

“MIAMI RIVER BASIN WATER QUALITY IMPROVEMENT REPORT”
Action Item Matrix Quarterly Progress Report

First Quarterly Report, 2023
(October - December 2022)

Action Item:

- 4. Monitoring and Research
 - a. Continue monthly monitoring for water quality of Wagner Creek, Miami River, and adjoining Biscayne Bay

Lead Agency:	Miami-Dade County Regulatory and Economic Resources, Division of Environmental Resources Management (DERM)
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Action Item Status:

Miami-Dade DERM has continued to collect monthly water quality samples in the Miami River and its tributaries (including Tamiami Canal, Comfort Canal and Wagner Creek). Due to the time it takes for analytical laboratories to provide results, and additional time for data Quality Assurance/Quality Control (QA/QC), the County can only report on the previous quarter's results. During the Fourth Quarter of 2022 samples were collected at each of the eight (8) stations in the River and tributaries on First Tuesday of the first full week in October and December and on the First Tuesday of the second full week in November. Costs for sampling (including salaries and fringe and analysis) have been calculated at approximately \$394 per station per month. No sewage spills were reported on or around the Miami River or its tributaries during the quarter. Please note that bacteriological parameters are not available at two (2) stations in December because the sample bottle failed and the sample was lost.

The Florida Department of Environmental Protection (FDEP) revised the human health-based surface water quality criteria in Chapter 62-302, F.A.C that are designed to ensure that Floridians can safely eat Florida fish and drink local tap water. Figures 1 -3 below depict where monthly results for stations in the Miami River and the vicinity exceed the single sample standard of 130 cfu/100ml for Enterococcus—the applicable indicator for saline locations. Figure 4 is a quarterly composite of Enterococci results from station locations on the Miami River and its tributaries showing how frequently the results at each station exceeded the standard during the Fourth Quarter of the year. Table 1 lists the observed Enterococcus values, as well as E. Coli levels, in Wagner Creek and its confluence with the Miami River (MR03) for October-December.

“MIAMI RIVER BASIN WATER QUALITY IMPROVEMENT REPORT”
Action Item Matrix Quarterly Progress Report
Biscayne Bay Surface Water Quality Monitoring Program
Enterococci Bacteria Sample Compliance
October 2022
Miami River and Tributaries

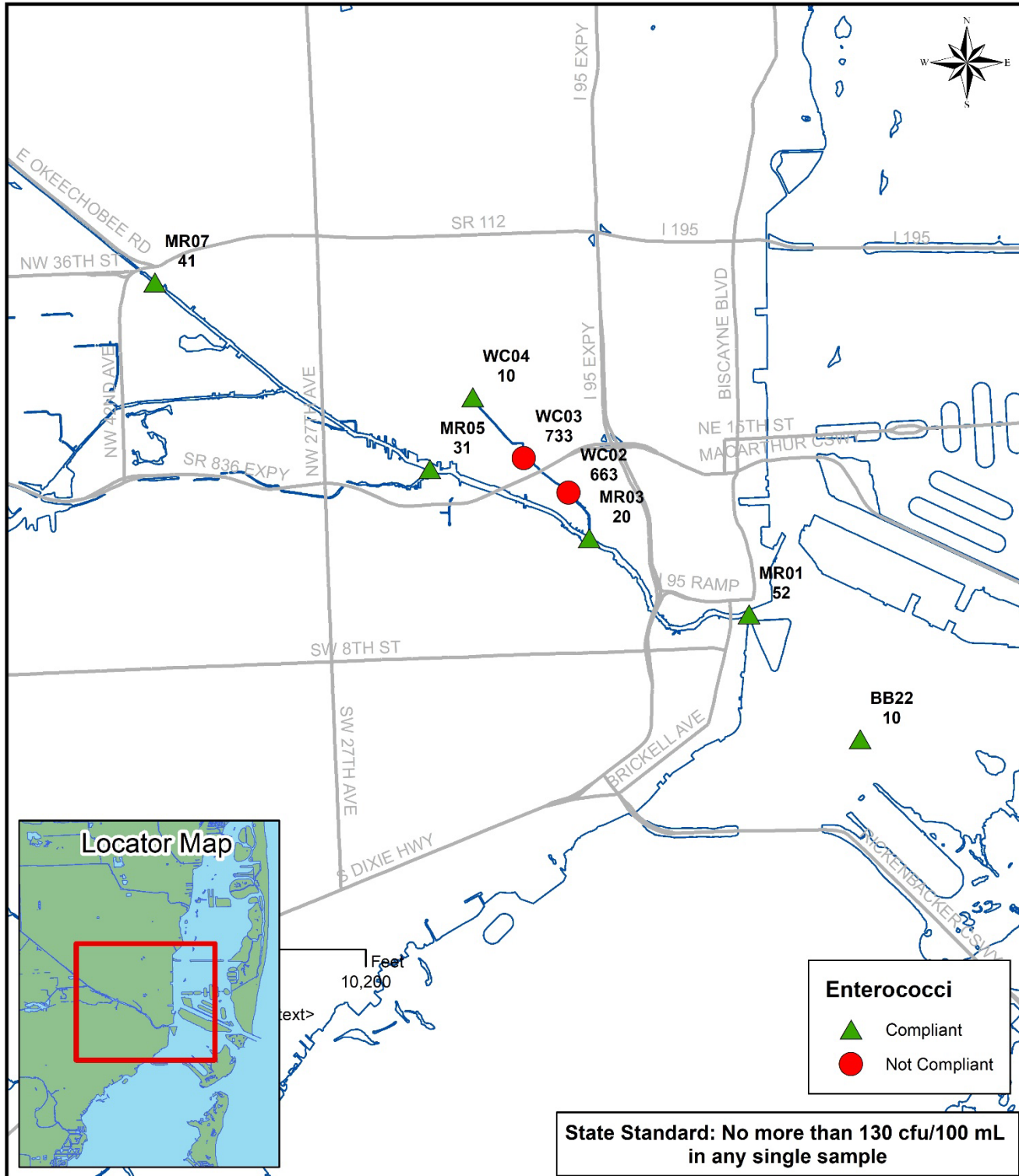


Figure 1.

**Biscayne Bay Surface Water Quality Monitoring Program
 Enterococci Bacteria Sample Compliance
 November 2022
 Miami River and Tributaries**

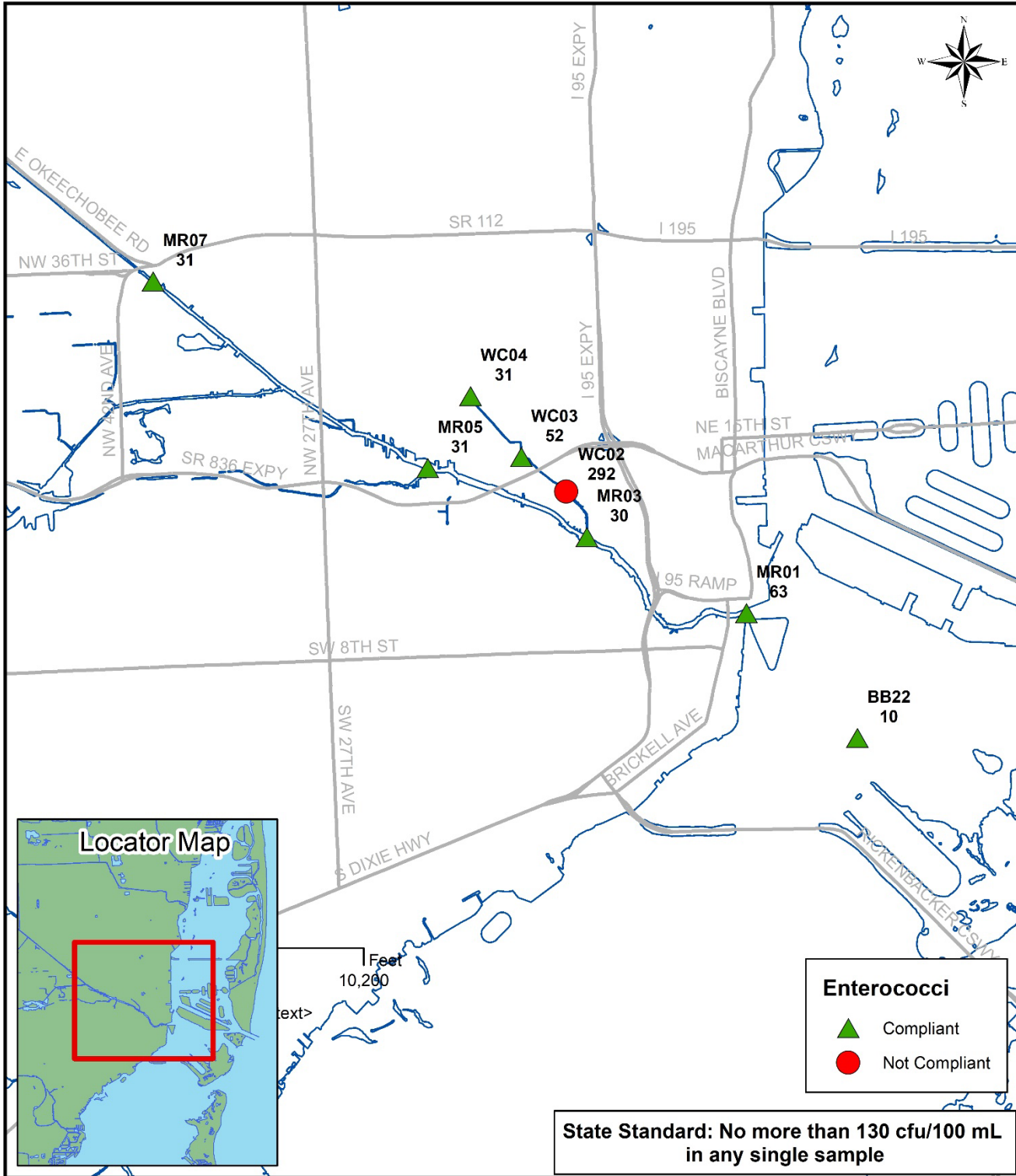


Figure 2.

