# AGENDA

18700 Ward St.
Fountain Valley, CA 92708
(714) 378-3200

REGULAR MEETING BOARD OF DIRECTORS
ORANGE COUNTY WATER DISTRICT
**Wednesday, July 2, 2025 – 5:30 p.m. – MWDOC 101**

**This meeting will be held in person. As a convenience for the public, the meeting may also be accessed by Zoom Webinar and will be available by either computer or telephone audio as indicated below. Because this is an in-person meeting and the Zoom component is not required, but rather is being offered as a convenience, if there are any technical issues during the meeting, this meeting will continue and will not be suspended.**

Computer Audio: Please click the link below to join the Zoom webinar:
https://ocwd.zoom.us/j/81643856309

Telephone Audio: (213) 338 8477

Meeting ID: 816 4385 6309

Teleconference Sites:
10382 Bonnie Drive, Garden Grove
20 Civic Center, Santa Ana
1454 Madison Street, Tustin
6148 E Baja Drive, Anaheim
101 Mission Avenue, Oceanside
303 W. Commonwealth Avenue, Fullerton
* Members of the public may attend and participate at all locations.

## PLEDGE OF ALLEGIANCE

## ROLL CALL

## ITEMS RECEIVED TOO LATE TO BE AGENDIZED

RECOMMENDATION: Adopt resolution determining need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda (requires two-thirds vote of the Board members present, or, if less than two-thirds of the members are present, a unanimous vote of those members present.)

## VISITOR PARTICIPATION

Time has been reserved at this point in the agenda for persons wishing to comment for up to three minutes to the Board of Directors on any item that is not listed on the agenda, but within the subject matter jurisdiction of the District. By law, the Board of Directors is prohibited from taking action on such public comments. As appropriate, matters raised in these public comments will be referred to District staff or placed on the agenda of an upcoming Board meeting.

At this time, members of the public may also offer public comment for up to three minutes on any item on the Consent Calendar. While members of the public may not remove an item from the Consent Calendar for separate discussion, a Director may do so at the request of a member of the public.

## CONSENT CALENDAR (ITEMS NO. 1- 3)

All matters on the Consent Calendar are to be approved by one motion, without separate discussion on these items, unless a Board member or District staff request that specific items be removed from the Consent Calendar for separate consideration.

1. APPROVAL OF CASH DISBURSEMENTS

RECOMMENDATION: Ratify/authorize payment of bills

2. AUTHORIZE AGREEMENTS FOR ON-CALL ENVIRONMENTAL SERVICES

RECOMMENDATION: Authorize on-call service agreements with:

- Environmental Science Associates;
- PSOMAS
- Helix Environmental Planning;
- Chamber Group; and
- Rincon

3. AWARD CONTRACT NO. FV-2024-1 ANNEX BUILDING ROOF REPLACEMENT PROJECT TO BEST CONTRACTING SERVICES

RECOMMENDATION:
1) Receive and file Affidavit of Publication of Notice Inviting Bids for Contract FV-2024-1 Annex Building Roof Replacement Project;

2) Ratify issuance of Addendum #1;

3) Reject C.I. Services, Inc. bid as non-responsive;

4) Accept and award contract FV-2024-1 to the lowest responsive and responsible Best Contracting Services Inc, in the amount of $192,848; and

5) Establish Project budget in the amount of $203,448

**INFORMATIONAL ITEMS**

4. UPDATE ON RESEARCH & DEVELOPMENT ACTIVITIES

5. SAWPA UPDATE

6. COMMITTEE/CONFERENCE/MEETING REPORT
   - ► Reports on Committees/Conferences/Meetings Attended at District Expense (at which a quorum of the Board was present)

7. VERBAL REPORTS
   - PRESIDENT'S REPORT
     Appoint GWRS tour ad hoc committee members
   - GENERAL MANAGER'S REPORT
   - DIRECTORS' REPORTS
   - GENERAL COUNSEL REPORT

**ADJOURNMENT**

Agenda Posting: In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted in the main lobby of the Orange County Water District, 18700 Ward Street, Fountain Valley, CA and on the OCWD website: www.ocwd.com not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the Assistant District Secretary. Backup material for the Agenda is available at the District offices for public review and can be viewed online at the District's website: www.ocwd.com.

Accommodations to the Disabled: Pursuant to the Americans with Disabilities Act, persons with a disability who require a disability-related modification or accommodation in order to participate in a meeting, including auxiliary aids or services, may request such modification or accommodation from the District Secretary at (714) 378-3234 or by email at cfuller@ocwd.com. Notification 24 hours prior to the meeting will enable District staff to make reasonable arrangements to assure accessibility to the meeting.

Availability of Agenda Material: As a general rule, agenda reports or other written documentation that has been prepared or organized with respect to each item of business listed on the agenda can be reviewed at www.ocwd.com. Copies of these materials and other disclosable public records distributed to all or a majority of the members of the Board of Directors in connection with an open session agenda item are also on file with and available for inspection at the Office of the District Secretary, 18700 Ward Street, Fountain Valley, California, during regular business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday. If such writings are distributed to members of the Board of Directors on the day of a Board meeting, the writings will be available at the entrance to the Board of Directors meeting room at the Orange County Water District office.

**AGENDA ITEM SUBMITTAL**

**Meeting Date:** July 02, 2025

**To:** Board of Directors

**From:** John Kennedy

**Staff Contact:** M. Ochoa

**Budgeted:** N/A
**Budgeted Amount:**
**Cost Estimate** $8,538,163.28
**Funding Source:** N/A
**Program/Line Item No.** N/A
**General Counsel Approval:** N/A
**Engineers/Feasibility Report:** N/A
**CEQA Compliance:** N/A

**Subject: APPROVAL OF CASH DISBURSEMENTS**

## SUMMARY

For the period of June 12, 2025 through June 25, 2025, including manual checks and wire transfers, staff is presenting cash disbursements totaling $8,538,163.28

| | | |
|---|---|---|
| Accounts Payable: | | |
| 06/12/2025 - 06/18/2025 | $ | 4,790,076.54 |
| 06/19/2025 - 06/25/2025 | $ | 2,361,306.55 |
| | | |
| Payroll | $ | 1,386,780.19 |
| **Total Disbursements** | **$** | **8,538,163.28** |

## RECOMMENDATION

Ratify/Authorize payment of bills

## PRIOR RELEVANT BOARD ACTION(S)

Semi-monthly

# Orange County Water District

# Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565334600 | Lab supplies | $136.27 | | |
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565334600 | SHIPPING / HANDLING | $22.63 | | |
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565349063 | Lab supplies | $679.69 | | |
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565349063 | SHIPPING / HANDLING | $31.90 | | |
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565370840 | Lab supplies | $417.06 | | |
| 804143 | 2025-06-18 | SIGMA-ALDRICH, INC. | Inv# 565370840 | SHIPPING / HANDLING | $19.35 | | |
| | **Total for Check:** | 804143 | | | | $1,306.90 | $29,659.07 |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 528773 | Lab supplies | $264.48 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 528773 | Lab supplies | $92.22 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 528773 | Lab supplies | $64.38 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 528773 | SP Hazardous Charging Fee | $35.89 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 528773 | CH Freight Fee | $17.64 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 529162 | Lab supplies | $2,453.40 | | |
| 804144 | 2025-06-18 | SPEX CERTIPREP, LLC | Inv# 529162 | CH Freight Fee | $38.33 | | |
| | **Total for Check:** | 804144 | | | | $2,966.34 | $12,493.50 |
| 804145 | 2025-06-18 | WECK LABORATORIES, INC. | Inv# W5B0786 | BPO WATER ANALYSIS | $130.00 | | |
| | **Total for Check:** | 804145 | | | | $130.00 | $31,883.00 |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012033855 | Water Production-helium | $452.21 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012033855 | hazardous material | $16.03 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012034673 | Wtr,Prod-lines | $13.82 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012034985 | Recharge-chaps | $116.24 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012035190 | Lab-helium,nitrogen | $1,870.87 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012035190 | haz.mtl, frt, fuel surcharge | $59.12 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012035447 | Recharge-carbon dioxide | $389.37 | | |
| 804146 | 2025-06-18 | WESTAIR GASES & EQUIPMENT | Inv# 0012035447 | hazardous material | $16.03 | | |
| | **Total for Check:** | 804146 | | | | $2,933.69 | $116,952.04 |
| ***Run Date:*** | ***6/17/2025*** | | | | **$7,336.93** | **$7,336.93** | |

# Orange County Water District

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**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 122990 | 2025-04-23 | SC FUELS | Inv# IN-0000108207 | Discount | $29.07 | | |
| 122990 | 2025-04-23 | SC FUELS | Inv# IN-0000108207 | BPO RED DIESEL | ($3,176.75) | | |
| **Total for Check:** | | 122990 | | | | ($3,147.68) | $76,881.25 |
| 123724 | 2025-06-18 | AECOM TECHNICAL SERVICES, INC. | Inv# 2001019860 | 12/21-4/30 PFAS IRWD OPA-1 | $7,130.00 | | |
| **Total for Check:** | | 123724 | | | | $7,130.00 | $435,541.00 |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130107445 | Lab supplies | $368.28 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130107445 | SHIPPING / HANDLING | $8.00 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130134353 | Lab supplies | $1,125.56 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $2,240.25 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $1,617.11 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $1,344.15 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $602.48 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $467.63 | | |
| 123725 | 2025-06-18 | AGILENT TECHNOLOGIES, INC. | Inv# 130135243 | Lab supplies | $461.10 | | |
| **Total for Check:** | | 123725 | | | | $8,234.56 | $200,610.16 |
| 123726 | 2025-06-18 | AIR FILTER SUPPLY, INC | Inv# I743195 | Generated by reorder 4/15/25 1 | $785.11 | | |
| **Total for Check:** | | 123726 | | | | $785.11 | $1,754.86 |
| 123727 | 2025-06-18 | ALTERNATIVE HOSE, INC. | Inv# 6115742 | BPO HOSES | $115.13 | | |
| 123727 | 2025-06-18 | ALTERNATIVE HOSE, INC. | Inv# 6115743 | BPO HOSES | $8.22 | | |
| 123727 | 2025-06-18 | ALTERNATIVE HOSE, INC. | Inv# 6115980 | BPO HOSES | $229.66 | | |
| **Total for Check:** | | 123727 | | | | $353.01 | $5,787.69 |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 17GY-Y974-VT9N | Research Center Supp- DON S. | $131.58 | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 17GY-Y974-VT9N | Research Center Supp- DON S. | $24.89 | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 17GY-Y974-VT9N | Research Center Supp- DON S. | $24.67 | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 17GY-Y974-VT9N | Promotions & discounts | ($2.47) | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 17L4-JHFH-Y1K9 | equipment for fitness room | $223.33 | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 1DC3-JHVT-GCWL | Generated by reorder 5/12/25 1 | $65.24 | | |
| 123728 | 2025-06-18 | AMAZON CAPITAL SERVICES, INC | Inv# 1XHQ-Q3KY-16NN | Generated by reorder 5/16/25 1 | $265.24 | | |
| **Total for Check:** | | 123728 | | | | $732.48 | $42,153.95 |
| 123729 | 2025-06-18 | AMERICAN WATER CHEMICAL, INC | Inv# 52250801 | 5/20 41180 lb antiscalant | $50,239.60 | | |
| **Total for Check:** | | 123729 | | | | $50,239.60 | $1,839,449.98 |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 127464300_20250612 | 05/08/2025 to 06/09/2025 | $43.05 | | |

# Orange County Water District

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| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 127602300_20250612 | 05/08/2025 to 06/09/2025 | $95.84 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 127603000_20250612 | 05/09/2025 to 06/10/2025 | $54.91 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 127704000_20250612 | 05/19/2025 to 06/10/2025 | $450.90 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128276000_20250613 | 05/12/2025 to 06/11/2025 | $118.30 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128279000_20250613 | 05/12/2025 to 06/11/2025 | $1,553.57 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128280300_20250613 | 05/07/2025 to 06/10/2025 | $101.83 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128282300_20250613 | 05/07/2025 to 06/10/2025 | $429.50 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128283000_20250613 | 05/12/2025 to 06/11/2025 | $1,158.31 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128284000_20250613 | 05/12/2025 to 06/11/2025 | $78.43 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128660002_20250613 | 05/12/2025 to 06/11/2025 | $428.03 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 131487000_20250613 | 05/12/2025 to 06/11/2025 | $58.90 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 132538000_20250613 | 05/12/2025 to 06/11/2025 | $351.02 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 134144000_20250613 | 05/12/2025 to 06/11/2025 | $58.90 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 134145000_20250612 | 05/09/2025 to 06/10/2025 | $77.54 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 134965000_20250612 | 05/09/2025 to 06/10/2025 | $90.69 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 138802000_20250613 | 05/12/2025 to 06/11/2025 | $24.96 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 139824000_20250613 | 05/12/2025 to 06/11/2025 | $307.53 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 145552000_20250613 | 05/12/2025 to 06/11/2025 | $109.18 | | |
| 123731 | 2025-06-18 | ANAHEIM, CITY OF | Inv# 128277000_20250613 | 05/12/2025 to 06/11/2025 | $1,045.27 | | |
| | **Total for Check:** | 123731 | | | | $6,636.66 | $666,989.03 |
| 123732 | 2025-06-18 | APPLIED INDUSTRIAL TECHNOLOGIES | Inv# 7032188135 | Generated by reorder 5/14/25 3 | $422.56 | | |
| | **Total for Check:** | 123732 | | | | $422.56 | $25,069.24 |
| 123733 | 2025-06-18 | AQUAPHOENIX SCIENTIFIC, LLC | Inv# CI25052809 | Research Center Supplies | $433.59 | | |
| 123733 | 2025-06-18 | AQUAPHOENIX SCIENTIFIC, LLC | Inv# CI25052809 | Shipping and Handling | $52.23 | | |
| | **Total for Check:** | 123733 | | | | $485.82 | $953.44 |
| 123734 | 2025-06-18 | AT & T | Inv# 339 259-6949_20250607 | 06/07/2025 - 07/06/2025 | $66.16 | | |
| | **Total for Check:** | 123734 | | | | $66.16 | $2,767.74 |
| 123735 | 2025-06-18 | AT & T | Inv# 335 2532206_20250607 | 06/07/2025 - 07/06/2025 | $81.99 | | |
| | **Total for Check:** | 123735 | | | | $81.99 | $2,767.74 |
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505191337 | BPO Batteries | $201.20 | | |
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505191337 | Battery Fee | $2.00 | | |
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505220815 | BPO Batteries | $569.24 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505220815 | Battery Fee | $2.00 | | |
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505221111 | BPO Batteries | $271.40 | | |
| 123736 | 2025-06-18 | BATTERY SYSTEMS | Inv# 34632505221111 | Battery Fee | $2.00 | | |
| | **Total for Check:** | 123736 | | | | $1,047.84 | $8,788.87 |
| 123737 | 2025-06-18 | BOOT BARN INC. | Inv# INV00487081 | BPO BOOTS | $200.00 | | |
| 123737 | 2025-06-18 | BOOT BARN INC. | Inv# INV00487082 | BPO BOOTS | $150.00 | | |
| 123737 | 2025-06-18 | BOOT BARN INC. | Inv# INV00487083 | BPO BOOTS | $200.00 | | |
| | **Total for Check:** | 123737 | | | | $550.00 | $1,671.88 |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $449.26 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $196.81 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $140.18 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $129.09 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $37.19 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $30.03 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Shipping | $20.90 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Handling | $4.35 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Discount | ($23.44) | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Generated by reorder 5/21/25 1 | $1,261.64 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Generated by reorder 5/21/25 1 | $277.82 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Generated by reorder 5/21/25 1 | $86.05 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Generated by reorder 5/21/25 1 | $55.60 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Generated by reorder 5/21/25 1 | $42.06 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Shipping | $31.35 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Handling | $4.37 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.002 | Discount | ($31.69) | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.001 | Generated by reorder 6/3/25 9: | $40.57 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.001 | Generated by reorder 6/3/25 9: | $22.84 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.001 | Shipping | $10.45 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.001 | Handling | $4.35 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.001 | Discount | ($1.17) | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.002 | Generated by reorder 6/3/25 9: | $22.84 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.002 | Shipping | $10.45 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.002 | Discount | ($0.42) | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.003 | Generated by reorder 6/3/25 9: | $27.05 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.003 | Shipping | $10.45 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.003 | Handling | $4.34 | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3228353.003 | Discount | ($0.50) | | |
| 123740 | 2025-06-18 | BPS SUPPLY GROUP | Inv# S3227847.001 | Generated by reorder 5/21/25 1 | $292.18 | | |
| | **Total for Check:** | 123740 | | | | $3,155.00 | $12,604.15 |
| 123741 | 2025-06-18 | BRENNTAG PACIFIC INC. | Inv# BPI524620 | 6/12 39780 lb H.Peroxide | $9,945.00 | | |
| 123741 | 2025-06-18 | BRENNTAG PACIFIC INC. | Inv# BPI524620 | discount | ($198.90) | | |
| | **Total for Check:** | 123741 | | | | $9,746.10 | $1,840,504.73 |
| 123742 | 2025-06-18 | BUENA PARK SCHOOL DISTRICT | Inv# 08UI0192 | CWEF Bus Refunds | $243.35 | | |
| 123742 | 2025-06-18 | BUENA PARK SCHOOL DISTRICT | Inv# 08UI0178 | Bus Reimbursement For CWEF | $475.00 | | |
| | **Total for Check:** | 123742 | | | | $718.35 | $933.35 |
| 123743 | 2025-06-18 | CALIFORNIA BARRICADE RENTALS, INC. | Inv# 88881 | TRAFFIC CONTROL SERVICES | $1,320.00 | | |
| | **Total for Check:** | 123743 | | | | $1,320.00 | $11,911.25 |
| 123744 | 2025-06-18 | CALTROL INC. | Inv# CD99227930 | Caltrol - New Complete Delta V | $1,610.73 | | |
| 123744 | 2025-06-18 | CALTROL INC. | Inv# CD99227930 | Shipping and Handling | $51.38 | | |
| | **Total for Check:** | 123744 | | | | $1,662.11 | $85,098.64 |
| 123745 | 2025-06-18 | CDM SMITH, INC. | Inv# 90234676 | 4/13-5/10 PFAS GG 19 wo#4A | $7,619.40 | | |
| | **Total for Check:** | 123745 | | | | $7,619.40 | $142,531.57 |
| 123746 | 2025-06-18 | CITY OF CHINO | Inv# 4357914 | 04/16/2025 to 05/14/2025 | $147.34 | | |
| | **Total for Check:** | 123746 | | | | $147.34 | $147.34 |
| 123747 | 2025-06-18 | CITY OF ORANGE | Inv# 00062272-00_20250605 | 04/01/2025 - 06/03/2025 | $537.44 | | |
| | **Total for Check:** | 123747 | | | | $537.44 | $7,378.15 |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $880.10 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $687.01 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $680.00 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $612.02 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $518.06 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $366.35 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $209.47 | | |
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $155.16 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123748 | 2025-06-18 | CLA-VAL | Inv# 918661 | Repair 3" Cla-Val | $107.75 | | |
| | **Total for Check:** | 123748 | | | | $4,215.92 | $4,215.92 |
| 123749 | 2025-06-18 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2794125 | Generated by reorder 5/5/25 9: | $600.30 | | |
| 123749 | 2025-06-18 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2794125 | Generated by reorder 5/5/25 9: | $463.28 | | |
| 123749 | 2025-06-18 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2794125 | Generated by reorder 5/5/25 9: | $308.85 | | |
| 123749 | 2025-06-18 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2794125 | Generated by reorder 5/5/25 9: | $308.85 | | |
| | **Total for Check:** | 123749 | | | | $1,681.28 | $5,471.47 |
| 123750 | 2025-06-18 | COLE-PARMER INSTRUMENT CO. | Inv# 4000011 | Lab supplies | $145.90 | | |
| 123750 | 2025-06-18 | COLE-PARMER INSTRUMENT CO. | Inv# 4000011 | Freight | $44.48 | | |
| | **Total for Check:** | 123750 | | | | $190.38 | $3,518.25 |
| 123751 | 2025-06-18 | CONSOLIDATED OFFICE SYSTEMS | Inv# 31389 | LABOR & INSTALL | $495.00 | | |
| | **Total for Check:** | 123751 | | | | $495.00 | $23,502.10 |
| 123752 | 2025-06-18 | CONSTELLATION NEWENERGY INC. | Inv# 70896781801 | 05/05/2025 to 06/04/2025 | $1,330,548.20 | | |
| | **Total for Check:** | 123752 | | | | $1,330,548.20 | $17,942,245.39 |
| 123753 | 2025-06-18 | COUNTY OF ORANGE TREASURER-TAX COLLECTOR | Inv# R1405 | Presidential General Election | $1,155,109.40 | | |
| | **Total for Check:** | 123753 | | | | $1,155,109.40 | $1,200,812.57 |
| 123754 | 2025-06-18 | CPI | Inv# 1294027 | 5/1/25-5/31/25 FSA ADMIN FEES | $281.05 | | |
| | **Total for Check:** | 123754 | | | | $281.05 | $3,303.60 |
| 123755 | 2025-06-18 | CULLIGAN OF SANTA ANA | Inv# 1994137 | WATER SOFTNER SERVICE | $209.21 | | |
| | **Total for Check:** | 123755 | | | | $209.21 | $2,697.10 |
| 123756 | 2025-06-18 | CWEA | Inv# MEMB RENEWAL B MANNING RENEWAL 2025 | MEMBERSHIP | $239.00 | | |
| | **Total for Check:** | 123756 | | | | $239.00 | $7,245.00 |
| 123757 | 2025-06-18 | DAYFORCE US, INC. | Inv# IN1538916 | Jun25 payroll svc | $6,237.50 | | |
| | **Total for Check:** | 123757 | | | | $6,237.50 | $70,757.11 |
| 123758 | 2025-06-18 | DIRECT MEASURES INC | Inv# 2919 | Traininig Invoice | $550.00 | | |
| | **Total for Check:** | 123758 | | | | $550.00 | $1,650.00 |
| 123759 | 2025-06-18 | DUNN EDWARDS | Inv# 2015A40444 | BPO FOR PAINT | $22.92 | | |
| 123759 | 2025-06-18 | DUNN EDWARDS | Inv# 2015A40445 | BPO FOR PAINT | $318.94 | | |

