

City of San José
CLASS SPECIFICATION
WASTEWATER MECHANIC I/II (3622/3672)

DEPARTMENT	ACCOUNTABLE TO	FLSA STATUS
Environmental Services Department	Wastewater Mechanical Supervisor	Non-exempt

CLASS SUMMARY

Performs skilled journey-level work of moderate difficulty in the maintenance, repair, and overhaul of varied industrial mechanical equipment; or in the operation and maintenance of large bore, medium speed, stationary, reciprocating engines and auxiliary equipment at the San Jose/Santa Clara Regional Wastewater Facility. Performs related work as required.

DISTINGUISHING CHARACTERISTICS

This is a two level flexibly-staffed class and is the journey-level mechanic in the Wastewater Mechanic series. It differs from the next higher class of Senior Wastewater Mechanic in that incumbents of the latter provide lead direction to Wastewater Mechanics. Depending on the work group, assignments will be made to any shift needed for an around-the-clock operation. Incumbents must also be available for work on Saturdays, Sundays, and Holidays.

Duties require a heavy level of physical exertion, including exerting up to 100 pounds of force occasionally, and or up to 50 pounds of force frequently, and/or up to 20 pounds of force constantly to move objects (e.g. large hand tools, pipes, or other wastewater equipment). Incumbents work with large industrial equipment and machinery, in confined spaces, and around hazardous materials. Incumbents may be required to utilize self-contained breathing apparatus (SCBA) equipment, which requires the ability to pass an annual fit and spirometry test.

QUALIFICATIONS

(These qualifications are typically required. An equivalent combination of education and experience sufficient to satisfactorily perform the duties of the job may be substituted.)

Minimum Qualifications

Wastewater Mechanic I

Education: Successful completion of high school, General Educational Development (G.E.D.) Certificate, or California Proficiency Certificate.

Experience: Two (2) years journey level experience as a mechanic in hydraulics, wastewater treatment or closely related industry or in operation, maintenance, repair, and overhaul of mechanical and electrical equipment related to large stationary diesel and spark-ignited engines and/or power generators; OR four (4) years experience assisting Wastewater Mechanics in the maintenance and repair of wastewater equipment at a level equivalent to Wastewater Attendant or Assistant Heavy Diesel Equipment Operator/Mechanic with the City of San José OR completion of the Apprentice Wastewater Mechanic program with the City of San José.

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Required Licensing: Possession of a valid State of California Class C driver's license. As a condition of employment in some designated positions, possession of a valid State of California Class A or B driver's license with applicable endorsements may be required in the performance of job duties.

Wastewater Mechanic II

Education: Successful completion of high school, General Educational Development (G.E.D.) Certificate, or California Proficiency Certificate.

Experience: Two (2) years journey level experience as a mechanic in hydraulics, wastewater treatment or closely related industry or in operation, maintenance, repair, and overhaul of mechanical and electrical equipment related to large stationary diesel and spark-ignited engines and/or power generators; OR four (4) years experience assisting Wastewater Mechanics in the maintenance and repair of wastewater equipment at a level equivalent to Wastewater Attendant with the City of San José OR completion of the Apprentice Wastewater Mechanic program with the City of San José. AND certification as Plant Mechanical Technologist Grade II from California Water Environment Association (CWEA) or equivalent,

Acceptable Substitution: Two (2) years of experience as a Wastewater Mechanic I may be substituted for the certification as Plant Mechanical Technologist Grade II.

Required Licensing: Possession of a valid State of California Class C driver's license. As a condition of employment in some designated positions, possession of a valid State of California Class A or B driver's license with applicable endorsements may be required in the performance of job duties.

Other Qualifications

(Incumbents may be required to have different combinations of the listed qualifications, or more specific job-related qualifications depending on the position.)

Basic Knowledge, Skills and Abilities

- Knowledge of safety practices, procedures, and standards applicable to industrial plant operations and maintenance such as confined space, rigging and lifting, hearing protection, respiratory protection, lock out/tag out, hazardous chemicals, hot work etc.
- Knowledge of practical methods and procedures for moving heavy objects.
- Knowledge of principles applicable to wastewater treatment plant operation and maintenance.
- Knowledge of piping systems including; layout, installation, repair, fabrication.
- Knowledge of Microsoft software including Word, Excel, Outlook or similar.
- Knowledge of fabrication shop tools including welding, sheet metal roller, drill press, sanders, band saw, torches or other.

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- Knowledge of and experience in inspecting, testing, dismantling, installing, maintaining, troubleshooting, repairing, and overhauling wastewater treatment equipment such as: bar screens, grit collectors, conveyors, mechanical grinders, pumps, small engines, blowers, gas and air compressors, ventilation systems, chlorinators, large bore, medium speed reciprocating engines, centrifugal air compressors, reciprocating methane gas compressors, etc.
- Knowledge of maintenance procedures associated with large bore, medium speed engines; valves, gearboxes, pumps and air compressors.
- Ability to repair a wide range of complex mechanical systems and equipment.
- Ability to make equipment setting adjustments or to mechanically modify equipment for more efficient operation.
- Ability to identify the root cause of system malfunctions and determine appropriate course of action to fix problems.
- Ability to efficiently use mechanical hand and power tools and equipment common to wastewater facility maintenance.
- Ability to read and interpret plans and drawings
- Ability to understand and use computerized control systems such as the Facility Distributed Control System (DCS).

