State Water Resources Control Board
Division of Drinking Water

January 29, 2026 PWS No. CA4810009

Jim Lindley, Administrative Contact
City of Dixon
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600 East A St.
Dixon, CA 95620-3697

HEXAVALENT CHROMIUM COMPLIANCE PLAN APPROVAL LETTER
CITY OF DIXON – CA4810009

Dear Mr. Lindley,

On October 1, 2024, the hexavalent chromium regulations came into effect. The regulation required all community and non-transient, non-community water systems to sample for hexavalent chromium. If the initial sample was above the maximum contaminant level (MCL) (10 ug/L), the system was required to start quarterly sampling. If a source exceeds the hexavalent chromium MCL by a running annual average (RAA) the water system is required to submit a compliance plan within 90 days.

In April 2025, the City of Dixon (City) was notified that sampling results indicated exceedances of the hexavalent chromium MCL at DW 37 Watson Ranch Well and DW 44 Industrial Well. In October 2025, sampling results confirmed that all six production wells—DW 37 Watson Ranch Well (PS Code CA4810009_001_001), DW 44 Industrial Well (PS Code CA4810009_002_002), DW 48 School Well (PS Code CA4810009_003_003), DW 52 Valley Glen Well (PS Code CA4810009_007_007), DW 54 Parklane Well, and DW 55 Homestead Well—exceeded the hexavalent chromium MCL based on RAA. On November 17, 2025, the City submitted a hexavalent chromium compliance plan (Compliance Plan) to the Division for review.

The final version of the enclosed Compliance Plan is hereby approved by the Division. This review and approval is solely for the purpose of ensuring compliance with Title 22, California Code of Regulations, section 64432(q). This does not constitute the State Water Resources Control Board's approval or permitting of a proposed project. The District Office reserves its full discretion when deciding whether to issue a permit or an amended permit after you complete your permit amendment application.

The City's Compliance Plan includes the following proposed drinking water infrastructure modifications and improvements to address current active sources impacted by hexavalent chromium concentrations, and specifies the following dates when project milestones are expected to be completed. Should any of the dates below need to be modified, the City shall propose the new dates and receive approval from the Division prior to exceeding the approved dates below. The City shall continue to update the Division of any changes to the Compliance Plan on a quarterly frequency, including when the milestones in the summary below have been completed.

PROJECT SUMMARY, MILESTONES, & APPROVED DATES

DW 37 – Watson Ranch Well

The City will continue to use DW 37 as a primary source until October 1, 2027, when the Cr6 MCL becomes effective. At that time, the well will be replaced or placed on standby. No immediate treatment will be installed for this well.

DW 48 – School Well

The future of this site depends on the cost of treatment, the production gained with the Fitzgerald well and Homestead Well, and whether Homestead will require treatment. Funding will likely limit the City from installing treatment at both facilities. The most likely scenario for School Well is to be moved to a standby source based on age, condition, and surrounding sources. The City will keep this well as the primary source until October 1, 2027, then likely move it to a standby status.

DW 52 – Valley Glen Well

Given the location of Valley Glen on the southern side of the main transmission line and its proximity to Parklane (a facility that will have treatment), this well will be moved to a standby source after October 1, 2027.

DW 54 – Parklane Well

For Cr6 MCL compliance planning, it is assumed that a treatment system will be installed for DW 54 by October 1, 2027, according to the following project schedule:

- Review and Selection of Treatment Technology: Technology alternatives were evaluated beginning in October 2024. Strong-based anion-exchange system (SBA) with Roll Up™ Regeneration (RUR) approach selected by mid-September 2025. *(Milestone achieved)*
- SBA Pilot Testing: The AutoPilot pilot test was commissioned on April 15, 2025, and completed on October 15, 2025.

- Preliminary Design / Basis of Design Report (BODR): The BODR is scheduled to be submitted to the Division for review and approval on February 27, 2026.
- Detailed Design and Bid Package: Detailed design and bid package preparation will begin on March 2, 2026, following BODR finalization, and is expected to be completed by August 31, 2026.
- Plans and Specifications: One hundred percent plans and specifications are scheduled to be submitted to the Division on September 1, 2026.
- Pre-Purchase and Manufacturing of Treatment Equipment: Pre-purchase and manufacturing of treatment equipment is expected to begin on March 2, 2026, and be completed by March 2, 2027.
- Environmental Review and Permitting: The CEQA environmental review and permitting process is expected to begin on March 2, 2026, and be completed by September 1, 2026.
- Contractor Selection and Contracting: Contractor selection and contracting is expected to begin on September 1, 2026, and be completed by November 30, 2026.
- Construction Start Date: Construction is scheduled to begin on December 1, 2026.
- Operation Plan: The Operations Plan is scheduled to be submitted to the Division on June 22, 2027.
- Construction Completion Date: Construction is scheduled to be completed by July 30, 2027.
  Testing, Commissioning, and Start-Up: Testing, commissioning, and start-up activities are expected to begin on August 2, 2027. The treatment system is scheduled to be fully operational by October 1, 2027.

DW 55 - Homestead Well

With the latest Cr6 concentration of 17 ppb, treatment will likely be required to meet 80 percent of the MCL; however, more quarterly sampling will be conducted to confirm this requirement. For compliance planning, it is assumed that a treatment system will be installed by October 1, 2027 (aligning with Parklane Well project delivery).

Future Wells – Fitzgerald, Campus, and Harvest

All future wells constructed as part of development will be required to meet 80 percent of the MCL. Production wells will be required to be lower than 8 ppb, or treatment will be required for acceptance.

The City has already constructed a monitoring well to design the replacement for DW 44 (Industrial Well) on the adjacent Fitzgerald property that houses a 1.5-MG storage tank and booster station. The new “Fitzgerald” well (2,000 to 2,500 gpm) will be drilled in 2026 and designed to avoid hexavalent chromium. If that proves not possible or economically unfeasible, the well will be designed with RUR IX treatment.

Both Campus and Harvest are exploring the cost vs. benefit of drilling deeper wells to avoid hexavalent chromium. An exploratory monitoring well is planned as part of the Campus development.

If you have any questions regarding this matter, please contact Solmaz Marzooghi of my staff at Solmaz.Marzooghi@waterboards.ca.gov or me at Marco.Pacheco@waterboards.ca.gov.

Sincerely,

Marco Pacheco, P.E.
Sr. Water Resource Control Engineer
San Francisco District

Enclosure: City of Dixon Hexavalent Chromium Compliance Plan, dated November 3, 2025

cc: Solano County Environmental Health Department (w/o encl.)

Brown AND Caldwell

FINAL | Prepared for

City of Dixon, Dixon, CA

Hexavalent Chromium Compliance Plan

City of Dixon Water System (CA4810009)

November 3, 2025

FINAL

Hexavalent Chromium Compliance Plan
City of Dixon Water System (CA4810009)

Prepared for
City of Dixon
November 3, 2025

Joseph Ming Wong, P.E.
California License C32351
Date of November 3, 2025

Brown AND Caldwell

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Section 1

Introduction

On April 17, 2024, in resolution No. 2024-0015, the State Water Resources Control Board, Division of Drinking Water (SWRCB, DDW) adopted a regulation for a hexavalent chromium (Cr6) maximum contaminant level (MCL) of 10 parts per billion (ppb). The MCL went into effect on October 1, 2024. The regulation included a compliance schedule for public water systems (PWS) based on the system size relating to service connections. The City of Dixon's PWS CA4810009, as an urban water supplier serving between 1,000 and 9,999 service connections, has been given a compliance deadline of October 1, 2027, i.e., 3 years from the effective date.

