STATUTORY COMPLIANCE · 08

Environmental Compliance Monitoring

Monitoring enquiries to observe, measure and review environmental conditions at a site.

Overview Regarding the Environmental Compliance Monitoring

Environmental Compliance Monitoring involves using observational techniques and tools like sensors, wireless communications, and remote management software to identify, observe, and measure the environmental conditions at a specific location. However, the actual implementation of these processes can vary significantly based on the specific purpose. Usually, it has mainly been employed for ecological reasons.

For instance, researchers interested in studying air pollution or the impact of industrial pollution on protected areas and habitats would typically use disconnected methods to measure environmental conditions over a long period. They would periodically retrieve the monitoring devices deployed in the field to gather the desired data.

However, advancements in technology, such as IoT devices, wireless connectivity, and platforms enabling instant access to information from any location, have expanded the scope of Environmental Compliance Monitoring to new applications. These applications include monitoring water treatment plants and groundwater sources and detecting leaks in oil and gas pipelines.

Objectives of Environmental Compliance Monitoring

Enhancing operational safety and efficiency	By employing Environmental Compliance Monitoring, companies can observe and respond to changes in on-site conditions, thereby reducing the risks of equipment failures, accidents, and resulting damages.
Mitigating the organization's environmental impact	Industrial facilities can utilize ecological monitoring techniques to track and identify ways to reduce pollution or carbon emissions, thus minimizing their ecological footprint.
Validating ongoing safety protocols	Companies operating in industries that rely on specific site conditions for effective operation can assess the effectiveness of their existing procedures by utilizing Environmental Compliance Monitoring reports.

Importance of Environmental Compliance Monitoring

- Mitigating the risk of equipment failure by suspending operations during unfavorable conditions.
- Preventing the accumulation of detrimental pollution in groundwater, soil, and both indoor and outdoor air.
- Reducing the likelihood of workplace accidents by implementing leak detection and pollution monitoring systems in high-risk environments such as oil and natural gas fields.
- Safeguarding local plant and animal life, agricultural production, and public health by enhancing groundwater and aquifer protection measures.

Types of Environmental Compliance Monitoring

- Monitoring air quality
- Sampling and analysing water
- Testing noise levels
- Evaluating soil quality
- Conducting microbial monitoring

The specific type of monitoring employed depends on the objectives or purposes at hand. The methods used for monitoring can vary based on the location, duration of the survey, and timing of the survey.

Methods of Environmental Compliance Monitoring

Filtration	This method involves selecting the appropriate filtration technique based on the specific pollutants that need to be monitored.
Impingers	High-velocity air is passed through impingers, either wet or dry, depending on the type of collecting surface required. Dry impingers are used when the collecting surface is dry, while wet impingers are used when the collecting surface is wet.
Sedimentation	A simple method for air sampling where an open container is placed in an unobstructed outdoor area. This method is commonly used to measure the deposition of dust in a particular region.
Electrostatic Samples	Efficient for collecting small samples, this method involves particles in the sampler picking up a charge and depositing it on electrodes.
Adsorption	Gases are adsorbed onto solid surfaces in this method. Materials like activated carbon, silica gel, and alumina are used in the adsorption process.
Condensation	The collected sample is cooled below the boiling point of the analyte, resulting in concentration.
Grab Sampling	High-volume samplers with filters are used in air quality monitoring. The filters, made of glass fibres, are 99% efficient in capturing particles with a diameter of 0.8 µ.
Composite Sampling	Samples are collected from different locations at different times to create a more representative sample of the pollution source.

Environmental Compliance Monitoring Tools

Sampling	Automated samplers and high-volume samplers are utilized to collect samples for analysis.

Monitoring	Instruments such as air monitoring sensors, data loggers, noise level meters, water testing sensors, indoor air quality meters, and flue gas monitors are employed to continuously monitor and measure environmental parameters.
Data loggers	Real-time data loggers are used to receive and store environmental data in real time.
Laboratory tools	Temperature chambers, analysers of various types, balances, evaporators, particle counters, pH meters, refractometers, and other laboratory equipment are utilized for detailed analysis and measurement of environmental samples.

