2024 NPDES SELF-MONITORING PROGRAM ANNUAL REPORT

NPDES PERMIT NO. CA0037869

East Bay Dischargers Authority
City of San Leandro
Oro Loma Sanitary District
Castro Valley Sanitary District
City of Hayward
Union Sanitary District

January 28, 2025

Table of Contents

Contents

Section 1: Comprehensive Discussion of Treatment Plant Performance and Compliance 3

Section 2: List of Analyses for Which the Discharger Is Certified 8

Section 3: Plan View Drawing or Map Showing the Discharger's Facility, Flow Routing, Sampling and Observation Station Locations 10

Section 4: Results of Facility Report Reviews 19

Section 5: BACWA Watershed Permitting and Monitoring 24

Section 6: Effluent Characterization Study and Report 25

Section 1: Comprehensive Discussion of Treatment Plant Performance and Compliance

Major milestones and construction projects completed at the EBDA member treatment plants in 2024 included the following:

- Oro Loma/Castro Valley Sanitary Districts (OLSD/CVSan)
    - Installed new 580kW Tesla Megapack to shave peak energy loading from the utility. This is part of a new "micro-grid" battery system that ties all our energy producing equipment into one system. The stored energy will also assist with providing backup power to the treatment process in case of loss of utility connection. This will assist with continued operation of the treatment plant.
    - Continuing to operate a full scale sidestream nitrification process using Microvi's biocatalyst. As constructed, approximately 100,000 gpd of belt press filtrate is treated each day. The sidestream contains approximately 17% of the total influent nitrogen. To date, the process reduces ammonia concentrations by 70%. Staff continues to work to improve the performance with a 90% removal target. The process is designed to reduce ammonia to nitrite or nitrate, which is readily available for denitrification in the mainstream process. Staff is currently working on stress testing the system to test the limits of the technology.
    - Much of the Oro Loma Sanitary District's Capital Program spending has shifted to the collection system. The District is approximately 60% complete with its goal to replace 40 miles of sewer pipe by 2029 at an approximate cost of $60M. The District has completed five of ten planned contracts in 2024, with two currently actively in construction and one out to bid, and expects to award two more in 2025.
    - Oro Loma Sanitary District worked to improve chlorine dosing to EBDA by utilizing the EQ basin to remove peaks and valleys from our influent flow to maintain a chlorine residual setpoint at the disinfection channel.
    - Oro Loma Sanitary District is currently removing 98% ammonia from our influent flow. The District continues to monitor the process and evaluate ways to reduce the total nitrogen in their effluent.
- Union Sanitary District (USD)
    - Enhanced Treatment and Site Upgrade (ETSU) Program phase 1A construction is ongoing. The design for phase 1B is concluding and is expected to be out to bid early in calendar year 2025. Phase 1A will modify the existing aeration basins, add an 8th aeration basin, and relocate existing administrative/operations/maintenance buildings to allow for phase 1B to be built. Phase 1B will construct new secondary clarifiers, return activated sludge pump station (RAS), waste activated sludge pump station (WAS) and new effluent pump station, including new chlorine contact channels.

The completion of the ETSU program will allow USD to be an Early Actor with respect to nutrient removal.

- Construction of a new Standby Generator system is underway and is expected to be completed in 2025. Long lead times for electrical equipment have caused delays in the project's timeline. This project also includes an upgrade to a portion of the facility's electrical distribution system, specifically the replacement of Substation No. 2.
- Replacement of the WAS Gravity Belt Thickeners is in the design phase, aimed at upgrading aging solids process equipment.
- Rehabilitation of Primary Digester No. 6, the plant's second-largest digester, is currently in the design phase.
- The Solids System Evaluation is commencing to review the scopes for currently budgeted CIP projects and to integrate the findings from various recent studies into a cohesive plan for the plant's solids system. The scope will include the development of process optimization strategies, evaluation of alternative technologies, and consideration of future regulatory impacts.

- <u>City of Hayward</u>
  - The work for the Main Switch Board project began in early 2024. The 12KV Switch Gear replacement project was awarded to Carollo in late 2021 and since renamed the Main Switch Board project. While waiting for the long lead items, the contractors have been working on the demolition of old equipment in the building as well as other abandoned electrical equipment around the facility. The project is expected to be completed in early 2026.
  - The nutrient management upgrades and administration building design project was awarded to Brown and Caldwell in August of 2022. Design for the administration building was completed in 2024 and is currently out for bid. The construction project for the administration building will be awarded in the first quarter of 2025. Design for Phase II nutrient upgrades is 60% complete with 90% expected in the first quarter of 2025. Design should be completed by the end of 2025 and will be placed out to bid and awarded in early 2026.
  - BAAQMD issued the permit for the headworks biofilter in 2024, and the Headworks project is now complete.
  - The North Vacuator was removed from service and inspected. It was determined that a major overhaul was needed. The project was put out to bid in the fourth quarter of 2024 and will be awarded in January 2025. Repairs will begin in Spring 2025 and with completion in the Summer of 2025.
- <u>City of San Leandro</u>
  - The City completed a 10-year Capital Improvement Program Plan for the treatment plant and collection system. The Plan delineates projects to extend the longevity of the current assets and recommends replacements

where needed. It also sets a strategy for preparing for additional nutrient reduction.

