

Water Treatment Operator

FLSA Status: Covered
Bargaining Unit: District Council of Trade Unions (DCTU)

General Summary

Positions in this broad class control and adjust water flow and chemical treatment for the City water system, including testing and monitoring of water quality and regulatory compliance.

Water Treatment Operator I - 30000146

Distinguishing Characteristics

The trainee level of this class assists with and learns testing and monitoring for water quality and process control.

Typical Duties/Examples of Work

1. Assists with and learns to collect water samples and analyze for appropriate physical and chemical dosages and feed rates; assists with and learns to calculate chemical dosages and feed rates and adjust appropriately.
2. Assists with and learns to monitor water treatment system through electronic and computerized systems; learns to make adjustments in water flow and corresponding chemical adjustments; assists with and learns to operate treatment process facilities on assigned shift.
3. Assists with and learns to respond to emergency alarms, isolating problem area and taking immediate corrective action to resolve the problem within established federal and state regulations; assists with and learns to test emergency equipment on established schedule to ensure constant emergency preparedness.
4. Assists with and learns to maintain the operational integrity of the water treatment facilities through daily inspection and identification of needed repair and maintenance.
5. Assists with and learns to conduct preventive and general maintenance on a variety of small and large equipment and specialized instrumentation such as valves, pumps, chlorine residual analyzers, pH meters, turbidimeters, generators, fuel systems, conduit pipes, and various compressed gas systems.

- 6. Learns to use computer technology to record water sample data and transmit to other offices, such as water quality and regulatory compliance laboratory.
- 7. Responds to calls to work during emergencies.
- 8. Performs related duties as assigned.

Required Knowledge, Skills and Abilities

Knowledge of: mechanical processes

Ability to: learn water system functions and operations; perform accurate mathematical calculations; diagnose and correct equipment problems

Special Requirements

Valid state driver’s license, Ability to obtain Oregon Department of Human Services Drinking Water Program Water Treatment Level 1 Operator Certification within 24 months of appointment; passing routine respiratory protection physical assessment within 6 months of appointment and ongoing.

Classification History:

Adopted: 2-03-99:

Class created as a result of DCTU Classification and Compensation Study 1998-99. This class is composed of the following classes:
1751 Water Treatment OP Trn Adopted: September 1996

Revised: 11-16-06

Changed requirement for respiratory physical assessment from upon appointment to within 6 months of appointment.

Revised: 03-05-07

Updated language for Operator Certification level 1 to conform to current State of Oregon terminology

June 2009 - Change Job Class number from 1751 to 30000146, due to system change.

Revised: 11-13-17

Update requirement to obtain the Oregon Department of Human Services Drinking Water Program Water Treatment Level 1 Operator Certification from within 6 months of appointment to 24 months of appointment.

Water Treatment Operator II - 30000147

Distinguishing Characteristics

The Water Treatment Operator II is responsible for monitoring and treating the City water supply and maintaining watershed and plant facilities. Incumbents

perform a combination of technical and mechanical duties in the ongoing operation and maintenance of the water treatment system. This level is distinguished from the Water Treatment Operator I by performing the full range of functions independently.

Typical Duties/Examples of Work

1. Collects water samples and analyzes for appropriate physical and chemical dosages and feed rates; calculates chemical dosages and feed rates and adjusts appropriately.
2. Monitors and controls water treatment system through electronic and computerized systems; makes adjustments in water flow and corresponding chemical adjustments; operates treatment process facilities on assigned shift.
3. Responds to emergency alarms, isolating problem area and taking immediate corrective action to resolve the problem within established federal and state regulations; tests emergency equipment on established schedule to ensure constant emergency preparedness.
4. Maintains the operational integrity of the water treatment facilities through daily inspection and identification of needed repair and maintenance.
5. Conducts preventive and general maintenance on a variety of small and large water treatment process equipment and systems instrumentation such as valves, pumps, chlorine residual analyzers, pH meters, turbidimeters, generators, fuel systems, conduit pipes, and various compressed gas systems.
6. Uses computer technology to record water samples data and transmits to other offices, such as water quality and regulatory compliance laboratory.
7. Orders treatment and testing chemicals, fuels, and supplies as needed to ensure continuous operation of the water treatment system.
8. Coordinates with Portland General Electric (PGE) on hydroelectric power production and corresponding reservoirs; coordinates work with other sections of the Bureau; provides information about operation of the water supply system to others including employees, regulators and the public; works as a team with instrument technicians, control center personnel and other staff.
9. Plans, organizes, orders and purchases materials for assigned job; coordinates job activity with other crafts and trades personnel; reviews plans and specifications and confers with engineers, design professionals and inspectors on suggested changes and modifications.

