



EAST BAY DISCHARGERS AUTHORITY
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A Joint Powers Public Agency

ITEM NO. 13

**REGULATORY AFFAIRS COMMITTEE
AGENDA**

**Wednesday, September 18, 2019
9:00 a.m.**

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

Committee Members: Johnson (Chair); Cutter

RA1. Call to Order

RA2. Roll Call

RA3. Public Forum

RA4. Status Report – NPDES Report

(The Committee will review NPDES Permit compliance data for July 2019.)

RA5. Toxicity Update

(The Committee will discuss recent toxicity test results and upcoming regulatory changes.)

RA7. Adjournment

(Any member of the public may address the Commission at the commencement of the meeting on any matter within the jurisdiction of the Commission. This should not relate to any item on the agenda. It is the policy of the Authority that each person addressing the Commission 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 Commission on an agenda item should do so at the time the item is considered. It is the policy of the Authority that oral comments be limited to three minutes per individual or ten minutes for an organization. Speaker's cards will be available in the Boardroom and are to be completed prior to speaking.)

(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 Administrative Assistant at the EBDA office at (510) 278-5910 or kyambao@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 posted on the East Bay Dischargers Authority website located at <http://www.ebda.org>.)

**The next Regulatory Affairs Committee meeting is scheduled for
Wednesday, October 16, 2019, at 9:00 a.m.**

ITEM NO. RA4 STATUS REPORT – NPDES PERMIT

Recommendation

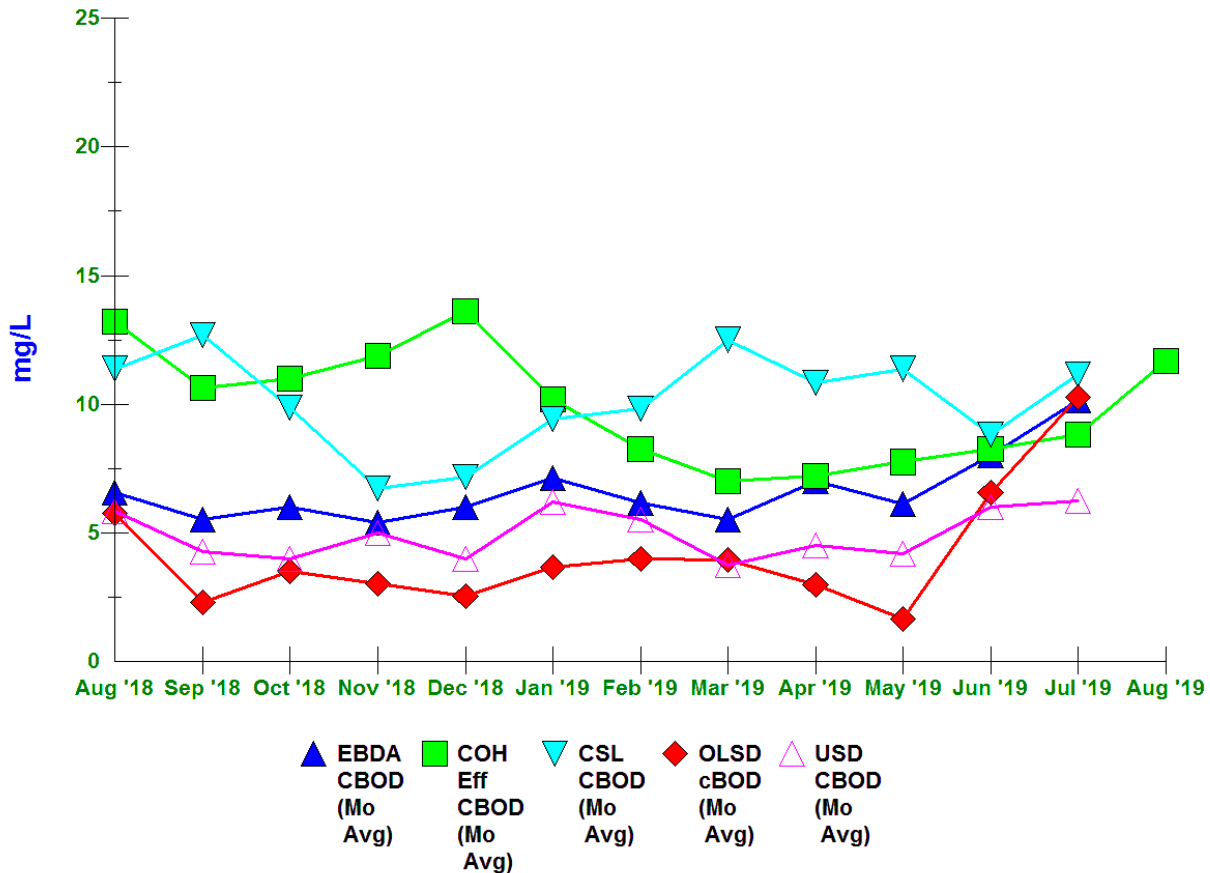
For the Committee’s information only; no action is required.

