JOB DESCRIPTION AND POSITION CLASSIFICATION

CLASSIFICATION	DWR POSITION NUMBER	SAP POSITION NUMBER	MCR
Engineer, Water Resources	**1380-3137-008/1380-3137-037**	**50006051/50000942**	**1**

APPOINTEE	SAP PERSONNEL NO.	DIVISION/SECTION
Vacant	**TBD**	**Modeling Support Office/Central Valley Modeling**

COLLECTIVE BARGAINING IDENTIFIER

Management Related BU:	Supervisory Related BU:	Confidential Related BU:	Rank and File BU:
☐	☐	☐	☑ **R09**

RESPONSIBILITIES EXERCISED	IMMEDIATE SUPERVISOR (Print)	SUPERVISOR'S CLASSIFICATION
☐ Supervisory ☐ Lead Person	**ZhiQiang Richard Chen**	**Senior Engineer, Water Resources**

APPROVED BY (Personnel Analyst's Name)	DATE
Tammy Geer	**11/03/2026**

Percent of Time	*Activity*
	POSITION SUMMARY **The Engineer, Water Resources, under the direction of a Senior Engineer, Water Resources in the Central Valley Modeling Section of the Modeling Support Office, is responsible for developing and maintaining present and future levels of hydrological inputs for various models such as CalSim and C2VSim. CalSim and C2VSim models are used to simulate operations of State Water Project (SWP) and Central Valley Project (CVP) as well as much of the water resources infrastructure in the Central Valley of California and Sacramento-San Joaquin Delta region.** **ESSENTIAL FUNCTIONS** **This position requires the incumbent to have knowledge of hydrology and numerical analysis, State Water Project (SWP) and Central Valley Project (CVP) system operations, and water resources simulation modeling; knowledge and working experience of programming languages and data analysis/visualization tools and ability to communicate effectively both in writing and verbally. The incumbent is also required to work cooperatively with others; maintain regular, consistent, and predictable attendance; and exercise good judgment. The specific essential duties are:**
45%	**Maintain, evaluate, and develop the surface water and groundwater hydrology inputs for CalSim and C2VSim models to provide scientific decision support for State Water Project (SWP)/Central Valley Project (CVP) planning and operation activities. Duties include: (1) processing/developing/evaluating datasets of soil hydraulic properties, land use, flow and hydroclimate timeseries from various sources for models under historical, current, and future climate change scenarios; (2) configurating, running and debugging computer models to simulate rainfall runoff, snow melt, crop evapotranspiration, evaporation from bare soil and water surface, unsaturated soil moisture flow, and groundwater flow under various hydroclimate and water use scenarios; 3) evaluating and improving physically-based, statistically-based, machine learning, and Artificial Intelligence (AI)- based methods used in developing components of hydrologic inputs; 4) expanding current hydrologic inputs both temporally and spatially; and 5) maintaining internal hydroclimate, hydrologic, and water uses database for models.**

SUPERVISOR'S STATEMENT: **I HAVE DISCUSSED THE DUTIES OF THE POSITION WITH THE EMPLOYEE.**

SUPERVISOR'S NAME (Print)	SUPERVISOR'S SIGNATURE	DATE
ZhiQiang Richard Chen	➢	

EMPLOYEE'S STATEMENT: **I HAVE DISCUSSED WITH MY SUPERVISOR THE DUTIES OF THE POSITION AND HAVE RECEIVED A COPY OF THE DUTY STATEMENT.**

EMPLOYEE'S NAME (Print)	EMPLOYEE'S SIGNATURE	DATE
Vacant	➢	

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Percent of Time	*Activity*
20%	**Develop and maintain Central Valley water management simulation models, including CalSim and C2VSim, used to support decisions for operating, planning, and managing California's SWP and CVP. Apply simulation models for planning studies, regulatory processes and water supply investigations related to the operations of the SWP and CVP. Studies include, but are not limited to, new regulatory actions, additional system storage, and conveyance facilities. Coordinate with other state agencies, federal entities, and other collaborators to update the simulation models and document modeling assumptions.**
20%	**Develop and maintain computer tools using Python, Fortran, Excel VBA, WRESL, GIS and other programming languages and software for complex calculations in hydroclimate data processing, mountainous watershed model, valley floor agriculture, urban and refuge water use modeling, forecast of stream flow, and other water resources engineering projects for SWP and CVP. Develop computer tools to automate the development of tables, graphics, and computer animations for visualizing results of simulation model studies.**
15%	**Prepare written reports, memorandum and correspondence of a technical nature to various local, State, and federal agencies to communicate the development, implementation, and use of computer simulation models related to hydrology development and planning studies. Use engineering knowledge to analyze model outputs and developing impact reports for various scenarios. Make presentations to managers, coworkers, and the public on model development activities and application results.**

SPECIAL REQUIREMENTS

Civil engineering degree is preferred with specialization in Water Resources Engineering and computer simulation modeling; knowledge or experience in CalSim, C2VSim, and rainfall-runoff models.

All employees are responsible for contributing to an inclusive, safe, and secure work environment that values diverse cultures, perspectives, and experiences, and is free from discrimination.

The Department of Water Resources is committed to its mission and employees, and we are grounded in our commitment to public safety. Regular, consistent, and predictable attendance is essential to the successful performance in this position.

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Percent of Time	*Activity*
	OTHER RESPONSIBILITIES **This position provides necessary support to the Divisions of Flood Management, Safety of Dams, Operations and Maintenance, Engineering, and/or the Public Affairs Office during Governor declared emergencies, flood, dam, SWP, and other incidents and emergencies. Additionally, this position may participate in emergency operations in the capacity of area teams, field inspection, coordination, and assist agencies such as Cal OES and FEMA in disaster work, including performing fieldwork to complete damage survey reports for droughts, flooding, earthquakes, and other emergencies. This position may also serve in one of the sections as established in the Incident Command System to assist the Department in performing its emergency preparedness, response, recovery, and mitigation functions. These functions are established in the California State Emergency Plan and the Department's Administrative Orders.**