

ENVIRONMENTAL CHEMIST (INORGANIC)

DISTINGUISHING FEATURES OF THE CLASS: Under supervision of a higher level professional, an incumbent in this position is responsible for conducting various environmental inorganic chemistry metals and conventional analyses of drinking water, wastewater, estuarine water, soil, and other environmental samples and for planning and coordinating the work of subordinate laboratory personnel performing these examinations to ensure that all tests adhere to established quality control standards of proficiency. The incumbent must maintain a satisfactory rating of performance for those procedures for which approval has been granted to the laboratory by the New York State Department of Health. Supervision is exercised over subordinate laboratory personnel. Does related work as required.

EXAMPLES OF WORK: (Illustrative Only)

Supervises and instructs subordinate professional and technical staff in the inorganic environmental chemistry analyses of water, wastewater, estuarine water, soil, and other environmental samples, including trace metal analyses, demand, minerals, nutrients, cyanide, phenols, solids and physical analyses;

Performs and interprets environmental inorganic chemistry analyses of natural and untreated waters; wastewater, estuarine waters, and soil for trace metals using atomic absorption spectrometry (i.e.: flame, cold vapor, high temperature furnace) and Inductively Coupled Plasma techniques;

Performs and interprets analyses on minerals, nutrients and solids through quantitative and qualitative methods (i.e.: digestion, extraction, and instrumentation - ion chromatography);

Performs statistical analyses (e.g., linear regression, standard deviation) utilizing spiked samples, duplicate samples, and method of additions to evaluate instrument and test data;

Performs analyses on quality assurance reference samples as required by current guidelines;

Performs complex analyses on problem samples that require special treatment to optimize results and eliminate interference;

Assists in researching, analyzing and evaluating the applicability of new procedures, techniques, equipment and instrumentation;

Compiles, evaluates and interprets the results of examinations ensuring the adherence to quality assurance standards;

Maintains quality control through the preparation and standardization of reagents and standards, and the generation of standard curves using reference and primary standards;

Tabulates statistical data for monthly and other reports;

EXAMPLES OF WORK: (Illustrative Only) (Cont'd.)

Prepares reports of examination of findings for various federal, state and local government authorities as well as private concerns;

Maintains assigned areas, instrumentation and equipment in a clean and safe manner and at operational readiness, troubleshoots and does repairs when necessary;

Maintains adequate inventories of laboratory equipment and supplies;

May be required to testify in court or before other administrative hearings regarding results of examinations;

Participates in the New York State Department of Health proficiency testing programs in the assigned area of discipline;

Supervises and instructs trainees and subordinate staff in the performance and interpretation of environmental chemistry analyses;

Uses computer applications or other automated systems such as spreadsheets, word processing, calendar, e-mail and database software in performing work assignments;

May perform other incidental tasks, as needed.

FULL PERFORMANCE KNOWLEDGE, SKILLS, ABILITIES AND ATTRIBUTES:

Thorough knowledge of environmental inorganic chemistry laboratory procedures, techniques and safety precautions; good knowledge of the principles and practices of environmental inorganic chemistry and terminology; good knowledge of instrumental methods of analysis such as means as: atomic absorption spectrophotometry, inductively coupled plasma emission spectroscopy, inductively coupled plasma-mass spectroscopy, UV-Vis spectroscopy, ion chromatography, flow injection auto analyzer systems, total organic carbon and total organic halide analyzers, and selective ion electrodes and probes; knowledge of current developments in environmental laboratory equipment; ability to plan, organize and supervise the work of subordinate laboratory personnel in the performance of laboratory tests and examinations; ability to research new methods and procedures and to prepare reports of findings; ability to compile and present data in a clear and concise manner; ability to communicate effectively both orally and in writing; ability to follow detailed oral and written instructions; ability to read, write, speak, understand, and communicate in English sufficiently to perform the essential duties of the position; ability to use computer applications such as spreadsheets, word processing, e-mail and database software; accuracy; thoroughness; dependability initiative; judgment; integrity; physical condition commensurate with the demands of the position.

MINIMUM ACCEPTABLE TRAINING AND EXPERIENCE: A Bachelor's Degree* in Chemistry, Chemical Engineering or a Biological Science, which must have included twenty credits* in chemistry, and four years of professional environmental inorganic chemistry laboratory experience**, or related chemistry experience in instrumentation or methodology used in an environmental inorganic chemistry laboratory**, which must have included one year of supervisory experience.

SUBSTITUTION: A Master's Degree* in Chemistry, Environmental Science, Environmental Engineering or related field may be substituted for one year of the above required environmental inorganic chemistry experience.

**NOTE: Acceptable professional environmental inorganic chemistry experience includes performance of both metals and conventional analyses in accordance with EPA methods and New York State Environmental Lab Approval Program Protocols. Relevant metals experience includes: analyses of drinking water, wastewater and soils using atomic absorption spectrophotometry and inductively coupled plasma techniques. Relevant conventional experience includes: analyses utilizing selective ion probes, flow injection auto analyzer systems, ion chromatography, total organic carbon and total organic halides analyzers.

*SPECIAL NOTE: Education beyond the secondary level must be from an institution accredited or recognized by the Board of Regents of the New York State Education Department as a post-secondary, degree-granting institution.

NOTE: Unless otherwise noted, only experience gained after attaining the minimum education level indicated in the minimum qualifications will be considered in evaluating experience.

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Job Group: XI