BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT

375 - 11th Street, Oakland, CA 94607 Office of the Secretary: (510) 287-0440

Notice of Time Change

PLANNING COMMITTEE
Tuesday, October 10, 2023
9:00 a.m.
Boardroom
375 11th Street
Oakland, CA 94607

Notice is hereby given that the Tuesday, October 10, 2023 Planning Committee meeting of the Board of Directors has been rescheduled from 9:15 a.m. to 9:00 a.m. The meeting will be held in the Administration Building Boardroom at 375 11th Street, Oakland, California.

Dated: October 5, 2023

Rischa S. Cole

Rischa S. Cole
Secretary of the District

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BOARD OF DIRECTORS
EAST BAY MUNICIPAL UTILITY DISTRICT

375 - 11th Street, Oakland, CA 94607 Office of the Secretary: (510) 287-0440

AGENDA
Planning Committee
Tuesday, October 10, 2023
9:00 a.m.
Boardroom
375 11th Street
Oakland, CA 94607

***** Please see appendix for public participation instructions*****

Committee Members: Doug A. Linney {Chair}, Lesa R. McIntosh, and Marguerite Young

ROLL CALL:

PUBLIC COMMENT: The Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

DETERMINATION AND DISCUSSION:

1. Los Vaqueros Reservoir Expansion Project Update (Tognolini)

2. Water Quality Program Semi-Annual Update – 2023 (Briggs)

ADJOURNMENT:

Disability Notice

If you require a disability-related modification or accommodation to participate in an EBMUD public meeting please call the Office of the Secretary (510) 287-0404. We will make reasonable arrangements to ensure accessibility. Some special equipment arrangements may require 48 hours advance notice.

Document Availability

Materials related to an item on this agenda that have been submitted to the EBMUD Board of Directors within 72 hours prior to this meeting are available for public inspection in EBMUD's Office of the Secretary at 375 11th Street, Oakland, California, during normal business hours, and can be viewed on our website at www.ebmud.com.

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APPENDIX

Planning Committee Meeting
Tuesday, October 10, 2023 – 9:00 a.m.

EBMUD Board committee meetings will be conducted in person and via Zoom.
These meetings are recorded and live-streamed.

*Online**
https://ebmud.zoom.us/j/94576194030?pwd=dWZlc3hNU3JNUVBQYmNKWjJSNVZQdz09
Webinar ID: 945 7619 4030
Passcode: 925293

By Phone
Telephone: 1 669 900 6833
Webinar ID: 945 7619 4030
Passcode: 925293
International numbers available: https://ebmud.zoom.us/u/kdmpbwwlg2

*****To familiarize yourself with Zoom, please visit https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting

Providing public comment - *The EBMUD Board of Directors is limited by State law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.*

- Each speaker is allotted 3 minutes to speak; the Committee Chair has the discretion to amend this time based on the number of speakers
- The Secretary will track time and inform each speaker when the allotted time has concluded
- Comments on **non-agenda items** will be heard at the beginning of the meeting
- Comments on **agenda items** will be heard when the item is up for consideration
- The Secretary will call each speaker in the order received

In person
- Fill out and submit a blue speaker card which is available in the meeting room

Via Zoom
- Use the raise hand feature in Zoom to indicate you wish to make a public comment https://support.zoom.us/hc/en-us/articles/205566129-Raising-your-hand-in-a-webinar
  - If you participate by phone, press *9 to raise your hand
- When prompted by the Secretary, please state your name, affiliation if applicable, and topic

Submitting written comments or materials
- Email written comments or other materials for the Board of Directors to SecOffice@ebmud.com
- Please indicate the meeting date and agenda item number or non-agenda item topic in the subject of the email. Contact information is optional.
- **Please email by 4 p.m. the day prior to the scheduled regular meeting**; written comments and other materials submitted to the Board of Directors will be filed in the record.

To *observe* the Planning Committee Meeting,
please visit: https://www.ebmud.com/about-us/board-directors/board-meetings/

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 5, 2023

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: Michael T. Tognolini, Director of Water and Natural Resources MTT

SUBJECT: Los Vaqueros Reservoir (LVR) Expansion Project Update

SUMMARY

The LVR Joint Powers Authority (JPA) has scheduled execution of the LVR Project agreements for spring 2024, ahead of the California Water Commission (CWC) final award hearing targeted for June 2024. Based on this schedule, EBMUD will need to make a decision on Project participation in early 2024. However, this schedule is aggressive and EBMUD has indicated to the JPA that the hearing should be delayed. Key issues that need to be resolved before EBMUD can decide on participation include completing negotiations of the Project agreements, updating the Project cost evaluation, and significantly advancing the sources of water supply for storage by securing key approvals. An update on the Project will be provided at the October 10, 2023 Planning Committee meeting.

DISCUSSION

The Project agreements are under development and negotiations include the Service Agreement, EBMUD Facilities Usage Agreement, Contra Costa Water District (CCWD) agreements [Facilities Usage, Operations and Maintenance (O&M), Design and Construction (D&C)], the Contracts for Administration of Public Benefits (CAPBs), and the Backstop Conveyance Agreement. Several significant issues remain to be resolved with these agreements. Staff is also continuing to evaluate water supply sources for the Project and is having ongoing discussions with CCWD and the JPA on the backstop water conveyance.

