

**City of San José**  
**CLASS SPECIFICATION**

**Title: Chemist I/II (5116/5106)**

<b>DEPARTMENT</b>	<b>ACCOUNTABLE TO</b>	<b>FLSA STATUS</b>
Environmental Services Department	Varies	Non-exempt

**CLASS SUMMARY**

Under general supervision (Chemist I) or direction (Chemist II), performs professional and technical work of moderate to complex difficulty involving the qualitative and quantitative biological, chemical and physical analyses of water, wastewater, industrial waste and related materials. Performs related work as required.

**DISTINGUISHING CHARACTERISTICS**

The Chemist I/II is a flexibly staffed entry/journey professional class in the Chemist series, described as follows:

Chemist I – This is the entry-level class in the professional Chemist classification series. This class is responsible for providing qualitative and quantitative laboratory determinations upon water, wastewater, industrial waste, and related materials. Positions at this level are not expected to function with the same amount of knowledge or skill level as positions allocated to the Chemist II level and usually exercise less independent discretion and judgment in matters related to work procedures and methods. Work is usually supervised while in progress and fits an established structure of pattern. Exceptions or changes in procedures are explained in detail as they arise. As experience is gained, assignments become more complex and are performed with greater independence.

Chemist II – This is the journey-level class in the professional Chemist classification series responsible for performing the full range of the more complicated and research related biological, chemical, and microbiological testing requirements. Incumbents are expected to work independently and exercise judgment and initiative. Positions at this level receive only occasional instruction or assistance as new or unusual situations arise and are fully aware of the operating procedures and policies of the work unit. Chemist II is distinguished from Chemist I in that they may provide training and oversight to a Chemist I. This class is distinguished from the Environmental Laboratory Supervisor in that the latter performs the most complex work assigned to the series, including serving as a supervisor over professional staff.

The Chemist I/II reports to the Environmental Laboratory Supervisor assigned to the San José/Santa Clara Regional Wastewater Facility Laboratory. Assignments may be made to any shift in an around-the-clock operation, and incumbents must be available for work on weekends and holidays or be on standby as needed.

**QUALIFICATIONS**

**Minimum Qualifications**

**Education and Experience**

***Chemist I***

Bachelor's degree in chemistry, environmental chemistry or related scientific discipline, plus one (1) year of experience working in a laboratory environment.

***Chemist II***

Bachelor's degree in chemistry, environmental chemistry or related scientific discipline, plus three (3) years of experience working in a water or wastewater laboratory environment.

**City of San José**  
**CLASS SPECIFICATION**

**Title: Chemist I/II (5116/5106)**

**Acceptable Substitution**

Master's degree or higher in chemistry or a related scientific discipline can be substituted for one (1) year of experience working in a laboratory environment.

**Required Licensing (such as driver's license, certifications, etc.)**

Possession of a valid driver's license authorizing operation of a motor vehicle in California.

**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 Competencies**

**(Needed at entry into the job in order to perform the essential duties.)**

- Job Expertise – Demonstrates knowledge of and experience with applicable professional/technical principles and practices, Citywide and departmental procedures/policies and federal and state rules and regulations.

Knowledge of:

- principles of physical, organic, inorganic, analytical chemistry, biochemistry and biology;
- principles and practices of chemistry measurement techniques for water matrices;
- modern laboratory procedures, techniques, instruments and equipment, and the ability to utilize such equipment;
- operation, maintenance and repair of instrumentation;
- mathematics, biochemistry and basic microbiology routinely utilized in an environmental laboratory.

Ability to:

- perform physical, biological, microbiological and chemical analyses;
  - perform research work on problems of a chemical, biochemical or physical nature;
  - calibrate, operate and perform maintenance and repair of instrumentation;
  - critically review chemical reports and standard operating procedures;
  - interpret test results for water quality determinations.
- Communication Skills - Effectively conveys information and expresses thoughts and facts clearly, orally and in writing; demonstrates effective use of listening skills and displays openness to other people's ideas and thoughts.
  - Computer Skills - Experienced with common business computer applications including but not limited to: MS Outlook, MS Word, MS PowerPoint, MS Access, and MS Excel.
  - Teamwork and Interpersonal Skills - Develops effective relationships with co-workers and supervisors by helping others accomplish tasks and using collaboration and conflict resolution skills.
  - Analytical Skills - Approaching a problem or situation by using a logical, systemic, sequential approach.
  - Creativity – Addresses objectives and problems while questioning traditional assumptions/solutions in order to generate creative ideas and new ways of doing business; exhibits creativity and innovation when contributing to organizational and individual objectives; seeks out opportunities to improve, streamline, reinvent work processes.

**City of San José**  
**CLASS SPECIFICATION**

**Title: Chemist I/II (5116/5106)**

- Reliability - Completes quality work assignments in a timely and efficient manner; fulfills responsibilities and maintains confidentiality as appropriate.

