2023 Cross-connection Control Program Summary

Overview

King County Wastewater Treatment Division (WTD) with support from the Consultant team, Kennedy Jenks and cross-connection control specialist Steve Coke, developed and submitted the Brightwater Treatment Plant Recycled Water System Cross-connection Control (CCC) Program (Plan) in April 2023, as part of WTD's reclaimed water (RW) permit (ST0045498). This memo serves to provide an update to the Plan since its implementation, including identifying system improvements and backflow prevention compliance testing. Details pertaining to the status of each section of the Plan are described below. WTD is in the process of updating customer contracts to provide the legal instrument to include language around King County's authority to manage the RW cross-connection efforts on their sites. This summary report has been reviewed by Steve Coke.

Status of Cross-connection Control Program Improvements

In February 2023, WTD and the Consultant team conducted an evaluation of the existing RW system and identified three areas for near term improvements. WTD developed an implementation strategy for each area and listed them in the Table 1 below.

Table 1: CCC Plan Near Term Improvements

Recommended Near Term Improvements	Status
Amend all existing customer contracts to included appropriate CCC language similar to the Example Recycled Water Contract Excerpts included in Appendix E of the CCC Plan	WTD recycled water program will implement in 2024.
Installation of a double check valve assembly at the Buttonwood Tree Farms	Prior to implementation it was determined that a reduced pressure back flow preventer is preferrable. This device was installed in 2023. Assembly information included in Attachment A.
Update and amend truck fill customer contracts as new contracts arise	WTD recycled water program will implement in 2024.

After the Plan was developed, a backflow tester identified that the existing air gap did not have a sufficient height as required to protect the potable water connection at the Brightwater Environmental Education and Community Center. This was remedied by King County in February 2024.

Annual Compliance Testing

Attachment A lists the cross-connection protection equipment throughout the RW Onsite and Offsite Distribution System. RW was not distributed during the 2023 season due to a pipe break in the 30-inch East force main at the York Pump Station. This is one of the main RW distribution pipelines that connect

Brightwater to the customer sites as well as associated cross-connection protection equipment. Due to the lack of RW to support testing, a majority of the devices could not be tested this year. Table 2 shows the cross-connection equipment that was tested in 2023. WTD plans to resume normal testing of cross-connection protection equipment during the 2024 reclaimed water season.

Table 2: Tested Cross-Connection Control Equipment

Location	**Backflow Device**	**Asset Number**	**Date Tested**
WTD – North Creek Pump Station	Air Gap Tank	T310046	4/17/2023
WTD – North Creek Pump Station	Reduced Pressure Backflow Assembly	BAC310017	4/17/2023
WTD – Brightwater Influent Pump Station	Reduced Pressure Backflow Assembly (6”)	BW-BAC240232	4/17/2023
WTD – Brightwater Influent Pump Station	Reduced Pressure Backflow Assembly (2”)	BW-BFP210060	4/17/2023

Attachment A: List of Service Connections (Updated January 2024)

Jurisdiction	Location	Address	Backflow Device	Device Specifications	Asset Number	Serial Number	Hazard Level
Cross Valley	WTD – Brightwater Center	22505 WA-9 Woodinville WA 98072	Reduced Pressure Backflow Assembly	1 ½" Wilkins 975XL RP	BW-BFP160020	3309899XLTCV	High
Bothell	WTD – Brightwater Influent Pump Station	11711 NE 195th Street. Bothell WA 98011	Air Gap Tank	N/A	BW-T210216	AG4R4	High
			Reduced Pressure Backflow Assembly (6")	6" Febco LF880 RP	BW-BAC240232	N1708010614	High
			Reduced Pressure Backflow Assembly (2")[1]	2" Watts 0092 M2QT RP	BW-BFP210060	298002	Low
Redmond	WTD – Hollywood Pump Station	14815 NE 124th St Redmond WA 98052	Air Gap Tank	N/A	T308301	AG	High
			Reduced Pressure Backflow Assembly	2" Watts LF009M2 RP	BW-BAC308160	120879	Low
Bothell	WTD – North Creek Pump Station	18707 North Creek Parkway South Bothell WA 98011	Air Gap Tank	N/A	T310046	[NONE]	High
			Reduced Pressure Backflow Assembly	4" Watts 909 RP	BAC310017	217619	Low
Kirkland	WTD – York Pump and RW Fill Station	14120 NE 124th St Redmond WA 98052	Air Gap Tank	N/A	T309400	[NONE]	High
			Reduced Pressure Backflow Assembly[5]	2" Watts 909 RP	BW-BAC309307B	220263	High
			Double Check Valve Assembly (Irrigation)[1]	1 ½" Febco 805Y DC	BAC309307	Y8101	Low
			Reduced Pressure Backflow Assembly (Fill Station)[2]	3" Watts 957 RP	BW-BAC309510	PA0126	Low
Redmond	60 Acres Park	15200 NE 116th St Redmond WA 98052	Reduced Pressure Backflow Assembly[5]	6" Wilkins 375A RP	BW-BAC309102	X36354	Low
			Double Check Valve Assembly (Connection with river)[1]	4" Wilkins 350 AST DC	BW-BAC309103	10260A	Low
Redmond	Buttonwood Farms	14500 NE 116th St Redmond WA 98052	Reduced Pressure Backflow Assembly[3]	2" Watts 009M2QT RP	BW-BAC309104	296144	Low
Redmond	Willows Run Golf Complex	10402 Willows Rd NE Redmond WA 98052	Double Check Valve Assembly[4]	8" Watts 709 DC	BW-BAC309101	328406	High

Legend

[1] Devices were not recorded on the previous list in cross-connection control plan and were not new installations.
[2] Correction to the previous list in cross-control control plan. Previously listed as a Double Check Valve Assembly.
[3] Device was installed since the cross-connection control plan was submitted. Asset and serial numbers reflect the *new* assembly.
[4] Device was replaced since the cross-connection control plan was submitted. Asset and serial numbers reflect the *old* assembly.
[5] Updated asset number