



**ITEM NO. 12**

**REGULATORY AFFAIRS COMMITTEE AGENDA**

**Tuesday, February 18, 2025**

**9:00 A.M.**

**East Bay Dischargers Authority  
2651 Grant Avenue, San Lorenzo, CA 94580**

**Committee Members: Johnson (Chair); Young**

- RA1. Call to Order**
- RA2. Roll Call**
- RA3. Public Forum**
- RA4. EBDA NPDES Compliance – See Item No. OM4**  
(The Committee will review NPDES Permit compliance data.)
- RA5. Regulatory Reporting Checklist**  
(The Committee will review a checklist of completed regulatory reporting items.)
- RA6. NPDES Annual Report**  
(The Committee will review the Authority’s Annual Report submittal.)
- RA7. PFAS Updates**  
(The Committee will receive updates on regulations and legislation related to PFAS.)
- RA8. Motion Authorizing the General Manager to Execute a Professional Services Agreement with H.T. Harvey and Associates for a Biosolids Suitability Assessment in the Amount of \$40,275**  
(The Committee will consider the motion.)
- RA9. Adjournment**

Any member of the public may address the Committee at the commencement of the meeting on any matter within the jurisdiction of the Committee. This should not relate to any item on the agenda. Each person addressing the Committee should limit their presentation to three minutes. Non-English speakers using a translator will have a time limit of six minutes. Any member of the public desiring to provide comments to the Committee on any agenda item should do so at the time the item is considered. Oral comments should be limited to three minutes per individual or ten minutes for an organization. Speaker's cards will be available and are to be completed prior to speaking.

Agenda Explanation  
East Bay Dischargers Authority  
Regulatory Affairs Committee  
February 18, 2025

In compliance with the Americans with Disabilities Act of 1990, if you need special assistance to participate in an Authority meeting, or you need a copy of the agenda, or the agenda packet, in an appropriate alternative format, please contact the Administration Manager at (510) 278-5910 or [juanita@ebda.org](mailto:juanita@ebda.org). Notification of at least 48 hours prior to the meeting or time when services are needed will assist the Authority staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting or service.

In compliance with SB 343, related writings of open session items are available for public inspection at East Bay Dischargers Authority, 2651 Grant Avenue, San Lorenzo, CA 94580. For your convenience, agenda items are also posted on the East Bay Dischargers Authority website located at <http://www.ebda.org>.

<p><b>Next Scheduled Regulatory Affairs Committee Meeting</b> <b>Tuesday, April 15, 2025 at 9:00 a.m.</b></p>
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**ITEM NO. RA5 QUARTERLY REPORTING CHECKLIST**

**Recommendation**

For the Committee’s information only; no action is required.

**Strategic Plan Linkage**

1. **Regulatory Compliance:** Proactively meet or exceed regulatory requirements for protection of the environment and public health.

**Background**

Authority staff maintains a checklist of all regulatory reporting and related tasks to ensure timely and complete reporting.

**Discussion**

The following checklist is extracted from a complete list of routine regulatory activities addressed throughout the year. The following items were completed during the period of December 1, 2024 – January 30, 2025; there are no outstanding activities.

<i>Authority</i>	<i>Required Action</i>	<i>Occurrence</i>	<i>Date Completed</i>
ADP Business Payroll	Payroll Tax Return Download Quarter 3	Quarterly	1/7/2025
ADP Business Payroll	Print W-2 copies for EBDA payroll file (EE W-2 forms will be delivered)	Annual	1/26/2025
Alameda County	Financial Statements Submittal	Annual	12/4/2024
AICo Environmental Health	OLEPS CUPA HMBP & Inventory Reporting (CERS ID 10188879)	Annual	1/26/2025
Alliant Insurance Services, Inc	Pollution Liability Insurance Program Renewal	Annual	12/26/2024
Bureau of Labor Statistics	Report monthly employment figures, include Commissioners and Staff	Monthly	1/13/2025
Ca Sanitation Risk Mgmt Authority	Pooled Liability Insurance Program - EPL Incentive Application	Annual	12/12/2024
City of San Leandro	MDF CUPA HMBP & Inventory Reporting (CERS)	Annual	1/26/2025
County of Alameda, Clerk/Recorder	Statement of Facts/Roster of Public Agencies Filing (Post-election changes to Commission)	Annual	1/3/2025
Department of Industrial Relations	Form 300A Posting	Annual	1/14/2025
Division of Occupational Safety & Health	OLEPS Crane Inspection/Certification	Annual	1/21/2025
East Bay Dischargers Authority	Review the Emergency Response Plan and Contingency Plan	Annual	1/13/2025
East Bay Dischargers Authority	Review the OLSD SPCC Plan	Annual	1/30/2025
Internal Revenue Service	Distribute W-2 forms to employees	Annual	1/15/2025
Internal Revenue Service	Distribute <i>Form 1099 (NEC or MISC)</i> to vendors/contractors	Annual	1/28/2025
Regional Water Quality Control Board	Recycled Water monthly reports	Monthly	1/30/2025
Secretary of State	Statement of Facts/Roster of Public Agencies Filing (Post-election changes to Commission)	Annual	1/3/2025
State Compensation Insurance Fund	Payroll Report, Semi-Annual Jul 01 - Jan 01	Semi-Annual	1/10/2025
State Controller's Office	Financial Statements Submittal	Annual	12/4/2024
State Controller's Office	Special Districts Financial Transactions Report (FTR)	Annual	1/24/2025
State Water Resources Control Board	Annual Waste Discharge Permit Fee	Annual	12/16/2024
State Water Resources Control Board	NPDES Annual Report	Annual	1/28/2025
State Water Resources Control Board	NPDES Quarterly Report (Oct-Dec)	Quarterly	1/28/2025
State Water Resources Control Board	NPDES monthly reports	Monthly	1/29/2025
Various	Financial Statements Submittal	Annual	12/4/2024
Various	EE Training (See: Log EE_Training)	Monthly	12/12/2024

**ITEM NO. RA6 NPDES ANNUAL REPORT**

**Recommendation**

For the Committee's information only; no action is required.

**Strategic Plan Linkage**

1. **Regulatory Compliance:** Proactively meet or exceed regulatory requirements for protection of the environment and public health.
  - b. Maintain consistent compliance with EBDA's National Pollutant Discharge Elimination System (NPDES) Permit.

**Background**

Each year at the end of January, EBDA is required by its NPDES permit to submit an annual report. The report provides a compendium of the status of EBDA's facilities, major projects undertaken by the Member Agencies, and discharge quality.

**Discussion**

EBDA's Annual Self-Monitoring Report is attached for the Commission's information.

# 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



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## 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.
- City of Hayward
  - 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.
- City of San Leandro
  - 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:

<b>Year</b>	<b>SBS Gallons Used</b>	<b>SBS Expenditure</b>
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.

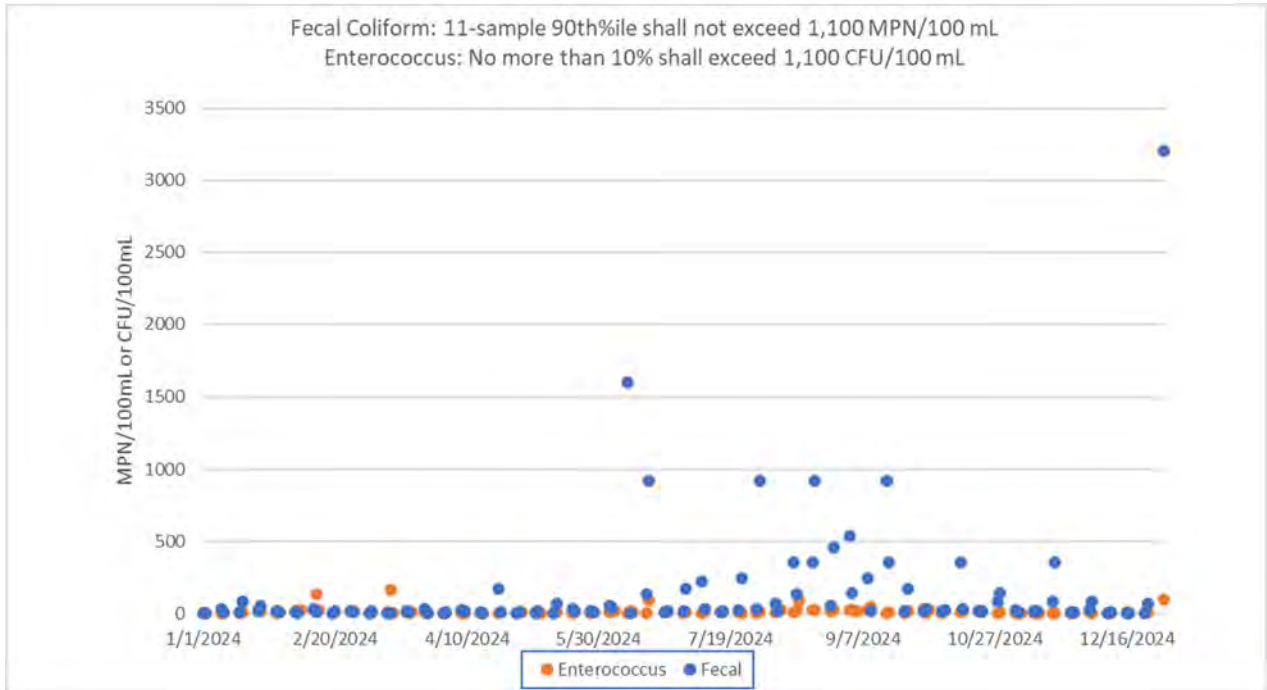
As shown in the following table, including the LAVWMA agencies, water recycling accounted for nearly 3 billion gallons, about 12% of EBDA's outfall discharge last year of approximately 24.3 billion gallons. Overall, this slightly lower than last year's totals and ratio.

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

*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.