The City of Dixon's PWS relies solely on groundwater. The City owns and operates six production wells, including the Homestead well, which has been recently accepted. A seventh well is planned as part of the new Campus 257 development, and there is potential for multiple wells to be constructed with the proposed Harvest master development. Currently, all six source water wells have detected levels of Cr6 that exceed the new MCL.

This document is the City of Dixon PWS's Cr6 MCL Compliance Plan prepared by Brown and Caldwell (BC) on behalf of the City. The City provided all the critical PWS information and water quality data, as well as previous treatment and non-treatment options investigation results. BC incorporated this information into the Compliance Plan, which also includes the DDW-required information of:

- Proposed treatment process and pilot testing descriptions.
- The schedule of submitting final plans and specifications for treatment system, and dates of starting and completing construction.
- The anticipated date to submit a Cr6 Operations Plan with all the requirements specified in the DDW Cr6 Compliance Plan Guidance.

Section 2

System Overview

The City of Dixon has two water purveyors: California Services Water Company (Cal Water) Dixon and the City of Dixon PWS. The PWS was established in 1978 and serves the majority of the city built in 1980 and after. This includes the Industrial Park, Watson Ranch, Connemara, Pheasant Run, Valley Glen, Parklane, and Homestead subdivisions. Cal Water serves the area of the city built before 1980, including downtown and the surrounding residential neighborhoods. This Cr6 compliance plan is only for the PWS.

The PWS is a single pressure zone consisting of six production wells; five are active and one is permitted as a standby source. Homestead well has been operational since August 2025. These wells are accompanied by four storage tanks with booster stations, and 12 booster pumps.

The six production wells, constructed to support development as the city grew, are:

- DW 37 Watson Ranch Well
- DW 44 Industrial Well
- DW 48 School Well
- DW 52 Valley Glen Well
- DW 54 Parklane Well
- DW 55 Homestead Well

Each well is connected to the distribution system independently; there is no central treatment plant or storage tank. Figure 1 shows the locations of the City's six production well sites. Figure 2 shows the Cal Water service area.

