



## Mechanical Technician

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### Summary

Perform a variety of skilled and semiskilled tasks pertaining to the installation, maintenance, repair and service of the electrical and mechanical equipment, instruments and structures used within the water system and water recycling plant and pump stations; and provide technical staff support to plant operations.

### Class Characteristics

This is the journey level for the mechanical functions. General supervision is provided by the Water Recycling Plant Operations Supervisor and lead direction from the Senior Mechanical Technician. An incumbent maintains and repairs water and water recycling and reuse equipment including, but not limited to: sluice gates, compressors and flights; hydraulic controls; mechanical, structural, and plumbing apparatus; belts, chains, and conveyors; diesel and/or gas engines and related cogeneration equipment; potable water systems; wastewater systems; storm drainage; chemical handling systems; boilers and digester systems; oxygen transfer systems; centrifugal, positive displacement, progressive cavity, chemical metering, and axial flow pumps; vertical turbine recycled water, submersible storm water and chopper type centrifugal pump stations; lift stations; plug, butterfly, motor and actuator valves; distributed programmable control logic control systems; and computerized control systems. Incumbents may also assist with general plant operations as needed.

This class can be distinguished from the Senior Mechanical Technician class because the incumbent in the latter class serves as lead worker and is also responsible for providing advanced technical expertise pertaining to the most complex maintenance and repair issues.

### Essential Duties, Skills, and Demands of the Position

*The duties, skills and demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with a disability to perform the essential duties, skills and demands.*

#### Duties:

Perform maintenance and repair duties for the City's water and water recycling plant and related facilities.

Inspect, maintain, troubleshoot, repair and service facilities, machinery and equipment including, but not limited to, pumps, lift stations, valves, motors, engines, compressors and computerized control systems; rebuild and overhaul pumps, pneumatic control systems and ventilation blower units; inspect and calibrate gauges and meters; inspect and test air quality analyzers; perform or make recommendations regarding a wide variety of maintenance and repair projects.

Perform corrective mechanical maintenance by troubleshooting the cause of malfunctions using visual inspection and precision measuring and testing instruments and replacing or repairing broken parts such as gauges, gaskets, plugs, coils, wires, bearings, drive lines, valves, pistons, rings, crankshafts and pumps.

Perform preventive and predictive maintenance checks and servicing on equipment by implementing maintenance schedules.

Monitor supplies and help maintain appropriate inventories; assist with estimating quantities of materials and supplies needed and placing orders; recommend and assist with equipment purchases by researching cost, availability and other factors; prepare time, material, work order and equipment use records.

Rebuild equipment as needed; disassemble and clean items; order replacement parts and repair mechanical malfunctions; reassemble and test items.

Adhere to safety orders and comply with federal and OSHA regulations in all aspects of work.

Work with engineers, contractors, vendors, other City departments and staff as needed in order to complete assignments; provide input as requested regarding the design, installation and maintenance of lift stations and conveyance systems.

Read and interpret blueprints and schematics; provide input and recommend changes on design blueprints as requested.

Operate and maintain a variety of hand and power tools used in the performance of assigned duties; drive trucks and operate light and heavy equipment such as backhoes, fork lifts, tractors, rollers, and loaders.

Fabricate parts and equipment as needed such as mounts, brackets and shields; operate welding and cutting equipment.

Spray pesticides, herbicides and insecticides as required.

Collect wastewater samples as assigned.

Perform general plumbing, electrical and carpentry duties as required.

May help train staff in work techniques, the use of equipment and safety programs and techniques such as confined space entry procedures and lift station maintenance safety procedures.

Prepare reports, forms, correspondence and related documentation regarding assigned operations in a complete, accurate and timely manner.

Perform related duties as assigned.

Skills/Abilities:

Perform skilled and semi-skilled work pertaining to the installation, maintenance, repair and service of electrical and mechanical equipment, instruments and structures used within a wastewater treatment and/or recycling plant.

Troubleshoot and diagnose malfunctions with pumping capacities, pneumatic controls, and computerized controls and recommend the effective course of action or correction.

