STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

MEETING DATE: July 9, 2025

ITEM: 4

Executive Officer's Report

Executive Officer's Report July 3, 2025

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Wastewater Mercury and Polychlorinated Biphenyls Loads Update (D'Andre Alejandro and James Parrish)

San Francisco Bay is impaired by mercury and polychlorinated biphenyls (PCBs). Mercury and PCBs are toxic and environmentally persistent, and they accumulate in fish, wildlife, and people. Consequently, the Board adopted total maximum daily loads (TMDLs) for mercury in 2006 and PCBs in 2008. These TMDLs included wasteload allocations that define how much mercury and PCBs can discharge to San Francisco Bay from municipal and industrial wastewater facilities. In 2024, mercury and PCBs loads in wastewater discharges continued to be below the TMDL wasteload allocations, which are implemented through a regionwide watershed permit the Board reissued in 2022 through Order R2-2022-0038.

As shown in Figures 1 and 2 below, the municipal and industrial mercury loads in 2024 were both 21 percent of their TMDL wasteload allocations. Both the municipal and industrial loads increased from the previous year. Nonetheless, mercury loadings remain consistent with discharges over the last decade.

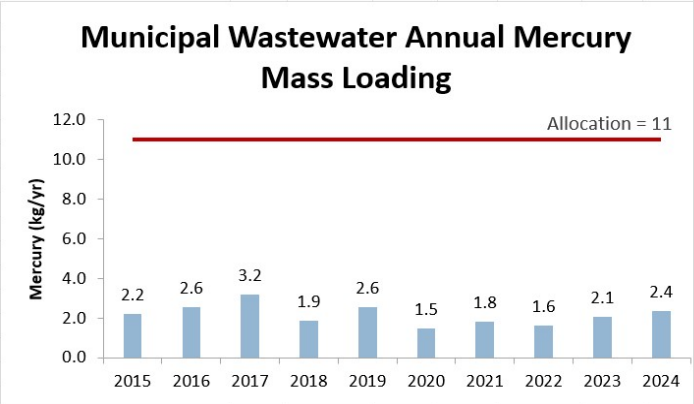

Figure 1: Municipal Mercury Mass Loads

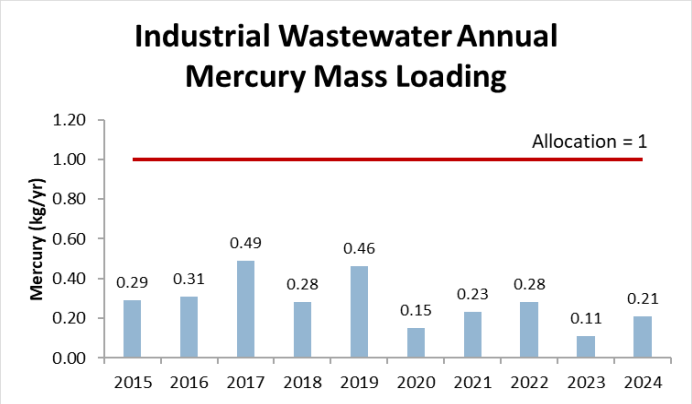

Figure 2: Industrial Mercury Mass Loads

As shown below in Figures 3 and 4 below, the municipal and industrial PCBs loads in 2024 were 18 and 37 percent of the TMDL wasteload allocations. The 2024 municipal discharge load slightly increased from the previous year, whereas the industrial discharge load decreased. PCBs loads remain consistent with both municipal and industrial discharges over the last decade.