# Orange County Water District

# Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123759 | 2025-06-18 | DUNN EDWARDS | Inv# 2015A40444 | BPO FOR PAINT | $262.40 | | |
| | **Total for Check:** | 123759 | | | | $604.26 | $1,100.42 |
| 123760 | 2025-06-18 | E & L ELECTRIC | Inv# 89790N | Motor for Admin Chiller JSMITH | $689.55 | | |
| 123760 | 2025-06-18 | E & L ELECTRIC | Inv# 89790N | Delivery Charge | $60.00 | | |
| | **Total for Check:** | 123760 | | | | $749.55 | $19,315.83 |
| 123761 | 2025-06-18 | EST ANALYTICAL | Inv# I095678 | SERVICES CONTRACT - LAB | $14,624.00 | | |
| 123761 | 2025-06-18 | EST ANALYTICAL | Inv# I095678 | Aug 2024 - June 2025 | $13,405.33 | | |
| 123761 | 2025-06-18 | EST ANALYTICAL | Inv# I095678 | July 2025 | $1,218.67 | | |
| 123761 | 2025-06-18 | EST ANALYTICAL | Inv# I095678 | SERVICES CONTRACT - LAB | ($14,624.00) | | |
| | **Total for Check:** | 123761 | | | | $14,624.00 | $20,616.67 |
| 123762 | 2025-06-18 | EVOQUA WATER TECHNOLOGIES, LLC | Inv# 907037408 | Generated by reorder 4/24/25 6 | $36,066.94 | | |
| 123762 | 2025-06-18 | EVOQUA WATER TECHNOLOGIES, LLC | Inv# 907040792 | Agmt 1694 PFAS Garden Grove | $419,363.65 | | |
| | **Total for Check:** | 123762 | | | | $455,430.59 | $4,362,957.88 |
| 123763 | 2025-06-18 | FACTORY MOTOR PARTS | Inv# 164-408606 | BPO AUTO PARTS | $34.65 | | |
| | **Total for Check:** | 123763 | | | | $34.65 | $21,931.41 |
| 123764 | 2025-06-18 | FEDERAL EXPRESS CORPORATION | Inv# 8-892-50917 | Package Delivery | $35.56 | | |
| 123764 | 2025-06-18 | FEDERAL EXPRESS CORPORATION | Inv# 8-892-50918 | Package Delivery | $101.24 | | |
| | **Total for Check:** | 123764 | | | | $136.80 | $16,904.12 |
| 123765 | 2025-06-18 | FISHER SCIENTIFIC CO. | Inv# 0761261 | Lab supplies | $195.02 | | |
| 123765 | 2025-06-18 | FISHER SCIENTIFIC CO. | Inv# 0826845 | Generated by reorder 5/5/25 9: | $2,018.07 | | |
| 123765 | 2025-06-18 | FISHER SCIENTIFIC CO. | Inv# 0826845 | Generated by reorder 5/5/25 9: | $1,147.55 | | |
| 123765 | 2025-06-18 | FISHER SCIENTIFIC CO. | Inv# 0826845 | Generated by reorder 5/5/25 9: | $564.74 | | |
| 123765 | 2025-06-18 | FISHER SCIENTIFIC CO. | Inv# 0826845 | Generated by reorder 5/5/25 9: | $296.45 | | |
| | **Total for Check:** | 123765 | | | | $4,221.83 | $306,155.49 |
| 123766 | 2025-06-18 | FRONTIER COMMUNICATIONS | Inv# 213-002-8985_20250607 | 06/07/2025 - 07/06/2025 | $45.41 | | |
| | **Total for Check:** | 123766 | | | | $45.41 | $63,467.02 |
| 123767 | 2025-06-18 | FRONTIER COMMUNICATIONS | Inv# 714-274-0393_20250607 | 06/07/2025 - 07/06/2025 | $1,491.03 | | |
| | **Total for Check:** | 123767 | | | | $1,491.03 | $63,467.02 |
| 123768 | 2025-06-18 | GLOBAL TEST SUPPLY | Inv# 546337-01 | Calibration, Certification, FL | $390.00 | | |
| | **Total for Check:** | 123768 | | | | $390.00 | $4,646.87 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123769 | 2025-06-18 | GOLDEN SOFTWARE, INC. | Inv# INV106508 | 1726 | $1,935.00 | | |
| 123769 | 2025-06-18 | GOLDEN SOFTWARE, INC. | Inv# INV106508 | 1726 | $261.00 | | |
| | **Total for Check:** | 123769 | | | | $2,196.00 | $2,196.00 |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9512337909 | BPO INDUSTRIAL SUPPLIES | $171.59 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9512337909 | BPO INDUSTRIAL SUPPLIES | $143.10 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9512337909 | BPO INDUSTRIAL SUPPLIES | $24.54 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9513407776 | | $375.34 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9513476656 | Generated by reorder 5/16/25 9 | $167.95 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9514952127 | BPO INDUSTRIAL SUPPLIES | $93.24 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9514952135 | Generated by reorder 5/16/25 9 | $246.65 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9515686740 | Generated by reorder 5/20/25 9 | $2,333.91 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9516875581 | BPO INDUSTRIAL SUPPLIES | $131.46 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9517068004 | JSMITH | $465.07 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9518407532 | BPO INDUSTRIAL SUPPLIES | $21.61 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9518600318 | BPO INDUSTRIAL SUPPLIES | $17.39 | | |
| 123771 | 2025-06-18 | GRAINGER INC. | Inv# 9515137231 | Generated by reorder 5/16/25 9 | $493.30 | | |
| | **Total for Check:** | 123771 | | | | $4,685.15 | $227,021.36 |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14503445 | Lab supplies | $2,799.23 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14503445 | Freight Charges | $32.74 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14505497 | Generated by reorder 5/14/25 3 | $365.33 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14505497 | Freight Charges | $32.75 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14508057 | Generated by reorder 5/14/25 3 | $2,616.53 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14510495 | Generated by reorder 5/16/25 1 | $1,396.35 | | |
| 123772 | 2025-06-18 | HACH COMPANY | Inv# 14510495 | Generated by reorder 5/16/25 1 | $32.74 | | |
| | **Total for Check:** | 123772 | | | | $7,275.67 | $71,085.90 |
| 123773 | 2025-06-18 | HOME DEPOT CREDIT SERVICES | Inv# 1628940 | BPO INDUSTRIAL SUPPLIES | $288.33 | | |
| 123773 | 2025-06-18 | HOME DEPOT CREDIT SERVICES | Inv# 2520231 | BPO INDUSTRIAL SUPPLIES | $220.97 | | |
| 123773 | 2025-06-18 | HOME DEPOT CREDIT SERVICES | Inv# 8280604 | BPO INDUSTRIAL SUPPLIES | $79.57 | | |
| 123773 | 2025-06-18 | HOME DEPOT CREDIT SERVICES | Inv# 8610054 | BPO INDUSTRIAL SUPPLIES | $300.62 | | |
| | **Total for Check:** | 123773 | | | | $889.49 | $34,939.24 |
| 123774 | 2025-06-18 | Haney, Lisa | Inv# MAY 13-15, 2025 TRAVEL 2025 Spr | 5/13-15 Monterey ACWA | $259.82 | | |
| | **Total for Check:** | 123774 | | | | $259.82 | $3,083.75 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123775 | 2025-06-18 | IDEXX LABORATORIES, INC. | Inv# 3176035687 | Generated by reorder 5/14/25 3 | $1,244.10 | | |
| 123775 | 2025-06-18 | IDEXX LABORATORIES, INC. | Inv# 3176035687 | Shipping | $175.18 | | |
| 123775 | 2025-06-18 | IDEXX LABORATORIES, INC. | Inv# 3176264146 | Lab supplies | $3,166.03 | | |
| 123775 | 2025-06-18 | IDEXX LABORATORIES, INC. | Inv# 3176264146 | Shipping | $31.39 | | |
| | **Total for Check:** | 123775 | | | | $4,616.70 | $18,123.51 |
| 123776 | 2025-06-18 | IDS GROUP INC | Inv# 22X79.00-10 | REFURBISH LAB WASH ROOM | $1,388.30 | | |
| | **Total for Check:** | 123776 | | | | $1,388.30 | $36,434.20 |
| 123777 | 2025-06-18 | INDUSTRIAL METAL SUPPLY CO. | Inv# 2941124 | BPO METAL SUPPLIES | $138.91 | | |
| 123777 | 2025-06-18 | INDUSTRIAL METAL SUPPLY CO. | Inv# 2941124 | Discount | ($1.28) | | |
| | **Total for Check:** | 123777 | | | | $137.63 | $9,793.98 |
| 123778 | 2025-06-18 | INORGANIC VENTURES | Inv# 0338989-IN | Lab supplies | $153.34 | | |
| 123778 | 2025-06-18 | INORGANIC VENTURES | Inv# 0338989-IN | Shipping | $21.66 | | |
| | **Total for Check:** | 123778 | | | | $175.00 | $944.10 |
| 123779 | 2025-06-18 | INSIGHT PUBLIC SECTOR, INC | Inv# 1101276259 | internet service renewal | $256.24 | | |
| 123779 | 2025-06-18 | INSIGHT PUBLIC SECTOR, INC | Inv# 1101276259 | internet service renewal | $224.65 | | |
| | **Total for Check:** | 123779 | | | | $480.89 | $85,199.73 |
| 123780 | 2025-06-18 | INTERA INCORPORATED | Inv# 04-25-137 | Apr25 Alamitos GAP grndwtr.mod | $11,099.50 | | |
| | **Total for Check:** | 123780 | | | | $11,099.50 | $111,295.57 |
| 123781 | 2025-06-18 | JOE A. GONSALVES AND SON | Inv# 162472 | Jun25 legis.support/SACTO | $8,000.00 | | |
| | **Total for Check:** | 123781 | | | | $8,000.00 | $96,000.00 |
| 123782 | 2025-06-18 | KENNEDY/JENKS CONSULTANTS, INC. | Inv# 180269 | tjri 4/25 PFAS Orange 26 wo#3 | $387.46 | | |
| 123782 | 2025-06-18 | KENNEDY/JENKS CONSULTANTS, INC. | Inv# 180269 | tjri 4/25 PFAS Orange 26 wo#3 | $2,927.55 | | |
| | **Total for Check:** | 123782 | | | | $3,315.01 | $578,862.30 |
| 123783 | 2025-06-18 | LHOIST NORTH AMERICA | Inv# 1102509575 | 5/18 lime(2) 25.23 & 25.16 ton | $22,582.79 | | |
| 123783 | 2025-06-18 | LHOIST NORTH AMERICA | Inv# 1102509791 | 5/20 lime(2) 25.56 & 25.04 ton | $22,676.89 | | |
| | **Total for Check:** | 123783 | | | | $45,259.68 | $1,757,096.72 |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $81.56 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $76.13 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | SET UP CHARGES | $63.45 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | SET UP CHARGES | $63.44 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | SET UP CHARGES | $63.43 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $42.41 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $42.41 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $42.41 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $32.62 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $28.28 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $21.75 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $21.75 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $21.75 | | |
| 123785 | 2025-06-18 | MANHATTAN STITCHING COMPANY INC | Inv# 108452 | POLO SHIRT REORDER | $14.14 | | |
| **Total for Check:** | | 123785 | | | | $615.53 | $8,536.86 |
| 123786 | 2025-06-18 | MCFADDEN-DALE HARDWARE CO. | Inv# 578861/5 | BPO INDUSTRIAL SUPPLIES | $234.93 | | |
| 123786 | 2025-06-18 | MCFADDEN-DALE HARDWARE CO. | Inv# 578861/5 | PURCHASE DISCOUNTS | ($6.54) | | |
| 123786 | 2025-06-18 | MCFADDEN-DALE HARDWARE CO. | Inv# 578863/5 | BPO INDUSTRIAL SUPPLIES | $28.02 | | |
| 123786 | 2025-06-18 | MCFADDEN-DALE HARDWARE CO. | Inv# 578863/5 | PURCHASE DISCOUNTS | ($0.78) | | |
| **Total for Check:** | | 123786 | | | | $255.63 | $6,744.41 |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 46991090 | BPO INDUSTRIAL SUPPLIES | $78.69 | | |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 46991090 | Shipping | $12.73 | | |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 46991090 | Discount | ($1.57) | | |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47131389 | Lab supplies | $60.13 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47131389 | Lab supplies | $29.96 | | |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47131389 | Shipping | $20.55 | | |
| 123787 | 2025-06-18 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47131389 | Purchase Discounts | ($1.80) | | |
| **Total for Check:** | | 123787 | | | | $198.69 | $17,998.98 |
| 123788 | 2025-06-18 | MCR TECHNOLOGIES, INC. | Inv# 43659 | Area VelocitySenor2150 JHAMMER | $7,602.58 | | |
| 123788 | 2025-06-18 | MCR TECHNOLOGIES, INC. | Inv# 43659 | Area VelocitySenor2150 JHAMMER | $3,087.37 | | |
| 123788 | 2025-06-18 | MCR TECHNOLOGIES, INC. | Inv# 43659 | Area VelocitySenor2150 JHAMMER | $249.04 | | |
| **Total for Check:** | | 123788 | | | | $10,938.99 | $11,651.98 |
| 123789 | 2025-06-18 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 755774 | PURCHASE DISCOUNTS | ($0.35) | | |
| 123789 | 2025-06-18 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756076 | BPO AUTO PARTS | $43.49 | | |
| 123789 | 2025-06-18 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756076 | PURCHASE DISCOUNTS | ($0.87) | | |
| 123789 | 2025-06-18 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 755774 | BPO AUTO PARTS | $17.50 | | |
| **Total for Check:** | | 123789 | | | | $59.77 | $3,766.35 |
| 123790 | 2025-06-18 | NATIONAL WATER SUPPLY ALLIANCE | Inv# 10171 | Memb Dues Jul 2025 - Jun 2026 | $5,000.00 | | |
| **Total for Check:** | | 123790 | | | | $5,000.00 | $5,475.00 |
| 123791 | 2025-06-18 | NEARMAP US INC | Inv# INV01747166 | Aerial Imagery Annual Subscri | $3,488.00 | | |
| **Total for Check:** | | 123791 | | | | $3,488.00 | $3,488.00 |
| 123792 | 2025-06-18 | NEWPORT-MESA UNIFIED SCHOOL DISTRICT | Inv# 78UI0220 | Bus Reimbursement For Festival | $205.95 | | |
| **Total for Check:** | | 123792 | | | | $205.95 | $205.95 |
| 123793 | 2025-06-18 | NORTHWEST MOSQUITO AND VECTOR | Inv# 1705 | BPO FOR MOSQUITO CONTROL | $1,499.86 | | |
| 123793 | 2025-06-18 | NORTHWEST MOSQUITO AND VECTOR | Inv# 1705 | BPO FOR MOSQUITO CONTROL | $1,428.67 | | |
| **Total for Check:** | | 123793 | | | | $2,928.53 | $8,499.86 |
| 123794 | 2025-06-18 | ODP BUSINESS SOLUTIONS LLC | Inv# 425538451001 | Toner/Cartridges Replacement | $135.53 | | |
| 123794 | 2025-06-18 | ODP BUSINESS SOLUTIONS LLC | Inv# 425538451001 | Toner/Cartridges Replacement | $69.24 | | |
| 123794 | 2025-06-18 | ODP BUSINESS SOLUTIONS LLC | Inv# 425538451001 | Toner/Cartridges Replacement | $69.24 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123794 | 2025-06-18 | ODP BUSINESS SOLUTIONS LLC | Inv# 425538451001 | Toner/Cartridges Replacement | $65.42 | | |
| 123794 | 2025-06-18 | ODP BUSINESS SOLUTIONS LLC | Inv# 425538451001 | Toner/Cartridges Replacement | $65.41 | | |
| | **Total for Check:** | 123794 | | | | $404.84 | $5,310.36 |
| 123795 | 2025-06-18 | PACIFIC ADVANCED CIVIL ENGINEERING, INC | Inv# 10267 | thru 4/30 PFAS GSWC wo#1 | $6,934.00 | | |
| 123795 | 2025-06-18 | PACIFIC ADVANCED CIVIL ENGINEERING, INC | Inv# 10268 | thru 4/30 PFAS GSWC wo#2 | $14,901.00 | | |
| | **Total for Check:** | 123795 | | | | $21,835.00 | $843,762.00 |
| 123796 | 2025-06-18 | PACIFIC MECHANICAL SUPPLY | Inv# 5389654 | Cage Stock Items - Maintenance | $1,648.80 | | |
| 123796 | 2025-06-18 | PACIFIC MECHANICAL SUPPLY | Inv# 5389654 | Purchase Discounts | ($16.49) | | |
| 123796 | 2025-06-18 | PACIFIC MECHANICAL SUPPLY | Inv# 5389655 | Generated by reorder 6/3/25 9: | $81.78 | | |
| 123796 | 2025-06-18 | PACIFIC MECHANICAL SUPPLY | Inv# 5389655 | Purchase Discounts | ($0.82) | | |
| | **Total for Check:** | 123796 | | | | $1,713.27 | $34,266.62 |
| 123797 | 2025-06-18 | PARKHOUSE TIRE, INC. | Inv# 1020294613 | Boat trailer tires replacement | $408.85 | | |
| 123797 | 2025-06-18 | PARKHOUSE TIRE, INC. | Inv# 1020294613 | Boat trailer tires replacement | $10.50 | | |
| | **Total for Check:** | 123797 | | | | $419.35 | $119,953.61 |
| 123798 | 2025-06-18 | PHENOVA INC | Inv# 216201 | Lab supplies | $380.63 | | |
| 123798 | 2025-06-18 | PHENOVA INC | Inv# 216201 | Freight | $46.73 | | |
| 123798 | 2025-06-18 | PHENOVA INC | Inv# 216201 | Handling | $12.00 | | |
| | **Total for Check:** | 123798 | | | | $439.36 | $29,825.59 |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $782.40 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $453.29 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $139.40 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $70.90 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $58.18 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | Shipping & Handling | $15.00 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $136.67 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $121.23 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $69.36 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $62.59 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $45.70 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $40.61 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $32.87 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $30.83 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238535 | | $24.80 | | |
| 123800 | 2025-06-18 | POWERPLAN OIB | Inv# P1238435 | RT-56 Repair (HX-10 mower and | $56.33 | | |
| | **Total for Check:** | 123800 | | | | $2,140.16 | $13,450.30 |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029149 | Apr25 legal/General Matters | $4,134.26 | | |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029150 | Apr25 legal/Water Resources | $3,204.00 | | |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029151 | Apr25 legal/Admin Matters | $19,332.00 | | |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029152 | Apr25 legal/Reclaim.Wtr.BPP | $396.00 | | |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029153 | Apr25 legal/PFAS | $3,531.00 | | |
| 123801 | 2025-06-18 | RUTAN & TUCKER, LLP | Inv# 1029154 | Apr25 legal/Prop.Mgmt | $108.00 | | |
| | **Total for Check:** | 123801 | | | | $30,705.26 | $340,721.88 |
| 123802 | 2025-06-18 | RYAN HERCO FLOW SOLUTIONS, INC. | Inv# B441277 | Generated by reorder 5/5/25 9: | $829.58 | | |
| 123802 | 2025-06-18 | RYAN HERCO FLOW SOLUTIONS, INC. | Inv# B441277 | Generated by reorder 5/5/25 9: | $650.03 | | |
| 123802 | 2025-06-18 | RYAN HERCO FLOW SOLUTIONS, INC. | Inv# B441277 | Generated by reorder 5/5/25 9: | $51.17 | | |
| | **Total for Check:** | 123802 | | | | $1,530.78 | $3,336.13 |
| 123803 | 2025-06-18 | SALCO DYNAMIC SOLUTIONS INC. | Inv# 120543 | Generated by reorder 5/27/25 9 | $124.39 | | |
| 123803 | 2025-06-18 | SALCO DYNAMIC SOLUTIONS INC. | Inv# 120543 | Generated by reorder 5/27/25 9 | $27.19 | | |
| 123803 | 2025-06-18 | SALCO DYNAMIC SOLUTIONS INC. | Inv# 120543 | Purchase Discounts | ($2.79) | | |
| | **Total for Check:** | 123803 | | | | $148.79 | $30,514.18 |
| 123804 | 2025-06-18 | SAN BERNARDINO VALLEY MUNICIPAL WATER | Inv# 4526 | | $25,394.00 | | |
| | **Total for Check:** | 123804 | | | | $25,394.00 | $25,394.00 |
| 123805 | 2025-06-18 | SC FUELS | Inv# IN-0000108207 | BPO RED DIESEL | $3,176.75 | | |
| 123805 | 2025-06-18 | SC FUELS | Inv# IN-0000108207 | Discount | ($29.07) | | |
| | **Total for Check:** | 123805 | | | | $3,147.68 | $76,881.25 |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $1,517.10 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $735.02 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $721.97 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $467.49 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $394.71 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $310.31 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $236.08 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $205.27 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $198.26 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $165.01 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $100.59 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $73.49 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $64.58 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $49.25 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $38.54 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $27.37 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $10.55 | | |
| 123807 | 2025-06-18 | SC FUELS | Inv# 1044773 | BPO UNLEADED FUEL | $210.10 | | |
| | **Total for Check:** | 123807 | | | | $5,525.69 | $112,125.23 |
| 123808 | 2025-06-18 | SC FUELS | Inv# IN-0000730490 | BPO RED DIESEL FUEL | $15,951.36 | | |
| 123808 | 2025-06-18 | SC FUELS | Inv# IN-0000730490 | BPO RED DIESEL FUEL | $5,448.45 | | |
| 123808 | 2025-06-18 | SC FUELS | Inv# IN-0000730490 | FEDERAL DIESEL US TAX | $8.03 | | |
| 123808 | 2025-06-18 | SC FUELS | Inv# IN-0000730490 | PURCHASE DISCOUNTS | ($198.61) | | |
| | **Total for Check:** | 123808 | | | | $21,209.23 | $65,734.71 |
| 123809 | 2025-06-18 | SEAL BEACH, CITY OF | Inv# BUSINESS LISC.TAX RENEWAL | Business License Fee | $230.61 | | |
| | **Total for Check:** | 123809 | | | | $230.61 | $230.61 |
| 123810 | 2025-06-18 | SOUTHERN COUNTIES LUBRICANTS, LLC | Inv# 222757 | Generated by reorder 5/7/25 10 | $3,395.74 | | |
| 123810 | 2025-06-18 | SOUTHERN COUNTIES LUBRICANTS, LLC | Inv# 222757 | Fuel Surcharge | $12.89 | | |
| | **Total for Check:** | 123810 | | | | $3,408.63 | $21,893.19 |
| 123811 | 2025-06-18 | CHARTER COMMUNICATIONS | Inv# 187906301060725 | 06/13/2025 - 07/12/2025 | $3,738.08 | | |
| | **Total for Check:** | 123811 | | | | $3,738.08 | $44,983.57 |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032374025 | | $153.75 | | |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032438067 | Generated by reorder 5/14/25 3 | $204.43 | | |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032438067 | Generated by reorder 5/14/25 3 | $36.06 | | |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032500952 | | $12.93 | | |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032500952 | | $12.28 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032500952 | | $5.21 | | |
| 123812 | 2025-06-18 | STAPLES ADVANTAGE | Inv# 6032650724 | Supplies | $27.94 | | |
| | **Total for Check:** | 123812 | | | | $452.60 | $14,577.64 |
| 123813 | 2025-06-18 | STATE OF CALIFORNIA | Inv# 12-ORA-057-0010-04 JUL25 Basin-Lease Jul25 | Lease Burris | $932.69 | | |
| | **Total for Check:** | 123813 | | | | $932.69 | $11,462.69 |
| 123814 | 2025-06-18 | STATE WATER RESOURCES CONTROL BOARD | Inv# 42424-01 | Los Alamitos State Loans | $153,294.71 | | |
| | **Total for Check:** | 123814 | | | | $153,294.71 | $14,969,416.02 |
| 123815 | 2025-06-18 | STATE WATER RESOURCES CONTROL BOARD | Inv# C-06-7868-110 2025 | Proj No. 7868-110 Fund pmt | $719,952.48 | | |
| | **Total for Check:** | 123815 | | | | $719,952.48 | $14,969,416.02 |
| 123816 | 2025-06-18 | TAB ANSWER NETWORK CALL CENTER | Inv# 1505405292025 | Acct Number 15054 | $82.23 | | |
| | **Total for Check:** | 123816 | | | | $82.23 | $1,106.74 |
| 123817 | 2025-06-18 | TETRA TECH, INC. | Inv# 52428324 | thru 5/2 PFAS Fullerton wo#1 | $79,034.00 | | |
| 123817 | 2025-06-18 | TETRA TECH, INC. | Inv# 52428330 | thru 4/25 PFAS Fullerton wo#5A | $3,402.91 | | |
| | **Total for Check:** | 123817 | | | | $82,436.91 | $1,136,662.20 |
| 123818 | 2025-06-18 | THE NELAC INSTITUTE | Inv# 6800 | TRAINING- CRAIG P. & ZACH B. | $150.00 | | |
| | **Total for Check:** | 123818 | | | | $150.00 | $1,250.00 |
| 123819 | 2025-06-18 | TROJAN TECHNOLOGIES CORP | Inv# 20050003115 | Generated by reorder 4/24/25 6 | $48,170.16 | | |
| 123819 | 2025-06-18 | TROJAN TECHNOLOGIES CORP | Inv# 20050003115 | Generated by reorder 4/24/25 6 | $394.35 | | |
| | **Total for Check:** | 123819 | | | | $48,564.51 | $322,561.10 |
| 123820 | 2025-06-18 | TUCKER ELLIS LLP | Inv# 1023988 | Apr25 legal/PFAS | $400.00 | | |
| 123820 | 2025-06-18 | TUCKER ELLIS LLP | Inv# 1023989 | thru Apr25 legal/CEQA-RAP | $8,172.50 | | |
| | **Total for Check:** | 123820 | | | | $8,572.50 | $66,993.60 |
| 123821 | 2025-06-18 | UCT LLC | Inv# INL114567 | Lab supplies | $4,298.35 | | |
| 123821 | 2025-06-18 | UCT LLC | Inv# INL114567 | Shipping Charges | $110.87 | | |
| | **Total for Check:** | 123821 | | | | $4,409.22 | $26,236.92 |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190346503 | 1557 | $310.92 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190346503 | 1557 | $8.01 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347316 | 1557 | $54.25 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347322 | 1557 | $16.77 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347331 | 1557 | $303.16 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347335 | 1557 | $10.78 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347349 | 1557 | $432.99 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347355 | 1557 | $103.95 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2190347357 | 1557 | $27.72 | | |
| 123822 | 2025-06-18 | UNIFIRST CORPORATION | Inv# 2200267569 | 1557 | $49.86 | | |
| | **Total for Check:** | 123822 | | | | $1,318.41 | $62,574.91 |
| 123823 | 2025-06-18 | UNITED PARCEL SERVICE | Inv# 0000X81601245_20250614 | Package Delivery | $152.68 | | |
| | **Total for Check:** | 123823 | | | | $152.68 | $5,312.99 |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53086746 | 6/11 23.194 ton sulfuric acid | $5,473.78 | | |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53086746 | discount | ($109.48) | | |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53086747 | 6/11 23.452 ton sulfuric acid | $5,534.67 | | |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53086747 | discount | ($110.69) | | |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53092933 | 6/16 405 gal s.bisulfite | $832.43 | | |
| 123824 | 2025-06-18 | UNIVAR SOLUTIONS USA | Inv# 53092933 | discount | ($16.65) | | |
| | **Total for Check:** | 123824 | | | | $11,604.06 | $386,034.83 |
| 123825 | 2025-06-18 | USA BLUEBOOK | Inv# INV00709023 | Generated by reorder 5/5/25 9: | $655.23 | | |
| 123825 | 2025-06-18 | USA BLUEBOOK | Inv# INV00709023 | Freight | $26.23 | | |
| | **Total for Check:** | 123825 | | | | $681.46 | $5,301.38 |
| 123826 | 2025-06-18 | UTILIQUEST LLC | Inv# 342898-Q | 5/11-17 screen/mark pipes | $1,314.82 | | |
| 123826 | 2025-06-18 | UTILIQUEST LLC | Inv# 342898-Q | 5/11-17 screen/mark pipes | $766.98 | | |
| 123826 | 2025-06-18 | UTILIQUEST LLC | Inv# 342898-Q | 5/11-17 screen/mark pipes | $94.01 | | |
| 123826 | 2025-06-18 | UTILIQUEST LLC | Inv# 342898-Q | 5/11-17 screen/mark pipes | $15.55 | | |
| | **Total for Check:** | 123826 | | | | $2,191.36 | $98,988.68 |
| 123827 | 2025-06-18 | VILLALOBOS, MARCUS | Inv# 2024-2025-06 | Education Reimbursement MJV | $276.00 | | |
| | **Total for Check:** | 123827 | | | | $276.00 | $1,006.55 |
| 123828 | 2025-06-18 | VWR INTERNATIONAL LLC | Inv# 8819077403 | Generated by reorder 5/16/25 1 | $1,557.69 | | |
| 123828 | 2025-06-18 | VWR INTERNATIONAL LLC | Inv# 8819053943 | | $213.89 | | |
| | **Total for Check:** | 123828 | | | | $1,771.58 | $93,015.27 |
| 123829 | 2025-06-18 | W. A. RASIC CONSTRUCTION COMPANY, INC. | Inv# 345822 | agmt 1451 wo#11 wells I-3 & 8 | $74,722.88 | | |
| | **Total for Check:** | 123829 | | | | $74,722.88 | $152,340.54 |
| 123830 | 2025-06-18 | WESTERN A/V | Inv# 22918 | agmt 1709 audiovisual | $125,968.76 | | |
| | **Total for Check:** | 123830 | | | | $125,968.76 | $264,605.52 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123831 | 2025-06-18 | WIENHOFF DRUG TESTING | Inv# 131021 | DOT | $190.00 | | |
| **Total for Check:** | 123831 | | | | | $190.00 | $2,606.00 |
| 123832 | 2025-06-18 | YORKE ENGINEERING LLC | Inv# 44090 | Apr25 service | $1,064.50 | | |
| **Total for Check:** | 123832 | | | | | $1,064.50 | $1,839.50 |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970226 | 6/5 4853 gal hypochlorite | $8,356.38 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970226 | CA mill | $204.73 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970226 | discount | ($167.13) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970227 | 6/5 4842 gal hypochlorite | $8,337.44 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970227 | CA mill | $204.27 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970227 | discount | ($166.75) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970228 | 6/5 4818 gal hypochlorite | $8,296.11 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970228 | CA mill | $203.25 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970228 | discount | ($165.92) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970229 | 6/5 4944 gal hypochlorite | $8,513.07 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970229 | CA mill | $208.57 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970229 | discount | ($170.26) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970328 | 6/6 4992 gal hypochlorite | $8,595.72 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970328 | CA mill | $210.60 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970328 | discount | ($171.91) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970329 | 6/6 4844 gal hypochlorite | $8,340.88 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970329 | CA mill | $204.35 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970329 | discount | ($166.82) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970330 | 15646/6 4889 gal hypochlorite | $8,418.37 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970330 | CA mill | $206.25 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970330 | discount | ($168.37) | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970331 | 6/6 4832 gal hypochlorite | $8,320.22 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970331 | CA mill | $203.85 | | |
| 978793 | 2025-06-12 | JCI JONES CHEMICAL, INC | Inv# 970331 | discount | ($166.40) | | |
| **Total for Check:** | 978793 | | | | | $67,480.50 | $5,588,675.11 |
| 978794 | 2025-06-13 | BOOKY OREN GLOBAL WATER TECHNOLOGIES LTD | Inv# 01/0000080 | May25 operation efficiency | $5,000.00 | | |
| **Total for Check:** | 978794 | | | | | $5,000.00 | $72,500.00 |
| 978795 | 2025-06-12 | U.S. BANK N.A. MINNESOTA-PARS | Inv# PARS Q4 APR-JUN25 | OPEB Trust Contribution | $160,000.00 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-12 **End Date:** 2025-06-18 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| | **Total for Check:** | 978795 | | | | $160,000.00 | $640,000.00 |
| ***Run Date:*** | ***6/18/2025*** | | | | **$4,782,739.61** | **$4,782,739.61** | |