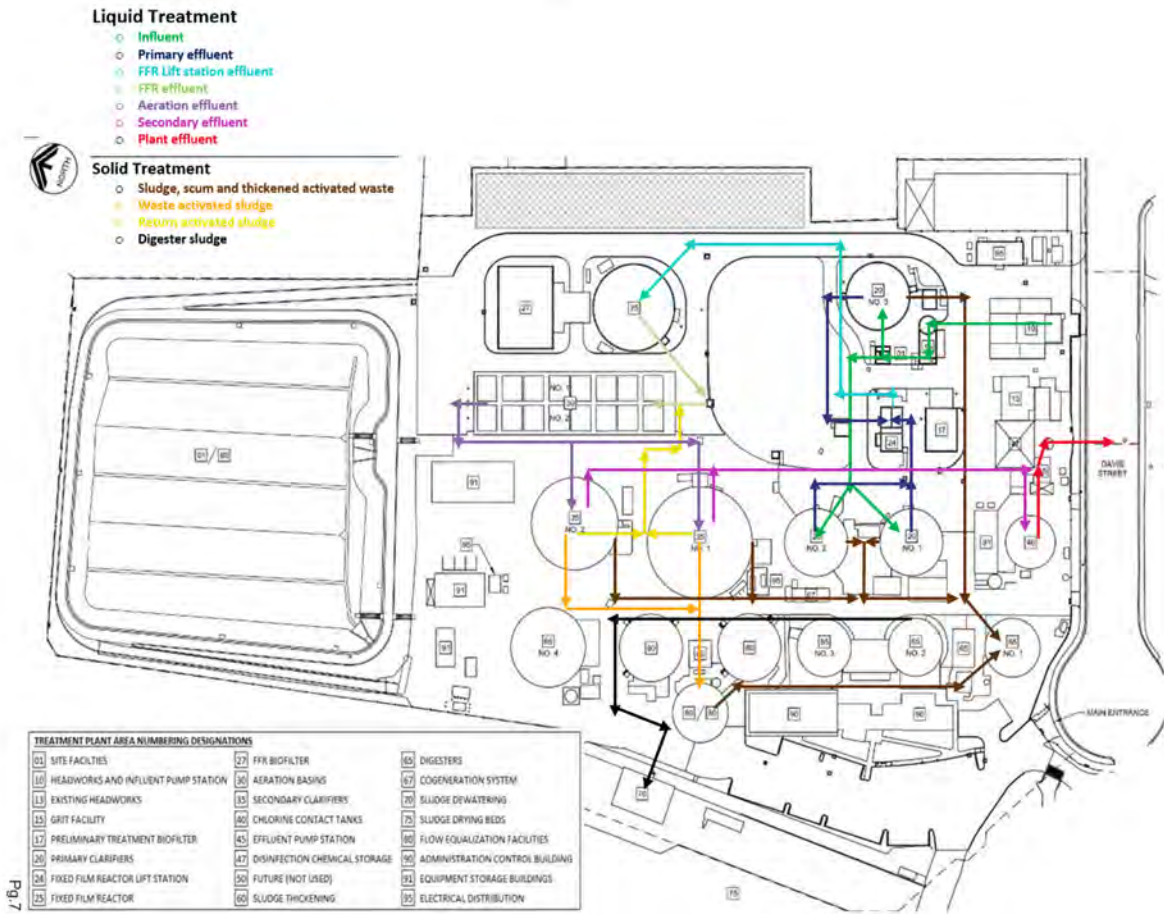
Copies of all laboratory reports are maintained on file at the Authority's office and are available for review upon request. Said reports are not included in this report.

### 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



San Leandro Plant – Sampling Locations

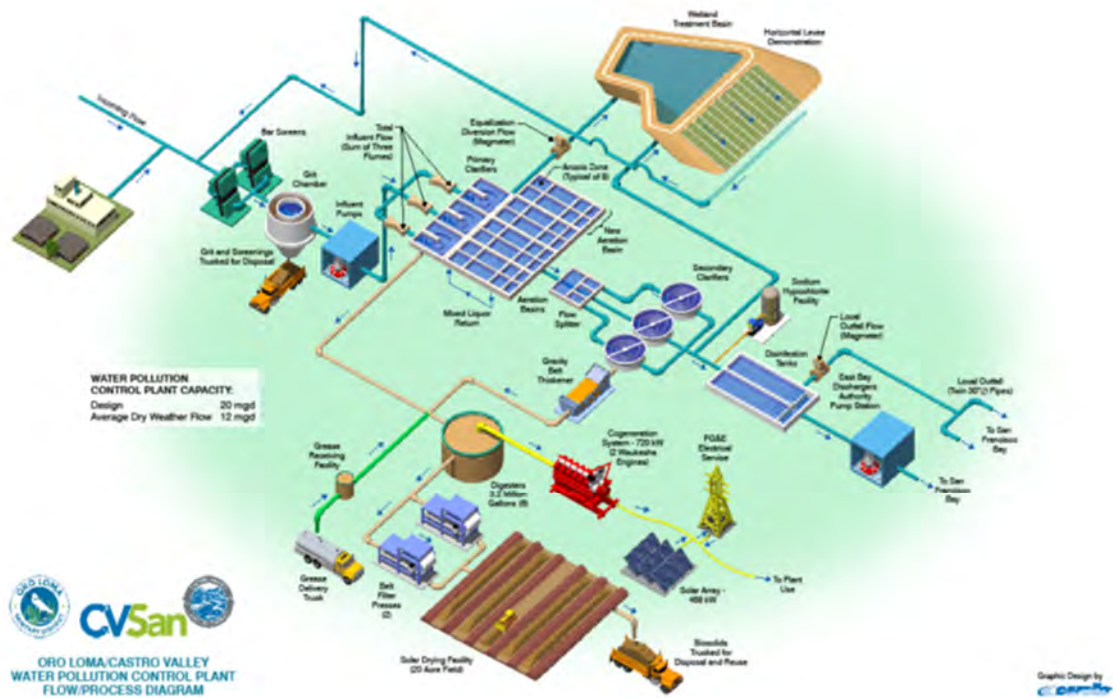


Effluent Sampling Point

Influent Sampling Point



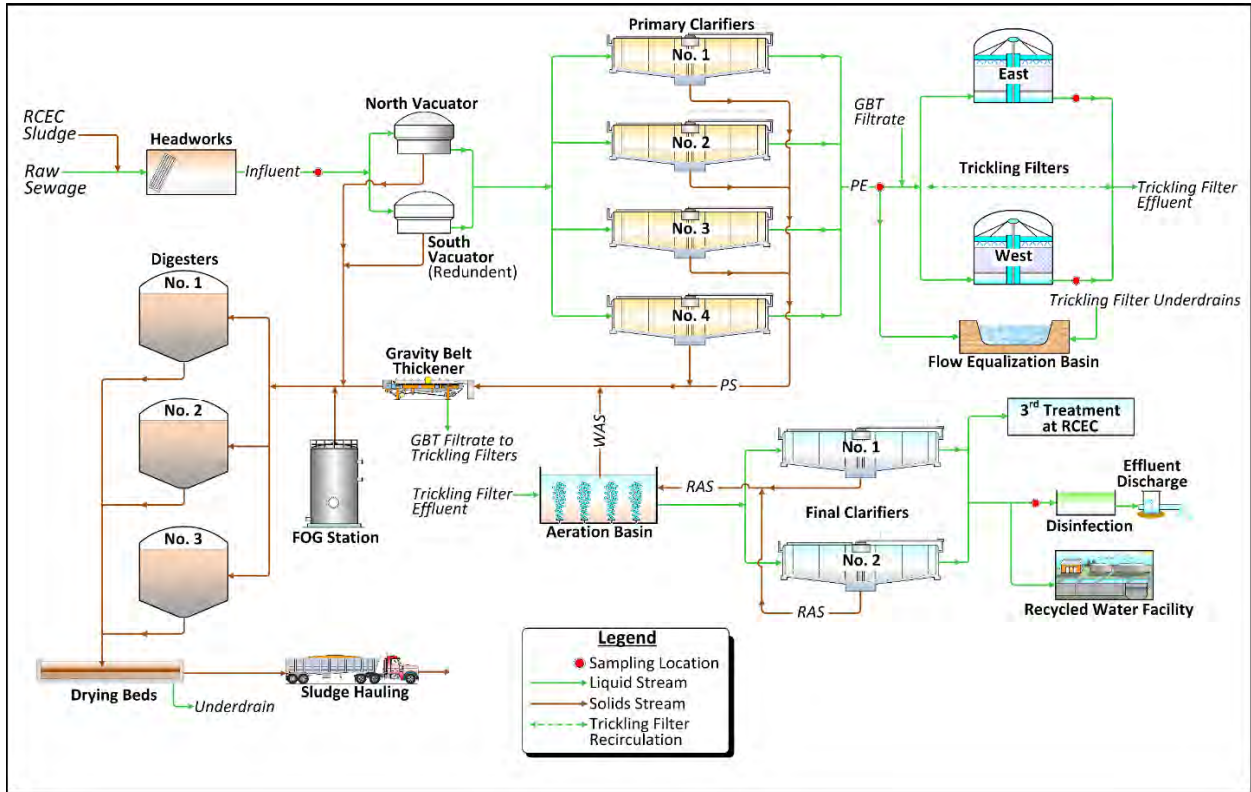
# OLSD/CVSan Plant – Process Flow Diagram