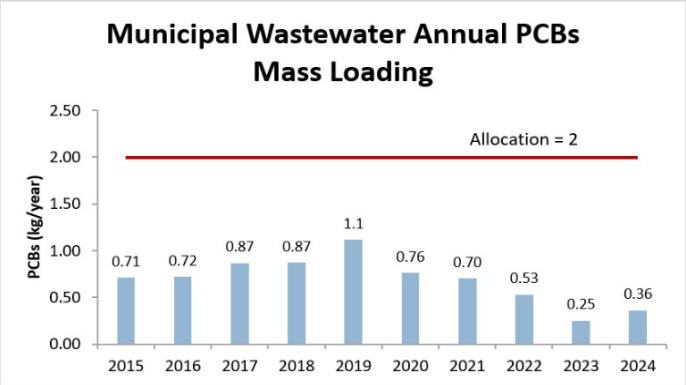

Figure 3: Municipal PCBs Mass Loads

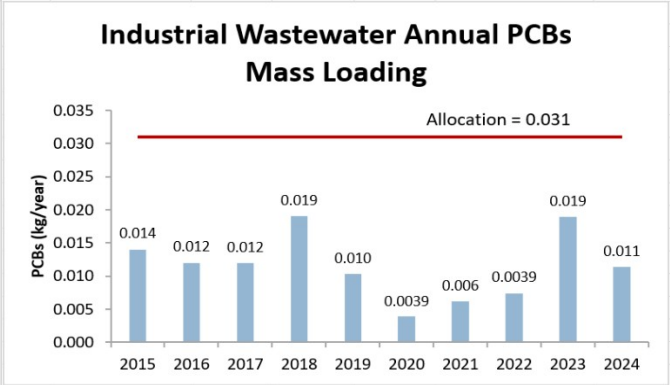

Figure 4: Industrial PCBs Mass Loads

We expect some mercury and PCBs load variation between years because load calculations are based on samples collected at random times throughout the year. Thus, load fluctuations could be due to sample timing and frequency, analytical variability, or weather. For example, wet weather can increase loads by mobilizing solids in municipal sanitary sewer systems or discharging contaminated runoff into industrial treatment ponds, and corresponding analytical results may be skewed based on the sample timing during a storm and sample frequency throughout the year. Industrial facilities' pollutant loads vary depending on the type of activities they are engaged in. Despite the factors that can affect load estimates, municipal and industrial wastewater facilities consistently discharge mercury and PCBs loads below their TMDL wasteload allocations. Municipal facilities generally remove over 90 percent of the mercury and PCBs in their influent and continue to engage in treatment, pretreatment, and pollution prevention efforts to control mercury and PCBs loads to the Bay.

Aquifer Storage and Recovery Pilot Project at the Del Oro Well in the Petaluma Valley Groundwater Basin (Jeff Melby)

In May, we reported on the initial results of an Aquifer Storage and Recovery pilot test in the Sonoma Valley, part of an ongoing effort to evaluate managed aquifer recharge throughout the North Bay. This month, we highlight another similar aquifer storage and recovery pilot test in the Petaluma Valley, which is the third project focused on aquifer storage and recovery for managed aquifer recharge in Sonoma County since 2018. These projects reflect growing regional interest in groundwater banking as a tool for drought resilience and sustainable water management.

The City of Petaluma, working in partnership with the Petaluma Valley Groundwater Sustainability Agency, is preparing to implement this aquifer storage and recovery pilot test at the Del Oro Well, located in the City's Del Oro Park (Figure 1 below). We issued a Notice of Applicability for the City to move forward with the project under State Water Board General Order 2012-0010-DWQ, which regulates aquifer storage and recovery projects that inject treated drinking water into groundwater systems. The goal is to test whether aquifer storage and recovery can enhance local water supply reliability by storing high-quality surface water underground during wet months, for use in the dry period when demand is high.

Figure 1: Location of Pilot Test Well and Injection Water Source at Del Oro Park, Petaluma

The Del Oro Well is ideally positioned for this pilot test. It draws from the Petaluma Formation, a regionally significant aquifer system composed of sand, gravel, and silty-clay deposits. The well is connected to the City's potable water distribution system,

which receives treated Russian River water through the Petaluma Aqueduct. During aquifer storage and recovery operations, this high-quality source water will be injected into the aquifer during winter periods of low demand and high availability.

