Class Code: 04404

Iowa Department of Administrative Services – Human Resources Enterprise
Job Classification Description

Geologist 2

Definition

Under immediate to general supervision, performs professional technical field and laboratory work in evaluating the geologic characteristics of earth materials; interprets geology, builds geologic databases, and provides geologic information to clients; performs related work as required.

The work examples and competencies listed below are for illustrative purposes only and not intended to be the primary basis for position classification decisions.

Work Examples

Performs geologic field work in one or more geologic areas to study, analyze, and define the geological features of Iowa; gathers data and specimens; studies surrounding terrain to identify geologic features; studies specimens using physical and chemical tests; records the results in the prescribed format.

Prepares technical reports on stratigraphy, water resources, mineral resources, or other geologic areas and topics to disseminate information to agency staff, governmental agencies, private industry, and/or the general public; gathers and organizes data and assembles the collected information into the proper format.

Constructs maps, graphs, charts, and cross sections to illustrate geologic features of Iowa and surrounding regions by compiling data on geologic features, water resources, mineral deposits, etc.; sorts, analyzes, and synthesizes data.

Assists/develops methods and procedures for gathering specimens, analyzing specimens, etc., to improve field work techniques and study collected data by reviewing and evaluating existing procedures and methods, determining desired outcome, establishing the best working method, and comparing the new methods to the existing ones to determine the best procedures.

Maintains permanent survey files containing stratigraphic logs, photographs, microfilms, slides, maps, and/or charts to provide easy access to all existing data dealing with the geology of Iowa; collects materials from various sources; classifies it as to type, area covered, and features discussed; files it in its proper place; makes necessary identification labels; retrieves material when requested.

Uses/maintains a variety of field and laboratory equipment to study the geological features of Iowa, research the geological history of Iowa, and determine potential water and/or mineral resources; follows proper procedures for use of the equipment; keeps all equipment in good working order (cleaning and making minor repairs and adjustments), referring it to others when necessary for major repairs.

Constructs stratigraphic log charts which identify geologic characteristics of rock units in Iowa; studies well cuttings, core samples, or outcrops; identifies the major rock types and their depths and thicknesses; labels major geologic time units and rock formation names; provides locational data.

Responds to written and telephone requests from other government agencies, industrial officials, or the general public for information pertaining to the geology of Iowa to assist them with problems or questions they may encounter and to interpret, clarify, or review and comment on studies conducted by

other state or private agencies; performs necessary research and provides requested information either orally or in writing.

Proofreads geologic manuscripts prepared by staff geologists to assure completeness, accuracy, and clarity; reviews the manuscripts for content and structure; edits; writes any comments or suggestions for the use of the staff geologist who wrote the manuscript.

Competencies Required

Knowledge:

- Law and Government – Laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- English Language – The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Computers and Electronics – Circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Engineering and Technology – 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.
- Mathematics – Arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Geography – 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.
- Physics – 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 – 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.

Abilities:

- Law and Government – Understand and adhere to applicable laws, legal codes, administrative rules, and regulations.
- Written Expression – Communicate information and ideas in writing so others will understand.
- Written Comprehension – Read and understand information and ideas presented in writing.
- Speech Clarity – Speak clearly so others can understand.
- Speech Recognition – Identify and understand the speech of another person.
- Category Flexibility – Generate or use different sets of rules for combining or grouping things in different ways.
- Flexibility of Closure – Identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.
- Deductive Reasoning – Apply general rules to specific problems to produce answers that make sense.

- Inductive Reasoning – Combine pieces of information to form general rules or conclusions.
- Information Ordering – Arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- Problem Sensitivity – Tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Skills:

- 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.
- 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.
- Speaking – Talking to others to convey information effectively.
- Writing – Communicating effectively in writing as appropriate for the needs of the audience.
- Monitoring – Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- Science – Using scientific rules and methods to solve problems.
- Time Management – Managing one's own time and the time of others.
- Active Learning – Understanding the implications of new information for both current and future problem-solving and decision-making.
- Judgment and Decision Making – Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Service Orientation – Actively looking for ways to help people.
- Complex Problem Solving – Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Minimum Qualification Requirements

Applicants must meet at least one of the following minimum requirements to qualify for positions in this job classification:

1) Graduation from an accredited four-year college or university with a degree in geology, physical geography, or a closely related geological science.
2) Graduation from an accredited four-year college or university with a degree in a natural science, computer science, math, or engineering field, and experience equal to two years of full-time work in ground water, soils, environmental geology, geographic information systems, or other related earth science specialty.

Effective date: 08/23 KC