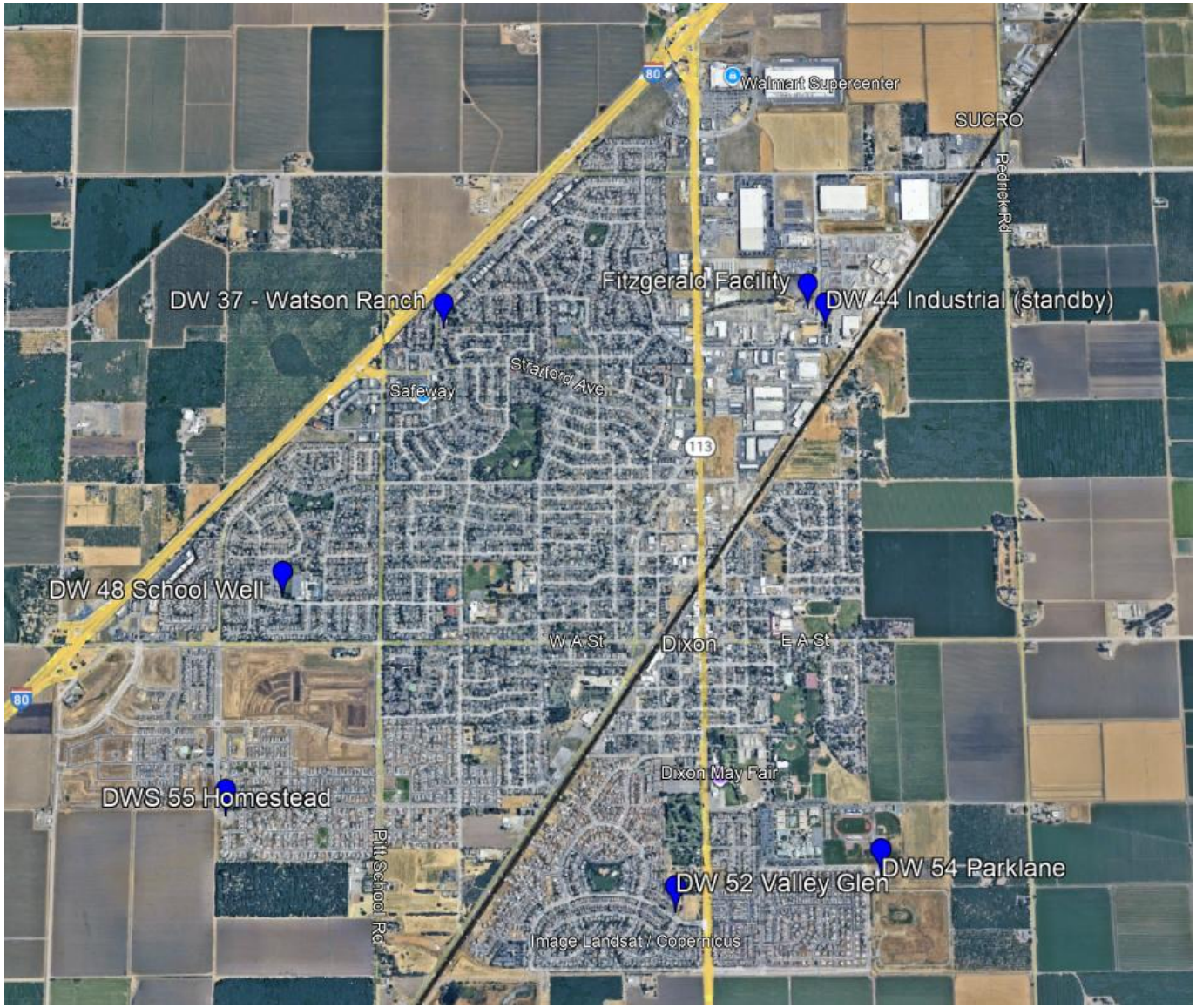

Figure 1. Locations of City PWS's six production well sites

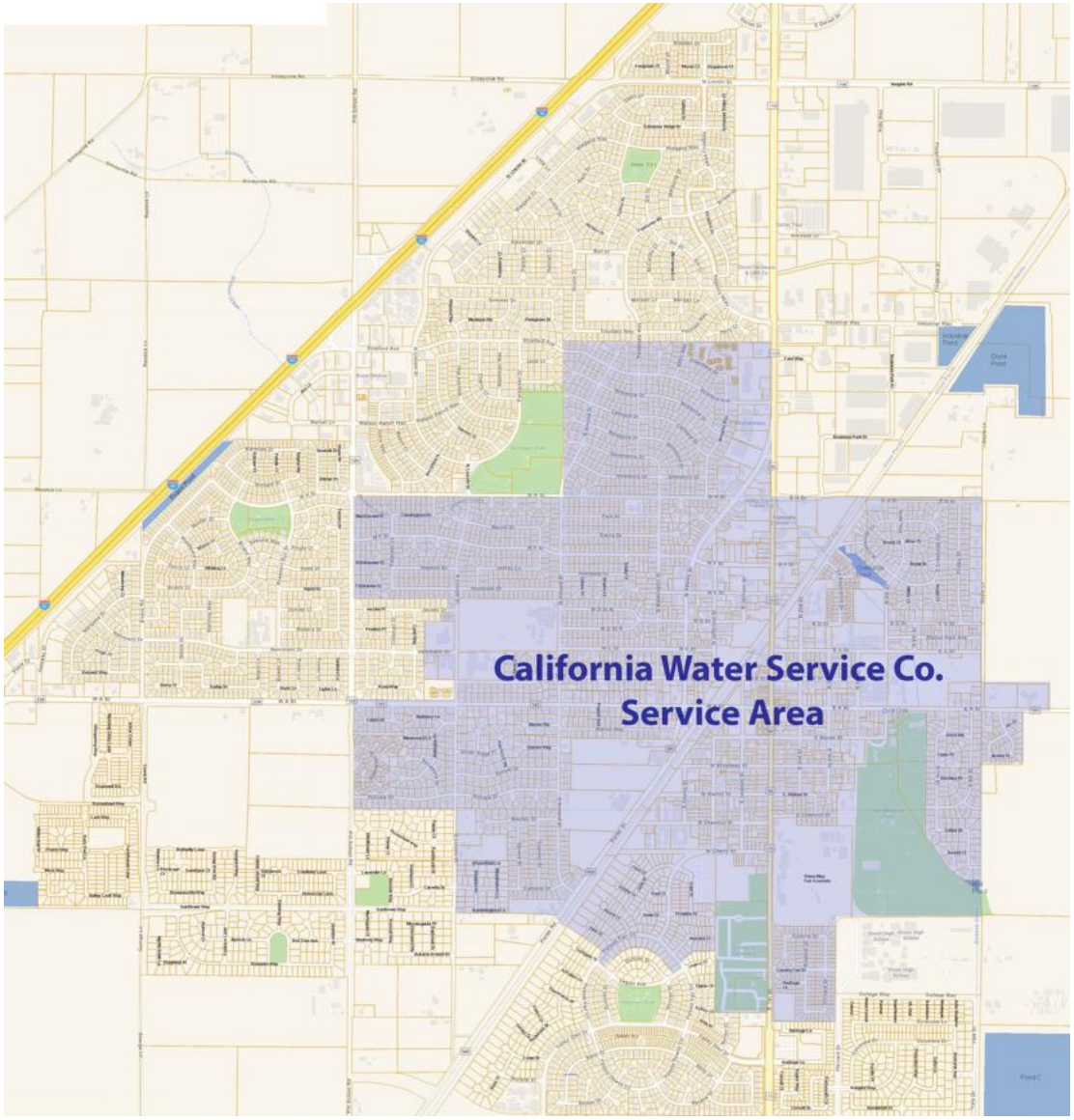

Figure 2. Cal Water service area

Section 3

Cr6 Detection Levels and Monitoring

The City monitors hexavalent chromium according to state regulations. After the MCL for Cr6 was established in 2014, the City began quarterly monitoring and continued that practice through 2017 when the MCL was invalidated. During the period the MCL was invalid, the City returned to the monitoring schedule set in the operating permit of every 3 years. When the MCL was re-established in late 2024, the City returned to quarterly monitoring starting in January 2025. Table 1 shows the Cr6 monitoring results of each production well.

Table 1. Cr6 Monitoring Results of Each Production Well

City of Dixon - Hexavalent Chromium Results (ug/L)						
Sample Year	Watson Ranch DW-37	Industrial DW-44[a]	School Well DW-48	Valley Glen DW-52	Parklane DW-54	Homestead DW-55[b]
Qtr1 2015	16	23	17	19	27	-
Qtr2 2015	14	20	16	20	24	-
Qtr3 2015	12	16	12	10	23	-
Qtr4 2015	12	18	12	13	22	-
Qtr1 2016	19	16	12	11	22	-
Qtr2 2016	20	21	16	8.6	25	-
Qtr3 2016	21	22	12	12	27	-
Qtr4 2016	17	20	14	14	27	-
Qtr1 2017	21	25	21	20	23	-
Qtr2 2017	11	15	15	10	18	-
Qtr3 2017	10	19	16	8.8	21	-
Qtr4 2017	14	18	15	17	21	-
2018	26	20	24	15	29	-
2021	19	-	15	19	17	-
2024	22	-	15	-	19	9.7
Qtr1 2025	27	18	16	-	21	-
Qtr2 2025	24	24	17	10	19	-
Qtr3 2025	22	-	16	9.2	26	-
Qtr4 2025	25	-	24	11	21	17
Well Average	18.5	19.7	16.1	13.4	22.7	13.4

a. *DW 44 was taken out of service in 2018. After a failed rehab, the source was moved to emergency standby in 2021. The well has not been used to serve the distribution system since 2018.*

b. *DW 55 Homestead well is still in the acceptance period. The site should be in operation and samples collected by Qtr4 2025.*

Section 4

Treatment Options and Selection

Title 22 of the California Code of Regulations (CCR) Related to Drinking Water, Article 12, identifies the best available technologies for hexavalent chromium as:

- Ion exchange (IX).
- Reverse osmosis (RO).
- Reduction/Coagulation/Filtration (RCF).

With no central storage or treatment, the City will need to install or find an alternative solution for Cr6 at each source. This eliminates RO as an option, given the complexity, reject disposal, footprint, and cost of the equipment. This leaves IX and RCF as the only practical treatment solutions. The City is conducting a pilot test for a strong-based anion-exchange system (SBA) and considered RCF as an option.

SBA has been proven effective at treating groundwater in the area. There are currently three SBA systems used in Cal Water Dixon that treat similar water from the same aquifers from which the City's PWS pulls its water. These systems use on-site regeneration equipment and have been in operation since shortly after the original MCL was established in 2014. With the MCL's return in 2024, technology has been improving, its footprint shrinking, and its cost stabilizing, which are what has prompted the City to proceed with an SBA pilot test.

One particular new SBA development is the use of Roll Up™ Regeneration (RUR) proposed by an alliance of four companies:

- Phibro-Tech provides a tanker truck for RUR, as well as regeneration waste disposal.
- ChartWater provides IX vessels and pertinent equipment.
- Ecolab provides IX resin and performance projections.
- datumpin provides cybersecure data management system (eDM) for system performance monitoring and optimization.

ChartWater provides integrated IX equipment in skid-mounted (8-foot [ft] diameter) or modular (10-ft diameter) lead-lag configuration together with two (one as standby) 5-micron cartridge/bag filters and control panel with human-machine interface (HMI) and eDM, and automatic valve manifold. The lead-lag package (skid-mounted or modular) is called a train. The RUR is performed after breakthrough of the lead IX vessel as indicated by eDM and is generally only for the exhausted lead IX vessel, except during startup when all IX vessels need to go through an RUR before commissioning. If continuous operation is desired, the lag IX vessel can be operated alone during the RUR process for the lead vessel, which usually takes approximately 4 hours to complete. The lag vessel then becomes the lead vessel after the RUR for normal operation.

The RUR approach for IX is much simpler to install and operate as it does not need on-site regeneration equipment and hazardous waste storage facilities. Footprints are reduced, and system monitoring is automatic with technical support by the vendor, which helps promote long-term reliability. This technology is a practical approach for the City not only given its limited staff, but because of the minimal impact it will impose on current operations.

In general, RCF technology has been improving and has the potential to be more cost effective than IX for larger systems; however, operators will require more skills in handling chemicals, given that a reduction chemical is needed to reduce Cr6 to Cr3 before coagulation and filtration, and pH adjustment by feeding acid may also be needed if pH is high. With the exception of Homestead Well, City well sites do not currently have sewer for discharge of backwash water laden with Cr3 and coagulated particles. A special permit for handling and storing California hazardous waste would be required for systems with a settling tank for backwash water recycling and Cr3-laden solids dewatering, storage, and disposal. The total space requirement is also much larger for RCF technology.

