

STATE OF MONTANA

JOB DESCRIPTION

Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodations to otherwise qualified individuals with disabilities.

Job Title: Materials Laboratory Specialist Position Number: 40105, 40054

Location: Helena Department: Transportation

Division and Bureau: Engineering Division Materials Bureau

Section and Unit: Physical Testing Section Inspection Operations Unit

Job Overview:

This position serves as a Materials Laboratory Specialist within the Materials Bureau's Inspection Operations Section. This position is responsible for statewide laboratory inspections and laboratory compliance oversight. This position is responsible for maintaining MDT's central laboratory federally mandated AASHTO-Resource (American Association of State Highway and Transportation Officials) and CCRL (Cement and Concrete Reference Laboratory) accreditation. This includes managing the central laboratory QMS (quality management system). This position manages the statewide Independent Assurance Program. This position manages Materials e-learning/testing system. This position assists in delivery of the WAQTC (Western Alliance for Quality Transportation Construction) training and certification program. This includes providing WAQTC training courses, remotely and in person, and administering and proctoring written and performance evaluation of internal and external applicants. This position assists in developing testing methods, standards, procedures, and technologies in conjunction with AASHTO, WAQTC, and other regional and national authorities. The position also performs a variety of other duties as assigned. The Materials Laboratory Specialist reports to the Inspection Operations Supervisor.

Essential Functions (Major Duties or Responsibilities):

Laboratory Inspection and Compliance - 30%

This position is responsible for compliance oversight, auditing, and monitoring of the consultant, district, and area MDT laboratories. This position develops, maintains, and implements inspection, certification, and oversight procedures to maintain federally mandated AASHTO-Resource and CCRL laboratory accreditation.

- Develop, implement, maintain and coordinate certification procedures for consultant and MDT district/area laboratories.
- Evaluate certification standards and integrate requirements into ongoing inspection processes to maintain certification eligibility for statewide laboratories and staff.
- Coordinate with federal certification authorities to evaluate and recommend new standards and procedures, explain and/or justify exceptions and deficiencies, and provide reports.
- Perform and report on laboratory inspections to assess laboratories for conformance to AASHTO-Resource, CCRL, and department requirements.
- Monitor statewide district and area laboratory operations and identify actual or potential deficiencies.
- Develop and recommend new procedures and equipment, maintenance schedules, and other changes as well as coordinate with project site and stationary laboratories to ensure effective mitigation and prevention of problems.
- Inspect and analyze laboratory equipment to ensure safety, efficiency, and effective operations.
- Identify non-compliance issues, develop corrective action plans, and implement changes necessary for compliance.
- Develop comprehensive inspection reports based upon analyses of findings to address compliance and define problems as well as propose short and long-term solutions and alternatives.
- Analyze trends and outliers and conduct additional investigations as needed.
- Recommend corrective action as well as implement and enforce corrective action to maintain accreditation.
- Documents all actions and updates manuals in preparation for accreditation inspections. Adjusts and implements new MDT testing standards and criteria after inspection.
- Document errors and inefficiencies in national AASHTO standards and specifications upon finding.
- Develop and propose new or modified procedures and national standards in support of the State Materials Engineer.
- Create reports documenting reasons, justifying need, and demonstrating efficiency of new or modified procedures and standards.
- Participates in national DOT meetings to develop and/or update AASHTO standards.

Statewide Materials Independent Assurance (IA) Program Management - 25%

This position develops, implements, and manages the state's technician and consultant IAP (Independent Audit – Procedure) and IAC (Independent Audit – Comparison) program in accordance with federal guidelines and agreements and verifies the program mandated IAs on all technicians are performed. This position statistically monitors the state IAC program.

- Establish and revise overall program work plans, priorities, and procedures and monitor the progress of the IA program.
- Develop and recommend responsibilities for individuals in each district to help preform the IAPs as well as work with the districts, scheduling, setting up locations, and acquiring the required materials and equipment for group IAP events.
- Establish objective, measurable, and observable performance standards for the technicians performing the IAPs.
- Monitor and manage the performance of the technicians performing the IAPs thru the latest laboratory information management system.
- Create laboratory referee samples to assess testing equipment and procedures as well as develop problem models.
- Analyze and evaluate the integrity of testing procedures and results and identify problems and deficiencies to assess trends affecting statewide laboratory operations and activities.
- Provide statistical reports of findings as well as write QA/QC procedures to assess testing equipment and procedures.
- Investigate, track, and report any quality failures or trends (IAP, IAC, or observation) while statistically monitoring the state IAC program to identify non-compliance issues and develop corrective action plans to implement necessary changes.

Materials E-Training - 10%

This position maintains the Materials Bureau eLearning testing software and website. This position works in conjunction with other Materials Laboratory Specialists in the section to accomplish delivery of eLearning curricula.

- Develop and maintain the Materials Bureau e-learning curricula while coordinating and reviewing educational content to incorporate updated technology in new eLearning curricula.
- Support the deployment of learning programs by uploading and updating courseware and curricula, training assignments and learner notifications.
- Develop and maintain the departments eLearning and testing software for the training and level advancement testing of Headquarters staff.