- The City contracted with HDR Engineering to create a nutrient reduction roadmap based on the specific nutrient load characteristics and treatment plant options. The project commenced in January 2025 and is expected to be completed in Q2 2025. The City expects to start contracting for implementation of the roadmap in late 2025.
- San Leandro City Council approved CEQA for the Treatment Wetland project in May 2024. A soil stabilization pilot test was completed in October 2024, which will inform the requirements for the full-scale project. Earthmoving for the project is expected in late summer 2025, with the remainder of the project scheduled for 2026, to allow time for the placed soil to settle before final grading.
- A microgrid battery system was installed in 2024 but was delayed due to PG&E permitting. Completion of the project is expected in 2025, with commissioning pending PG&E agreement. Digester and aeration improvements are expected to complete by late 2025.

EBDA's major projects in 2024 included the following:

- EBDA continues to implement its Asset Management Plan to ensure appropriate renewal and replacement of infrastructure. The estimated total restoration cost over 20 years is approximately $11.3 million. This includes $420,000 annually through 2030 (for a total of $4.2 million) that EBDA is contributing for capital improvements to the Union Effluent Pump station, per EBDA's Amended and Restated Joint Powers Agreement.
- EBDA advanced the Hayward Effluent Pump Station (HEPS) Pump Replacement project. This project to replace all four pumps and motors was awarded in January 2023, and pumps were delivered in December 2023, with installation beginning in early 2024. Two out of the four pumps have now been installed. Once the pump manufacturer clears the first two new pumps, we will start installation of the third new pump, with a target project completion date of October 2025.
- In August 2025, EBDA completed installation of a new actuator on the City of Hayward's Pond 3 valve. The new actuator has a feedback loop and SCADA interface, allowing for automated diversion of high flows to Pond 3. During wet weather storm events, having better information on SCADA greatly improves EBDA operations. The ability to automatically divert flow to Pond 3 saves EBDA the cost of pumping the flow to Pond 7, which requires using the HEPS pumps, and saves the City the cost of adding sodium hypochlorite to the diverted flow.
- EBDA has commenced the design of two new automatic transfer switches (ATSs) at the Oro Loma Effluent Pump Station (OLEPS). The two new ATSs will improve reliability of the pump station in the event of a power outage. If the PG&E power fails, the OLEPS emergency generator is the primary source of backup power.

Currently, if the emergency generator fails to start, operators can manually switch to the secondary source of backup power from OLSD. The installation of two new ATSs will allow the switch from primary to secondary backup to occur automatically. This ATS work is being completed as part of Phase Two of the OLEPS Electrical Upgrades. Replacement of the breakers and refurbishment of the Main Switchboard was completed in Phase One of the OLEPS Electrical Upgrades last year.

- In June 2024, EBDA replaced the main breaker at the Marina Dechlorination Facility (MDF). This was the first phase of the MDF Electrical Upgrade Project. The next phase includes replacement of the ATS electronic controls.
- Following the Water Board's adoption of the blanket permit amendment for total residual chlorine (TRC), EBDA turned off its continuous feed of sodium bisulfite (SBS) on January 2, 2024. EBDA implemented a new Chlorine Process Control Plan and programming at MDF to ensure that effluent consistently meets the new TRC limit of 0.98 mg/L as a one-hour average. The SBS savings at MDF have already been substantial. The following table shows SBS usage before and after the new TRC effluent limit implementation:

Year	SBS Gallons Used	SBS Expenditure
2023	163,208	$293,988
2024	12,230	$22,793

- EBDA continued its key role in the Transforming Shorelines Project. This project, funded by an EPA Water Quality Improvement Fund grant, includes design of a full-scale horizontal levee south of Oro Loma ("First Mile" project), continued research at Oro Loma's horizontal levee pilot, advancement of pilot wetlands projects at San Leandro and Hayward, and building capacity for nature-based solutions among Bay Area wastewater agencies. In close coordination with East Bay Regional Park District, Hayward Area Shoreline Planning Agency, and San Francisco Estuary Partnership, EBDA has been managing the First Mile project. In 2024, the First Mile team conducted a design charette with stakeholders, completed 30% design drawings and Basis of Design Report, and conducted several rounds of consultation with the Bay Restoration Regulatory Integration Team (BRRIT). The team was also successful in securing additional WQIF funding for the Pivot Points Project, which will fund final design and permitting of the First Mile. The new funding agreement was signed in November 2024, and the next phase of work under the new grant is kicking off in early 2025.
- EBDA has been working closely with Cargill, Inc. to develop a project that would deliver mixed sea salt brine from Cargill's solar salt ponds in Newark to EBDA's transport system for dilution and discharge. In 2023, EBDA's Commission approved an Environmental Impact Report (EIR) for the project, which is available here: https://ebda.org/projects/cargill-partnership/. Following EIR approval, Cargill made the decision to further evaluate an alternate pipeline route that goes along paths near the Bay instead of through City streets that are already congested with utilities. In 2024, Cargill confirmed the feasibility of connecting to EBDA's system

downstream of MDF to avoid corrosion impacts. EBDA expects to resume CEQA analysis in 2025, and Cargill projects construction beginning sometime between 2027 and 2029 depending on permitting, with operation commencing between 2031 and 2033.