Agreements Status and Outstanding Issues

The following key issues need to be resolved prior to EBMUD deciding on participation in the Project:

1. Operational priorities for filling the reservoir.
2. Priority of an exchange between CCWD and EBMUD when EBMUD requests water from storage.
3. Allocation of storage capacity, costs, and usage rights.
4. Public benefits terms, including the operational priorities of the refuges.

5. Need for JPA rather than CCWD oversight and authority on decisions impacting construction costs for which the JPA member agencies bear the financial risk.
6. Backstop water conveyance to CCWD during the Los Vaqueros construction.
7. Cost for use of CCWD facilities.

Table 1 provides a summary of the status of the Project agreements and the outstanding issues. Issues 1, 2, and 3 are being addressed in subgroups facilitated by the JPA consisting of member agencies' staff. Negotiations of public benefits (issue 6) with the State agencies are being led by the JPA and a negotiations schedule has been developed by the JPA. The JPA will be facilitating a separate subgroup consisting of the member agencies' staff to discuss the public benefits terms. CCWD has declared an impasse in negotiation of issue 5, and General Managers from several agencies including CCWD and EBMUD are working to resolve the outstanding issue. CCWD plans to have a discussion with their board about backstop conveyance in October 2023. The JPA has provided CCWD with follow-up comments from the member agencies on issue 7.

Table 1. Summary of Project Agreements Status and Outstanding Issues

Agreement	Purpose	Status	Outstanding Issues
Service Agreement	JPA provides services to the members who make payments for them (e.g., storage, conveyance, public benefits, design and construction).	Member agencies have provided the JPA comments on version 3 of the termsheet. Draft agreement to be completed by end of September. Subgroup meetings with member agencies' staff facilitated by the JPA are being held to discuss and resolve operational priorities and storage and conveyance allocations.	1. Operational priorities among member agencies. 2. Public benefits terms have not been negotiated, including operational priority of the refuges. 3. For release of stored water, the priority of an exchange between CCWD and EBMUD. 4. Cost and usage rights allocations. 5. Storage capacity allocations. Storage is currently oversubscribed by 50 thousand acre-feet (TAF). EBMUD needs at least 30 TAF of storage.
CCWD Design & Construction	D&C services to be provided to the JPA by CCWD, payment terms, reporting, and construction approval and authorities.	JPA has responded to CCWD on termsheet version 2 based on input by member agencies, and CCWD has declared an impasse on the negotiations. General Managers from several agencies including CCWD and EBMUD are working to	CCWD is negotiating to have overall authority on decisions impacting construction costs while the JPA member agencies take on the majority of the financial risk. EBMUD has indicated that this is not acceptable and has proposed alternative terms.

Agreement	Purpose	Status	Outstanding Issues
		resolve the outstanding issue.	
CCWD Facilities Usage	Conditions under which the JPA can use CCWD's facilities and the associated usage fees.	Draft termsheet is under review by the member agencies and will be discussed with the JPA Board Ad Hoc Committee in October 2023.	Usage fees methodology is still under negotiations. Proposed CCWD methodology is not accepted by the LV partners.
CCWD O&M Agreement	Allows JPA to pay CCWD for operating their facilities after construction.	Under development by CCWD.	To be determined.
EBMUD Facilities Usage	Conditions under which the JPA can use EBMUD's facilities and the associated usage fees.	Draft termsheet prepared by EBMUD is under review by the JPA and member agencies.	To be determined.
CAPBs	Ensures the project public benefits will meet the State funding requirements.	Kickoff meeting with the JPA, Department of Water Resources (DWR), and California Department of Fish and Wildlife (CDFW) occurred in August 2023. The JPA has developed a schedule for negotiations with DWR and CDFW. JPA to facilitate a subgroup consisting of member agency staff to discuss public benefit terms.	Public benefits terms need to be negotiated and then incorporated into the Service Agreement.
Backstop Conveyance Agreement	Conditions under which EBMUD can provide backstop conveyance to CCWD while the dam is under construction and being refilled.	EBMUD is preparing the draft agreement and is expected to be completed in October.	CCWD expressed that they need full backstop under all scenarios. EBMUD cannot provide guaranteed backstop due to planned capital projects and uncertain future conditions.

Water Supply Sources Evaluation

Staff is continuing to evaluate water supply sources for the Project. Staff is also in discussions with Sacramento Municipal Utility District (SMUD) and the U.S. Bureau of Reclamation to develop an agreement for use of a partial assignment of SMUD's Central Valley Project (CVP) contract as a water supply source for storage. EBMUD signed a letter of intent with SMUD on July 27, 2023, to exclusively negotiate this assignment. In addition, staff is continuing to evaluate the potential of storing surplus Mokelumne River water by transferring the water using recycled water credits.