# Orange County Water District

# Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 Page: 1

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565404892 | Lab supplies | $558.79 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565404892 | SHIPPING / HANDLING | $29.67 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565413584 | Lab supplies | $1,172.33 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565413584 | SHIPPING / HANDLING | $20.94 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565413585 | Lab supplies | $1,045.68 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565413585 | SHIPPING / HANDLING | $42.13 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565419331 | Lab supplies | $239.25 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565419331 | Lab supplies | $142.47 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565419331 | Lab supplies | $120.70 | | |
| 804147 | 2025-06-25 | SIGMA-ALDRICH, INC. | Inv# 565419331 | SHIPPING / HANDLING | $27.85 | | |
| | **Total for Check:** | 804147 | | | | $3,399.81 | $33,058.88 |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012036833 | haz.mtl, frt, fuel surcharge | $59.11 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012036833 | R&D nitrogen | $35.89 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038499 | haz.mtl, frt, fuel surcharge | $59.12 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038499 | Wtr.Prod-nitrogen | $46.50 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038535 | Lab-nitrogen | $110.02 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038535 | haz.mtl, frt, fuel surcharge | $59.12 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038928 | Recharge-propane | $69.30 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038928 | hazardous material | $16.04 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0012038928 | COC cylinder maintenance | $6.46 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667941 | May25 cylinder rental/Wtr.Prod | $11.61 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667942 | May25 cylinder rental/Recharge | $168.13 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667943 | May25 cyliinder rental/Lab | $828.24 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667943 | May25 cyliinder rental/Wtr.Pro | $324.40 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667943 | May25 cyliinder rental/Hydroge | $18.41 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667943 | May25 cyliinder rental/Recharg | $9.21 | | |
| 804149 | 2025-06-25 | WESTAIR GASES & EQUIPMENT | Inv# 0080667944 | May25 cylinder rental/Lab | $1,049.27 | | |
| | **Total for Check:** | 804149 | | | | $2,870.83 | $119,822.87 |
| ***Run Date:*** | ***6/24/2025*** | | | | **$6,270.64** | **$6,270.64** | |

