SAUSALITO-MARIN CITY SANITARY DISTRICT

OPERATIONS AND MAINTENANCE TECHNICIAN III

DEFINITION

Under general supervision of the Operations and Maintenance Supervisor, performs advanced and lead-level tasks to operate and maintain wastewater processes and equipment, and performs standard and advanced laboratory analyses and mechanical maintenance and repair work.

SUPERVISION EXERCISED

Exercises technical and functional supervision over assigned Operations and Maintenance personnel in the absence of the Operations and Maintenance Supervisor.

IMPORTANT AND ESSENTIAL DUTIES (Illustrative only)

- Operates treatment facilities and processes to ensure reliable and cost effective operation in compliance with all NPDES permit and regulatory requirements.
- Performs advanced-level process control calculations such as solids balances, volatile solids reduction, solids and hydraulic retention time, chemical dosages, efficiency determination and other calculations.
- Performs routine laboratory analysis; such as conductivity, pH, temperature, turbidity, chlorine residual (free and combined), dissolved oxygen, biochemical oxygen demand, solids (total, dissolved, suspended, volatile, non-volatile), volatile acid/alkalinity, methane gas, carbon dioxide, hydrogen sulfide and settleable solids; and microbiological analyses, such as sterile techniques, total and fecal coliform (MPN), confirmed test, media preparation and total plate count.
- On a relief or project basis, provides lead direction and work review to staff responsible for operation and maintenance of the wastewater treatment plant, including repair and installation of all hydraulic, pneumatic and mechanical equipment; trains staff in work procedures and ensures that all safety precautions are followed.
- Develops new methods, techniques and procedures to effectively and efficiently operate and maintain plant facilities
- Maintains documentation, such as worksheet/log sheet entries and sample test results, precisely and accurately.
- Operates, maintains and calibrates test equipment such as dissolved oxygen meters, pH meters and turbidimeter.
- Collects samples of wastewater, sludge, receiving water and commercial wastewater in accordance with established lab procedures.
- Prepares, sorts, washes, decontaminates, and sterilizes lab glassware.
- Prepares chemical reagents and bacteriological culture media.

- Interprets and works from drawings, designs, schematics, sketches, and written and verbal instructions; performs basic maintenance, repairs, fabrication, and rebuilding of shop, field and plant equipment used in wastewater treatment facilities, pump stations and collection systems.
- Lubricates, adjusts, and maintains shop, field and plant equipment, including the inspection, cleaning, and repair of wet wells, pipelines, pumps, compressors, valves, chemical feed, and processing equipment.
- Performs preventive and corrective maintenance on a variety of electrical and mechanical equipment.
- Performs electrical and instrumentation circuit installation for additions or modifications by bending and installing conduit, pulling wire, wiring in circuits as shown on blueprint and testing system for proper installation.
- Assists in the installation of, inspection, and repair of a variety of pumps, such as centrifugal, positive displacement, and screw; services, lubricates, adjusts, and maintains pumps; removes and installs packing and most seals.
- Performs basic horizontal welding and fabricating with acetylene and arc welders; heats and cuts materials.
- Installs, inspects, maintains, and repairs piping systems of galvanized steel, PVC, stainless steel, and copper tubing; identifies types of piping, fittings, and basic valves; cuts and threads pipes; and makes minor modifications to existing piping systems.
- Performs basic maintenance and repair tasks on engines, such as changing oil, belts, and spark plugs; replaces filters; obtains oil and fuel samples; takes hydrometer readings of coolant and battery fluids.
- Performs regularly scheduled maintenance, inspection, and repair tasks on comminuting and grinding devices; replaces and adjusts cutters and combs; cleans bar screens; lubricates devices; and assists others in the more complex repairs.
- Performs inspection, maintenance, and repair tasks on mechanical and electrical drive components.
- Inspects, maintains, and assists in the repair of a variety of hydraulic, pneumatic and electrical process control equipment
- Follows proper safety practices, precautions, and procedures, such as confined space entry; the storing, handling, and transportation of gases; using correct lockout, tagout and rigging procedures, wearing flash protection when welding and other safety equipment as appropriate;; and operating and maintaining hand and power tools and test equipment in a safe manner.
- Monitors work activities to ensure compliance with established policies and procedures and makes recommendations for changes and improvements to existing policies and procedures.
- Operates dump and flatbed trucks, generators, and other types of machinery, and equipment.
- Monitors gages, meters, charts, instruments, control panels and computer work station screens and maintains a professional quality log of operational data and events and interprets process deviations.