Biscayne Bay Surface Water Quality Monitoring Program

Enterococci Bacteria Sample Compliance

December 2022

Miami River and Tributaries

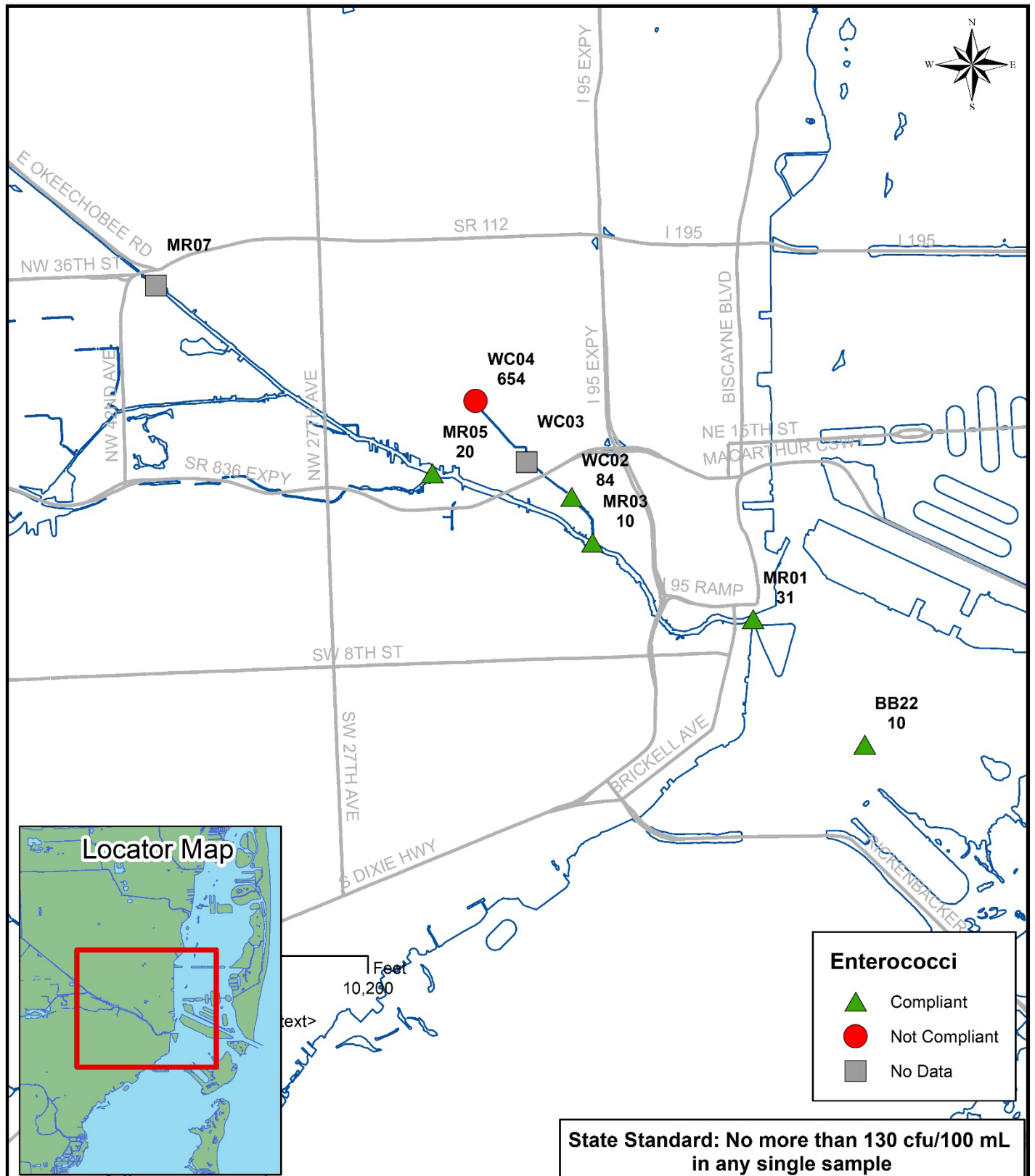


Figure 3.

Biscayne Bay Surface Water Quality Monitoring Program

Quarterly Summary of Enterococci Bacteria Sample Compliance

October to December 2022

Miami River and Tributaries

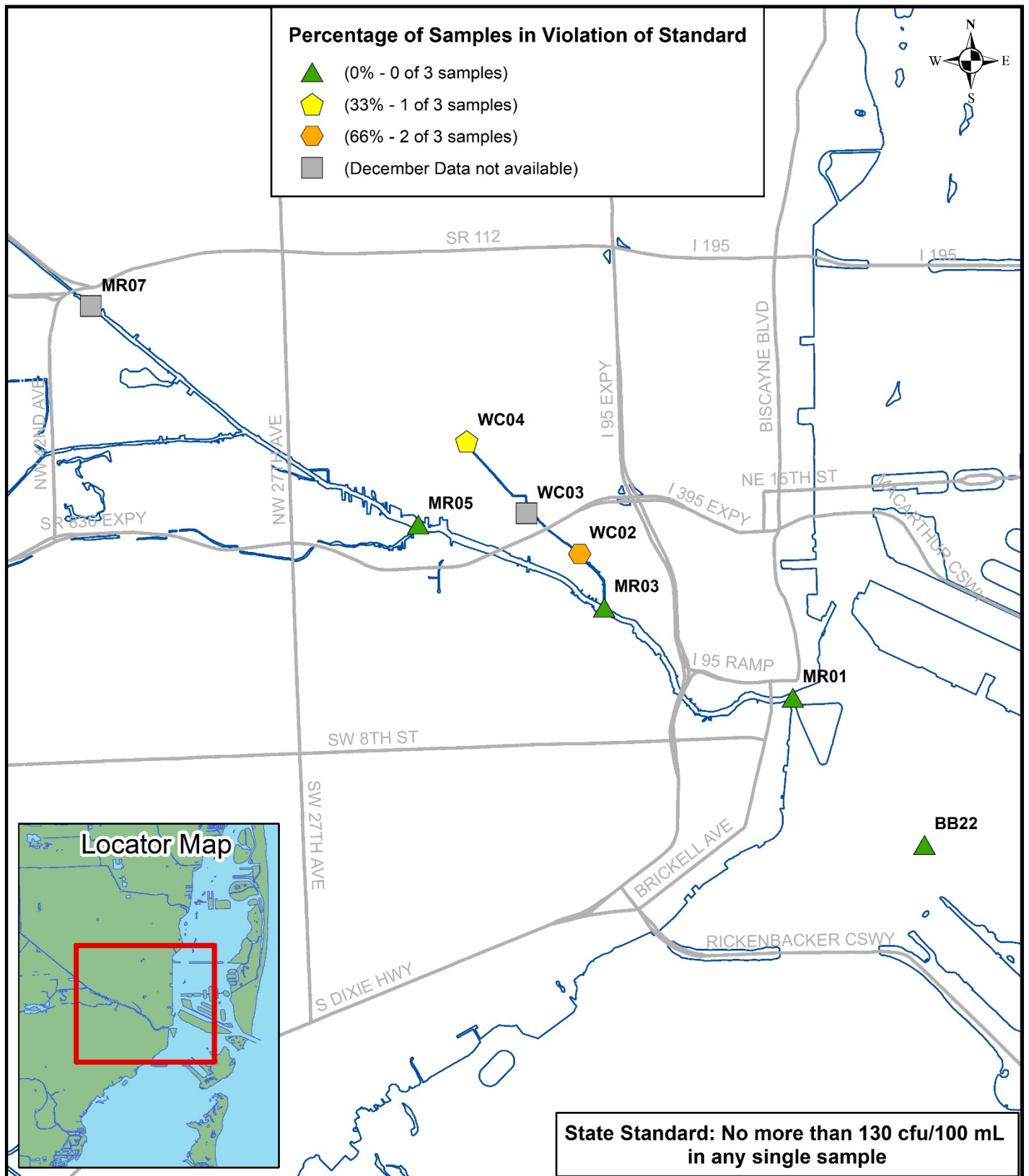


Figure 4.

Table 1.

MONTHLY INDICATOR BACTERIA LEVELS (cfu's/100 ml) IN WAGNER CREEK								
	MR03		WC02		WC03		WC04	
Parameter	Entero	E.Coli	Entero	E.Coli	Entero	E.Coli	Entero	E.Coli
October	20	146	663*	2420*	733*	3450*	10	20
November	30	292	292*	512*	52	550*	31	1720*
December	10	31	84	758*	NA	NA	654*	1090*

A "*" indicates results that exceed the State's E. Coli Standard (410 cfu/100ml) or Enterococci (130 cfu/100ml); a "0" indicates that the true value was below the method detection limit.