- EBDA's Member Agencies recycled 859 million gallons in 2024, a 15% decrease from 2023. For consistency with recycled water totals submitted through GeoTracker, the totals presented below include in-plant reuse.

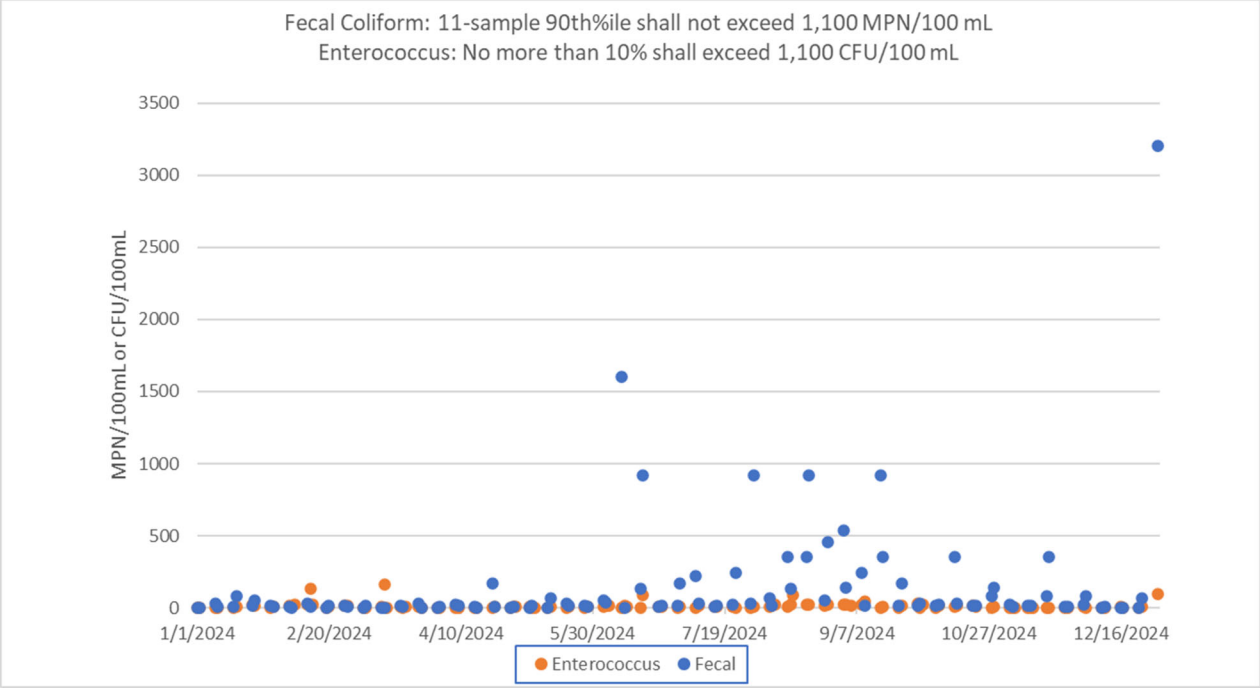
  As shown in the following table, including the LAVWMA agencies, water recycling accounted for nearly 3 billion gallons, about 12% of EBDA's outfall discharge last year of approximately 24.3 billion gallons. Overall, this slightly lower than last year's totals and ratio.

Agency	*2024 Recycled Water Production (MG)*
Hayward	440
San Leandro	30
EBDA Skywest Project	9
Oro Loma Sanitary District	18
Union Sanitary District	362
EBDA Total	**859**
Livermore	485
Dublin San Ramon Services District (DSRSD)	1569
LAVWMA Total	**2054**
Grand Total	**2913**

Bacterial Compliance

The chart that follows presents pathogen data from samples through the year. Note that permit limits are calculated as monthly geometric means or monthly 90%ile samples. Sporadically, at random intervals, a high sample can be detected. This outcome is probably due to the sloughing of pipe biofilms into the sample line. These non-representative events are why permit compliance is determined by geometric means. EBDA and its member agencies worked hard over the past few years to improve chlorine dosing to prevent periodic increases in bacterial contamination, which had occurred in prior years. This increased attention to chlorine dosing has led to consistent compliance with limits. That said, EBDA spends a considerable amount on chlorine to ensure that occasional high fecal coliform values do not compromise compliance, and therefore, we look forward to the removal of fecal coliform limits from our permit, consistent with Basin Plan revisions that were made subsequent to permit adoption.

Figure 1 – EBDA Bacterial Contaminant Performance



Section 2: List of Analyses for Which the Discharger Is Certified

EBDA conducts no analyses of its own. Each member agency is certified by the State Water Resources Control Board for standard water quality tests such as BOD, TSS, pH, DO, enterococcus, and fecal coliform. City of San Leandro staff performs these analyses on the combined effluent. Beginning in 2024, Oro Loma Sanitary District allowed their ELAP certification to lapse, and all compliance samples were analyzed by certified contract laboratories.

All metals and organics analyses are performed by the Authority's contract laboratory, Caltest Analytical Laboratory. Caltest's lab is certified for these analyses. Caltest subcontracts for analytical work on some items, including dioxin and furan compounds and PCBs, to other certified labs.