OTHER DUTIES

- Operates cleans, services, maintains, and paints equipment, machinery, vehicles, structures, grounds, buildings, pipelines, storage tanks and additional items found in wastewater collection, treatment and disposal facilities.
- Updates operations, maintenance and laboratory procedures and O&M manuals.
- Responds to emergencies.
- Performs other related duties as assigned.

QUALIFICATIONS

Knowledge of:

- Methods, materials and equipment used in the operation and maintenance of wastewater treatment facilities and collection and disposal systems.
- Methods and techniques used in quantitative laboratory analysis, biology and bacteriology as related to wastewater treatment processes and operations.
- Basic principles and practices of supervision, training and personnel management.
- Pertinent federal and state codes and regulations and the plant discharge permit.
- Use and care of laboratory and plant equipment and hazards and proper safety precautions and procedures, including chemical hygiene and personal protective equipment.
- Principles of wastewater sampling and process control tests.
- Safe work practices, including storage and handling acutely hazardous materials and chemicals.
- Techniques, methods, practices, procedures, and tools of plant maintenance.
- Principles and practices of preventative maintenance.
- Use and care of standard hand, electric and pneumatic tools and equipment of the mechanical trades.
- Electrical circuits, including sizing, installation, troubleshooting and repair.
- Shop mathematics.
- Computer applications related to the work.
- Basic principles and practices of supervision, training and work review.

Skill in:

- Operating wastewater treatment, collection and disposal equipment and facilities, including diagnose and correcting faulty process operations.
- Making repairs and performing preventive and predictive maintenance to the equipment used in the collection, treatment and disposal of wastewater
- Troubleshooting and repairing a variety of mechanical equipment common to a wastewater facility.
- Using operations and maintenance software applications effectively.
- Operating and maintaining plant equipment, facilities, grounds and vehicles.
- Safely operating standard hand, electric and pneumatic tools and equipment of the plant maintenance trade and motor vehicles.
- Performing standard quantitative laboratory analysis.

Ability to:

- Direct, train and review the work of staff.

- Evaluate, interpret, and apply the results of laboratory testing, including advanced mathematical calculations, such as statistics.
- Plan and organize a project from start to finish including purchasing of materials and supplies and scheduling of equipment rentals and specialty contractors.
- Wear personal protective equipment, such as safety glasses or goggles, hard hat, respirator protection (e.g. dust mask, self-contained breathing apparatus, etc.), safety steel toe boots, gloves and protective clothing.
- Read and interpret gages and other recording instruments.
- Prepare reports and keep accurate records.
- Communicate clearly and concisely, both orally and in writing in the English language.
- Establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.
- Follow oral and written instructions.
- Perform physical, chemical and biological tests on treated and polluted water, industrial and domestic wastewater and related materials, including proper sampling and preservation techniques independently.
- Maintain accurate and complete laboratory records; maintain complete and accurate operational logs; maintain maintenance labor and materials records.
- Clean and prepare laboratory equipment/glassware and maintain laboratory in orderly fashion.
- Read, understand and follow proper procedures related to work performed.
- Perform tasks in a timely manner.
- Read and interpret mechanical drawings, plans, and specifications.
- Estimate labor and materials for proposed work.

Experience and Education:

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience:
Six years of experience in the operation and maintenance of wastewater collection and treatment and facilities. Successful completion of college or technical school coursework related to the field may be substituted for the experience on a year for year basis to a maximum of two years.

Education:
Equivalent to graduation from high school supplemented by specialized training in biology, chemistry or a related field. An associate degree in a technical discipline is highly desirable.

LICENSES AND CERTIFICATES

Must possess a Grade III Wastewater Treatment Operator certificate issued by the California State Water Resources Control Board.

Must possess a Laboratory Analyst II certificate and a Mechanical Technologist Grade II certificate issued by the California Water Environment Association, or obtain such certificates in a time frame specified by the District.

Must possess a valid California class C driver's license and a satisfactory driving record.

PHYSICAL DEMANDS

Must possess stamina to walk, stoop, climb and work in confined spaces and a laboratory setting; strength to lift and carry equipment, tools and supplies weighing up to 50 pounds and heavier weights with proper equipment; vision to read a printed page and a computer screen; and hearing and speech to communicate in person and over the telephone.

WORKING CONDITIONS

Must be willing to work under potentially hazardous conditions and with exposure to potentially hazardous chemicals. Must be available for standby, emergency on-call and periodic off-shift work.