**OLSD/CVSan Plant – Sampling Locations**



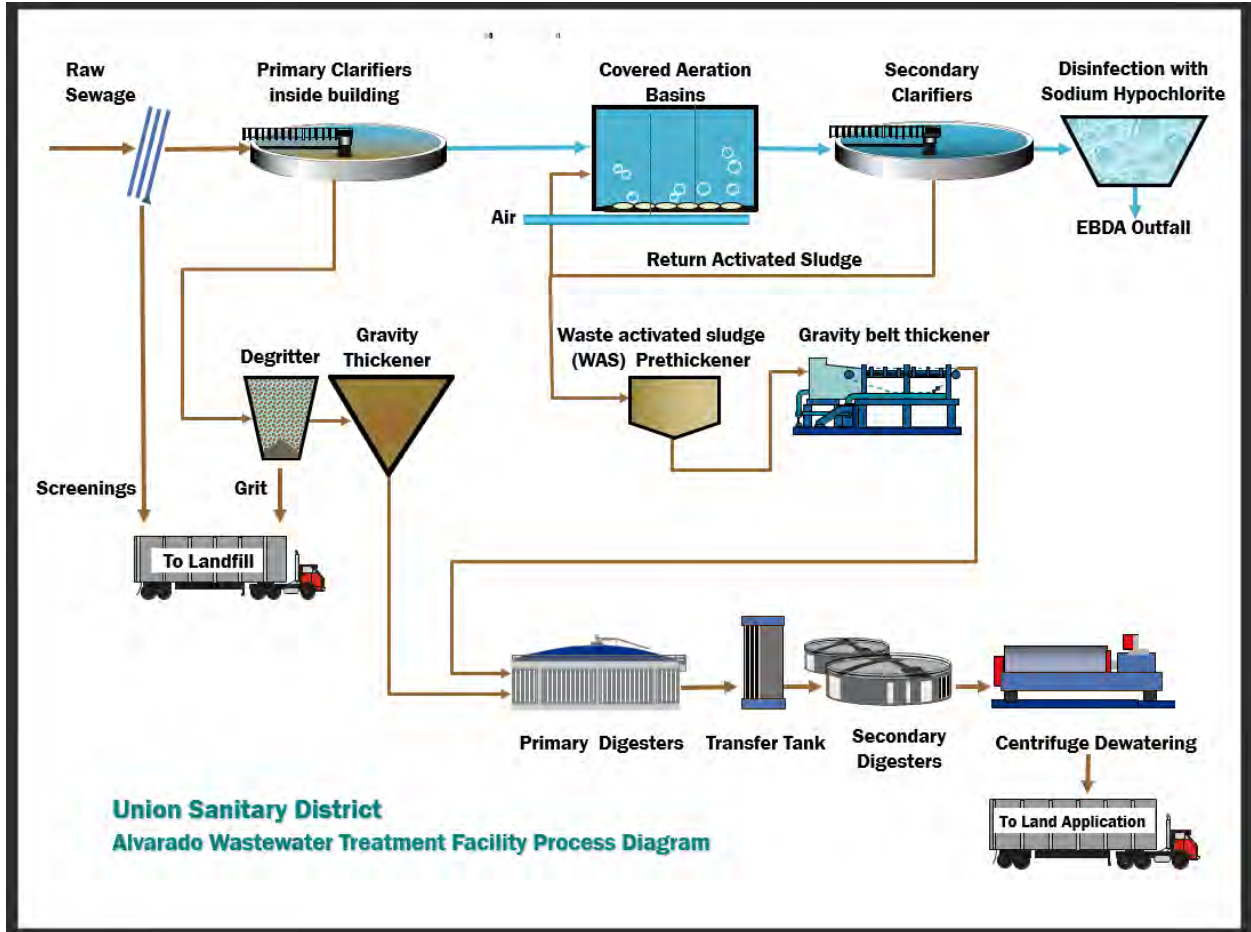
# Hayward Plant – Process Flow Diagram



# 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.	<p>The Authority maintains a comprehensive O&amp;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.</p> <p>In January 2024, the O&amp;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.</p>	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.	<p>In 2024, EBDA completed the following projects:</p> <ul style="list-style-type: none"> <li>• UEPS payment #4 of 10 for a total of \$4.2 M</li> <li>• MDF Main Breaker Replacement</li> <li>• Hayward Pond 3 Valve Actuator Replacement</li> </ul> <p>In 2025, the Authority is continuing work on the following upgrades to the EBDA system:</p> <ul style="list-style-type: none"> <li>• HEPS Pump Replacement Project</li> <li>• OLEPS ATS Replacement</li> </ul>	<p>Anticipated Completion:</p> <p>HEPS Pump Replacements, October 2025</p> <p>OLEPS ATS Replacement, June 2026</p>

## 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		<p>Capital Improvement Project Plan completed in October 2024. Urgent projects identified in the plan are currently in design.</p> <p>Annual Street Overlay and Sewer Point Repair Project is in design.</p> <p>Construction will be completed for microgrid battery backup system and other energy efficiency improvements, pending review by PG&amp;E.</p> <p>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.</p>	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		<p>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.</p> <p>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.</p>	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	<p>The phase II Facilities Plan was completed in 2020.</p> <p>The city will implement projects as recommended in the 2020 Phase II Facilities Plan.</p>	<p>Complete Capital Improvement Projects according to the 10-year Master Plan CIP.</p> <p>Planned for 2025:</p> <ul style="list-style-type: none"> <li>• The replacement of the effluent pumps will be completed in 2025.</li> <li>• Construction of the new MSB replacement project will continue.</li> <li>• The admin building project design will go out to bid Q1 and construction will begin in late 2025.</li> <li>• The EQ basin project has been added to the Nutrient Upgrade project.</li> <li>• The phase II nutrient upgrade design will continue in 2025.</li> </ul>	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	<p>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.</p> <p><b>2024 Projects Completed/in-progress:</b></p> <ul style="list-style-type: none"> <li>Standby Power Upgrade (Construction in progress)</li> <li>Plant Miscellaneous Improvements (Construction in progress)</li> <li>Alvarado Influent Valve Box Improvements (Construction in progress)</li> </ul> <p><b>ETSU: Phase 1A:</b></p> <ul style="list-style-type: none"> <li>Aeration Basin Modification (Construction in progress)</li> <li>Campus relocation (Construction in progress)</li> </ul>	<p>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.</p> <p><b>2025 Projects Planned:</b></p> <ul style="list-style-type: none"> <li>WAS Gravity Belt Thickener (In Design)</li> <li>Anaerobic Digester #6 Rehab (Construction to begin)</li> <li>Electrical Switchboard and MCC Replacements (In Design)</li> <li>Gravity Thickener 1&amp;2 Rehab (In Design)</li> </ul> <p><b>ETSU: Phase 1B:</b></p> <ul style="list-style-type: none"> <li>New Secondary Clarifiers (Construction to begin)</li> <li>New Effluent Pump Station (Construction to begin)</li> <li>New RAS/WAS Pump Station (Construction to begin)</li> </ul>	<p>20-year CIP annual update in June.</p> <p><b>Master Plans:</b></p> <ul style="list-style-type: none"> <li>Alvarado Basin MP 2023-25</li> <li>Newark Basin MP 2025-27</li> <li>Irvington Basin 2027-29</li> <li>Pump Station Asset Condition Assessment 2028-31</li> <li>Plant Asset Condition Assessment 2025-27</li> <li>Plant Solids System/Capacity Assessment 2032-34</li> <li>Solids System Evaluation 2025-26</li> </ul>

## **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:

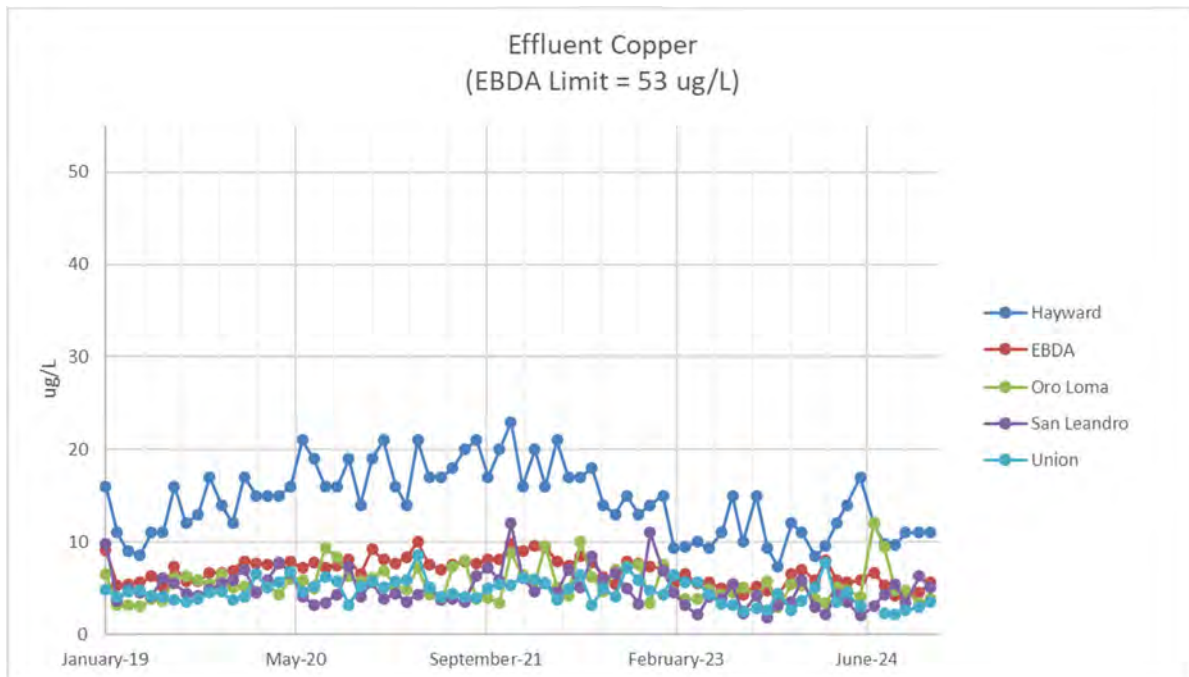
<https://bacwa.org/document/bacwa-npdes-permit-letter-for-calendar-year-2024/>