Documents Required for Environmental Compliance Monitoring

EMS	Outlining the extent and boundaries of the Environmental Management System (EMS).
Environmental Policy	Stating the organization's commitment and principles regarding environmental management.
Risks, Opportunities, and Required Processes	Identifying the risks and opportunities to be addressed and the processes needed to achieve environmental goals.
Criteria for Significant Environmental Aspects Evaluation	Establishing the criteria for evaluating significant environmental aspects.
Environmental Aspects and Associated Impacts	Documenting the environmental aspects and their corresponding impacts.
Compliance Obligations Document	Describing the legal and other requirements that the organization must comply with.
Training and Qualifications Records	Maintaining records of employee training, skills, experience, and qualifications related to environmental management.
Evidence of Communication	Documenting the communication processes and exchanges regarding environmental matters.
Monitoring and Measurement Results	Recording the results of monitoring and measurements.
Compliance Evaluation Results	Document the findings from evaluating compliance with environmental requirements.
Internal Audit Program	Outlining the program for conducting internal audits of the EMS.
Results of Internal Audits	Reporting the outcomes and findings of internal audits.
Results of Management Review	Document the results and decisions made during management reviews of the EMS.
Results of Corrective Actions	Recording the results and effectiveness of corrective actions taken to address identified issues.

How MLC Can Assist You

End-to-End Assistance

Owing to our extensive experience of over ten years in the field of Environmental approvals, our team of professionals is fully equipped to provide comprehensive assistance for your Environmental Compliance Monitoring.

Expert Legal Guidance

MLC provides full support services for Environmental Compliance Monitoring, including legal advice, through a customizable package that can be tailored to the priorities and needs of our clients.

Best in Class Client Support

Our dedicated support team ensures that our clients are kept up to date with the latest guidelines and updates from relevant government departments regarding Environmental Compliance Monitoring and other relevant information.

FAQ

Q. What is environmental compliance monitoring?

It is the use of observation techniques and tools, such as sensors, wireless communication and remote management software, to identify, observe and measure environmental conditions at a specific location.

Q. Why does my business need environmental compliance monitoring?

Monitoring helps prevent pollution building up in groundwater, soil and air, lowers the risk of equipment failure and workplace accidents, reduces your environmental impact, and confirms that your safety procedures are working.

Q. What types of monitoring are carried out?

The main types are air quality monitoring, water sampling and analysis, noise level testing, soil quality evaluation and microbial monitoring. The type used depends on the purpose, location and duration of the survey.

Q. What methods are used to collect samples?

Common methods include filtration, impingers, sedimentation, electrostatic sampling, adsorption, condensation, grab sampling and composite sampling, chosen according to the pollutant being measured.

Q. What records are needed for compliance monitoring?

Typical records include your EMS scope, environmental policy, environmental aspects and impacts, compliance obligations, training records, monitoring and measurement results, compliance evaluation results, internal audit results, management review results and corrective actions.

Q. Why is environmental compliance monitoring important?

It reduces the risk of equipment failure and workplace accidents, prevents harmful pollution building up in groundwater, soil and air, and protects plant and animal life, agriculture and public health.

Q. Which methods are used for air sampling?

Filtration, impingers, sedimentation, electrostatic sampling, adsorption, condensation, grab sampling and composite sampling.

Q. What documents are required?

Among others: the EMS scope, the environmental policy, risks and opportunities, environmental aspects and impacts, compliance obligations, training records, monitoring and measurement results, compliance evaluation results, and records of internal audits, management reviews and corrective actions.

Useful details to share when you enquire

- Business activity, site location and ownership details
- Existing applications, permissions and supporting records
- The registration or approval you need to discuss

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