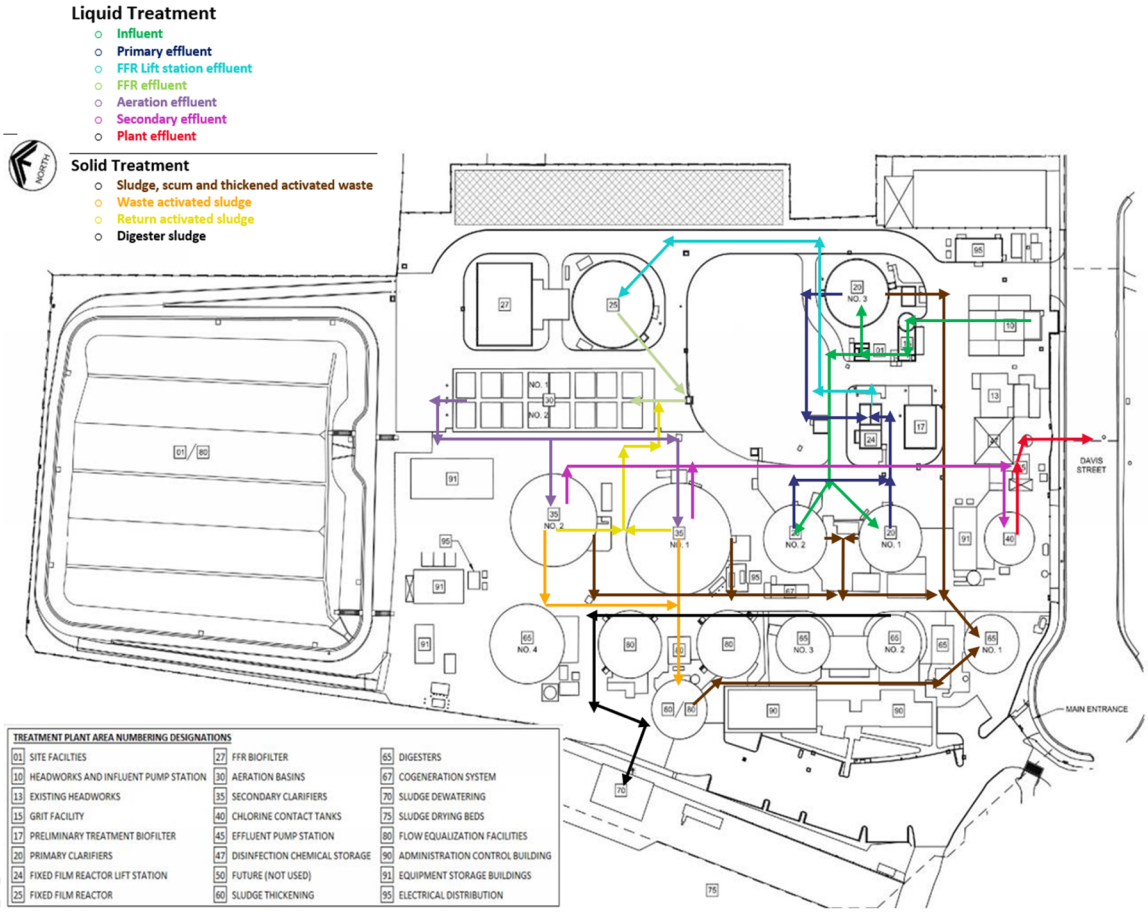
Pacific Eco-Risk (PER), also a certified laboratory, conducts the required acute and chronic toxicity testing for the Authority.

Copies of all laboratory reports are maintained on file at the Authority's office and are available for review upon request. Said reports are not included in this report.

Section 3: Plan View Drawing or Map Showing the Discharger's Facility, Flow Routing, Sampling and Observation Station Locations