Based on the above reasons, the City has selected the RUR IX technology for the sites that would require treatment. It is noted that Cal Water Dixon is exploring the use of RCF, and that Loprest/(WRT) has contacted the City about an advanced RCF process that is different from what Cal Water Dixon is proposing, though Loprest/WRT's advance RCF process has the same disadvantages as the other RCF technologies.

Section 5

Pilot Testing Program

The City contracted with datumpin, which has deployed a pilot SBA system for the City's RUR system. The IX pilot system, called AutoPilot, with the eDM monitoring system, was installed on the City's highest-capacity production well (DW 54 Parklane) on April 15, 2025, and was commissioned immediately. The well can produce up to 2,800 gallons per minute (gpm) and has the highest Cr6 concentration of the City's wells.

The IX pilot ran for approximately 6 months with two loading and regeneration cycles. The AutoPilot was trucked to Phibro-Tech's hazardous waste facility for regeneration and was returned to the well site for reinstallation and operation. After the second regeneration, the AutoPilot was run to past breakthrough. The pilot test results were used to compare with computer projections for Cr6 breakthrough performance to estimate equipment, operating, and maintenance costs.

A major concern using SBA is that the negatively charged chloride ions in the resin exchange with other anions, such as sulfate, nitrate, and bicarbonate, in addition to Cr6 ions. This exchange can change the water's chloride/sulfate mass ratio (CSMR), which could raise the potential for galvanic corrosion of lead-solder joints in the water distribution system. Samples were collected from the IX pilot testing for corrosivity evaluation, and Ecolab ran computer projections. The results indicated that CSMR is quite high during the first part of the IX run (until about 1,500 bed volumes [BV]) and then it reverts back to the original value of untreated water through breakthrough, which is approximately 10,000 BVs. This would be a major concern if 100 percent of the water is treated by SBA; however, with lead-lag configuration, and with the lead vessel regenerated after breakthrough, the final effluent Cr6 concentration should be mostly non-detect. This allows the bypass of a portion of the well water around the IX system for blending with treated water.

Ecolab has proposed a final blended Cr6 concentration of 7 ppb to be under the MCL of 10 ppb. With blending, the concern for high CSMR is reduced. Using multiple trains with staggered running times and using treated water reservoirs (Parklane) to dilute the treated water would further alleviate the concern. The potential for galvanic corrosion of lead-solder joints will be evaluated more closely prior to the design stage.

Section 6

Alternative Options to Treatment

The City has identified three potential alternative options to treating the well water sources:

Option 1. Replace existing production wells with deeper wells. Within city limits there is a monitoring well owned by the Solano County Water Agency (SCWA) with monitoring zones at 2,212 ft and 2,370 ft deep. While the City sees average Cr6 levels up to 29 ppb in its wells that are 1,500 ft deep, both of the SCWA well's deeper aquifers were sampled and showed no detect (ND) for Cr6 and total Cr. There is a thick clay layer between the City's current deepest well (~1,500 ft) and the aquifer of the SCWA monitoring well, with waters below that layer potentially free of Cr6.

Option 2. Design the well to target aquifers that are low in Cr6. The City recently accepted a new source (Homestead Well [DW 55]) as part of a recent development. This well is 1,450 ft deep and was designed to eliminate the zones that contained the highest levels of Cr6. Initial testing has resulted in Cr6 levels of 9.7 to 10 ppb, which initially provided an optimistic outlook for this option; however, the most recent quarterly Cr6 monitoring result of DW 55 was 17 ppb, which proved this alternative to be unreliable and possibly unrealistic.

Chromium is naturally occurring and has the ability to alter form from Cr3 to Cr6, which makes screening out aquifers high in chromium difficult. Additionally, it would be difficult to identify which zones of an existing deep well are higher in chromium and swage (block) them off, potentially resulting in production loss and alternative water quality changes.

Options 3. Move the existing well source to standby. The last option for existing sources that exceed the new MCL is moving the well to standby. If the cost to install treatment is greater than the value of the site, the City may elect to replace the well with a new source of greater production with better water quality. During the replacement, the existing source would be reclassified as a standby source, which would come with operational restrictions through State regulations.

Section 7

City's Production Wells

The City has a combined six active and standby production wells. Figure 3 provides detailed information on construction and pumps for each well. Descriptions and status of each well are discussed in this section.

7.1 DW 37 – Watson Ranch Well

Watson Ranch Well was constructed in 1978 and is recorded as 917 ft deep. The well has a concreted liner from ground level to 317 ft, with screened casing from 317 ft to 917 ft to allow water from all aquifers in that depth range. The well produces 1,200 gpm and feeds a 0.8-million-gallon (MG) storage tank; a booster station pumps the water to the distribution system. The facility has ample space to accommodate treatment equipment if needed.

Watson Ranch is currently used as a primary source for the PWS and is critical to meeting customer demand. The average detection for Cr6 over the last 10 years is 17.9 ppb. Given the age and design of this well, the City will continue to use it as a primary source until October 1, 2027, when the Cr6 MCL becomes effective. At that time, the well will be replaced or placed on standby. No immediate treatment will be installed for this well.

Over the next 5 years there is funding approved to replace Watson Ranch Well. If the well is replaced, it will be drilled and designed to avoid Cr6. If that proves not possible or economically unfeasible, the well will be designed with RUR IX treatment if needed.

7.2 DW 44 – Industrial Well

Industrial Well was constructed in 1977 and is recorded as 872 ft deep. The well has a concrete liner from ground level to 257 ft, with screened sections at specific intervals to target high-yield aquifers; it produces 800 gpm. The average detection for Cr6 over the last 10 years is 19.7 ppb.

Industrial Well was placed on standby in 2021 after a failed rehabilitation attempt to combat excessive sanding. The well has multiple failures in the casing, and given its age and construction it has been identified as a priority for replacement.

Replacement funding is available as of July 2025. The City has already constructed a monitoring well to design the replacement production well on the adjacent Fitzgerald property that houses a 1.5-MG storage tank and booster station. The new well (2,000 to 2,500 gpm) will be drilled in 2026 and designed to avoid Cr6. If that proves not possible or economically unfeasible, the well will be designed with RUR IX treatment. The Fitzgerald property has ample space to accommodate treatment equipment if needed.

Of note: initial monitoring results from the Fitzgerald monitoring well were an average of 18.1 ppb over the three monitoring depths.

7.3 DW 48 – School Well

School Well was constructed in 1989 and is recorded as 1,430 ft deep. The well has a concrete sanitary seal from ground level to 120 ft with screened sections at specific intervals to target high-yield aquifers; it produces 1,500 gpm. School Well is a direct feed well, operating on a variable-

frequency drive (VFD) and pumping directly into the distribution system. This site has limited open space for treatment equipment.

School Well is currently used as a primary well water source for the PWS and is critical to meeting customer demand. The average detection for Cr6 over the last 10 years is 15.6 ppb.

In addition to treatment, the facility will need electrical and pumping equipment upgrades. Most of the electrical equipment is original to the facility and needs replacement. The pump and motor are close to the end of their industry life expectancies and will need to be replaced over the next 5 years.

