

MICHIGAN CIVIL SERVICE COMMISSION
JOB SPECIFICATION

GEOLOGICAL TECHNICIAN

JOB DESCRIPTION

Employees in this job perform geologic support activities related to either the release of hydrogen sulfide gases from oil, gas and mineral wells, or the contamination of the state's groundwater and investigations in various environmental media, including soil, ground water and surface water.

There are five classifications in this job.

Position Code Title - Geological Technician-E

Geological Technician 8

This is the entry level. In this classification, the employee works in a learning capacity performing a range of geological technician assignments under close supervision.

Geological Technician 9

This is the intermediate level. In this classification, the employee works in a developing capacity with increased responsibility for performing a range of geological technician assignments.

Geological Technician E10

This is the experienced level. In this classification, the employee independently performs a full range of geological technician assignments, and uses considerable independent judgment in making decisions requiring the interpretation and application of guidelines with considerable latitude to specific work situations.

Position Code Title - Geological Technician-A

Geological Technician 11

This is the advanced level. In this classification, the employee serves either as a lead worker assigning and overseeing the work activities of other Geological Technicians or as a senior worker performing the most complex assignments beyond those expected at the experienced level which have been approved by Civil Service.

Position Code Title - Geological Technician-SS

Geological Technician 12

This is the staff specialist level. The employee uses specialized technical knowledge in performing highly complex geological technician assignments involving authority for an assigned program. Staff specialist positions have sole and full time responsibility for an assigned program area, and are recognized through approval by Civil Service.

NOTE: Employees generally progress through this series to the experienced level based on satisfactory performance and possession of the required experience.

JOB DUTIES

NOTE: The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every position are included, nor is it expected that all positions will be assigned every duty.

Inspects and monitors producing oil, gas and mineral wells for compliance with applicable regulations.

Inspects new wells or facilities that are reported to contain hydrogen sulfide.

Investigates hydrogen sulfide odor complaints.

Participates in the installation of monitor wells to detect groundwater contamination.

Witnesses encapsulation of drilling reserve pits to ensure proper procedures are being followed to minimize loss of contents into the soil and groundwater.

Maintains permanent records and maps on each well and treatment and storage facility in order to gauge hydrogen sulfide levels.

Witnesses and implements testing programs on wells in order to determine that testing equipment meets requirements.

Oversees field plugging operations and gives advice on alternate procedures, methods and materials to use when well plugging problems occur.

Conducts geologic and geophysical studies and field surveys and sets up survey grids.

Operates various geophysical instruments such as seismographs, magnetometers, electrical receptivity instruments, etc.

Field inspects brine injection and production facilities for compliance with applicable requirements.

Samples soil and water in cases of suspected oil and brine contamination.

Decontaminates equipment by using steam, soap, water and solvents for the prevention of cross-contamination while installing monitor wells.

Prepares mining plans for the extraction of rock, sand and gravel.

Conducts hydrogen sulfide safety classes for division employees, industry personnel, and the general public pertaining to drilling, rework, plugging and the production of oil, gas and mineral wells.

Acts to correct conditions that threaten public safety in the event of a hydrogen sulfide emergency by following established procedures and policies.

Investigates and collects geological and technical data for compliance and enforcement activity for the purpose of hearings and court testimony.

Leads and participates in the operation of equipment for the installation of monitor wells to determine groundwater flow direction, detect contamination, define lithology, and evaluation for best placement of long-term monitor well networks.

Assists in the inspection of potentially uncontrolled hazardous waste or contaminated sites.

Takes site samples of air, surface and ground water and soils, or other media and debris to use in the identification of contamination and for potentially hazardous waste or solid waste.

Decontaminates equipment by using steam, soap, water, etc. for the prevention of cross-contamination while conducting environmental media sampling.

Transports samples to a laboratory for analysis.

May oversee the assessment or remediation efforts being conducted at hazardous or solid waste sites.

Maintains vehicles and equipment.

Procures supplies and equipment.

Compiles data obtained during environmental sampling assessments, as requested.

Maintains and monitors various instruments that measure and record the flow of water, air, etc.

Performs related work as assigned.

Additional Job Duties

Geological Technician 11 (Lead Worker)

Coordinates and oversees the work of lower-level Geological Technicians by scheduling and overseeing work assignments.

Trains personnel in geological technician activities and in the operation and maintenance of geological instruments.

Oversees and assures the quantity and quality of the work by requiring strict adherence to established methods and procedures.

Explains work instructions and adapts, if necessary, pertinent general methods and procedures in order to meet required needs.

Geological Technician 11 (Senior Worker)

Performs on a regular basis geological technician activities which are recognized as the most complex.

Geological Technician 12

Exercises independent authority and responsibility for an assigned program area.

Serves as the recognized expert within a program area, and provides technical assistance to other departmental staff.

JOB QUALIFICATIONS

Knowledge, Skills, and Abilities

NOTE: Some knowledge in the area listed is required at the entry level, developing knowledge is required at the intermediate level, considerable knowledge is required at the experienced level, and thorough knowledge is required at the advanced level.

Knowledge of methods of prevention and control of hydrogen sulfide.

Knowledge of petroleum field equipment and machinery.

Knowledge of drilling machine operations.

Knowledge of excavation and earthwork procedures.

Knowledge of groundwater table levels.

Knowledge of pollution investigation methods.

Knowledge of basic mathematics.

Knowledge of the equipment used for, and the techniques of sampling, environmental media for field and laboratory analysis.

Knowledge of the hazards of contaminants, wastes, sewage, and other pollutants and of their safe handling and exposure.

Knowledge of the installation, operation, calibration, maintenance and repair of equipment used to measure water flow, air quality, etc.

