



ORANGE COUNTY BOARD OF SUPERVISORS

Nomination for Boards, Commissions & Committees (Rev. 8/29/23)

Agenda Date: 4/14/2026

Item # _____

To: **Members of the Orange County Board of Supervisors**

cc: **Clerk of the Board of Supervisors**

From: **Jennifer Sarin, Executive Director of Public Health & Nursing Services**

Health Care Agency, Public Health Services

It is my intent to appoint:

Roy Herndon

Address: [REDACTED]

City & Zip: [REDACTED]

Day Phone: [REDACTED]

Fax Number: ()

E-mail address: [REDACTED]

To the: **Well Standards Advisory Board**

(Name of Board, Commission or Committee)

Position Slot: **Registered Geologist, represents Orange County Water District**

Name of incumbent being replaced or last known member: N/A

Term (Choose One):

3 Years Beginning Term Date: 1/6/2026 to Expiration Term Date: 1/1/2029

Term Concurrent with Supervisor's Term of Office

Term Concurrent with position

Vacancy occurred due to:

Resignation (attach letter of resignation)

Termination (provide reason for termination in remarks) Death

Expiration of Term Other (provide reason in remarks)

Nomination to: Appoint Reappointment Newly Formed Committee

Qualifications: Attached (must be attached for appointments and reappointments)

Remarks: Per OC Ordinance 2607, Article 2, Section 4-5-16

For Clerk of the Board Use Only

Clerk's Initials: _____ File I.D. _____ Needs a COI Send Departure Letter

Contact Name _____ Supporting Agency _____ Mail or Pony

Appoint/Complete: Term Years _____ Term Dates: _____ to _____

CWS Other _____

Check one: Scheduled Vacancy Unscheduled Vacancy

Posted on _____ to _____ Certification of posting attached.



APPLICATION FOR COUNTY OF ORANGE
BOARD, COMMISSION OR COMMITTEE

Attachment D
(FOR COUNTY USE ONLY)

Return to: Clerk of the Board of Supervisors
400 W. Civic Center Dr., 6th Floor
Santa Ana, California 92701
Email: response@ocgov.com
Website: <https://cob.ocgov.com/>

Instructions: Please complete each section below. Be sure to enter the title of the Board, Commission or Committee for which you desire consideration and attach a resume. For information or assistance, please contact the Clerk of the Board of Supervisor's Office at (714) 834-2206. Please print in ink or type.

NAME OF BOARD, COMMISSION, OR COMMITTEE TO WHICH YOU ARE APPLYING FOR MEMBERSHIP. SEE LIST AT <https://cob.ocgov.com/boards-commissions-committees/bcc-name-list-and-contact-information>

Well Standards Advisory Board

SUPERVISORIAL DISTRICT IN WHICH YOU RESIDE: First Second Third Fourth Fifth

APPLICANT NAME AND RESIDENCE ADDRESS:

Roy		Herndon	
First Name	Middle Name (Optional)	Last Name	
[Redacted]		[Redacted]	[Redacted]
Street Address		City	State
[Redacted]		[Redacted]	[Redacted]
Home Phone Number		Cell Phone Number	
[Redacted]		[Redacted]	
Email Address			
[Redacted]			

CURRENT EMPLOYER: [Redacted]

OCCUPATION/JOB TITLE: Chief Hydrogeologist

BUSINESS ADDRESS: [Redacted]

BUSINESS PHONE NUMBER: [Redacted]

EMPLOYMENT HISTORY: Please attach a resume to this application and provide any information that would be helpful in evaluating your application. **A RESUME MUST BE ATTACHED TO YOUR APPLICATION.**

ARE YOU A CITIZEN OF THE UNITED STATES: YES NO

IF NO, NAME OF COUNTRY OF CITIZENSHIP: _____

ARE YOU A REGISTERED VOTER? YES NO

IF YES, NAME COUNTY YOU ARE REGISTERED IN: Orange

LIST ALL CURRENT PROFESSIONAL OR COMMUNITY ORGANIZATIONS AND SOCIETIES OF WHICH YOU ARE A MEMBER.

