of 2016.

Water Quality

The recycled water meets the most rigorous quality standards in the industry, termed "Class A Recycled Water." To continuously meet Class A standards the City invested \$27 million in its Membrane Bioreactor Treatment System that produces water that is virtually indistinguishable from drinking water. For example, drinking water for human consumption must have turbidity (a measure of cloudiness of the water) of less than 0.3 turbidity units over 95% of the time. The new Recycled Water Plant will routinely produce a turbidity of less than 0.1 turbidity units.

Regulations

The project will reliably meet NPDES permit levels for the next 20+ years; increase treatment capacity from roughly 1.7 MGD to 3.0 MGD to match projected population growth in the service area by 2026; address environmental concerns impacting the Umatilla River and threatened salmonid species; and discharge the highest quality Class A Recycled Water to the Umatilla River.

Monitoring

The City monitors the turbidity continuously at the treatment plant. A system is in place wherein automatic alarms and shut-downs occur when the turbidity exceeds 0.5 NTU. The total coliforms are monitored daily.

Invitation

Customers of WEID are invited to tour the Hermiston Recycle Water Plant facilities. Please contact WEID Manager, Bev Bridgewater to arrange for a tour.

Class A Recycled Water

Class A Recycled Water is suitable for direct use on all food crops including organically labeled produce. It must meet the most stringent water quality standards developed by DEQ such as turbidity standards (less than 2 NTU) and total coliforms (less than bacteria per 100 mL).

Uses of Recycled Water

Level of Treatment (after disinfection unless otherwise specified)

- Class A** Class A recycled water must be oxidized, filtered and disinfected. Before disinfection, turbidity may not exceed:
- An average of 2 NTUs within a 24-hour period.
 - 5 NTUs more than five percent of the time within a 24-hour period.
 - 10 NTUs at any time.

- After disinfection, total coliform may not exceed:
- A median of 2.2 organisms per 100 mL based on daily sampling over the last 7 days that analyses have been completed.
 - 23 organisms per 100 mL in any single samples.

- Class B** Class B recycled water must be oxidized and disinfected. Total coliform may not exceed:
- A median of 2.2 organisms per 100 mL, based on the last 7 days that analyses have been completed.
 - 23 total coliform organisms per 100 mL in any single sample.

- Class C** Class C recycled water must be oxidized and disinfected. Total coliform may not exceed:
- A median of 23 total coliform organisms per 100 mL, based on results of the last 7 days that analyses have been completed.
 - 240 total coliform organisms per 100 mL in any two consecutive samples.

These water quality parameters apply to the WEID concrete-lined canal.

Beneficial Uses

Class A recycled water may be used for:


- Class B, Class C, Class D, and nondisinfected uses.
- Irrigation for any agricultural or horticultural use.
- Landscape irrigation of parks, playgrounds, school yards, residential landscapes, or other landscapes accessible to the public.
- Commercial car washing or fountains when the water is not intended for human consumption.
- Water supply source for non restricted recreational impoundments.

Class B recycled water may be used for:


- Class C, Class D, and nondisinfected uses.
- Stand-alone fire suppression systems in commercial and residential building, non-residential toilet or urinal flushing, or floor drain trap priming.
- Water supply source for restricted recreational impoundments.

Class C recycled water may be used for:

- Class D and nondisinfected uses.
- Irrigation of processed food crops; irrigation of orchards or vineyards if recycled water is applied directly to the soil.
- Landscape irrigation of golf courses, cemeteries, highway medians, or industrial or business campuses.
- Industrial, commercial, or construction uses limited to: industrial cooling, rock crushing, aggregate washing, mixing concrete, dust control street sweeping, or sanitary sewer

 Oregon Department of Environmental Quality Table 315 Water Quality Criteria Constructed Channel Segment West Division Main Canal, Umatilla Basin 340-041-0315		
Parameter	For Irrigation (mg/l, metals as dissolved)	For Livestock Watering (mg/l, metals as dissolved)
Total dissolved solids	450	
Arsenic (inorganic)	0.1	0.2
Beryllium	0.1	
Cadmium	0.01	0.05
Chromium	0.1	1
Copper	0.2	0.5
Lead	5	0.1
Mercury		0.01
Nickel	0.2	
Selenium	0.02	0.05
Zinc	2	25

NPDES PERMIT NO. 101294
ISSUED to CITY OF HERMISTON



State of Oregon
Department of Environmental Quality

Pursuant to ORS 468B.050 and The Federal Clean Water Act (The Clean Water Act)

WEID MAIN CANAL

DISCHARGE POINT



City of Hermiston Wastewater Treatment Facility