Marina Dechlorination Facility

San Leandro Plant – Process Flow Diagram



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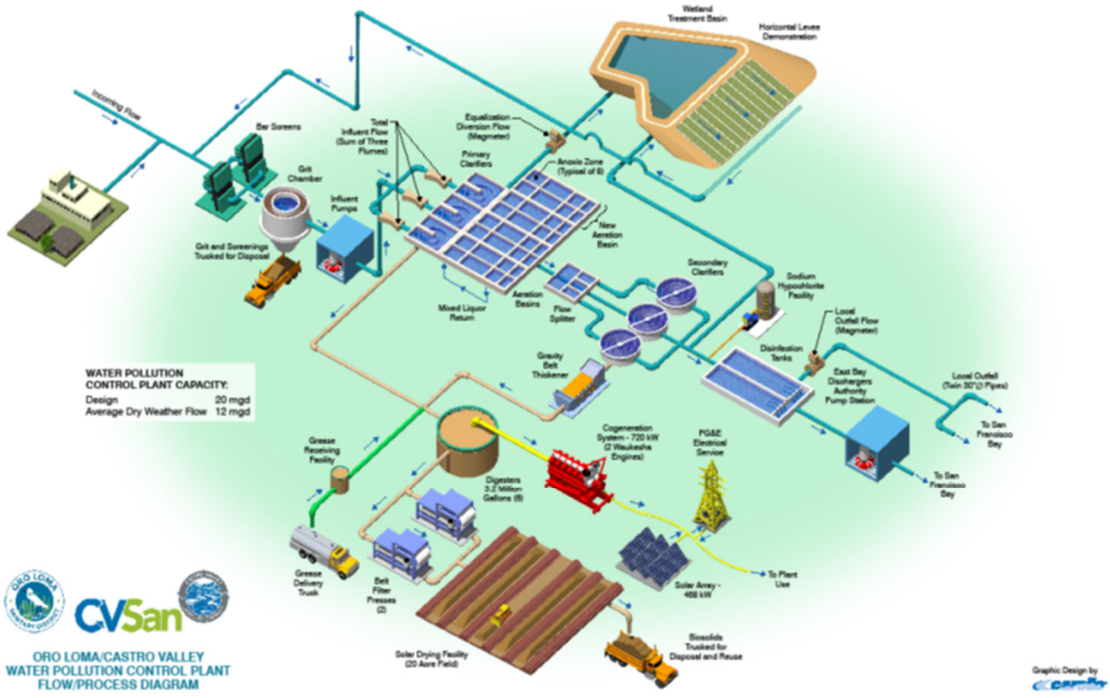
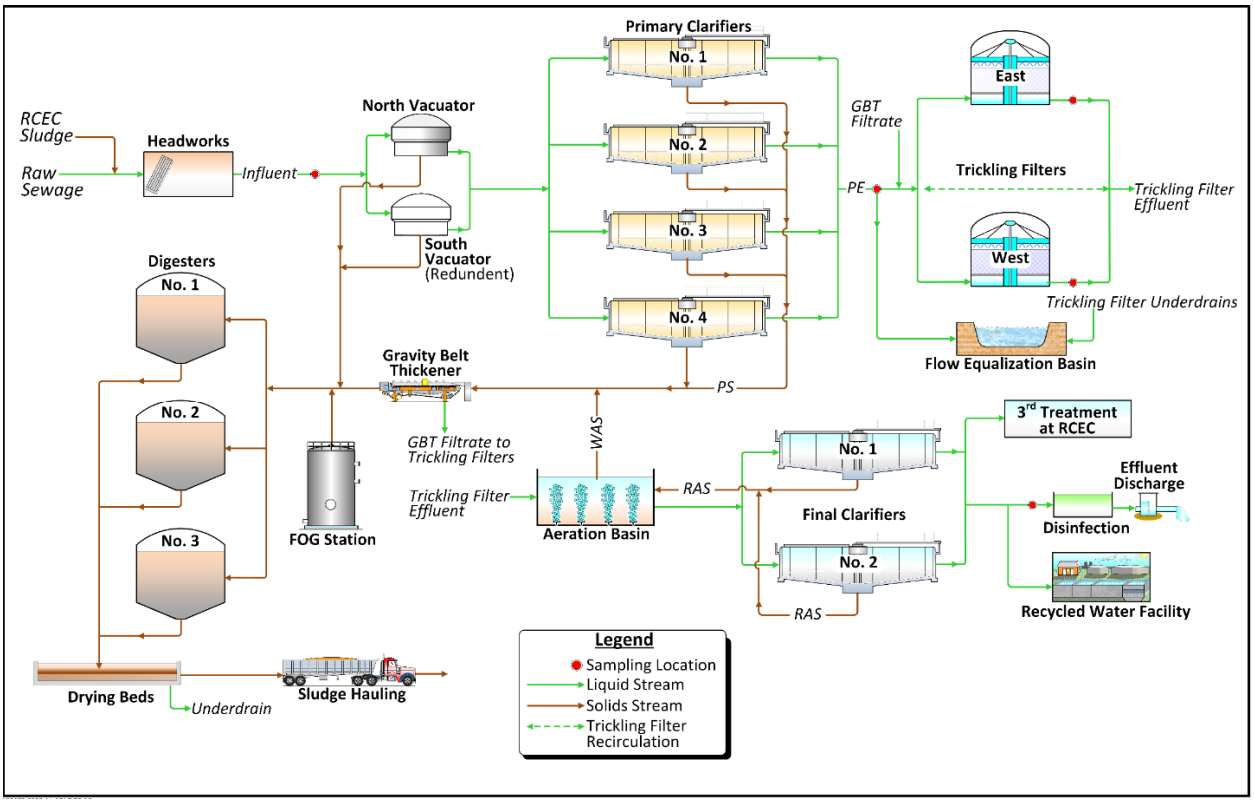
San Leandro Plant – Sampling Locations