# Orange County Water District

# Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123833 | 2025-06-25 | ABSOLUTE STANDARDS, INC. | Inv# 247590 | Shipping & Handling | $15.00 | | |
| 123833 | 2025-06-25 | ABSOLUTE STANDARDS, INC. | Inv# 247730 | Lab supplies | $170.00 | | |
| 123833 | 2025-06-25 | ABSOLUTE STANDARDS, INC. | Inv# 247730 | Shipping and Handling | $15.00 | | |
| 123833 | 2025-06-25 | ABSOLUTE STANDARDS, INC. | Inv# 247590 | Lab supplies | $382.50 | | |
| | **Total for Check:** | 123833 | | | | $582.50 | $17,163.50 |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20698978 | Jun25 HVAC maintenance | $8,930.00 | | |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20702559 | AC 1 Unit Failing at Building | $1,460.25 | | |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20702559 | AC 1 Unit Failing at Building | $1,239.00 | | |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20702559 | AC 1 Unit Failing at Building | $100.00 | | |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20702559 | AC 1 Unit Failing at Building | $61.73 | | |
| 123834 | 2025-06-25 | ACCO ENGINEERED SYSTEMS | Inv# 20702559 | Discount | ($57.12) | | |
| | **Total for Check:** | 123834 | | | | $11,733.86 | $244,712.19 |
| 123835 | 2025-06-25 | ACCUSTANDARD, INC. | Inv# 1027588 | SHIPPING / HANDLING | $113.36 | | |
| 123835 | 2025-06-25 | ACCUSTANDARD, INC. | Inv# 1027588 | Lab supplies | $82.89 | | |
| | **Total for Check:** | 123835 | | | | $196.25 | $16,818.20 |
| 123836 | 2025-06-25 | AGILENT TECHNOLOGIES, INC. | Inv# 130167340 | Lab supplies | $992.50 | | |
| 123836 | 2025-06-25 | AGILENT TECHNOLOGIES, INC. | Inv# 130167340 | SHIPPING / HANDLING | $8.00 | | |
| | **Total for Check:** | 123836 | | | | $1,000.50 | $201,610.66 |
| 123837 | 2025-06-25 | AGUINAGA GREEN INC | Inv# 53715 | MULCH FOR SANTIAGO BIKE TRAIL | $8,145.90 | | |
| 123837 | 2025-06-25 | AGUINAGA GREEN INC | Inv# 53715 | MULCH FOR SANTIAGO BIKE TRAIL | $1,282.23 | | |
| 123837 | 2025-06-25 | AGUINAGA GREEN INC | Inv# 53715 | MULCH FOR SANTIAGO BIKE TRAIL | $942.82 | | |
| | **Total for Check:** | 123837 | | | | $10,370.95 | $10,370.95 |
| 123838 | 2025-06-25 | AIR SITES 2000 LLC | Inv# 20180 | REPEATER SITE LEASE, MONTHLY | $450.00 | | |
| | **Total for Check:** | 123838 | | | | $450.00 | $4,950.00 |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1CWM-QWJQ-FFFR | Francine Hard Hat/ Supplies | $173.83 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1CWM-QWJQ-FFFR | Francine Hard Hat/ Supplies | $86.91 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1CWM-QWJQ-FFFR | Francine Hard Hat/ Supplies | $21.76 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1DTX-1JTL-F3H1 | ICE MACHINE SUPPLIES | $165.28 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1DTX-1JTL-F3H1 | ICE MACHINE SUPPLIES | $17.36 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1FT1-D6LY-FQW4 | Misc. items for tours and nest | $15.06 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1FT1-D6LY-FQW4 | Misc. items for tours and nest | $10.23 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1L7P-P41F-CMGV | OFFICE SUPPLIES | $27.18 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1L7P-P41F-CMGV | OFFICE SUPPLIES | $11.95 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1L7P-P41F-CMGV | OFFICE SUPPLIES | $6.46 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1XW1-XL4W-9WQ4 | | $88.97 | | |
| 123840 | 2025-06-25 | AMAZON CAPITAL SERVICES, INC | Inv# 1YRF-WG4G-CNXJ | AMAZON PARTS | $43.40 | | |
| | **Total for Check:** | 123840 | | | | $668.39 | $42,822.34 |
| 123841 | 2025-06-25 | AMBERTEK SYSTEMS INC | Inv# 35791 | Office supplies | $3,575.92 | | |
| 123841 | 2025-06-25 | AMBERTEK SYSTEMS INC | Inv# 35791 | Office supplies | $250.00 | | |
| 123841 | 2025-06-25 | AMBERTEK SYSTEMS INC | Inv# 35791 | Shipping | $43.99 | | |
| 123841 | 2025-06-25 | AMBERTEK SYSTEMS INC | Inv# 35791 | Office supplies | $1,787.96 | | |
| | **Total for Check:** | 123841 | | | | $5,657.87 | $7,937.94 |
| 123842 | 2025-06-25 | AMERICAN WATER CHEMICAL, INC | Inv# 52251201 | 5/30 antiscalant | $50,190.80 | | |
| | **Total for Check:** | 123842 | | | | $50,190.80 | $1,889,640.78 |
| 123843 | 2025-06-25 | ANAHEIM ELEMENTARY SCHOOL DISTRICT | Inv# 71M 24-25 | Bus reimbursement James Guinn | $595.00 | | |
| 123843 | 2025-06-25 | ANAHEIM ELEMENTARY SCHOOL DISTRICT | Inv# 78M 24-25 | Bus reimbursement Westmont Ele | $1,608.75 | | |
| | **Total for Check:** | 123843 | | | | $2,203.75 | $3,682.99 |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110196000_20250617 | 05/14/2025 to 06/13/2025 | $24.96 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110198000_20250617 | 05/14/2025 to 06/13/2025 | $281.13 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110199000_20250617 | 05/14/2025 to 06/13/2025 | $9,439.78 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110452300_20250618 | 05/14/2025 to 06/13/2025 | $439.16 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110561300_20250618 | 05/14/2025 to 06/13/2025 | $75.16 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 110562000_20250618 | 05/15/2025 to 06/16/2025 | $12,237.17 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 111128000_20250618 | 05/15/2025 to 06/16/2025 | $344.79 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 118602000_2025018 | 05/15/2025 to 06/16/2025 | $26.84 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 129051000_20250617 | 05/14/2025 to 06/13/2025 | $24.96 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 137310300_20250618 | 05/14/2025 to 06/13/2025 | $35.13 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 140776000_20250618 | 05/15/2025 to 06/16/2025 | $80.62 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 145085300_20250618 | 05/14/2025 to 06/13/2025 | $81.21 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 145086300_20250618 | 05/14/2025 to 06/13/2025 | $27.45 | | |
| 123845 | 2025-06-25 | ANAHEIM, CITY OF | Inv# 147092000_20250618 | 05/15/2025 to 06/16/2025 | $170.88 | | |
| | **Total for Check:** | 123845 | | | | $23,289.24 | $690,278.27 |
| 123846 | 2025-06-25 | ASSI SECURITY | Inv# 77576 | 1725 | $3,734.67 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123846 | 2025-06-25 | ASSI SECURITY | Inv# SD22407 | VMS system upgrade | $1,800.00 | | |
| 123846 | 2025-06-25 | ASSI SECURITY | Inv# SD22407 | VMS system upgrade | $1,250.00 | | |
| 123846 | 2025-06-25 | ASSI SECURITY | Inv# SD22407 | VMS system upgrade | $885.00 | | |
| | **Total for Check:** | 123846 | | | | $7,669.67 | $78,386.99 |
| 123847 | 2025-06-25 | BEAR STATE WATER HEATING | Inv# 794987 | SERVICE BOILER | $159.86 | | |
| | **Total for Check:** | 123847 | | | | $159.86 | $21,988.91 |
| 123848 | 2025-06-25 | BIS SAFETY SOFTWARE INC. | Inv# BIS66294 | BIS Invoice | $997.88 | | |
| | **Total for Check:** | 123848 | | | | $997.88 | $10,859.14 |
| 123849 | 2025-06-25 | BLUESPACE INTERIORS | Inv# 1-02317108 | Generated by reorder 5/21/25 1 | $244.69 | | |
| 123849 | 2025-06-25 | BLUESPACE INTERIORS | Inv# 1-02317108 | Generated by reorder 5/21/25 1 | $2.99 | | |
| 123849 | 2025-06-25 | BLUESPACE INTERIORS | Inv# I-02316707 | BEN LOMELI FOR Daniel P | $31.32 | | |
| 123849 | 2025-06-25 | BLUESPACE INTERIORS | Inv# I-02316707 | BEN LOMELI FOR Daniel P | $2.99 | | |
| | **Total for Check:** | 123849 | | | | $281.99 | $12,944.37 |
| 123850 | 2025-06-25 | BPS SUPPLY GROUP | Inv# S3223880.002 | Inbound Freight | $146.33 | | |
| 123850 | 2025-06-25 | BPS SUPPLY GROUP | Inv# S3223880.002 | Shipping | $10.45 | | |
| 123850 | 2025-06-25 | BPS SUPPLY GROUP | Inv# S3223880.002 | Handling | $4.35 | | |
| 123850 | 2025-06-25 | BPS SUPPLY GROUP | Inv# S3223880.002 | Discount | ($13.89) | | |
| 123850 | 2025-06-25 | BPS SUPPLY GROUP | Inv# S3223880.002 | Generated by reorder 5/5/25 9: | $609.20 | | |
| | **Total for Check:** | 123850 | | | | $756.44 | $13,360.59 |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525988 | 6/17 45130 lb citric acid | $31,312.32 | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525988 | discount | ($626.25) | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525989 | 6/18 11.4586 ton caustic soda | $9,046.85 | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525989 | carbon emission | $171.88 | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525989 | superfund | $8.96 | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI525989 | discount | ($184.55) | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI526915 | 6/20 39700 lb H.Peroxide | $9,925.00 | | |
| 123851 | 2025-06-25 | BRENNTAG PACIFIC INC. | Inv# BPI526915 | discount | ($198.50) | | |
| | **Total for Check:** | 123851 | | | | $49,455.71 | $1,889,960.44 |
| 123852 | 2025-06-25 | BUTIER ENGINEERING, INC. | Inv# OCWD 1558 017 | 3/16-4/30 PFAS TUS-2022-1 | $89,374.32 | | |
| 123852 | 2025-06-25 | BUTIER ENGINEERING, INC. | Inv# OCWD 1558 017 | 3/16-4/30 PFAS TUS-2022-1 | $44.49 | | |
| | **Total for Check:** | 123852 | | | | $89,418.81 | $1,005,166.76 |
| 123853 | 2025-06-25 | CALIAGUA INC | Inv# 21 ORA-2022-1 | Prog.Pmt#21 ORA-2022-1 | $419,814.50 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123853 | 2025-06-25 | CALIAGUA INC | Inv# 21 ORA-2022-1 | Prog.Pmt#21 ORA-2022-1 | $60,201.50 | | |
| 123853 | 2025-06-25 | CALIAGUA INC | Inv# 27 TUS-2022-1 | Prog.Pmt#27 TUS-2022-1 | $105,450.00 | | |
| 123853 | 2025-06-25 | CALIAGUA INC | Inv# 27 TUS-2022-1 | Prog.Pmt#27 TUS-2022-1 | $88,630.25 | | |
| | **Total for Check:** | 123853 | | | | $674,096.25 | $19,477,072.96 |
| 123854 | 2025-06-25 | PACIFIC PREMIER BANK | Inv# ESC 20230117-2773 RET#27 TUS-2022-1 | Ret#27 Caligua | $5,550.00 | | |
| 123854 | 2025-06-25 | PACIFIC PREMIER BANK | Inv# ESC 20230117-2773 RET#27 TUS-2022-1 | Ret#27 Caligua | $4,664.75 | | |
| | **Total for Check:** | 123854 | | | | $10,214.75 | $624,184.78 |
| 123855 | 2025-06-25 | PACIFIC PREMIER BANK | Inv# ESC 20231011-7499 RET#21 ORA-2022-1 | Ret#21 Caliagua | $22,095.50 | | |
| 123855 | 2025-06-25 | PACIFIC PREMIER BANK | Inv# ESC 20231011-7499 RET#21 ORA-2022-1 | Ret#21 Caliagua | $3,168.50 | | |
| | **Total for Check:** | 123855 | | | | $25,264.00 | $322,466.40 |
| 123856 | 2025-06-25 | CALTROL INC. | Inv# CD99228199 | Caltrol - New Complete Delta V | $11,825.98 | | |
| 123856 | 2025-06-25 | CALTROL INC. | Inv# CD99228199 | Caltrol - New Complete Delta V | $1,478.61 | | |
| 123856 | 2025-06-25 | CALTROL INC. | Inv# CD99228199 | Caltrol - New Complete Delta V | $118.95 | | |
| | **Total for Check:** | 123856 | | | | $13,423.54 | $98,522.18 |
| 123857 | 2025-06-25 | CCS FACILITY SERVICES-ORANGE COUNTY INC. | Inv# 699638 | 1602 | $13,449.00 | | |
| 123857 | 2025-06-25 | CCS FACILITY SERVICES-ORANGE COUNTY INC. | Inv# 699638 | 1602 | $1,582.00 | | |
| 123857 | 2025-06-25 | CCS FACILITY SERVICES-ORANGE COUNTY INC. | Inv# 699638 | 1602 | $501.00 | | |
| | **Total for Check:** | 123857 | | | | $15,532.00 | $199,652.00 |
| 123858 | 2025-06-25 | CEL ANALYTICAL INC | Inv# 250514-6283 | WQ ANALYSIS | $630.00 | | |
| | **Total for Check:** | 123858 | | | | $630.00 | $13,020.00 |
| 123859 | 2025-06-25 | CHEMCO PRODUCTS COMPANY | Inv# 238910 | Monthly Closed Loop Water Serv | $300.00 | | |
| | **Total for Check:** | 123859 | | | | $300.00 | $3,611.90 |
| 123860 | 2025-06-25 | CITY OF LONG BEACH | Inv# 42222 | Apr25 Alamitos 18.90 af | $29,143.80 | | |
| | **Total for Check:** | 123860 | | | | $29,143.80 | $1,329,637.75 |
| 123861 | 2025-06-25 | CLA-VAL | Inv# 919478 | Generated by reorder 5/19/25 1 | $1,924.88 | | |
| 123861 | 2025-06-25 | CLA-VAL | Inv# 919478 | Generated by reorder 5/19/25 1 | $1,424.63 | | |
| | **Total for Check:** | 123861 | | | | $3,349.51 | $7,565.43 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123862 | 2025-06-25 | COALITION FOR ENVIRONMENTAL PROTECTION | Inv# CEPRD2025 PRO | CEPRD REGIONAL RELIABILITY | $25,000.00 | | |
| **Total for Check:** | | 123862 | | | | $25,000.00 | $50,000.00 |
| 123863 | 2025-06-25 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2797251 | Generated by reorder 5/20/25 8 | $277.31 | | |
| 123863 | 2025-06-25 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2797251 | Generated by reorder 5/20/25 8 | $277.31 | | |
| 123863 | 2025-06-25 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2797251 | Generated by reorder 5/20/25 8 | $215.36 | | |
| 123863 | 2025-06-25 | COAST TO COAST COMPUTER PRODUCTS | Inv# A2797251 | Generated by reorder 5/20/25 8 | $138.66 | | |
| **Total for Check:** | | 123863 | | | | $908.64 | $6,380.11 |
| 123864 | 2025-06-25 | COMMERCIAL DOOR OF ORANGE CO. | Inv# 28579 | Warehouse Bay Door Repair | $720.25 | | |
| **Total for Check:** | | 123864 | | | | $720.25 | $20,492.83 |
| 123865 | 2025-06-25 | CONSOLIDATED OFFICE SYSTEMS | Inv# 31392 | I&E OFFICE CUBICLE- YADI | $2,138.03 | | |
| 123865 | 2025-06-25 | CONSOLIDATED OFFICE SYSTEMS | Inv# 31392 | I&E OFFICE CUBICLE- YADI | $580.00 | | |
| 123865 | 2025-06-25 | CONSOLIDATED OFFICE SYSTEMS | Inv# 31392 | I&E OFFICE CUBICLE- YADI | $325.00 | | |
| **Total for Check:** | | 123865 | | | | $3,043.03 | $26,545.13 |
| 123866 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $30.00 | | |
| **Total for Check:** | | 123866 | | | | $30.00 | $7,525.00 |
| 123867 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $50.00 | | |
| **Total for Check:** | | 123867 | | | | $50.00 | $7,525.00 |
| 123868 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $50.00 | | |
| **Total for Check:** | | 123868 | | | | $50.00 | $7,525.00 |
| 123869 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $50.00 | | |
| **Total for Check:** | | 123869 | | | | $50.00 | $7,525.00 |
| 123870 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $50.00 | | |
| **Total for Check:** | | 123870 | | | | $50.00 | $7,525.00 |
| 123871 | 2025-06-25 | CWEA | Inv# 848273 | Lab training | $50.00 | | |
| **Total for Check:** | | 123871 | | | | $50.00 | $7,525.00 |
| 123872 | 2025-06-25 | DEBTBOOK | Inv# DB2002786 | Debtbook Software | $16,000.00 | | |
| **Total for Check:** | | 123872 | | | | $16,000.00 | $16,000.00 |
| 123873 | 2025-06-25 | DELTA MOTORS CO., INC. | Inv# 25486 | Refurbishment GAP Influent Mot | $3,825.00 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123873 | 2025-06-25 | DELTA MOTORS CO., INC. | Inv# 25486 | Refurbishment GAP Influent Mot | $3,817.13 | | |
| | **Total for Check:** | 123873 | | | | $7,642.13 | $56,480.76 |
| 123874 | 2025-06-25 | DEPARTMENT OF TOXIC SUBSTANCES | Inv# 24SM6865 | 1333 | $3,567.54 | | |
| | **Total for Check:** | 123874 | | | | $3,567.54 | $27,633.66 |
| 123875 | 2025-06-25 | DEPARTMENT OF TOXIC SUBSTANCES | Inv# 24SM6801 | 401866 Prado Shooting Range | $325.43 | | |
| | **Total for Check:** | 123875 | | | | $325.43 | $27,633.66 |
| 123876 | 2025-06-25 | Dadakis, Jason | Inv# JUNE 17-18, 2025 TRAVEL House-Senate PFAS | 6/17-18 D.C. | $1,314.04 | | |
| | **Total for Check:** | 123876 | | | | $1,314.04 | $2,817.15 |
| 123877 | 2025-06-25 | Dosier, Bruce | Inv# JAN-JUN25 PHONE STIPENDS | 1/10-6/9/25 phone stipends | $200.00 | | |
| | **Total for Check:** | 123877 | | | | $200.00 | $640.00 |
| 123878 | 2025-06-25 | EATON CORPORATION | Inv# 987916736 | EATON Service Agreement 815-UP | $20,171.00 | | |
| | **Total for Check:** | 123878 | | | | $20,171.00 | $23,932.50 |
| 123879 | 2025-06-25 | EDELSTEIN GILBERT ROBSON AND SMITH | Inv# 2287 | May25 legis.support/SACTO | $8,000.00 | | |
| | **Total for Check:** | 123879 | | | | $8,000.00 | $96,000.00 |
| 123880 | 2025-06-25 | ENVIRONMENTAL SCIENCE ASSOCIATES | Inv# 208077 | Apr25 South Basin CEQA | $1,971.60 | | |
| 123880 | 2025-06-25 | ENVIRONMENTAL SCIENCE ASSOCIATES | Inv# 208114 | Apr25 wo#10 GWRSFE archaeo.pal | $1,345.00 | | |
| | **Total for Check:** | 123880 | | | | $3,316.60 | $255,534.06 |
| 123881 | 2025-06-25 | EUROFINS ENVIRONMENT TESTING SW LLC | Inv# 5700230450 | BPO WATER ANALYSIS | $910.00 | | |
| | **Total for Check:** | 123881 | | | | $910.00 | $8,997.50 |
| 123882 | 2025-06-25 | EVOQUA WATER TECHNOLOGIES, LLC | Inv# 907017906A | agmt 1423 GSWC freight | $30,900.00 | | |
| | **Total for Check:** | 123882 | | | | $30,900.00 | $4,393,857.88 |
| 123883 | 2025-06-25 | FACTORY MOTOR PARTS | Inv# 164-410236 | BPO AUTO PARTS | $12.14 | | |
| | **Total for Check:** | 123883 | | | | $12.14 | $21,943.55 |
| 123884 | 2025-06-25 | FEDERAL EXPRESS CORPORATION | Inv# 8-899-61404 | Package Delivery | $746.96 | | |
| | **Total for Check:** | 123884 | | | | $746.96 | $17,651.08 |
| 123885 | 2025-06-25 | FILMTEC CORP | Inv# 952424651 | PLANT CHEMICALS YSN | $8,156.25 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| **Total for Check:** | 123885 | | | | | $8,156.25 | $5,322,647.30 |
| 123886 | 2025-06-25 | FISHER SCIENTIFIC CO. | Inv# 0918294 | Lab supplies | $88.35 | | |
| 123886 | 2025-06-25 | FISHER SCIENTIFIC CO. | Inv# 0984628 | Lab supplies | $141.87 | | |
| 123886 | 2025-06-25 | FISHER SCIENTIFIC CO. | Inv# 0984628 | Shipping | $47.53 | | |
| 123886 | 2025-06-25 | FISHER SCIENTIFIC CO. | Inv# 1047708 | | $268.31 | | |
| 123886 | 2025-06-25 | FISHER SCIENTIFIC CO. | Inv# 1047708 | | $98.15 | | |
| **Total for Check:** | 123886 | | | | | $644.21 | $306,799.70 |
| 123887 | 2025-06-25 | FRUIT GROWERS LABORATORY INC | Inv# 503477A | BPO RADIOACTIVITY ANAYLSIS | $602.00 | | |
| 123887 | 2025-06-25 | FRUIT GROWERS LABORATORY INC | Inv# 503491A | BPO RADIOACTIVITY ANAYLSIS | $1,199.00 | | |
| 123887 | 2025-06-25 | FRUIT GROWERS LABORATORY INC | Inv# 503492A | BPO RADIOACTIVITY ANAYLSIS | $1,199.00 | | |
| 123887 | 2025-06-25 | FRUIT GROWERS LABORATORY INC | Inv# 503859A | BPO RADIOACTIVITY ANAYLSIS | $602.00 | | |
| 123887 | 2025-06-25 | FRUIT GROWERS LABORATORY INC | Inv# 503865A | BPO RADIOACTIVITY ANAYLSIS | $1,199.00 | | |
| **Total for Check:** | 123887 | | | | | $4,801.00 | $41,655.00 |
| 123888 | 2025-06-25 | GOOD WATER WAREHOUSE, INC | Inv# 1068480 | Generated by reorder 6/4/25 10 | $38.79 | | |
| 123888 | 2025-06-25 | GOOD WATER WAREHOUSE, INC | Inv# 1068480 | Generated by reorder 6/4/25 10 | $38.79 | | |
| **Total for Check:** | 123888 | | | | | $77.58 | $77.58 |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9516875581 CREDIT | Credit 9490038206 / 9516875581 | ($262.92) | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9520174443 | BPO INDUSTRIAL SUPPLIES | $24.74 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9522098707 | MAINTENANCE, LIGHT PANEL YADI | $126.49 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9522605154 | BPO INDUSTRIAL SUPPLIES | $548.28 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9522889352 | BPO INDUSTRIAL SUPPLIES | $37.42 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9522889360 | BPO INDUSTRIAL SUPPLIES | $333.48 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9524904316 | Generated by reorder 5/28/25 7 | $994.02 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9524904316 | Generated by reorder 5/28/25 7 | $152.10 | | |
| 123889 | 2025-06-25 | GRAINGER INC. | Inv# 9524904316 | Generated by reorder 5/28/25 7 | $55.50 | | |
| **Total for Check:** | 123889 | | | | | $2,009.11 | $229,030.47 |
| 123890 | 2025-06-25 | HABITAT WEST | Inv# 91595 | 5/2,5,8,15,16,21 agmt 1542 | $8,564.16 | | |
| 123890 | 2025-06-25 | HABITAT WEST | Inv# 91596 | 5/28-30 agmt 1683 Corona | $6,041.30 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123890 | 2025-06-25 | HABITAT WEST | Inv# 91596 | 5/28-30 agmt 1683 Corona | $1,743.10 | | |
| | **Total for Check:** | 123890 | | | | $16,348.56 | $292,910.42 |
| 123891 | 2025-06-25 | HEALTHEQUITY INC. | Inv# XM1BEEU | HSA Monthly Admin Fees | $5.90 | | |
| | **Total for Check:** | 123891 | | | | $5.90 | $53.10 |
| 123892 | 2025-06-25 | HOME DEPOT CREDIT SERVICES | Inv# 4011022 | BPO INDUSTRIAL SUPPLIES | $194.88 | | |
| 123892 | 2025-06-25 | HOME DEPOT CREDIT SERVICES | Inv# 4171249 | BPO INDUSTRIAL SUPPLIES | $976.58 | | |
| 123892 | 2025-06-25 | HOME DEPOT CREDIT SERVICES | Inv# 5522848 | BPO INDUSTRIAL SUPPLIES | $192.87 | | |
| 123892 | 2025-06-25 | HOME DEPOT CREDIT SERVICES | Inv# 5620330 | BPO INDUSTRIAL SUPPLIES | $308.96 | | |
| | **Total for Check:** | 123892 | | | | $1,673.29 | $36,612.53 |
| 123893 | 2025-06-25 | ISLE INC | Inv# INV-2120 | 2025PFAS Utility Partnership R | $5,000.00 | | |
| | **Total for Check:** | 123893 | | | | $5,000.00 | $11,000.00 |
| 123894 | 2025-06-25 | KENNEDY/JENKS CONSULTANTS, INC. | Inv# 180404 | thru 5/23 PFAS Orange wo#2 | $18,726.25 | | |
| | **Total for Check:** | 123894 | | | | $18,726.25 | $597,588.55 |
| 123895 | 2025-06-25 | KONICA MINOLTA BUSINESS SOLUTIONS USA IN | Inv# 502332246 | BPO COPY CHARGES | $34.80 | | |
| 123895 | 2025-06-25 | KONICA MINOLTA BUSINESS SOLUTIONS USA IN | Inv# 502429678 | BPO COPY CHARGES | $135.98 | | |
| 123895 | 2025-06-25 | KONICA MINOLTA BUSINESS SOLUTIONS USA IN | Inv# 502429748 | BPO COPY CHARGES | $98.90 | | |
| 123895 | 2025-06-25 | KONICA MINOLTA BUSINESS SOLUTIONS USA IN | Inv# 502429819 | BPO COPY CHARGES | $25.46 | | |
| | **Total for Check:** | 123895 | | | | $295.14 | $21,646.14 |
| 123896 | 2025-06-25 | Karpukhin, Alexander | Inv# 2024-2025-08 | Education Reimbursement AVK | $3,000.00 | | |
| | **Total for Check:** | 123896 | | | | $3,000.00 | $3,718.52 |
| 123897 | 2025-06-25 | LHOIST NORTH AMERICA | Inv# 1102510125 | 5/26 lime(2) 24.85 & 24.97 ton | $22,327.34 | | |
| 123897 | 2025-06-25 | LHOIST NORTH AMERICA | Inv# 1102510226 | 5/28 lime(2) 25.47 & 25.11 ton | $22,667.94 | | |
| | **Total for Check:** | 123897 | | | | $44,995.28 | $1,802,092.00 |
| 123898 | 2025-06-25 | LILLESTRAND LEADERSHIP CONSULTING | Inv# 8149 | May25 leadership consulting | $2,650.00 | | |
| 123898 | 2025-06-25 | LILLESTRAND LEADERSHIP CONSULTING | Inv# 8149 | May25 leadership consulting | $50.00 | | |
| | **Total for Check:** | 123898 | | | | $2,700.00 | $40,925.00 |
| 123899 | 2025-06-25 | MATA, MICHELE | Inv# 03.17-06.03.25 | FHQ PETTY FHQ Petty Cash | $833.35 | | |
| | **Total for Check:** | 123899 | | | | $833.35 | $1,936.56 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47145275 | BPO INDUSTRIAL SUPPLIES | $262.17 | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47145275 | Shipping | $18.35 | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47145275 | Discount | ($4.82) | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47321157 | BPO INDUSTRIAL SUPPLIES | $110.44 | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47321157 | Discount | ($1.99) | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47345445 | Credit for Inv 47321157 | ($55.22) | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47449848 | BPO INDUSTRIAL SUPPLIES | $186.62 | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47449848 | Shipping | $11.72 | | |
| 123900 | 2025-06-25 | MCMASTER-CARR SUPPLY COMPANY | Inv# 47449848 | Discount | ($3.73) | | |
| **Total for Check:** | 123900 | | | | | $523.54 | $18,522.52 |
| 123901 | 2025-06-25 | MILLER & AXLINE | Inv# 11531 | 6/18/25 legal/Sabic | $9,795.77 | | |
| **Total for Check:** | 123901 | | | | | $9,795.77 | $120,079.09 |
| 123902 | 2025-06-25 | MYBINDING, LLC | Inv# SI3032825 | | $87.73 | | |
| 123902 | 2025-06-25 | MYBINDING, LLC | Inv# SI3032825 | | $77.43 | | |
| **Total for Check:** | 123902 | | | | | $165.16 | $434.53 |
| 123903 | 2025-06-25 | MYTHICS | Inv# 228182 | Renew Oracle Support Contract | $5,614.30 | | |
| **Total for Check:** | 123903 | | | | | $5,614.30 | $23,362.74 |
| 123904 | 2025-06-25 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756580 | BPO AUTO PARTS | $114.94 | | |
| 123904 | 2025-06-25 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756580 | PURCHASE DISCOUNTS | ($2.30) | | |
| 123904 | 2025-06-25 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756627 | BPO AUTO PARTS | $75.41 | | |
| 123904 | 2025-06-25 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756627 | discount | ($1.51) | | |
| 123904 | 2025-06-25 | NAPA/ORANGE COUNTY AUTO PARTS | Inv# 756660 | Original Inv 754967 | ($140.70) | | |
| **Total for Check:** | 123904 | | | | | $45.84 | $3,812.19 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123905 | 2025-06-25 | O'Toole, Kevin | Inv# DEC24-JUNE25 PHONE STIPEN | 12/13/24-6/12/25 phone stipend | $238.58 | | |
| | **Total for Check:** | 123905 | | | | $238.58 | $478.58 |
| 123906 | 2025-06-25 | ODP BUSINESS SOLUTIONS LLC | Inv# 426232675001 | SUPPLIES | $8.61 | | |
| 123906 | 2025-06-25 | ODP BUSINESS SOLUTIONS LLC | Inv# 426232675001 | SUPPLIES | $8.42 | | |
| 123906 | 2025-06-25 | ODP BUSINESS SOLUTIONS LLC | Inv# 426232675001 | SUPPLIES | $121.34 | | |
| | **Total for Check:** | 123906 | | | | $138.37 | $5,448.73 |
| 123907 | 2025-06-25 | ONESOURCE DISTRIBUTORS INC. | Inv# S007934844.001 | Generated by reorder 5/28/25 8 | $462.56 | | |
| 123907 | 2025-06-25 | ONESOURCE DISTRIBUTORS INC. | Inv# S007934844.001 | Generated by reorder 5/28/25 8 | $462.55 | | |
| 123907 | 2025-06-25 | ONESOURCE DISTRIBUTORS INC. | Inv# S007934844.001 | Discount | ($8.51) | | |
| | **Total for Check:** | 123907 | | | | $916.60 | $312,644.17 |
| 123908 | 2025-06-25 | ORANGE COUNTY EMPLOYEE ASSOCIATION | Inv# OCEAJUNE2025 | OCEA DUES JUNE 2025 | $2,968.35 | | |
| | **Total for Check:** | 123908 | | | | $2,968.35 | $40,286.40 |
| 123909 | 2025-06-25 | Ochoa, Melissa | Inv# DEC24-JUN25 PHONE STIPEND | 12/14/24-6/13/25 phone stipend | $240.00 | | |
| | **Total for Check:** | 123909 | | | | $240.00 | $680.00 |
| 123910 | 2025-06-25 | PACIFIC ADVANCED CIVIL ENGINEERING, INC | Inv# 10343 | thru 5/31 PFAS GSWC wo#1 | $6,692.00 | | |
| 123910 | 2025-06-25 | PACIFIC ADVANCED CIVIL ENGINEERING, INC | Inv# 10344 | thru 5/31 PFAS GSWC wo#2 | $11,692.00 | | |
| | **Total for Check:** | 123910 | | | | $18,384.00 | $862,146.00 |
| 123911 | 2025-06-25 | PACIFIC HYDROTECH CORPORATION | Inv# 8 SA-2023-2 | Prog.Pmt#8 SA-2023-2 | $501,956.25 | | |
| | **Total for Check:** | 123911 | | | | $501,956.25 | $3,864,468.38 |
| 123912 | 2025-06-25 | AMERICAN BUSINESS BANK | Inv# ESC 8656803 RET#8 | SA-2023-2 | $26,418.75 | | |
| | **Total for Check:** | 123912 | | | | $26,418.75 | $108,170.00 |
| 123913 | 2025-06-25 | PACWEST SECURITY SERVICES | Inv# OC39908 | 1496 | $80.26 | | |
| 123913 | 2025-06-25 | PACWEST SECURITY SERVICES | Inv# OC39921 | Jun25 security svc | $39,064.42 | | |
| | **Total for Check:** | 123913 | | | | $39,144.68 | $467,628.28 |
| 123914 | 2025-06-25 | PAYROLLORG | Inv# 321213-25-26 | Membership Renewal 2025-2026 | $305.00 | | |
| | **Total for Check:** | 123914 | | | | $305.00 | $604.00 |
| 123915 | 2025-06-25 | PENDERGRAFT, REX | Inv# JULY 2025 | Retiree Cash Medical July 2025 | $512.45 | | |
| | **Total for Check:** | 123915 | | | | $512.45 | $6,061.85 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123916 | 2025-06-25 | PERKINELMER U.S LLC | Inv# 441235812 | Lab supplies | $957.86 | | |
| 123916 | 2025-06-25 | PERKINELMER U.S LLC | Inv# 441235812 | Freight | $63.07 | | |
| | **Total for Check:** | 123916 | | | | $1,020.93 | $67,994.17 |
| 123917 | 2025-06-25 | PHENOMENEX INC. | Inv# CIUS-25037128 | Lab supplies | $639.45 | | |
| 123917 | 2025-06-25 | PHENOMENEX INC. | Inv# CIUS-25037128 | Shipping | $27.19 | | |
| 123917 | 2025-06-25 | PHENOMENEX INC. | Inv# CIUS-25037128 | Purchase Discounts | ($12.26) | | |
| | **Total for Check:** | 123917 | | | | $654.38 | $91,145.19 |
| 123918 | 2025-06-25 | PROACTIVE ENVIRONMENTAL PRODUCTS LLC | Inv# 36297 | | $3,880.00 | | |
| 123918 | 2025-06-25 | PROACTIVE ENVIRONMENTAL PRODUCTS LLC | Inv# 36297 | | $110.70 | | |
| | **Total for Check:** | 123918 | | | | $3,990.70 | $3,990.70 |
| 123919 | 2025-06-25 | PRUDENTIAL GROUP INSURANCE | Inv# C00694, B252925 JUNE2025 June25 | Life Insurance | $38,450.43 | | |
| | **Total for Check:** | 123919 | | | | $38,450.43 | $457,009.55 |
| 123920 | 2025-06-25 | QUINN COMPANY | Inv# PC830435278 | BPO EQUIPMENT & SUPPLIES | $474.54 | | |
| | **Total for Check:** | 123920 | | | | $474.54 | $96,765.01 |
| 123921 | 2025-06-25 | RBA BUILDERS LLC | Inv# PA4-251601 | Prog.Pmt#4 LAB-2024-1 | $121,105.90 | | |
| 123921 | 2025-06-25 | RBA BUILDERS LLC | Inv# PA4-251601 | Prog.Pmt#4 LAB-2024-1 | $31,818.80 | | |
| | **Total for Check:** | 123921 | | | | $152,924.70 | $597,675.08 |
| 123922 | 2025-06-25 | RED WING SHOE CO. INC. | Inv# 789-1-81974 | BPO WORK BOOTS | $200.00 | | |
| | **Total for Check:** | 123922 | | | | $200.00 | $11,138.30 |
| 123923 | 2025-06-25 | RESQME, INC. | Inv# 1001168 | Whistles | $850.00 | | |
| 123923 | 2025-06-25 | RESQME, INC. | Inv# 1001168 | Whistles | $170.00 | | |
| 123923 | 2025-06-25 | RESQME, INC. | Inv# 1001168 | Whistles | $75.00 | | |
| 123923 | 2025-06-25 | RESQME, INC. | Inv# 1001168 | Whistles | $20.00 | | |
| | **Total for Check:** | 123923 | | | | $1,115.00 | $1,115.00 |
| 123924 | 2025-06-25 | SANTA ANA UNIFIED SCHOOL DISTRICT | Inv# 8758/8765/8724 | CWEF Bus Refunds For three Inv | $2,016.23 | | |
| | **Total for Check:** | 123924 | | | | $2,016.23 | $4,541.37 |
| 123925 | 2025-06-25 | SANTA ANA WATERSHED ASSOCIATION | Inv# 2025-48 | 1369 | $6,439.21 | | |
| | **Total for Check:** | 123925 | | | | $6,439.21 | $118,572.71 |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $1,527.90 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $940.79 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $491.02 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $283.88 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $283.24 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $272.41 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $213.99 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $167.23 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $141.71 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $141.25 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $141.01 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $107.76 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $80.24 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $77.03 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $49.05 | | |
| 123927 | 2025-06-25 | SC FUELS | Inv# 1051318 | BPO UNLEADED FUEL | $44.22 | | |
| | **Total for Check:** | 123927 | | | | $4,962.73 | $117,087.96 |
| 123928 | 2025-06-25 | SIDEPATH INC. | Inv# 24143 | Replacement laptop | $9,009.63 | | |
| 123928 | 2025-06-25 | SIDEPATH INC. | Inv# 24143 | Replacement laptop | $16.00 | | |
| 123928 | 2025-06-25 | SIDEPATH INC. | Inv# 24148 | LAPTOP REPLACEMENT | $2,307.31 | | |
| 123928 | 2025-06-25 | SIDEPATH INC. | Inv# 24170 | I&E LAPTOP- YADI | $3,263.47 | | |
| | **Total for Check:** | 123928 | | | | $14,596.41 | $146,679.82 |
| 123929 | 2025-06-25 | SINCLAIR WELL PRODUCTS INC | Inv# 51047 | HYDROGEOLOGY SUPPLIES FOR CWEF | $258.83 | | |
| 123929 | 2025-06-25 | SINCLAIR WELL PRODUCTS INC | Inv# 51047 | FREIGHT CHARGES | $150.00 | | |
| 123929 | 2025-06-25 | SINCLAIR WELL PRODUCTS INC | Inv# 51047 | PURCHASE DISCOUNTS | ($7.76) | | |
| | **Total for Check:** | 123929 | | | | $401.07 | $909.31 |
| 123930 | 2025-06-25 | SOUTHERN CALIFORNIA NEWS GROUP | Inv# 0000619289 | Legal Notices Placed | $1,774.01 | | |
| | **Total for Check:** | 123930 | | | | $1,774.01 | $21,125.08 |
| 123931 | 2025-06-25 | SUNSET INDUSTRIAL PARTS | Inv# INV82050 | 2", 50' Gorilla Hose JSMITH | $1,047.43 | | |
| 123931 | 2025-06-25 | SUNSET INDUSTRIAL PARTS | Inv# INV82050 | Discount | ($9.63) | | |
| | **Total for Check:** | 123931 | | | | $1,037.80 | $14,211.53 |
| 123932 | 2025-06-25 | SUPERIOR SWEEPING LTD. | Inv# 377-0625 | BPO STREET SWEEPING | $450.00 | | |
| | **Total for Check:** | 123932 | | | | $450.00 | $5,872.00 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123933 | 2025-06-25 | Smith, Benjamin | Inv# 2025 TRAVELS, PHONE STIPE | jan-jun25 travel, phone stipen | $929.75 | | |
| | **Total for Check:** | 123933 | | | | $929.75 | $2,123.54 |
| 123934 | 2025-06-25 | TRL SYSTEMS, INC. | Inv# 13485 | 1674 | $25,906.41 | | |
| | **Total for Check:** | 123934 | | | | $25,906.41 | $228,041.40 |
| 123935 | 2025-06-25 | TROPICAL PLAZA NURSERY, INC. | Inv# 3769 | 1255 | $3,489.89 | | |
| 123935 | 2025-06-25 | TROPICAL PLAZA NURSERY, INC. | Inv# 3769 | 1255 | $948.03 | | |
| | **Total for Check:** | 123935 | | | | $4,437.92 | $78,365.37 |
| 123936 | 2025-06-25 | U-LINE | Inv# 193546761 | Lab supplies | $243.73 | | |
| 123936 | 2025-06-25 | U-LINE | Inv# 193546761 | Lab supplies | $75.04 | | |
| 123936 | 2025-06-25 | U-LINE | Inv# 193546761 | SHIPPING / HANDLING | $59.96 | | |
| 123936 | 2025-06-25 | U-LINE | Inv# 193554286 | Generated by reorder 5/28/25 8 | $73.54 | | |
| 123936 | 2025-06-25 | U-LINE | Inv# 193554286 | SHIPPING / HANDLING | $1.50 | | |
| | **Total for Check:** | 123936 | | | | $453.77 | $14,846.18 |
| 123937 | 2025-06-25 | UNDERGROUND SERVICE ALERT | Inv# 24-253992 | 7/24 to 6/25 Total Fees | $297.89 | | |
| 123937 | 2025-06-25 | UNDERGROUND SERVICE ALERT | Inv# 520250511 | UOCW01 New Ticket Charges | $901.70 | | |
| | **Total for Check:** | 123937 | | | | $1,199.59 | $14,186.30 |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190349898 | 1557 | $283.23 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190349898 | 1557 | $8.01 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350755 | 1557 | $54.25 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350756 | 1557 | $16.77 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350761 | 1557 | $308.74 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350762 | 1557 | $10.78 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350771 | 1557 | $520.11 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350772 | 1557 | $103.95 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2190350773 | 1557 | $27.72 | | |
| 123938 | 2025-06-25 | UNIFIRST CORPORATION | Inv# 2200270392 | 1557 | $49.86 | | |
| | **Total for Check:** | 123938 | | | | $1,383.42 | $63,958.33 |
| 123939 | 2025-06-25 | UNIVAR SOLUTIONS USA | Inv# 53101120 | 6/18 23.505 ton sulfuric acid | $5,547.18 | | |
| 123939 | 2025-06-25 | UNIVAR SOLUTIONS USA | Inv# 53101120 | discount | ($110.94) | | |
| 123939 | 2025-06-25 | UNIVAR SOLUTIONS USA | Inv# 53101121 | 6/18 23.561 ton sulfuric acid | $5,560.40 | | |
| 123939 | 2025-06-25 | UNIVAR SOLUTIONS USA | Inv# 53101121 | discount | ($111.21) | | |
| | **Total for Check:** | 123939 | | | | $10,885.43 | $396,920.26 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

### Accounts Payable Check Register Presented for Board Ratification and/or Approval

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 123940 | 2025-06-25 | UTILIQUEST LLC | Inv# 343030-Q | 5/18-24 screen/mark pipes | $1,091.54 | | |
| 123940 | 2025-06-25 | UTILIQUEST LLC | Inv# 343030-Q | 5/18-24 screen/mark pipes | $636.72 | | |
| 123940 | 2025-06-25 | UTILIQUEST LLC | Inv# 343030-Q | 5/18-24 screen/mark pipes | $78.04 | | |
| 123940 | 2025-06-25 | UTILIQUEST LLC | Inv# 343030-Q | 5/18-24 screen/mark pipes | $12.91 | | |
| | **Total for Check:** | 123940 | | | | $1,819.21 | $100,807.89 |
| 123941 | 2025-06-25 | VWR INTERNATIONAL LLC | Inv# 8819119143 | | $237.95 | | |
| 123941 | 2025-06-25 | VWR INTERNATIONAL LLC | Inv# 8819139012 | Lab supplies | $55.44 | | |
| | **Total for Check:** | 123941 | | | | $293.39 | $93,308.66 |
| 123942 | 2025-06-25 | W. A. RASIC CONSTRUCTION COMPANY, INC. | Inv# 345859 | agmt 1451, wo#12 | $53,698.44 | | |
| | **Total for Check:** | 123942 | | | | $53,698.44 | $206,038.98 |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970470 | 6/9 4818 gal hypochlorite | $8,296.11 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970470 | CA mill | $203.25 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970470 | discount | ($165.92) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970471 | 6/9 4825 gal hypochlorite | $8,308.17 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970471 | discount | ($166.16) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970472 | 6/9 4832 gal hypochlorite | $8,320.22 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970472 | CA mill | $203.85 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970472 | discount | ($166.40) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970473 | 6/9 4808 gal hypochlorite | $8,278.89 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970473 | CA mill | $202.83 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970473 | discount | ($165.58) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970552 | 6/10 4883 gal hypochlorite | $8,408.04 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970552 | CA mill | $206.00 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970552 | discount | ($168.16) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970553 | 6/10 4818 gal hypochlorite | $8,296.11 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970553 | CA mill | $203.25 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970553 | discount | ($165.92) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970554 | 6/10 4840 gal hypochlorite | $8,334.00 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970554 | CA mill | $204.18 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970554 | discount | ($166.68) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970555 | 6/10 4877 gal hypochlorite | $8,397.71 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970555 | CA mill | $205.74 | | |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970555 | discount | ($167.95) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970796 | 6/12 4887 gal hypochlorite | $8,414.92 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970796 | CA mill | $206.16 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970796 | discount | ($168.30) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970797 | 6/12 4770 gal hypochlorite | $8,213.47 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970797 | CA mill | $201.23 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970797 | discount | ($164.27) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970798 | 6/12 4814 gal hypochlorite | $8,289.23 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970798 | CA mill | $203.09 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970798 | discount | ($165.78) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970799 | 6/12 4833 gal hypochlorite | $8,321.94 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970799 | CA mill | $203.89 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970799 | discount | ($166.44) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970930 | 6/13 4038 gal hypochlorite | $6,953.03 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970930 | discount | ($139.06) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970931 | 6/13 4885 gal hypochlorite | $8,411.48 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970931 | CA mill | $206.08 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970931 | discount | ($168.23) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970954 | 6/13 4889 gal hypochlorite | $8,418.37 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970954 | CA mill | $206.25 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970954 | discount | ($168.37) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970955 | 6/13 4881 gal hypochlorite | $8,404.59 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970955 | CA mill | $205.91 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970955 | discount | ($168.09) | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970471 | CA mill | $203.55 | | |
| 978796 | 2025-06-20 | JCI JONES CHEMICAL, INC | Inv# 970930 | CA mill | $170.35 | | |
| | **Total for Check:** | 978796 | | | | $132,660.58 | $5,721,335.69 |
| 978797 | 2025-06-20 | CALIFORNIA DEPARTMENT OF TAX & FEE ADMIN | Inv# 024-792532 Q2 PP2 #07010 | Use Tax 024-792532 | $667.00 | | |
| | **Total for Check:** | 978797 | | | | $667.00 | $27,614.30 |
| 978798 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 GARN C-REG Garn C-Reg | PR13 Jun 25,25 6911 | $351.80 | | |
| | **Total for Check:** | 978798 | | | | $351.80 | $26,555,422.74 |

# Orange County Water District

## Check Register

**Begin Date:** 2025-06-19 **End Date:** 2025-06-25 

**Accounts Payable Check Register Presented for Board Ratification and/or Approval**

| Check No. | Date | Vendor Name | Invoice # | Purpose | Invoice Amount | Check Amount | FYTD |
|---|---|---|---|---|---|---|---|
| 978799 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 GARN ABF Garn ABF | PR13 Jun 25,25 6911 | $1,801.14 | | |
| 978799 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 GARN ABF Garn ABF | PR13 Jun 25,25 6911 | ($1,801.14) | | |
| | **Total for Check:** | 978799 | | | | $0.00 | $26,555,422.74 |
| 978800 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 GARN ABF Garn ABF | PR13 Jun 25,25 6911 | $1,801.84 | | |
| | **Total for Check:** | 978800 | | | | $1,801.84 | $26,555,422.74 |
| 978801 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 ID6527 | PR13 JUN 25, 2025 ID6527 | $42,263.77 | | |
| | **Total for Check:** | 978801 | | | | $42,263.77 | $26,555,422.74 |
| 978802 | 2025-06-24 | WELLS FARGO BANK | Inv# JUN 25, 2025 ID6911 | PR13 JUN 25, 2025 ID 6911 | $981,399.50 | | |
| | **Total for Check:** | 978802 | | | | $981,399.50 | $26,555,422.74 |
| 978803 | 2025-06-25 | FIDELITY INVESTMENTS | Inv# JUNE 25, 2025 401A | PR13 June 25, 2025 401A | $257,541.18 | | |
| | **Total for Check:** | 978803 | | | | $257,541.18 | $6,700,912.19 |
| 978804 | 2025-06-25 | FIDELITY INVESTMENTS | Inv# JUNE 25, 2025 457B | June 25, 2025 PR #13 | $103,422.10 | | |
| | **Total for Check:** | 978804 | | | | $103,422.10 | $2,797,528.96 |
| 978805 | 2025-06-25 | CITIBANK NA NEW YORK, ABA | Inv# 2005ASWAP PMT 05.27-06.25 05.27-06.25.25 | 2005A SWAP PMT | $23,463.22 | | |
| | **Total for Check:** | 978805 | | | | $23,463.22 | $296,358.44 |
| ***Run Date:*** | ***6/25/2025*** | | | | **$3,741,816.10** | **$3,741,816.10** | |

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# AGENDA ITEM SUBMITTAL

**Meeting Date:** July 2, 2025

**To:** Board of Directors

**From:** John Kennedy

**Staff Contact:** S. Nevill/L. Haney

**Budgeted:** N/A
**Budgeted Amount:** N/A
**Cost Estimate:** N/A
**Funding Source:** N/A
**Program/Line Item No.:** N/A
**General Counsel Approval:** N/A
**Engineers/Feasibility Report:** N/A
**CEQA Compliance:** N/A

**Subject: AUTHORIZE AGREEMENTS FOR ON-CALL ENVIRONMENTAL SERVICES**

## SUMMARY

The District currently has three pre-qualified firms available for on-call environmental consulting services. These firms are used to supplement the District's in-house staff person that prepares environmental documentation and conducts field environmental reviews. Staff issued a Request for Qualifications (RFQ) to select new firms to be included on the list of pre-qualified on-call environmental consultants. Based on evaluation of the submitted proposals, staff recommends authorizing on-call services agreements with five firms.