<u>ORGANIZATION/SOCIETY</u>	<u>FROM (MO./YR.)</u>	<u>TO (MO./YR.)</u>
South Coast Geological Society	1/2015	1/2026
Groundwater Resources Association of California	1/2005	1/2026
Orange County Wheelmen	1/2016	1/2026

WITHIN THE LAST FIVE YEARS, HAVE YOU BEEN AFFILIATED WITH ANY BUSINESS OR NONPROFIT AGENCY(IES)? YES NO

DO YOU OWN REAL OR PERSONAL PROPERTY OR HAVE FINANCIAL HOLDING WHICH MIGHT PRESENT A POTENTIAL CONFLICT OF INTEREST? YES NO

HAVE YOU BEEN CONVICTED OF A FELONY OR MISDEMEANOR CRIME SINCE YOUR 18TH BIRTHDAY? YOU ARE NOT REQUIRED TO DISCLOSE ANY OF THE FOLLOWING: ARRESTS OR DETENTIONS THAT DID NOT RESULT IN A CONVICTION; CONVICTIONS THAT HAVE BEEN JUDICIALLY DISMISSED, EXPUNGED OR ORDERED SEALED; INFORMATION CONCERNING REFERRAL TO AND PARTICIPATION IN ANY PRETRIAL OR POSTRIAL DIVERSION PROGRAM; AND CERTAIN DRUG RELATED CONVICTIONS THAT ARE OLDER THAN TWO YEARS, AS LISTED IN CALIFORNIA LABOR CODE § 432.8 (INCLUDING VIOLATIONS OF CALIFORNIA HEALTH AND SAFETY CODE SECTIONS 11357(B) AND (C), 11360(C) 11364, 11365 AND 11550 – AS THEY RELATE TO MARIJUANA)?

YES NO

IF YES, PLEASE EXPLAIN AND ATTACH ADDITIONAL SHEETS, IF NECESSARY.

PLEASE BRIEFLY EXPLAIN WHY YOU WISH TO SERVE ON THIS BOARD, COMMITTEE, OR COMMISSION. ATTACH ADDITIONAL SHEETS, IF NECESSARY.

I fill two required positions (OCWD representative) and CA

professional geologist on the WSAB; I have 40+ years exper.

DATE: 1/9/26

APPLICANTS SIGNATURE:



CLERK OF THE BOARD OF SUPERVISORS USE ONLY – DO NOT WRITE BELOW THIS LINE

Date Received: _____ Received by: _____
Deputy Clerk of the Board of Supervisors

Date referred: _____

- To: BOS District 1 BOS District 2 BOS District 3 BOS District 4 BOS District 5
- All BOS BCC Contact Person Name _____

Roy L. Herndon

Chief Hydrogeologist



Mr. Herndon has over 40 years of professional experience in hydrogeologic investigations pertaining to environmental and water supply projects. These projects include the delineation of groundwater contaminant plumes over several miles long, characterization of hydrogeologic systems ranging from one-acre sites to the 350-square mile (910 km²) Orange County groundwater basin, evaluation and control of seawater intrusion, and design of groundwater recharge and extraction systems for water supply and contamination remediation, respectively.

Mr. Herndon manages the Hydrogeology Department at the [REDACTED] and has directed hydrogeologic studies that have collectively entailed the construction of over 200 monitoring wells, 50 of which exceed 1,000 feet (300 m) in depth. He is responsible for overseeing all departmental activities including the construction of a basin-wide numerical groundwater flow model, development of a comprehensive data management and geographic information system, and design/construction of multi-depth monitoring wells and municipal water wells. Mr. Herndon has served on several technical advisory panels for governments at the local, state, and international level. He has given numerous presentations to professional, regulatory, and industrial organizations, and served as guest lecturer to university classes.