## 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.

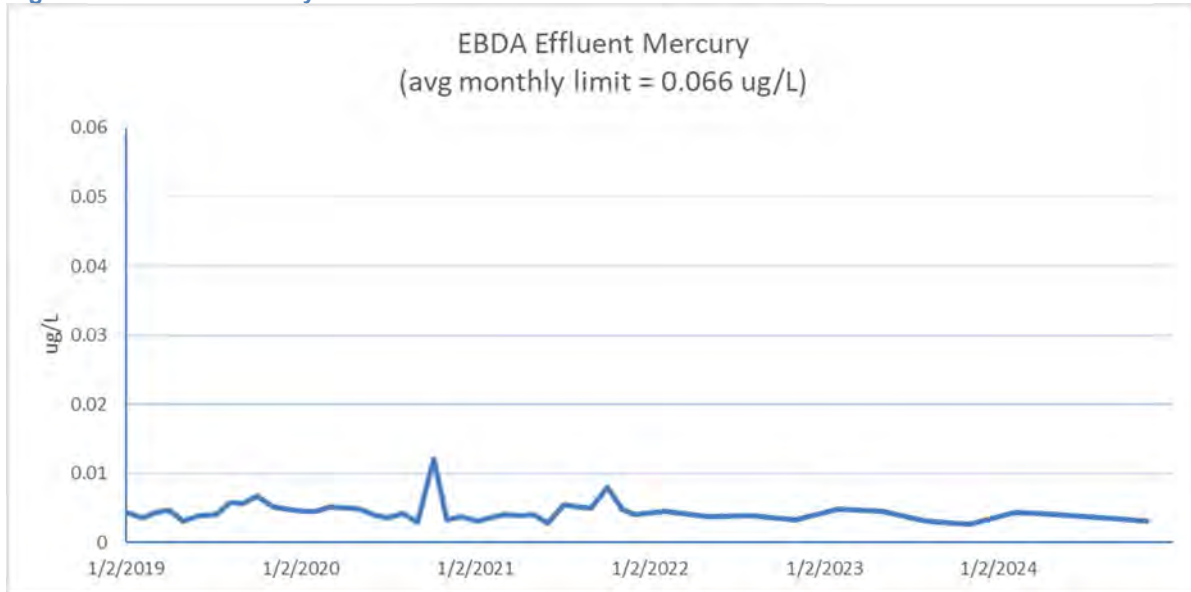
EBDA's five-year trend for copper shows that while individual member agency effluent concentrations have varied, EBDA's common outfall concentration consistently averaged less than 20 ppb, versus a permit limit of 53 ppb (see Figure 3).

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



**ITEM NO. RA7 PFAS UPDATES**

**Recommendation**

For the Committee’s information only; no action is required.

**Strategic Plan Linkage**

- c. **Regulatory Compliance:** Proactively meet or exceed regulatory requirements for protection of the environment and public health.
  - a. Represent EBDA and the Member Agencies’ interests by preemptively engaging in development of emerging regulations and permits and advocating for reasonable, science-based decisions.
  - e. Track and share scientific and regulatory developments related to emerging contaminants, and advocate for source control.

**Background**

Per- and polyfluoroalkyl substances (PFAS) are a large group of human-made substances that are very resistant to heat, water, and oil. PFAS have been used extensively in surface coating and protectant formulations. Common PFAS-containing products are non-stick cookware, cardboard/paper food packaging, water-resistant clothing, carpets, and fire-fighting foam. All PFAS are persistent in the environment, can accumulate within the human body, and have demonstrated toxicity at relatively low concentrations. Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS), two of the most common PFAS compounds, were found in the blood of nearly all people tested in several national surveys.

The regulatory and legislative landscape for drinking water, wastewater, and biosolids has been evolving quickly over the last several months, as has public awareness. This report summarizes the current status of key initiatives.

**Discussion**

Drinking Water Regulation

As discussed at previous Committee meetings, regulatory efforts to address PFAS to date have primarily focused on drinking water in order to minimize human ingestion of these chemicals. On April 10, 2024, EPA finalized Primary Drinking Water Standards for six PFAS chemicals, establishing enforceable maximum contaminant levels (MCLs) and unenforceable maximum contaminant level goals (MCLGs):

	<b>MCLG</b>	<b>MCL</b>
Perfluorooctanoic acid (“PFOA”) Perfluorooctane sulfonic acid (“PFOS”)	Zero	4 ppt
GenX Chemicals Perfluorohexane sulfonic acid (“PFHxS”) Perfluorononanoic acid (“PFNA”) Hexafluoropropylene oxide dimer acid (“HFPO-DA”)	10 ppt	10 ppt

Mixtures containing two or more GenX or perfluorobutane sulfonic acid (“PFBS”)	1 (unitless)*	1 (unitless)
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\* There is no unit for this this Hazard Index MCL because it is a sum of fractions. EPA is currently developing an online calculator that will add up each fraction that represents average PFAS ratios (e.g., PFHxS/10 ppt + PFNA level/10 ppt) and see if the annual average is greater than the MCL of 1.

In California, public water systems will also be required to comply with California MCLs, which will be based on the new OEHHA public health goals (PHGs), adopted by California’s Office of Environmental Health Hazard Assessment (OEHHA) on April 5, 2024:

	California Public Health Goal
PFOA	0.007 ppt
PFOS	1 ppt

While the proposed MCLs are of obvious concern to drinking water agencies, they are unlikely to directly affect EBDA or our members’ wastewater operations. Where wastewater facilities discharge into waterbodies that have the potential to be drinking water sources, there is a chance that the MCLs could be implemented as effluent limits in wastewater permits.

Human Health Water Quality Criteria

Because EBDA discharges to the Bay, any limits on EBDA’s effluent would be driven by the potential for impacts to aquatic ecosystems or fish consumption. In December 2024, EPA released draft criteria for human health protection based on fish consumption and water consumption for PFOA, PFOS, and perfluorobutane sulfonic acid (PFBS). The levels, summarized in the table below, are more than 100 times below observed concentrations in rain and are lower than current detection limits.

**Table 1.** Draft Human Health Criteria (HHC) for Three PFAS.

PFAS	Water + Organism HHC (ng/L; ppt) <sup>1</sup>	Organism Only HHC (ng/L; ppt) <sup>1</sup>
PFOA	0.0009	0.0036
PFOS	0.06	0.07
PFBS	400	500

<sup>1</sup> Values are provided in ng/L units to aid in comparison to method detection limit (MDL).

Human health criteria are not regulatory requirements and do not, on their own, compel any action. They are information for entities, including state regulators, to consider when making policy decisions that protect water quality. In this case, the “Organism Only” criteria could apply to San Francisco Bay if adopted by California, for example into the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). EBDA staff understands that the OEHHA is working on their own criteria that would be also be



considered in any rulemaking.

#### Hazardous Waste Regulation

As of July 2024, PFOA and PFOS are now designated as hazardous substances under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – also known as the Superfund law. The intent of this approach by the U.S. Environmental Protection Agency (EPA) is to invoke a “polluter pays” principle, forcing the chemical companies that produce PFAS compounds to take responsibility for cleaning them up. The Superfund law works by triggering cleanups once contamination exceeds EPA thresholds, and another provision allows the agency to sue for cost recovery. However, the wastewater sector and other industries that are passive receivers of PFAS have argued that we should not be subject to these requirements.

There are unlikely to be any immediate ramifications to wastewater agencies from this designation because the default reportable quantity is one pound per day for PFOA and PFOS, a mass which is unlikely to be reached in wastewater agencies’ biosolids or effluent. The rule adoption was also accompanied by an [Enforcement Discretion and Settlement Policy](#) that makes clear that “EPA does not intend to pursue entities where equitable factors do not support seeking response actions or costs under CERCLA, including farmers, municipal landfills, water utilities, municipal airports, and local fire departments.” However, the wastewater sector is continuing to push for an exemption to counter the risk that the reportable quantity could be lowered in the future. Several bills sponsored by the National Association of Clean Water Agencies (NACWA) are aimed at excluding wastewater agencies from liability.

#### Biosolids Regulation

On January 14, 2025, EPA released its Draft Sewage Sludge Risk Assessment for PFOA and PFOS (see attached EPA Fact Sheet). The Risk Assessment looked at the risk associated with PFOS and PFOA for a hypothetical farm family exposed to PFAS through land application of biosolids on their property. Based on their modeling, which draws on a very limited set of publications, EPA found that there may be human health risks exceeding the EPA’s acceptable thresholds when land-applying sewage sludge that contains 1 part per billion (ppb) of PFOA or PFOS. 1 ppb is considerably lower than the PFAS concentrations found on average in biosolids.

What the draft Risk Assessment fails to do is to put in context the risks that individuals on a farm or elsewhere face from background levels of PFAS found in their food packaging, clothing, cookware, carpeting, and other common sources. Direct home exposure is likely much more significant than biosolids exposure. In addition, the water, fish, and other consumables that EPA assumes the family is eating from their farm would be contaminated with PFAS at background levels above those assumed to be stemming from the biosolids.

In its communication about the Risk Assessment, EPA posits that wastewater treatment

plants can control PFAS in biosolids through source control. However, studies in the Bay Area and elsewhere indicate that in areas without PFAS manufacturing or other industrial uses, the primary inputs of PFAS to wastewater systems come from residential and commercial sources – essentially from consumer products – making it essentially impossible for wastewater agencies to take a source control approach.

The California Association of Sanitation Agencies (CASA) has commissioned an expert panel of academic researchers to review the draft Risk Assessment and develop comments. These comments will be summarized in a template comment letter that will be circulated for agencies to submit in advance of EPA's comment deadline of March 17, 2025. EBDA staff will work with the Managers Advisory Committee (MAC) on a comment strategy.

It is unclear given the posture of the new administration whether the Risk Assessment will be finalized. If it is, the next step would be development of regulations to manage land application of biosolids to reduce risk to acceptable levels. Typically, such management actions are released coincident with the Risk Assessment. However, this draft Risk Assessment was released earlier to meet a 2024 Congressional deadline.

A fact sheet on PFAS in biosolids released by the National Association of Clean Water Agencies (NACWA) in response to the draft Risk Assessment is attached for reference.