## RECOMMENDATION

Authorize on-call service agreements with:

- Environmental Science Associates;
- PSOMAS;
- Helix Environmental Planning;
- Chamber Group; and
- Rincon.

## DISCUSSION

The District has existing agreements with three pre-qualified firms for on-call environmental consulting services. These firms are Psomas, SageCrest (previously Environmental Advisors), and Environmental Science Associates (ESA). Technical support from these firms is used to supplement the District's in-house staff person that prepares environmental documentation.
Most of the environmental documentation prepared for the District's projects, in compliance with the California Environmental Quality Act (CEQA), such as Environmental Impact Reports or Initial Study/Mitigated Negative Declarations, are prepared by our in-house staff person. The on-call environmental consulting firms are utilized to prepare technical studies such as air quality or noise evaluations that are used to prepare the environmental documentation. The on-call firms may also provide services during construction for cultural resource monitoring, when needed.

For the on-call environmental firms, individual work activities are managed through work orders issued by the District. A work order for a cost less than $20,000 is issued under the General Manager's authority. A work order for a cost of $20,000 or greater is only issued after review and approval by the Board of Directors. The total anticipated cost of the work done by all of the on-call environmental firms is estimated to be approximately $80,000 per year.

The Board previously authorized the issuance of a Request for Qualifications (RFQ) to consider the consultants to select consulting firms to be included on the list of pre-qualified on-call environmental consultants. OCWD received eight proposals in response to the RFQ. The proposals were independently reviewed and scored by staff from the Planning and Engineering departments and the scoring of the proposals included evaluating each firm's experience and qualifications, organizational support resources, record of success on similar projects and billing rates.

See Table 1 for the average proposal score and ranking for each firm.

**Table 1:**
**Proposal Score and Ranking**

| Firm | Average Proposal Score (out of 100) | Ranking |
|---|---|---|
| Environmental Science Associates | 86 | **1** |
| PSOMAS | 83 | **2** |
| Helix Environmental Planning | 82 | **3** |
| Chamber Group | 80 | **4** |
| Rincon | 79 | **5** |
| Tetra Tech | | |
| Terraphase Engineering | | |
| Eocene Environmental Group | | |

Staff's evaluation of the proposals resulted in a recommendation of the top five consultants for on-call agreements. Staff recommends authorizing service agreements with Environmental Science Associates, PSOMAS, Helix Environmental Planning, Chamber Group, and Rincon for On-Call Environmental Services.

## PREVIOUS BOARD ACTIONS

6-19-2019 R19-6-83 -Authorize renewal of existing Agreements for on-call environmental analysis services with SageCrest, Psomas, and Environmental Science Associates for an additional term of three years, extending the termination date to August 31, 2022.

1-20-2016 R16-1-4- Authorize renewal of existing Agreements for on-call environmental analysis services with Bonterra Psomas Consulting and Environmental Advisors (now SageCrest) for an additional term of three years, extending the termination date to August 31, 2019; Approve and authorize execution of Agreement with Environmental Science Associates for on-call environmental analysis services with a termination date of August 31, 2019

7-24-2013 R13-7-86 - Authorize renewal of Agreements for on-call environmental analysis services with Bonterra Consulting, Environmental Advisors, and Michael Brandman Associates for an additional term of three years, extending the termination date to August 31, 2016

8-1-2012, R12-8-97 - Include Environmental Advisors on the District's list of pre-qualified on-call environmental consulting firms and authorize execution of a professional services agreement with the company

8-18-2010, R10-8-132 - Authorize issuance of non-exclusive Professional Service Agreements to Bonterra Consulting, Chambers Group, Environmental Science Associates, and Michael Brandman Associates for on-call environmental analysis services.

**REVISED**
**AGENDA ITEM SUBMITTAL**

**Meeting Date:** July 2, 2025

**To:** Board of Directors

**From:** John Kennedy

**Staff Contact:** R. Bouley/M. Patel/ F. Almario

**Budgeted:** Yes
**Budgeted Amount:** $170,000
**Cost Estimate:** ~~$168,000~~ **$192,848**
**Funding Source:** R&R
**Program/Line Item No.:** R24011
**General Counsel Approval:** N/A
**Engineers Report:** N/A
**CEQA Compliance:** N/A

**Subject:** **REVISED - AWARD CONTRACT NO. FV-2024-1 ANNEX BUILDING ROOF REPLACEMENT PROJECT TO BEST CONTRACTING SERVICES**

## SUMMARY

Seven construction bids were received on May 22, 2025, for Annex Building Roof Replacement Project, Contract No FV-2024-1. Based on the review of the bids, staff recommends awarding the contract to ~~C.I. Services, Inc.~~ **Best Contracting Services Inc**. as the lowest responsive and responsible bidder in the amount of ~~$168,000~~ **$192,848**.

Attachment: Affidavit of Publication for Notice Inviting Bids for Contract FV-2024-1

## RECOMMENDATION

1. Receive and file Affidavit of Publication of Notice Inviting Bids for Contract FV-2024-1 Annex Building Roof Replacement Project;

2. Ratify issuance of Addendum #1;

3. **Reject C.I. Services, Inc. bid as non-responsive;**

4. Accept and award contract FV-2024-1 to the lowest responsive and responsible bidder, ~~C.I. Services, Inc.~~ **Best Contracting Services Inc**, in the amount of ~~$168,000~~ **$192,848**; and

5. Establish Project budget in the amount of ~~$177,400~~ **$203,448**.

## BACKGROUND/ANALYSIS

The Annex building was constructed in the early 1980's and is located on the Fountain Valley campus. Both the OCWD Research and Development department and National Water Research Institute (NWRI) occupy the Annex building. The existing roof system on the Annex building is typical of its era and consists of one layer of ½" plywood decking for structure with one layer of bitumen (tar) and reinforcing fabric to provide weather/water proofing. The current roofing system has reached the end of its usable

life and has been patched many times due to numerous leaks since it was constructed about forty years ago.

The roof was inspected in February 2023 by Maintenance Staff and a representative from Weather Weld to explore possible repair or replacement options. Weather Weld manufactures a fiberglass reinforced ceramic asphalt that is sprayed over the existing roofing materials to provide a new seamless roof membrane surface that is water-tight, meets California energy requirements, and does not require the removal and disposal of the existing roof material. In September 2024, Weather Weld provided a demonstration of how their roof would be installed in a small area of the Annex roof that required a patch, and the roof was inspected again to verify conditions prior to preparing design documents. In general, the existing roof was rated from fair to poor with observations of ponding water. The inspection report noted that the roof field, field seams, and the roof perimeter were all in poor condition. Additionally, the roof penetrations showed signs of deterioration that could be potential pathways for leaks. The inspector also performed a core test to determine the condition of the plywood decking and found the structure to be in fair condition.

The inspection report concluded that the existing roof materials could stay in place and would not require complete removal. Weather Weld's recommendation includes installation of a reinforcement coating system directly over the existing roof making the entire roof seamless from the top of the parapet to the bottom of the drains. This system would be sprayed on and applied to a minimum thickness of 250 mil dry film thickness (¼-inch). This system will require no maintenance for the life of the 40-year warranty.

The bid advertisement period commenced April 17, 2025, and spanned 35 calendar days. A Non-Mandatory Pre-Bid conference was held on April 30, 2025, and was attended by representatives from Weather Weld, potential bidders, and OCWD staff. Addendum No. 1 was issued May 8, 2025, to provide responses to potential bidder's questions. Seven construction bids were received on May 22, 2025, for contract FV-2024-1. A summary of the seven bids is shown below in Table 1.

**Table 1: Construction Bid Summary**

| Contractor | Bid Price |
|---|---|
| C.I. Services, Inc. | $ 168,000 |
| Best Contracting Services | $ 192,848 |
| AME Builders | $ 222,600 |
| Southland Roofing Company | $ 224,000 |
| Chapman Coast Roof Company | $ 231,314 |
| McDonnel Roofing, Inc. | $ 243,675 |
| Ranger Roofing and Solar | $ 251,670 |

~~Staff reviewed the bid of C.I. Services Inc, checked references, and confirmed that its contractor's license is current, active, and in good standing with the State of California. Staff recommends award of the construction contract to C.I. Services Inc. as the lowest responsive bidder for $168,000.~~

**At the time of the bid opening, C.I Services, Inc. (CIS) submitted the apparent lowest bid. However, CIS's bid contained an error that included incorrectly filling out the Bid Documents. On June 11, 2025, Best Contracting Services Inc. filed a formal bid protest via the District website regarding this error by CIS. District Legal Counsel has reviewed the protest letter and determined that the error is of a type that would allow CIS to withdraw their bid without forfeiting their bond and is accordingly considered consequential under applicable law. District Legal Counsel recommended that the District either accept the protest and disqualify CIS, or reject all bids and rebid the Project. The error in the CIS bid is significant and therefore the bid is non-responsive and is recommended to be rejected. Staff reviewed the bid of Best Contracting Services Inc. and confirmed that their contractor's license is current, active, and in good standing with the State of California and recommends awarding a construction contract to Best Contracting Services Inc. in the amount of $192,848.**

The project budget for the Annex Building Roof Replacement project is summarized in Table 2.

**Table 2: Annex Building Roof Replacement Budget Summary**

| Description | Budget |
|---|---|
| **Design and Construction Management** | |
| In-house CM | $ 0 |
| Advertisement | $ 1,000 |
| | |
| **Construction** | |
| *Contract FV-2024-1* | *$ 192,848* |
| | |
| ***Project Contingency*** | *$ 9,600* |
| ***Total Project Budget:*** | *$ 203,448* |

The expected project schedule is shown in Table 2.

**Table 2: Annex Building Roof Replacement Project Schedule Summary**

| Description | Date |
|---|---|
| Design | December 2024 |
| Construction Contract FV-2024-1 | Jul 2025 – Aug 2025 |

**PRIOR RELEVANT BOARD ACTION(S)**

12/18/2024, M24-118: Authorize publication of Notice Inviting Bids for Annex Building Roof Replacement Project.

**AGENDA ITEM SUBMITTAL**

**Meeting Date:** July 2, 2025

**To:** Board of Directors

**From**: John Kennedy

**Staff Contact:** M. Plumlee/J. Dadakis

**Budgeted:** N/A
**Budgeted Amount:** N/A
**Cost Estimate:** N/A
**Funding Source:** N/A
**Program/ Line Item No.** N/A
**General Counsel Approval:** N/A
**Engineers/Feasibility Report:** N/A
**CEQA Compliance:** N/A

**Subject: UPDATE ON RESEARCH & DEVELOPMENT ACTIVITIES**

## SUMMARY

This Research & Development (R&D) update presentation will highlight three current projects:

1. Completion of a trial of a commercially-available software-as-a-service online dashboard to visualize performance data from the GWRS (RO) facility;

2. Ongoing pilot-scale trial of an ultrafiltration (UF) membrane product manufactured by Toray as part of R&D's program evaluating UF or microfiltration (MF) membranes for possible installation in the GWRS UF/MF facility; and,

3. Update on ongoing PFAS adsorbent pilot testing program that was relocated from the District's Field Headquarters site to Yorba Linda Water District's PFAS treatment plant and associated Water Research Foundation research grant.

Attachments:

- R&D Project Update Report (Biannual) dated April 22, 2025
- Presentation

## RECOMMENDATION

Informational

**PRIOR RELEVANT BOARD ACTION(S)** N/A

# OCWD R&D Department

## *R&D Project Update Report*

**Date:** 22 April 2025

**To:** All Departments

**From:** Megan Plumlee and R&D Department Staff

**Subject:** R&D PROJECT UPDATE REPORT – October 1, 2024 to March 31, 2025

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This R&D Project Update Report is generated twice per year to summarize R&D projects from the prior six months. The first section, "Project Updates", provides a brief status report for 22 current projects and programs.

Later sections note recent publications and conference presentations by R&D staff, as well as external research projects in which OCWD's role as a participating utility is coordinated by R&D staff.

## Contents (all contents are hyperlinked to jump to projects)

# Project Updates

# *Pilot-Scale Treatment Studies – Product Evaluations*

## Program: Low-Pressure Membrane (UF) Pilot Scale Product Evaluation for AWPF

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | Ongoing |
| *External Funding:* | No |

The District commenced a pilot testing program for alternative low-pressure membrane products (i.e., microfiltration [MF] and ultrafiltration [UF] membranes) in 2015 to support a product selection decision for the 30-mgd GWRS Final Expansion (FE) for which design began in 2017. Piloting was conducted by R&D staff at the OCWD Engineering Research Center (ERC) as well as at OC San Plant No.2 which was necessary because effluent from this plant was introduced at the completion of the GWRSFE as an additional water source for the AWPF. Submersible low-pressure membranes were evaluated from Evoqua Water Technologies, GE Water and Process Technologies, Toray Industries, Inc. and Scinor North America. Based on positive results of the R&D piloting, Scinor UF membranes (late 2018) and Evoqua UF membranes (early 2019) were installed in two full-scale MF / UF cells (E04 and E03) at the AWPF for larger-scale evaluation led by the Engineering Department; ultimately, the Evoqua membranes were selected for the GWRSFE and operate today alongside the pre-existing MF basins that still use an Evoqua (Memcor) MF product. While the MF membranes are composed of polypropylene (PP) and therefore do not tolerate sodium hypochlorite (bleach), polyvinylidene fluoride (PVDF) UF membranes are more robust. One of the previously evaluated UF products was the Toray Industries, Inc. PVDF module (HSU-1515) which demonstrated excellent filtration performance with an optimized chemical cleaning regime at a high flux rate of 40 gfd and an 18-min backwash interval. Currently, R&D is piloting modified Toray PVDF UF modules at the ERC, which are designed to be directly retrofittable to the Evoqua (DuPont Memcor) MF/UF systems. These modifications aim to ensure compatibility with the Memcor full-scale system.

**Project Updates**

*Current*

- Feedwater supply from OC San Plant 2 resumed in Q4 2024. Hence, UF pilot #1 is now treating blended feedwater from P1 and P2 (same as GWRS MF feed), after an extended period with only OC San Plant 1 feedwater (same as GWRS MF feed). The membranes are Toray HFUG S1212B PVDF modules (20 m², non-bundle type) that were installed in pilot at the ERC in May 2024.
- The modules continue to be are operated at a flux rate of 34 gfd, with a backwash interval of 22 minutes, maintenance windows of 2-3 days, and a clean-in-place (CIP) schedule of 30 days.
- R&D staff and GWRS Operation Manager met with the Toray Japan team to discuss piloting results. The team decided to continue the pilot trial for at least 6 months (Q1 2025).

*Future*

- R&D will continue to monitor pilot system performance and provide updates to Toray through Q3 2025.

## Program: RO Antiscalant Product Evaluation for AWPF

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | 2008 - ongoing |
| *External Funding:* | No |

The AWPF RO system requires chemical addition, antiscalant and acid, to the feed to prevent the precipitation of sparingly soluble minerals which foul the membranes. Identifying the appropriate antiscalant product, dosage and feed water pH through pilot testing is an ongoing program. R&D continues to test newly available antiscalants, as well as operating conditions (dose and pH), to identify preferred products and minimum required doses via pilot-scale testing at the ERC using RO pilots. Antiscalant products found to be effective through these efforts are short-listed for bidding through the District's procurement process.

### Project Updates

*Current*

- R&D continued with RO Pilot #4 commissioning work in Q4 2024 and Q1 2025. Maintenance activities included replacing gaskets, fixing leaks on the high-pressure pump, and rebuilding pressure vessel (PV) endcaps. Instrumentation work involved calibrating the feed pH meter, addressing incorrect pH readings on the HMI, and troubleshooting pressure sensor and transmitter issues. The pilot successfully reached flow setpoints.

*Future*

- R&D will test a new antiscalant product from AWC in Q2 or Q3 2025.

## Program: RO Membrane Product Evaluations for AWPF (Satellite Vessels)

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | 2009 - ongoing |
| *External Funding:* | No |

Commercial RO membrane products continue to be developed by manufacturers which have potential for significant benefits in terms of enhanced permeability and rejection. Products for the AWPF are continuously evaluated by R&D through conducting long-term testing (~12 months) using a series of eight test vessels (satellite vessels - SVs) located in the AWPF RO facility. Products deemed successful are short-listed for future membrane procurements. The goal is to expand the list of pre-qualified products to create a competitive environment within the District's procurement process.

### Project Updates

*Current*

- R&D is continuing the ongoing trials of Water Surplus Nanostack coated Dupont Filmtec BW30XFRLE-400 RO membranes in both first stage and third stage satellite vessel positions.
- Staff also maintain ongoing concurrent membrane product evaluation trials across four other satellite vessels to facilitate the upcoming procurement of RO membranes for the plant. The trial

involves the assessment of Toray TLF-400DG, Nitto Hydranautics ESPA2-LD, Dupont Filmtec EXLE-400/28, and Dupont Filmtec BW30XFRLE-400 (control) membrane elements.

- Testing has experienced plant low flow periods and inconsistent feed source blend to the GWRS feedwater. Plant 2 water from OC San as part of the feedwater blend resumed in November 2024.

*Future*

- A set of special aggressive clean in place (CIPs) events and a membrane autopsy were scheduled for Nanostack coated Dupont Filmtec elements in Q2 2025.
- Testing of Nitto Hydranautics ESPA2-LD and Dupont Filmtec EXLE-400/28 is set to terminate due to performance issues (Q2 2025).
- A feed side booster pump with a VFD controller has been procured and will be tested on one of the satellite vessel (SV) systems (C01) to enable pressure boosting for maintaining constant flux operation.
- R&D continues to work with several membrane and technology companies to consider testing additional RO membrane products and enhancement technologies to support upcoming plant RO membrane procurements.

# *Pilot-Scale Treatment Studies – Research & Optimization*

## Project: Evaluation of Hydrogen Peroxide as Disinfectant for Biofouling Control in an MF/RO Treatment System

| | |
|---|---|
| *R&D Staff Contacts*: | Jana Safarik |
| *Start Date/Expected Completion*: | 2025 - TBD |
| *External Funding:* | No |

GWRS feed water contains significant quantities of membrane fouling materials, including nanoparticulates, bacteria, microbial detritus and dissolved organic matter impairing the performance of the UF, MF and RO systems. To control RO biofouling while also benefiting UF and MF, sodium hypochlorite is added to the feedwater at AWPF reacting with ammonia in the secondary effluent (Q1 water) to form monochloramine (MCA) as a useful disinfectant. However, the use of MCA may be problematic because it can cause oxidative damage to the polyamide separation layer of RO membranes, and forms *N*-nitrosodimethylamine (NDMA) and other disinfection by-products (DBPs). To address these concerns, a prior phase of study (completed by R&D in 2024 and supported by a USBR grant in collaboration with Stanford University) explored the use of hydrogen peroxide ($H_2O_2$) as a non-chlorine-based disinfectant and an antifouling agent for UF and RO. $H_2O_2$ is appealing and of interest because it does not produce toxic by-products, is relative low cost, and is available in liquid form. The previous work, utilizing a UF pilot over long-term trials, demonstrated that $H_2O_2$ is effective in maintaining UF performance; and preliminary findings from shorter-term RO piloting suggested it may also help prevent RO fouling. Executive staff met with R&D to review the findings and agreed that R&D should investigate $H_2O_2$ as an alternative disinfectant further in a second phase. The current study will expand the investigation to include MF, which was not part of the original study, but is a key component of the AWPF

treatment train, since the low-pressure membrane system that serves as pretreatment to RO at the AWPF consists of UF-type membranes in some cells and MF-type membranes in the others. Additional RO testing is also needed, though prior more preliminary results were promising.

**Project Updates**

*Current*

- A proposal to USBR seeking funding for the second phase of work was submitted. Unfortunately, USBR funding has been halted due to current federal funding cuts/mandates.
- A manuscript detailing the project results from the first phase of work is in preparation.
- R&D staff continued operating the UF pilots with a hydrogen peroxide dose of 8 mg/L and performing maintenance washes every 3 to 4 days. The pilot has consistently demonstrated strong performance compared to the full-scale UF system which receives MCA. In contrast, the full-scale UF membranes have experienced elevated transmembrane pressures (TMPs), more frequent maintenance washes and cleanings, and an increased need for CIPs. Additionally, the full-scale system has had to reduce membrane flux to maintain production and minimize cleaning frequency. The $H_2O_2$-treated pilot has continued to operate at a significantly higher flux—23 gfd—compared to the plant's operating range of 2–16 gfd and consistently reaches its 30-day cleaning interval.
- Plans are being finalized to transition from UF testing with $H_2O_2$ to evaluating its effects on MF and RO systems. To enable this next phase, commissioning of MF Pilot #3 was completed. The unit is currently undergoing optimization and final plumbing modifications to supply feedwater to RO Pilot #3.

*Future*

- Begin MF testing and RO testing using $H_2O_2$.
- Complete and submit manuscript to share results of the prior phase of work funded by USBR.

## Project: Use of Colloidal Particle Monitoring for Microfiltration/Ultrafiltration Optimization in Water Reuse Facilities

| | |
|---|---|
| *R&D Staff Contact*: | Jana Safarik |
| *Start Date/Expected Completion*: | 2022 – 2025 |
| *External Funding:* | Yes (USBR) |

This project evaluates a novel Nanoparticle Tracking Analysis (NTA) instrument that is a light scattering technology developed by Hyperion Analytical, LLC for use in the water/wastewater industry. OCWD is serving as the test site for this study which seeks to field test the novel technology to: i) directly measure the colloidal particles (i.e., nanoparticles) composition (concentration and size distribution) in microfiltration/ultrafiltration (MF/UF) feed water in order to facilitate smart backwashing (i.e. colloidal

particle count-based backwashing rather than current full-scale GWRS plant approach of fixed time-based backwashing) to minimize membrane fouling, and ii) evaluate use of nanoparticles as a surrogate for pathogen removal for membrane integrity monitoring via online water quality (nanoparticle) monitoring.

**Project Updates**

*Current*

- The nanoparticle analyzer (a new instrument that was installed in the previous reporting period) developed laser issues and had to be returned to the manufacturer for repairs. Unfortunately, this caused a significant delay in the project. After further review of the data collected with the new instrument, the research team concluded that the data was compromised due to the faulty laser.
- The repaired instrument with a new laser was delivered and installed in February 2025. Initial testing shows good data acquisition and recording.
- Following the installation, particle monitoring resumed, and the data from the new analyzer has been consistent, yielding promising results.
- Earlier data collected using the previous version of the analyzer indicated lower particle concentrations. However, measurements obtained with the upgraded laser system confirm that particle concentrations remain consistent with original estimates.
- Ongoing data collection is being conducted to further validate particle levels and assess the reliability and consistency of the updated instrument.