EDUCATION

M.S., Hydrology and Water Resources (1985), University of Arizona, Tucson
B.A., Geology (1982), The Colorado College, Colorado Springs

PROFESSIONAL REGISTRATIONS

California Professional Geologist No. 4817
California Certified Hydrogeologist No. 113

EMPLOYMENT HISTORY

1992 - present: Chief Hydrogeologist, [REDACTED]
1988 - 1992: Project Hydrogeologist, [REDACTED]
1985 - 1988: Project Hydrogeologist, [REDACTED]

ACTIVITIES/MEMBERSHIPS

Chairman, Orange County Well Standards Advisory Board
Chairman, Santa Ana River Watermaster

Advisory Panel Member, Republic of Singapore water resources evaluation
 Member and former Director, Groundwater Resources Association of California
 Member, Alamitos Seawater Barrier Joint Management Committee
 Member, South Coast Geological Society
 Member, MCAS El Toro Restoration Advisory Board
 Former Technical Advisor, California Department of Water Resources Sustainable Groundwater Management Act implementation
 Former Technical Advisor, California State Water Resources Control Board Low-Risk Underground Storage Tank Closure Policy
 Former Technical Advisor, California Department of Water Resources Local Groundwater Management Assistance Act implementation

REPRESENTATIVE PROJECTS

Groundwater Contaminant Remediation

South Basin Groundwater Protection Project – Directed remedial investigation and feasibility study which characterized the nature and extent of chlorinated VOC and perchlorate contamination over a 3-square mile (7.8 km²) area; investigation included 200+ CPT borings and 11 multi-depth monitoring wells. Subsequent interim remedial action plan included eight extraction alignments and treatment systems for plume containment and treatment.

PFAS Regional Impacts – Evaluated the nature and extent of PFAS contamination in the Orange County Groundwater Basin, including pathways from the Santa Ana River and point sources including military installations and airports. Given the unprecedented extent of occurrence resulting in over 100 high-capacity drinking water wells exceeding 4 ng/L, the strategy is to construct wellhead treatment systems using IX or GAC at an estimated cost of \$600 million.

Regional TCE/TDS/Nitrate Groundwater Contamination Investigation - Managed three-year investigation to determine source and extent of groundwater containing TCE, TDS, and nitrates in Irvine Subbasin; designed/supervised construction of twelve monitoring wells ranging from 150 to 1,300 feet (40 to 430 m) deep; prepared two reports documenting evidence and rationale for conclusion of MCAS El Toro as the source of a four-mile-long TCE plume, resulting in Superfund designation of site.

North Basin Groundwater Protection Project - Directed remedial investigation and feasibility study of project to contain chlorinated VOC contamination over a 6-square mile (15.5 km²) area; sited, directed construction of 6 extraction wells and 100+ monitoring wells. Site is now a federal Superfund site.

Seawater Intrusion Evaluation/Control

Alamitos Seawater Barrier Improvements - Directed \$15 million project to stop further sea water intrusion through the existing network of injection wells spanning the Alamitos Gap between Los Angeles and Orange counties. The project included 17 additional injection wells and four multi-depth monitoring wells constructed in 2017-18.

Sunset Gap Seawater Barrier Evaluation - Directed ongoing feasibility study of a potential new seawater barrier in city of Seal Beach. This followed a 12-year investigation to characterize nature and extent of seawater intrusion in Seal Beach and Huntington Beach, including two electrical resistivity surveys, construction of 12 multi-depth monitoring wells, and expansion of a numerical flow model.

Talbert Seawater Barrier Expansion – Directed design and construction of 21 new multi-depth injection wells to more than double the capacity of the barrier to over 30 mgd (78 m³/min). Source water is highly-treated recycled water from OCWD’s Groundwater Replenishment System.

Talbert Seawater Barrier Well Rehabilitation - Evaluated causes of declining injection rates of 81 individual injection wells in operation since 1975. Developed and implemented several programs to mitigate corrosion holes in casing, clogging of perforations and gravel pack, and leakage of injection water to ground surface. Programs included installing casing liners, permeation and jet grouting around casings, and chemical/mechanical well development techniques.

Alamitos Barrier Reclamation Project - Technically reviewed hydrogeologic portion of feasibility study to convert 50% of the injection water to recycled water. Regulatory guidelines required that travel times and percentages of injection water be estimated at municipal-supply wells in proximity to the barrier.