Backstop Water Conveyance

In March 2021, EBMUD and CCWD executed a Memorandum of Understanding (MOU) to analyze whether and under which conditions EBMUD could convey CCWD's water from the Freeport Regional Water Project (FRWP) intake to the CCWD-EBMUD Raw Water Intertie during the Los Vaqueros Reservoir outage. During reservoir construction and subsequent refilling planned between 2028 and 2032, CCWD may need assistance conveying water supplies secured by CCWD to provide water supply to improve water quality normally provided by Los Vaqueros Reservoir. EBMUD staff identified eight facility outages of EBMUD water supply, treatment, and distribution infrastructure that are scheduled to occur due to key facility upgrades during the dam construction and reservoir refill period. The results of EBMUD's analysis concluded that providing backstop conveyance to CCWD is potentially possible during most outage conditions with the exceptions of the Mokelumne Aqueduct 3 relining project (estimated to occur from July 2029 to July 2030) and Lafayette 1 relining project (estimated to occur from November 2027 to June 2028). However, other conditions may occur that could limit EBMUD's ability to convey water to CCWD.

EBMUD provided CCWD a memo with the results of the backstop conveyance analysis. Discussions on backstop are ongoing between EBMUD, CCWD, and the JPA. CCWD has indicated that they need to have backstop conveyance under all conditions and EBMUD has indicated that it is not possible to change the schedule of the critical EBMUD projects that prohibit backstop conveyance for CCWD. EBMUD has inquired about CCWD looking into a backup option such as revising secondary water quality goals during the period when EBMUD is not able to provide backstop conveyance.

NEXT STEPS

Staff will continue to negotiate the Project agreements and work to resolve the key issues necessary to determine participation in the Project. The JPA will send the detailed cost estimates to the member agencies in October 2023, and staff will use them to update EBMUD's cost evaluation of the Project. Committee and Board updates are scheduled over the next several months to obtain feedback on the Project prior to Board consideration of all agreements in spring 2024.

CCC:MTT:dec

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 5, 2023

MEMO TO: Board of Directors

THROUGH: Clifford C. Chan, General Manager CCC

FROM: David A. Briggs, Director of Operations and Maintenance DB

SUBJECT: Water Quality Program Semi-Annual Update – 2023

SUMMARY

The attached report provides an update on the District's water quality efforts to ensure the delivery of high-quality water to customers. Water quality data for the first six months of calendar year 2023 is summarized in the report. A presentation on the Water Quality Program will be made at the October 10, 2023 Planning Committee meeting.

DISCUSSION

From January 1, 2023 through June 30, 2023, the District met all federal and state drinking water standards and 97 percent of the District's internal goals (123 of 127 goals were met). As in previous updates, levels of three types of disinfection byproducts were higher than District goals. An additional goal related to treatment plant operation was not met. This is explained further in Attachment 1. Tabular data is presented in Attachment 2.

The District continues to monitor developing federal and state regulations related to lead and other contaminants of concern in drinking water.

CCC:DAB:sd

Attachments: 1. Water Quality Semi Annual Report 2023
2. EBMUD Water Quality Goals – January 1 through June 30, 2023

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ATTACHMENT 1

WATER QUALITY SEMI-ANNUAL REPORT – 2023

This report provides an update on the District's efforts to ensure delivery of high-quality water to its customers for the first six months of calendar year 2023.

From January 1, 2023 through June 30, 2023, the District met all federal and state drinking water standards and 97 percent of the District's internal goals (123 of 127 goals were met). As in previous updates, levels of three types of disinfection byproducts (DBPs) were higher than District goals. One additional goal related to water treatment plant operation was not met. In addition to numerical goals and standards, this report covers the District's efforts to minimize potential lead exposure to customers, monitor contaminants of emerging concern, and prepare for upcoming regulatory changes.

District Water Quality Goals

The District's internal water quality goals are substantially more stringent than federal and state water quality standards. The goals are adjusted when appropriate, depending on the latest technical information and regulatory changes.

Chlorinated disinfectant byproducts (DBPs): During the first half of 2023, the District exceeded two internal water quality goals related to chlorinated DBPs. Total trihalomethanes (TTHMs) and five haloacetic acids (HAA5) are regulated DBPs that form when chlorine reacts with natural organic matter in raw water. The District's current goals of 40 parts per billion (ppb) for TTHMs and 30 ppb for HAA5 are half of regulatory standards. Atmospheric rivers early in 2023 significantly affected raw water quality by increasing organic matter and turbidity in runoff. As a result, additional DBP samples were collected during the first quarter. The District's goal was exceeded in 53 out of 64 individual TTHM samples and 55 out of 64 HAA5 samples in the first half of 2023. DBP levels have since stabilized but remain somewhat elevated. Achieving lower DBP levels with current treatment technologies employed at the water treatment plants (WTPs) could compromise appropriate disinfection of the water. Upcoming capital projects at the WTPs should reduce peak concentrations of DBPs.

Chloraminated DBPs: N-nitroso-dimethylamine (NDMA) is one of several nitrosamines that can form when chloramine reacts with organic precursor materials in water. NDMA forms slowly and is generally detected in parts of the distribution system with very long residence times. In the first half of 2023, the District's water quality goal was exceeded in 3 of 10 individual NDMA samples. The District's goal is set at the Public Health Goal (PHG) because there is currently no regulatory standard for NDMA. The regulatory future of NDMA remains uncertain. The U.S. Environmental Protection Agency (USEPA) has discussed potential NDMA regulations as part of its revisions to the microbial and disinfection byproduct rules, and the State Water Resources Control Board (State Board) has indicated that it plans to regulate NDMA in the near future.