The future of this site depends on the cost of treatment, the production gained with the Fitzgerald well and Homestead Well, and whether or not Homestead will require treatment. Funding will likely limit the City from installing treatment at both facilities, and the City will need to focus the treatment on the newer facility that has room for treatment, storage, and expansion. While this source has some of the lower levels of Cr6 detected in the system, which would make a small treatment system possibly more economical and practical, the most likely scenario for School Well is to be moved to a standby source based on age, condition, and surrounding sources. The City will keep this well as the primary source until October 1, 2027, then likely move it to a standby status.

7.4 DW 52 – Valley Glen Well

Valley Glen Well was constructed in 2003 and is recorded as 1,465 ft deep. The well has a sanitary seal from ground level to 220 ft and a 14-inch-diameter liner that was installed in 2024. The liner is 1,465 ft deep with blank casing from 0 to 440 ft and screened intervals to target high-yield aquifers; it produces 1,500 gpm. Valley Glen Well is a direct feed well, operating on a VFD and pumping directly into the distribution system. This site has ample space to accommodate treatment equipment.

Historically, after 2008, Valley Glen was used as a backup source to Parklane. The well has a history of sanding and rising nitrates. The site is still undergoing rehabilitation efforts from the liner project, and the average detection for Cr6 over the last 10 years is 13.8 ppb.

Like School Well, this source has some of the lower levels of Cr6 detected, so there is potential to install a small treatment system to produce water that meets the new MCL; however, given the location of Valley Glen on the southern side of the main transmission line and its proximity to Parklane (a facility that will have treatment), this well will be moved to a standby source after October 1, 2027. There is also potential for additional sources coming online that will be constructed as part of the Harvest development on the southern part of the City, all of which will al meet the MCL.

7.5 DW 54 – Parklane Well

Parklane Well was constructed in 2008 and is recorded as 1,470 ft deep. The well has a sanitary seal from ground level to 360 ft and screened intervals to target high-yield aquifers; it produces 2,500 gpm. The well feeds two 1.0-MG storage tanks and has a booster station that pumps the water into the distribution system. The facility has ample space to accommodate treatment equipment.

Parklane is currently used as a primary source for the PWS and, as such, is critical to meeting customer demand. The average detection for Cr6 over the last 10 years is 22.6 ppb.

Given its age, production/storage capacity, condition, and location, Parklane is critical to the water system and will have treatment installed. These aspects are also why the City chose this location to pilot the SBA system. For Cr6 MCL compliance planning, it is assumed that a treatment system will be installed by October 1, 2027.

7.6 DW 55 – Homestead Well

Homestead was constructed in 2024 and is recorded as 1,450 ft deep. The well has a concrete sanitary seal from ground level to 630 ft with screened sections at specific intervals to target high-yield aquifers; it produces 1,500 gpm. Homestead Well is a direct-feed well that operates on a VFD and pumps directly into the distribution system. The facility has ample space to accommodate treatment equipment if needed. With the latest Cr6 concentration of 17 ppb, treatment will likely be required to meet 80 percent of the MCL; however, more quarterly sampling will be conducted to confirm this requirement. For compliance planning, it is assumed that a treatment system will be installed by October 1, 2027.

The well was constructed as part of the Homestead development. Water quality monitoring has been limited to initial samples upon well completion. The first sample resulted in 10 ppb Cr6 detected, with a follow-up sample at 9.7 ppb. The second quarterly sample resulted in 17 ppb Cr. More monitoring will be required to determine if treatment is necessary for this well. If required, the RUR IX technology will also be implemented.

Technically, Cr6 treatment is not yet required; however, this site will likely need treatment (>80 percent of MCL) based on the latest quarterly sampling result. Given its age, location, and space for expansion (tank and booster station), this site will have treatment installed if needed.

7.7 Future Wells – Campus and Harvest

All future wells constructed as part of development will be required to meet 80 percent of the MCL. Production wells will be required to be lower than 8 ppb, or treatment will be required for acceptance.

Both Campus and Harvest are exploring the cost vs. benefit of drilling deeper wells to avoid Cr6. An exploratory monitoring well is planned as part of the Campus development.

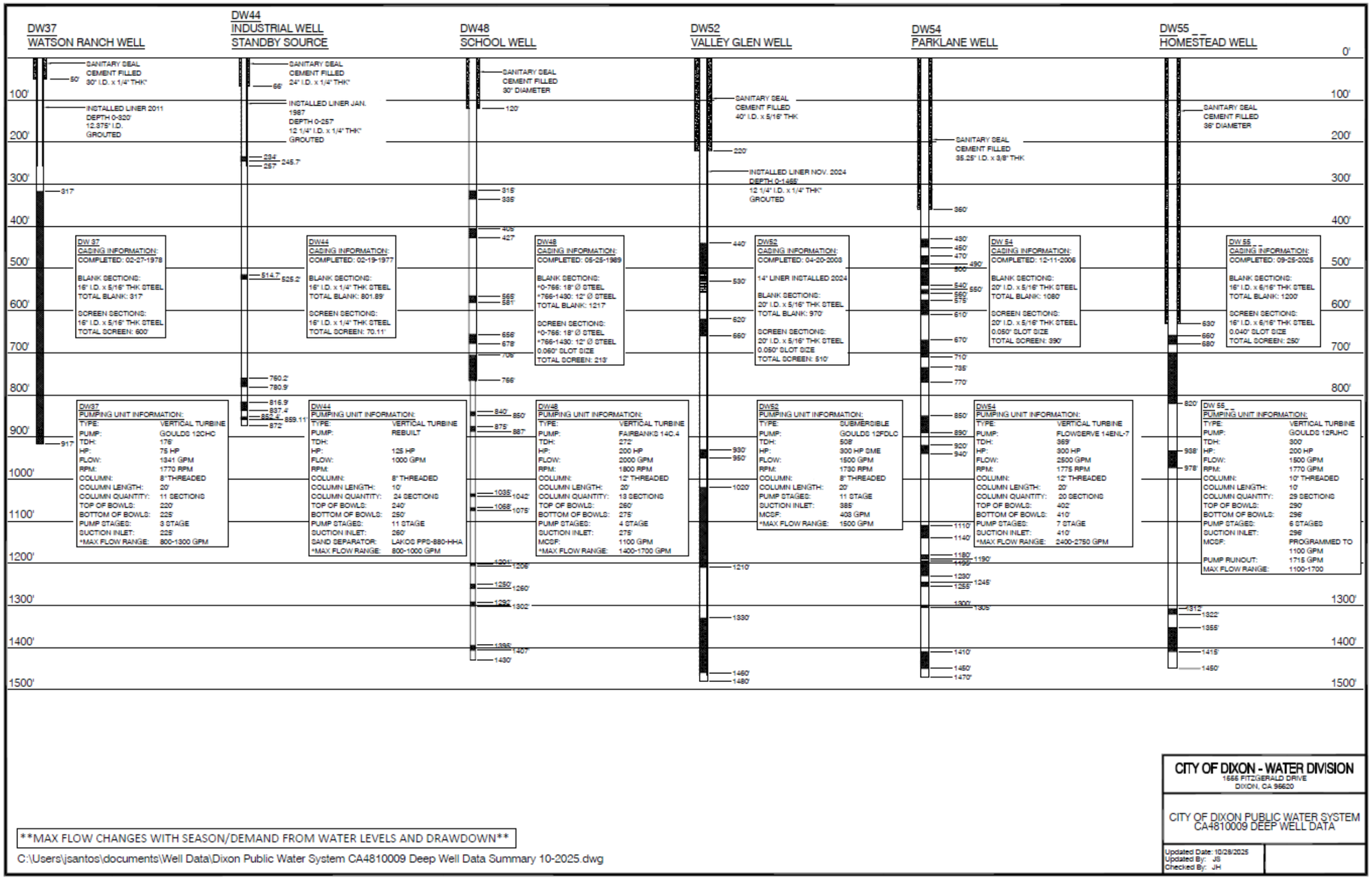

Figure 3. Detailed information for City's production wells

Section 8

Treatment Systems Description

Based on the discussions in Section 6, there are two well sites that will require the installation of treatment systems by October 1, 2027: DW 54 (Parklane) and DW 55 (Homestead). These two sources would be adequate to supply water for the City until May 2028 when the new well on the Fitzgerald property comes online. Whether treatment for Cr6 is needed for the Fitzgerald Well is uncertain at this time. As soon as more results from the monitoring well indicate that treatment would be required, the City will start the design and construction process so that the well will be able to start supplying water that complies with the Cr6 MCL in May 2028.