Knowledge of work area procedures and safety standards and of pertinent local, state, and federal laws, regulations, and guidelines.

Knowledge of the visual characteristics of contamination and industrial use areas so as to maximize information gathered from the collection of samples.

Knowledge of the equipment and techniques necessary to safeguard people in proximity to hazardous and waste at industrial sites.

Skill in the use of a variety of testing equipment.

Skill in the use of surveying instruments and equipment such as the odolite, level, stadia rod, etc.

Skill in the use of calculators, compasses and meters.

Ability to inspect and monitor well operations.

Ability to write technical reports.

Ability to investigate and collect geological and technical data.

Ability to conduct hydrogen sulfide safety classes.

Ability to use surveying equipment.

Ability to use petroleum field equipment and machinery.

Ability to read and interpret topographic maps, aerial photos, and compasses.

Ability to make chloride tests.

Ability to differentiate between clean and contaminated material.

Ability to lift heavy loads weighing up to 90 pounds.

Ability to work under extreme hot or cold weather conditions.

Ability to maintain favorable public relations.

Ability to use, maintain and repair equipment and tools associated with the work such as respirators, hand tools, pumps, steam cleaners, sampling tools, field parameter sampling equipment, etc.

Ability to use a computer to access, input, and compile data.

Ability to communicate effectively verbally and work effectively with staff and all others contacted in the course of the work.

Ability to read and understand requests from management and technical staff, aerial photos, work plans, and topographic maps relative to the impact of investigations on land and water interfaces.

Ability to observe the collection of monitoring data or assessment work being conducted by other parties.

Ability to drive and operate large vehicles and drill rigs, and the ability to safely tow small to medium-sized box and flatbed trailers.

Ability to operate basic shop equipment, including mills, lathes, drill presses, welding devices, grinders, etc.

Additional Knowledge, Skills, and Abilities

Geological Technician 11 (Lead Worker)

Ability to organize and coordinate the geological support activities of a specific work area.

Ability to establish priorities, assign and evaluate the work of other lower level Geological Technicians.

Ability to communicate effectively verbally and work effectively with staff and all others contacted in the course of the work.

Geological Technician 11 (Senior Worker)

Ability to perform the most complex geological technician assignments.

Geological Technician 12

Knowledge of the programmatic and developmental aspects of assigned program area.

Ability to organize and operate assigned program.

Ability to adapt new technology and methods to increase program effectiveness.

Working Conditions

Employees are frequently subject to exposure to hydrogen sulfide environments and other chemicals and by-products associated with the oil and gas industry, or hazardous waste, and are required to use provided protective clothing and equipment.

Work is frequently performed around large drilling rigs and heavy construction machinery, and extensive travel on a statewide basis may be required.

Employees may be required to work under extreme hot or cold weather conditions.

Work is performed outdoors as well as in the office or the lab and involves such activities as collection and documentation of field samples of lakes, streams, soil, ground water and other media and debris.

The employee may experience considerable travel, exposure to the weather in all seasons, including inclement weather, as well as hazardous wastes or chemicals, and may participate in emergency response activities.

Some assignments may require the use of protective clothing and respirators.

Physical Requirements

The job duties require an employee to walk, reach, bend and drive on Michigan roadways and off-road for extended periods.

The job duties may require an employee to traverse rough terrain.

The job duties require an employee to move and carry heavy objects, including 50 pounds or more.

Education

Possession of an associate's degree in petroleum technology, earth science, or geology.

Experience

Geological Technician 8

No specific type or amount is required.

Geological Technician 9

One year of experience performing geological technician assignments equivalent to a Geological Technician 8.

Geological Technician E10

Two years of experience performing geological technician assignments, including one year equivalent to a Geological Technician 9.

Geological Technician 11

Three years of experience performing geological technician assignments, including one year equivalent to a Geological Technician E10.

Geological Technician 12

Four years of experience performing technical geological technician assignments equivalent to a Geological Technician, including two years equivalent to a Geological Technician E10 or one year equivalent to a Geological Technician 11.

Alternate Education and Experience

Geological Technician 8 - 12

Four years of experience in any of the following: well drilling; service/inspections of pumps, tanks, and water systems; soil and water sampling; well maintenance and repair; welding of pipes and repair of well related equipment; or, operation of heavy equipment including backhoe, well drilling rig, and related equipment may be substituted for the educational requirement.

Completion of one year of college (30 semester or 45 term credits) and two years of experience in any of the following: well drilling; service/inspections of pumps, tanks, and water systems; soil and water sampling; well maintenance and repair; welding of pipes and repair of well related equipment; or, operation of heavy equipment including backhoe, well drilling rig, and related equipment may be substituted for the educational requirement.

Possession of a bachelor's degree or higher with 16 semester (24 term) credits in job specific or related course work qualifies for the Geological Technician E10.

Special Requirements, Licenses, and Certifications

Some positions within this job are assigned job duties that may require possession of the Commercial Driver's License (CDL) issued by the Secretary of State as required by Public Act 346 of 1988 to operate a designated state vehicle.

NOTE: Equivalent combinations of education and experience that provide the required knowledge, skills, and abilities will be evaluated on an individual basis.

JOB CODE, POSITION TITLES AND CODES, AND COMPENSATION INFORMATION

Job Code

GEOLOGTCH

Job Code Description

GEOLOGICAL TECHNICIAN

<u>Position Title</u>	<u>Position Code</u>	<u>Pay Schedule</u>
Geological Technician-E	GEOLTCHE	L32-006
Geological Technician-A	GEOLTCHA	L32-012
Geological Technician-SS	GEOTCHSS	L32-013

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