Chlorine Residuals: Maintaining an adequate disinfectant residual throughout the distribution system controls the growth of microorganisms and maintains the safety of drinking water. The District analyzes hundreds of chlorine residual samples each month throughout the service area, both from water mains and distribution storage reservoirs. Thirty-five online analyzers have been

added to continuously measure chlorine residuals at reservoirs. The District's goal is to maintain at least 0.5 milligram per liter (mg/L) chlorine residual in 95 percent of all samples each month. In the first half of 2023, this goal was met. In previous reports, the chlorine residual goal was often not met in distribution reservoirs. Data from the online analyzers, coupled with the lower overall temperatures during the first half of 2023, likely assisted in meeting this challenging chlorine residual goal. District staff continue to increase cycling of reservoirs and frequently add chlorine directly to distribution reservoirs to boost disinfectant levels.

Corrosion Control Index at WTPs: To minimize the corrosivity of the water in the distribution system, water chemistry is adjusted at the effluent of each WTP. Corrosion control treatment helps ensure that any incidental lead in the water system or in customer homes does not leach into the water, in addition to reducing corrosion of other materials such as iron and cement. The Langelier Saturation Index (LSI) is used as an indicator, and the goal is to maintain the LSI between -0.5 and +0.5 in calculations made each week. During the first half of 2023, the LSI goal was met at all plants except the Sobrante WTP in 3 of 12 samples.

Other Water Quality Issues

In addition to currently regulated parameters and internal goals, the District has several ongoing water quality initiatives intended to prepare for upcoming regulatory changes or potential threats to water quality.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS)

The State Board and USEPA continue efforts to regulate PFAS in drinking water and wastewater. California has drinking water notification levels and response levels for four PFAS: perfluorooctanoic acid (PFOA), perfluorooctane sulfonic acid (PFOS), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS), and is working on enforceable drinking water regulations. On March 14, 2023, USEPA proposed enforceable regulations for six PFAS: PFOS and PFOA via maximum allowable levels, and four additional PFAS via a calculated "health index": PFOA, PFOS, PFBS, and hexafluoropropylene oxide (HFPO) - known as "GenX chemicals". In chemical and product manufacturing, GenX chemicals are considered a replacement for PFOA, and PFBS is considered a replacement for PFOS. Public comments were accepted on the new regulation from the proposal date through May 30, 2023. The District did not submit independent comments, but worked with industry groups (e.g., American Water Works Association, California Urban Water Agencies, and Association of California Water Agencies) to submit joint comments. Well over 100,000 comments were received on the proposed rule. USEPA intends to finalize the new PFAS standards by the end of 2023, with compliance required three years later. Initial regulatory actions have focused on source control - banning use of PFAS in food packaging and other consumer products and banning PFAS-containing firefighting foams.

Required PFAS Monitoring

Between 2023 and 2025, the District will collect samples for 29 different PFAS compounds under the federal Unregulated Contaminant Monitoring Rule 5 (UCMR5) and report the results to USEPA. Monitoring began in April 2023. Each WTP must be sampled quarterly for at least four quarters.

PFAS results in all UCMR5 samples to date are below the Method Reporting Levels (MRLs), the lowest level USEPA considers reliable. The UCMR5 protocol does not allow quantification below the MRLs which range from 3 - 7 nanograms per liter (ng/L).

California initiated PFAS monitoring through a series of phased monitoring orders that prioritize monitoring based on vulnerability of each water source to PFAS contamination. The latest phase, in 2022, required sampling of the Sacramento River, including the Freeport intake. The Freeport sampling began in the first quarter of 2023 and continues quarterly. This monitoring is being conducted in coordination with Sacramento County Water Agency. The local and upcountry watersheds are considered more protected against PFAS contamination and have yet to be included in the State Board's monitoring orders. All results under the State's monitoring orders to date are below the minimum reporting levels.

Additional PFAS Monitoring

To better characterize the sources, additional samples have been collected in the local East Bay watersheds from several creeks that feed into San Pablo and Upper San Leandro Reservoirs. Several PFAS compounds have been detected, likely resulting from stormwater runoff from the cities of Orinda and Moraga. Runoff contribution from other creeks likely dilute these concentrations before water enters treatment plants. Additional raw water sampling is ongoing, and studies have begun to assess potential alternative treatment options.

San Joaquin County groundwater associated with the District's Demonstration Recharge, Extraction and Aquifer Management (DREAM) project was tested for PFAS during January 2022 and again in June 2023; no PFAS compounds were detected. Bayside groundwater monitoring wells were tested in July 2023. Low levels of perfluorobutanoic acid (PFBA) and PFOS were detected in one well, located immediately adjacent to the Bayside well. A low concentration of PFOS was detected in another monitoring well located in a park about 0.5 miles upgradient of the Bayside well. All PFAS detected in the Bayside monitoring wells are below USEPA's proposed regulatory standards.

Lead

The District continues to minimize customer exposure to lead in drinking water. Based on data from regulatory monitoring (including lead service lines and copper pipes with lead solder), customer sampling voucher program, school sampling, and periodic studies, the corrosion control program effectively minimizes release of lead from any remaining lead-bearing plumbing materials as shown in Figure 1. This graphic shows the variability of each group of samples.

