

Overview of Environmental Technician Role

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Key points, typical duties, required skills, and career outlook

1. Role Summary

- **Primary purpose:** Support environmental monitoring, data collection, and compliance activities to protect natural resources and public health.
- **Work settings:** Government agencies, consulting firms, manufacturing plants, utilities, research labs, and non-governmental organizations (NGOs).
- **Typical reporting line:** Reports to environmental scientists, senior engineers, or compliance managers.

2. Core Responsibilities

Category	Typical Tasks	Frequency
Field Sampling	• Collect water, soil, air, and sediment samples using portable kits. • Install and maintain monitoring equipment (e.g., pumps, samplers, sensors). • Perform site inspections for spills, erosion, or habitat disturbance.	Daily–weekly
Laboratory Analysis	• Prepare samples for analysis (filtration, preservation, labeling). • Operate analytical instruments (GC-MS, ICP-OES, spectrophotometers). • Record and validate results against quality-control standards.	Daily
Data Management	• Enter field and lab data into databases or LIMS (Laboratory Information Management Systems). • Generate preliminary reports and graphs. • Assist in statistical analysis for trend identification.	Ongoing

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	• Verify that operations meet local, state, and federal regulations (e.g., Clean Water Act, Clean Air Act, RCRA).	
Regulatory Compliance	• Prepare documentation for permits, inspections, and audits. • Respond to agency inquiries and corrective action requests. • Follow OSHA and site-specific safety protocols. • Conduct hazard assessments and use PPE correctly.	As required
Health & Safety	• Participate in emergency response drills (spill containment, wildlife rescue). • Assist in preparing outreach materials (fact sheets, flyers).	Continuous
Community & Stakeholder Interaction	• Participate in public meetings or site tours when needed.	Periodic
Equipment Maintenance	• Calibrate instruments, perform routine checks, and troubleshoot malfunctions. • Keep inventory of supplies and order reagents.	Weekly–monthly
Documentation & Reporting	• Compile field logs, chain-of-custody forms, and analytical reports. • Contribute to technical reports, environmental impact assessments, and remediation plans.	Weekly–monthly

3. Required Knowledge & Skills

Knowledge Area	Details
Environmental Science Fundamentals	Ecology, hydrology, geology, atmospheric science, toxicology.
Regulatory Frameworks	EPA, state environmental agencies, OSHA, ISO 14001, NEPA.
Sampling Techniques	Grab vs. composite sampling, passive samplers, depth profiling.

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Knowledge Area	Details
Laboratory Methods	Gravimetric analysis, chromatography, spectroscopy, microbiological assays.
Data Handling	Excel, GIS, statistical software (R, SPSS), LIMS.
Instrumentation	pH meters, DO probes, flow meters, portable gas analyzers.
Safety Practices	Hazard communication, confined space entry, spill response.
Communication	Clear written reports, concise oral briefings, basic presentation skills.
Problem Solving	Identify anomalies, troubleshoot equipment, propose corrective actions.

4. Educational & Certification Pathways

Pathway	Typical Requirements	Typical Duration
Associate Degree (Environmental Science, Chemistry, or related)		