Permit Compliance Issues

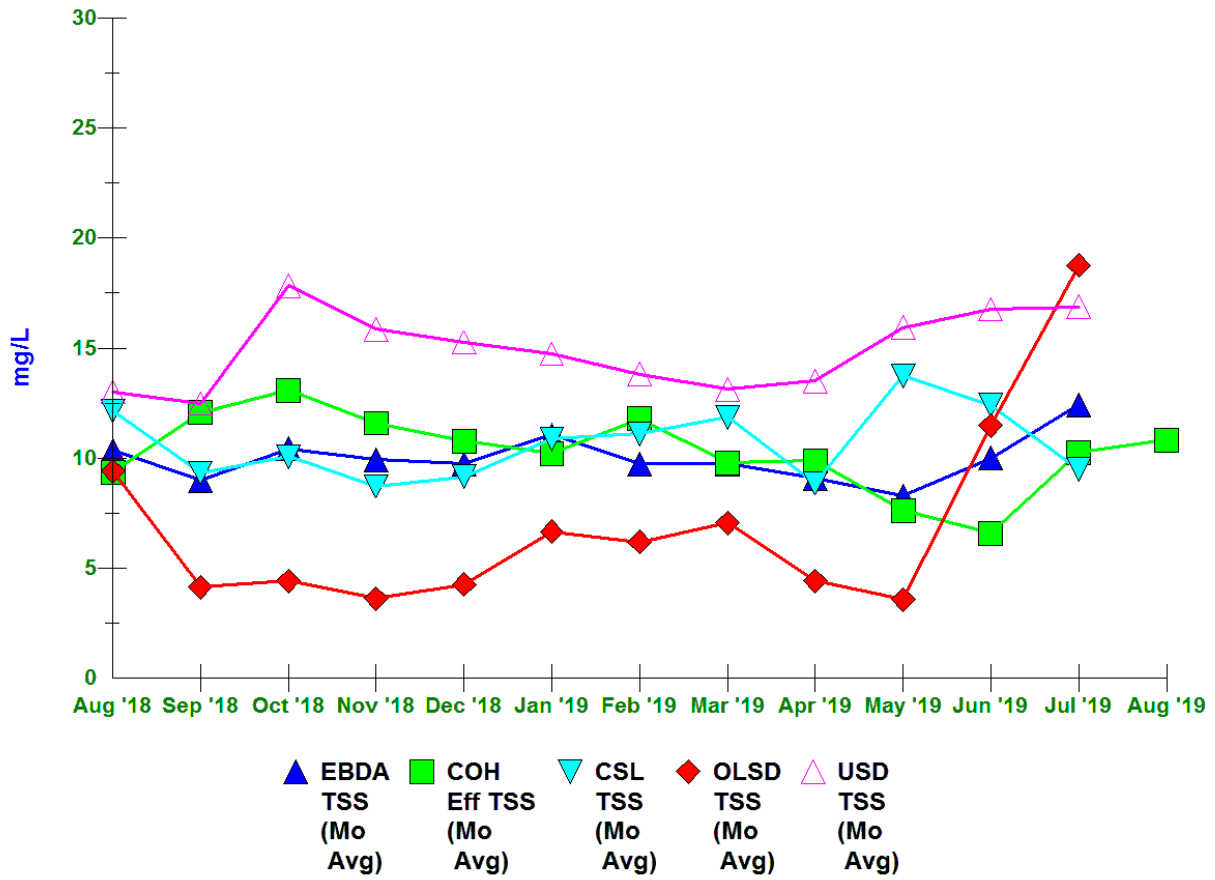
There were no NPDES permit violations in July and preliminary data from August are also free of permit exceedances. Member Agency CBOD and TSS performance are shown below. A table with bacterial indicators is also included.

As noted previously, bacterial regrowth tends to accelerate as the weather warms in the summer months, and EBDA did experience several three-digit results for fecal coliform in August. Staff has kept chlorine dosing high to ensure that additional high bacteria results are not detected. 90th percentile values and geometric means that determine compliance remain well under effluent limits. Complete results are shown in the table below.