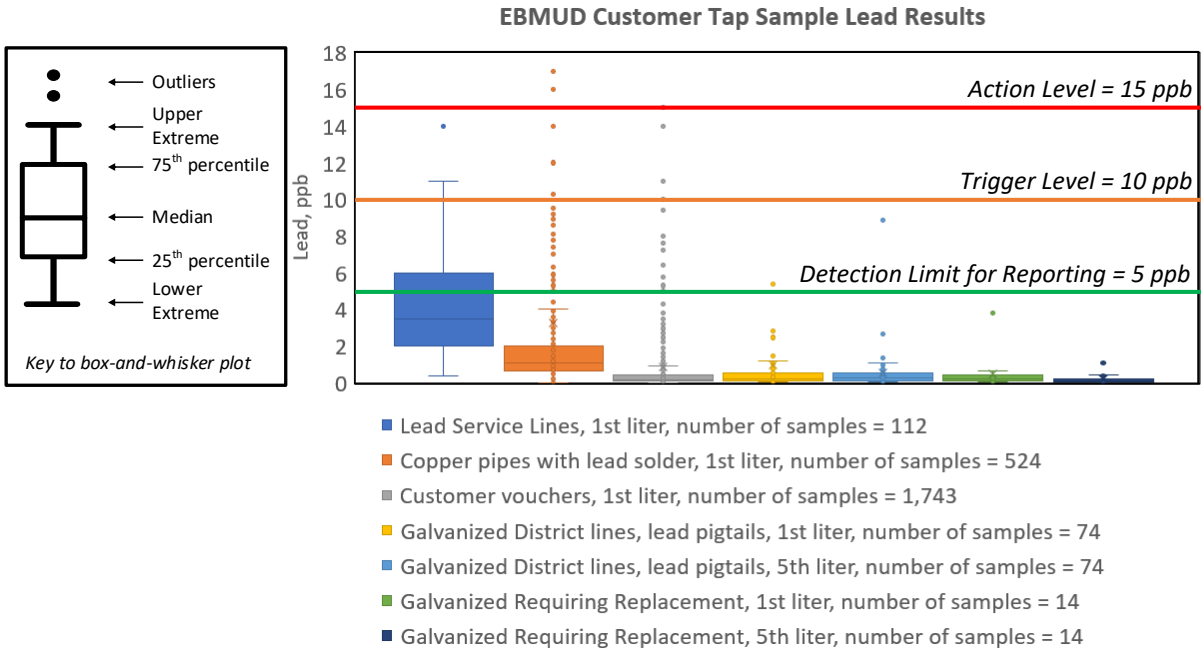

Figure 1. Summary of Customer Tap Sample Lead Results

The customer sampling program continues to be successful. Over 3,300 customers have taken advantage of the offer for a free lead test. Results continue to be good; 90 percent of sample results are one ppb or less. The District has streamlined the administrative aspects and transitioned from a contract-lab effort to a permanent, in-house program as of April 2022.

In 2020, in accordance with state requirements, the District completed an inventory of the public-side service lines (from the water main to the meter) and developed a plan for removal of any remaining lead components. There are approximately 670 galvanized steel lines which are suspected to include short connectors made of lead (also known as pigtails or goosenecks). The District's plan, which was approved by the State Board, includes removal of at least 125 galvanized steel service lines each year, along with their lead goosenecks, during pipeline replacement, repair of breaks and leaks, or other work. This replacement target has been met or exceeded each year, and complete replacement should occur by 2030. The District has been working with these customers to collect in-home tap samples for lead to ensure lead components do not impart lead into the water. More than 400 samples have been collected to date using USEPA's new 5-Liter protocol; the 90th percentile value is less than one ppb. These results confirm that the District corrosion control program continues to be effective.

A revised federal Lead and Copper Rule with new requirements was promulgated in 2021. Among other actions, the service line inventory will need to include the customer-side material (between the meter and the home) and must be made public. Staff do not expect to find any lead components on the customer side. However, customer-side galvanized service lines that were

formerly connected to a District-side lead service line must be identified. These lines are termed Galvanized Requiring Replacement (GRR) in the inventory.
Historically, there were approximately 7,000 lead service lines in the service area serving approximately 10,000 homes and businesses (some service lines were branched). To comply with the new rules, identification of the customer-side service line materials for these former lead service lines must be completed by October 2024. Customers with confirmed GRRs must be notified by November 2024. The District's contractor began work in August 2023. Data indicates that approximately 50 percent of the customer-side materials are galvanized steel and; therefore, will be characterized as GRRs. Notification letters will be sent to these customers starting in fall 2023 and continue through November 2024. District staff is continuing outreach efforts to cities, counties, and local community groups in the areas that will receive these letters. The District's sampling indicates that lead exposure in these situations is very limited.

Severe Winter Weather

Large storms impacted the Bay Area and the Mokelumne River watershed throughout early 2023. A large amount of sediment and organic material washed into the Mokelumne River and Pardee Reservoir. Turbidity levels entering the inline filtration plants (Walnut Creek and Orinda WTPs) rose rapidly. These plants do not have clarifiers and cannot operate at moderate or high rates while turbidity is elevated. District staff quickly responded by shunting high-turbidity water away from the outlet tower and out the bottom of Pardee Reservoir, adjusting outlet tower gates to maximize intake of low-turbidity water into the aqueducts, and shifting production from the inline plants to the conventional WTPs. Although the storms had a similar impact in the East Bay watersheds, the local WTPs have additional treatment processes in place to handle such challenging conditions. All production targets and turbidity goals were met during this challenging period. Although turbidity levels have decreased in early 2023, organic carbon levels remain elevated which has contributed to higher DBP levels in the first six months of 2023.