The proposed treatment system at DW 54 (Parklane) would include two trains of lead-lag IX system designed for RUR. Each modular train would include:

- Two 5-micron cartridge filters (one as standby).
- Two 10-ft-diameter IX vessels, each with 336 cubic feet of SBA resin.
- Stainless-steel interconnecting piping and automatic valve manifold.
- Duplex stainless-steel brine distributor and piping.
- Automatic valves.
- Instrumentation and controls (e.g, pressure transmitters, flow meters, conductivity meter and probe, and a main control panel with HMI and datumpin eDM).

The approximate dimensions of each modular train are 356 inches long x 184 inches wide and 178 inches high. With the addition of ladders and a platform on each end for access to the top of the vessels, the total length is approximately 460 inches. The piping from the well supply will have a bypass valve (Cla-Val), flow meter, and piping for blending before the blended water flows to the two reservoirs. Figure 4 shows a preliminary layout of the IX trains at DW 54 site. The layout will allow adequate space for the RUR truck to perform on-site regeneration of the lead IX vessel and to haul off the regeneration wastes. The layout may be refined with pipe routings as part of the design evaluation.

The proposed treatment system for the DW 55 Well (Homestead) site (if required) would also include two trains of lead-lag IX system designed for RUR. The modular trains include all the components described above with the same dimensions. There is also a bypass pipe with a valve and flow meter for blending treated and untreated water to achieve an effluent concentration of <7 ppb of Cr6. Figure 5 shows a preliminary layout of the treatment system at the DW 55 Well site. The layout may be revised with pipe routing as part of the design evaluation.

