THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Water System Operations Group

- **Operations Monthly Activities for May 2024**

Summary

This monthly report for the Water System Operations Group provides a summary of activities for May 2024 in the following key areas:

- Enhance Workforce Safety
- Develop Workforce and Prepare Employees for New Opportunities
- Manage Business Operations, Budget, and Staffing
- Ensure Accurate Billing and Support Revenue Generation
- Provide Reliable Water Deliveries and Manage Storage
- Develop New Supplies and Optimize System Flexibility
- Manage Power Resources and Energy Use in a Sustainable Manner
- Protect Source Waters and Ensure Water Quality Compliance
- Optimize Water Treatment and Distribution
- Protect Infrastructure and Optimize Maintenance
- Enhance Emergency Preparedness and Response
- Prepare for Future Legislation and Regulations
- Advance Education and Outreach Initiatives
- Engage with Member Agencies and Other Stakeholders on Technical Matters

Purpose

Informational by the Water System Operations Group on a summary of key activities for the month of May 2024

Attachments

Attachment 1: Detailed Report – Water System Operations Group's Monthly Activities for May 2024

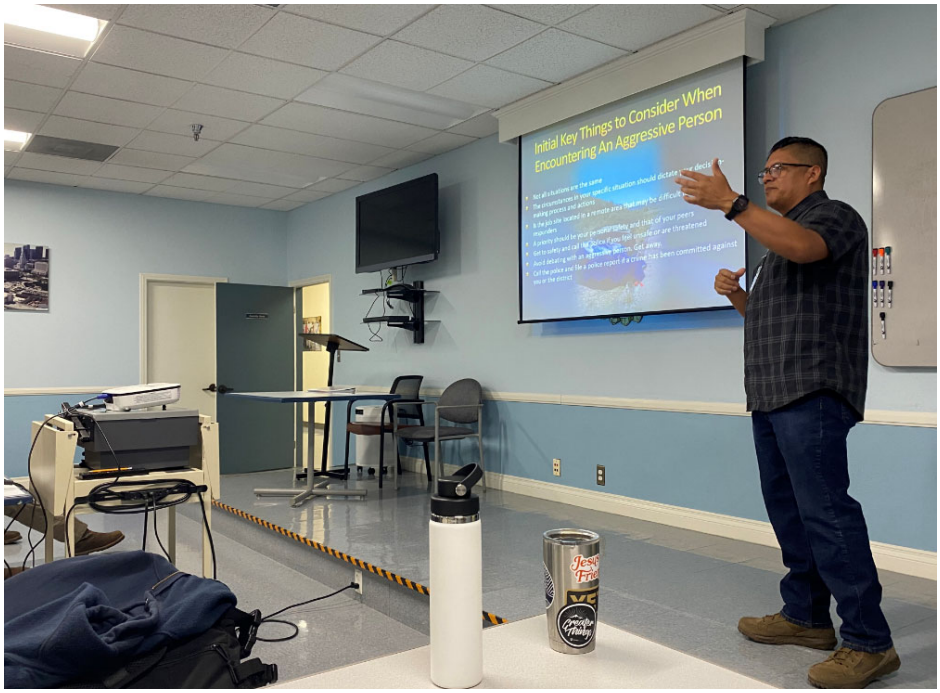
Date of Report: June 11, 2024

Water System Operations

Core Business Objectives

Enhance Workforce Safety

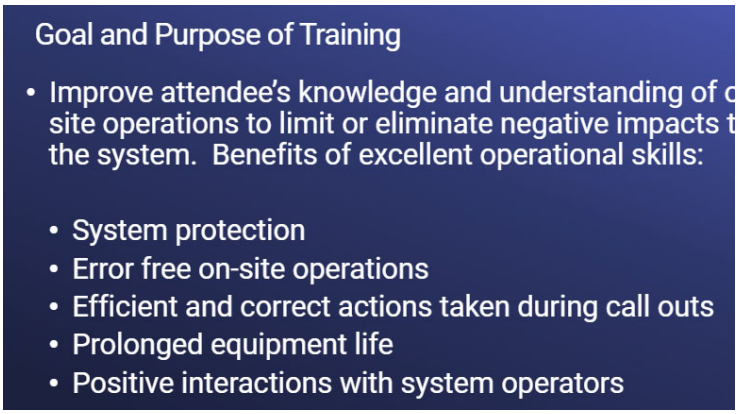
While maintaining the distribution system throughout Southern California, staff may have encounters with others that could potentially escalate to violence. Training was provided to enhance situational awareness and identify, prevent, and de-escalate potential conflicts. A Metropolitan instructor presented several scenarios and advised staff on how to handle such situations to help ensure their safety, while remaining courteous, respectful, and professional while performing their critical job duties.