#### Industrial Effluent Limits

Consistent with their assertion that the best approach to managing PFAS in effluent and biosolids is source control, in January 2023, EPA put forward a program plan for Effluent Limitations Guidelines (ELGs) for PFAS. ELGs contain limits for certain industrial categories that can be enforced through wastewater agencies' pretreatment programs. EPA was considering ELGs for the following categories:

- Landfills
- Textile mills
- Metal finishers
- PFAS manufacturing facilities
- Pulp, paper, and paperboard
- Airports

EPA sent its draft PFAS ELGs to the White House in June 2024 for mandatory pre-release review. That process typically takes 90 days, but the PFAS rules had stalled. On January 21, 2025, the US Office of Management and Budget (OMB) withdrew the EPA's proposal for ELGs for PFAS Manufacturers Under the Organic Chemicals, Plastics and Synthetic Fibers Point Source Category, in line with Trump's executive order freezing new regulations pending review. Next steps for EPA on this are unclear at this time.

### California Legislation

As noted above, because we are receivers of PFAS, the wastewater community is primarily focused on source control rather than treatment as the most effective way to address PFAS in the environment. CASA has been working with a consortium of environmental advocacy partners, including Environmental Working Group, to sponsor and support legislation targeted at companies producing products containing PFAS. While several bills approved by the legislature over the past several years that banned added PFAS in certain classes of products were vetoed by Governor Newsom, citing state agency cost concerns, a number of others are now on the books:

- **Cosmetics.** Starting January 1, 2025, the Toxic-Free Cosmetics Act of 2020 (AB 2762) and the PFAS-Free Beauty Act of 2022 (AB 2771) ban intentionally added PFAS in cosmetics sold in California.
- **Textiles.** As of January 1, 2025, the California Safer Clothes and Textiles Act of 2022 (AB 1817) prohibits intentionally added PFAS in most clothing and textiles sold in California.
- **Juvenile Products.** Beginning July 1, 2023, intentionally added PFAS is banned in juvenile products sold in California, such as high chairs, strollers, and car seats (AB 652).
- **Food Packaging.** The California Safer Food Packaging and Cookware Act (AB 1200) banned the sale of paper-based food packaging containing PFAS chemicals starting in 2023.
- **Menstrual Products.** Beginning in 2029, AB 2515 prohibits the sale of menstrual products containing PFAS in California.
- **Carpets and Rugs.** In 2021, the California Department of Toxic Substances Control (DTSC) adopted regulations for PFAS in carpets and rugs.
- **Textile and Leather Treatments.** In 2022, DTSC adopted regulations for PFAS in treatments for carpets, upholstery, clothing, and shoes.

CASA and its environmental partners sponsored a bill last session, [SB 903](#) (Skinner), that would have prevented the sale and use of products containing PFAS unless the use of the PFAS in the product is necessary and there is not a safer alternative available. It would have banned the sale of products containing PFAS by 2030, and would have set up a process at DTSC allowing manufacturers to petition for the Department to determine whether the presence of PFAS in their product is a currently unavoidable use. Unfortunately, the Appropriations Committee's fiscal analysis cited \$10 million annually and 44 positions at DTSC to implement the program, effectively killing the bill in a year of budget shortfall. CASA and partners have been working with DTSC staff to identify changes to the bill that would bring costs down and plan to reintroduce it this year.

Meanwhile, CASA staff has been contacted by several state legislators who have been moved by recent media coverage about risks of PFAS in biosolids, coupled with the EPA draft Risk Assessment, and who are considering introducing legislation on that topic. It is not clear yet what form legislation on PFAS in biosolids may take, and more will be

understood in the coming months once a bill is introduced. CASA is working with legislative staff to try to counter any harmful proposals, focusing on the fact that land application of biosolids is a common practice regulated under the Clean Water Act that has significant benefits for agriculture and the environment, and that banning or significantly limiting biosolids land application would lead to higher greenhouse gas emissions from synthetic fertilizer use and biosolids transport to landfills.

### Research

To better inform the wastewater community's proactive approach to reducing PFAS in the environment, as well as to counter legislative and regulatory actions based on incomplete information, wastewater agencies are continuing to actively support several research projects, including the following:

- National Collaborative PFAS Study: Dr. Ian Pepper at the University of Arizona is leading a team conducting field studies across the U.S. investigating the fate and transport of PFAS on sites applied with biosolids. The team is looking at a variety of soils, climates, and depth to groundwater. A preliminary report was released on January 17, 2025. Findings to date show very little transport of PFAS from biosolids offsite or into groundwater, and PFAS concentrations decreased with increased soil depth. Sites were <1 ppb, regardless of land application loading rate. Concentrations were less than or close to soil screening levels (i.e., the levels considered safe for groundwater protection). Control plots also had measurable PFAS concentrations. Phase 2 will evaluate the potential for crop uptake of PFAS following land application of biosolids.
- U.C. Davis Crop Uptake Study: Dr. Tom Young at U.C. Davis published a paper on January 26, 2025 summarizing his work evaluating uptake of PFAS to dry-farmed oats. This study, which was partially funded by the Bay Area Biosolids Coalition, looked at three sites within 10 miles of each other, one that had received biosolids since 1978, one that had received biosolids since 2017, and one that had not had biosolids. 33 PFAS compounds were measured in the oats, biosolids compost, and soil, and no PFAS were found in the oats at any of the sites, indicating that there was not crop uptake.
- PFAS Sources to Solutions Project: Building on work they completed in 2022 evaluating PFAS concentrations in the Bay and [from wastewater treatment plants](#), San Francisco Estuary Institute (SFEI) is now leading an EPA-funded project called [PFAS: Sources to Solutions](#). The goals of this project are to seek meaningful management actions for PFAS inputs to the Bay. Work will include developing a conceptual model that maps PFAS transport from products to the Bay via runoff and wastewater and identifying product categories most likely to be major contributors to PFAS in wastewater and urban stormwater runoff.

## Draft Sewage Sludge Risk Assessment for PFOA and PFOS: Information for Wastewater Treatment Plants

January 2025

This fact sheet contains information that may be useful to operators of wastewater treatment plants (WWTPs) in addressing perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) contamination in sewage sludge.

On January 14, 2025, the U.S. Environmental Protection Agency (EPA) released its Draft Sewage Sludge Risk Assessment for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS). The draft risk assessment indicates that in some scenarios, the EPA's acceptable risk thresholds may be exceeded when sewage sludge containing PFOA and PFOS is land applied for beneficial reuse or surface disposed. The draft risk assessment focuses on people living on or near impacted farms or those that rely primarily on their products. The findings presented in the draft risk assessment are preliminary. The EPA expects to publish a final risk assessment after reviewing public comments and revising the draft risk assessment accordingly. Once finalized, the risk assessment will provide information on risk from use or disposal of sewage sludge and will inform the EPA's potential future regulatory actions under the Clean Water Act (CWA). The EPA is committed to partnering with states, Tribes, territories, and wastewater treatment plants (WWTPs) to reduce risks from PFOA and PFOS that may occur through the management of sewage sludge, including the land application of sewage sludge.

### What are sewage sludge and biosolids?

When sewage from households and businesses is sent to a WWTP, the liquids are separated from the solids, producing a nutrient-rich product known as "sewage sludge." The EPA typically uses the term "biosolids" to refer to treated sewage sludge that is intended to be applied to land as a soil conditioner or fertilizer. Sometimes biosolids are distributed to farms. While some states, Tribes, or counties may have additional rules around the use of biosolids, federal rules currently allow biosolids to be applied to pastures, feed crops, and crops for direct human consumption. Biosolids can also be applied to forests, tree farms, golf courses, turf farms, and other types of land. In other cases, biosolids are bagged and sold at stores to the general public and are often used on lawns or in home gardens. Not all WWTPs create biosolids for land application; some incinerate sewage sludge and others send it to a landfill. Biosolids are different from manure or industrial sludge (like pulp from a paper mill), which are also sometimes used as a soil amendment. The EPA does not regulate the land application of manure or industrial sludges in the same manner it does for biosolids.

### What are PFOA and PFOS?

PFOA and PFOS are two chemicals in a large class of synthetic chemicals called [per- and polyfluoroalkyl substances \(PFAS\)](#). PFOA and PFOS have been widely studied, and they were once high production volume chemicals within the PFAS chemical class. PFOA and PFOS tend to persist in the environment for long periods of time and have been linked to a variety of adverse human health effects (*see the EPA's [Final Toxicity Assessment for PFOA](#) and [Final Toxicity Assessment for PFOS](#)*). PFAS manufacturers voluntarily phased out domestic manufacturing of PFOA and PFOS and their uses have been restricted by Significant New Use Rules (SNURs)

issued under the Toxic Substances Control Act (TSCA) (see the EPA's [Risk Management for PFAS under TSCA](#)). Though concentrations of PFOA and PFOS in people's blood have lowered since the voluntary phase out, blood levels can be elevated in communities where there is significant environmental contamination and exposure.

Learn more about [PFAS](#), the [EPA's PFAS Strategic Roadmap](#), and [PFAS exposure in impacted communities](#).

### **Why is the EPA concerned about the presence of PFOA and PFOS in sewage sludge?**

Although domestic manufacturing of PFOA and PFOS have been phased out and their uses restricted, multiple activities still result in PFOA, PFOS, and their precursors being released to WWTPs.<sup>1</sup> Traditional wastewater treatment technology does not remove or destroy PFOA or PFOS, and these chemicals typically accumulate in the sewage sludge. PFOA and PFOS have strong chemical bonds, which means they do not break down on their own in the environment or in our bodies. The chemicals can move from soils to groundwater or nearby lakes or streams, and be taken up into fish, plants, and livestock. These factors combine to raise questions about the potential risks associated with the presence of PFOA or PFOS in sewage sludge that is land applied as a soil conditioner or fertilizer (on agricultural, forested, and other lands), surface disposed, or incinerated.

### **What are the potential sources of PFOA and PFOS in sewage sludge?**

Current and historical activities that can contribute PFOA and PFOS to sewage sludge include industrial releases (e.g., certain types of firefighting foam, pulp and paper plants), commercial releases (e.g., car washes, industrial launderers), and down-the-drain releases from homes (e.g., use of consumer products like after-market water resistant sprays, ski wax, floor finishes, laundering of stain or water-resistant textiles with PFOA or PFOS coatings). If products containing PFOA or PFOS are disposed of at a lined municipal solid waste landfill, because the most common off-site management practice for landfill leachate is to transfer it to a WWTP, then that landfill's leachate could be a source of PFOA and PFOS to a WWTP. Studies have found that PFOA and PFOS in sewage sludge even at WWTPs that only receive wastewater from residential and commercial users. At different WWTPs across the country, any of these release mechanisms might play a role in PFAS entering the plant and contaminating sewage sludge.