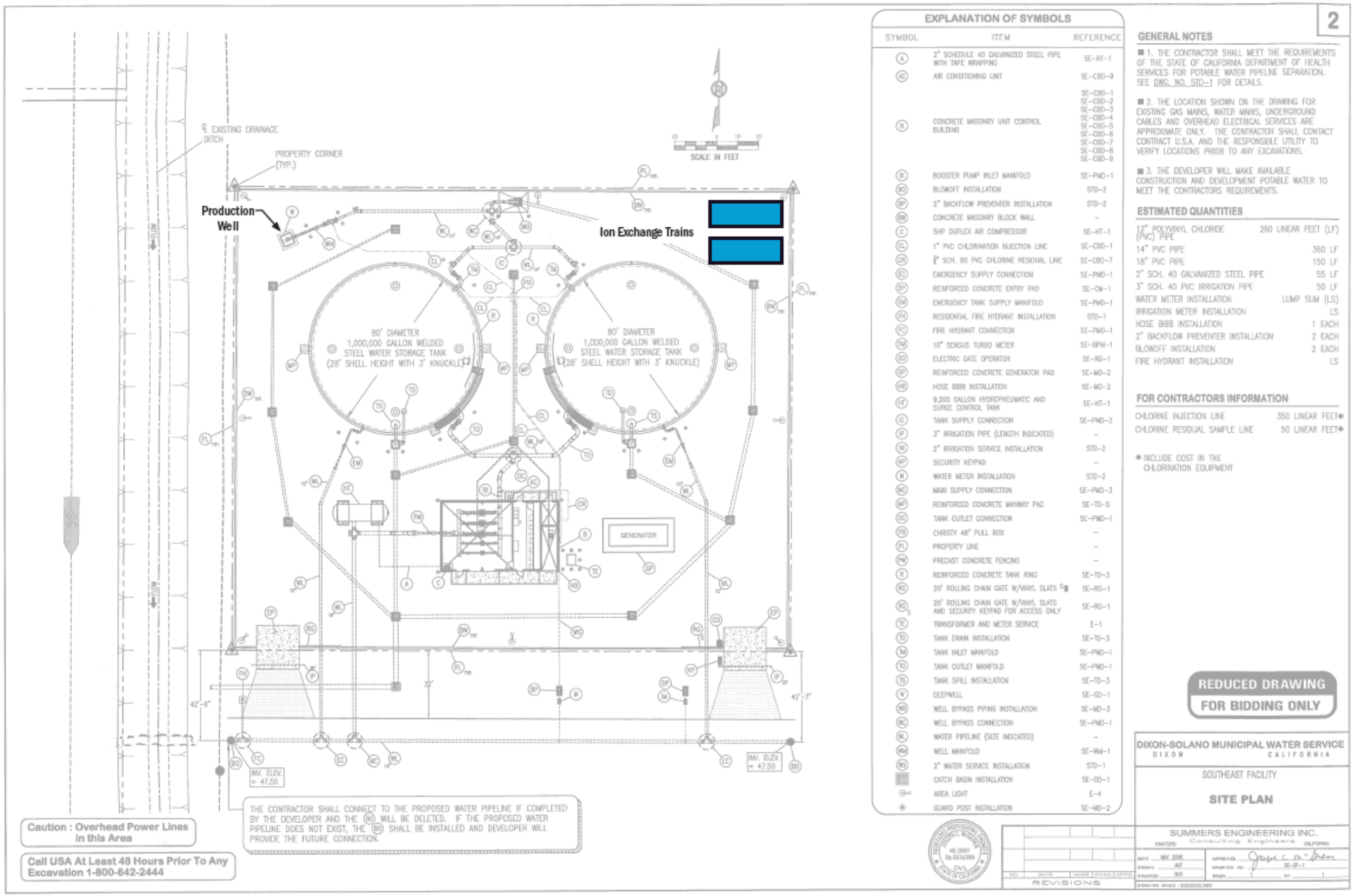

Figure 4. Preliminary treatment system layout for DW 54 Well site

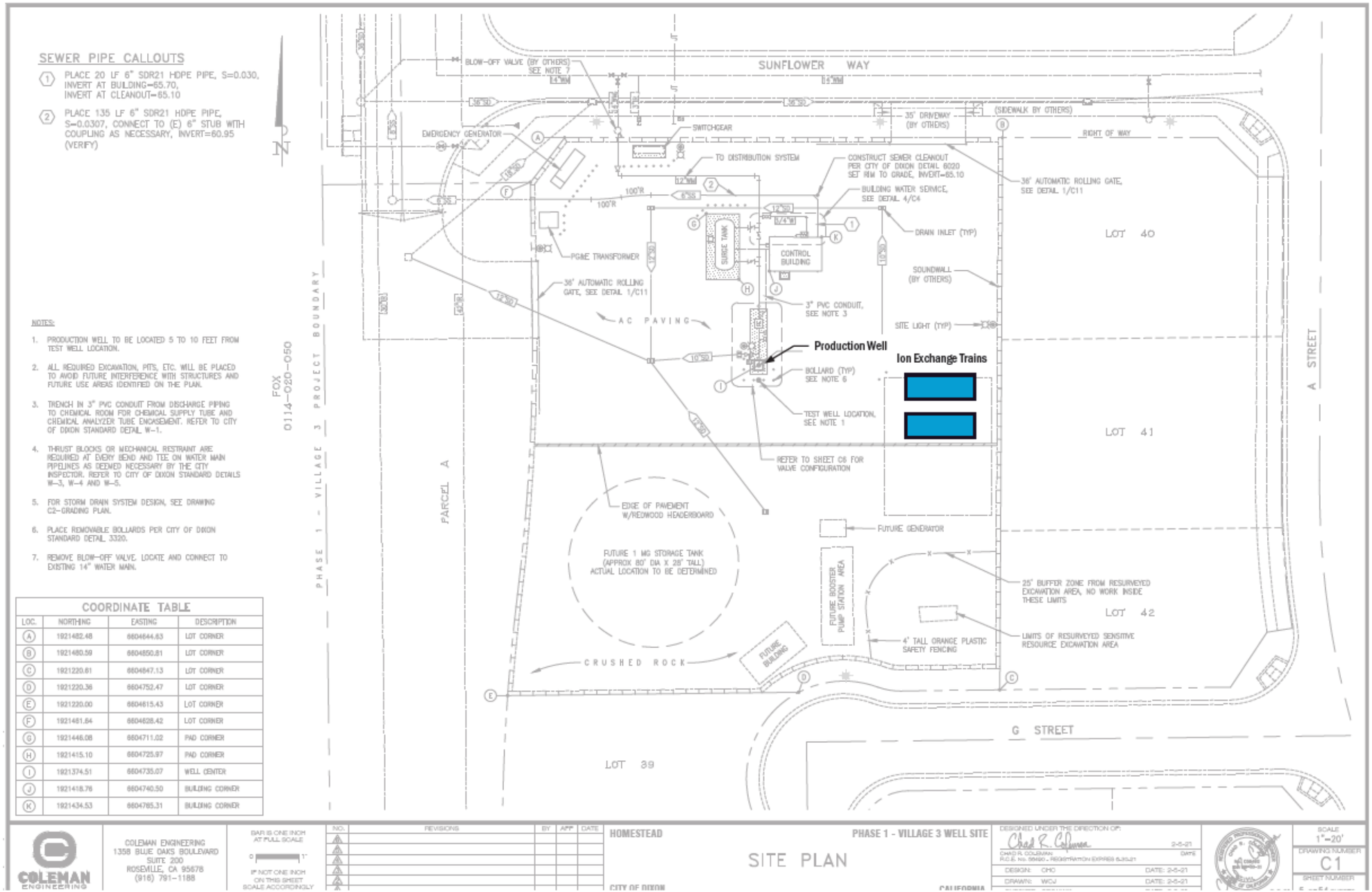

Figure 5. Preliminary treatment system layout for DW 55 Well site

Section 9

Cr6 MCL Compliance Plan Schedule

The critical path steps for the City to achieve Cr6 MCL compliance consider design firm selection and contracting, preliminary design, detailed design to complete plans and specifications and contractor bid package, pre-purchase of treatment equipment after preliminary design, contractor selection and contracting, construction, and testing and commissioning. Evaluation of permitting requirements for the treatment facilities will be conducted along with California Environmental Quality Act (CEQA) in conjunction with detailed design. The environmental review process will include all project-related activities and will begin within 30 days of completion of the preliminary design phase and finalization of the basis of design report (BODR) for the treatment facilities. Investigation and selection of treatment alternatives have been completed, and pilot testing of SBA is ongoing. Figure 6 shows the compliance plan schedule for each major activity leading to meeting the October 1, 2027, compliance date. The milestones are briefly discussed following Figure 6.

Task Name	Duration	Start	Finish
Review and Selection of Treatment Technology	227 days	Fri 11/1/24	Mon 9/15/25
IX Pilot Testing	132 days	Tue 4/15/25	Wed 10/15/25
Selection and Contracting with Design Engineer	44 days	Thu 10/16/25	Tue 12/16/25
Preliminary Design Report	40 days	Mon 1/5/26	Fri 2/27/26
Detailed Design & Bid Package Preparation	131 days	Mon 3/2/26	Mon 8/31/26
Plan and Specs Submission to DDW	1 day	Tue 9/1/26	Tue 9/1/26
Environmental Review/Permitting	132 days	Mon 3/2/26	Tue 9/1/26
Pre-purchase and Manufacturing of Treatment Equipment	262 days	Mon 3/2/26	Tue 3/2/27
Contractor Selection and Contracting	65 days	Tue 9/1/26	Mon 11/30/26
Construction	174 days	Tue 12/1/26	Fri 7/30/27
Operations Plan Submission to DDW	46 days	Tue 4/20/27	Tue 6/22/27
Testing and Commissioning	45 days	Mon 8/2/27	Fri 10/1/27