OLSD/CVSan Plant – Process Flow Diagram



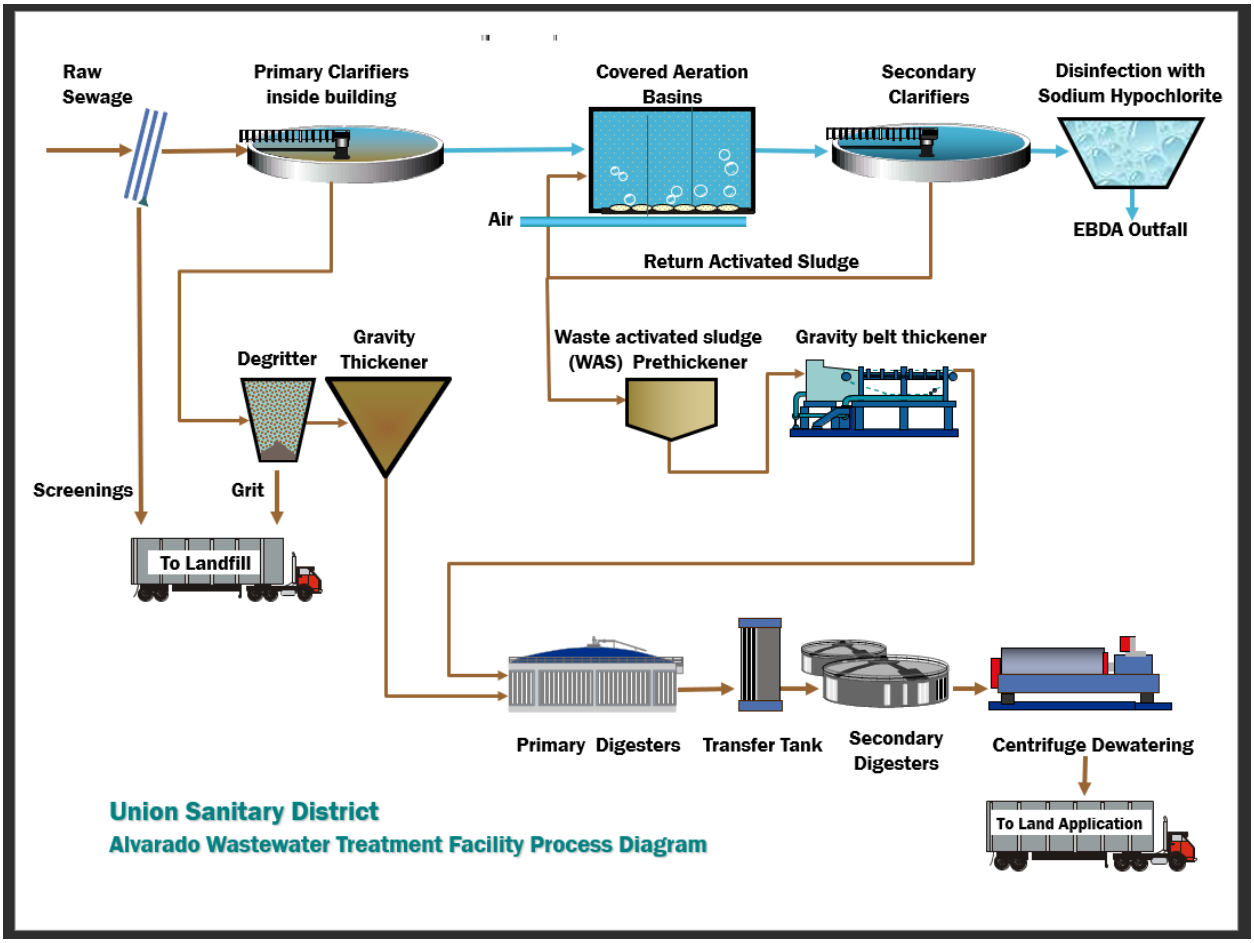
OLSD/CVSan Plant – Sampling Locations

Hayward Plant – Process Flow Diagram



Hayward Plant – Sampling Locations

USD Plant – Process Flow Diagram



USD Plant – Sampling Locations

Section 4: Results of Facility Report Reviews

The tables in this section summarize the status of reviewing and updating the following documents: Operations & Maintenance (O&M) Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report.

EBDA Facilities

Document	Review Date	Review Procedures	Planned Actions	Schedule
O&M Manual	Jan 2025	Updated on an as-needed basis and reviewed annually by the EBDA O&M Manager. .	The Authority maintains a comprehensive O&M Manual for the joint-use facilities. Chapters of the Manual are regularly reviewed and updated. EBDA's Wet Weather SOP is reviewed annually and updated as needed. In January 2024, the O&M Manual was updated to incorporate a revised Chlorine Process Control Plan for the Marina Dechlorination Facility, consistent with Order No. R2-2023-0023. The Plan describes the process for ensuring that residual chlorine is zero at EBDA's discharge to the Bay, which occurs at the diffusers 37,000 feet offshore 23.5 feet under the water surface.	Performed annually
Contingency Plan	Jan 2025	Updated annually by EBDA O&M and Administration Managers. EBDA is included in the Alameda County's Office of Emergency Service's Utility Unit.	The Emergency Operating Contingency Plan is supported by Operations & Maintenance Agreements between Member Agencies, which are compatible with their existing plans and known to all other local and county agencies for emergency purposes. Operation and maintenance activities are contracted with the Member Agencies for routine work. Emergency work is performed sometimes by Member Agencies and sometimes through contracts with private specialty firms.	Performed annually
Spill Prevention Plan	The SPCC Plan was updated in April of 2024.	Reviewed annually by EBDA O&M Manager	No major changes planned for 2025.	Performed as needed
Wastewater Facilities Status Report	Jan 2025	EBDA continues to implement a comprehensive Renewal and Replacement Program. The Authority has an Asset Management Plan that covers all critical equipment.	In 2024, EBDA completed the following projects: • UEPS payment #4 of 10 for a total of $4.2 M • MDF Main Breaker Replacement • Hayward Pond 3 Valve Actuator Replacement In 2025, the Authority is continuing work on the following upgrades to the EBDA system: • HEPS Pump Replacement Project • OLEPS ATS Replacement	Anticipated Completion: HEPS Pump Replacements, October 2025 OLEPS ATS Replacement, June 2026