The injection system at the Del Oro Well has been upgraded for the pilot test. As shown in Figure 2 below, treated water will be piped through the well head integrated with the City's system for collecting real-time data to monitor and control equipment, and introduced into the aquifer at depths of approximately 50 to 100 feet.

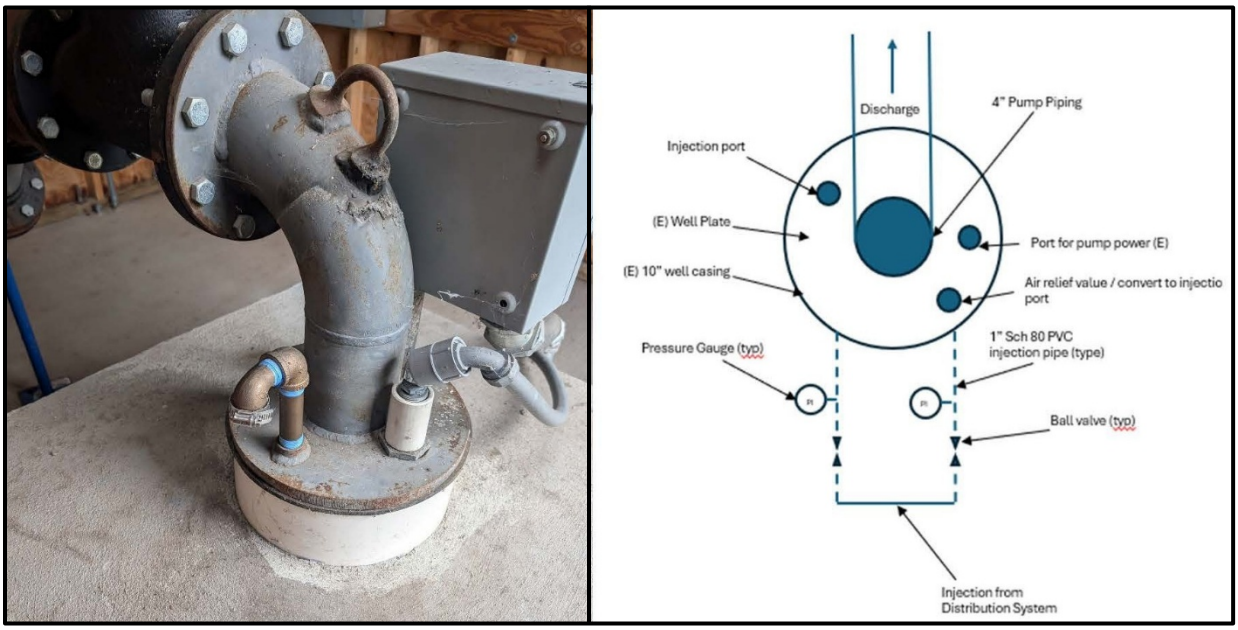

Figure 2: Del Oro Well Head and Injection Piping Design

Aquifer storage and recovery at the Del Oro Well will follow a series of recharge and recovery cycles to assess aquifer response, hydraulic characteristics, and water quality compatibility. During injection periods, potable water will be introduced at rates between 10 to 50 gallons per minute. Recovery will occur through the same well, with a target rate of approximately 100 gallons per minute. Recovered water will be routed to the sanitary sewer system for treatment at the Ellis Creek Water Recycling Facility. The cycle design includes progressively longer storage intervals to evaluate the effects of aquifer residence time on water quality and recovery efficiency.

Beyond evaluating aquifer performance, the pilot test will also assess the potential benefits to groundwater quality. One key consideration is whether injecting high-quality water can help reduce concentrations of naturally-occurring arsenic, which currently exceeds the drinking water standard. Aquifer storage and recovery could dilute arsenic levels or alter geochemical conditions in a way that reduces mobilization of the contaminant. The pilot test will also assess whether aquifer storage and recovery could help protect the aquifer from saltwater intrusion. The Del Oro Well is located near the downstream boundary of the Petaluma Valley Basin where elevated chloride concentrations, an indicator of saltwater intrusion, have recently been observed in some monitoring wells. Injecting high-quality water may create a hydraulic barrier that limits

inland migration of saline water, helping to preserve the integrity of the aquifer system over time.