Frist Quarterly Report, 2023
(Data for October-December 2022)

Action Item:

- 5. Management
- d. Establish standardized water quality tracking for key characteristics

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Action Item Status:

This report presents selected results of the water quality monitoring that occurred in the Fourth Quarter (October-December) of 2022 for Bacteriological parameters, Ammonia, Total Phosphorus, and Turbidity. Due to the extensive nature of the database, it is not feasible to track each parameter collected at each station for the period of record. Therefore, representative parameters have been selected to achieve the objective of this Action Item. Current water quality trends will be tracked by plotting the actual sample results of several key parameters (see Charts 1-14 for graphs of Ammonia Nitrogen, Total Phosphorus, Bacteriological Indicator species, and Turbidity data) throughout the river.

All currently monitored stations in the river were included with each parameter plotted on 3 separate graphs each representing the lower river, upper river, and Wagner Creek (See maps presented under action item 4.a for station locations). Data are plotted in time series from the previous ten-year (2013-2023) period, except for Enterococcus and Escherichia Coli which only have 5 years of data available. For further comparison, the target values developed under Action Item 4.f are plotted, and where applicable, the existing state or county standard for each parameter is shown.

Ammonia Nitrogen Tracking

Ten Year Period: 2013-2023

Lower Miami River

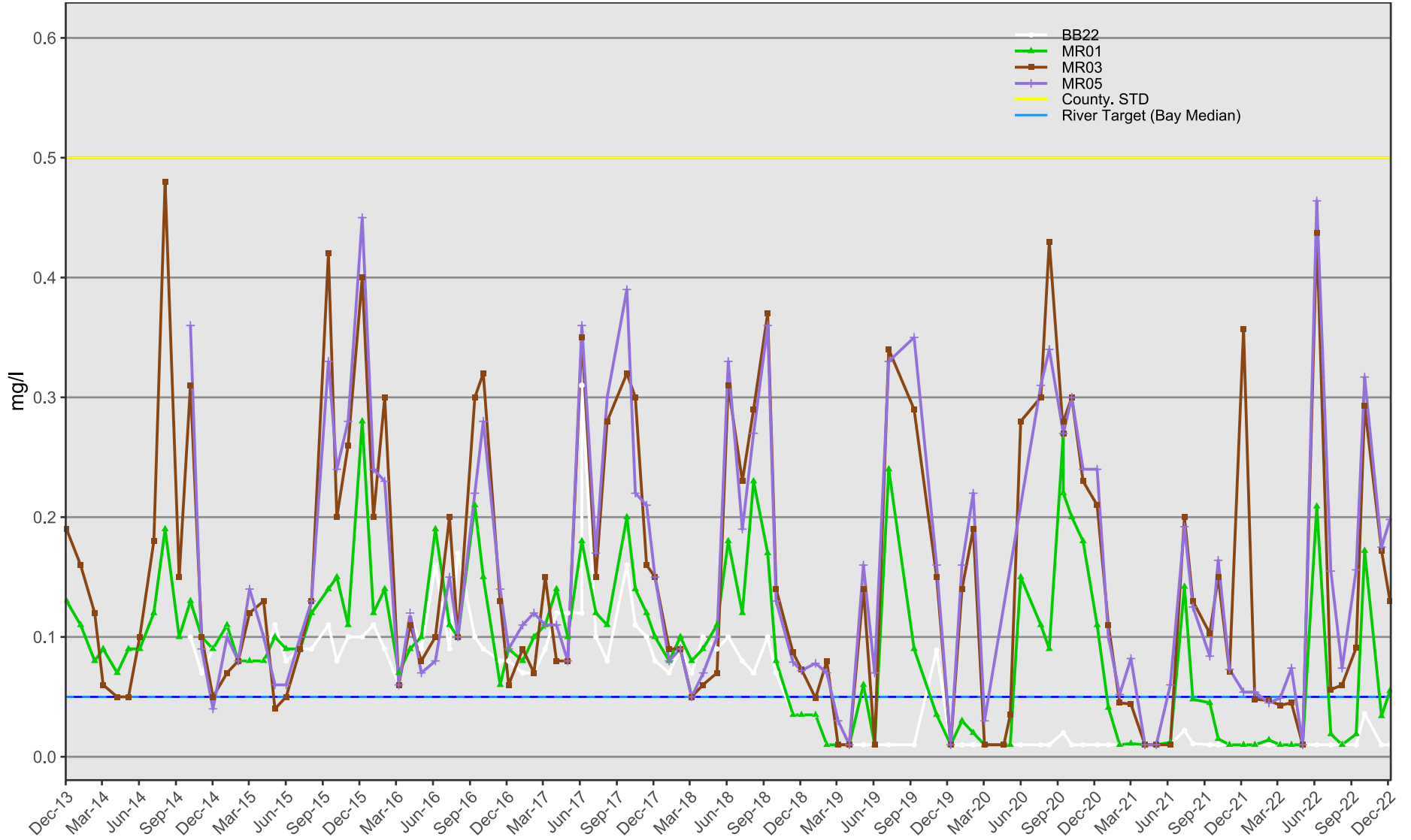


Chart 1

Nitrogen Ammonia Tracking

Ten Year Period: 2013-2023

Upper Miami River

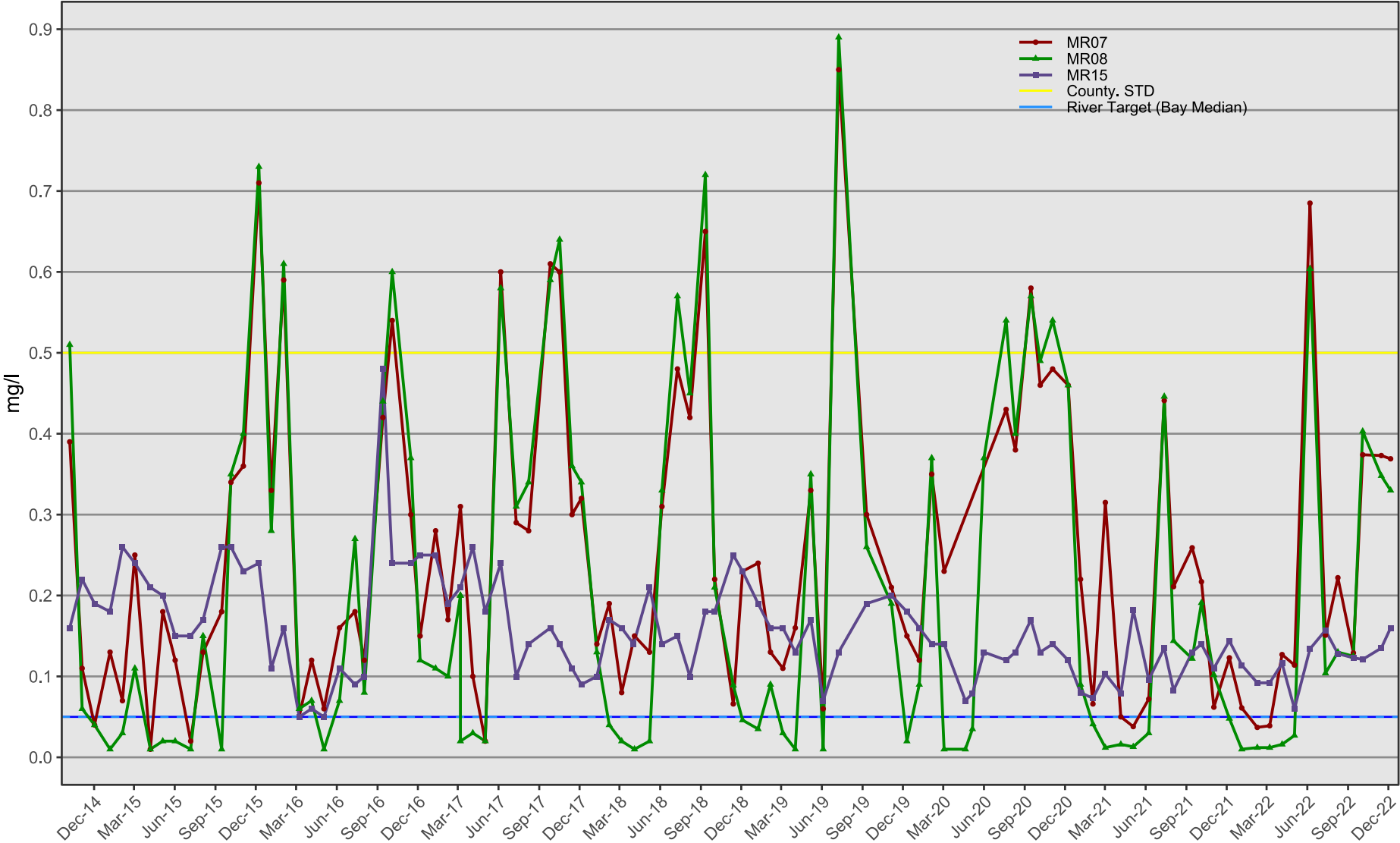


Chart 2

Nitrogen Ammonia Tracking

Ten Year Period: 2013-2023

Wagner Creek

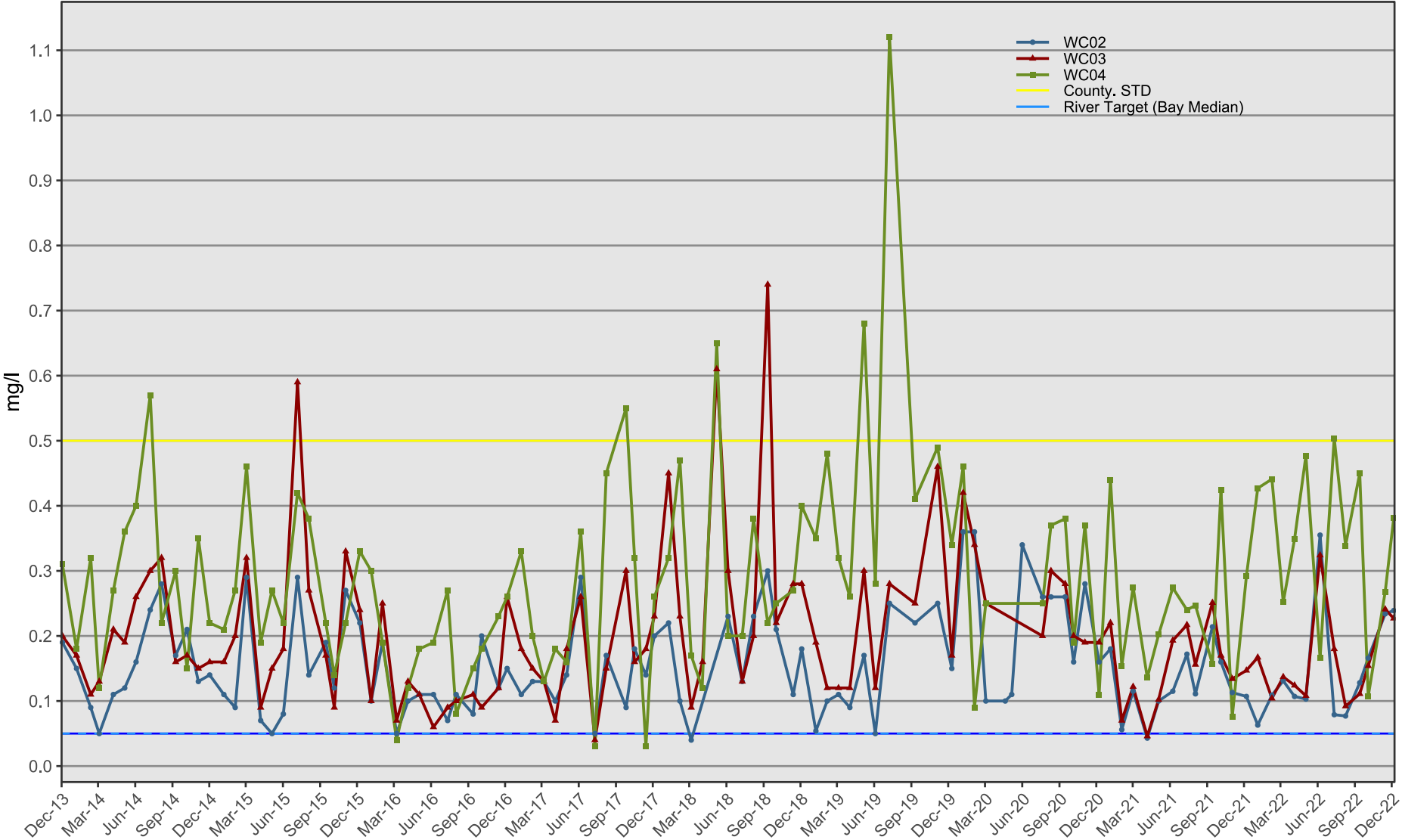


Chart 3

Total Phosphate Tracking

Ten Year Period: 2013-2023

Lower Miami River

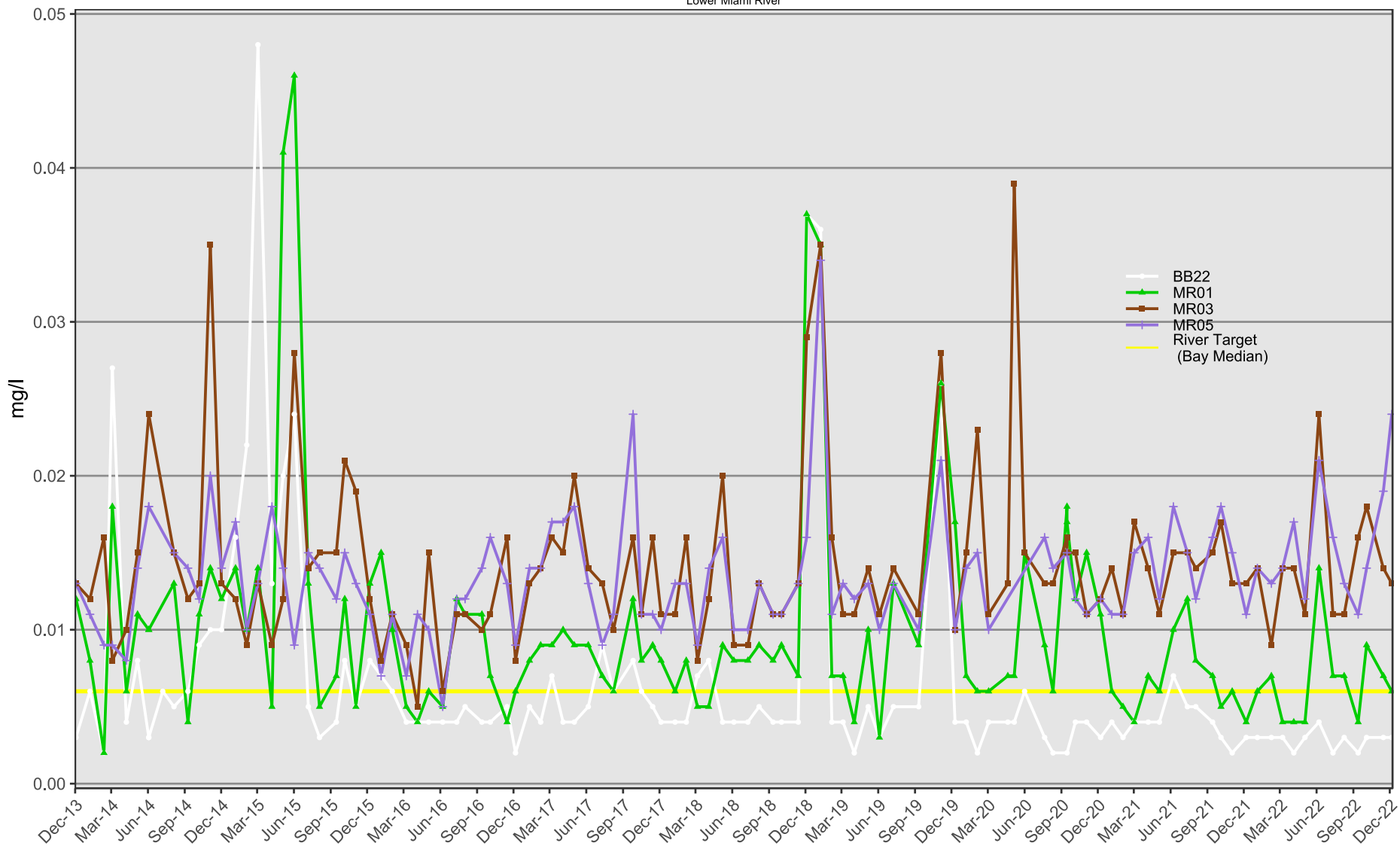


Chart 4

Total Phosphate Tracking