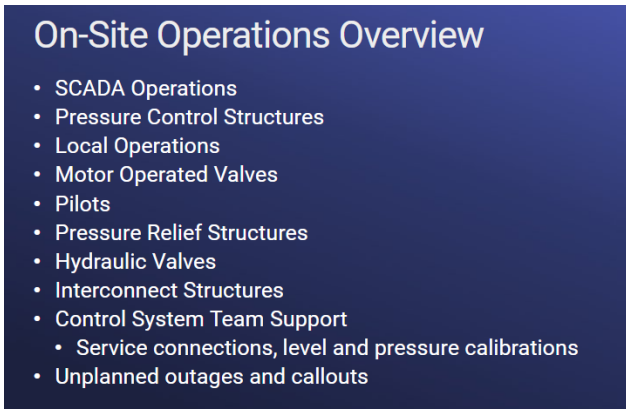


Staff provided training on Conflict De-escalation

Develop Workforce and Prepare Employees for New Opportunities

A formal On-Site Operator training session was prepared and added to the Hydroelectric Training Class for the first time. The class was attended by employees who operate and maintain conveyance and distribution system facilities. The curriculum included an overview of pipeline hydraulics, such as hydraulic grade calculations, pilot valve, and relief valve operations. On-site training was also provided with a trip that demonstrated various SCADA screens and system operations at the Eagle Rock Operations Control Center . Class participants also visited other facilities such as pressure control structures and hydroelectric power plants.





On-Site Operator training goal and course overview

Manage Business Operations, Budget, and Staffing

Business Management Team staff is continuing to prepare for the end of the fiscal year 2023/24 and the beginning of the new fiscal year 2024/25. With approval of the operating equipment budget for FY2024/25, WSO is preparing to begin purchasing equipment at the start of the new year. With the fiscal year drawing to a close, staff is also preparing for the upcoming evaluation season, including offering information and Q&A sessions for managers to highlight current processes and assist in meeting Human Resources deadlines.

WSO filled one vacancy in May.

Ensure Accurate Billing and Support Revenue Generation

WSO staff is working with staff from Finance, Information Technology, and a consultant team to develop the WINS 2.0 application that will eventually replace the current application for invoicing member agencies monthly for water transactions. System Operations staff has been testing the Automatic Meter Reading and Meter Maintenance modules. Staff has been working with the project group to review various components. One of the new modules completed this month allows for efficient set up and invoicing of water delivered under Metropolitan's various current and potential future water programs. Staff will start user acceptance testing of this module next month.

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 95,000 acre-feet (AF) for May with an average of 3,060 AF per day, which was about 400 AF per day higher than in April. As a result of the increased SWP Allocation, Metropolitan has recently started Cyclic and Conjunctive Use Program deliveries. Treated water deliveries were 8,200 AF higher than in April for a total of 52,200 AF, or 55 percent of total deliveries for the month. The Colorado River Aqueduct (CRA) pumped a total of 87,000 AF in May. State Water Project (SWP) imports averaged 980 AF per day, totaling about 30,400 AF for the month. The target SWP blend was 0 percent for Weymouth, Diemer, and Skinner plants for most of the month and increased to 25 percent at the end of the month.

Metropolitan expects to have sufficient SWP and Colorado River supplies to meet demands in 2024. Water continues to be managed according to Water Surplus and Drought Management (WSDM) principles and operational objectives with an emphasis to position SWP supplies to meet future demands in the SWP-dependent area. Metropolitan has resumed deliveries to Desert Water Agency and Coachella Valley Water District because of the improved supply conditions. Metropolitan is prioritizing the use of Table A supplies this year to meet demands and improve reserves and future drought reliability for the SWP-Dependent Area. Some Table A supplies are also available for blending to help manage salinity levels.

Develop New Supplies and Optimize System Flexibility

During May, staff continued baseline monitoring for tertiary membrane bioreactor (MBR) nitrification-denitrification testing at the Pure Water Southern California Napolitano Innovation Center demonstration plant and maintained stable MBR and reverse osmosis (RO) process performance at target operating conditions. Staff also continued to optimize the carbon dosing system to efficiently achieve MBR filtrate nitrate targets. Comprehensive monitoring of source water, RO concentrate, product water, and key intermediate process locations was completed to characterize performance of the treatment train.