### **What is a sewage sludge risk assessment?**

Risk assessment is a scientific process that is used to understand health risks to people, livestock, or wildlife across the country. The concentration of pollutants found in sewage sludge varies across space and time, depending on industrial and other inputs to individual WWTPs. The presence of a pollutant in sewage sludge alone does not necessarily mean that there is risk to human health or the environment from its use or disposal. The EPA uses sewage sludge risk assessments to help evaluate whether actions, including regulation, are needed to protect those who may experience risks from sewage sludge use or disposal. In this sewage sludge risk assessment, the EPA estimates potential human exposures and risks in modeled scenarios where sewage sludge has been land applied or surface disposed. The draft risk assessment focuses on risks to humans because available data indicate that people are much more sensitive to exposures to PFOA or PFOS than livestock or wildlife. Finally, this risk assessment does *not* assess risks to people in the general population, who often have a diversity of sources for their foods.

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<sup>1</sup> see the EPA's [Preliminary Effluent Guidelines Program Plan 16](#) and [Multi-Industry Per- and Polyfluoroalkyl Substances \(PFAS\) Study – 2021 Preliminary Report](#)

## What does this draft sewage sludge risk assessment suggest?

The draft risk assessment focuses on those living on or near impacted sites (*e.g.*, farm families and their neighbors) or those that rely primarily on their products (*e.g.*, food crops, animal products, drinking water); the draft risk assessment does *not* model risks for the general public. Based on the modeling in the draft sewage sludge risk assessment, the EPA finds that there may be human health risks exceeding the EPA's acceptable thresholds for some modeled scenarios when land-applying sewage sludge that contains 1 part per billion (ppb) of PFOA or PFOS. The EPA also finds that there may be human health risks associated with drinking contaminated groundwater sourced near a surface disposal site when sewage sludge containing 1 ppb of PFOA or sewage sludge containing 4 to 5 ppb of PFOS is disposed in an unlined or clay-lined surface disposal unit. The EPA provides a qualitative description of the potential risks to communities living near a sewage sludge incinerator (SSI) in the draft risk assessment but does not provide quantitative risk estimates due to significant data gaps related to the extent to which incineration in an SSI destroys PFOA and PFOS and the health effects of exposure to products of incomplete combustion.

The draft risk calculations are not conservative estimates because (1) they model risk associated with sewage sludge containing 1 ppb PFOA or PFOS, which is on the low end of measured U.S. sewage sludge concentrations (2) reflect median exposure conditions (*e.g.*, 50<sup>th</sup> percentile drinking water intake rates) rather than high end exposure conditions, (3) do not take into account non-sewage sludge exposures to PFOA and PFOS (*e.g.*, consumer products, other dietary sources), (4) do not account for the combined risk of PFOA and PFOS, and (5) do not account for additional exposures from the transformation of PFOA and PFOS precursors. As such, risk estimates that account from multiple pathways, multiple sources of exposure, and multiple PFAS would be greater than presented in this draft assessment.

## What is the recommended analytical method to measure PFOA and PFOS in sewage sludge?

The EPA recommends using EPA Method 1633 to measure 40 PFAS analytes, including PFOA and PFOS, in sewage sludge. EPA Method 1633 finished multi-laboratory validation and was finalized in January 2024. It is planned to be included in the upcoming Methods Update Rule 22, which was proposed in late 2024.

Learn more about [EPA Method 1633](#) and [Methods Update Rules](#).

## What plans exist for PFAS monitoring in sewage sludge nationwide?

The EPA is currently planning the next National Sewage Sludge Survey (NSSS) in collaboration with the POTW Influent PFAS Study. The NSSS will focus on obtaining current national occurrence and concentration data for 40 target PFAS analytes using EPA Method 1633. The data generated by the NSSS will help inform future risk assessments and risk management actions for sewage sludge. A Voluntary Data Submission Portal also will be available throughout the duration of the POTW Influent PFAS Study and NSSS to collect more PFAS data nationwide.

Learn more about the [National Sewage Sludge Survey](#) and the [POTW Influent PFAS Study](#).

## What does this mean for WWTPs?

The draft risk assessment is not a regulation and does not compel action. The EPA's draft risk assessment indicates that each of the three common use or disposal options may result in elevated risk levels when sewage sludge with typical concentrations of PFOA or PFOS is managed. With the understanding that eliminating these risks is likely not possible at this time, the EPA recommends, in addition to pretreatment to reduce PFAS at the

source, that WWTPs consider management options or practices that can mitigate or lessen risks. The EPA recognizes that WWTPs may have constrained options for sewage sludge management and changes may not be possible, particularly in the near term. The EPA recommends working with your [state and regional biosolids coordinators](#) for support in sewage sludge management planning.

The EPA is continuing to recommend that WWTPs monitor sewage sludge for PFAS contamination, identify likely industrial discharges and other sources of PFAS, and implement industrial pretreatment programs where appropriate. Doing so will help prevent downstream PFAS contamination and lower the concentration of PFAS in sewage sludge as described in Section C of the EPA's December 2022 memorandum entitled, "[Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs](#)." Current science indicates that **lower levels of PFAS exposure present less risk**, so these efforts to identify and reduce PFOA and PFOS in sewage sludge help protect public health and the environment.

WWTPs may choose to evaluate whether additional risk mitigation actions are appropriate to reduce risk posed by certain sewage sludge use and disposal activities. To reduce potential risk associated with land application, consider land-applying in areas that may be less sensitive to PFOA and PFOS pollution, like areas far from fishable waters or with deep protected drinking water aquifers. Consider avoiding land application in fields used to graze livestock or grow feed, especially for dairy cows. Fields used to grow fruits and grain may be better alternatives to those growing hay or leafy greens like spinach or kale. To reduce potential risk associated with surface disposal of sewage sludge consider using disposal sites with composite liners and leachate collection and treatment systems (understanding how that leachate will be disposed or treated). To better understand potential risks from incineration of sewage sludge consider performance testing incinerators to gain information about potential releases of PFOA, PFOS, and other PFAS that may be generated through incomplete combustion. For example, a recently released air method, [OTM-50](#), can help test emissions for more volatile products of incomplete combustion, in addition to using [OTM-45](#) to monitor for PFAS emissions. For more information, please refer to the EPA's 2024 [Interim Guidance on the Destruction and Disposal of PFAS and Materials Containing PFAS](#).

## Are there innovative technologies available to remove and destroy PFAS in sewage sludge?

There are several emerging PFAS destruction technologies (*e.g.*, supercritical water oxidation, plasma gasification, pyrolysis and gasification coupled with a high-temperature thermal oxidizer) for sewage sludge. Most are still in the pilot-scale stage and further research is needed to evaluate potential products of incomplete destruction and capacity limitations. The EPA's 2024 [Interim Guidance on the Destruction and Disposal of PFAS and Materials Containing PFAS](#) discusses ORD's PFAS Innovative Treatment Team (PITT)'s research on innovative technologies, and includes a technology evaluation framework for further assessing emerging technologies.

Learn more about the EPA's ORD [PITT](#) research effort on innovative PFAS technologies.

Learn more about funding opportunities for capital projects to treat emerging contaminants through the [Clean Water State Revolving Fund Emerging Contaminants](#).

## What are the EPA's next steps after the final risk assessment is released?

After the public comment period has closed, the EPA will consider the comments received, revise the draft risk assessment as appropriate, and prepare a final risk assessment. The final risk assessment will help inform the



EPA's potential future regulatory actions under the Clean Water Act (CWA). If the final risk assessment indicates that there are risks above acceptable thresholds when using or disposing of sewage sludge, the EPA expects to propose a regulation under CWA section 405 to manage PFOA and/or PFOS in sewage sludge to protect public health and the environment. During the risk management deliberation process, the results of the final risk assessment may be integrated with other considerations, such as economic costs and treatment feasibility, to reach decisions regarding the need for and practicability of implementing various risk reduction activities.

Learn more about the EPA's recent actions to address [PFAS in sewage sludge](#).

Review the EPA's [Frequently Asked Questions](#) on the Draft Sewage Sludge Risk Assessment for PFOA and PFOS.

Learn more about the [EPA's Draft Sewage Sludge Risk Assessment for PFOA and PFOS](#).

# PFAS in Biosolids

PFAS are a large group of man-made chemicals. Many consumer and industrial products and processes have used PFAS for decades because of their ability to resist heat, water, and oil. Until these products are removed from the supply chain, PFAS chemicals will continue to make their way into wastewater and biosolids.

## What we know

Biosolids are nutrient-rich organic materials generated when a wastewater treatment facility treats domestic sewage (i.e., treated sewage sludge). Publicly owned treatment works (POTWs) – tasked with treating millions of gallons of domestic, commercial, and industrial wastewater daily—do not use PFAS in their operations. However, they can receive PFAS from each of these waste streams. Current research is studying PFAS in biosolids including their ability to move into other media, like water, plants, and animals. Recent research found certain PFAS chemicals in biosolids, including the PFAS chemicals commonly found in [toilet paper](#).<sup>1</sup>

The chemical properties of different PFAS affects their ability to build up in plants and animals. Some PFAS are more likely to stay in the organic rich soils, while others can more easily run-off in water or be taken up by plants.

## Regulatory Context

The U.S. Environmental Protection Agency (EPA) has not set standards for PFAS in biosolids. Some states have developed plans to prevent and manage PFAS in biosolids. On January 14, 2025, the EPA released the draft risk assessment for two common PFAS, PFOS and PFOA, in biosolids. The draft risk assessment indicates that in some scenarios, the EPA’s acceptable risk thresholds may be exceeded when sewage sludge containing PFOA and PFOS is land applied for beneficial reuse or surface disposed. The draft risk assessment focuses on farm families and their neighbors, who are likely to have much higher potential contact with biosolids than the general public.