*Future*

- The backwash cycle interval will continue to be adjusted based on nanoparticle loading, alternating between 18-minute and 25-minute intervals. Membrane performance, specifically transmembrane pressure (TMP), will be monitored to evaluate the impact of different backwash intervals and assess the relationship between particle loading and membrane fouling.
- A transition to smart backwashing is planned, wherein backwash frequency will dynamically respond to real-time particle load data—decreasing the interval during periods of high loading and increasing it when particle concentrations are low.
- Feedwater colloidal particle loads and size distributions will continue to be collected.

## Project: Process Control and Optimization of Reverse Osmosis Plants Enabled by Direct RO Membrane Monitoring

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | 2023 – 2024 (completed) |
| *External Funding:* | USBR grant to Noria Water (OCWD providing in-kind support) |

The Noria Water Technologies RO SpotLight™ uses online, direct membrane surface imaging to track surface coverage and permeate flux changes. OCWD R&D has collaborated with Noria Water for several

phases of testing of their technology in previous years, including prior installation on an OCWD RO pilot which resulted in a journal publication. The RO-Spotlight™ has been deployed since late September 2019 in the OCWD GWRS AWPF for real-time monitoring of the tail element exit region of the 3rd stage of full-scale RO Unit E01, where the RO-Spotlight™ is fed high pressure concentrate from an existing sampling line. Noria Water secured grant funding from USBR Pitch to Pilot program for Fiscal Year 2020 on a project focused on process control and optimization of reverse osmosis enabled by direct RO membrane monitoring. OCWD is the sole test site partner for this project (now completed as of this reporting period).

**Project Updates**

*Current*

- Noria team completed the pilot study in Q4 2024. The pilot system was removed from ERC in Q1 2025. While Noria will continue data analysis and project report development for the funding agency, OCWD's role in this project is complete.

*Future*

- This project is complete. R&D staff look forward to receiving the draft report from Noria Water which will further allow staff to evaluate potential usefulness of the technology for OCWD.

## Project: Separation and Destruction of Per- and Polyfluoroalkyl Substances (PFAS) from Potable Reuse Reverse Osmosis Concentrate

| | |
|---|---|
| *R&D Staff Contacts*: | Meeta Pannu, Han Gu |
| *Start Date/Expected Completion*: | March 2024 – December 2025 |
| *External Funding*: | Yes, USBR |

The objective of this study is to evaluate the feasibility of removing PFAS from reverse osmosis concentrate (ROC) by coupling adsorption technology with destruction of PFAS from the spent media solid waste. The project team will evaluate the effectiveness of treatment of ROC by adsorbent media such as granular activated carbon (GAC), ion exchange (IX) resins and novel alternative adsorbents (first step) followed by destruction of the PFAS in the spent (exhausted) media (a solid waste) via a promising destruction technology (second step). The overall concept is to evaluate whether it will be feasible to, in a stepwise approach, remove PFAS from ROC and then destroy the PFAS. This project is being led by OCWD R&D with pilot testing in the GWRS AWPF RO building. Project partners are Ovivo, Kennedy Jenks (KJ) and OC San. The project began with Ovivo delivering their "mini-pilot" of IX columns on site to OCWD (commissioned in August 2024) to complete preliminary IX product testing and generate spent adsorbents for a bench-scale destruction study. Later, Ovivo will provide a larger-scale adsorption and destruction pilot to provide an integrated solution for PFAS treatment. The destruction technology uses electrooxidation (developed previously by E2Metrix) for PFAS destruction. OC San is analyzing PFAS for the water samples generated by this project.

*Current*

- R&D finished setting up subcontracts with the project partners (Ovivo and Kennedy Jenks) and started working on project tasks.
- Since the initial commissioning of Ovivo's mini pilot (for IX columns), two rounds of testing (Round 1 and Round 2) have been conducted. Round 1 assessed six Ovivo-provided regenerable IX adsorbents for their ability to remove PFAS from ROC, using an empty bed contact time (EBCT) of 2 minutes. Three of the resins were ineffective, while the remaining three showed better performance and were selected for further testing. These three higher-performing resins were then chosen for Round 2 testing to further optimize contact times and regeneration protocols.
- A progress report was submitted to USBR at the end of October 2024.
- R&D staff submitted quarterly invoices to the funding agency, USBR.
- R&D staff (Han Gu) presented the preliminary findings of this project at the Membrane Technology Conference in Feb 2025 (MTC 2025).
- R&D submitted an abstract to present the findings of this project at AWWA's Water Quality Treatment Conference (WQTC) in November 2025.
- The team continues to meet on a biweekly basis to discuss project progress.
- The R&D team along with AWPF Operations staff continue to assist Ovivo's team to identify an appropriate location for the larger-scale pilot.

*Future*

- Round 3 of testing just began in March 2025 which will last 5-6 weeks. This round of testing will help refine the adsorbent selection and EBCT for PFAS removal and further refine regeneration protocols for regenerable adsorbents after they are exhausted.
- The larger-scale adsorption and destruction pilot will be brought on-site to study PFAS breakthrough on select, best-performing adsorbents as well as demonstrate on-site PFAS destruction in the regenerant solution.
- The team will start working on the final report to submit to the funding agency, USBR.

## Project: Improving RO Recovery through Optimization of Flux and Pump Usage with Real-Time Sensor Connectivity, Data-driven Modeling, and Automation

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | April 2023 – 2026 |
| *External Funding*: | Yes, USBR |

This project is led by Hazen and Sawyer in partnership with OCWD on the development and deployment of advanced machine learning (ML) and automation systems aimed at optimizing reverse osmosis (RO) operations, particularly RO recovery. The goal is to improve efficiency, reduce operational costs, and

enhance overall performance. This project takes place at OCWD's Engineering Research Center, utilizing an existing RO pilot system.

*Current*

- An RO pilot test was conducted from August 2024 to January 2025 using RO Pilot #3. The pilot operated with recovery rates ranging from 85% to 93% (where recovery is increased above the conventional 85% via partial RO concentrate recycling to the feed) to gather performance data under varying recovery conditions. For reference, the AWPF main RO plant operates at 85%, which is considered the upper limit for this facility based on the feedwater quality. The test continued until significant scaling and fouling were observed, as indicated by the specific flux data in the tail element and the tail pressure vessel of the second stage. Data were analyzed by Hazen using machine learning.

- R&D staff (Han Gu) and Hazen project lead Javad presented the preliminary findings of this project at the Membrane Technology Conference in Feb 2025 (MTC 2025).

*Future*

- With respect to a separate project task wherein Hazen is developing a Power BI dashboard for RO performance monitoring, R&D staff will review and provide feedback on the draft version of the dashboards that will display KPIs, fault detection results, and other critical insights derived from the ML models deployed on Hazen's cloud infrastructure.

## Project: Optimization of RO Feed Pretreatment Train Enabled by Machine Learning

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu |
| *Start Date/Expected Completion*: | Nov. 2024 – Dec 2025 |
| *External Funding*: | Yes, NAWI grant to university team |

The objective of this project is to develop a novel RO feedwater pretreatment system using mixed coagulants to target a broad range of contaminants, optimizing coagulant dosing in a pretreatment train with hydrocyclones and ultrafiltration. This system will incorporate machine learning for real-time control and adaptive optimization, enabling it to adjust to variations in feedwater quality and operating conditions. The goal is to create a scalable, efficient pretreatment process that improves contaminant removal, reduces sludge volumes, and enhances overall system performance for both small and large-scale RO plants.

*Current*

- R&D staff had a virtual meeting with Professor Samanvaya Srivastava (UCLA) to discuss the status of the project and sampling needs for MF feed water.
- R&D staff hosted UCLA researchers from Prof. Srivastava's lab to collect 220 gallons of UF feed water after chlorination in February and March 2025.

*Future*

- R&D will host a small pretreatment skid designed by the UCLA team to test inline coagulation with hydrocyclone pretreatment and ultrafiltration with GWRS MF feed water (Q3 2025).

# *Method Development*

## Project: Advancing Traditional Microbial Monitoring using the MinION Long-Read DNA Sequencer

| | |
|---|---|
| *R&D Staff Contacts*: | Julio Polanco |
| *Start Date/Expected Completion*: | 2022 – ongoing |
| *External Funding* | No |

The goal of this study is to implement a state-of-the-art microbial monitoring program that utilizes molecular methods including quantitative PCR (qPCR) and long-read environmental DNA (eDNA) sequencing technology to advance the current method of microbial monitoring at potable reuse facilities like GWRS. These facilities utilize wastewater as a source and therefore require stringent monitoring programs to verify treatment performance and minimize public health risk. Currently, microbial monitoring programs for potable reuse rely on detection of microbial surrogate indicators such as *E. coli* and fecal and total coliform to verify removal and validate the high quality of the finished water. These are somewhat outdated surrogate assays for presence/absence enumeration of long-used indicators of fecal contamination that have been adopted from historical use in assessment and regulation of conventional drinking waters. While affordable, these assays fail to provide comprehensive microbial community information and conclusive evidence of pathogen removal. Specifically, the use of traditional microbial indicators (e.g., *E. coli* and coliforms) provides an imprecise direct assessment of potential pathogenic risk and offers limited process performance insights. The proposed study aims to elevate traditional microbial monitoring programs by employing DNA sequencing technology for microbial community characterization at specific stages of advanced treatment. Use of DNA sequencing techniques and subsequent bioinformatic analysis will enable the characterization of microbial communities that reside at each treatment stage. Additionally, as a complementary assay, removal of specific microbial targets (indicators) can be measured using quantitative PCR (qPCR) techniques to demonstrate treatment performance. The key aim of this study is to leverage these techniques to modernize current microbial water quality practices by quantitating microbial removal to inform operational performance, profiling the broader microbial community at each treatment stage, and creating a historical record of comprehensive microbial water quality.

*Current*

- R&D staff has completed the long-term sample collection phase for this study, and no additional large-volume water samples are planned to be collected. In summary, monthly samples were collected from various sites along the GWRS AWPF between Q1 2023 through Q1 2025. Sampling sites included AWPF (Q1) influent (n=22), microfiltration/ultrafiltration (MF/UF) feed (n=22), reverse osmosis (RO) feed (n=22), and ultraviolet product (UVP) water (n=16). All samples have been concentrated and preserved at –80 °C for processing and archival purposes.
- R&D staff continue to isolate eDNA from remaining samples preserved at –80 °C including those collected from RO feed and UV product water samples. Samples are being analyzed for eDNA concentrations and results will be reviewed to inform next steps (i.e. DNA sequencing or qPCR analysis).

- Sequencing data obtained from Q1 and MF/UF feed have been analyzed. Data has been reviewed for method sensitivity and quality control. A preview of this data was presented as a conference poster at the 2025 WateReuse Symposium in Tampa, FL.
- Additional quality control samples including field blanks and matrix spike recovery samples collected in parallel with all AWPF samples are currently being analyzed to estimate eDNA recovery and inform long-term feasibility of eDNA sequencing.
- A draft budget plan was developed to evaluate costs associated with maintaining an ongoing advanced microbial monitoring program. Estimates were reported in the WateReuse conference poster and will be used to draft a manuscript.

*Future*

- Initial results show that eDNA amounts isolated from RO feed and UVP water are too low for MinION sequencing. As a result, R&D staff will explore the use of qPCR for RO feed and UVP samples. Specific microbial targets for qPCR will be selected based on Q1 and MF/UF long-read (MinION) sequencing results to evaluate log-removal.
- R&D will apply statistical analyses to interpret eDNA sequence datasets to quantitate changes in microbial diversity through MF/UF treatment over time.
- Sequencing results from this study along with a utility perspective on feasibility of maintaining an advanced microbial monitoring program will be reported in a manuscript to be submitted to a peer-reviewed scientific journal.

## Project: Scaling Up a Field-Deployable Water Sampling Device to Rapidly Screen Adsorbable Organic Fluorine *In Situ*

| | |
|---|---|
| *R&D Staff Contacts*: | Meeta Pannu |
| *Start Date/Expected Completion*: | April 2024 – April 2026 |
| *External Funding:* | Yes, USEPA |

The objective of a related, prior project which commenced at the end of 2022 (Water Research Foundation grant # 5102) was to explore and demonstrate the Particle-Induced Gamma Ray Emission (PIGE) method as a practical tool to quantify PFAS in surface water and groundwater. The current project will perform continued work on the PIGE technique and will serve as a second phase of the project. The University of Notre Dame (UND) and FAS (Forever Analytical Services) are the project leads for this project and have received funding from USEPA's Small Business Innovation Research Program (SBIR) Phase II. OCWD R&D will receive a subaward of $50,000 to perform this research project. FAS has developed an innovative technique using PIGE spectroscopy to rapidly screen drinking water for PFAS. This patented method allows for high-throughput screening of water samples in a two-step process. In the first step, a solid-phase extraction device with low-cost commercial filters is used to extract PFAS from each water sample. These filters are then exposed to an accelerated beam of protons, which results in the production of characteristic gamma rays. By measuring these gamma rays, the total fluorine content of each sample can be determined. PIGE is the only spectroscopic method that enables such rapid and

precise total adsorbable organic fluorine analysis, making it sensitive enough to screen for PFAS in drinking water at extremely low levels, below 4 parts per trillion (ppt).

As a part of this project, OCWD will coordinate field measurements at approximately 8 - 12 diverse water utilities from across the United States to beta-test the modified SPE device with samples from actual drinking water providers. FAS will analyze the AOF for each of these water sources, and OCWD will collect the routine water quality parameters reported with each sample (DOC, pH, temperature, conductivity) and we will look for effects on PFAS spike-recovery experiments in laboratory bench tests. The results from this testing across the US can be directly compared to results obtained by the utilities using their own results from EPA methods 537.1 and 533.

**Project Updates**

*Current*

- R&D staff met with UND and FAS staff and discussed sites to test the field deployable PIGE apparatus.

*Future*

- An OCWD subcontract will be set up under UND and FAS.
- The PIGE apparatus will be shipped to R&D to test out in the field.
- Along with the PIGE apparatus, UND plans to send detailed instructions for sample collection e.g., in the form of a video.
- R&D staff will coordinate field measurements of PFAS using PIGE at approximately 8-12 diverse water utilities/sites across the United States.

## Project: Evaluation of Bench-Scale Methods to Predict Drinking Water PFAS Removal Performance of IX and Alternative Adsorbents

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|---|---|
| *R&D Staff Contacts*: | Meeta Pannu |
| *Start Date/Expected Completion*: | January 2022 – June 2025 |
| *External Funding*: | Yes, The Water Research Foundation (WRF) |

This study is evaluating a variety of bench-scale testing protocols for IX resins to identify which approach is best suited to predict the removal of PFAS in full-scale systems. Testing will also be extended to other non-IX alternative adsorbents. The same IX resins and District water source (groundwater) used for the Phase I pilot were evaluated by conventional bottle point isotherm (BPI), and Rapid Small-Scale Column Testing (RSSCT). A previously planned Recirculating Column Isotherm (RCI) testing was dropped from the project due to poor results, and the project is now focused on comparing RSSCT and BPI methods. This study has also tested IX resins from the OCWD Phase II pilot. This critical validation exercise will ascertain to what degree the predictions of the BPI, or RSSCT (each completed in days) match the observed performance in the pilot (which required months). Based on these initial results, further IX resins will be tested using well water from other participating agencies. Participants include OCWD, Yorba Linda

Water District (YLWD) and Water Replenishment District (WRD) of Southern California. YLWD is also collaborating with the District on a full-scale test of two IX resins side-by-side, and WRD has completed a PFAS pilot; the proposed research study will compare study-measured bench-scale predictions of their waters to their full-scale (YLWD) or pilot-scale (WRD) IX system performances.

**Project Updates**

*Current*

- The abstract for the work conducted in this project was accepted and an oral presentation was delivered at the Western Groundwater Conference in Lake Tahoe (October 2024).
- The project was successfully completed during this period.
- The draft final report was submitted to WRF on March 27, 2025.
- An invoice for the final draft report was prepared and submitted along with the report.

*Future*

- In response to feedback from WRF on the draft final report, revisions will be incorporated into the final report, which will then be submitted to WRF for final report publication.
- An invoice for the final report will be prepared and submitted alongside the completed report.
- The team present the results/findings of this study at conferences and/or webinars.

## Project: Development of an Omics Platform and a Testbed for Dynamic Characterization of Biofouling

| | |
|---|---|
| *R&D Staff Contacts*: | Han Gu, Jana Safarik |
| *Start Date/Expected Completion*: | 2022 – 2026 |
| *External Funding:* | Yes (NAWI grant to university team) |

OCWD is serving as the test site for this study which seeks to characterize RO biofilm maturation dynamics by building a comprehensive omics platform to fundamentally understand biofilm formation and mitigate biofouling in RO systems. A membrane fouling simulator (MFS) provided by the university research team was installed on the District's full-scale RO system feed line to collect data. A benefit of the MFS is the ability to collect information without disrupting RO plant operation (i.e., where more conventional biofilm observation and sampling would require interrupting and sacrificing a full-scale RO membrane element). The project team was awarded research funding ($600K) from NAWI and includes the University of Texas at Austin, Oak Ridge National Laboratory, and Rice University.

**Project Updates**

*Current*

- OCWD staff attended biweekly meetings with selected project team members, led by Prof. Manish Kumar of UT Austin.
- R&D staff and UT Austin graduate student researcher commissioned the pressurized and unpressurized flow cells systems in the AWPF RO plant (November 2024).
- R&D staff carried out monthly membrane coupon extractions and replacements for the pressurized and unpressurized flow cells set up in the RO plant.

*Future*

- R&D staff will host the UT Austin graduate student to start the RO Pilot phase of the study using a catalytic membrane (Q2 2025).

## Project: Real-Time Detection of Volatile Organic Compounds in RO-Based Potable Reuse

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|---|---|
| *R&D Staff Contacts:* | Jana Safarik, Megan Plumlee |
| *Start Date/Expected Completion* | 2023 to 2025 |
| *External Funding* | Yes (WRF 5210 grant) |



Online total organic carbon (TOC) analyzers are commonly used as a surrogate for pathogen removal in reverse osmosis (RO) systems, to ensure compliance with final product water TOC targets, and to detect episodic chemical spikes. However, some online TOC analyzers may not effectively detect volatile organic compounds (VOCs). The goal of this project is to implement a near real-time VOC analyzer capable of detecting specific VOCs at low concentrations (µg/L to ng/L) before and after RO and granular activated carbon (GAC) treatment for potable reuse applications. As part of a study led by Southern Nevada Water Authority (SNWA) and funded by their grant from The Water Research Foundation (WRF), R&D is collaborating with Entanglement Technologies, Inc. to test their innovative AROMA in-field VOC analyzer, which can perform multi-compound measurements in water matrices. AROMA utilizes a direct sparge interface that purges VOCs from water and collects them onto a sorbent within the analyzer. The sorbent is then heated, releasing the VOCs, which are chromatographically separated before being detected via cavity ring-down spectroscopy (CRDS). The AROMA analyzer is currently installed in the RO building and is connected to both the RO feed and RO permeate streams to measure purgeable VOCs online. It monitors more than 20 VOCs, including acetone, dichloromethane, toluene, and chloroform, with a measurement cycle of approximately 50 minutes.

*Current*

- The AROMA continuously analyzed RO feed and RO permeate water streams in the full-scale RO plant successfully for 6 months, demonstrating feasibility of long-term operation of the analyzer.

- Trends in the data showed fluctuations in VOC concentrations over approximately 12-hour cycles. Several target compounds were detected in both the feed and permeate during the testing period. These compounds are typically present in the feedwater, though concentration appeared slightly elevated on a few occasions.
- TOC analyzers were installed on the same RO feed and RO permeate streams to compare VOC concentrations and trends to online TOC. No direct correlations between online VOC measurements and online TOC measurements were observed.

*Future*

- The AROMA will be relocated to R&D ERC and installed on an RO pilot. The SNWA team will visit OCWD to execute a VOCs spiking study at pilot-scale as chemical peak simulations.

# *Data Technologies – Digitalization, Dashboards, and Analytics*

## Project: Pani Energy Dashboard Pilot Trial for GWRS Plant

*R&D Staff Contacts*: Han Gu, Andrew Huang
*Start Date/Expected Completion*: 2022 – 2025
*External Funding:* No

pani

In this study, R&D staff coordinated with Water Production staff to execute a 12-month trial (pilot) of the Pani Energy software service tailored to the GWRS RO plant. Pani Energy is a Canadian software company that provides an artificial intelligence (AI) and machine learning (ML) based service called Pani ZED™. The platform collects and analyzes operational data, providing timely decision support and actionable intelligence to operations and maintenance (O&M) professionals. As a first step, Pani Energy created a cloud-based data dashboard for selected units of the GWRS RO plant. The service can provide predictive insights and warn of system faults ahead of time. The platform can detect and provide actionable information on sensor failures, off-standard flowrates or pressures, and abnormal inputs/readings. In the long run, the platform is proposed to reduce RO operating costs and extend membrane life and reduce replacement costs. After one year, this study was extended to a second year, focused on addressing specific feedback and feature requests by the R&D and Operations staff.

**Project Updates**

*Current*

- Operations (Operations Manager and Chief Operator) and R&D staff continued to trial the Pani Energy dashboard of 9 full-scale RO units. Pani continued to hold weekly or biweekly virtual meetings with these OCWD staff to solicit feedback.
- Pani Energy continued to develop and enhance the new user case modules of the dashboard based on Ops/R&D feedback focusing on CIP economical analytics and RO membrane replacement. Adding user-specific modules was identified by the Pani-OCWD team as a potential strategy to improve the overall dashboard that otherwise is not providing sufficient benefit to Operations staff.

*Future*

- As the team is near the conclusion of the second year of the long-term trial, Operations and R&D staff will convene to review the overall findings of the product trial and make a determination as to whether OCWD would like to go forward with implementing this dashboard via a software-as-a-service (SaaS) subscription.
- Meantime, the team will continue to hold monthly virtual meetings to review and discuss dashboard features.

## Project: Data-Driven Fault Detection and Process Control for Potable Reuse with Reverse Osmosis

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|---|---|
| *R&D Staff Contacts*: | Han Gu, Jana Safarik, Andrew Huang |
| *Start Date/Expected Completion*: | 2022 – 2025 |
| *External Funding:* | Yes (NAWI) |

Carollo is leading this research project awarded funding from the National Alliance for Water Innovation (NAWI). OCWD has agreed to serve as a test site (along with one other water agency) and will be responsible for completing aspects of the research scope including reverse osmosis (RO) pilot operation. RO is the core treatment process for most potable reuse projects. RO-based treatment produces a high-quality purified water but there is need for improvement in operation to optimize energy and cost. Influent water quality can change quickly due to daily patterns or industrial discharges. Potable reuse utilities use numerous sensors for monitoring performance, but the data is underutilized. Fault detection is based on fixed limits on single variables, and cleaning is often conducted based on a conservative, fixed schedule. Accordingly, opportunity exists for adaptive, data-driven fault detection and process control that takes the whole treatment train into account. Statistical and machine learning (ML) modeling approaches will be used for fault detection and prediction. Fault detection will benchmark methods to detect industrial discharges and instrumentation failures. Prediction models will be used for real-time control and optimization using genetic algorithms. State-of-the-industry benchmarks will be selected in consultation with utility partners. Desktop evaluations of cutting-edge methodologies in year one will lead to cloud-based, semi-autonomous, near-real-time implementation at pilot scale in year two.

### Project Updates

*Current*

- R&D staff have been collaborating with Hyperion Analytical to pilot their online NDMA analyzer, with the goal of enabling more frequent data collection to support the AI/ML model. However, the analyzer is not yet field-ready, and as a result, the proposed testing will not be conducted during the current project timeline. R&D staff will continue to engage with Hyperion to support ongoing development, with the intention of positioning OCWD as a test site once the instrument is ready for field deployment.

- Data and statistical analysis comparing the number of alarms using traditional statistical methods versus the newly implemented Shewhart Sign Test method was provided to Carollo for inclusion in NAWI 5.17 quarterly report #10.

*Future*

- R&D staff propose transitioning the Shewhart dashboard concept into a Phase 2 trial implementation using data from the full-scale plant's existing TOC analyzers that monitor RO feed and permeate. To do so, R&D staff will leverage insights from regulatory and programming staff to automate the calculation and reporting of LRV via developing TOC LRV dashboard.

## Project: Process Twins for Decision-Support and Dynamic Energy and Cost Prediction in Water Reuse Processes

*R&D Staff Contacts*: Han Gu
*Start Date/Expected Completion*: 2023 – 2025
*External Funding:* Yes (NAWI grant to university team)


This project is funded by NAWI and led by a collaborative team comprising UCI and Oak Ridge National Laboratory and aims to develop advanced data analytics methods suitable for water reuse processes. Over a two-year timeline, the project focuses on creating a method for water cost optimization, taking into account power cost variations. The deliverables include a physical "plant" twin for data collection and investigation, serving as a pilot, and a digital twin adaptable to full-scale facilities. OCWD plays a crucial role as a test bed partner, contributing to the project's success as a participating utility. The project encompasses various tasks such as data collection from utilities, analysis of electrical power tariff structures, development of physical and digital twins, and the creation of a comprehensive process and energy model for water reuse. The ultimate goal is to enhance decision support and predict dynamic energy and cost factors in water reuse, fostering knowledge transfer for broader industry impact.

### Project Updates

*Current*

- The UCI team conducted several short-duration runs at varying recycle ratios and recovery setpoints to assess energy usage (Q4 2024).
- R&D staff participated in a workshop organized by NAWI on "Flexible Desalination and Water Reuse Systems" at UCI (Q1 2025).
- The UCI team and R&D staff hold monthly meetings to review the progress of the pilot study and ongoing modeling efforts.

*Future*

- R&D staff will continue providing onsite support for the UCI team to complete the remaining piloting study.

