

CHEMIST I, II

DEFINITION

Under general supervision, this class series performs standard instrumental and wet analyses of water and/or wastewater at various stages of treatment and distribution throughout the transmission systems and plant processes; performs research on organic and/or inorganic substances and methods to control or eliminate their presence; performs quality control tests to insure data quality; performs related duties as required.

DISTINGUISHING CHARACTERISTICS

Chemist I - This is the entry level class in the series performing professional laboratory work in quantitative physical and chemical testing of potable water and wastewater and standard laboratory preparation work.

Chemist II - This is the fully experienced, journey level class in the series that performs professional laboratory work in research and quantitative physical and chemical testing of potable water, groundwater, storm water, and wastewater. This class performs the full range of complex analyses.

REPRESENTATIVE DUTIES

*The duties listed below are examples of the work typically performed by employees in this class. An employee may not be assigned all duties listed and may be assigned duties which are not listed below. Marginal duties are those which are **least** likely to be essential functions for any single position in this class.*

1. Performs wet chemical, colorimetric, instrumental and physical analyses of samples collected from various areas within the transmission/process systems in accordance with Standard Methods to insure the product is safe to drink and meets all standards of purity set forth by State and Federal regulatory agencies.
2. Investigates new methods, instrumental procedures and programs through experimentation. Participates in research and implementation of programs in conjunction with the America Water Works Association (AWWA) and the Environmental Protection Agency (EPA); handles special samples and customer complaints which require special analytical procedures.
3. Isolates and identifies organic and inorganic substances present in potable water and/or wastewater samples through the use of The United States Environmental Protection Agency (USEPA) and Standard Methods; utilizes gas chromatography to analyze samples for organic constituents to include liquid-liquid extraction techniques for sample preparation; maintains the specialized equipment, i.e., gas Chromatographers, spectrometer, atomic absorption spectrophotometry, UV/VIS spectrophotometer.
4. Maintains a quality control program to insure that the methods, techniques and materials used to analyze water give consistent, accurate and reliable results.

5. Prepares reports and maintain records of all analyses and experimental results and the interpretation of results of the analyses; prepares periodic reports on results of testing.
6. Maintains necessary records and reports such as sample logs, reference material, an input for changes to standard operating procedures; requisitions necessary supplies for the laboratory.
7. Confers with other City staff as required, providing administrative assistance and project support; represents the City in meeting with governmental and industrial representatives, other customers, and members of professional and technical organizations.
8. May receive training in operations of gas chromatographer spectrometer and its associated data processing components using proper operating, maintenance and safety techniques.
9. Prepares solutions, reagents, standards, titrates and equipment used in performing analyses; washes all glassware and other utensils used in work; prepares glassware in accordance with established techniques to meet quality control standards.
10. Represents and supports the policies and procedures established by the City Council, City Manger, Department Heads and Division Chiefs.

EMPLOYMENT STANDARDS

Education and/or Experience

Chemist I - Graduation from an accredited college with a Bachelor's degree in chemistry or related laboratory science or any combination of training and experience that provides the desired knowledge and abilities.

Chemist II - Graduation from an accredited college with a Bachelor's degree with major work in chemistry supplemented by two years of progressively responsible experience in the field of potable analysis or any combination of training and experience that provides the desired knowledge and abilities. An advances degree in analytical chemistry or related fields is desirable.

Knowledge of:

Both Classes - principles, practices and techniques of organic and inorganic chemistry as related to the characteristics of potable water and/or wastewater; operation and care of standard laboratory equipment, including basic instruments techniques; Federal Environmental Protection Agency (EPA) and State Safe Drinking Water Regulations.

Chemist II - advances scientific research methodology and statistical analysis of trace organic constituents in potable water, laboratory procedures employed in potable water, wastewater, rainwater, groundwater, bio-solids, and solid analysis; occupational hazards and safety precautions of the work performed; operation and maintenance of an atomic absorption spectrophotometer and UV/VIS spectrophotometer; programmable laboratory equipment.

Ability to:

Both Classes - perform laboratory analyses with detailed accuracy and prepare reports on the results; implement testing procedures and present scientific data clearly; follow oral and written instructions exactly; establish and maintain working relationships with employees and others contracted in the course of the work.

Chemist II - write complete, comprehensive reports on scientific data and laboratory testing procedures and results; organize and implement original and implements original research in a problem solving environment; perform analyses with detailed accuracy; implement testing procedures; interpret and apply technical instructions.

Special Requirements

Possession of or ability to obtain and maintain a valid California Drivers' License.

Chemist I - Possession of, or ability within one year of date of hire, a California Water Environment Association (CWEA) or American Water Works Association, California/Nevada Section (AWWA-CA/NV), Water Quality Analyst I Certificate, and the ability obtain the Analyst II Certificate within three years of date of hire.

Chemist II - Possession of or ability to obtain within 12 months of appointment date, an American Water Works Association, California/Nevada Section (AWWA-CA/NV) or a California Water Environmental Association (CWEA), Water Quality Analyst II certificate.

Physical Demands

Sitting, standing, walking, some stooping, and bending. Dexterity and coordination to handle files and single pieces of paper, occasional lifting of objects up to 25 lbs., such as files, stacks of paper and other reference materials. Moving from place to place within the laboratory; some reaching for items above and below desk level.

WORKING CONDITIONS

Occasional exposure to unpleasant elements such as fumes and odors, and raw sewage. Works in outside weather occasionally. Travel throughout the area may be required.

Date Adopted: August 6, 1996