Ten Year Period: 2013-2023

Upper Miami River

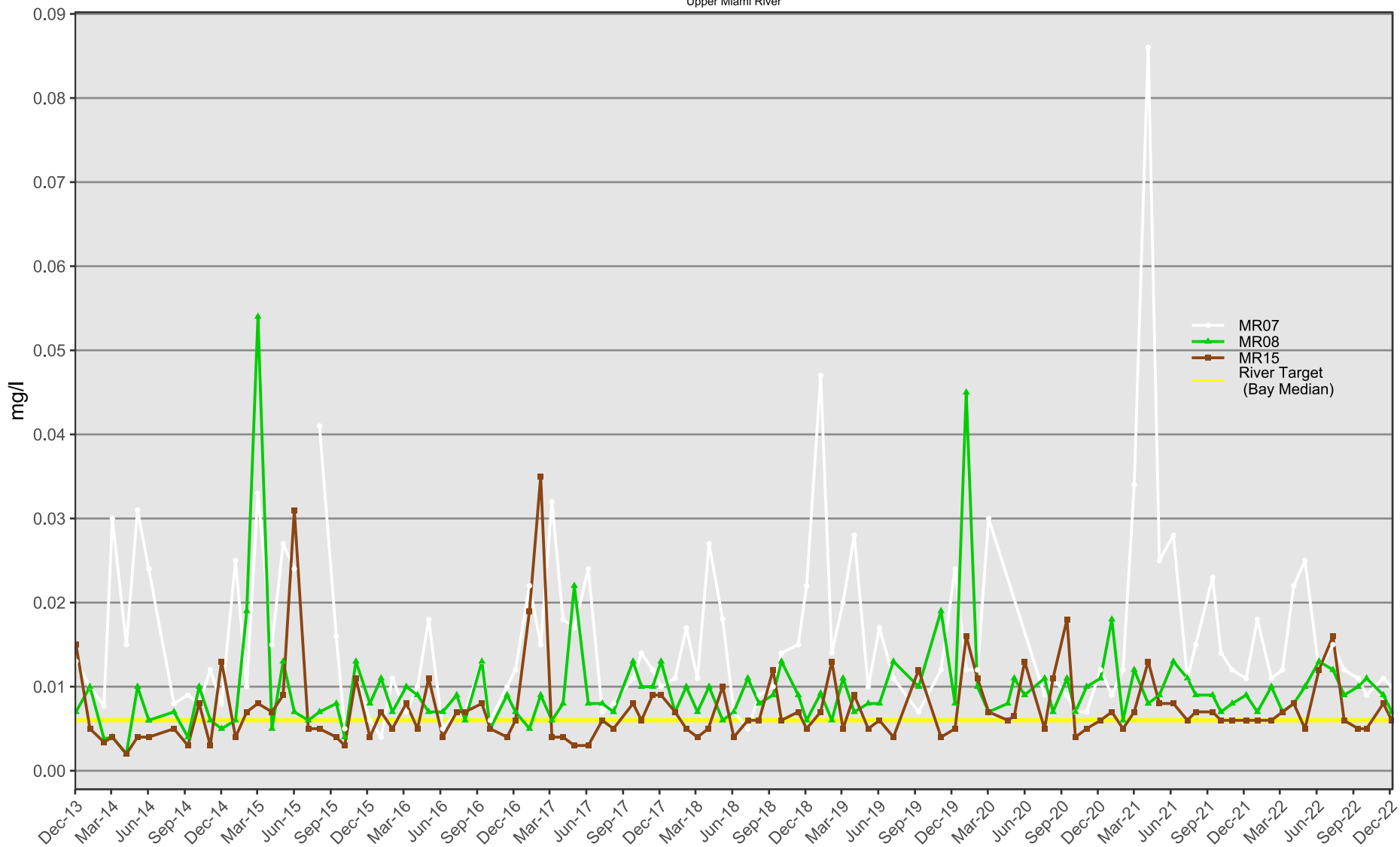


Chart 5

Total Phosphate Tracking

Ten Year Period: 2013-2023

Wagner Creek

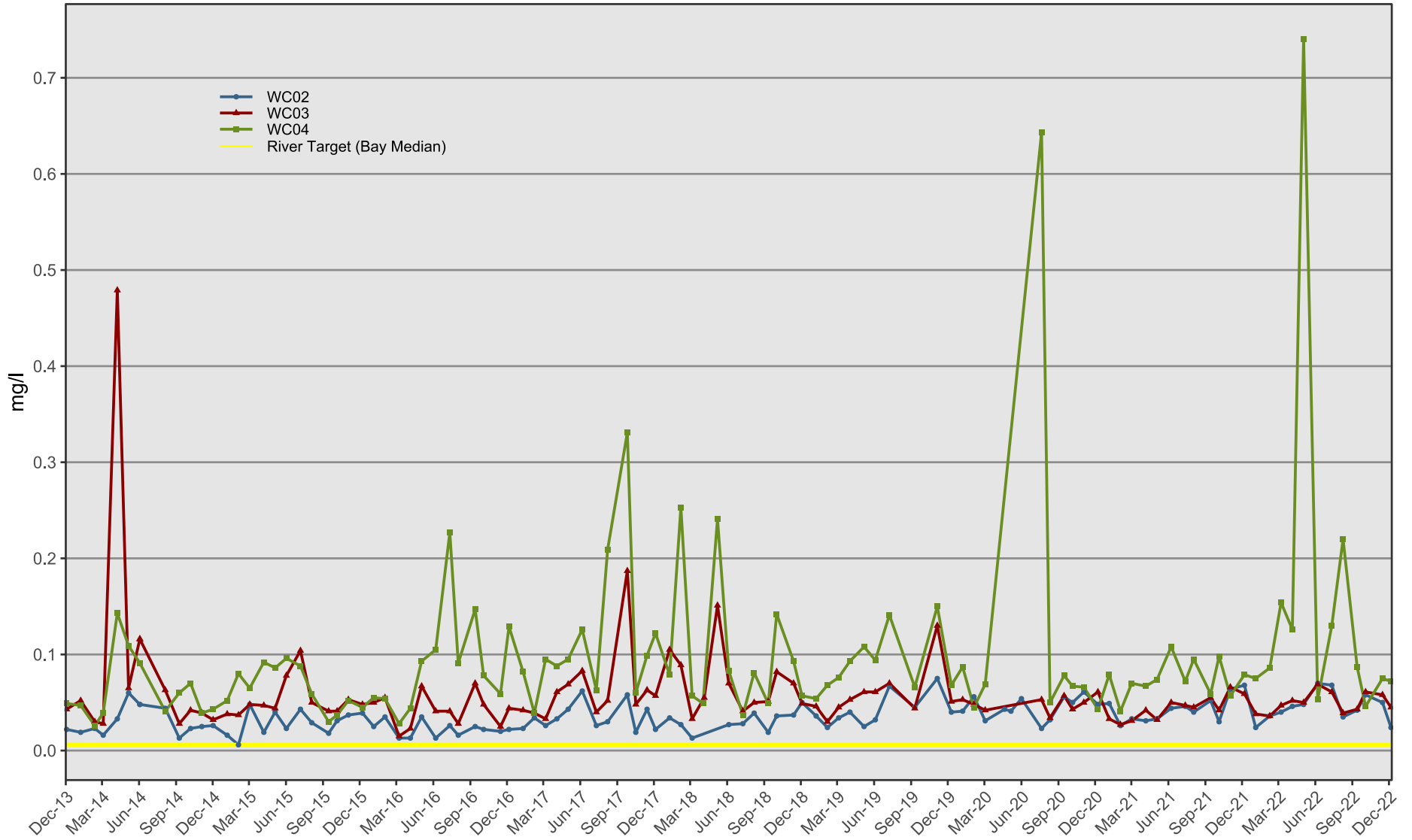


Chart 6

Enterococci Tracking

Lower Miami River

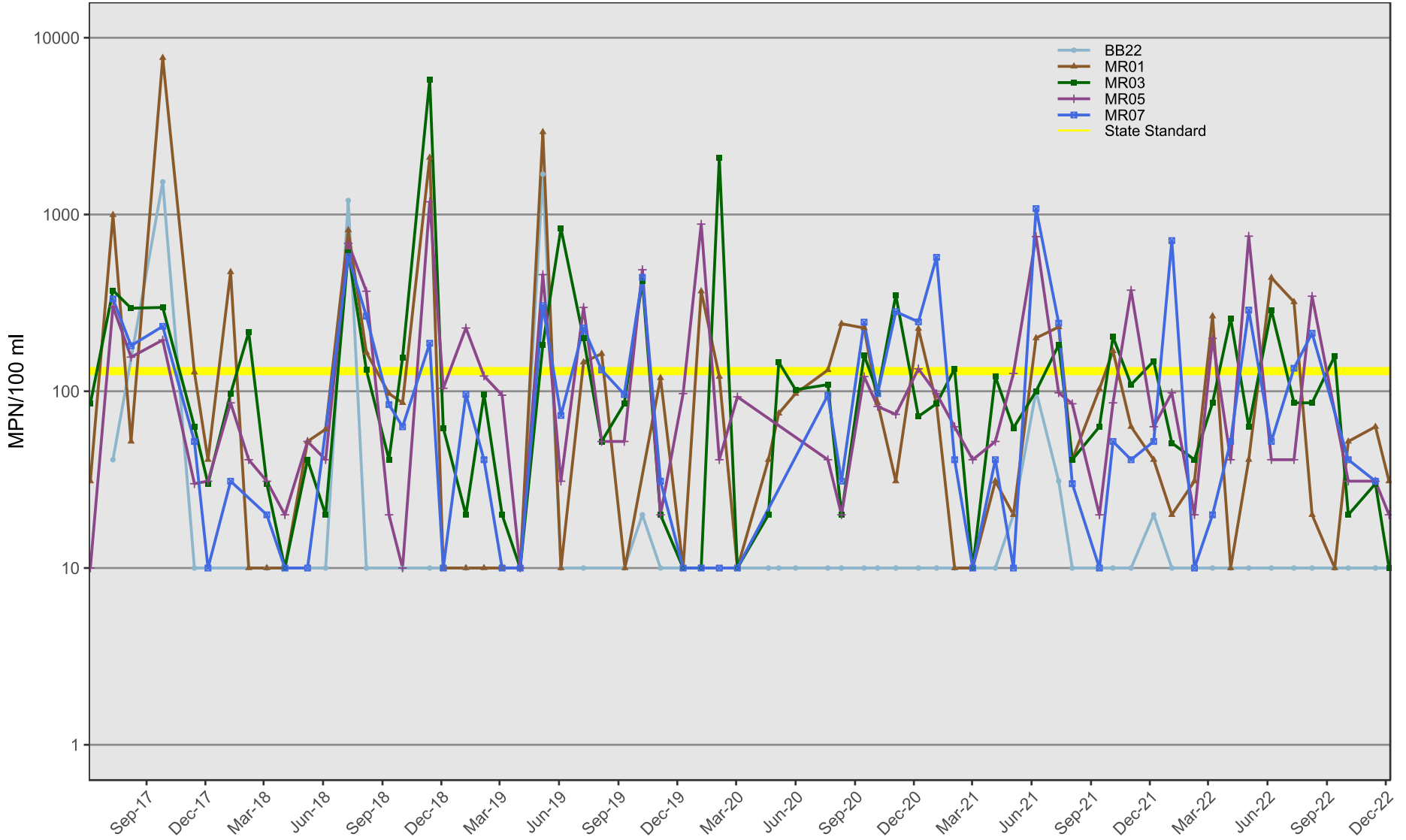


Chart 7

Enterococci Tracking

Wagner Creek

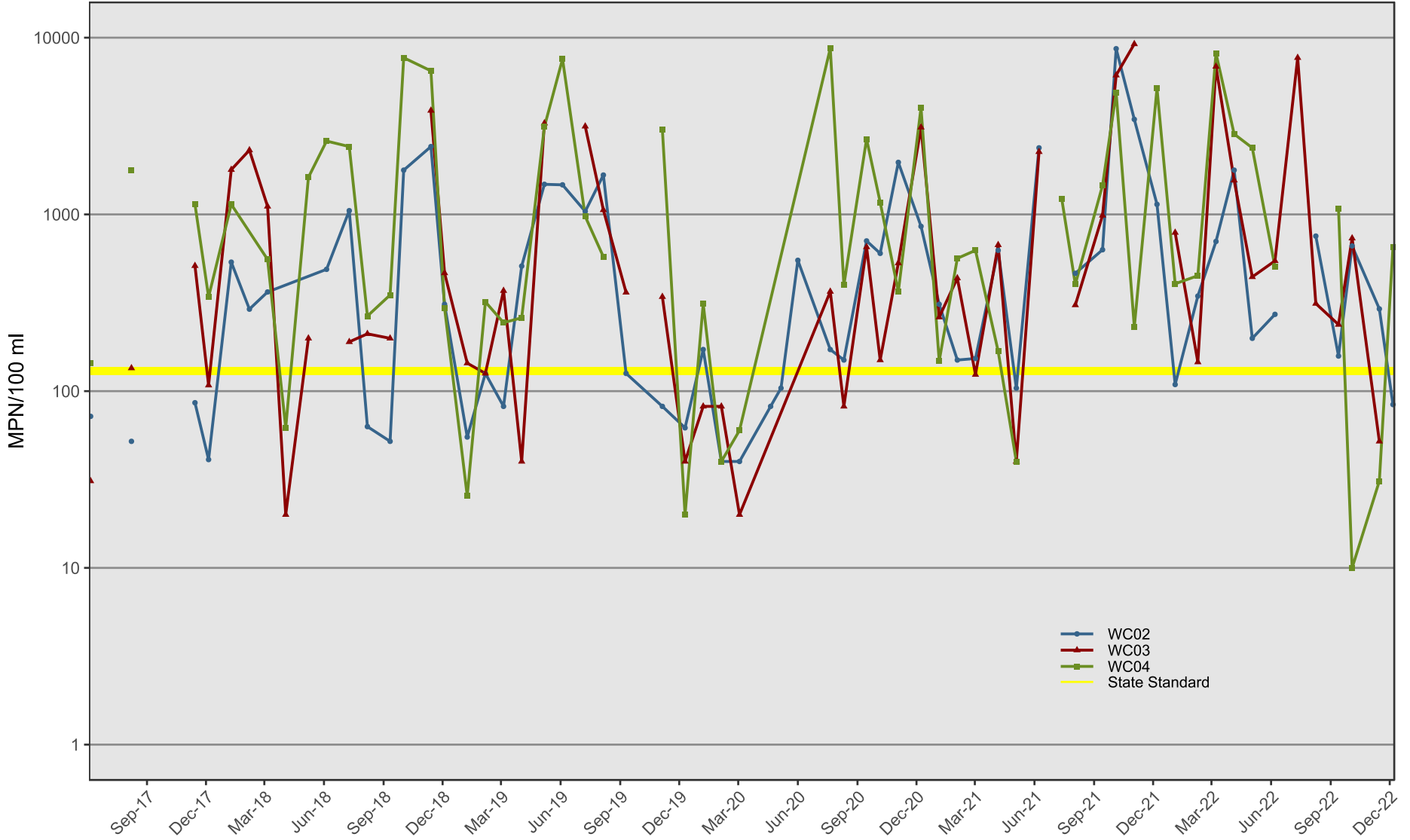


Chart 8

E. coli Tracking

Lower Miami River

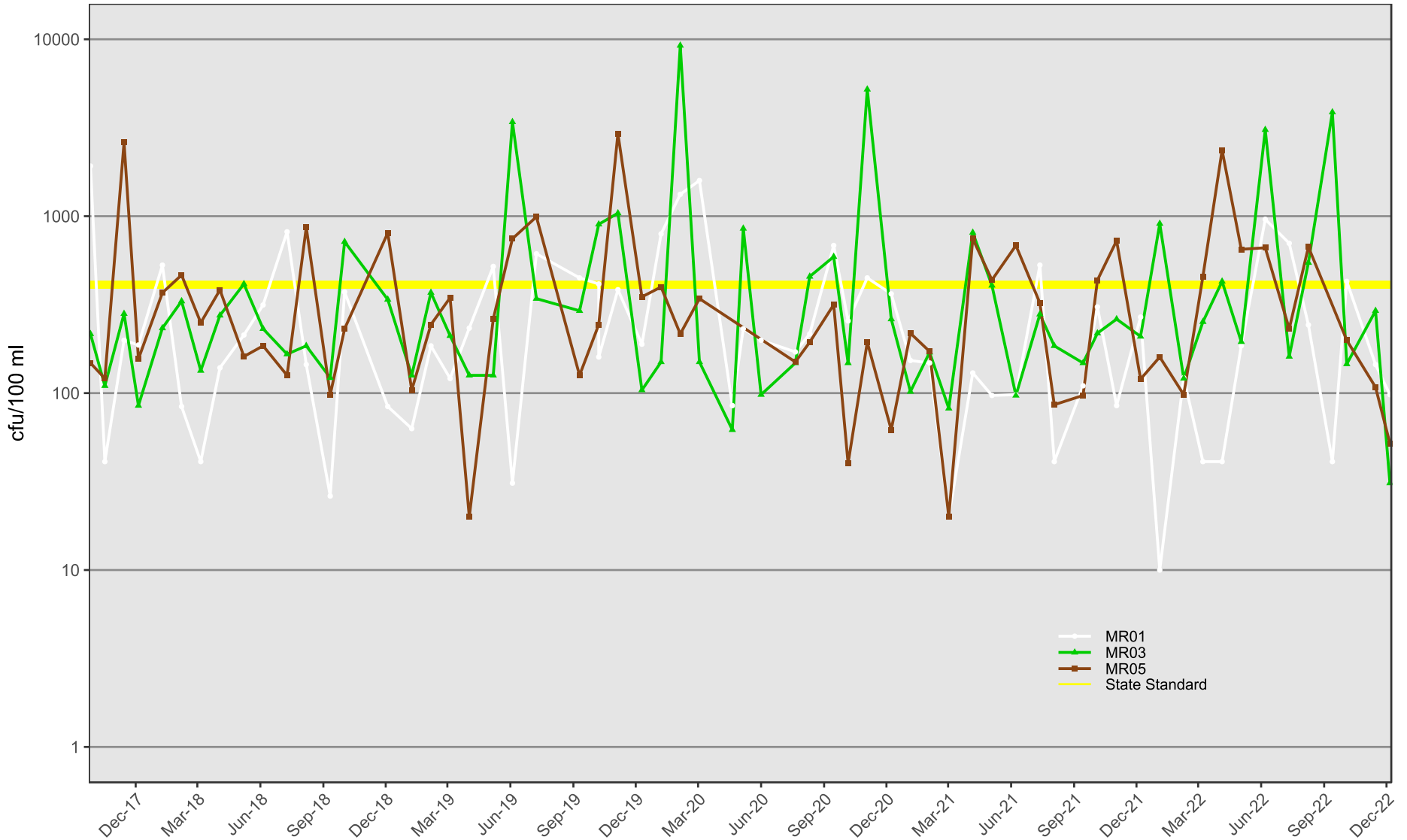


Chart 9

E. coli Tracking

