



April 2024
STUDENT INTERNSHIP

STUDENT INTERN- LABORATORY

DEFINITION

Under supervision, the student intern will observe and shadow Carmel Area Wastewater District laboratory staff in routine to complex physical, chemical, and microbiological analysis of water, wastewater, and related samples. Student intern will also observe and shadow laboratory staff on general care and upkeep of the laboratory, including, but not limited to cleaning and sterilization of laboratory glassware, preparation of reagents, and the maintenance of laboratory chemical & physical inventories. Student intern will learn the use of computer systems for instrument operation, generation of QA/QC control charts, and LIMS data entry support.

SUPERVISION RECEIVED AND EXERCISED

Receives supervision from the Laboratory Supervisor and Laboratory Analysts. No supervision of staff is exercised.

SUPPLEMENTAL INFORMATION

Student internships are to provide meaningful training and work experience for high school or college students pursuing academic studies related to the district's mission and goals. Interns must submit proof of high school or college enrollment, including class schedules.

EXAMPLES OF ESSENTIAL FUNCTIONS

- Follows safe work procedures within standard operating procedures and protocols
- Observes the following laboratory activities under supervision:
- Chemical, biochemical, biological, bacteriological, and physical analyses of samples related to the wastewater treatment, quality control, and disposal of wastewater influent and effluent, following standard procedures and guidelines.
- Preparation of standard chemical solutions and reagents.
- Instrument calibrations
- Quality control and quality assurance
- Restaurant grease trap inspections
- Wastewater sample collection efforts, including composite sampler setup and programming

Ability to learn the following:

- Chemical, biological, and physical characteristics of wastewater.
- Principles, practices, equipment, and materials required for the chemical, biochemical, biological, bacteriological, and physical analysis of samples of potable wastewater.
- Sampling techniques and related statistical analysis techniques.
- Laboratory and wastewater plant safety procedures and equipment.
- Record keeping principles and procedures.
- Basic math/math concepts (addition, subtraction, multiplication, division, percentages, ratios/proportions; conversion factors, scientific notation, dimensional analysis, formulas)
- Chemistry principles (acids/bases, pH scale, conductivity, titration, distillation, filtration, dilutions, concentration)
- Biology (bacteria, viruses, parasites, microscopy, taxonomy)
- Physics concepts (area, volume, flow, mass, weight, pressure, temperature, electricity)

QUALIFICATIONS

Knowledge of:

- Basic computer skills

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EDUCATION

- Enrolled in high school or a General Education Development/Diploma GED program.

PHYSICAL DEMANDS

Must possess mobility to work in a wastewater treatment plant laboratory; vision to read printed materials and a computer screen; color vision to identify chemical and biological solvents and substances; and hearing and speech to communicate in person and over the telephone and radio. Employees primarily work both indoors and outdoors. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to handle laboratory equipment.

ENVIRONMENTAL ELEMENTS

Interns are occasionally exposed to loud noise levels, vibration, confining workspace, chemicals, mechanical and/or electrical hazards, and hazardous physical substances, odors, and fumes.