Staff collects samples to evaluate performance of the MBR-based treatment train at the NIC Demonstration Plant

Manage Power Resources and Energy Use in a Sustainable Manner

Energy markets in May 2024 reflected the relatively mild winter of 2023–24 and relatively plentiful natural gas supplies. Natural gas prices fell from their normal winter price range of $5–10 per Metric Million British Thermal Unit (MMBtu) range into the $2-5 per MMBtu range, with electricity prices in the CAISO market following suit. Sunshine and longer daylight hours driving increased solar generation, coupled with relatively low springtime electricity demands, helped keep electricity prices on average in the $20–-40 per megawatt-hour (MWh) range, and pushing prices strongly negative during the high solar hours from 10 am to 4 pm. No significant energy pricing events occurred either in the western US or nationwide. Metropolitan power scheduling staff, in conjunction with Metropolitan's scheduling coordinator ACES Power LLC, coordinated the scheduling of CRA load and USBR hydro generation for maximum efficiency, resulting in negative CAISO invoices over several weeks of May. Summer electric and capacity price forecasts are also trending lower.

The CRA resumed full operation following the March shutdown, averaging about seven pumps. The CRA energy cost budget for fiscal year 2023/24 is $82.6 million; however, the current cost forecast for the 2023/24 fiscal year is significantly lower than budgeted at $43.4 million because of reduced pumping and lower forward cost curves. Monthly costs are forecast to increase as energy prices increase in anticipation of summer.

Metropolitan staff attended the annual meeting of the Arizona Electric Power Co-Operative (AEPCO), the entity that serves as Metropolitan's Transmission Operator for the CRA transmission system. The meeting was held on May 8 in Tucson, Arizona.

Protect Source Waters and Ensure Water Quality Compliance

Metropolitan complied with all water quality regulations and primary drinking water standards during April 2024.

On May 15–16, staff participated in the Topock Chromium-6 Groundwater Remediation Project Orientation at the Pipa Aha Macav Cultural Center in Mohave Valley, Arizona. The two-day training included presentations on tribal and cultural history, regulatory background, groundwater and soil investigations and remediation, and archaeology. The training also featured a guided tour of key sites within the project area. Since 2003, Metropolitan has supported cleanup of the project site to ensure continued water quality protection of Colorado River supplies.

Optimize Water Treatment and Distribution

The SWP target blend entering the Weymouth and Diemer plants was increased from zero percent to approximately 25 percent on May 28. Coagulant dosages were adjusted accordingly. The SWP blend entering Lake Skinner remained at zero percent, while the blend leaving Lake Skinner continued trending down to below 20 percent.

Flow-weighted running annual averages for total dissolved solids from March 2023 through February 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the CRA were 345, 430, and 470 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

Because of the configuration of the Lower Feeder, air entrainment occurs in the source water at Diemer plant. Air entrainment causes several operational challenges. Diemer plant is collaborating with Engineering Services Group to conduct an Air Entrainment Study. Staff recently upgraded vacuum relief valves for the ozone contactors. This will allow the plant to conduct full-scale testing of the effectiveness of using the ozone destruct blowers to remove dissolved gas in the source water.

Staff upgrading vacuum relief valves for the ozone contactor at the Diemer plant

Protect Infrastructure and Optimize Maintenance

This month staff completed large valve maintenance on a 42-inch conical plug valve at the Sepulveda Feeder in the City of Gardena. The Sepulveda Feeder runs 43 miles from the Jensen plant to the city of Torrance interconnecting with several pipelines through the San Fernando Valley and Los Angeles areas. During this maintenance, staff operated the valve to inspect mechanical and electrical components and confirm system reliability.

Staff inspecting the operation of a 42-inch valve during routine preventive maintenance at the Sepulveda Feeder

At the Mills plant during a routine plant check, a leak from the ammonia solution piping that feeds the plant's influent control structure (ICS) was found. Staff used a crane to pull the concrete trench covers to help determine the exact location of the leak. At this location, ammonia is used in combination with chlorine to suppress bromate formation. Mills plant remained online while repairs were performed with all water quality goals and objectives being met.