EBDA CBOD (Limit=25 ppm)



EBDA TSS (Limit 30 ppm)



EBDA Eff TSS

EBDA Bacterial Indicators

	FECAL	ENTERO
Date	MPN/ 100mL	MPN/ 100mL
Limit (Geomean)	500	240
Jan 2019, Geomean	6	3
Feb 2019, Geomean	3	3
Mar 2019, Geomean	7	2
April 2019, Geomean	7	< 2
May 2019, Geomean	14	2
June 2019, Geomean	16	3
7/1/2019	5	< 2
7/2/2019	4	< 2
7/3/2019	17	2
7/8/2019	6	< 2
7/9/2019	13	2
7/15/2019	22	< 2
7/16/2019	23	210
7/22/2019	2	< 2
7/23/2019	2	< 2
7/29/2019	10	< 2
7/30/2019	61	< 2
July 2019, Geomean	9	< 3
8/5/2019	29	2
8/6/2019	79	< 2
8/7/2019	110	4
8/12/2019	12	< 2
8/13/2019	17	62
8/14/2019	13	< 2
8/19/2019	4	< 2
8/20/2019	22	< 2
8/21/2019	130	4
8/26/2019	62	< 2
8/27/2019	79	4
August 2019, Geomean	32	< 3

ITEM NO. RA5 TOXICITY UPDATE

Recommendation

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

Background

EBDA's NPDES permit requires periodic monitoring of acute and chronic whole effluent toxicity. Toxicity is assessed via bioassay, by exposing live organisms of a sensitive species – in EBDA's case, fathead minnows – to effluent in different concentrations and measuring mortality and growth. The goal of toxicity testing is to ensure there are no synergistic toxic effects of the constituents in effluent or toxicity caused by constituents that are not otherwise regulated. EBDA's toxicity testing is performed by a contract lab, Pacific EcoRisk (PER), which performs similar testing for many permittees across the state.

EBDA's current NPDES permit has effluent limitations for acute toxicity. EBDA must comply with an 11-sample median value of not less than 90% survival, and an 11-sample 90th percentile value of not less than 70% survival. The current permit does not contain effluent limits for chronic toxicity, but rather requires accelerated monitoring and potentially initiation of a toxicity reduction evaluation if certain triggers are exceeded.

Under EBDA's permit, the Authority is permitted to extract 96-hour survival data from the chronic test to evaluate acute toxicity; performing separate tests is not required. EBDA had been required to perform bioassay tests bi-monthly. However, following one year of results under acute toxicity effluent limitations and chronic toxicity triggers, the Authority was allowed to reduce testing frequency to quarterly.

This report will summarize the results of August's bioassay tests and follow-up testing, as well as changes that are proposed to the state's toxicity provisions.

Discussion

August Toxicity Results

PER performed bioassay testing on EBDA effluent on samples collected the first week of August. Though chronic toxicity showed significant reductions in survival and growth, the results were well under chronic toxicity triggers. However, the 96-hour survival data extracted from the chronic test resulted in an acute toxicity survival rate of 47.5%. Because compliance is based on an 11-sample median and 90th percentile value, one departure does not constitute a violation. However, to comply with follow-up testing requirements in the permit and to better understand the potential toxicity issue, several follow-up tests were conducted.

In describing the acute toxicity effluent limit, the permit states, "If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused by ammonia and that ammonia in the discharge complies with the ammonia effluent limits in Table 5 of this Order, then such toxicity shall not constitute a violation of this effluent limitation." EBDA's effluent ammonia result per Caltest's analysis for the period during which the bioassay was conducted was 38 mg/L, well below the maximum daily effluent limit in Table 5 of 120 mg/L. However, PER suspected that the observed toxicity could be caused by ammonia coupled with the use of younger more sensitive fish than required for the acute toxicity protocol. Their supposition

stemmed from the ammonia concentrations they observed during the test, plus other factors contributing to ammonia toxicity such as pH drift. Samples are buffered and adjusted to pH 7.3 to reduce ammonia interference, but there was evidence of drifting during the test.

To demonstrate that the low survival rate was caused by ammonia and that this result did not constitute a threatened violation, a follow-up Toxicity Identification Evaluation (TIE) test was conducted using the same samples from the original test. The results are summarized in the table below:

TIE treatment	% Survival	Effects of TIE on baseline
Un-treated baseline sample	0%	Sample is toxic
Ammonia removal via Zeolite	95%	Toxicity is removed
Ammonia add-back	0%	Toxicity is recovered

This series of experiments indicates that ammonia was the likely cause of the initially observed toxicity.