To support this effort, the City is installing two new monitoring wells: a shallow well adjacent to Adobe Creek to evaluate groundwater surface water interactions, and a deep well co-located with the Del Oro Well to track aquifer response and water quality sampling. The monitoring network also includes two nearby wells for background data comparison.

Pilot testing is expected to begin in summer 2025 and extend through the fall. If the results are promising, the City and Petaluma Groundwater Sustainability Agency will explore the potential expansion of groundwater banking at other municipal wells in the area. Conceptually, expanding to four aquifer storage and recovery wells operating during the winter season could store approximately 65 acre-feet of potable water annually. This would represent a meaningful contribution to regional groundwater storage, enhancing local drought resilience and water supply reliability while also providing operational flexibility during peak demand or surface water supply constraints.

Dye Tracer Studies at Defense Fuel Support Point Ozol, Martinez (Ciroos Liaghat)

Defense Fuel Support Point Ozol (DFSP Ozol) is an inactive U.S. Department of Defense fuel storage and dispensing facility located on the southern shore of the Carquinez Strait in Martinez. The facility operated from the 1920s to 1999, and stored and dispensed various aviation fuels in support of military operations from 1960 to 1999. The discharger is Defense Logistics Agency, Energy – Engineering, Environmental, and Property Division (DLA Energy). The site is generally hilly, with elevations reaching higher than 360 feet.

Defense Fuel Support Point Ozol is divided into two main areas, the Administration Area, located at the base of the hills, and the Tank Farm Area, built into the hills and containing twelve 3.5-million-gallon underground bulk fuel storage tanks. Numerous soil and groundwater investigations have been conducted to evaluate the fuel releases associated with the historical operations and a groundwater extraction system operates to prevent migration of contamination to the Carquinez Strait. However, the hydrogeologic regime beneath the hilly portion of Defense Fuel Support Point Ozol remains only partially characterized due to the complex geology consisting of fill and fractured siltstone bedrock.

Figure 1: Location of Tank Farm Area and Administration Area at Defense Fuel Support Point Ozol, Martinez

Due to the complex geology, DLA Energy has assessed the groundwater contamination migration pathways and travel times by conducting two fluorescence dye tracer studies at the Tank Farm Area. Dye was injected into select monitoring wells, and data were collected over approximately one year using both new and existing wells. In one of the two study areas, the dye was not detected at the performance monitoring well located 108 feet from the injection well. This may be due to the heterogeneity of the fill or the presence of preferential flow paths within the weathered bedrock. However, in the second study area, fluorescence dye was successfully detected at a monitoring well located 83 feet downgradient from the injection point after 310 days. Initially detected at low concentrations, the dye concentration increased over subsequent sampling events. This result translates to a groundwater velocity of 0.280 feet/day (102.3 feet/year) under a natural hydraulic gradient of 0.7557 feet/foot.

The findings regarding porosity and hydraulic conductivity will be used to refine the conceptual site model, support groundwater flow and contaminant transport modeling efforts, and groundwater remediation efforts at Defense Fuel Support Point Ozol.

Staff Update (Eileen White)

Tamami French joins the Water Board as a Water Resource Control Engineer in the Groundwater Protection and Waste Containment Division. She previously worked at Alameda County Environmental Health Department's Local Oversight Program where she served as the lead case worker for Leaking Underground Storage Tank and Cleanup Program cases at various stages of investigation and remediation. She also oversaw the design, construction, operation and maintenance of vapor intrusion mitigation systems for some of her cases.

Tamami holds a master's degree in environmental engineering from UC Berkeley and is an engineer in training, actively pursuing her engineering licensure. Outside of work, she enjoys reading, hiking, and spending time with her family.

