

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Natural Resources Project Engineer

Class Code: 40872

A. Purpose:

Evaluates plans and specifications, engineering reports, and operation and maintenance manuals; develops permits; and conducts construction and operational inspections to ensure natural resources projects and facilities are developed and operating in compliance with environmental protection and natural resources management rules and regulations, and department standards and procedures.

B. Distinguishing Feature:

Natural Resources Project Engineers are assigned complete projects or portions of projects and work under general supervision.

Natural Resources Engineers are entry-level positions and work under direct supervision of other engineering staff for a minimum of one year to learn the application of standard engineering techniques to environmental protection and natural resources management projects.

Natural Resources Engineering Specialists manage an assigned statewide engineering program, and provide technical expertise in the specialty to other engineers and staff.

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 which may be found in positions of this class.)

1. Evaluates plans and specifications, bid documents, grant agreements, and engineering reports to determine compliance with state and federal environmental regulations, and recommends approval.
 - a. Applies engineering formulas, calculations, and methods.
 - b. Reviews and evaluates best management practices.
 - c. Reviews assessment and remediation reports to determine if contaminated sites have been adequately defined and corrective action plans are appropriate.
 - d. Reviews permit applications for correctness, completeness, and compliance.
 - e. Participates in pre-bid and pre-construction conferences to answer questions from project sponsors and consulting engineers about technical requirements.
 - f. Prepares cost estimates, cost-benefit analyses, cost-sharing equities, etc., to assist local entities in development and formulation of natural resources projects.
 - g. Writes technical letters detailing department requirements for the staff engineer's signature.
2. Conducts construction inspections of natural resources projects and environmental control facilities to determine compliance with plans and specifications.
 - a. Conducts preliminary project reviews and site testing and evaluation.
 - b. Performs on-site inspections of construction procedures.
 - c. Determines corrective actions for non-compliance and ensures implementation.
 - d. Assists consulting engineers to develop solutions to construction problems.
 - e. Develops inspection reports for project sponsors, engineering consultants, and department engineering managers.
3. Conducts inspections of all aspects of the operation, maintenance, and safety of environmental control and natural resources facilities to ensure compliance with state and federal regulations.

- a. Collects influent and effluent samples and monitors flows.
 - b. Calculates organic and hydraulic loadings on various unit processes.
 - c. Determines capability of facility to meet limits of permit.
 - d. Reviews operation and maintenance manuals, plans of operation, applicable ordinances, and other related documents.
 - e. Evaluates management plans and practices and develops and recommends modifications to improve facility performance.
 - f. Makes engineering recommendations for corrective actions.
 - g. Provides technical assistance to facility operators in areas of plant operation, process control, and sampling and reporting.
 - h. Prepares technical reports summarizing findings of engineering evaluations, including limiting factors and recommendations for improvements.
4. Develops permits to direct the operation and maintenance of a variety of environmental facilities.
 - a. Conducts research and wasteload allocation evaluations necessary to identify total maximum daily loads, permit limits, and effect of pollution on the environment.
 - b. Determines monitoring and sampling requirements and inspection schedules.
 - c. Develops statements of basis to establish and defend rationale used in determining final and interim limits, monitoring requirements, and compliance schedules.
 - d. Monitors and determines compliance with permit conditions and recommends enforcement action when necessary.
 5. Investigates complaints of environmental violations to ensure corrective and preventive measures are implemented and effective.
 - a. Compiles information regarding complaints and obtains complainants' statements and signatures.
 - b. Contacts entities operating in alleged violation to arrange field inspections.
 - c. Conducts field inspections to determine source and extent of violations and whether involved entities are regulated.
 - d. Recommends applicable corrective and enforcement actions.
 - e. Monitors processes to eliminate pollution and generates enforcement procedures when applicable.
 6. Provides technical information and education to facility managers, project sponsors, consulting engineers, and the general public to ensure knowledge and understanding of environmental controls and natural resources management practices, causes and control of pollution, and the effect of natural resources projects on their environment.
 7. Performs other work as assigned.

D. Reporting Relationships:

Reports to a Natural Resources Administrator. Does not supervise.

E. Challenges and Problems:

Challenged to know and apply extensive technology to environmental and natural resources management projects and facilities and ensure adequate protection of public safety and natural resources while considering the economic limitations of the regulated community. Further challenged to explain engineering criteria and technology and natural resource issues to the public, local governments, and other agencies so that cooperation and understanding are achieved.

Problems include reviewing plans and specifications within allocated timeframes, defusing hostility and negativity with facts and understanding, ensuring compliance without over-regulating, conveying regulatory recommendations to non-regulated entities, and determining sources of environmental violation and pollution.

F. Decision-making Authority:

Decisions include whether plans and specifications meet engineering requirements and environmental limitations; whether projects are being constructed according to approved plans and specifications and corrective actions necessary to achieve compliance; permit components, limitations, and schedules; whether facilities are meeting permit requirements; modifications to improve facilities' performance; the source and extent of environmental violations; content of technical letters and reports; and recommendations for enforcement actions.

Decisions referred include final approval of plans and specifications, permits, and enforcement actions.

G. Contact with Others:

Daily contact with the general public to explain environmental and departmental limitations and regulatory capabilities; with permit applicants to explain requirements; with consulting engineers to review plans and specifications; and with other department staff to exchange expertise; and weekly contact with local government agencies and special interest groups to convey information on environmental control projects and facilities and provide technical advice.

H. Working Conditions:

Works in a typical office environment, on construction sites, and around environmental management facilities; is exposed to varied weather conditions, construction equipment, hazardous materials, and infectious bacteria.

I. Knowledge, Skills, and Abilities:

Knowledge of:

- engineering principles and practices as applied to the control of water pollution, water supply, air pollution, solid waste, and hazardous materials;
- chemical, biological, and physical characteristics of pollutants;
- state and federal laws and regulations relating to water quality, air quality, and waste management;
- the principles and techniques of effective public relations and external communications;

Ability to:

- make appropriate decisions by applying standards and available information to specific situations;
- assign appropriate priorities to work activities based on organizational goals and situational pressures;
- identify, define, and prioritize problems or potential problems;
- communicate persuasively and defend a position or decision; clearly and concisely communicate information in a logical sequence to recipients with varied levels of technical understanding.