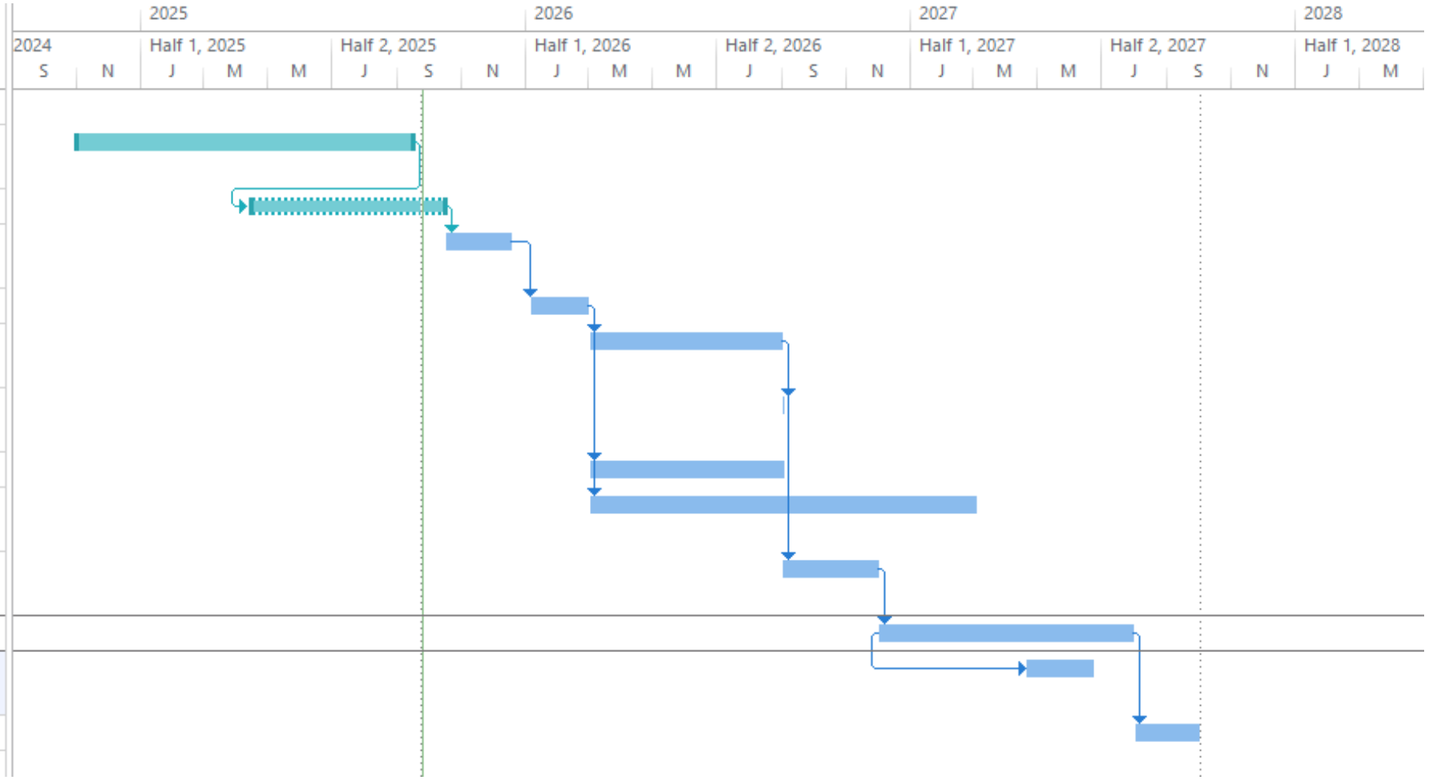

Figure 6. Cr6 compliance plan schedule

The following presents a brief discussion of each task:

- **Review and Selection of Treatment Technology**. The City has started reviewing alternative treatment technologies since the effective date of the Cr6 MCL in October 2024, including literature review, as well as talking to other utilities, consultants, and treatment technology vendors. By mid-September 2025, the City has decided on using SBA with the RUR approach, which is the most desirable alternative for the City as detailed earlier in this document.
- **IX Pilot Testing**. The City contracted with datumpin to conduct an SBA pilot test at the DW 54 well site using the AutoPilot system with eDM to simulate the RUR approach. The AutoPilot was commissioned on April 15, 2025, and continued until October 15, 2025. During pilot testing, the AutoPilot was transported to Phibro-Tech's waste handling site for regeneration upon breakthrough, as monitored by the eDM. A final pilot testing report from datumpin will be reviewed by the City and submitted to DDW at a later date. Preliminary results indicate the effluent Cr6 concentration would remain non-detect until breakthrough and that breakthrough time (measured in BVs) was longer than projected by the Ecolab computer software. More pilot testing is planned to investigate the potential galvanic corrosion issue.
- **Selection and Contracting with Design Engineer**. The City will start the design firm selection and contracting process after the completion of the first pilot testing. This effort is expected to be completed within 2 months.
- **Preliminary Design Report**. The contracted design firm will start the preliminary design and prepare a BODR for both well sites. The BODR will include process design criteria, a major equipment list, a refined site layout, a process flow diagram, a piping and instrumentation diagram (P&ID), permitting evaluation, and a preliminary cost estimate. The BODR is expected to be finalized within 3 months. The BODR will be submitted to DDW for review.
- **Detail Design and Bid Package Preparation**. The design team will start the detailed design phase immediately after finalizing the BODR. The detailed design includes preparation of plans and technical specifications (specs). To accelerate the design process, a 60% and 90% level of design have been considered for the City's review before finalizing the plans and specs. A construction bid package will be prepared to accompany the plans and specs.
- **Plan and Specs Submission to DDW**. Upon completion of the 100% plans and specs the City will submit them to DDW for approval.
- **Environmental Review and Permitting.** The City will conduct a CEQA review with proper documentation and coordinate with DDW on the permitting process during the detailed design phase.
- **Pre-purchase and Manufacturing of Treatment Equipment.** After finalizing the BODR the City will start to negotiate the pre-purchase of treatment equipment from the selected vendor. The total time from purchase order issuance to equipment delivery is expected to be approximately 50 weeks. The equipment delivery dates will be coordinated with the construction contractor yet to be selected.
- **Contractor Selection and Contracting.** After the construction bid package is prepared the City will advertise and receive bids from perspective contractors. The City expects to have a selected contractor on board within 3 months.
- **Construction**. The construction at both well sites is expected to start on December 1, 2026, and be completed on July 30, 2027.

- **Operations Plan Submission to DDW**. During the construction process, with assistance from the equipment vendor, the City will prepare and submit an Operations Plan to DDW for approval. The Operations Plan will include the performance monitoring program, unit process equipment maintenance program, a detailed description of each unit process, the RUR procedures, reliability features, and a description of the treatment media (SBA) inspection program.
- **Testing and Commissioning.** Upon construction completion and system cleaning and disinfection, the treatment equipment vendor will supervise testing and commissioning of the treatment systems. Each IX vessel will go through an RUR before testing and commissioning. The treatment systems are expected to start operations by October 1, 2027.

Section 10

Financial Impact and Preparation

The City recently went through a rate study and 218 process, successfully setting a 5-year rate plan that accounted for many overdue capital improvement projects. The rate structure did not include Cr6 treatment because the MCL was not official at the time, but it was in draft form and discussed with the rate committee and City Council. The City, along with its rate consultant, acknowledged the potential cost of Cr6 treatment and prepared the Council and customers. The idea of a supplemental fee was discussed to pay the cost of equipment and installation. There is also a loan/bond component to the rate structure, which would allow the City to borrow money for system improvements.

There is also the potential to redirect some Capital Improvement Program (CIP) funding if development continues and new wells with greater production can replace existing sources that do not meet the MCL. The City can redirect funding from one of the two funded replacement wells to replace a single well and treat an existing well.

Regardless of CIP savings, the City will have to treat Parklane Well (DW 54). Industrial Well (DW 44) will be replaced with a well on the adjacent Fitzgerald property and ideally not require treatment; however, if the City cannot design around Cr6, treatment will be required. Homestead Well (DW 55) will likely need treatment as well. The financial impact will be determined by the pilot study and the cost of implementing treatment, as well as the alternative of drilling deeper to avoid Cr6 in well water.

Section 11

Summary and Conclusions

The City's PWS currently operates with five production wells as primary, and one as reserve/standby. To meet current demand year-round, the City will need to maintain at least three active sources and bring them into compliance with the Cr6 MCL as follows:

- Parklane Well (DW 54) will have treatment installed.
- Industrial Well (DW 44) will be replaced with a well on Fitzgerald property that will comply with the Cr6 MCL either without treatment, or with treatment installed if required.
- Homestead Well (DW 55) will replace School Well as a primary source and likely require treatment (additional monitoring will determine).
- School Well (DW 48) and Valley Glen Well (DW 52) will be placed on standby and restricted to run hours and emergency use only.
- Watson Ranch (DW37) is scheduled to be replaced in 2027/2028; however, depending on the success of Fitzgerald (production/Cr6 levels) and the development at Campus, Watson may be placed on standby as well, using the storage tank and booster station only to support demand.

To comply with the October 1, 2027, Cr6 MCL compliance requirement, the following is planned:

- Treatment will be installed at Parklane Well (DW 54) and likely at Homestead Well (DW 55). Fitzgerald will need to be ready by May 1, 2028, either with or without Cr6 treatment.
- The treatment at Parklane will include two SBA trains. Homestead Well, if required, will also need two SBA trains.

This compliance schedule is based on constructing treatment systems at Parklane and Homestead wells. The compliance schedule as presented on Figure 6 is fast-tracked and assumes accelerated and efficient design, equipment manufacturing and delivery, and construction activities. Meeting the compliance date of October 1, 2027, may be challenging if there are any unforeseen circumstances such as supply chain disruptions. The City will provide periodical progress updates to DDW throughout this period.