San Leandro Treatment Plant

Document	Review Date	Review Procedures	Planned Actions	Schedule
O&M Manual	Sections assigned and updated throughout the year	O&M manuals and SOPs are written and revised as necessary by designated Plant Operators and reviewed by the Operations Supervisor and Plant Manager	Review O&M chapters and SOPs as needed. Continue developing and revising SOPs for plant processes. Additional chapters have been added to the Online O&M Manual and SOPs have been organized for easy access in SharePoint	Performed continuously
Contingency Plan	January 2024	WPCP management reviews, edits and approves	Current contingency plan updated as needed with changes. A significant revision is planned for 2024 with more detailed plans for specific scenarios.	Performed annually
Spill Prevention Plan	November 2023	WPCP management reviews, edits and approves	Currently up to date. No major changes planned for 2025	Performed as needed
Wastewater Facilities Status Report	January 2024		Capital Improvement Project Plan completed in October 2024. Urgent projects identified in the plan are currently in design. Annual Street Overlay and Sewer Point Repair Project is in design. Construction will be completed for microgrid battery backup system and other energy efficiency improvements, pending review by PG&E. Treatment Wetland Pilot Mixing Project successfully completed in 2024. Earthmoving is scheduled for 2025 with piping and installation scheduled for 2026. This project will treat approximately 20% of the ADWF to remove nitrogen and other contaminants through both technological and nature-based processes.	Maintenance and project schedule for 2024

Oro Loma/Castro Valley Sanitary District Treatment Plant

Document	Review Date	Review Procedures	Planned Actions	Schedule
O&M Manual	Ongoing	Continual reviews and revisions as necessary when new processes come online or when modifications are made to current processes.	The District has completed developing a computer based training program for the 25 unit processes in the treatment plant (including the EBDA OLEPS pump station). Staff will continue to train on the modules.	Ongoing
Contingency Plan	November 2024	Management team completed its review and updated document to reflect changes in contact information or equipment/facility changes.	Continue to make updates as needed, at least annually.	Annually
Spill Prevention Plan	April 2024	The District performed a significant update to its plan in 2022 to reflect administrative audit findings from CUPA. It was updated again in 2024 to reflect updated staff members.	Currently up to date and will update as necessary.	As needed
Wastewater Facilities Status Report	January 2024		The District continues to execute its planned 10-year, $168M capital program. The program includes extensive sewer pipe renewal (1.5% of system/year; the District is working to replace 40 miles (15%) of its 271-mile collection system by 2029), Digester Design and Cothickening improvements are underway and will likely be in construction in 2025, and Cogeneration System Replacement in 2030. By the end of 2024, the District had completed 60% of the construction to replace 40 miles of the collection system and began the design for the Digester Rehabilitation Project.	10-Year Capital Plan (Updated December 2024)

Hayward Water Pollution Control Facility

Document	Review Date	Review Procedures	Planned Actions	Schedule
O&M Manual	Ongoing	COH WPCF electronic O&M manuals, including SOP's, are reviewed and updated throughout the year by staff. Revisions are made to Sections and SOP's	Create new SOPs as required and review and update older SOPs throughout the year. Continually review and update O&M sections. Brown and Caldwell will be looking into a fully revised O&M as part of the nutrient management project.	SOP's and O&M sections are reviewed continuously
Contingency Plan	January 2025	The entire plan is reviewed by the WPCF manager with updates and edits made by the Senior Secretary.	Continue to make updates as needed.	Performed annually
Spill Prevention Plan	January 2025	Plan reviewed by WPCF Manager every January. Changes made by Senior Secretary.	Make updates as needed.	Performed annually
Wastewater Facilities Status Report	January 2025	The phase II Facilities Plan was completed in 2020. The city will implement projects as recommended in the 2020 Phase II Facilities Plan.	Complete Capital Improvement Projects according to the 10-year Master Plan CIP. Planned for 2025: • The replacement of the effluent pumps will be completed in 2025. • Construction of the new MSB replacement project will continue. • The admin building project design will go out to bid Q1 and construction will begin in late 2025. • The EQ basin project has been added to the Nutrient Upgrade project. • The phase II nutrient upgrade design will continue in 2025.	10-year Master Plan CIP planning changes are made every year in July with mid-year adjustments made in January/February