## Program: Online Dashboards for Real-time Monitoring and Analytics

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|---|---|
| *R&D Staff Contacts*: | Andrew Huang |
| *Start Date/Expected Completion*: | 2022 - ongoing |
| *External Funding:* | No |

Online dashboards provide a consolidated view of up-to-date data, key performance indicators and metrics, and therefore serve as powerful tools for organizations and key project stakeholders. Real-time dashboards allow data visualization that automatically updates with relevant information based on the latest available data. Real-time analytics can be used to model and predict long-term trends allowing users to glean quick insights at a glance. Dashboards also expedite decision making by automating data collection, plotting, analysis, and report building. R&D staff are developing various dashboards for different District stakeholders for multiple projects. The dashboards and associated data are hosted on the cloud (Amazon Web Services).

Producer PFAS Facilities Dashboard: One of these dashboards is the Producers' PFAS treatment facilities dashboard. It was developed in 2023 and continues to operate. Data is programmatically fetched from the WRMS database every 24 hours. The dashboard provides PFAS influent concentration and lead media, lag media, and combined effluent concentrations for every treatment site. Data can be graphed and exported with just a few clicks making it less cumbersome to visualize and review data from multiple sites.

Online Sensor Dashboards: R&D maintains and operates several online sensors that support ongoing research projects. Previously these sensors solely logged data locally (data was stored in the sensor) which necessitated frequent data downloads. Several of the sensors (Sievers M9 TOC analyzers, Turner C3 fluorometers) were configured to output data to a time-series database hosted in the cloud. Dashboards were developed for each analyzer. The data from each analyzer is streamed to the dashboard in real-time allowing for data to be viewed instantaneously.

AWPF Influent TOC Dashboard: This dashboard is in development. As part of a prior R&D study, online TOC analyzers from Veolia were piloted and ultimately purchased and permanently installed, which are more suitable for lower-quality water (i.e., secondary effluent) in contrast to the online TOC analyzers the District currently employs on AWPF RO feed and permeate. The online TOC analyzers are installed at Q1 (i.e., AWPF influent location that is a blend of OC San Plant 1 and Plant 2 secondary effluent) and separately at OC San Plant 2 (Huntington Beach) secondary effluent. The dashboard enables real-time display of TOC concentration in the AWPF influent which varies over time and between the two source waters, and other parameters.

FHQ Recharge Basin Dashboard: This dashboard is in development. In 2024, R&D staff met with Recharge staff from the District's Field Headquarters recharge facilities at FHQ to learn about the District's recharge data collection procedures. The goal is to determine what data should be included in the dashboard, identifying staff needs, and determining what will make data processing easier, more interpretable, and more user-friendly.

ERC Pilot Units Dashboard: This dashboard is in development related to the ongoing pilot upgrades being completed at the District's ERC for UF and RO pilots, to enhance data access for R&D staff.

**Project Updates**

*Current*

- R&D continually updates the Producers' PFAS treatment facilities dashboard, adding new features as needed, including in collaboration with staff from IS Department. In this reporting period, the dashboard was updated to be dynamic, meaning new sites are automatically added to the user interface as they are added to WRMS.
- R&D drafted a new proposal to the USBR to fund and develop the proposed FHQ Recharge Basin Dashboard, in response to a USBR research grant funding opportunity related to water digitalization. The proposal was 75% complete when USBR cancelled the opportunity due to the turmoil in the federal government.
- The online sensor dashboards continue to collect data in support of NAWI project 5.17, Data-Driven Fault Detection and Process Control for Potable Reuse with Reverse Osmosis (described earlier in this report).
- Staff made progress in this period on creating the ERC pilot dashboard. Data can now be automatically downloaded and viewed in real time, and stored in a SCADA historian, making it accessible and usable for analysis. This includes data for the recently upgraded RO pilot #3 and 4, and UF pilot #1, #2 and #3.
- An SFTP server was setup to allow external collaborators to access pilot performance data at the ERC. Data is automatically exported weekly.
- IoT devices were installed on the R3 TOC analyzers at Q1 and OC San Plant 2's secondary effluent. These devices interface with the analyzers via the MODBUS protocol and send data back to a database. A dashboard was developed allowing for real-time display of TOC and other parameters.

*Future*

- R&D will continue development of all currently deployed dashboards by adding new features while incorporating new instruments/sensors to be monitored.
- R&D will continue to develop ideas for the recharge-related dashboard and review currently available data streams.
- Related to ongoing pilot upgrades being completed at the District's ERC for UF and RO pilots, R&D will continue developing dashboards to enable remote viewing of real-time data such as for the recently upgraded RO pilot #3 and 4, and UF pilots #1-3.

# *Groundwater Recharge and Treatment*

## Project: In-Situ Removal of PFAS During Managed Aquifer Recharge

*R&D Staff Contacts*: Meeta Pannu, Andrew Huang
*Start Date/Expected Completion*: Fall 2020 to September 2025
*External Funding:* Yes (USBR)

R&D Department Field Research Laboratory (FRL) staff partnered with Colorado School of Mines (Mines) and Jacobs (staff person is now with Kleinfelder) to secure $200,000 in grant funding through the US Bureau of Reclamation's (USBR) Pitch to Pilot Program to conduct a study evaluating the feasibility of removing per- and polyfluoroalkyl substances (PFAS) in-situ during managed aquifer recharge. R&D FRL is leading and executing the laboratory and field scale phases of the project. The project utilizes both a pilot-scale column system and a larger-scale demonstration system. For the demo-scale part of this study, PFAS-adsorbing media were installed in rehabilitated concrete test cells with support from Forebay heavy equipment operators. R&D staff execute and/or coordinate sampling and monitoring of the systems to track performance over time. Both Water Quality Department and Laboratory Department staff support PFAS sampling and analyses efforts. Mines faculty and a Kleinfelder consulting engineer and PFAS expert serve as project technical advisors. Kleinfelder is also developing a high-level economic analysis to help assess the overall feasibility of the concept using the pilot- and demo-scale results.

### Project Updates

*Current*

- Monitoring of the pilot columns is ongoing with data collected, processed and analyzed for the USBR draft final report. Thirteen water quality sampling events have been conducted so far with two more planned.
- The two demo-scale concrete test cells commissioned for testing in the previous period were monitored during this period to assess PFAS breakthrough. One test cell was designed to simulate a conventional recharge basin (control cell), while the other was designed to simulate a recharge basin with a layer of adsorbent media embedded in the subsurface for in-situ PFAS sequestration.
- The concept cost estimate is currently being prepared by Kleinfelder consulting engineer who is a subawardee under the District for this grant.

*Future*

- Data collected will be summarized and an abstract will be submitted for an upcoming Western Groundwater Conference (WGC) at San Diego in October 2025.
- The demo-scale concrete test cells performance will continue to be monitored for PFAS breakthrough that will inform full-scale design and an improved cost estimate.
- R&D staff is working on final report to be submitted to the grant funding agency by summer 2025.

## Program: Pilot Scale Evaluation of PFAS Removal Media (Phase 4) and (Coupled Project) Estimating PFAS using Total Fluorine Methods in Influent and Effluents from a Pilot-Scale Adsorption System

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| *R&D Staff Contacts:* | Meeta Pannu |
| *Start Date/Expected Completion*: | 2024 – ongoing |
| *External Funding:* | Yes, WRF |

The District commenced a pilot testing program in December 2019 led by R&D to evaluate the performance of different adsorbent-based products to remove PFAS from groundwater. The objective was to determine the product(s) that are most efficient at removing PFAS for Orange County water retailers (Producers). GAC products that were evaluated included bituminous (both virgin and reactivated), lignite, and enhanced coconut-shell based products. IX resins evaluated were single-use anion exchange media. Alternative adsorbents were also evaluated. The pilot was located at Bessie well close to OCWD's Anaheim Field office. The completed, first phase of the pilot study is now referred to as the "Phase I" pilot study. The objective of the subsequent phases of piloting (Phase II and III) was to evaluate additional adsorbents (media products) to remove PFAS from groundwater. As of September 2023, Phases II and III are complete and all columns were decommissioned. Phase 4 is planned to commission a new pilot skid in collaboration with the Yorba Linda Water District (YLWD) at their full-scale PFAS treatment site (Producer site). The purpose of moving the pilot to YLWD is to obtain a more representative source water quality (production well water) to get a more accurate prediction of performance for tested medias for full-scale Producer systems. Several adsorbents will be tested at the site including GAC, IX and alternative adsorbents (AA) plus novel regenerable medias. In addition to the primary goal of identifying promising candidate medias, the testing will re-confirm performance of top adsorbents that were previously evaluated at the earlier location and will evaluate application of alternative analytical methods that estimate "total PFAS" concentration (i.e., known and unknown PFAS potentially present from the family of compounds). Total PFAS in the source groundwater and pilot-treated effluent will be estimated by measuring adsorbable organic fluorine in combination with other broad spectrum PFAS measurement methods.

### Project Updates

*Current*

- The team continued work to set up the PFAS pilot at YLWD. R&D staff with help from YLWD staff procured a shed for housing the pilot system, which has been installed at the Yorba Linda Water District's PFAS Treatment Facility. Engineering Department staff are collaborating with R&D to install the pilot, such as planned plumbing contractor work.
- In collaboration with Xylem, R&D facilitated the delivery and installation of a pilot system consisting of a 4-column setup, which was placed inside the shed.
- The team was informed that the proposal submitted in October 2024 has been accepted for funding under WRF's TC program for an amount of $300,000. OCWD will serve as the prime and contribute $100,000 in cash, while Tucson Water has committed to providing $50,000 in cash for

the project. California State Division of Drinking Water (DDW) has agreed to contribute by providing in-kind in the form of sample analysis at their contracted laboratory (Babcock).

- R&D continues to research new adsorbent products (e.g., regenerable resins) to be evaluated in the new pilot located at YLWD, and is considering testing different adsorbents in series.
- R&D is working on signing the research grant contract with WRF, as well as setting up the OCWD-subawardee agreements with the project partners that will be subcontractors.

*Future*

- Planning and preparation will continue for the pilot to be sited at YLWD including installation of proper plumbing and electrical at the site. R&D is working with staff from the Engineering Department to identify appropriate contractors to perform the work.
- The R&D team will organize several meetings with project partners and sub-teams (State DDW, Tucson Water, Babcock Labs, Subcontractors) based on the specific tasks outlined in this project.
- The R&D plans to commission two GAC columns, one ion exchange (IX) column, and one alternative adsorbent product for the first phase of the pilot.

## Project: Supercritical Water Oxidation (SCWO) Destruction of PFAS Concentrated Spent Media

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| *R&D Staff Contacts*: | Megan Plumlee |
| *Start Date/Expected Completion*: | Winter 2022 - ongoing |
| *External Funding:* | No |

The objective of this project is to evaluate supercritical water oxidation (SCWO) technology for destroying PFAS along with spent IX resins used by wellhead treatment systems for removing PFAS from groundwater prior to drinking water distribution. This technology is a potential solution for OCWD and its Producer agencies to destroy the region's spent IX resin waste that otherwise necessitates disposal in landfills or incinerators. SCWO is a physical-thermal process relying on the unique reactivity and transport properties of water above 374°C and 3200 psi. Through the addition of oxygen, conditions are created where all organics (including PFAS) are soluble and completely oxidized forming carbon dioxide, clean water, and inorganic salts. A limited number of competing companies including start-ups have advanced the SCWO practice for the specific, unique application of spent treatment media, marketing approaches that are commercially available or near-commercial.

*Current*

- R&D staff together with Claire Johnson (Regulatory) held regular follow-up meetings with General Atomics and (separately) 374Water to advance the planning for near-term future demonstration-scale tests.
- Engineering staff (Alex Waite) have requested information from Revive to develop a preliminary cost assessment (compared to District's/Producers current GAC waste disposal costs) to advise

R&D on whether to consider piloting the Revive technology known as GAC Renew. With GAC Renew, spent GAC from a wellhead PFAS treatment system could be regenerated onsite using a proprietary solvent that is circulated through lead/lag vessels, removing the adsorbed PFAS from the spent media. The company would then haul the PFAS concentrate offsite to be destroyed at a SCWO facility.

- Previously, R&D worked with 374Water on a test plan to evaluate their SCWO technology. More recently, 374Water has re-prioritized the OCWD project to ensure the test gets completed. They updated the draft test plan for potential execution of a test this summer, in which they would use SCWO to destroy one supersack of spent IX waste from one of the Producer PFAS treatment facilities and collect data to demonstrate PFAS destruction.
- Previously, General Atomics (GA) offered to conduct testing (at no cost) on spent IX resin at their SCWO facility in San Diego. They picked up spent IX resin from one of the local groundwater Producers, Serrano Water District in 2024 and brought it to their facility in San Diego. The testing was delayed when GA no longer had funding. Funding was recently renewed and test planning was finalized.
- GA completed a preliminary SCWO test on the resin as-received which was not successful because the IX resin beads are large enough to cause temperature spikes above allowable limits in the SCWO reactor due to the embedded high energy content of IX resins. This was not unexpected by GA staff who have some experience with other clients' IX resins; but they felt it was worth a try since grinding the beads requires an extra pretreatment step.

*Future*

- 374Water testing of SCWO destruction of Producer-provided spent IX resin is targeted for Summer 2025 if planning continues according to schedule.
- GA will grind the previously provided spent IX resin, using specialized equipment they have, to create a more suitable feedstock for SCWO. Then they will re-attempt the SCWO destruction test using their reactor.

## Project: Soil Aquifer Treatment (SAT) Virus Log Removal Values (LRVs) for Project-Specific GWRS Credit

*R&D Staff Contacts*: Julio Polanco
*Start Date/Expected Completion*: Spring 2022 to Spring 2024
*External Funding:* No

Soil aquifer treatment (SAT) is the natural attenuation of constituents in water, including microorganisms and micropollutants, that occurs during water filtration through sands and soils. At OCWD, managed aquifer recharge benefits from SAT, which is known to be quite effective for the removal of many compounds and microbial organisms over a range of various source waters. Underground storage serves as an "environmental buffer" for (indirect) potable reuse (where "indirect" refer to either groundwater

recharge- or surface water storage-based water reuse applications). The current 1-log virus reduction credit per 1-month of underground travel time that is granted to OCWD for the Groundwater Replenishment System (GWRS) is based on a 1985 benchtop study that measured decay of MS coliphage, poliovirus, and echovirus over a period of 30 days. The rate of virus decay was measured using 11 domestic (United States) groundwater samples to determine how physical and chemical properties of each distinct sample affect virus inactivation. The 1985 study found that higher water temperatures promote virus inactivation. Building upon these studies, the R&D team will design and execute similar virus decay tests on GWRS groundwater samples from OCWD groundwater monitoring wells to conduct a site-specific study. Virus inactivation and decay will be measured in a similar benchtop incubation format using MS coliphage. The goal of this project is to measure site-specific MS coliphage inactivation to understand how water temperature and water hardness influence virus inactivation. In a later phase of the project, virus inactivation will also be measured using *in-situ* diffusion chamber vessels to be deployed in groundwater monitoring wells. Virus inactivation and decay will be measured using standard cultivable methods and molecular methods (RT-qPCR) followed by statistical decay modeling from various OCWD recharge and groundwater sites representing different geological locations.

**Project Updates**

*Current*

- R&D staff together with Claire Johnson (Regulatory) began reviewing comments received from the California State Water Resources Control Board, Division of Drinking Water (DDW) on R&D's test plan previously submitted to DDW. The test plan describes a detailed experimental approach to incubate viruses in groundwater in the laboratory to determine their rate of decay and inactivation using water collected from GWRS-impacted groundwater monitoring well sites. The data may enable the District to demonstrate site-specific virus removal in recharged water from the GWRS AWPF due to soil aquifer treatment (SAT).
- R&D staff are reviewing the technical and logistical inquiries from DDW to accordingly modify and finalize the experimental approach with the overall goal to seek additional virus log removal credits for SAT.
- R&D staff are coordinating with OCWD Water Quality staff to acquire groundwater samples, conduct preliminary assays, and optimize sampling procedures prior to executing the finalized experimental plan. Water Quality staff will assist R&D with collection of groundwater samples obtained from groundwater monitoring wells located at the forebay, mid-basin, and the seawater intrusion barrier locations.
- As a separate research task not included as part of the DDW test plan, R&D has continued lower-priority work related to use of diffusion chambers to measure virus decay rates. Diffusion chamber integrity tests are now complete and the chamber vessels are ready for deployment. Initial tests to prevent MS coliphage from adhering to the inner walls of the chamber were performed with limited success. The team suspects that coliphage adhesion may be a result of stagnant (non-recirculating) water, which was required to measure chamber integrity. Deploying the chambers in a small-scale test system (such as passing GWRS product water through a 55-gallon drum containing soil to simulate SAT), could prevent MS coliphage adhesion by maintaining viruses suspended in water due to continuous movement of water.

*Future*

- R&D staff will coordinate with a commercial laboratory that has been selected to process the virus concentration measurements for samples that will be generated in the DDW study. R&D will optimize sample submission, sample handling procedures, and generate an experimental sampling calendar. Preliminary samples will be sent to the commercial laboratory to establish a standard shipment procedure to maintain quality assurance throughout the study.

- In preparation for data analysis, the R&D team plans to reach out to Dr. Jade Mitchell at Michigan State University who was recommended by the GWRS Independent Advisory Panel (IAP). Dr. Mitchell is an expert in modeling pathogen persistence using mathematical modelling.
- R&D and Regulatory staff will submit a response-to-comments to DDW to address their technical and logistical questions. Pending their response, the experimental test plan evaluating virus inactivation in GWRS groundwater will begin.
- Pending a response from DDW for the above test plan, deployment of diffusion chambers near the recharge basins using a 55-gallon drum filled with soil to simulate soil aquifer treatment has been postponed.

# Reporting Period Publications

**Gu, H., Megan H. Plumlee**, Mingheng Li, Auryan Mohseni and Ronit Erlitzki. Enhancing Municipal Potable Reuse Recovery With Flow-Reversal RO: Pilot Study, Challenges, and Retrofit Considerations. Desalination Volume 601, 5 May 2025, 118594

John Stults, Dan Bryant, Azita Assadi, Stephanie Shea and **Meeta Pannu**. PFAS Article # 12. PFAS in Background. Winter Hydrovisions. March 2025. Available at https://issuu.com/hydrovisions/docs/hydrovisions_winter_2025

# Reporting Period Conference and Workshop Presentations and Posters

**Andrew Huang**, Kyle Thompson. “Reverse Osmosis Process Monitoring for Reuse”. WEFTEC 2024. October 5-9, 2024, New Orleans, Louisiana.

**Meeta Pannu, Megan Plumlee**, Issam Najm, Gabby Najm, Brian Gallagher and Scott Grieco. PFAS Removal from Groundwater with Ion Exchange and Alternative Adsorbent: Predicting Pilot- and Full-Scale Performance with Bench-Scale Test. Western Groundwater Congress. October 7-9, 2024, Lake Tahoe, California.

**Meeta Pannu.** PFAS Removal from Groundwater to Restore Drinking Water Quality. October 2024. Water Research Foundation, **Project WRF 5280**, PAC Meeting, Passaic Valley, New Jersey

Christopher Bellona, **Jana Safarik**. “Real-Time Detection of Volatile Organic Compounds in Potable Reuse”. Membrane Technology Conference & Exposition 2025, February 24-27, 2025, Long Beach, CA.

Javad Roostaei, **Han Gu**, Tom O’Neil, **Megan H. Plumlee**, Ben Stanford, Richard Franks, Safa Yosafi, and Erik Vosburgh. “Data-Driven Modeling for Optimizing RO System Operation and Maintenance - Case Studies”. Membrane Technology Conference & Exposition, February 24-27, 2025, Long Beach, CA.

**Han Gu, Manmeet (Meeta) Pannu, Megan H. Plumlee**, Charlie Liu, Ihsen Ben Salah, Zia Klocke, and Katie Henderson. “Pilot Studies on Innovative RO Concentrate Recovery and PFAS Removal for Sustainable Municipal Potable Reuse”. Membrane Technology Conference & Exposition, February 24-27, 2025, Long Beach, CA.

**Julio A. Polanco, Megan H. Plumlee, Jana Safarik**. "Exploring Feasibility and Cost of Modernizing Microbial Monitoring Programs". Conference Poster. WateReuse Symposium 2025, March 16-19, 2025, Tampa, FL.

Charlie Liu, Erica Wirski, Brendan Jordan, **Jana Safarik, Don Supernaw, Megan Plumlee,** Duncan Griffiths, William Shroader, and Serina Erxleben. ”Optimizing membrane Backwashing with Novel Colloidal Particle Measurement”. WateReuse Symposium 2025, March 16-19, 2025, Tampa, FL.

Charlie Liu, **Meeta Pannu, Han Gu, Megan H. Plumlee**, Zia Klocke, Katie Henderson, Ihsen Ben Salah. “Not So Forever Chemicals: A Case Study Driven Overview of PFAS Destruction Technologies.” Texas Water 2025, March 18-21, 2025, Houston, TX.

# Participating Utility Projects

OCWD participates in collaborative research with universities and other partners in which OCWD does not lead the project but provides water samples, data, operating history, and other support that are critical to the projects as an in-kind contribution to the partner-led study. These efforts are often facilitated by R&D staff. In this role, OCWD is referred to as a “participating utility”. Current projects in which R&D or other District staff are coordinating OCWD participation include the following, with the OCWD project representative listed:

**Water Research Foundation (WRF)**

- Evaluation of PFAS Removal by Post-Filter GAC, WRF 5280 (Meeta Pannu: PAC Member)
- Give Membranes the Virus Removal Credit They Deserve, Using Rapid In-Field Molecular Based Methods, WRF 5209 (Julio Polanco)
- Cost-Effective Approaches for Control of Multiple Constituents of Emerging Concern (CECs), WRF 5171 (Claire Johnson)
- Unlocking the Nationwide Potential for Water Reuse, WRF 5197 (Claire Johnson)
- Cal-Val Guide to Treatment Credits for Indirect Potable Reuse in California, WRF TC23-19 (Jason Dadakis, Co-Principal Investigator)
- Understanding the Factors Affecting PFAS Variability in the Potomac River Watershed, WRF 5269 (Jason Dadakis)

**Environmental Protection Agency (EPA)**

- Novel Quantitative Methods for Indigenous Viruses in Wastewater: Improving the Assessment of Water Reuse Treatment Performance, EPA Science to Achieve Results (STAR), Tulane University (Julio Polanco)

- Viral Pathogen and Surrogate Approaches to Assessing Treatment Performance in Water Reuse, Project 5126, EPA Science to Achieve Results (STAR), WRF/University of Arizona (Julio Polanco, Claire Johnson)

- Closing PFAS Analytical Gaps: An Inter-Method Evaluation of Total Organofluorine Techniques for AFFF-Impacted Water, University of California-Berkeley (Dr. David Sedlak and Dr. Fuhar Dixit, UC Berkeley and Mohamed Ateia, USEPA) (Meeta Pannu)

- Protecting Water Quality During Enhanced Aquifer Recharge: A Geochemical Compatibility Assessment of Various Water Sources and Co-located Aquifers in the United States, EPA Science to Achieve Results (STAR) Enhanced Aquifer Recharge (EAR), Carnegie Mellon University (Jason Dadakis, Megan Plumlee)

**U.S. Department of Energy (DOE) - National Alliance for Water Innovation (NAWI)**

- "Electrocoagulation/Electrooxidation (EC/EO) to Accelerate Cost-Effective Potable Water Reuse". PI: Shankar Chellam, Texas A&M University. (Jana Safarik)
- "Selective Electrocatalytic Destruction of PFAS using a Reactive Electrochemical Membrane System". PI: Brian Chaplin, University of Illinois-Chicago. (Megan Plumlee)
- "Wastewater Pretreatment for Potable Reuse" (NAWI 5.20) PI: Judy Riffle, NALA Membranes (Jana Safarik, Han Gu, Megan Plumlee)
- "222 nm KrCl Driven Advanced Oxidation for Reverse Osmosis Pretreatment: Fouling Control and Chemical/Pathogen Abatement". PI: Professor Karl Linden, University of Colorado, Boulder (Megan Plumlee)

**U.S. Centers for Disease Control and Prevention (CDC)**

- 'Multi-Site Study of the Health Implications of Exposure to PFAS-Contaminated Drinking Water Department of Health and Human Services' on PFAS in drinking water in Orange County, UC Irvine, Water Quality Panel (Jason Dadakis)

**National Science Foundation (NSF)**

- Texas A&M / NSF ERASE PFAS Collaborative Research: Tools to Assess the Mechanisms and Full Potential of UV-ARPs for the Treatment of PFAS in Water. PI: Garrett McKay (TAMU), Co-PI: Steve Mezyk (CSULB) (Meeta Pannu)

**US Bureau of Reclamation (USBR)**

- Texas State University / USBR: Diatom-Based Photobiological Treatment of Brackish Groundwater Reverse Osmosis Concentrate: Greener Scalant Removal Process for Enhanced Water Recovery (R21AC10106) (Megan Plumlee)

- Desalination and Water Purification Research (DWPR) Pitch to Pilot – "Development of Multiparameter Direct Water Quality Monitoring System to Achieve the Circular Society for Water" led by Professor Keisuke Ikehata at Texas State University (Megan Plumlee)

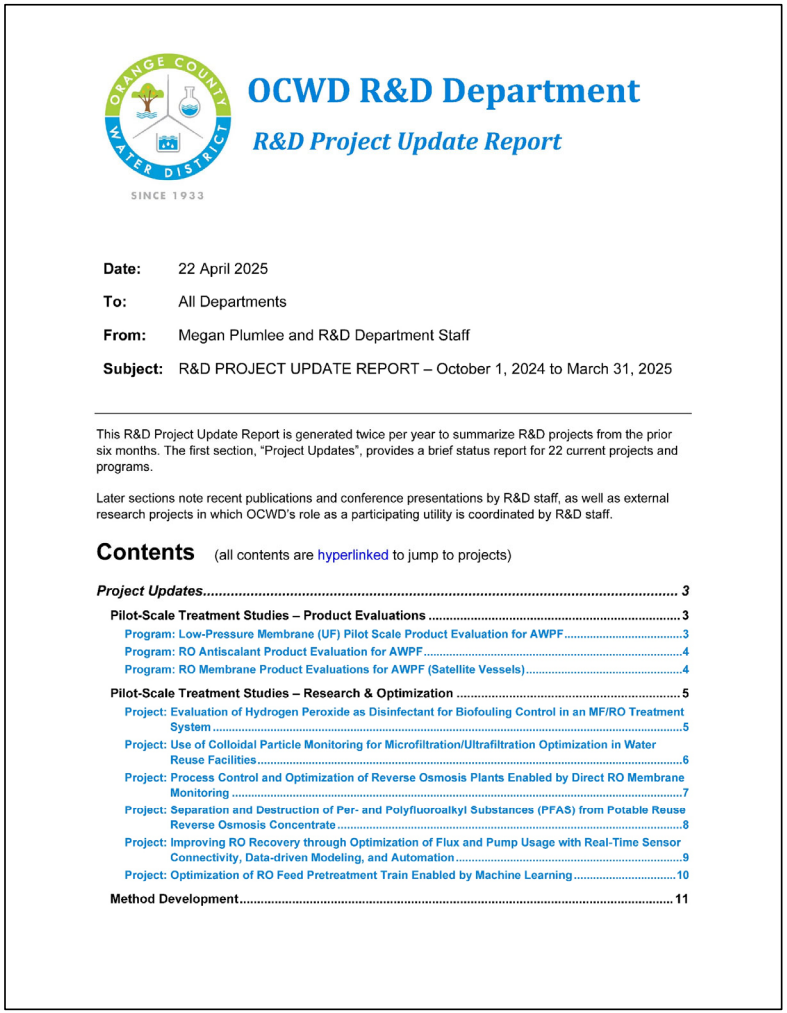
# Update on R&D Activities

Board of Directors Meeting

July 2, 2025

# Biannual R&D Summary Report

- Issued most recent Biannual Report in April →
- Attached to staff report for this item today
- Highlights 22 current *programs* and *projects*
  - *Programs:* recurring, continuous efforts
  - *Projects:* studies lasting typically 1 to 3 years



**OCWD R&D Department**

***R&D Project Update Report***

**Date:** 22 April 2025

**To:** All Departments

**From:** Megan Plumlee and R&D Department Staff

**Subject:** R&D PROJECT UPDATE REPORT – October 1, 2024 to March 31, 2025

This R&D Project Update Report is generated twice per year to summarize R&D projects from the prior six months. The first section, "Project Updates", provides a brief status report for 22 current projects and programs.