**Additional Competencies and/or Desirable Qualifications**

**(Competencies, knowledge, skills and abilities that are more position specific and/or likely to contribute to more successful job performance.)**

- California Water Environment Association (CWEA) Laboratory Analyst Grade 2 Certification is desirable.
- CA-NV/American Water Works Association (AWWA) Water Quality Analyst Certificate is desirable.

Knowledge of:

- instrumental analytical methods and their application to environmental analyses;
- laboratory safety and quality assurance methods and procedures;
- and ability to perform routine and sophisticated physical, biological and chemical determinations with regard to the environmental characterization of water, wastewater, industrial waste and related materials;
- local, state and federal environmental regulations.

Ability to:

- operate instrumentation associated with typical operations in an analytical chemistry laboratory;
- configuring and running data acquisition and processing software in order to produce technical reports and database-compatible output.

<b>DUTY NO.</b>	<b>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:</b>	<b>FREQUENCY*</b>
1.	Develops and directs instrumental and wet chemical analyses on water, wastewater, industrial waste and related samples for specific inorganic and organic substances.	Daily
2.	Monitors and evaluates problems related to plant operations and laboratory analyses and recommends solutions to alleviate such problem situations.	Daily
3.	Performs the more complicated and research related biological, chemical and physical analyses of water, wastewater, industrial waste and related samples.	As Required
4.	Evaluates analytical performance against data quality requirements including following up on any deficiency with root cause analysis and corrective actions.	Daily
5.	Supports the implementation of the quality assurance/quality control program and recommends methods and procedures for implementation into normal laboratory operations.	As Required
6.	Supports the daily work activities within the laboratory including the instruction of laboratory personnel or co-workers as assigned.	Daily
7.	Troubleshoots or optimizes instruments and methods for optimum performance	As Required
8.	Assists with the organization and analysis of information from industry,	As Required

**City of San José**  
**CLASS SPECIFICATION**

**Title: Chemist I/II (5116/5106)**

	government agencies and the public, which may include hearings, workshops, seminars, etc.	
9.	Compiles, records and manages laboratory data and records; provides organization of record keeping and data retrieval; prepares written and verbal reports as requested.	Daily
10.	Reviews, analyzes and implements requirements for chemical storage facilities, hazardous materials inventory statements and hazardous material management and communication plans.	As Required
11.	Compiles and records data onto worksheets; enters reviewed data and results of analyses into a Laboratory Information Managements System (LIMS).	Daily
12.	Reads, interprets, and reviews published methods; drafts and revises standard operating procedures (SOPs) and work instructions.	As Required
13.	Maintains an appropriate inventory of laboratory supplies by preparing fresh reagents and standards; orders and received chemicals, supplies, and related equipment.	Daily
14.	Sets up, calibrates, operates, and performs maintenance on a variety of laboratory instruments and equipment.	Daily
15.	Analyzes complex laboratory data using spreadsheets, databases, and data acquisition and processing software.	Daily
16.	Utilizes work safety policies, practices, and procedures in a wastewater facility.	Daily
17.	Sample collection, receiving, login, and preservation.	As Required
18.	Cleans and maintains laboratory in an orderly fashion including cleaning and sterilizing glassware, equipment, and supplies.	Daily
19.	Reads, interprets, and reviews published methods; drafts and revises standard operating procedures (SOPs) and work instructions.	As Required
20.	Performs other related work as required.	As Required

\*Frequency defined as Daily/Several Times, Daily, Weekly, Intermittent, or As Required

### PHYSICAL/ENVIRONMENTAL ELEMENTS

Depending on assignment, this classification may be Sedentary up to Medium Work.

- Sedentary Work: Exerting up to 10 pounds of force occasionally and/or a negligible amount of force frequently or constantly to lift, carry, push, pull or otherwise move objects, including the human body. Sedentary work involves sitting most of the time. Jobs are sedentary if walking and standing are required only occasionally, and all other sedentary criteria are met.
- Light Work: Exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or a negligible amount of force constantly to move objects. If the use of arm and/or leg controls requires exertion of forces greater than that for Sedentary Work and the worker sits most of the time, the job is rated for Light Work.
- Medium Work: Exerting up to 50 pounds of force occasionally, and/or up to 20 pounds of force frequently, and/or up to 10 pounds of force constantly to move objects.

Possess ability to:

- wear and use laboratory PPE;
- work safely with hazardous and non-hazardous chemicals, fixed and portable analysis equipment used in the operation and monitoring of laboratory instruments;

City of San José  
**CLASS SPECIFICATION**

**Title: Chemist I/II (5116/5106)**

- operate a variety of lab instruments;
- move between/within work areas, including but not limited to sitting, talking, hearing, kneeling, lifting, grasping, feeling, reaching, standing, walking, pushing, and making repetitive hand movements.

**CLASSIFICATION HISTORY** *Created 04/80, Rev. 07/83, Rev. 09/90, Rev. 09/23*