Operate a variety of hand and power tools; drive trucks and operate a variety of heavy construction equipment.

Read and interpret drawings, blueprints and specifications.

Understand a variety of technical instructions in text, mathematical or diagram form.

Prepare technical reports and documents.

Work in confined work spaces.

Effectively present information to supervisors and managers in a clear and concise manner.

Respond to emergency situations in an appropriate manner.

Make sound decisions and meet critical deadlines.

Define problems, collect data, establish facts and draw valid conclusions.

Utilize standard business computer hardware and software to maximize productivity and efficiency.

Communicate effectively, both orally and in writing.

Establish and maintain effective working relationships with those contacted in the course of the work.

Physical Demands and Work Environment:

While performing the duties of this job, the employee is frequently required to sit, stand, walk, talk, hear, and reach with hands and arms. The employee is frequently required to use hands to finger, handle, or feel objects, tools, or controls, and will frequently be required to enter data into a terminal, personal computer or keyboard device and operate office equipment requiring repetitive arm/hand movement. The employee is occasionally required to climb, balance, stoop, kneel, crouch, or crawl, taste or smell. The employee must be able to perform heavy physical labor, including having sufficient strength to lift, carry and/or move items up to 75 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and the ability to adjust focus. While performing the duties of this job, the employee is occasionally exposed to outside weather conditions and wet conditions. Other work conditions include exposure to unpleasant odors, mechanical parts, fumes, airborne particles and moderate noise levels. There is risk of exposure to hazardous fumes and substances. Employees must operate vehicles and equipment in order to perform job duties. Employees may be required to work overtime, weekends, and/or holidays and may perform on call duties.

**Special Physical Requirement:**

May be required to enter confined space and /or respond in an emergency. Must be able to wear self-contained breathing apparatus (SCBA) and perform confined space entry and emergency response duties in protective clothing and equipment including SCBA weighing up to 32 pounds.

**Qualifications**

Knowledge of:

Typical operations, services and activities within water and water recycling facilities.

Principles, methods, materials and tools employed in the repair and maintenance of pumps, motors and other wastewater plant equipment, including welding, machining, institutional HVAC, equipment fabrication, pumps, and/or process equipment.

Occupational hazards and safety precautions necessary in heavy industrial maintenance work.

Basic plumbing and electrical principles.

Principles and practices of hydraulics related to pumps.

Practices and techniques of metal cutting and welding.

Supervisory Control and Data Acquisition (SCADA) pump control systems.

Report writing and records maintenance.

Gas and diesel engine maintenance and repair.

Standard methods of purchasing and inventory control.

Methods and techniques of implementing a preventive and predictive maintenance program.

Standard business computer applications including Microsoft Windows and Office.

**Education and Experience:**

*Any combination equivalent to the education and experience likely to provide the required knowledge and abilities would be qualifying. A typical way to gain such knowledge and abilities would be:*

**Education:**

Equivalent to graduation from high school; additional technical or college-level coursework related to water systems and/or water recycling plant operations is highly desirable.

**Experience:**

Two years of responsible experience performing systems maintenance and repair duties in a water or wastewater treatment plant; **or** four years performing maintenance and repair in an industrial environment that included maintaining/repairing pumps, motors, engines, boilers, piping, valves and instrumentation.

**Licenses/Certificates:**

Possession of a valid California Class C driver's license with a satisfactory driving record.

Possession of a valid Grade I Plant Maintenance Mechanical Technologist Certification issued by the California Water Environment Association (CWEA) within 24 months of appointment.

Possession of a valid Grade II Plant Maintenance Mechanical Technologist Certification issued by the California Water Environment Association within 36 months of appointment to position.

Possession of a valid Wastewater Treatment Plant Operator Certificate issued by the State of California Water Resources Control Board is desirable.

Possession of a valid Certificate in Collection System Maintenance issued by the California Water Environmental Association (CWEA) is desirable.

**Additional Requirement**

Must be available to work overtime and off-shift hours, including weekends, on a project or emergency basis. May be required to work on-call.

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