

COMPETENCY PROFILE:

ENVIRONMENTAL TECHNICIAN

ROLE OVERVIEW

Environmental technicians support the environmental sector through practical, field-based efforts. They work for environmental consulting firms, government agencies, manufacturers, contractors, and environmental labs, focusing on identifying pollution and contamination sources. Their tasks include gathering water, soil, wildlife, food safety, and air quality data to assist environmental scientists and engineers in creating strategies for pollution prevention, environmental safeguarding, and cleanup efforts.

Key responsibilities include:

- Inspecting and maintaining environmental monitoring equipment.
- Managing hazardous waste.
- Collecting various environmental samples.
- Ensuring compliance with environmental regulations.

They are heavily involved in on-the-ground data collection and environmental surveillance activities, which extend to studying fisheries and wildlife.

By performing these vital functions, environmental technicians contribute to developing and implementing solutions that protect and preserve the environment, aligning their work with broader environmental conservation and compliance goals.

ALSO KNOWN AS:

- Environmental Conservation Technician
- Environmental Protection Technician
- Groundwater Protection Technician
- Pollution Control Technician
- Environmental Field Technician
- Environmental Field Specialist
- Reclamation Technician
- Ecological Technician

NATIONAL OCCUPATIONAL CLASSIFICATION:

- 22110 – Biological technologists and technicians

EDUCATION AND EXPERIENCE

- A diploma in environmental technology or a related program is typically required. This program provides foundational environmental science knowledge, such as ecology, pollution control, and waste management, through a mix of classroom, practical lab, and fieldwork.
- A bachelor's degree in environmental science, biology, chemistry, or geology can be necessary for specific roles, offering deeper scientific understanding and potentially leading to more specialized or advanced positions.
- Educational and experience needs differ among employers and positions, with some emphasizing hands-on fieldwork and others requiring a thorough background in environmental policy, regulations, or tech skills.
- Internships, co-op programs, or entry-level positions in environmental sectors are crucial for gaining experience in environmental sampling, data analysis, equipment upkeep, and regulatory compliance.
- Keeping up to date with new environmental technologies, changes in regulations, and best practices through continuous education and professional development is vital for staying relevant in the field.
- Certifications in environmental management systems or hazardous material handling can significantly enhance an environmental technician's qualifications, leading to more career opportunities.

TECHNICAL



Data and Information Analysis

Uses established statistical methods and tools for data analysis, identifying trends and patterns to guide strategic decision-making.

- Interprets statistical, technical, and environmental data to prepare clear and concise recommendations, reports, and studies.
 - Analyses samples and other key findings in a laboratory to help better understand what the implications of their findings will mean for the surveyed ecosystems.
 - Uses appropriate methodologies to study collected data and provide interpretations of the result.
 - Uses data from previous and ongoing research to improve future project results.
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Sample Collection

Collects and prepares relevant samples for analysis to facilitate insights and support evidence-based decision-making.

- Collects samples at different sites and periods to track changes in various ecosystems and provide a fuller picture of human impacts on pollution.
- Applies appropriate techniques in the field to gather and record necessary samples to measure and track changes.
- Collects samples at consistent intervals to establish a baseline for a site and identify deviations more easily.
- Follows established sample collection guidelines to ensure all samples arrive at the laboratory intact and untampered.
- Applies a working knowledge of applicable federal and provincial regulations to meet sampling requirements.

Record Keeping and Data Collection

Records and maintains data to accurately track observed changes and provide a basis for assisting decision-makers in determining what changes or improvements an organization needs to make.

- Prepares extensive records through observation, sample collection, laboratory analysis, and investigation to keep track of changes in findings over time.
 - Records data gathered from sample analysis so the results are easily viewed and interpreted.
 - Gathers relevant data from various datasets to create a database that provides meaningful insights to environmental scientists on their team.
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Technical Writing

Writes various documents as required to convey, explain, and summarize findings to accurately and concisely communicate important information.

- Processes information and distills complex findings to create a more robust understanding for the audience.
 - Extracts relevant and significant information from records to ensure that the most critical information is represented in the report.
 - Writes reports and recommendations based on their findings to aid supervisors in decision-making.
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Equipment Management

Operates and maintains equipment using established processes to ensure all equipment functions within allowable variances to maximize safety and efficiency.

- Monitors the performance of the equipment and implements adjustments to match changes in operating conditions and ensure that equipment remains appropriately calibrated.
 - Inspects data acquisition equipment and instruments to ensure it meets accepted standards.
 - Integrates and sets up sampling technologies and equipment required at the sites to support scientific research activities.
 - Works with other technical staff to install equipment to monitor and gather data from a specific location.
 - Uses a range of specialized tools and equipment to diagnose faults and test for electrical equipment maintenance.
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Field Surveys

Conduct field surveys to collect specific/requested information on the area's ecosystem, landscape, or organisms to determine the viability of projects and the impacts of human activity on the ecosystem.

- Supervises or conducts field surveys to collect the necessary data and minimize the survey's impact on the local environment.
- Applies appropriate techniques to conduct field surveys to ensure data is accurate, reproducible, and relevant to the survey plan.
- Uses survey equipment and instrumentation to collect and gather samples and data to identify the site's natural characteristics.
- Identifies potential contamination or pollution and provides the data to experts to aid decision-making.



Communication

Communicate with team members proactively and on time to ensure everyone is on the same page.

- Writes reports to provide updates on progress and findings or to propose project development changes.
- Builds and sustains strong relationships with stakeholders and Indigenous communities to integrate varied viewpoints into the project.
- Promotes and encourages open communication and sharing of ideas amongst team members to create a collaborative working environment.
- Summarizes and distills complex information to a more digestible, condensed format to communicate clearly and concisely to different audiences.



Health, Safety, and Environment (HSE) Compliance

Performs site inspections and generates reports to verify compliance with regulatory standards, internal policies, procedures, and client expectations.

- Inspects public or business spaces to trace and mitigate contamination and ensure compliance with public health standards.
- Participates in the entire process of opening and monitoring HSE files for non-compliance to ensure that the needed remedial action is taken to resolve issues.
- Records and tracks HSE successes and failures for statistical and reporting purposes and publishes essential results, including performance against key performance indicators.
- Inform site decision-makers of any HSE gaps to ensure that they can be addressed.
- Applies a working knowledge of applicable legislation to ensure compliance in all areas.



Environmental Remediation (Pollution Control Processes)

Implements and operates pollution control processes to prevent or manage existing pollution and rehabilitate sites.

- Samples and laboratory analyses are used to identify the type and intensity of pollutants and create targeted solutions.
- Utilizes proper personal protective equipment (PPE) to reduce the chance of any adverse health outcomes.
- Creates and applies sustainable solutions that meet both organizational objectives and government regulations.
- Identifies and assesses risks to human health and the environment and ensures compliance with applicable standards.

Site Inspection

Analyze and identify an area's ecosystem to understand the impacts of human activity and assist in determining appropriate use cases for its development and management.

- Collaborates with other technical specialists to accurately confirm roles, responsibilities, and permissions to conduct site assessments.
- Collects samples using established protocols to provide a better understanding of the environmental condition of the area.
- Contributes to complex environmental studies to assess the effects of development activities on an environment.
- Identifies relevant site limitations or necessary permissions to conduct habitat management plans.
- Identifies and assesses risks to human health and the environment and ensures compliance with applicable standards.