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Job Specification

Position Title: SENIOR ENVIRONMENTAL OFFICER - AIR MONITORING
Job Code: OPSEU - Environmental Officer 4, 61507
Job ID: 21183

Purpose of Position:

To provide all aspects of the operation of air monitoring equipment and to correct/validate the air quality and meteorological data collected in support of point source compliance monitoring and special studies. To provide ongoing technical and data support for the auditing of industrial self monitoring programs. To provide assistance to District staff in conducting inspections of industrial facilities as well as providing monitoring and communications support in environmental response situations. To act as a Provincial Officer and a resource for compliance/non-compliance issues.

Duties/Responsibilities:

In a region with multiple locations, job requires:

1. Recommending, installing, operating, modifying, inspecting, maintaining, trouble shooting, calibrating and repairing regional air quality monitoring and meteorological monitoring instrumentation to the component and print circuit board level, including repairing data loggers and interrogating instruments remotely and on site and maintaining logs of performance to assure proper functioning of air monitoring instrumentation and computer telemetry equipment. Evaluating/ testing new equipment and providing appropriate technical recommendations with respect to their operation in regional industrial air monitoring programs. Maintaining emergency response equipment, including air monitoring and communications equipment. Procuring equipment and supplies including tracking and reporting inventory and costs.
2. Assisting District staff with design/siting of air monitoring stations (portable or stationary) related to point source compliance monitoring (eg. "Selected Targets for Air Compliance - STAC program) and special studies in conjunction with input from the Air Quality Analyst. This would include installing and coordinating construction of air monitoring stations, shelters and support services by self or by arranging for and overseeing the services of external contractors to address issues such as: electrical power, telephone, heating, air conditioning and snow clearing. Contacting property owners to make arrangements for installing and operating monitoring stations or equipment, e.g. by establishing or updating agreements.
3. Inspecting and validating industry operated monitors and recorded information for audit purposes related to the Industrial Self Monitoring program by: conducting confirmatory sampling as required, checking instrument function, requesting data corrections to ensure acceptable data quality, challenging with test gases, checking recorded information for consistency. Submitting and tracking samples to Ministry and private laboratories, using established sample submission and data validation procedures. Reviewing existing or potential industrial self monitoring programs, and making recommendations to the Air Quality Analyst about the set up design or improvements to existing systems and/or best equipment.
4. Maintaining data flow from monitoring stations as required, by keeping instruments in continuous operation and in good state of repair. Validating monitoring data by on site and remote checks, assessing the accuracy of recorded information and applying corrections as needed; providing prompt notice to others (Air Quality Analyst, Supervisor and District staff) and reporting and/or seeking advice on unusual results. Alerting appropriate ministry staff about unusually high pollution readings or unfavourable operational practices and providing support data, such as meteorological information about pollution episodes.
5. Providing monitoring and technical support for response to spills and other environmental response situations by operating portable monitors, accessing data from fixed stations and making the data available to other emergency personnel and by maintaining and operating mobile communications equipment and control centers.
6. Providing technical information, expertise and advice to Ministry staff, municipalities, consultants,

agencies and the public, including making presentations and preparing written reports. Assisting the Air Quality Analyst in the preparation of reports and recommendations to industry and MOE staff concerning audit results and air inspections. Supporting enforcement actions by providing testimony at legal proceedings as a technical expert with respect to the validity of the data used by Air Quality Analyst, based on expertise in the areas of air monitoring equipment operation/ maintenance, sampling principles, techniques and methodologies, and chain of custody protocol.

7. Selecting, recommending and providing training and on going direction to paid observers who carry out routine checks on MOE air monitoring stations and instruments with respect to procedures, problems and changing needs. Providing technical guidance to technicians running industry- operated equipment, students and other temporary positions.

8. Complying with all health and safety legislation, policies, procedures and reporting all unsafe equipment and conditions to the supervisor.

9. Performing other duties as assigned.

Knowledge:

Job requires knowledge of:

Operating principles, trouble-shooting techniques and repair methods for air quality, meteorological and telemetry instruments by using precision diagnostic equipment, hand and power tools used to repair defective instruments on site or in the Ministry workshop in order to provide data to meet published audit standards of the Ministry.

Air quality instrumentation auditing principles and methods used to ensure that monitoring equipment is being operated in accordance with MOE procedures/methodologies.

Theory and principles of electrical/electronic circuits to design and repair air monitoring instruments. Electronics safe practices for working with electrical circuitry including high voltages (e.g. power supplies).

Industrial air pollution control technologies/equipment to assist District Staff in addressing site air quality issues and related inspection programs and to provide specific information for specialized air monitoring studies as required.