Enforcement Actions (Brian Thompson and James Parrish)

The following tables show the proposed and settled enforcement actions since last month's report. As the proposed settlements are pending and could come before the Board, ex-parte communications are not allowed. Please refer to the Pending Enforcement Liabilities and Penalties webpage for more information on the details of the alleged violation and proposed settlement.

Proposed Settlement

The following is noticed for a 30-day public comment period. If no significant comments are received by the deadline, the Executive Officer will sign the order implementing this settlement.

Discharger	Violation(s)	Proposed Penalty	Comment Deadline
City of Richmond and Richmond Municipal Sewer District No. 1	Discharge limit violations	$336,000[1]	July 7, 2025

1 Half of this penalty ($168,000) would fund the Richmond Watershed Rangers Program, which would coordinate and supervise watershed stewardship and trash cleanup projects in the City of Richmond's disadvantaged communities with participation from local schools. Students would perform projects with assistance from their teachers and families with the primary goal of trash removal within neighborhoods, parks, and waterways.

Settled Action

On behalf of the Board, the Executive Officer approved the following settlement:

Discharger	Violation(s)	Imposed Penalty	Supplemental Environmental Project
Allstate Plastics LLC	Failure to comply with Industrial Stormwater General Permit	$155,844	-

401 Water Quality Certification Applications Received (Elizabeth Morrison)

The table below lists those applications received for Clean Water Act section 401 water quality certification from May 15 through June 11, 2025. A check mark in the right-hand column indicates a project with work that may be in the San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction.

Project Name	City/Location	County	May have BCDC Jurisdiction
A Street Permanent Embankment Stabilization Across from Crescent Ave	Castro Valley	Alameda	
Bayleaf Dry Creek Farms Improvement Project	Fremont	Alameda	
Sulfur Creek (Zone 2, Line K)	Hayward	Alameda	
8333 Enterprise Drive Site Development Project	Newark	Alameda	
East Vineyards Storm Drain Outfall Repairs, Cip No. 24676	Pleasanton	Alameda	
Tassajara Sinkhole Repair	Pleasanton	Alameda	
Lake B Long-Term Bank Stabilization Project	Unincorporated	Alameda	
BLPOA Bulkhead Repair/Replace Project	Belvedere	Marin	X
EA-2J510 (culvert on MRN-01 at PM 40.3) State Route 1 Culvert Replacement Project	Marshall	Marin	
Arroyo Corte Madera Creek Repair - 2025	Mill Valley	Marin	
2025 Rosemont Ave Sediment Management Project	Unincorporated	Marin	X
Lucas Valley MP 8.02 Emergency Slide Repair	Unincorporated	Marin	
SMART Timber Bridge Replacements at Basalt Creek (MP 29.31) and San Antonio Slough (MP 31.74)	Unincorporated	Marin	
Ravenswood-San Mateo 230kV Tower 001/011 Replacement Project	Redwood City	San Mateo	X
12kV Power Distribution Replacement Project	Unincorporated	San Mateo	
Schenly Creek Crossing Stabilization project	Unincorporated	San Mateo	
SFO LLWAS #2 Wooden Platform Replacement Project	Unincorporated	San Mateo	X
Calero Dam Geotechnical Exploration Project, Phase II	San Jose	Santa Clara	

Project Name	City/Location	County	May have BCDC Jurisdiction
Pond A4 Resilient Habitat Restoration Project	Unincorporated	Santa Clara	X
Benicia Marina Maintenance Dredging	Benicia	Solano	X
2025 Petaluma Creeks Interim Maintenance Project	Petaluma	Sonoma	
Rodgers Creek Bank Stabilization at Temelec	Temelec	Sonoma	
Marsh Trail Improvements for Watershed and Natural Resource Protection	Unincorporated	Sonoma	
Sonoma Creek Restoration at the Lupine Ridge Road Crossing Project	Unincorporated	Sonoma	