At the same time, to comply with permit provisions stating that “if results of an acute bioassay test indicated a violation or threatened violation (e.g. the percentage of surviving test organisms is less than 70 percent), the Discharger shall initiate a new test as soon as practical,” San Leandro staff arranged for a follow-up test when the initial results were received. To satisfy the requirements of the chronic toxicity method, PER uses fish less than 48 hours old for EBDA’s chronic toxicity testing. For the acute toxicity protocol, 1-14 day-old fish can be used. By combining the acute and chronic tests, EBDA saves time and money; however, it does lead to acute testing being performed on younger, more sensitive fish than would otherwise be required. The acute bioassay follow-up test conducted in the same month of August with new samples was performed using 11-day-old fish to lessen the ammonia sensitivity issue. The result of the follow-up test was 97.5% survival.

Since the test fish survival rate was >90% and the Authority investigated the causes of the mortality and found it to be ammonia, compliance with toxicity requirements as specified in the permit have been satisfied for this monitoring period.

The results of these follow-up tests will be detailed in EBDA’s August monthly report to the Regional Water Board. Staff is also working with PER to assess the benefits of running two discrete chronic and acute tests going forward.

State Water Board Toxicity Provisions

Since 2012, State Water Resources Control Board staff has been working on policy changes to the way toxicity requirements are implemented in permits. In October 2018, they released a formal draft of revisions to the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California*. Further revisions were made in the most recent July 2019 version. The provisions in this document would overwrite toxicity-related provisions in regional Basin Plans and mandate certain changes in the way toxicity is regulated in permits. The most significant changes from current practice are as follows:

- **Mandatory effluent limits for chronic toxicity.** As noted above, historically, and in EBDA's current permit, wastewater must be routinely monitored for toxicity, but failure of a chronic toxicity test is not considered a violation of the permit because there is not an effluent limit for toxicity. Rather, failure of a toxicity test leads to increased monitoring and an evaluation process for determining the source of the toxicity. Under the new provisions, all municipal wastewater dischargers over 5 MGD are considered to have reasonable potential to cause water quality impairment, and therefore they will have toxicity effluent limits. This means that every failed test will now be a violation of the permit, open to enforcement action. The new provisions do give Regional Water Boards the discretion not to include effluent limits for acute toxicity, which San Francisco Bay Water Board staff has indicated they would exercise.
- **Required use of the Test of Significant Toxicity (TST).** Chronic toxicity testing is currently performed by establishing a dose-response curve, looking at the health of the organisms in different concentrations of wastewater effluent relative to control water. The results of the test are reported in terms of the % survival of organisms at different effluent concentrations, as well as other endpoints such as growth of the organisms. In lieu of this method, the new provisions will require use of a statistical analysis called the TST. The TST is a bright line pass/fail result that analyzes the number of organisms that survive at a particular effluent concentration known as the in-stream waste concentration. This concentration represents the expected concentration of effluent in the receiving water, taking into account dilution. The wastewater industry has raised a number of concerns about the use of the TST for compliance purposes, including the fact that the test method has not been formally promulgated by EPA, and that compared to the historical approach, the TST yields more false positive results.

In order to assess the effects of the proposed changes on EBDA's NPDES compliance going forward, staff engaged PER in 2018 to evaluate EBDA's historic chronic toxicity data using the TST statistical analysis. The results were provided in a Technical Memorandum included with the Committee's December 2018 agenda. Based on statements by Regional Water Board staff, it is expected that EBDA's in-stream waste concentration would be established based on the 79:1 dilution granted for our deep water outfall. This means that the TST would be performed with just 1.3% effluent, making it highly unlikely that toxicity would ever be seen. Out of an abundance of caution, PER's analysis was done using 10% effluent. At that level, the five years of data analyzed showed a 100% pass rate. This analysis demonstrates that the likelihood of EBDA violating its toxicity effluent limit under the new provisions is very low. It also establishes that EBDA would qualify for reduced monitoring allowed for under the provisions.

- **Sensitive Species Screening.** As part of every permit cycle, each discharger must conduct a screening to identify the most sensitive species to their effluent. That species is then used for bioassays during the permit term. Several years ago, the Regional Water Board adopted an Alternate Monitoring and Reporting Program that allows dischargers to contribute to the Regional Monitoring Program (RMP) in lieu of conducting a sensitive species screening if the characteristics of their effluent have not changed. Currently, the RMP gets approximately \$180K per year from agencies avoiding paying for sensitive species screening. The proposed toxicity provisions require a new screening scheme and will not allow agencies to use results from the previous scheme. The resulting effect is that

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agencies will now be incentivized to conduct the screening rather than pay the RMP. This effect will diminish the valuable work the RMP can accomplish in terms of truly evaluating the trends of toxic substances in the Bay. BACWA is working with Regional and State Water Board staff to try to resolve this issue.

The provisions are currently scheduled for December adoption and then would be incorporated in EBDA's next NPDES permit in 2022.