

ENVIRONMENTAL LABORATORY ANALYST 1797

DEFINITION

An Environmental Laboratory Analyst performs complex standardized laboratory analyses of samples for harmful materials, calibrates and operates laboratory equipment, and performs Quality Assurance and Quality Control (QA/QC) analyses.

TYPICAL DUTIES

Utilizes materials and equipment including analytical balances, glassware, chemicals, microscope, refractometer, turbidity meter, and spectrophotometer as necessary in the performance of the following duties:

Prepares samples for analysis by ashing, centrifuging, measuring turbidity, and mounting on slides. Analyzes field samples for harmful materials, including asbestos and metals, by gravimetric and basic chemical identification through colorimetric changes and flame atomic absorption spectroscopy.

Prepares chemical mixtures such as slide mounting fluids, special solvents, and staining compounds, and calibration standards and laboratory control samples.

Maintains computerized files of calibration programs, samples, and results of laboratory analyses. Calibrates, operates, and/or maintains laboratory equipment such as a compound light microscope, analytical balance, refractometer, centrifuge, ultrasonic cleaner, and spectrophotometer.

Performs Quality Assurance and Quality Control (QA/QC) analyses such as analysis of proficiency testing materials and calibration and analysis of reference standards and by repeat analyses and comparison of results from multiple analyses to determine precision and accuracy of data.

Writes technical documents such as standard operating procedures.

Reviews reference materials to ensure that the laboratory's standard operating procedures are in conformity with State and federal regulations.

Performs difficult and complex analyses of environmental samples using various laboratory equipment.

Writes technical and narrative reports on results of sample analysis.

Labels, organizes, and files laboratory slides and samples.

Trains assigned staff, assigns tasks and follows up to assure completed staff assignments.

Assists in the development, maintenance and implementation of laboratory quality assurance program.

Makes recommendations on method standards and specifications for conformance with regulatory agencies.

Performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

A Environmental Laboratory Analyst performs complex laboratory analyses and procedures and assists the Environmental Laboratory Manager with maintaining the laboratory's quality assurance program.

The Environmental Laboratory Manager supervises the employees and activities of the environmental laboratory, manages the Asbestos Compliance Program, participates in performing the more difficult studies, develops laboratory methods and techniques, and reviews test results.

An Electron Microscopist operates a transmission electron microscope and related equipment to conduct tests of air and water samples to detect and classify asbestos.

## SUPERVISION

An Environmental Laboratory Analyst receives general supervision from the Environmental Laboratory Manager. No supervision is exercised.

## CLASS QUALIFICATIONS

### Knowledge of:

- Standard methods, EPA, and National Institute for Occupational Safety and Health methodology
- Polarized light and phase contrast microscopy
- Analysis of air samples for airborne contaminants
- Analysis of metals in water samples
- Pertinent laboratory equipment and their uses
- Sample preparation procedures
- Record keeping practices
- Safe laboratory practices and procedures
- Principles of organic, inorganic, and physical chemistry, including qualitative and quantitative analyses
- Flame and graphite furnace atomic absorption spectroscopy
- Chemistry, as applied to the analyses of environmental samples using microscopy and spectroscopy
- Method specific quality control requirements and general laboratory quality assurance procedures

### Ability to:

- Perform reliable phase contrast, polarized light microscopic and metals analyses, and interpret test results
- Assemble laboratory apparatus used in microscopic and spectroscopy analyses
- Prepare clear and concise reports
- Perform repetitive, routine work
- Work without close supervision
- Perform analyses for metal content by graphite furnace atomic absorption spectroscopy
- Communicate effectively orally and in writing
- Plan, coordinate, and review the activities of technicians in the analysis, data interpretation and reporting of results
- Skillfully operate various laboratory equipment such as microscopes, (UV-visible/atomic absorption) spectrophotometers and gas chromatograph
- Solve problems and use independent judgment

### Special Physical Requirements:

- Visual acuity to perform phase contrast and polarized light microscopy
- Normal color vision

## ENTRANCE QUALIFICATIONS

### Education:

Graduation from a recognized college or university with a bachelor's degree in chemistry, biochemistry, biology, geology, or related sciences field. Experience, beyond that required below, utilizing at least one or more of the following instruments may be substituted for the required education on a year-for-year basis: polarized light microscope, phase contrast microscope, atomic absorption spectrophotometer, or gas chromatograph.

### Experience:

Two years of experience working in an analytical laboratory troubleshooting analytical methods and laboratory equipment, and performing one or more analytical procedures such as sample and standard preparations, gravimetric analysis, polarized light or phase contrast microscopy, atomic absorption spectroscopy, gas chromatography, and colorimetric analysis. Experience utilizing standard methods and Environmental Protection Agency and National Institute for Occupational Safety and Health methodologies is preferable.

## SPECIAL NOTES

1. Employment is subject to medical clearance which meets pertinent provisions of the General Industry Safety Orders of the California Code of Regulations regarding protective equipment when exposed to hazardous materials including, but not limited to, asbestos or lead.
2. Employees in this class are subject to call at any hour.

This class description is not a complete statement of essential functions, responsibilities, or requirements. Requirements are representative of the minimum level of knowledge, skill and/or abilities. Management retains the discretion to add or change typical duties of the position at any time.

Revised and title change from  
Senior Environmental Laboratory  
Technician  
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