Legislation and associated regulations, policies and guidelines such as the Transportation of Dangerous Goods Act, for the safe handling and transportation procedures of compressed gases used for air monitoring and instrument calibration; and the Environmental Protection Act as it relates to air quality in order to provide advice to the Supervisor or Air Quality Analyst regarding non compliance and to the Supervisor regarding potentially hazardous conditions.

Occupational Health and Safety Act and regulations that apply to the work and knowledge of any potential and actual danger to health and safety in the work place to ensure compliance and the reporting of all unsafe working conditions and equipment to the Supervisor.

Sampling principles, techniques and methodologies to conduct confirmatory air sampling in accordance with established sample submission and data validation procedures for the inspection/ validation of industrial operated equipment and collected data for audit purposes related to the Industrial Self Monitoring program.

Computer hardware/software, data loggers and networks, including specialized custom software, used for data capture and transmission of monitoring results to Ministry and industry staff. Computer modelling and other software applications to support data analysis, evaluation and report preparation activities.

Data validation and correction methods to correct inaccurate records by applying standard Ministry mathematical correction equations using input from independent audit measurements.

Spill scene response procedures, in order to operate safely while providing mobile monitoring, information on plume characterization and dispersion in other environmental response situations to provide advice to emergency officials.

Environmental and physical Federal and Provincial requirements for siting of air quality and meteorological monitors including geographical requirements, structural influences, traffic patterns, limitations of instrumentation and seasonal effects, as well as municipal bylaw requirements to select and set up monitoring stations.

Rules of evidence and court procedures in order to support legal proceedings by providing evidence, preparing legal documents and providing testimony in court.

Divisional initiative and the Ministry Business plan to meet ministry priorities as reflected in Regional Work Plan initiatives.

Staffing and Licensing Requirements:

The job requires a valid class G Ontario driver's licence.

Skills:

Job requires:

Analytical and evaluation skills to trouble shoot and assess instrument failures and malfunctions in order to make adjustments and/or repairs by replacing defective components.

Reasoning/analytical/judgement skills to examine records and data collected as well as evaluating skills to use past practice to correct and validate the records obtained from air quality and meteorological instruments either from ministry or industry operated stations.

Reasoning/analytical/evaluation skills to select monitoring options/ locations for spill scenes based on contaminants expected to be present at scene in order to collect data useful to emergency officials for their decision making/evacuation calls.

Evaluation skills to consider options for siting air monitoring stations for the collection of unbiased data and economical provision of site services such as electrical power, telephone service, access and security.

Computer skills to maintain and troubleshoot air data communication equipment and storage of real-time air quality data.

Technical skills to set-up, operate, calibrate and repair delicate monitoring instruments.

Physical skills to carry, load/unload equipment from field vehicles and climb ladders.

Written and verbal communication skills to prepare and present technical assessments/recommendations and technical reports, evaluations and letters to Ministry and/or other agency/government staff, regulated sectors and the public. Oral communication skills to present, explain and defend technical evaluations, interpretations and recommendations, to conduct interviews and negotiate terms and conditions and to negotiate agreements with agencies, property owners, municipalities and others and for providing technical testimony at legal proceedings as an expert.

Interpersonal skills to persuade, influence and reconcile interests of industry and the public in order to resolve conflicting opinions (eg. monitoring related to point source compliance issues and auditing of Industrial Self Monitoring

Freedom of Action:

Job works within environmental, and health and safety legislation, regulations and policies, and regional air management program guidelines and unit procedures related to air quality management.

Job makes decisions within specialized technical function of diagnosing equipment malfunction and deciding to replace/repair instrument components; making decisions on the detailed layout and design of stations, short term sampling sites and the placement of sampling intakes to obtain unbiased results within a general Ministry framework and with advice on general location requirements from the Air Quality Analyst or Supervisor. Job requires referring to Air Quality Analyst and/ or Supervisor for major repair or replacement costs of equipment, e.g., oven replacement in total reduced sulphur monitors.

Job has accountability for field work technical accuracy and recommendations; work is reviewed by Air Quality Analyst and/or Supervisor for accuracy and consistency with Ministry policies and guidelines and data are also examined by Air Quality Analyst for accuracy and inconsistencies. In addition, instruments and data are checked at regular intervals by an independent audit group for accurate operation within Ministry guidelines.

Issues involving conflicting policy, legal actions and/or scientifically complex issues are referred to Air Quality Analyst (Group Leader) and/or Supervisor.

Progress on files and achievement of work objectives are evaluated regularly through discussions with Air Quality Analyst (Group Leader) and/or Supervisor.