



New Mexico State Personnel Office

2600 Cerrillos Road
Santa Fe, New Mexico 87505-0127

Classification Description

HYDROLOGISTS

Class Title	Class Code	Pay Band	Alt Pay Band*
Hydrologists-B	F2043B	60	65
Hydrologists-O	F2043O	65	70
Hydrologists-A	F2043A	70	75

**In accordance with SPB Rule 1.7.4.10 NMAC, the assignment to alternative pay bands shall be reviewed annually to determine their appropriateness.*

Occupation Description

Research the distribution, circulation and physical properties of underground and surface waters; study the form and intensity of precipitation, its rate of infiltration into the soil, movement through the earth and its return to the ocean and atmosphere.

Nature of Work

Hydrologists often specialize in either underground water or surface water. They examine the form and intensity of precipitation, its rate of infiltration into the soil, its movement through the Earth, and its return to the ocean and atmosphere. Hydrologists use sophisticated techniques and instruments. They may use remote sensing technology, data assimilation, and numerical modeling to monitor the change in regional and global water cycles. Some surface-water hydrologists use sensitive stream-measuring devices to assess flow rates and water quality.

Distinguishing Characteristics of Levels

Note: Examples of Work are intended to be cumulative for each progressively higher level of work. The omission of specific statements does not preclude management from assigning other duties which are reasonably within the scope of the duties.

Basic

- Employees in this Role identify beneficial uses of public water resources; read, calibrate, and utilize water measuring devices; develop databases including hydrologic data; and draft maps using manual methods and electronic software; provide information regarding the water rights application process; manipulate and maintain water use data in a computerized database system; calculate acreage by using planimeters and measuring instruments; operate surveying equipment; draft maps, plats, plotting elevations and locations of wells; calculate areas, volumes, distances; inspect irrigated areas to determine acreage of each crop; collect and analyze water samples to determine water quality.

Recommended Education and Experience for Full Performance

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering and two (2) years of experience implementing water regulatory programs, ground water investigation and remediation, and/or hazardous waste management.

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Minimum Qualifications

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering.

Operational

- Employees in this Role research existing beneficial use permit files, hydrographic survey maps, understanding of state water laws, rules, regulations, and policies to facilitate the filing of an application for permit.
- Employees prepare consent agreements for the collection of monetary assessments; assist in the review of subdivision water supply proposals; utilize Global Positioning Survey data; analyze and make recommendations relating to water conservation; assist registered engineers in inspections of low hazard existing dams.

Recommended Education and Experience Standards for Full Performance*

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering, and four (4) years of experience implementing water regulatory programs, ground water investigation and remediation, and/or hazardous waste management.

Minimum Qualifications

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering, and two (2) years of experience implementing water regulatory programs, ground water investigation and remediation, and/or hazardous waste management.

Advanced

- Employees in this Role apply analytical groundwater flow models and prepare documents regarding cost sharing encumbrances and agreements; abstract agency water rights files and research technical reports; perform field surveys; review design plans for the rehabilitation of ditches and irrigation systems; draft digital ortho-photographic and other CAD maps to document location and extent of water rights; inspect and measure gauging stations, streams, water flow, and levels; inspect and evaluate the extent of flood damage to levees and irrigation systems and prepare a cost estimate to repair the damage; compile water use data and analyze current and past water uses.

Recommended Education and Experience for Full Performance

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering and six (6) years of experience implementing water regulatory programs, ground water investigation and remediation, and/or hazardous waste management.

Minimum Qualifications

Bachelors of Science in Hydrology, Geology, Chemistry, Environmental Sciences, or Engineering, and five (5) years of experience implementing water regulatory programs, ground water investigation and remediation, and/or hazardous waste management.

Knowledge and Skills

*Note: This information has been produced by compiling information and documentation provided by O*NET. O*NET™ is a trademark of the U.S. Department of Labor, Employment and Training Administration.*

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Knowledge

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Physics — Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub-atomic structures and processes.

Chemistry — Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations that they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods.

Geography — Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

Biology — Knowledge of plant and animal organisms, their tissues, cells, functions, interdependencies, and interactions with each other and the environment.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Law and Government — Knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Skills

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Science — Using scientific rules and methods to solve problems.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Mathematics — Using mathematics to solve problems.

Speaking — Talking to others to convey information effectively.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Complex Problem Solving — Identifying complex problems and reviewing related information

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to develop and evaluate options and implement solutions.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Statutory Requirements: N/A

Conditions of Employment: Working Conditions for individual positions in this classification will vary based on each *agency's utilization, essential functions, and the recruitment needs* at the time a vacancy is posted. All requirements are subject to possible modification to reasonably accommodate individuals with disabilities.

Default FLSA Status: Exempt. FLSA status may be determined to be different at the agency level based on the agency's utilization of the position.

Bargaining Unit: This position may be covered by a collective bargaining agreement and all terms/conditions of that agreement apply and must be adhered to.

Established: 07/07/2001

Revised: 9/20/2011

**Adapted from the United States Bureau of Labor Statistics and are intended to illustrate the typical education and experience required for this occupation.*

Note: Classification description subject to change. Please refer to the SPO website www.spo.state.nm.us to ensure this represents the most current copy of the description.