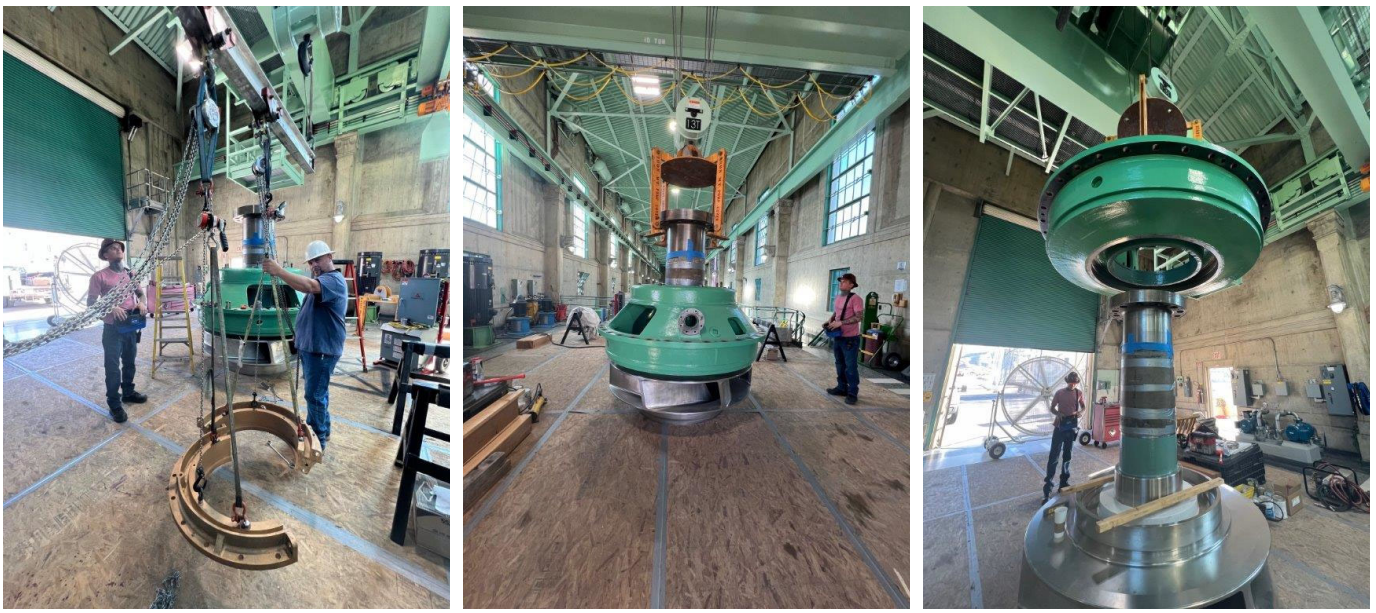
Staff in personal protective equipment investigating the exact location of the ammonia leak at the Mills plant

Operations (continued)

Staff investigated a potential leak at the EM-17 Service Connection in Murrieta when water was found entering a valve structure. After potholing the 60" encased pipeline between the valve structure and the downstream manhole structure, nuisance water was found; however, a leak could not be confirmed. Staff worked with a contractor to install two monitoring wells and are conducting daily water samples and monitoring the site as part of this continued investigation.

Contractor assisting with vacuum excavation at the EM-17 service connection

The Iron Unit 5 Discharge Valve repair project involves the removal of the discharge plug and headcover. Staff inspected and refurbished the pump components before reassembly.



Staff reassembling pump components at Iron Mountain pumping plant

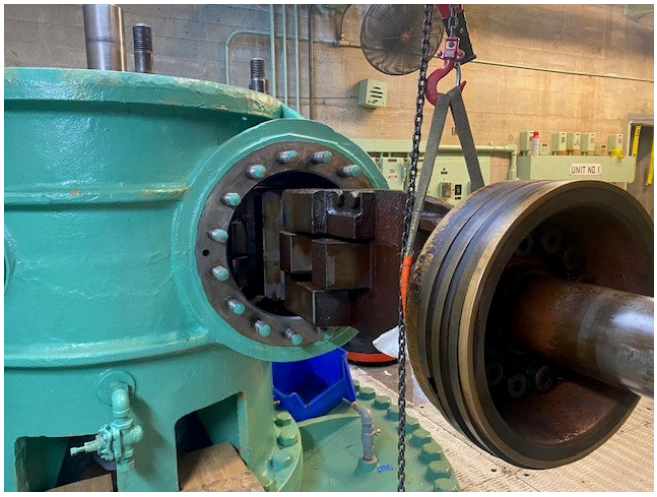
Staff installed a new HVAC unit at the Hinds pumping plant control room. Air conditioning provides a critical function during the extreme summer temperatures by ensuring that personnel and critical equipment remain at optimal temperatures.