Managed Aquifer Recharge/Hydrogeologic Characterization

Orange County Water District Recharge Facilities - Developed conceptual hydrogeologic model of region surrounding the 1,000-acre (400 hectares) surface spreading facilities; sited and designed five 1,000-foot (300 m) multi-depth and 20+ shallow monitoring wells to evaluate recharge mounding potential and effective depth of recharge in vicinity of basins; examined numerous borehole lithologic and geophysical logs, well and basin hydrographs to assess potential loss of vadose zone and clogging of spreading basins.

Santa Ana River Water Quality and Health Study - Manager of hydrogeologic characterization portion of \$10 million study to delineate flow paths and travel times of groundwater from point of recharge to point of extraction at nearby production wells; developed and implemented an ongoing isotopic tracer study with Lawrence Livermore National Laboratory to “label” and track recharge water following percolation at OCWD’s Anaheim spreading basins.

Groundwater Replenishment System Feasibility Study - Prepared hydrogeologic portion of feasibility study report describing the percolation capacity of the OCWD recharge facilities and piezometric and water quality characteristics of the underlying aquifers in the city of Anaheim; evaluated the potential for recharging up to 100,000 acre-feet/year (123 million m³/year) of recycled water at these facilities.

Artificial Recharge Feasibility Study, Butler Valley, Arizona - Conducted hydrogeologic investigation of remote desert basin, located along Central Arizona Project aqueduct, to evaluate its potential as a conjunctive-use storage basin; supervised construction of two 600-foot (200 m)

deep monitoring wells; performed aquifer testing and analysis; assisted with seismic and gravity surveys; constructed numerical flow model to estimate maximum basin storage potential.

Groundwater Numerical Modeling

Orange County Groundwater Basin Management - Directed development and transient calibration of numerical flow model (MODFLOW) of 350-square mile (910 km²) basin; model contains over 40,000 active cells and was successfully used to evaluate mounding potential beneath Anaheim Forebay recharge facilities under increasing recharge conditions and effects of shifting future groundwater production inland to lessen recharge mounding potential and reduce drawdown in coastal areas of the basin.

Alamitos Seawater Barrier Expansion – Oversaw project to construct MODFLOW-based 13-layer numerical model of the Alamitos Gap to determine locations and design flow rates for a series of new injection wells to expand the capacity of the existing seawater barrier.

Talbert Seawater Barrier Expansion – Managed project to construct MODFLOW-based 13-layer numerical model of the Talbert Gap to determine locations and design flow rates for a series of new injection wells to expand the capacity of the existing seawater barrier.

Irvine Desalter Project - Developed numerical flow model (MODFLOW/MODPATH) of Irvine subbasin used to design layout of 7.5-mgd (19.5 m³/min) production well field as part of a \$45 million (capital) combined water supply/groundwater remediation facility to remove groundwater containing elevated TDS, nitrate, and TCE.

Oak Creek Canyon Water Supply Evaluation - Managed project to determine safe yield of small groundwater basin near Tehachapi, California for cement plant operations; designed and supervised construction and pump testing of two water wells; developed conceptual hydrogeologic and numerical flow models (MODFLOW) to evaluate maximum yield of basin.

Groundwater Salinity Investigation, Laughlin, Nevada - Developed groundwater flow and solute transport model (PLASM/Random Walk) to evaluate the effectiveness of an extraction system to contain a high-salinity groundwater plume at a power generating plant; supervised construction of multi-depth monitoring wells to delineate extent of saline plume.

Data Management

OCWD Water Resources Management System - Managed design and construction of integrated database, GIS, CAD, and modeling software that stores and retrieves historical geologic, well construction, water level, water quality, and groundwater production data; system originally developed in client-server (DOS-UNIX) and converted to Windows; directed 20-year effort to compile, organize, code, and key-enter/digitize hundreds of thousands of paper records of geologic/water resources data.