The EPA, the [United States Department of Agriculture \(USDA\)](#)<sup>2</sup>, and the [United States Food and Drug Administration \(FDA\)](#)<sup>3</sup> are working to understand the following:

- Potential risk of pollutants in land-applied biosolids
- Uptake rate of PFAS in agricultural produce grown on land supplemented with biosolids
- Concentrations of PFAS in the U.S. food supply

Sources other than biosolids can contribute to PFAS in agriculture, including insecticides, some synthetic fertilizers, and even rainfall.

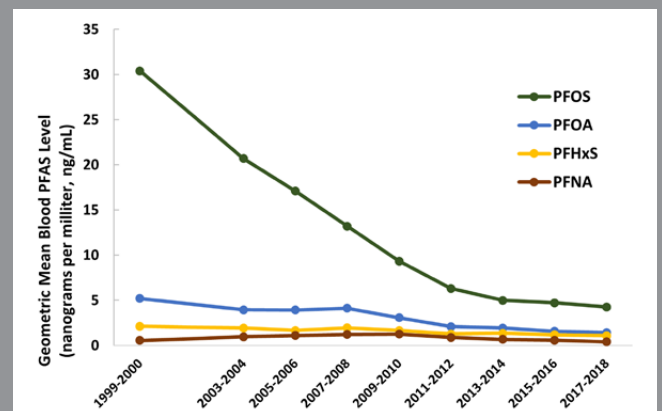
The FDA has not found PFAS in over 97% of fresh and processed food samples since starting to test in 2019. Most of the samples where PFAS were detected were seafood (e.g., fish and shellfish). Similarly, only 2 (0.1%) of the 3,200 meat and poultry samples tested by the USDA’s Food Safety and Inspection Service had detectable levels of PFAS.

## PFAS Sources



You can commonly find PFAS in everyday consumer goods including non-stick cookware, food paper packaging, cosmetics, fabrics and textiles, and cleaning products. Lithium-ion batteries, solar panels, fire-fighting foams, and medical devices all use PFAS. PFAS by their very design are intended to be durable and resistant to degradation and treatment. Thus, PFAS are found in our bodies and our environment.

## PFAS Exposure



National Report on Human Exposure to Environmental Chemicals, Biomonitoring Data Tables for Environmental Chemicals. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention

PFAS are found in so many consumer and industrial products and applications that everyone has some risk of exposure. Exposure to specific PFAS compounds has been associated with certain health effects, including increases in cholesterol levels, changes in liver enzymes, lower antibody response to some vaccines, small decreases in birth weight, and kidney and testicular cancer.

Almost everyone in the U.S. and other developed countries have measurable amounts of PFAS in their blood. The [National Health and Nutrition Examination Survey \(NHANES\)](#)<sup>4</sup> has been monitoring certain PFAS chemicals in the blood of people living in the United States since 1999. As specific PFAS are phased out of use, which reduces everyday exposure, blood serum levels of those specific PFAS are dropping too.

It is challenging to compare potential risks from different materials or products based on PFAS concentrations alone. That is because each person’s exposure to products varies. How often you may eat, touch, or breathe in PFAS associated with various products changes based on the product and how different people use it.



## Benefits of Biosolid Land Application

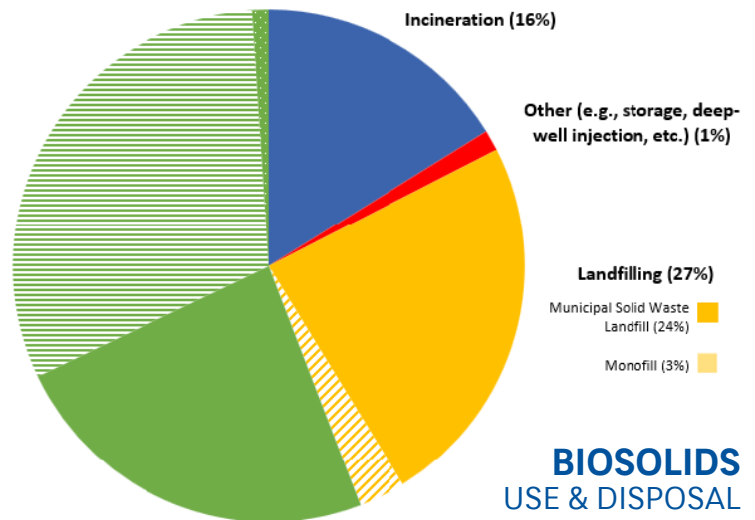
Since 1993, land application of biosolids has been regulated under the Clean Water Act, Section 503. As of 2022, 56% of biosolids in the United States are land applied, 27% go to the landfill, and 16% go to an incinerator. Biosolids serve an important function in a sustainable and circular economy. Land applied biosolids offer moisture retention, slow-release nutrients, and carbon sequestration. Biosolids can also be used in other, non-agricultural applications, such as reclaiming lands after wildfires or mining. They also provide a cost-effective alternative to commercially manufactured synthetic fertilizers. Manufactured or synthetic fertilizers can often be prohibitively expensive and come with intensive energy footprints to manufacture. They often have negative water quality impacts because they release nutrients quickly.

Prohibiting land application can have unintended consequences. Those include increased greenhouse gas emissions to produce synthetic fertilizers and from moving biosolids long distances for disposal in a landfill. The cost of synthetic fertilizers to replace biosolids can also create economic hardship on farmers who rely on biosolids.

## What's Next?

The EPA's draft risk assessment for PFOS and PFOA in biosolids is not a regulation, and the EPA, Environmental Council of the States (ECOS) and the National Association of State Departments of Agriculture (NASDA) emphasize that one of the most effective short and long term solutions<sup>5</sup> to reducing PFAS in biosolids is to prevent PFAS from entering wastewater treatment facilities in the first place.

The EPA acknowledges that POTWs may have limited options for biosolids management and changes may not be feasible, particularly in the short term. EPA identifies ongoing monitoring, pretreatment programs, and land-application strategies (e.g., distance from waterways, crop type, etc.) as considerations to mitigate potential risk.



**BIOSOLIDS USE & DISPOSAL**  
from 2022 Biosolids Annual Reports

A recent study found that up to 50-60% of certain PFAS could be absorbed through the skin from consumer products applied to the skin, like cosmetics.<sup>6</sup> This is an important and more common potential exposure pathway to PFAS than direct exposure to land applied biosolids for most people.



<sup>1</sup> <https://www.acs.org/pressroom/presspacs/2023/march/toilet-paper-is-an-unexpected-source-of-pfas-in-wastewater.html>

<sup>2</sup> <https://www.farmers.gov/protection-recovery/pfas/faq>

<sup>3</sup> <https://www.fda.gov/food/process-contaminants-food/questions-and-answers-pfas-food>

<sup>4</sup> <https://www.atsdr.cdc.gov/pfas/data-research/facts-stats/index.html>

<sup>5</sup> <https://www.epa.gov/system/files/documents/2023-07/Joint-Principles-Preventing-Managing-PFAS.pdf>

<sup>6</sup> Ragnarsdóttir, O., Abdallah, M.A.E. and Harrad, S., 2024. Dermal bioavailability of perfluoroalkyl substances using in vitro 3D human skin equivalent models. *Environment International*, 188, p.108772. <https://www.sciencedirect.com/science/article/pii/S0160412024003581>

**ITEM NO. RA8 MOTION AUTHORIZING THE GENERAL MANAGER TO EXECUTE A PROFESSIONAL SERVICES AGREEMENT WITH H.T. HARVEY AND ASSOCIATES FOR A BIOSOLIDS SUITABILITY ASSESSMENT IN THE AMOUNT OF \$40,275**

**Recommendation**

Approve a motion authorizing the General Manager to execute an Agreement with H.T. Harvey and Associates.

**Strategic Plan Linkage**

5. **Resilience:** Champion resilience for communities and the environment through regional leadership and advancing priority programs to support the Member Agencies in achieving their sustainability goals.
  - b. Advance concepts for shoreline adaptation and climate resilience.
6. **Internal Collaboration:** Expand cooperation among EBDA Member Agencies to improve economies of scale, reduce duplication of effort, and enhance each Agency's capacity.
  - c. Advance a joint Biosolids Management Strategy.

**Background**

EBDA's member agencies currently use a combination of landfilling, land application as an agricultural soil amendment, and compost for disposal or beneficial reuse of their biosolids. Wastewater agencies across California have been under increasing pressure over the past several years to divert biosolids from landfill to reduce methane emissions as part of the state's Short-lived Climate Pollutant Reduction Strategy. More recently, land application and composting of biosolids have been under mounting public relations, regulatory, and legislative threats due to risks associated with PFAS, as discussed in Item No. RA7.

Meanwhile, there is recognition that around the Bay region, action is needed to improve shoreline resilience to sea level rise. Nature-based flood protection projects along the shoreline will require significant quantities of sediment to achieve desired elevations. The opportunity to reuse fill materials has the potential to bring down costs and accelerate wetland restoration and shoreline resilience. Projects such as the South Bay Salt Ponds Restoration Project and the South San Francisco Bay Shoreline Project require significant amounts of fill. Some of that fill is now being sourced from upland construction projects, and then amended with compost to improve its organic content.

**Discussion**

Staff is recommending that EBDA engage a team of H.T. Harvey and TRC Solutions, Inc. to evaluate the suitability of biosolids as an amendment to upland soils for use in wetland restoration and ecotone levee projects. The evaluation would review biosolids data through the lens of the Master Quality Assurance Project Plan (Master QAPP) for the U.S. Fish and Wildlife Service Don Edwards National Wildlife Refuge (Refuge). The Master

QAPP establishes methods to evaluate fill material from upland sources for beneficial reuse in the Refuge. If the evaluation indicates that biosolids may be suitable for use in shoreline restoration and resilience projects, the consulting team would facilitate discussions with the regulators that would have governance over such use – the San Francisco Regional Water Quality Control Board (RWQCB) and the Bay Conservation and Development Commission (BCDC).

The ability to use biosolids for restoration and shoreline resilience would be a win-win for EBDA agencies, providing a beneficial outlet for biosolids in the face of decreasing options, while providing a vital source of sediment and organic content for wetland ecosystems.