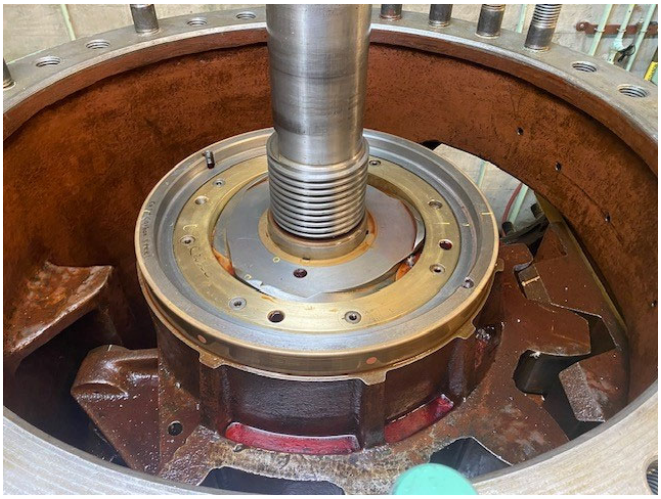
New HVAC installation at Hinds pumping plant

Staff continue work on a major project to repair the transition joint at the Eagle Mountain headgate structure. As the leak originates internally from the structure, work can be performed only during the annual CRA Shutdown. The project addressed leaks at the joint between the steel delivery lines and the concrete structure.

Headgate structure before repair in November 2021 (left) and after repair in May 2024 (right) during seven-pump CRA flow at Eagle Mountain pumping plant

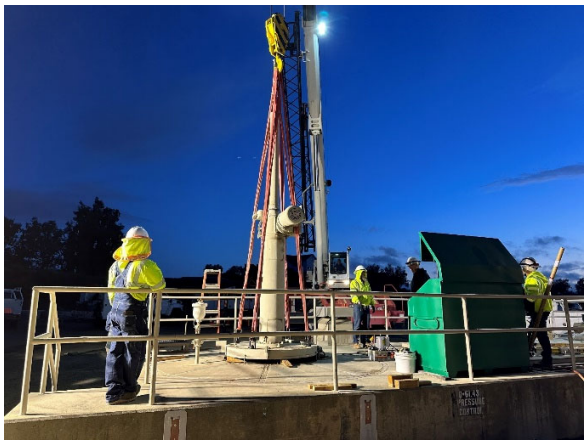
At the Gene pumping plant, staff began disassembly and repair of the Unit 1 Discharge Valve. Before disassembly, an isolator fitting was installed to secure the unit from the delivery line. Staff has removed and stored the oil for the actuating mechanism, with teardown and assessment in progress.





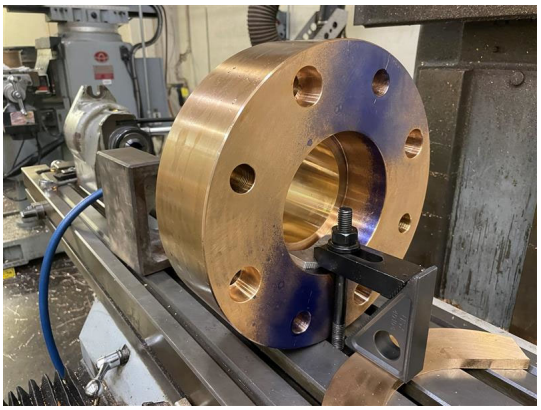
Repair of Unit 1 Discharge Valve at Gene pumping plant

Staff replaced a disabled 42-inch sleeve valve at Auld Valley Control Structure. This structure consists of two sleeve valves that control flow on San Diego Pipeline No. 3. Last year, one of the valves seized and would not operate. During a November 2023 shutdown, staff removed the broken valve and sent it to the La Verne Shops for refurbishment. Staff quickly determined that the problem was within the valve operator. In addition to refurbishing the operator, staff manufactured and repaired several valve components. During the recent shutdown, staff reinstalled the refurbished valve and removed the second valve, which will be similarly refurbished to ensure reliability of the pipeline.



Staff removing a 42-inch sleeve valve at Auld Valley Control Structure on San Diego Pipeline No. 3


Troubleshooting of Auld Valley Control Structure valve operator (left) and shaft (right)

Machining of existing valve cover (left) and manufacturing new bronze stem bearing (right)


Repaired valve gate and new stem (left) and refurbished operator pedestal (right) for Auld Valley Control Structure on San Diego Pipeline No. 3

Communication sites throughout Metropolitan's service area enable the various facilities to communicate with each other and ensure no service interruptions to the member agencies. One of these communication sites is Detention Peak in Oak Glen. An upgraded fiber optic line will be added to the site that will ensure reliability. Staff will complete the necessary work to route the fiber optic cable approximately 1,300 feet from a nearby service road to the communication site.