Backflow protection

Untreated groundwater from private wells and other non-potable sources can affect the distribution system without appropriate backflow protection. In 2017, staff began proactively investigating the potential for improperly configured groundwater wells by reviewing county and District records. That effort yielded 5,514 potential properties with domestic wells. To date, staff has verified the presence of 691 wells, and either installed or facilitated the installation of 366 backflow prevention devices where water services did not already meet requirements. Through field visits, an additional 69 previously unknown wells have been discovered. District staff will continue to target at least 350 sites for investigation each year until all known wells are investigated and backflow protection is added. As of August 2023, about 3,600 site inspections remain.

Microplastics

The State Board continues to develop regulations for microplastics in drinking water as required by Senate Bill 1422. Two analytical methods and sampling protocols have been developed, and

several commercial laboratories are developing capacity for this work. The State Board is using a policy handbook to convey the recommended analytical procedures and sampling protocols. A small pilot program will be used to sort out the details of the sample collection and analysis. This pilot will include about 30 water systems, including the District. The pilot effort will be followed by state-wide implementation once the methodologies are established and vetted. All drinking water utilities, beginning with surface water sources, will eventually be required to conduct four consecutive years of microplastics monitoring and share results in their Consumer Confidence Reports.

Wildfire Impacts

At its September 26, 2023 meeting, the Board requested information regarding how smoke from wildfires can affect water quality. The information provided in this report responds to the request.

Post-wildfire water quality impacts have been studied in several watersheds in the western United States. Wildfire smoke can deposit on the surface of the water and cause water quality changes; however, this phenomenon has not been as well documented and is more subtle. For example, a noticeable layer of ash was deposited on Hetch Hetchy Reservoir in 2013 after the Rim Fire without subsequent increases to turbidity or contaminant loading. SFPUC operations were not significantly impacted. Other data show reduced algal productivity/photosynthesis due to decreased light penetration. Erosion is probably the bigger threat to water quality following a wildfire. Without stabilizing vegetative cover, topsoil is easily washed into reservoirs and rivers with measurable increases to turbidity, nutrients, algae, and organic matter. These changes to raw water conditions can create challenging conditions for water treatment.

EBMUD Water Quality Goals – January 1 to June 30, 2023

Parameter	Units	MCL	PHG	DLR	SMCL	NL	other	Basis	Goal	Status*
USEPA/State Water Quality Regulations										
Primary (Health Standards)										
Inorganic Chemicals										
Aluminum	ug/L	1000	600	50	200			½SMCL	100	Met
Antimony	ug/L	6	1	6				PHG	1	Met
Arsenic	ug/L	10	0.004	2				PHG	0.004	Met
Asbestos	MFL	7	7	0.2				½MCL	3.5	Met
Barium	ug/L	1000	2000	100				½MCL	500	Met
Beryllium	ug/L	4	1	1				PHG	1	Met
Cadmium	ug/L	5	0.04	1				PHG	0.04	Met
Chromium (total)	ug/L	50		10				½MCL	25	Met
Cyanide	mg/L	0.15	0.15	0.1				½MCL	0.075	Met
Fluoride (source water)	mg/L	2	1	0.1				PHG	1	Met
Hexavalent chromium	ug/L		0.02					PHG	0.02	Met
Mercury	ug/L	2	1.2	1				½MCL	1	Met
Nickel	ug/L	100	12	10				PHG	12	Met
Nitrate + Nitrite Total (as N)	mg/L	10	10					½MCL	5	Met
Nitrate as N [x4.5 for NO3]	mg/L	10	10	0.4				½MCL	5	Met
Nitrite (as N)	mg/L	1	1	0.4				½MCL	0.5	Met
Perchlorate	ug/L	6	1	2				PHG	1	Met
Selenium	ug/L	50	30	5				½MCL	25	Met
Thallium	ug/L	2	0.1	1				PHG	0.1	Met
Organic Chemicals										
Volatile Organic Compounds (VOCs)										
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L	200	1000	0.5				½MCL	100	Met
1,1,2,2-Tetrachloroethane	ug/L	1	0.1	0.5				PHG	0.1	Met
1,1,2-Trichloroethane (1,1,2-TCA)	ug/L	5	0.3	0.5				PHG	0.3	Met
1,1-Dichloroethane (1,1-DCA)	ug/L	5	3	0.5				½MCL	2.5	Met
1,1-Dichloroethylene (1,1-DCE)	ug/L	6	10	0.5				½MCL	3	Met
1,2,4-Trichlorobenzene	ug/L	5	5	0.5				½MCL	2.5	Met
1,2-Dichlorobenzene (o-DCB)	ug/L	600	600	0.5				½MCL	300	Met
1,2-Dichloroethane (1,2-DCA)	ug/L	0.5	0.4	0.5				½MCL	0.25	Met
1,2-Dichloropropane	ug/L	5	0.5	0.5				PHG	0.5	Met
1,3-Dichloropropene (Total)	ug/L	0.5	0.2	0.5				PHG	0.2	Met

Note: District to meet all applicable regulatory requirements at all times.