PUBLICATIONS

Hutchinson, A.S., Woodside, G.D. and Herndon, R.L., *Increasing the Sustainable Yield of the*

- Orange County Groundwater Basin with Managed Aquifer Recharge*. Groundwater, Vol. 6, No. 5, 2022, <https://doi.org/10.1111/gwat.13149>
- Woodside, G., Sovich, T., Herndon, R., and Dadakis, J., *Water Quality Benefits of the Groundwater Replenishment System*, proc. of the International Water Association 11th International Conference on Water Reclamation and Reuse, Long Beach, CA, July 23-27, 2017.
- Herndon, R., and Markus, M., *Large-Scale Aquifer Replenishment and Seawater Intrusion Control Using Recycled Water in Southern California*, Instituto Geológico y Minero de España (IGME), June 2014, Bulletin 125 (2): 143-155; ISSN: 0366-0176.
- Clark, J.F., Morrissey, S., Dadakis, J., Hutchinson, A., and Herndon, R., *Investigation of Groundwater Flow Variations near a Recharge Pond with Repeat Deliberate Tracer Experiments*, Water 2014, 6, 1826-1839; doi:10.3390/w6061826; ISSN 2073-4441; www.mdpi.com/journal/water
- Herndon, R.L., and Bonsangue, J.D., *Hydrogeology of Orange County Groundwater Basin -- An Updated Overview*, in Geology of the Orange County Region, Southern California, Field Trip Guide Book No. 33, John Bonsangue and Robert Lemmer ed., South Coast Geological Society, Inc., 2006.
- Clark, J.F., Hudson, G.B., Davisson, M.L., Woodside, G., Herndon, R., *Geochemical Imaging of Flow Near an Artificial Recharge Facility, Orange County, California*, Ground Water, Vol. 42, No. 2, March-April 2004.
- Herndon, R.L., Woodside, G.D., Davisson, M.L., Hudson, G.B., *Use of Isotopes to Estimate Groundwater Age and Flow Path*, Southwest Hydrology, Vol. 2, No. 1, January/February 2003.
- Grebien, V., Ide, C., and Herndon, R., *Alternatives to Adjudications – The OCWD Model*, presented by V. Grebrien at CLE California Water Law Conference, Irvine, CA, October, 2002.
- Gamlin, J.D., Clark, J.F., Woodside, G., Herndon, R., *Large-Scale Tracing of Ground Water with Sulfur Hexafluoride*, Jour. of Environ. Engr., February 2001.
- Davisson, M.L., Hudson, G.B., Esser, B.K., Ekwurzel, B., Herndon, R.L., *Tracing and Age-Dating Recycled Waste Water Recharge for Potable Reuse in a Seawater Injection Barrier, Southern California, USA*, International Atomic Energy Agency, International Symposium on Isotope Techniques in Water Resources Development and Management, Vienna, 10-14 May, 1999. IAEA-SM-361/36
- Davisson, M.L., Hudson, G.B., Moran, J., Niemeyer, S., Herndon, R., *Isotope Tracer Approaches for Characterizing Artificial Recharge and Demonstrating Regulatory Compliance*, Annual UC Water Reuse Research Conference, Monterey, CA, June 1998.

- Ebersold, D.B., Hacker, M.D., Herndon, R., Cardenas, F., *Evaluation of Direct Injection of Reclaimed Water in a Potable Aquifer in the Alamitos Gap Seawater Intrusion Barrier*, Journal of the American Water Resources Association, October 1997.
- Davisson, M.L., Hudson, G.B., Herndon, R., Niemeyer, S., Beiriger, J., *Report on the Feasibility of Using Isotopes to Source and Age-Date Groundwater in Orange County Water District's Forebay Region, Orange County, California*, Lawrence Livermore National Laboratory ref. #UCRL-ID-123953, May 1996.
- Crook, J., Herndon, R.L., Wehner, M.P., and Rigby, M.G., *Studies to Determine the Effects of Injecting 100 Percent Reclaimed Water from Water Factory 21*, Proceedings of Annual Water Environment Federation Conference, Miami, FL, 1995.
- Herndon, R.L., *Hydrogeology of Orange County Groundwater Basin -- An Overview*, in The Regressive Pleistocene Shoreline, Coastal Southern California, Annual Field Trip Guide Book No. 20, Edward G. Heath and W. Lavon Lewis ed., South Coast Geological Society, Inc., 1992.