- 10. Oversees the computerized maintenance management system; maintains appropriate documentation.
- 11. Maintains and purchases spare parts inventory for treatment process-related equipment.
- 12. Performs related duties as assigned

Required Knowledge, Skills and Abilities

Knowledge of: federal and state water regulations pertaining to water treatment and treatment facilities. The OSHA safety rules relating to maintenance and repair of equipment, and handling, storage, disposal of potentially hazardous chemicals. Water quality analysis procedures; water treatment equipment and its proper use and associated maintenance requirements; hydraulics and electricity; water chemistry relating to water treatment; mathematics; manual and electronic record keeping methods; confined space entry.

Ability to: operate treatment facilities within established procedures; calculate chemical additions, water volume, and rates of flow; collect and conduct accurate water sampling analysis using analog and digital data-collection equipment; determine operational problems and act quickly and decisively in bringing the system back to a normal state; read and interpret blueprints and maintenance manuals and apply that information to maintenance procedures; communicate effectively, orally and in writing; operate a computer and supporting software packages; analyze data, draw accurate conclusions, and record findings; use proper safety equipment according to OR-OSHA standards; drive to remote facilities; establish and maintain effective working relationships with employees, individuals with other agencies, and the general public; operate heavy equipment

Skill in: operating manual and power tools in repairing equipment; modifying existing treatment process systems

Special Requirements

Valid state driver’s License; Oregon Health Division Water Treatment Operator Class II certificate; Confined Space Certification; Crane Certification within 6 months of appointment; pass routine respiratory protection physical assessment within 6 months of appointment and ongoing; 24-Hour Water Treatment Hazardous Materials Operations certificate within 6 months of appointment.

Classification History:

Adopted: 2-03-99:

Class created as a result of DCTU Classification and Compensation Study 1998-99. This class is composed of the following classes:

1752 Water Treatment Oper Adopted: September 1996

Revised: 11-16-06

Added requirement for 24 Hour HAZMAT certification within 6 months of appointment. Changed requirement for Crane Certification and respiratory physical assessment from upon appointment to within 6 months of appointment.

June 2009 - Change Job Class number from 1752 to 30000147, due to system change.

Water Treatment Operator, III - 30000148

Distinguishing Characteristics

The Water Treatment Operator III classification is the third level of the Water Treatment Operator series and the journey level of this class. The WTO III has responsibility for monitoring and treating the City water supply and operating and maintaining plant facilities. The Water Treatment Operator III position performs work with minimal supervision and participates in the planning and organization of daily work. Water Treatment Operator IIIs make operational decisions independently. This classification provides guidance and assistance to WTO Is and WTO IIs in the daily operations and maintenance of the City's Drinking Water Treatment facilities.

This level is distinguished from the Water Treatment Operator II by its potential for lead responsibilities and class III certification level of water treatment performed.

Typical Duties/Examples of Work

1. Collects physical and biological water samples and performs chemical and physical water quality analysis.
2. Monitors, controls, and maintains water treatment processes, systems, and equipment; and detects, responds to, and corrects abnormal conditions.
3. Operates treatment process facilities on assigned shifts. Maintains standard operating procedures and related equipment documentation. Maintains the operational integrity of the water treatment facilities through daily inspection and identification of needed repair and maintenance.
4. Uses a variety of specialized equipment including benchtop and online analyzers, computer systems including SCADA (Supervisory Control and Data Acquisition) for process control, HMIs (Human Machine Interfaces) for more localized control, LIMS (Laboratory Information Management System) for logging samples and storing water quality analysis results, and CMMS (Computerized Maintenance Management System) for managing maintenance tasks.
5. Responds to emergency alarms, isolating problem areas and taking immediate corrective action to resolve the problem within established federal and state

