



CITY OF BANNING STAFF REPORT

TO: CITY COUNCIL

FROM: Robert Fisher, Acting City Manager

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MEETING DATE: July 8, 2025

SUBJECT: City of Banning's Hexavalent Chromium Compliance Plan

RECOMMENDATION:

Receive and file.

BACKGROUND:

The City of Banning ('City') operates multiple groundwater production wells that are critical to its municipal water supply. In June 2023, the California State Water Resources Control Board Division of Drinking Water (SWRCB-DDW) released SWRCB-DDW-21-003, an order of a proposed new maximum contaminant level (MCL) for Hexavalent Chromium (Cr6) of 10 parts per billion (ppb) in drinking water. Furthermore, this Order required an initial Cr6 MCL sampling by April 1, 2025, and a compliance timeline (Cr6 Compliance Plan) within 90-days after initial sampling.

Chromium is a metal found in natural deposits of ores containing other elements, mostly as chrome iron ores. It is also widely present in soil and plants. Under most conditions, natural chromium in the environment occurs as Trivalent Chromium (Cr3), but under oxidizing conditions chromium can exist as Hexavalent Chromium (Cr6). Chromium also originates as a contaminant in the environment from the discharges of dye and paint pigments, wood preservatives, chrome-plating liquid wastes, and leaching from hazardous waste sites. At an MCL of 10 ppb (equivalent to 10 drops of water in a 100,000 gallon water tank), the health risk from hexavalent chromium in drinking water is limited to a one-in-two-thousand chance of developing cancer during a lifetime (70 years) of exposure.

Since 1977, California has regulated Total Chromium (Cr3 and Cr6) at a MCL of 50 ppb. The United States Environmental Protection Agency (EPA) had also adopted the 50 ppb standard, but in 1991 raised it to the current standard of 100 ppb. Initially, in 2014, the California SWRCB established a Cr6 MCL of 10 ppb. However, California was sued over this regulation in 2017 and the Superior Court of Sacramento County ruled that the state "did not adequately document why the MCL was economically feasible." Economic feasibility evaluates how costly Cr6 treatment technologies are and whether the price tag is within a water utility's budget.

Since the Superior Court's invalidation of the Cr6 MCL, the State continued to work on establishing a new MCL for Cr6. In 2020, SWRCB published a white paper "Discussion on Economic Feasibility Analysis in Consideration of a Hexavalent Chromium Maximum Level". In 2023, the SWRCB started the formal rulemaking process for establishing a new Cr6 MCL and in 2024 adopted the new regulation setting the Cr6 MCL at 10 ppb, which became effective on October 1, 2024.

The City's water division was expecting many wells to test positive for Cr6 and the initial water quality

sampling results due prior to April 1, 2025 indicated that four (4) of the City’s 21 municipal wells exceeded the newly established MCL, thus requiring regulatory compliance through mitigation. It shall also be noted that another 5 wells are either at or very close to the MCL, refer to table below for Cr6 MCL results:

Well	Cr6 MCL (ppb)	Well Capacity (gpm)
C2A	16	1,100
C3	14	1,100
C4	12	1,300
C6	12	900
M10	10	800
M11	10	800
C5	9.5	900
M3	8.3	800
C8	*	1,000

* The compliance MCL for recently drilled well C8 which is currently being equipped will be reported once sampled during production (during development of well C8, it resulted in 12 ppb).

Since the initial Cr6 MCL rulemaking in 2014, the City anticipated many wells to test positive for Cr6; therefore, it conducted several studies throughout the years to evaluate different approaches for complying with the Cr6 MCL:

- 2016 Cr6 Compliance Study – initial evaluation of treatment options and costs.
- 2022 Cr6 Compliance Study Updates – update to the original 2016 Cr6 compliance study, incorporating treatment technology advancements and updating costs.
- 2024 Cr6 Compliance Study Update – system-wide update to the 2022 Cr6 compliance study providing cost and non-cost (reliability and resiliency, operations and maintenance complexity, water loss, residuals handling, environmental and community impacts) analysis of options.

The objective of the 2024 Cr6 Compliance Study was to evaluate options for addressing Cr6 and to develop cost estimates including capital, operations and maintenance all to support the development of a treatment strategy for compliance. The 2024 Cr6 Compliance Study evaluated best available technologies (BATs) including weak base anion exchange (WBA), strong base anion exchange (SBA) and reduction coagulation and filtration/microfiltration (RCF/RCMF).

BATs were assessed based on lifecycle costs and operability considerations (chemical consumption, residual waste generation, and staffing requirements). While the accuracy range of lifecycle costs overlap for alternatives, it was found that the RCF with horizontal filter configuration located at the clustered treatment facilities and individual sites was the lowest point estimate lifecycle cost compared with WBA and SBA.

It shall be noted that the 2024 Cr6 Compliance Study did not evaluate include any non-treatment options i.e., existing well screen modifications, blending, repurposing potable wells to non-potable, or drilling new wells.

JUSTIFICATION:

The objective of this Compliance Plan is for the City to come into compliance with the established MCL via RCF treatment or non-treatment options (e.g. existing well screen modifications, blending, repurposing potable wells to non-potable, or drilling new wells). Prior to doing so, the City plans to take a wholistic approach to meet the stated objective by achieving the following milestones listed below:

- i. Well profile to determine well screen modification opportunities for reducing levels of Cr6 below the MCL; and
- ii. Hire an owner’s advisor (consultant) to evaluate and design treatment and non-treatment options,

- prepare plans, specifications, capital and annual operations and maintenance costs; and
- iii. Raise capital via grants, rate increases, loans, bond issuance, etc., to implement the City's compliance strategy; and
- iv. Construct treatment and/or non-treatment improvements and proceed with operations.

Since the 2024 Cr6 Compliance Study did not evaluate any non-treatment options, it would be fiscally and operationally prudent for the City to explore these options first. As indicated above, Cr6 levels were detected in 9 wells, but only 4 wells exceeded the MCL. However, based on the initial Cr6 sampling results, there are 5 additional wells (as listed in table above) that may exceed the MCL in the future; therefore, to be proactive, the City will take a system-wide approach and include these 5 additional wells as part of its compliance strategy.

It is anticipated that milestones listed above from well profiling to construction of treatment/non-treatment improvements will begin in 2025 and will last through mid-2033.

FISCAL IMPACT:

The 2024 Cr6 Compliance Study developed a high-level range of costs to treat 9 Cr6 wells consistent with Association for the Advancement of Cost engineering (AACE) Class 4 costs with an accuracy range of 30% to +50%, resulting in \$23,200,000 to \$84,700,000 with an additional \$2,000,000 to \$3,000,000 in annual operation and maintenance.

Although the Water Operations Fund (Fund 660) currently has an approximate revenue budget from metered sales of \$13,000,000; it is important to note that the City's current water rate structure does not support the required financial investment to comply with the new Cr6 regulation. A new rate study will need to be completed to determine the rate impacts. Staff will have to work on having more detailed cost estimates developed during the treatment/non-treatment design phase in order to include those costs in a future rate study.

Once the rate study is approved by the City Council, the City shall carry out a rate approval process in compliance with Proposition 218. Once rate increases are approved, the City will proceed with acquiring the necessary funding, likely through debt financing, to move forward with the identified compliance improvements. City staff also plans to aggressively seek grant funding for the implementation of the Compliance Plan.

ALTERNATIVES:

N/A

BUDGETED?:

No

CONTRACT/AGREEMENT:

No

ATTACHMENTS:

1. [City of Banning Hexavalent Chromium Compliance Plan.pdf](#)