Upper Miami River

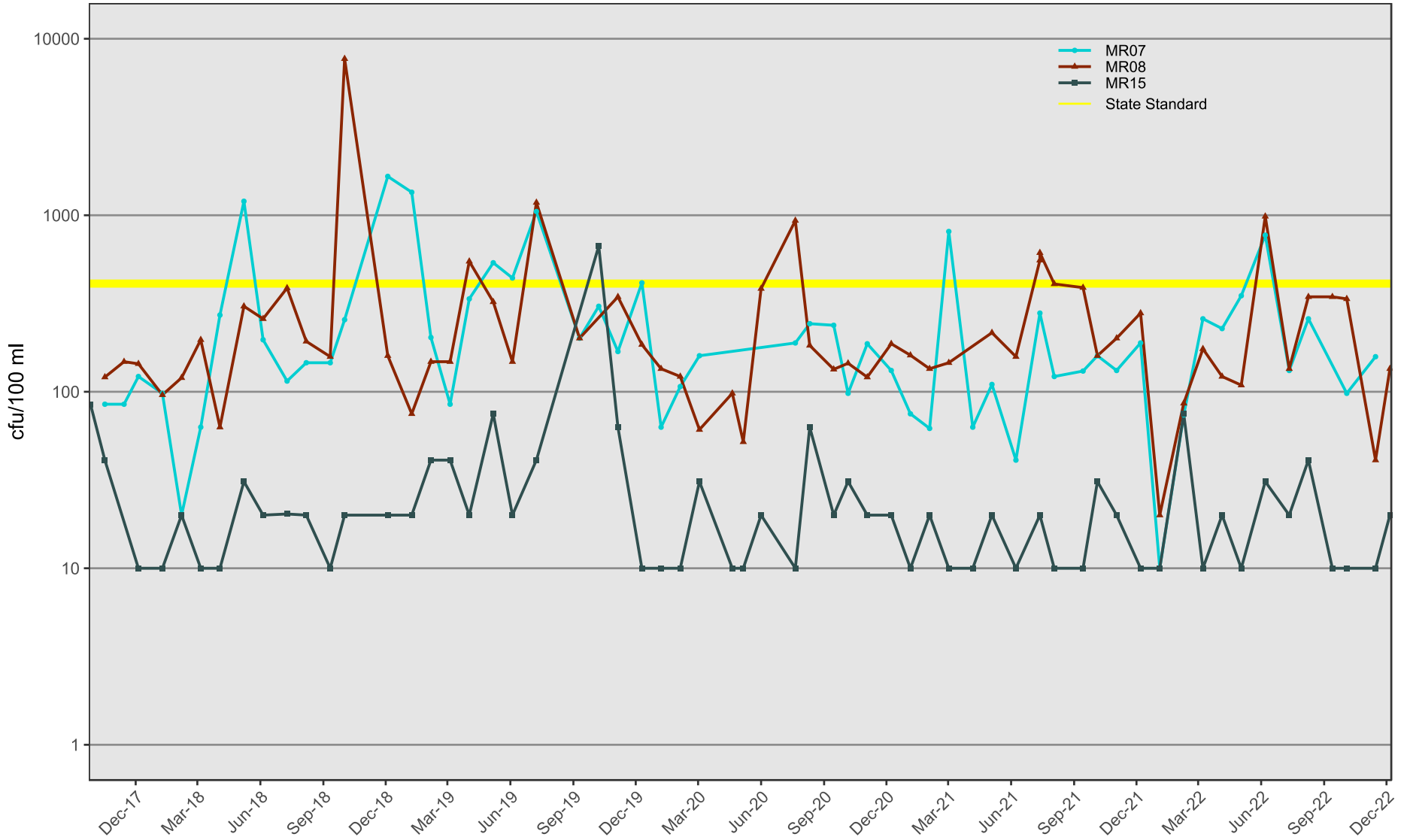


Chart 10

E. coli Tracking

Wagner Creek

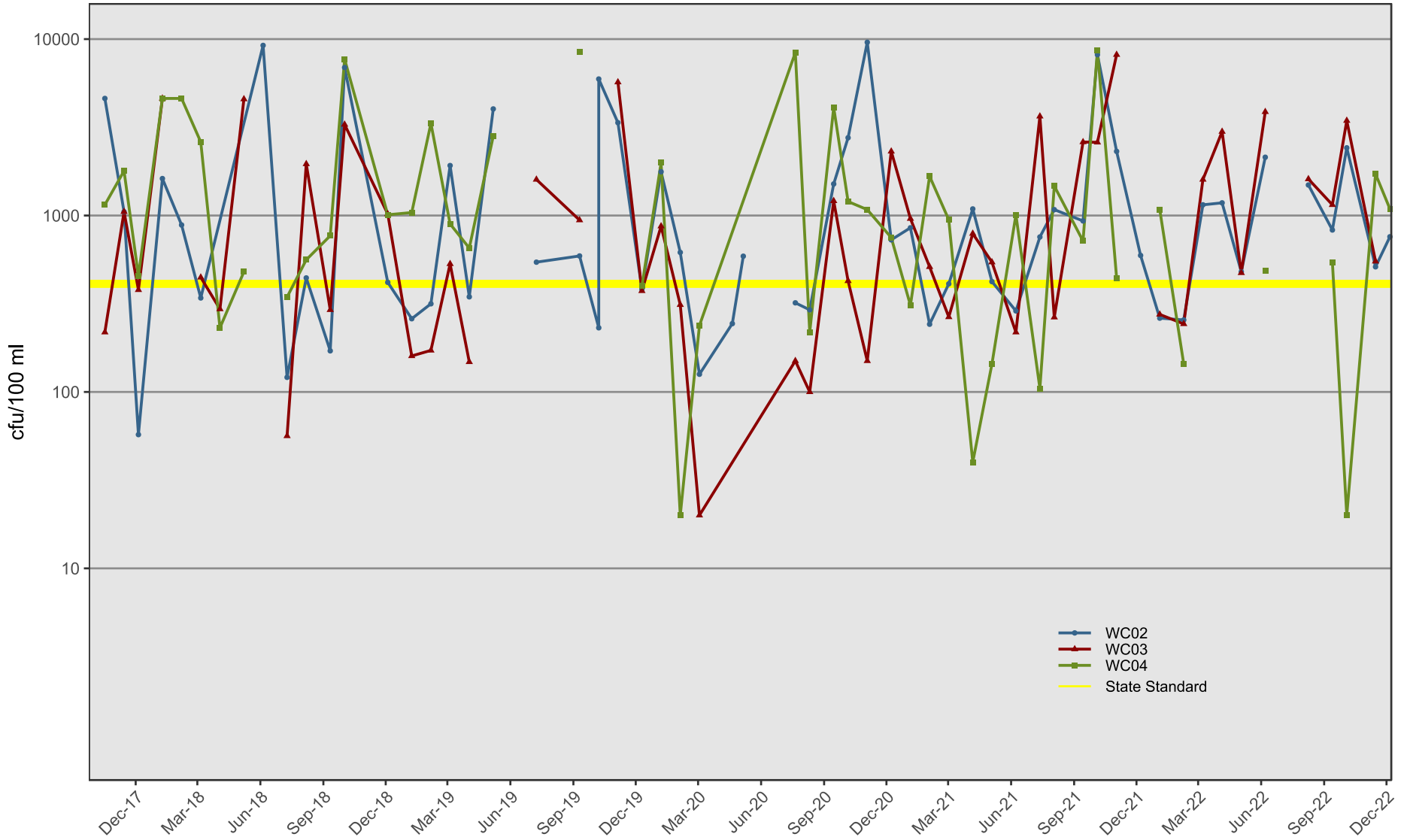


Chart 11

Turbidity Tracking

Ten Year Period: 2013-2023
Lower Miami River

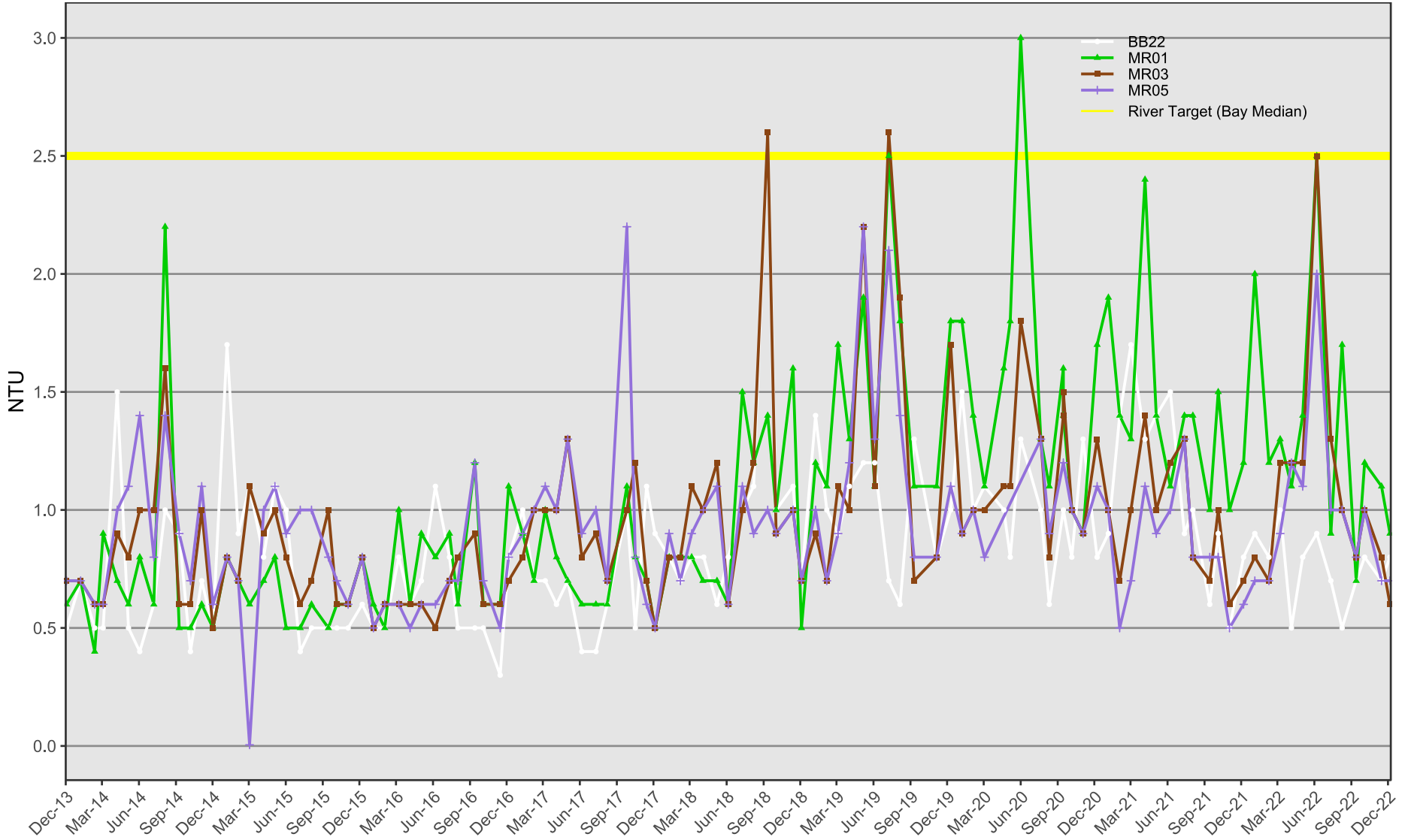


Chart 12

Turbidity Tracking

Ten Year Period: 2013-2023
Upper Miami River

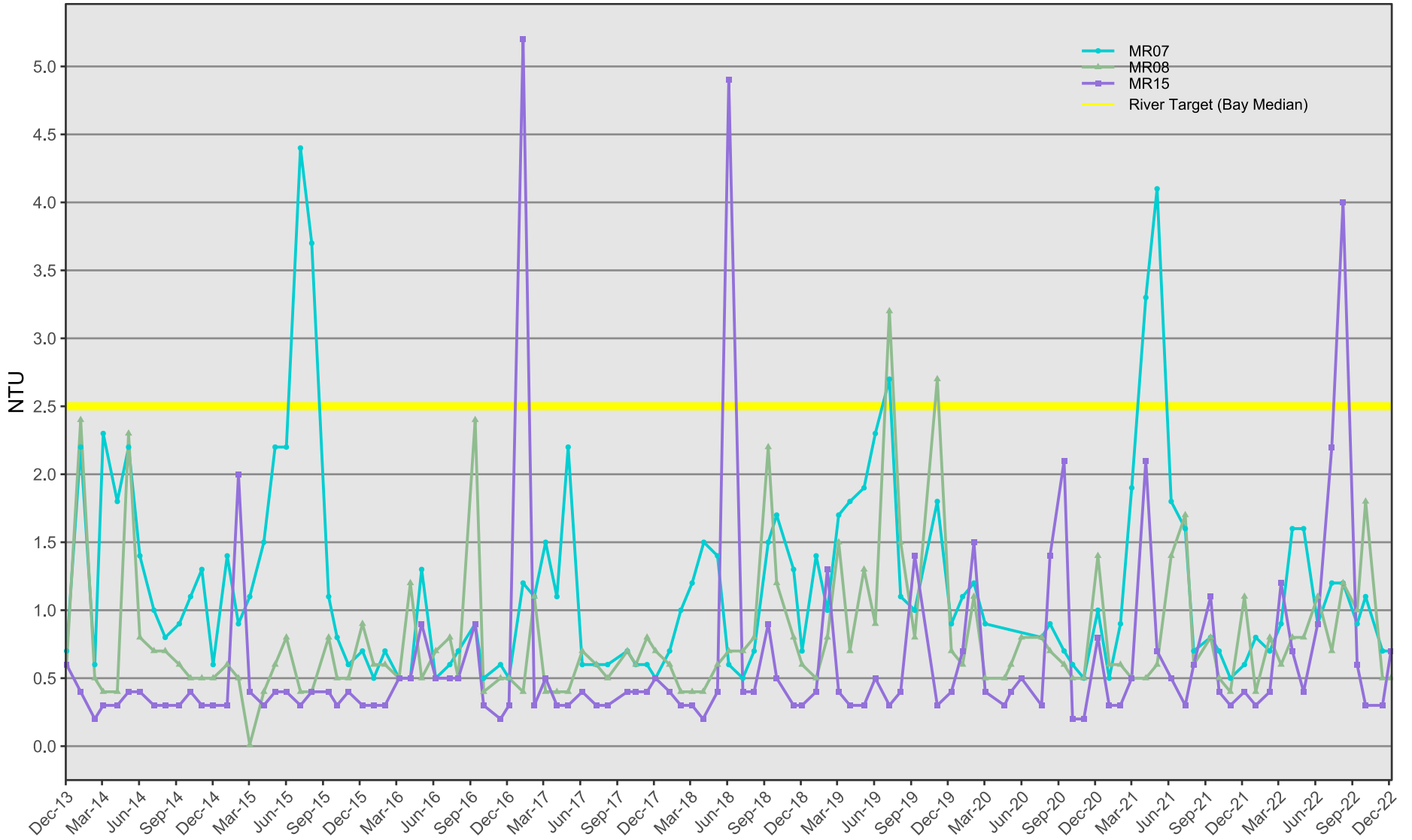


Chart 13

Turbidity Tracking

Ten Year Period: 2013-2023

Wagner Creek

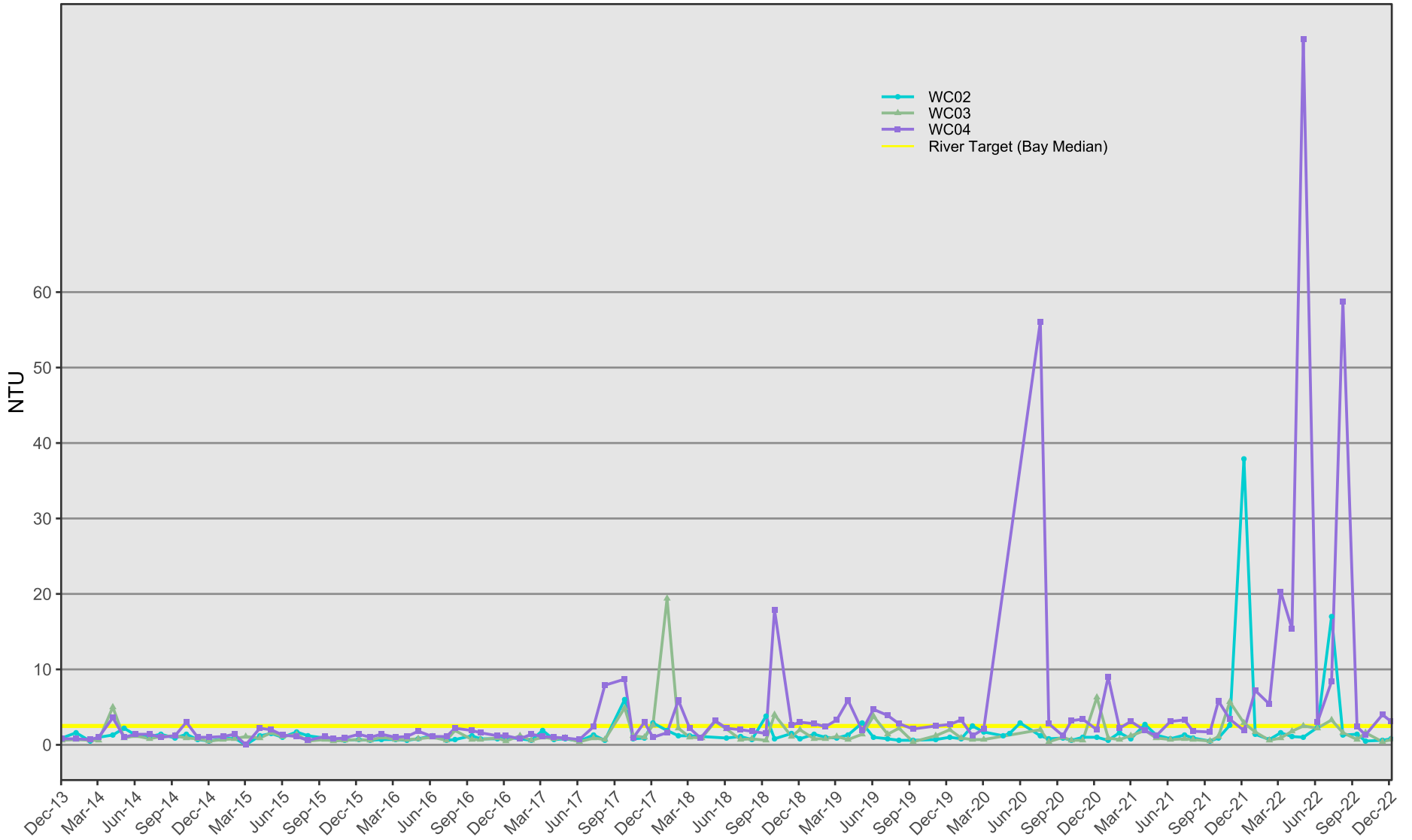


Chart 14