- regulations; tests emergency equipment on an established schedule to ensure constant emergency preparedness.
6. Provides quality assurance and quality control checking of data and reports.
 7. Participates in special studies to investigate alternative treatment methods and technologies.
 8. May be assigned an area of responsibility such as leading SOP development, project inspections, or process optimizations.
 9. Plans, organizes, orders, and purchases materials for assigned job; coordinates job activity with other crafts and trades personnel; reviews plans and specifications and confers with engineers, design professionals, and inspectors on suggested changes and modifications.
 10. May perform lead responsibilities, such as maintaining and tracking the training schedule of treatment operators and providing training, guidance, and assistance to Treatment Operators.
 11. Collaborate daily with the other employees and managers of the Portland Water Bureau, including PWB divisions of Engineering, Hydropower, Resource Protection, and others. Frequently interact and coordinate with external contractors, such as Energy Northwest and the Eugene Water and Electric Board.
 12. Performs related duties as assigned.

Required Knowledge, Skills, and Abilities

Knowledge of: federal and state water regulations pertaining to water treatment and treatment facilities. The OSHA safety rules related to maintenance and repair of equipment, and handling, storage, and disposal of potentially hazardous chemicals. Water quality analysis procedures; water treatment equipment and its proper use and associated maintenance requirements; hydraulics and electricity; water chemistry relating to water treatment; mathematics; manual and electronic record-keeping methods; confined space entry.

Ability to: operate treatment facilities within established procedures; calculate chemical additions, water volume, and rates of flow; collect and conduct accurate water sampling analysis using analog and digital data-collection equipment; determine operational problems and act quickly and decisively in bringing the system back to a normal state; read and interpret blueprints and maintenance manuals and apply that information to maintenance procedures; communicate effectively, orally and in writing; operate a computer and supporting software packages; analyze data, draw accurate conclusions, and record findings; use proper safety equipment according to OR-OSHA standards; drive to remote facilities; establish and maintain effective working relationships with

employees, individuals with other agencies, and the general public; operate heavy equipment

Skill in:

Controlling treatment plant processes, chemical dosages, and equipment used to treat water. Determining the correct disinfectant dosage and contact time to maintain the desired level of residual in the drinking water system. Determining correct corrosion control dosage to ensure appropriate alkalinity and pH in the drinking water system. Modifying and repairing existing treatment systems. Operating and maintaining mechanical and hydraulic piping, appurtenances, and equipment. Using computer applications, particularly SCADA and HMI, to control the water treatment system. Technical writing, specifically the preparation of standard operating procedures, etc. Determining and adjusting plant flows to meet system demands. Troubleshooting malfunctions and problems in plant processes and equipment. Identify trends and abnormal operations in plant processes by interpreting data from gauges, meters, charts, and graphs. Make appropriate changes in plant processes to optimize performance and efficiency. Mix batches of chemical solutions and add chemicals to hoppers and feed equipment. Ensure the proper handling, storage, and use of chemicals, such as acids, bases, chemical disinfectants, and corrosion control compounds.

Special Requirements

Valid state driver's license; Oregon Health Authority Water Treatment Operator Class III certification; confined space certification; pass routine respiratory protection physical assessment within 6 months of appointment and ongoing; 24-Hour Water Treatment Hazardous Materials Operations certificate within 6 months of appointment.

Classification History:

Adopted: 2-03-99:

Class created as a result of DCTU Classification and Compensation Study 1998-99.

Revised: 11-16-06

Added requirement for 24 Hour HAZMAT certification within 6 months of appointment. Changed requirement for Crane Certification and respiratory physical assessment from upon appointment to within 6 months of appointment.

June 2009 - Change Job Class number from 1753 to 30000148, due to system change.

Revised: 7-21-2022:

Change Job Class title from 'Water Treatment Operator, Lead' to 'Water Treatment Operator III'. Added requirement for OHA Water Treatment Operator Class III certification, and adjusted duties and responsibilities accordingly.

Working Conditions

Work in this class is typically performed in a water treatment facility and in the field. The incumbent is usually required to negotiate rough terrain; to lift up to 50 pounds; to work outdoors in all weather conditions; to be called back to work during emergencies; to work around potentially hazardous chemicals and wear protective gear or clothing. Must be able to use self-contained breathing apparatus, including passing routine respiratory protection assessment.