

THE CITY OF LOS ANGELES



CIVIL SERVICE COMMISSION

CLASS SPECIFICATION

(04-20-90)

**ENGINEERING GEOLOGIST
(Code 7255)**

Summary of Duties: Directs, or assists in the directing of, an engineering geology section; conducts and prepares, or reviews for acceptability, professional reports on engineering geological investigations and studies relating to environmental impact reports and the design and construction of tracts, dams, reservoirs, tanks, residential and office buildings, streets and highways, tunnels, electric power generating plants, transmission towers, distributing stations, and other structures; classifies rock and soil samples; performs geologic field inspections and investigations for water bearing strata, methane seepage, geologic hazards, hillside stabilization and landslide repairs, new hillside construction, proposed subdivisions, and grading projects; investigates and provides expert testimony on legal matters involving the City; assigns, reviews and evaluates the work of Assistant Engineering Geologists and other employees engaged in geotechnical or related professional work; applies sound supervisory principles and techniques in building and maintaining an effective work force; fulfills affirmative action responsibilities; and does related work.

Distinguishing Features: An Engineering Geologist is responsible for the accuracy and adequacy of professional geological interpretations and reports. The work requires making frequent field trips and being subject to various hazards such as operational grading equipment, hiking on steep and unstable slopes, snake bites, poison oak, exposure, and excessive noise and dust. Such work is normally performed without technical supervision and may affect major engineering and administrative decisions for both private and public projects.

An Engineering Geologist is a full supervisor. Incumbents in this class may supervise and review the work of other Engineering Geologists, Geotechnical Engineers, and other personnel engaged in geotechnical engineering work. As bona fide supervisors, Engineering Geologists are distinguished from lead workers in that they are responsible for the performance of the full range of supervisory activities including application of discipline, processing and resolution of grievances, evaluation of performance, and approval of time off requests.

An Engineering Geologist is distinguished from a Geotechnical Engineer in that the latter performs calculations based on geotechnical and geological data supplied by the former.

Examples of Duties: An Engineering Geologist:

- Plans, organizes, and supervises a geotechnical engineering unit conducting, and may personally conduct, preliminary and final engineering geological studies and

investigations, and provides recommendations on the structural soundness of sites for erection of structures;

- compiles, collects, and interprets data using geological equipment, published and unpublished reports, aerial photographs, existing topographic and geological maps, cross sections of test holes, and well logs;
- determines the nature and extent of geophysical explorations to be made;
- identifies the age, structure, and composition of subsurface materials;
- determines the physical property of rock and soil and their variation underlying varying site conditions;
- evaluates the behavior of rock and soil under various conditions of deposition;
- investigates geologic hazards such as landslides, slope failures, erosion, faults, fractures, subsidence, liquefaction, and ground water seepage, and recommends measures for corrective action;
- determines the location and depth for drilling for the placement of stabilizing agents to remedy weaknesses and leaks in the abutments or foundations of dams and other structures;
- checks dams and other structures for earthquake damage;
- makes special engineering geological investigations for the City Attorney when required in connection with claims against the City of Los Angeles;
- serves as an expert witness in geological matters;
- acts as a representative of a department in meetings where geological questions are considered;
- works with environmental review sections of various City departments;
- investigates and reports on the seismicity of project areas and monitors specific areas for possible tectonic movements;
- directs, prepares, analyzes, and reviews consulting engineering geological reports submitted in connection with dams and reservoirs, tanks, tracts, grading plans, street and highway projects, excavations, tunnels, and building sites and reports to various City agencies and officials on measures required to correct geological hazards within or beneath proposed improvements;
- consults with other engineering geologists, engineers, land owners, City inspection personnel, and other City officials, and the public on geologic aspects of engineering plans, and the design of major structures;
- plans, supervises, and participates in the work of other Engineering Geologists and other employees engaged in conducting geological studies and investigations of sites for erection of structures and surface and subsurface geological conditions;
- reviews and coordinates reports and staff recommendations of engineering projects;
- communicates equal employment/affirmative action information to employees;
- applies job related criteria in selecting, orienting, assigning, training, counseling, evaluating, and disciplining subordinates;
- assists employees in preparing for promotion as described in the City's Affirmative Action Program;
- reviews current engineering geology literature and attends conferences/meetings to maintain technical competence;
- personally performs the more difficult geological assignments.

May occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications: An Engineering Geologist must have the following knowledges and abilities:

A knowledge of:

- the principles, practices, standards, and techniques of engineering and structural geology and soil mechanics utilized in the design of foundations, excavations, shoring and embankments, cut slopes, and buttress fills;
- the principles of mineralogy, petrography, petrology, paleontology, stratigraphy, hydrology, seismology, chemistry, and physics;
- the historical geology of Southern California;
- geological survey and mapping procedures, techniques, and equipment;
- supervisory principles and practices including: planning, delegating, and controlling the work of subordinates;
- techniques of training, instructing, and evaluating of subordinate work performance;
- techniques for counseling, disciplining, and motivating subordinate personnel;
- the procedures for grievance handling;
- supervisory responsibility for EEO/AA as set forth in the City's Affirmative Action Program;
- effective safety principles and practices;
- fundamental principles of civil engineering;
- the dynamic behavior of soil, rock, and structures during earthquakes;
- hazardous material site assessments and remediation plans;
- memoranda of understanding as they apply to subordinate personnel;
- a general knowledge of City personnel rules, policies, and procedures.

The ability to:

- apply geological knowledge to engineering problems;
- identify and classify surface and subsurface geological formations;
- use geological equipment such as microscopes, Brunton compass, geologist's pick, and drafting and surveying instruments;
- select, take and analyze significant rock and earth samples;
- locate and trace geological faults and shear zones;
- map and delineate geological formations and members;
- compile and interpret engineering geological data;
- read topographic maps;
- establish and maintain a work environment to enhance both employee morale and productivity;
- apply sound supervisory principles and techniques;
- fulfill supervisory affirmative action responsibilities as indicated in the City's Affirmative Action Program;
- write clear and concise technical reports;
- clearly communicate orally with others;
- maintain effective working relationships with public officials, professional engineers and geologists, other employees, and the public.

Persons with a medical limitation may, with reasonable accommodations, be capable of performing the duties of some of the positions in this class. Such determination must be made on an individual basis in light of the person's limitations, the requirements of the position, and the appointing authority's ability to effect reasonable accommodations to the person's limitation.

Minimum Requirements:

Graduation from a recognized four year college or university with a specialization in geology or engineering geology and four years of professional experience in the field of engineering geology is required. One year of graduate study in geology or engineering geology may be substituted for one year of the required experience.

Registration:

Registration as a Professional Geologist and specialty certification as an Engineering Geologist with the California State Board of Registration for Geologists and Geophysicists is required.

License: A valid California driver's license is required.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory, and not restrictive. It is not intended to declare what the duties and responsibilities of any position shall be.