Union Sanitary District Treatment Plant

Document	Review Date	Review Procedures	Planned Actions	Schedule
O&M Manual	Ongoing	Plant O&M documents are incorporated into the District's Competency-Based Training Program. USD utilizes Microsoft Sharepoint software to track document review.	Plant management reviews training documents and SOP's as changes occur (i.e., following construction) or as scheduled.	Each individual training module and SOP has a review frequency of 3 years.
Contingency Plan	December 2024	Plant Manager reviews and updates the Contingency Plan annually.	None. Contingency Plan was updated in December 2024.	Complete next review by December 2025.
Spill Prevention Plan	December 2024	Spill Prevention Plan is incorporated into our Contingency Plan and is reviewed at the same time.	None. Spill Prevention Plan was reviewed in December 2024.	Complete next review by December 2025.
Wastewater Facilities Status Report	December 2024	USD's Master Plans address most of the Facilities Evaluation requirements. Our Plant Master Plan is updated every 5 years and Pump Station and Collection System Master Plans are updated as needed. Asset management data is updated on an ongoing basis. CIP and Operating plans and budgets are reviewed and revised annually. **2024 Projects Completed/in-progress:** • Standby Power Upgrade (Construction in progress) • Plant Miscellaneous Improvements (Construction in progress) • Alvarado Influent Valve Box Improvements (Construction in progress) **ETSU: Phase 1A:** • Aeration Basin Modification (Construction in progress) • Campus relocation (Construction in progress)	Complete capital improvements in accordance with 20-year CIP plan. Implement annual rate adjustments for Sewer Service Charges and Capacity Fees in accordance with 10-year financial plan. **2025 Projects Planned:** • WAS Gravity Belt Thickener (In Design) • Anaerobic Digester #6 Rehab (Construction to begin) • Electrical Switchboard and MCC Replacements (In Design) • Gravity Thickener 1&2 Rehab (In Design) **ETSU: Phase 1B:** • New Secondary Clarifiers (Construction to begin) • New Effluent Pump Station (Construction to begin) • New RAS/WAS Pump Station (Construction to begin)	20-year CIP annual update in June. **Master Plans:** • Alvarado Basin MP 2023-25 • Newark Basin MP 2025-27 • Irvington Basin 2027-29 • Pump Station Asset Condition Assessment 2028-31 • Plant Asset Condition Assessment 2025-27 • Plant Solids System/Capacity Assessment 2032-34 • Solids System Evaluation 2025-26

Section 5: BACWA Watershed Permitting and Monitoring

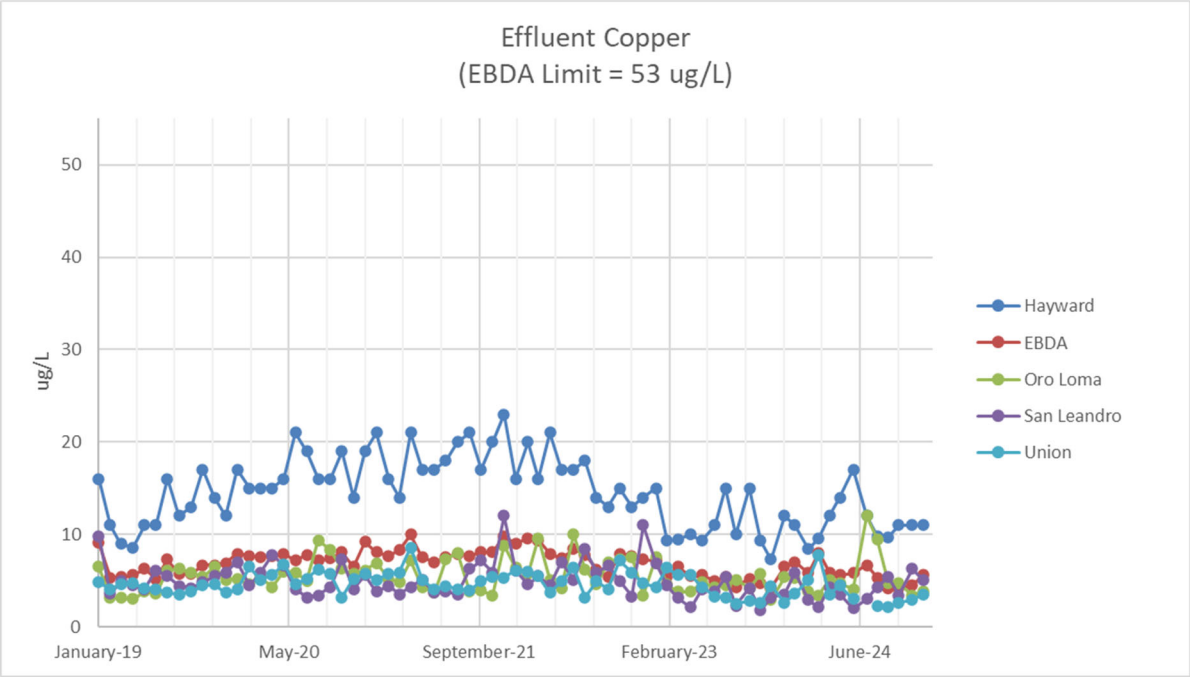
EBDA participates in a number of group processes coordinated by the Bay Area Clean Water Agencies (BACWA) to fulfill permit requirements, including Receiving Water Quality Monitoring, TMDL/SSO Support, Mercury and PCBs Watershed Permit Support, Nutrients Watershed Permit Support, and Implementation of Copper Action. Participation in these items is described in an annual BACWA letter to the Regional Water Board found here:
https://bacwa.org/document/bacwa-npdes-permit-letter-for-calendar-year-2024/

Section 6: Effluent Characterization Study and Report

EBDA regularly monitors and evaluates discharges from the common outfall and each contributing plant's effluent to identify any concerning trends. No significant increases over past performance were noted in 2024 data.

EBDA's five-year trend for copper shows that while individual member agency effluent concentrations have varied, EBDA's common outfall concentration consistently averaged less than 20 ppb, versus a permit limit of 53 ppb (see Figure 3).

Figure 3 – Effluent Copper Trend



EBDA's effluent mercury concentrations also continue to be well below permit limits, as shown in Figure 4.

Figure 4 – Effluent Mercury Trend