Training and Certification - 30%

This position assists in delivery of the WAQTC (Western Alliance for Quality Transportation Construction) training and certification program. This includes providing WAQTC training courses, remotely and in person, and administering and proctoring written and performance evaluation of internal and external applicants. This position assists in developing testing methods, standards, procedures, and technologies in conjunction with AASHTO, WAQTC, and other regional and national authorities.

- Provide materials testing consultation and technical assistance to laboratory personnel and other Department staff throughout the course of projects to enhance the overall quality and efficiency of testing processes.
- Coordinate training programs to educate, test, and/or certify staff on various testing methods, procedures, and standards; safety issues; equipment operations; information systems; and other developments.
- Design training curricula, materials, and schedules; deliver or coordinate training sessions from other staff or consultants; and evaluate the effectiveness of training for continuous improvement.
- Instruct MDT's materials training and qualification programs in conformance with training, testing, and certification requirements.
- Coordinate with AASHTO, WAQTC, and other certification authorities regarding training and testing curricula, procedures, materials, outcomes, and other issues to ensure conformity, identify deficiencies, and resolve problems affecting accreditation.
- Maintain a contemporary knowledge of materials sampling and testing practices, equipment, procedures, and State and federal requirements so laboratory inspection and certification processes reflect the most current methods, technologies, and requirements.
- Research new products, trends, and approaches to laboratory inspections, materials testing procedures, equipment operations, certification requirements and other issues to serve as a technical specialist and information resource for other Bureau and Department staff.
- Determine training needs of Unit staff through analysis of program effectiveness, new methods and policies, and staff performance.
- Assist in developing training plans and present or coordinate training through personnel specialists, training offices, or outside consultants to ensure that modern appraisal methods are available.
- Verify consistency in the application of training opportunities for all Quality Control staff and that Unit personnel are properly supervised and trained for effective program operations.
- Implement MDT's library of highway and bridge materials training documents, reference works, periodicals, research papers, technical manuals, visual and audio media, software, and other resources.
- Manage access, return, storage, and disposal of resource materials; respond to specialized information requests; and recommend purchase/acquisition of new resources.

- Coordinate review, coding, and payment of training expenses associated with training course delivery, publications, materials, seminar attendance, and others to ensure accurate and timely payment in accordance with MDT policies and purchase agreements.

Other Duties - 5%

Performs a variety of other engineering activities as assigned by the Inspections Operations Supervisor in support of the department mission and division objectives.

Supervision:

The number of employees supervised is: 0

The position number for each supervised employee is: 0

Physical and Environmental Demands:

- Lifting heavy objects (core samples, analytical equipment, etc.) up to 50 lbs.
- Ability to walk over uneven terrain or in water
- Remaining seated for extended periods of time, with occasional walking; standing; bending
- Extensive travel (over 2,000 miles/month)
- Operating a personal computer
- Communicate in writing, in person, and over the phone
- Exposure to extreme weather
- Exposure to loud noises
- Exposure to hot materials

Knowledge, Skills and Abilities (Behaviors):

This position requires extensive knowledge of the principles and practices of materials inspection, sampling, testing, and analysis techniques, properties and characteristics of a variety of materials, new and established sampling and laboratory testing protocols and procedures, state, federal, AASHTO, FHWA, ASTM, and WAQTC testing standards, methods and techniques of highway construction, extensive knowledge of various site-specific characteristics and their potential effects on construction projects (e.g., soils, temperature, weather conditions, gradations, segregation, stability, flows, additives, absorption rates, etc.), and safety practices and procedures.

This position further requires skill in operating a variety of sampling and testing equipment (e.g., gyratory compaction device, nuclear gauges), operations of monitoring devices (e.g., gauges, hydrated lime feed, bin splits, specific gravity, segregation, etc.).

This position facilitates training to communicate technical information to varied audiences; developing and delivering technical training programs related to materials sampling and testing and laboratory protocols.

This position maintains and deploys e-learning curricula in support of the overall materials training program. Be able to effectively provide training both in-person and remotely to external candidates.

Minimum Qualifications (Education and Experience):

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to Bachelor's Degree in highway construction related field, engineering, physical science, or computer science, or a related field. Graduate degrees will be evaluated on a case-by-case basis, considering course/laboratory work, for compliance with the experience requirements above.

This position requires a minimum of 2 years of experience in materials testing or laboratory oversight.

Certifications, licensure, or other credentials include: The successful candidate must possess all required WAQTC certifications within 6 months of hiring. The successful candidate must demonstrate proficiency in training through 80% positive feedback received as part of WAQTC program delivery within the first year.

Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

Special Requirements:

☐ Fingerprint check

☒ Valid driver's license

☐ Background check

☐ Other; Describe

035-MFPE Union Code

Safety Responsibilities

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

Signatures

My signature below indicates the statements in the job description are accurate and complete.

Immediate Supervisor	Title	Date
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Administrative Review	Title	Date
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My signature below indicates that I have read this job description.

Employee	Title	Date
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Human Resources Review

Job Code Title: Materials Specialist Job Code Number: D2D011 Level: 1

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

☐ FLSA Exempt

☒ FLSA Non-Exempt

☐ Telework Available

☒ Telework Not Available

☒ Classification Complete

☐ Organizational Chart attached

Human Resources:

Signature

Title

Date