Compounds highlighted in blue appear more than once in this table.

**Status is either "Met or "Not Met". If goal was not met, number shown is the percent of samples not meeting the goal.*

1,4-Dichlorobenzene (p-DCB)	ug/L	5	6	0.5				½MCL	2.5	Met
Benzene	ug/L	1	0.15	0.5				PHG	0.15	Met
Carbon Tetrachloride	ug/L	0.5	0.1	0.5				PHG	0.1	Met
Parameter	**Units**	**MCL**	**PHG**	**DLR**	**SMCL**	**NL**	**other**	**Basis**	**Goal**	**Status***
Dichloromethane (Methylene Chloride)	ug/L	5	4	0.5				½MCL	2.5	Met
Ethylbenzene	ug/L	300	300	0.5				½MCL	150	Met
Freon 113 (1,1,2 trichloro 1,2,2 trifluoroethane)	ug/L	1200	4000	10				½MCL	600	Met
Methyl-tert-butyl ether (MTBE)	ug/L	13	13	3	5			½SMCL	2.5	Met
Monochlorobenzene (Chlorobenzene)	ug/L	70	70	0.5				½MCL	35	Met
Styrene	ug/L	100	0.5	0.5				PHG	0.5	Met
Tetrachloroethylene	ug/L	5	0.06	0.5				PHG	0.06	Met
Toluene	ug/L	150	150	0.5				½MCL	75	Met
Trichloroethylene (TCE)	ug/L	5	1.7	0.5				PHG	1.7	Met
Trichlorofluoromethane (Freon 11)	ug/L	150	1300	5				½MCL	75	Met
Vinyl Chloride (VC)	ug/L	0.5	0.05	0.5				PHG	0.05	Met
Xylenes (Total)	ug/L	1750	1800	0.5				½MCL	875	Met
cis-1,2-Dichlorethylene (c-1,2-DCE)	ug/L	6	13	0.5				½MCL	3	Met
trans-1,2-Dichloroethylene (t-1,2-DCE)	ug/L	10	50	0.5				½MCL	5	Met
Synthetic Organic Compounds (SOCs)										
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2	0.0017	0.01				PHG	0.0017	Met
2,3,7,8-TCDD (Dioxin)	pg/L	30	0.05	5				PHG	0.05	Met
2,4,5-TP (Silvex)	ug/L	50	3	1				PHG	3	Met
2,4-D	ug/L	70	20	10				PHG	20	Met
Alachlor (Alanex)	ug/L	2	4	1				½MCL	1	Met
Atrazine (Aatrex)	ug/L	1	0.15	0.5				PHG	0.15	Met
Bentazon (Basagran)	ug/L	18	200	2				½MCL	9	Met
Benzo(a)pyrene	ug/L	0.2	0.007	0.1				PHG	0.007	Met
Bis(2-ethylhexyl)phthalate (DEHP)	ug/L	4	12	3				½MCL	2	Met
Carbofuran	ug/L	18	0.7	5				PHG	0.7	Met
Chlordane	ug/L	0.1	0.03	0.1				PHG	0.03	Met
Dalapon	ug/L	200	790	10				½MCL	100	Met
Di(2-ethylhexyl)adipate	ug/L	400	200	5				½MCL	200	Met
Dinoseb (DNBP)	ug/L	7	14	2				½MCL	3.5	Met
Diquat	ug/L	20	6	4				PHG	6	Met
Endothall	ug/L	100	94	45				½MCL	50	Met

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Endrin	ug/L	2	0.3	0.1				PHG	0.3	Met
Ethylene dibromide (EDB)	ug/L	0.05	0.01	0.02				PHG	0.01	Met
Glyphosate	ug/L	700	900	25				½MCL	350	Met
Heptachlor	ug/L	0.01	0.008	0.01				½MCL	0.005	Met
Heptachlor Epoxide	ug/L	0.01	0.006	0.01				½MCL	0.005	Met
Hexachlorobenzene	ug/L	1	0.03	0.5				PHG	0.03	Met
Hexachlorocyclopentadiene	ug/L	50	2	1				PHG	2	Met
Lindane (Gamma BHC)	ug/L	0.2	0.032	0.2				PHG	0.032	Met
Parameter	**Units**	**MCL**	**PHG**	**DLR**	**SMCL**	**NL**	**other**	**Basis**	**Goal**	**Status***
Methoxychlor	ug/L	30	0.09	10				PHG	0.09	Met
Molinate	ug/L	20	1	2				PHG	1	Met
Oxamyl (Vydate)	ug/L	50	26	20				½MCL	25	Met
PCB's	ug/L	0.5	0.09	0.5				PHG	0.09	Met
Pentachlorophenol (PCP)	ug/L	1	0.3	0.2				PHG	0.3	Met
Picloram	ug/L	500	166	1				PHG	166	Met
Simazine	ug/L	4	4	1				½MCL	2	Met
Thiobencarb	ug/L	70	42	1	1			½SMCL	0.5	Met
Toxaphene	ug/L	3	0.03	1				PHG	0.03	Met
1,2,3-Trichloropropane	ug/L	0.005	0.0007	0.005				PHG	0.0007	Met
Disinfection By-Products (DBPs)										
Bromate	ug/L	10	0.1	1				½MCL	5	Met
Chlorite	ug/L	1000	50	20				PHG	50	Met
Haloacetic Acids (HAA5)	ug/L	60						½MCL	30	Not Met
Total Trihalomethanes (TTHM)	ug/L	80						½MCL	40	Not Met
Radionuclides										
Alpha	pCi/L	15		3				½MCL	7.5	Met
Beta	pCi/L			4			50	Other [1]	25	Met
Radium 226 + 228	pCi/L	5						½MCL	2.5	Met
Strontium-90	pCi/L	8	0.35	2				PHG	0.35	Met
Tritium	pCi/L	20000	400	1000				PHG	400	Met
Uranium	pCi/L	20	0.43	1				PHG	0.43	Met
Microbiological										
%Total Coliforms Positive/Mo.	Organisms/100 ml	5%						Other [2]	0.5%	Met
TCR Tap Total Chlorine Residual	mg-Cl_2/L							Meets Partnership for Safe Water	≥ 0.5 mg-Cl_2/L in ≥95% of routine samples per month	Met
Reservoir Total Chlorine Resdiual	mg-Cl_2/L							Exceeds Partnership for Safe Water [3]	≥ 0.5 mg-Cl_2/L in ≥95% of reservoirs per month	Met

