

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Natural Resources Technician

Class Code: 51430

Pay Grade: GF

A. Purpose:

Collects, compiles, and monitors ground water data; manages and maintains an observation well network; measures water levels and obtains water quality samples from observation wells; and maintains wells, equipment, and related records to provide supporting data for management of ground water resources.

B. Distinguishing Feature:

Natural Resources Technicians gather and record data to provide baseline and continuing information from which natural resources managers formulate recommendations and make decisions on environmental controls.

Environmental Scientists conduct environmental inspections or investigations, collect and analyze environmental data, recommend action to correct inadequacies or ensure compliance, and manage databases.

C. Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions that may be found in positions of this class.)

1. Compiles well data to provide ongoing information on the status of the state's aquifers.
 - a. Collects water level readings.
 - b. Compiles data obtained from the field by entering data from records and logs into computer databases.
 - c. Reviews and edits data by analyzing historical data, nearby wells, rainfall records, etc., to determine validity of field data.
 - d. Reviews and verifies data collected by temporary employees and enters data into appropriate databases.
 - e. Maintains water level records for each observation well.
 - f. Prepares charts, hydrographs, and maps for use in technical reports.
 - g. Manages a database for recording well logs submitted by licensed well drillers; and a database of licensed well drillers.
2. Samples, monitors and maintains observation wells to ensure continuity of well data, integrity of well sites, and effective operation of equipment.
 - a. Measures and records water levels, conductivity, temperature, acidity, and other water quality measurements using manual or electronic devices.
 - b. Inspects wells to detect well deterioration and deficiencies, and maintains and repairs wells as necessary, such as adding bentonite or cement grout to seal the well area.
 - c. Pumps wells to keep screens open and allow water to flow freely; and collects water samples for field and laboratory analyses of water quality;
 - d. Develops new wells and plugs wells removed from the observation network.
 - e. Surveys wells to determine accurate elevations and locations.
3. Provides technical support to managers and the public.

- a. Answers questions, prepares and interprets data, and composes letters to answer specific inquiries from the public, consultants, and state and federal agencies concerning water data.
- b. Researches historical well records and prepares reports as requested.
- c. Provides training and technical assistance to seasonal well technicians; reviews and edits their work.
- d. Inspects and obtains measurements and samples at private water supplies when necessary.
- e. Maintains equipment and vehicles by making minor repairs and performing regular maintenance.

4. Performs other work as assigned.

D. Reporting Relationships:

Reports to the Water Rights Chief Engineer or a Natural Resources Administrator. Does not supervise.

E. Challenges and Problems:

Challenged to make sure all data submitted from various sources is accurate, reliable, and entered into the appropriate databases in a timely fashion in order to make data accessible when it's needed. This is challenging because multiple weeks in the field limit time available to verify and enter data into databases. Further challenged to find time for necessary well maintenance while maintaining a systematic data collection program. This is a challenge because of the number of wells, routine damage, and the travel time necessary to make a scheduled run.

Problems include accessing wells in inclement weather, surveying well locations and repairing well casings while working alone, keeping driller licensing forms up-to-date and on hand, and scheduling vehicle maintenance during high-use times.

F. Decision-making Authority:

Decisions include how to handle data points that are obviously incorrect; extent and format of responses to requests for groundwater data and well information; travel schedules; courses of action required to repair observation wells; purchase of routine supplies; when to send renewal requests for well driller licenses; numbers and types of forms to send drillers; recommendations for seasonal hires; and timing and scheduling of vehicle maintenance.

Decisions referred include when to add, replace, abandon, or plug wells; how to proceed when verified water level readings are inconsistent with the historical record of a well; whether well drillers qualify for licensing; replacement and purchase of equipment; final approval of seasonal hires; and purchase of capital assets.

G. Contact with Others:

Daily contact with the public while working in the field to explain water level readings, why wells are located where they are and the purpose, aquifer locations and trends; weekly contact with other departments and private entities in response to requests for information on water levels, etc.; and annual contact with well drillers for licensing renewal.

H. Working Conditions:

Works outdoors and travels extensively in all types of weather; lifts as much as 100 pounds when placing plastic pipes into wells for the purpose of pumping and cleaning them; uses and maintains air compressors which produce up to 100 pounds of pressure, pumps, and associated tools; is exposed to traffic while working near roads; handles chlorine when sanitizing wells; and performs hard manual labor to repair well casings, maintain well sites, and replace posts.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- well construction and maintenance;
- basic mechanics of small engines and air compressors;
- general terminology of geology, geohydrology, and water chemistry;
- data processing and management;
- computer applications for data retrieval and storage.

Ability to:

- install, troubleshoot, and repair data loggers and continuous recorders;
- troubleshoot installations and repair water level measuring devices;
- collect, analyze, and interpret data;
- compile and summarize data in report and graphic form;
- deal effectively and courteously with the public;
- communicate information clearly and concisely.