- Ability to use and read precision measurement devices such as micrometers, laser alignment tools, dial indicators, etc. for measuring and machinery alignment.
- Ability to inspect, trouble shoot and write concise and accurate work orders and reports on the Computerized Maintenance Management System (CMMS).
- Ability to accurately and properly fill out regulatory permits and paperwork
- Ability to read, interpret, and record data gathered from meters and gages mounted on: engines, gas compressors and Distributive Control System (DCS).
- Ability to distinguish between essential and non-essential information in preparing reports.
- Ability to use information from the CMMS to prepare documents.
- Ability to recommend and implement improvements to standard operating procedures for the maintenance and repair of mechanical equipment.
- Ability to effectively communicate with diverse workgroups, including wastewater operators, electricians, engineers, heavy equipment operator, and various other employees from various other departments, contractors, vendors, and consultants.

Desirable Qualifications

(Knowledge, skills, and abilities; licenses, certificates, education, experience that is more position specific and/or likely to contribute to more successful job performance.)

- Knowledge of mechanical principles, pneumatics, hydraulics and other equipment found in wastewater facility or similar heavy industrial facilities.
- Knowledge of blended gas system and its delivery.
- Knowledge of diesel fuels and lubricants used in heavy-duty power plant operation.

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- Knowledge of standard operating procedures related to 5KV three phase alternating current generation and distribution
- Knowledge of state, federal and local standards and regulations related to the Wastewater facility.
- Knowledge of and experience in operating, troubleshooting and adjusting large bore medium speed reciprocating compression and spark ignited engines that operate on variable BTU methane fuel.
- Ability to operate power switchboard, and adjust distribution of electric power.
- Ability to provide on-the-job training for inexperienced employees.
- Ability to use gathered data to evaluate operational condition of machinery and make adjustments when necessary.
- Completion of technical trade school in the field of mechanics.
- Experience in metal fabrication, including sheet metal.
- Possession of specialized certification such as Backflow preventer installation and maintenance, Welding, Confined Space Entry, Power Plant, Hazardous Material Handling, etc.

DUTY NO.	TYPICAL CLASS ESSENTIAL DUTIES: (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FRE-QUENCY*
	Installs, aligns, removes, and repairs various types of industrial equipment.	Continuous
	Performs preventive maintenance tasks and inspections of industrial equipment to prevent breakdowns.	Continuous
	Operates and maintains large bore medium speed engines operating on diesel and variable BTU methane, gas compressors and related auxiliary equipment	Continuous
	Dismantles, overhauls, and reassembles engines, centrifugal air compressors, methane gas compressors and auxiliary equipment	Continuous
	Makes continuous inspections of assigned equipment and adjusts and repairs parts needing specific attention.	Continuous
	Makes equipment setting adjustments to provide efficient engine and auxiliary equipment operation.	Continuous
	Interprets Distributive Control System (DCS) graphics and trends to monitor and adjust operating systems.	Continuous
	Reads, gathers data, and records data from meters, gauges, thermometers, and other recording and measuring devices which show operating conditions.	Continuous
	Operates three phase alternating current 5KV generator switchgear, using standard operating procedures.	Continuous
	Cleans work area.	Continuous
	Stays current with safety topics and issue to provide for safety in work areas, and for safe operation of the equipment.	Continuous

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DUTY NO.	TYPICAL CLASS ESSENTIAL DUTIES: (These duties and estimated frequency are a representative sample; position assignments may vary depending on the business needs of the department.) Duties may include, but are not limited to, the following:	FRE-QUENCY*
	Removes, installs, and relocates various pieces of heavy, unwieldy, or otherwise critical equipment and machinery using cranes, winches, hoists, dollies, rollers, and forklift trucks.	Frequent
	Provides trainings and directs the activities of assigned Wastewater Attendants, Apprentice Wastewater Mechanics and other staff.	Frequent
	Performs rigging, shoring and confined-space entry.	Frequent
	Operates various equipment such as drill presses, bridgeport, lathe, and surface grinders as well as forklifts, backhoes, man lifts, front loaders, and all terrain forklifts.	Frequent
	Operates and maintains low-pressure boilers.	Frequent
	Installs, repairs and checks high pressure piping systems.	Occasional
	Modifies existing piping and tests systems and equipment for proper operation and conformance to standards.	Occasional
	Performs all-position welding for different types of metals and alloys of various sizes, thickness, and shapes; such as arc, tig, mig, as well as oxy-acetylene and plasma cutting.	Occasional
	Cuts plates, structural steel and alloys within close tolerances with flame-cutting torch equipment.	Occasional
	Prepares sketches, job orders and specifications.	Occasional
	Reads and interprets blueprints and drawings.	Occasional
	Lays out, cuts, bends and assembles pipes and other component parts for the fabrication of new systems.	Occasional
	Maintains records and prepares reports.	Occasional
	Modifies equipment for more efficient operation or reduced maintenance.	As Required
	Performs other duties of a similar nature or level.	As Required

*Frequency defined as %, (totaling 100%) *or* “Continuous” (daily or approximately 20%+), “Frequent”(weekly or approximately 15%+), “Occasional”(monthly or approximately 10%+), “As Required”(Intermittent or 5% or less)

CLASSIFICATION HISTORY: *Created 5/80; Rev. 11/86, 4/92, 4/98; Rev, Ret (formerly Plant Mechanic) & Cons. with Heavy Diesel Equipment Operator/Mechanic 8/13; 3622s002*