Staff is recommending a sole source contract for this work with H. T. Harvey and TRC Solutions, Inc. These two firms are uniquely qualified to provide this evaluation for the following reasons:

- The team authored the Master QAPP, which is the key document that will be used to evaluate biosolids for beneficial reuse. During preparation and implementation of the Master QAPP, the team collaborated closely with the RWQCB and BCDC to establish screening methods geared towards maximizing beneficial reuse opportunities without adversely affecting aquatic life.
- From 2018 to the present, H. T. Harvey has served and continues to work as a quality assurance officer, and TRC Solutions serves as a peer reviewer, to implement the Master QAPP.
- H. T. Harvey is contracted to the State Coastal Conservancy to lead the development of restoration plans for a large 60-acre ecotone for the South San Francisco Bay Shoreline Project. As a result, they have firsthand knowledge of the ecotone topsoil preparation requirements for ecotone restoration.
- During preparation of the team's most recent version of the Master QAPP document (completed in November 2024), H. T. Harvey in collaboration with TRC Solutions, RWQCB, and BCDC, developed a method to blend soil material that does not meet wetland reuse criteria with soil that does meet criteria. This method presents an opportunity to assess biosolid reuse potential, by blending biosolids that may not meet wetland surface criteria with other upland soil sources that do. Having developed this assessment method, the H. T. Harvey team is best qualified to use this method to assess biosolid reuse potential.

In EBDA's 2021-2022 Budget, the Commission approved setting aside \$100,000 to evaluate the feasibility of an EBDA biosolids collaboration or project. That funding has been carried over in subsequent budgets and has not been used. The EBDA Managers Advisory Committee (MAC) recommended using a portion of those funds to support this evaluation.

# East Bay Dischargers Authority – Preliminary Chemical Suitability Assessment of Biosolids for Beneficial Reuse in San Francisco Bay Marsh-Upland Ecotones

December 18, 2024  
Proposal No. 11935

The H. T. Harvey & Associates (H. T. Harvey) team is pleased to submit a proposal to the East Bay Dischargers Authority (EBDA) to provide a preliminary assessment of the chemical suitability of Class B biosolids (hereafter, biosolids) produced from the wastewater treatment process for beneficial reuse in San Francisco Bay (Bay) shoreline restoration. We understand that EBDA has been a leader in contributing to multi-benefit projects along the shoreline, including the First Mile Horizontal Levee Project and the Oro Loma Sanitary District living levee demonstration project. We also understand EBDA evaluated the chemical suitability of agricultural lands where topsoil was mixed with biosolids to be restored to tidal wetlands (Bay Area Biosolids Coalition et al. 2022). H. T. Harvey team’s proposed study will further EBDA’s exploration of options for beneficial reuse of biosolids. Specifically, our team proposes to conduct a preliminary evaluation of the chemical suitability of biosolids mixed with upland soil for use in Bay shoreline tidal marsh-upland ecotone (ecotone) restoration (e.g., for construction of “horizontal levees”).

The H. T. Harvey team consists of H. T. Harvey and TRC Solutions, Inc. Our firms have collaborated closely over the past 7 years to develop and implement the Master Quality Assurance Project Plan (Master QAPP) for the U. S. Fish and Wildlife Service Don Edwards National Wildlife Refuge (Refuge). The Master QAPP establishes methods to evaluate fill material from upland sources for beneficial reuse in the Refuge. The H. T. Harvey team coauthored the first version of the Master QAPP with the Refuge in 2017. Since then, the Master QAPP has been used as the basis to screen and import approximately 2,000,000 cubic yards of upland soil and urban stream sediment to the Refuge for levee fill and ecotone habitat creation (specifically, to the South San Francisco Bay Shoreline Project and the South Bay Salt Pond Restoration Project [SBSRP]). H. T. Harvey serves as a quality assurance officer and TRC Solutions serves as a peer reviewer to implement the Master QAPP. During preparation and implementation of the Master QAPP, our team collaborates closely with the Regional Water Quality Control Board (RWQCB) and the Bay Conservation and Development Commission (BCDC) to establish screening methods geared towards maximizing beneficial reuse opportunities without adversely affecting aquatic life. As a result, our team has an unsurpassed understanding of the Master QAPP and how to collaborate with RWQCB and BCDC to evaluate novel potential beneficial fill materials, such as biosolids.

In our scope of work below, the H. T. Harvey team proposes to work with EBDA to prepare a plan to sample and analyze biosolids for this beneficial reuse evaluation. Sample analysis will be based on the list of contaminants of concern in the Master QAPP. Additional chemicals may be analyzed due to their potential

presence in biosolids and effect on ecological receptors. Based on our preliminary review of the white paper produced by Bay Area Biosolids Coalition et al. (2022), we assume that biosolids on their own may not meet the screening limits in the Master QAPP. However, mixing soil that has minor exceedances of QAPP standards with soil that meets these standards in a ratio to produce a mixture that meets the wetland surface criteria has been acceptable to BCDC, RWQCB, and the California Department of Toxic Substance Control (DTSC) in the past. The SBSPRP has primarily imported terrestrial subsoil with low organic content (less than 1% organic matter by dry weight). To facilitate vegetation establishment, H. T. Harvey typically recommends that topsoil in ecotones have an organic matter content of approximately 2-5% (dry weight basis). Mixing biosolids with lower fertility soil could potentially provide an opportunity to enhance the horticultural suitability of soil used for ecotones while remaining protective of aquatic life. Therefore, following receipt of biosolids sample results, we propose to explore the ratio of biosolids to upland fill soil that could potentially be mixed while remaining protective of aquatic life in wetlands. The outcome of this will be a preliminary evaluation of the ratio (by volume) of biosolids to upland soil, if any, that could potentially be mixed for reuse on upcoming permitted ecotone restoration projects in the Refuge. We will present our teams' findings as a concise technical memorandum, and after discussing the results with EBDA, set up a meeting with RWQCB and BCDC to review the results of the assessment and identify next steps.

Our proposed scope is presented below and our team's fee estimate is provided in Table 1 at the end of the scope of work.

## **Task 1. Biosolid Sample Plan and Data Review**

The H. T. Harvey team will attend a kick-off meeting with EBDA. Then, the team will review the white paper by Bay Area Biosolids Coalition et al. (2022), preliminary chemical testing data on biosolids provided by EBDA, and carry out a limited literature review of ecological contaminants of concern in biosolids. In addition, the team will review basic information on biosolid production provided by EBDA, such as the quantity of biosolids being produced and the sources of the biosolids (e.g., sewer and stormwater run-off, or sewer only). Based on this review, the team will prepare a technical memorandum (3-5 pages) summarizing the findings and providing recommendations for EBDA to sample their biosolids to fill data gaps necessary for the H. T. Harvey team's evaluation. The sampling plan will include a list of relevant contaminant testing standards (for ecological screening), chemical contaminants, testing methods, and reporting limits that the laboratory will need to achieve so that results can be compared to applicable screening limits.

### **Deliverables:**

- Technical memorandum with 1 figure showing EBDA biosolid production locations; with biosolid sample plan and rationale.

### **Assumptions:**

- EBDA will provide relevant background information listed above.
- EBDA will collect and send samples to an appropriate laboratory for sample analysis and provide the results to H. T. Harvey as a lab report and electronic data deliverable (EDD).

## **Task 2. Analyze Sample Results and Prepare Memorandum Summarizing Potential for Beneficial Reuse**

The H. T. Harvey team will compare the biosolids sample results to applicable screening limits for wetland surface criteria in the Master QAPP. The H. T. Harvey team will also review past borrow site submittals for a representative set of upland soil sources that have been approved as wetland surface material for the Shoreline project and/or SBSRP, then determine the ratio of biosolid material that could have been mixed with up to 3 of these representative soil sources to generate a soil mixture that meets the wetland surface criteria in the Master QAPP. The results of the assessment will be summarized into a concise 4-6 page memorandum and submitted to EBDA for review. The H. T. Harvey team will meet with EBDA to discuss comments on the draft, then we will prepare a final version.

### **Deliverables:**

- Draft and final technical memorandum summarizing potential for biosolid reuse in San Francisco Bay shoreline ecotone soils.

### **Assumptions:**

- Laboratory testing results provided by EBDA will have sufficient accuracy to compare with applicable screening limits.

## **Task 3. Meet with RWQCB and BCDC to Discuss Results**

Following completing of the memorandum in Task 2, if EBDA judges that they would like to proceed with evaluating the potential for beneficial reuse of biosolids, H. T. Harvey will coordinate and lead a virtual 1.5 hour meeting with EBDA and key staff involved in the Master QAPP from the RWQCB and BCDC. The purpose of the meeting will be to discuss the findings in the Task 2 memorandum, the H. T. Harvey team's opinion about the potential suitability of biosolids for beneficial reuse and get feedback from RWQCB and BCDC. Prior to meeting with RWQCB and BCDC, the H. T. Harvey team could meet with EBDA to discuss approaches to blending biosolids with potential import soil sources to achieve a final soil that meets the wetland surface criteria in the Master QAPP. Following the meeting, H. T. Harvey will prepare meeting notes and a list of ideas for next steps.

### **Deliverables:**



- PowerPoint presentation for RWQCB/BCDC meeting
- Meeting notes

## Fee Estimate

The H. T. Harvey team will bill time hourly up the maximum Team Not-to-Exceed Fee shown in the table below.

<b>Task</b>	<b>H. T. Harvey</b>	<b>TRC Solutions</b>	<b>Team Not-to-Exceed Fee</b>
Task 1. Biosolid Sample Plan and Data Review	\$11,354	\$6,000	\$17,354
Task 2. Analyze Sample Results and Prepare Memorandum Summarizing Potential for Beneficial Reuse	\$9,852	\$2,500	\$12,325
Task 3. Meet with RWQCB and BCDC	\$8,069	\$2,500	\$10,569
<b>Total</b>	<b>\$29,275</b>	<b>\$11,000</b>	<b>\$40,275</b>

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