Detention Peak Communication Site

Enhance Emergency Preparedness and Response

On May 7, the Water Quality Incident Command Post (ICP) collaborated with Metropolitan's Emergency Operations Center in a simulated earthquake response exercise with downed network and phone lines. This provided staff with essential hands-on training in alternative emergency communications and additional experience in emergency response.

Prepare for Future Legislation and Regulations

On April 16, EPA released updated Interim Guidance on the Destruction and Disposal of Perfluoroalkyl and Polyfluoroalkyl Substances and Materials Containing Perfluoroalkyl and Polyfluoroalkyl Substances—Version 2 for public comment. The updated guidance provides information on technologies that may be feasible and appropriate for the destruction or disposal of PFAS and PFAS-containing materials. The 2024 interim guidance also identifies key data gaps and uncertainties that must be resolved before the EPA can issue more definitive recommendations about PFAS destruction and disposal technologies. Staff is reviewing the Guidance; the comment deadline is October 14, 2024.

On April 17, State Water Resources Control Board, Division of Drinking Water adopted a 10 µg/L maximum contaminant level (MCL) for hexavalent chromium. The rule was adopted as proposed (with minor language changes):

- 10 µg /L MCL
- Detection limit for purposes of reporting (DLR) of 0.1 µg/L
- 2–4 yr. compliance timelines, depending on system size
- Need for a compliance plan, etc.

If approved by the Office of Administrative Law, the rule will be effective on October 1, 2024. Staff will track the implementation of the rule.

On April 26, EPA published final drinking water standards for six PFAS. EPA set individual maximum contaminant levels (MCLs) for PFOA and PFAS at 4.0 parts per trillion (ppt) and 10 ppt for PFNA, PFHxS, and GenX. EPA will also regulate PFAS mixtures containing at least two or more PFHxS, PFNA, GenX, and PFBS using a unitless Hazard Index of one. Lastly, EPA finalized health-based, non-enforceable Maximum Contaminant Level Goals for PFOA and PFOS at 0 ppt and 10 ppt for PFNA, PFHxS, and GenX. Staff is evaluating these new standards on how they will affect Metropolitan and its member agencies.

On May 3, staff submitted comments to CARB on its proposed amendments to the Advanced Clean Fleets (ACF) regulation. These amendments were in response to recently passed legislation sponsored by CMUA (Assembly Bill 1594 [Garcia, 2023]—Medium- and heavy-duty zero-emission vehicles: public agency utilities). Staff requested that CARB define the term "traditional utility-specialized vehicles" such that Metropolitan's specialized/customized vocational utility trucks are eligible for the exemptions under the ACF. Staff also supported the elimination of the 13-year minimum age requirement from select exemptions, as well as amending the daily usage exemption for medium- or heavy-duty vehicles. Staff will continue to track and engage in any changes to the ACF that affect Metropolitan's vehicle fleet.

On May 8, EPA published its final rule designating PFOA and PFOS, including their salts and structural isomers, as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Despite EPA's April 19, 2024, enforcement discretion policy that emphasized that EPA will not target water utilities, staff is still concerned that the final rule may encumber water utilities with potential liability under CERCLA for the disposal of water treatment residuals that may contain PFAS. To alleviate this concern, staff is supporting H.R. 7944—the Water Systems PFAS Liability Protection Act, which offers exemptions for water and wastewater systems from potential liability under CERCLA for the lawful disposal of PFAS.

Advance Education and Outreach Initiatives

Staff hosted a tour at the Iron Mountain pumping plant for a club that works closely with Bureau of Land Management (BLM) on the preservation of western history.

Tour at Iron Mountain pumping plant

This month, Jensen plant hosted a tour for students from College of the Canyons, a local junior college that provides a water technology program for operator training. The tour provided a chance for students to learn about Metropolitan and see a water treatment plant in operation to provide context for their academic program.

Students from the College of the Canyons Water Technology Program touring the Jensen plant

Engage with Member Agencies and Other Stakeholders on Technical Matters

On May 29, Metropolitan hosted its regular quarterly meeting with the State Water Resources Control Board's Division of Drinking Water. Discussion topics included updates on regulations, capital projects, treatment and distribution system water quality, nitrification action levels and responses, and an update on replacement of the domestic water systems at the CRA pumping plants and permit amendment application.