Later sections note recent publications and conference presentations by R&D staff, as well as external research projects in which OCWD's role as a participating utility is coordinated by R&D staff.

**Contents** (all contents are hyperlinked to jump to projects)

# Current Programs

- Low Pressure (UF) Membrane Product Evaluations
- RO Membrane Product Evaluations (Satellite Vessels)
- RO Anti-Scalant Product Evaluations
- PFAS Removal Media (Adsorbent) Product Evaluations for Producer Treatment Systems

# Current Projects

## PFAS – Treatment and Measurement

- Separation and Destruction of PFAS from Potable Reuse Reverse Osmosis Concentrate (OCWD, Ovivo, Kennedy Jenks)
- Scaling Up a Field-Deployable Water Sampling Device to Rapidly Screen Adsorbable Organic Fluorine In Situ (Forever Analytical, OCWD)
- Bench-Scale Methods to Predict Drinking Water PFAS Removal of IX and Alternative Adsorbents (OCWD, WQTS, Kleinfelder)
- Estimating PFAS using Total Fluorine Methods in Pilot-Scale Adsorption for Drinking Water (Groundwater) (OCWD, DDW)
- Supercritical Water Oxidation (SCWO) Destruction of PFAS Concentrated Spent Media (OCWD, various vendors)

## Digitalization of Water Treatment to Improve Efficiency and Reliability

- Improving RO Recovery through Data-driven Modeling and Automation (Hazen, OCWD)
- Dashboard Pilot Trial for GWRS RO Plant (Pani Energy, OCWD)
- Data-Driven Fault Detection and Process Control for Potable Reuse with RO (Carollo, OCWD)
- Process Twins for Decision-Support and Dynamic Energy and Cost Prediction in Water Reuse Processes (UC Irvine, OCWD)
- Online Dashboards for Real-time Water Quality Monitoring (e.g., PFAS; TOC LRV RO; TOC feedwater) (OCWD in-house development)

## Projects: Membrane Performance Optimization for Potable Reuse

- Evaluation of Hydrogen Peroxide as Alternative to Chloramine Disinfectant for MF/UF/RO (OCWD, Stanford U.)
- Colloidal Particle Monitoring to Optimize MF/UF (OCWD, Kennedy Jenks, Hyperion Analytical)
- Platform for Dynamic Monitoring & Characterization of RO Biofouling (U Texas Austin, Rice U., OCWD)

## Groundwater Recharge & Optimization

- In-Situ Removal of PFAS During Managed Aquifer Recharge (OCWD, CO School of Mines, Kleinfelder)
- Online Dashboard for Groundwater Recharge: Monitoring Flow and Pond Level At-a-Glance (OCWD)

## Water Quality & Regulatory Compliance for Potable Reuse

- Advancing Traditional Microbial Monitoring using the MinION Long-Read DNA Sequencer (OCWD)
- Real-Time Detection of Volatile Organic Compounds in RO-Based Potable Reuse (SNWA, Entanglement Tech., CO School Mines, OCWD)
- Soil Aquifer Treatment (SAT) Virus Log Removal Values (LRVs) for Project-Specific GWRS Credit (OCWD)

# Today's Updates

- Completed trial of commercially-available software (dashboard) for RO plant (GWRS)
- Ongoing trial of Toray ultrafiltration (UF) membrane
- Ongoing project to pilot PFAS treatment media at YLWD

# Trial of Online Dashboard for RO

SaaS (Software-as-a-service) product

# Trial of Commercially-Available RO Dashboard

- Canadian start-up company that has been recognized for its RO dashboard SaaS
  - Pani Zed™ = data-driven analytics platform
- Features include:
  - Real time data visualization tools (customizable)
  - Interactive operational logs
  - Performance insights
  - Alerts & notifications – based on membrane performance
  - CIP timing optimization tool (forecasting based on energy saving)

**Online real-time dashboards for 9 RO units:**

Customizable dashboards

Quick log entry for events

Monitoring and trending performance

**Pani Analytics and Insights:**

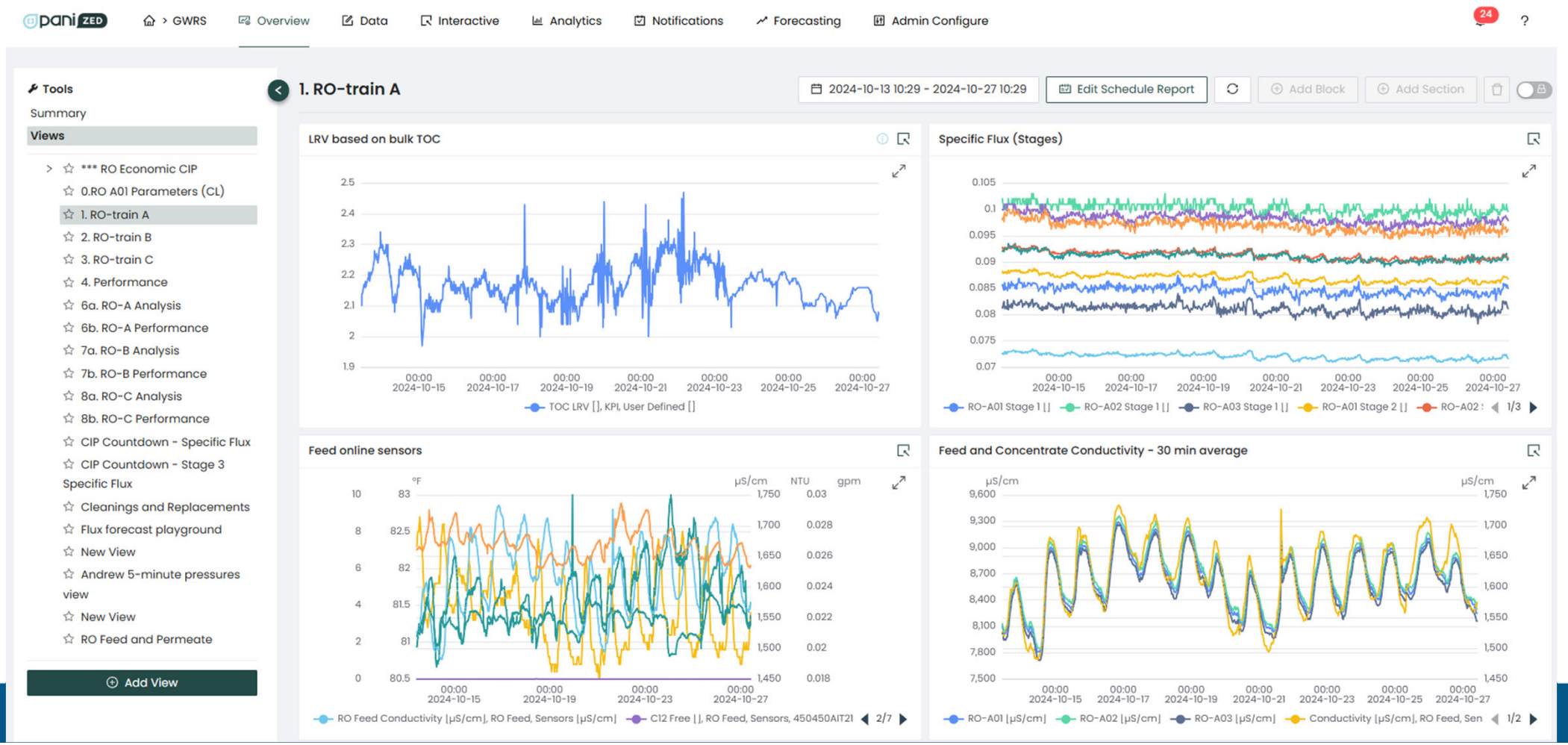
Data Processing for Predictive Insights

Advising on Performance Improvement

**Engaging OCWD Operations Staff:**

Feedback and Implementation Recommendations

# Example Dashboard Views



**Tools**

Summary

**Views**

- *** RO Economic CIP
- 0.RO A01 Parameters (CL)
- 1. RO-train A
- 2. RO-train B
- 3. RO-train C
- 4. Performance
- 6a. RO-A Analysis
- 6b. RO-A Performance
- 7a. RO-B Analysis
- 7b. RO-B Performance
- 8a. RO-C Analysis
- 8b. RO-C Performance
- CIP Countdown - Specific Flux
- CIP Countdown - Stage 3 Specific Flux
- Cleanings and Replacements
- Flux forecast playground
- New View
- Andrew 5-minute pressures view
- New View
- RO Feed and Permeate

Add View

RO Feed and Permeate | 2024-10-29 11:47 - 2024-11-05 10:47 | Schedule Report | Add Block | Add Section

### TOC LRV

**TOC LRV [], KPI, User Defined**
1 day average measured over Nov 4th to Nov 5th.
**2.15**

### Chlorine Demand Across RO

**RO Feed Chlorine Total**
1 day average measured over Nov 4th - Nov 5th (3.25)

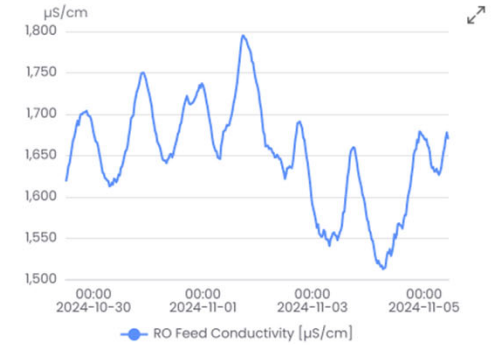
**RO Permeate Chlorine Total**
1 day average measured over Nov 4th - Nov 5th (2.74)

**-15.9 %**
(percent difference)

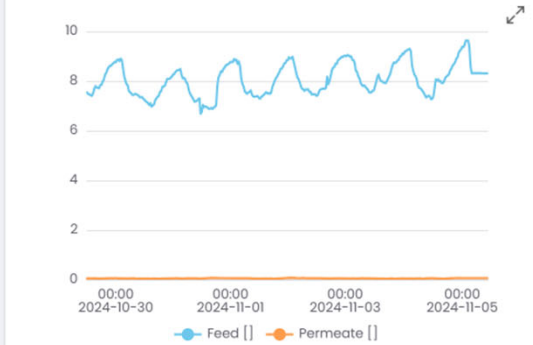
### Free Chlorine

**Feed**
1 day average measured over Nov 4th to Nov 5th.
**0.00128**

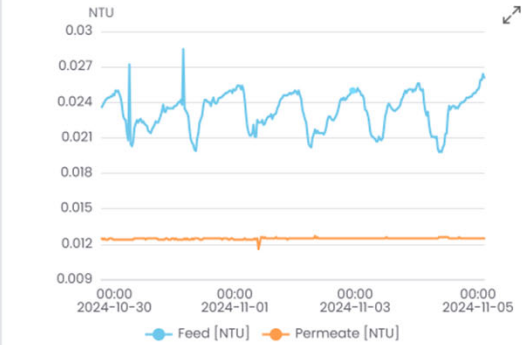
### New Block



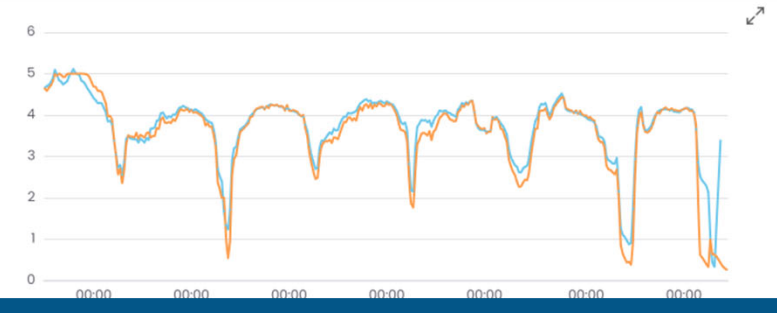

### TOC - 30 min average



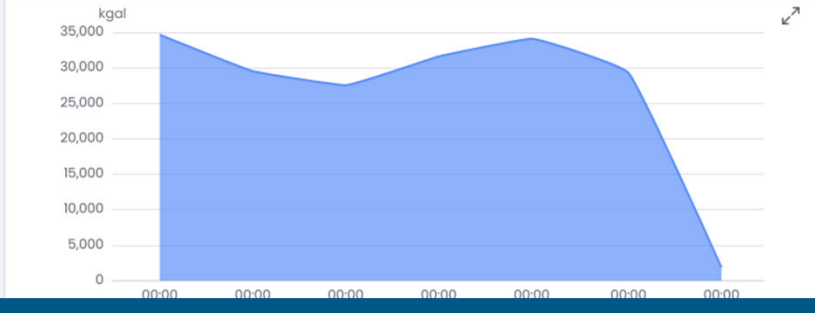

### NTU - 30 min average




### Total Chlorine - 30 min average




### RO Daily Production



# Conclusions from Trial of Pani Dashboard

**The dashboard will not be adopted beyond the pilot phase**
-- based on feedback from the GWRS Operations Team and R&D team

**Primary Concerns:**

**Usability challenges**: Cluttered interface, slow performance, and unintuitive navigation

**Lack of transparency**: Key recommendations required blind trust; no visibility into how metrics like “cost savings” were calculated, “black box” logic

**Low operational value**: Limited integration into daily workflows; alarm fatigue reduced trust

**Mobile usability**: No app, not suitable for small screens

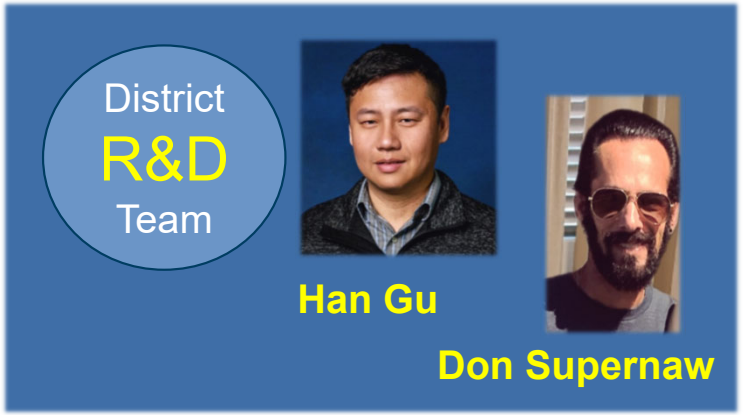

*Future consideration possible if platform evolves with clear improvements in design and functionality.*

# Pilot Testing of Toray Ultrafiltration (UF) Membrane – Ongoing

at OCWD Engineering Research Center (ERC)

# Background on UF Membrane Pilot Testing Program

- This is the first step of the MF/UF → RO → UV-AOP treatment train
- Ongoing program to select best UF membranes for GWRS.
  - e.g., based on prior piloting and full-scale testing, Evoqua UF was selected for GWRSFE and operates today alongside pre-existing MF basins.
- However, the full-scale plant UF cells have exhibited elevated feed pressures (i.e., fouling) which can affect plant's ability to reach water production target
  - Hence, identifying a potentially superior UF product remains of interest



# Pilot Testing of Toray UF PVDF Membrane

- Currently testing Toray HFUG-S1212B UF membrane (PVDF, 0.01 µm pore size)
- This product is directly retrofittable to plant
- Good performance thus far, hence considering full-scale test in one basin

**Test conditions:**

- ✓ **33 gfd filtrate flux, 22 min backwash interval**
- ✓ **Chlorination using sodium hypochlorite (SHC)**
- ✓ **"Maintenance wash" 2x/week using SHC and citric acid; Full clean (CIP) every 30 days**

# OCWD PFAS Pilot at YLWD

# OCWD Pilot Program (2019-present)



*Outcome: Performance findings from first phase were incorporated into media procurement decisions for full-scale Producer systems*

# Pilot was relocated to YLWD PFAS Treatment Plant

New Pilot: GAC + IX capable; another skid to be added

Pilot shed at YLWD

# WRF Grant Awarded to Support PFAS Pilot

- Submitted proposal to WRF for competitive Tailored Collaboration program.
- Awarded $200,000 in funding to District and our partners, including
  - $50,000 contribution from Tucson Water
  - $68,500+ in-kind contribution from SWRCB DDW to cover cost for novel analytical sampling


# Objectives

- Product testing: evaluate medias for Producer consideration for PFAS treatment plants
- Applied research: trial novel PFAS ***measurement methods*** and assess ***removal of broad-spectrum organic fluorine***

# Study Scope and Team

- Use emerging methods to quantify removal of “total PFAS” (i.e., broad-spectrum PFAS)
- DDW has previously studied and began utilizing these emerging methods:
  - AOF-CIC* to estimate total fluorine
  - Ultrashort-chain PFAS
  - Suspect screening (non-target) PFAS
- Explore applicability of PFAS bioassay
- Also measure conventional PFAS using EPA Method 533
- To our knowledge, no research to date has assessed ability of PFAS treatment medias to remove broad-spectrum PFAS

**Alternative Adsorbents**



**Ion Exchange (IX) Resin Including Regenerable IX**



**Granular Activated Carbon (GAC)**

* *Adsorbable organic fluorine – Combustion ion chromatography)*

# Thank You!

Questions?

@OCWaterDistrict

# S A W P A

**SANTA ANA WATERSHED PROJECT AUTHORITY**
11615 Sterling Avenue. Riverside. California 92503 • (951) 354-4220

This meeting will be conducted in person at the addresses listed below. As a convenience to the public, members of the public may also participate virtually using one of the options set forth below. Any member of the public may listen to the meeting or make comments to the Commission using the call-in number or Zoom link. However, in the event there is a disruption of service which prevents the Authority from broadcasting the meeting to members of the public, the meeting will not be postponed or rescheduled but will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required. Members of the public are welcome to attend the meeting in-person.

| **Meeting Access Via Computer (Zoom):** | **Meeting Access Via Telephone:** |
|---|---|
| • https://sawpa.zoom.us/j/85356742730 | • 1 (669) 900-6833 |
| • Meeting ID: 853 5674 2730 | • Meeting ID: 853 5674 2730 |

## REGULAR COMMISSION MEETING
## TUESDAY, JULY 1, 2025 – 9:30 A.M.

at

Western Municipal Water District
Board Room
14205 Meridian Parkway
Riverside, CA 92518

and

601 N. Ross Street, Room 327
Santa Ana, CA 92701

and

Desert Vista Community Center
10360 Sun City Boulevard
Las Vegas, NV 89134

# AGENDA

1. **CALL TO ORDER/PLEDGE OF ALLEGIANCE (Mike Gardner, Chair)**

2. **ROLL CALL**

3. **PUBLIC COMMENTS**

Members of the public may address the Commission on items within the jurisdiction of the Commission; however, no action may be taken on an item not appearing on the agenda unless the action is otherwise authorized by Government Code §54954.2(b).

Members of the public may make comments in-person or electronically for the Commissions' consideration by sending them to publiccomment@sawpa.gov with the subject line "Public Comment". Submit your electronic comments by 5:00 p.m. on Monday, June 30, 2025. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record. Individuals have a limit of three (3) minutes to make comments and will have the opportunity when called upon by the Commission.

## 4. ITEMS TO BE ADDED OR DELETED

Pursuant to Government Code §54954.2(b), items may be added on which there is a need to take immediate action and the need for action came to the attention of the SAWPA Commission subsequent to the posting of the agenda.

## 5. CONSENT CALENDAR

All matters listed on the Consent Calendar are considered routine and non-controversial and will be acted upon by the Commission by one motion as listed below.

### A. APPROVAL OF MEETING MINUTES: JUNE 17, 2025

**Recommendation:** Approve as posted.

### B. TREASURER'S REPORT: MAY 2025

**Recommendation:** Approve as posted.

## 6. NEW BUSINESS

### A. INTERIM GENERAL MANAGER COMPENSATION (CM#2025.50)

**Presenter:** Thomas S. Bunn, General Counsel
**Recommendation:** To authorize salary for the Interim General Manager in the amount of $309,750 per annum and car allowance in the amount of $1,000 per month, effective June 17, 2025.

## 7. INFORMATIONAL REPORTS

**Recommendation:** Receive for information.

### A. COMMUNICATIONS REPORT

**Presenter:** Karen Williams

### B. GENERAL MANAGER REPORT

**Presenter:** Karen Williams

### C. CHAIR'S COMMENTS/REPORT

### D. COMMISSIONERS' COMMENTS

### E. COMMISSIONERS' REQUEST FOR FUTURE AGENDA ITEMS

## 8. CLOSED SESSION

### A. PUBLIC EMPLOYEE APPOINTMENT

Title: General Counsel

## 9. CLOSED SESSION REPORT

## 10. ADJOURNMENT

**PLEASE NOTE:**

Americans with Disabilities Act: If you require any special disability related accommodations to participate in this meeting, call (951) 354-4220 or email svilla@sawpa.gov 48-hour notification prior to the meeting will enable staff to make reasonable arrangements to ensure accessibility for this meeting. Requests should specify the nature of the disability and the type of accommodation requested.

Materials related to an item on this agenda submitted to the Commission after distribution of the agenda packet are available for public inspection during normal business hours at the SAWPA office, 11615 Sterling Avenue, Riverside, and available at www.sawpa.gov, subject to staff's ability to post documents prior to the meeting.

**Declaration of Posting**

I, Sara Villa, Clerk of the Board of the Santa Ana Watershed Project Authority declare that on June 26, 2025, a copy of this agenda has been uploaded to the SAWPA website at www.sawpa.gov and posted at the following locations: SAWPA's office at 11615 Sterling Avenue, Riverside, CA 92503 | WMWD's Office at 14205 Meridian Parkway, Riverside, CA 92518 | 601 N. Ross Street, Room 327, Santa Ana, CA 92701 | Desert Vista Community Center at 10360 Sun City Boulevard, Las Vegas, NV 89134.

## 2025 SAWPA Commission Meetings/Events

First and Third Tuesday of the Month
(NOTE: All meetings begin at 9:30 a.m., and are held at SAWPA, unless otherwise noticed.)

| | | | |
|---|---|---|---|
| **January** | | **February** | |
| 1/7/25 | ~~Commission Workshop~~ [cancelled] | 2/4/25 | Commission Workshop |
| 1/21/25 | Regular Commission Meeting | 2/18/25 | Regular Commission Meeting |
| **March** | | **April** | |
| 3/4/25 | Commission Workshop | 4/1/25 | Commission Workshop |
| 3/18/25 | Regular Commission Meeting | 4/15/25 | Regular Commission Meeting |
| **May** | | **June** | |
| 5/6/25 | Commission Workshop | 6/3/25 | Commission Workshop - EMWD |
| 5/20/25 | Regular Commission Meeting - IEUA | 6/17/25 | Regular Commission Meeting - EMWD |
| 5/13 – 5/15/25 ACWA Spring Conference, Monterey, CA | | | |
| **July** | | **August** | |
| 7/1/25 | Commission Workshop - WMWD | 8/5/25 | Commission Workshop - SBVMWD |
| 7/15/25 | Regular Commission Meeting - WMWD | 8/19/25 | Regular Commission Meeting - SBVMWD |
| **September** | | **October** | |
| 9/2/25 | Commission Workshop | 10/7/25 | Commission Workshop |
| 9/16/25 | Regular Commission Meeting | 10/21/25 | Regular Commission Meeting |
| **November** | | **December** | |
| 11/4/25 | Commission Workshop | 12/2/25 | Commission Workshop |
| 11/18/25 | Regular Commission Meeting | 12/16/25 | Regular Commission Meeting |
| | | 12/2 – 12/4/25 ACWA Fall Conference, San Diego, CA | |