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EBMUD Water Quality Goals – January 1 to June 30, 2023

Treatment Techniques										
Individual Filter Effluent (IFE) Turbidity	NTU							Exceeds Partnership for Safe Water [4]	<0.10 NTU in 99.5% of samples per filter (monthly)	Met
Combined Filter Effluent (CFE) Turbidity	NTU							Exceeds Partnership for Safe Water [4]	< 0.10 NTU in 99.9% of samples per WTP (monthly)	Met
Distribution System Fluoride	mg/L							Other [5]	0.6-1.2	Met
CT Ratio							1	Other [6]	>1.0	Met
Lead 90th percentile	ug/L		0.2	5			15	½ AL[7]	7.5	Met
Copper 90th percentile	ug/L		300	50			1300	½ AL[8]	650	Met
Parameter	**Units**	**MCL**	**PHG**	**DLR**	**SMCL**	**NL**	**other**	**Basis**	**Goal**	**Status***
Langelier Saturation Index (LSI)								Corrosion Control	-0.5 to 0.5 in 95% WTP effluent samples (annually)	Not Met
Acrylamide							0.05% mono-mer by wt. dose not to exceed 1 mg/L	Other [9]	0.05% monomer by wt. dose not to exceed 1 mg/L	Met
Secondary (Aesthetic) Standards										
Aluminum	ug/L	1000	600	50	200			½SMCL	100	Met
Chloride	mg/L				250			½SMCL	125	Met
Color	color unit				15			½SMCL	7.5	Met
Copper	ug/L		300	50	1000			PHG	300	Met
Foaming agents (MBAS)	ug/L				500			½SMCL	250	Met
Iron	ug/L				300		100	Other [10]	100	Met
Manganese	ug/L				50	500	15	Other [10]	15	Met
Methyl tertiary butyl ether (MTBE)	ug/L	13	13	3	5			½SMCL	2.5	Met
Odor threshold	TON				3			SMCL	3	Met
Silver	ug/L				100			½SMCL	50	Met
Specific Conductance	uS/cm				900			½SMCL	450	Met
Sulfate	mg/L				250			½SMCL	125	Met
Thiobencarb	ug/L	70	42	1	1			½SMCL	0.5	Met
Total Dissolved Solids	mg/L				500			½SMCL	250	Met
Turbidity (distribution)	NTU				5			½SMCL	2.5	Met
Zinc	ug/L				5000			½SMCL	2500	Met
Customer Expectations										

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District-caused complaints	Com-plaints/ month						30	Other [11]	30	Met
Emerging Contaminants										
Inorganic Chemicals										
Boron	ug/L			100		1000		½NL	500	Met
Chlorate	ug/L					800		½NL	400	Met
Organic Chemicals										
1,2,4-Trimethylbenzene	ug/L					330		½NL	165	Met
1,3,5-Trimethylbenzene	ug/L					330		½NL	165	Met
Cylindrospermopsin	ug/L						0.7	HA [12]	0.7	Met
Microcyctins	ug/L						0.3	HA [12]	0.3	Met
N-Nitrosodi-methylamine [NDMA]	ng/L		3			10		PHG	3	Not Met
N-Nitrosodiethylamine [NDEA]	ng/L					10		½NL	5	Met
Naphthalene	ug/L					17		½NL	8.5	Met

[1] ½ screening level
[2] 1/10th 5% MCL
[3] ≥ 0.5 mg-Cl2/L in ≥95% of routine monthly samples
[4] <0.10 NTU 95% of the time
[5] Optimal Fluoride Dose (0.7 mg/L) per 2015 US Public Health Service recommendation
[6] CT ratio of 1 is the minimum for compliance; goal is be greater than or equal to 1 at all times.
[7] ½ Action Level
[8] ½ Action Level; compliance based on in-home samples.
[9] USEPA Treatment Technique
[10] Based on operational experience
[11] Based on historical data
[12] USEPA Health Advisory Level

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