

Advantages of Using an EDMS for an Environmental Manager

Why does an Environmental Manager need an EDMS?

Organisations whose activities may potentially pollute the environment are accountable for their environmental impact through strict rules and regulations. These rules and requirements require the monitoring, collection and reporting of environmental data to ensure a site is within its defined limits.

Environmental managers are an organisations first line of defence in managing and navigating these strict rules and regulations. They face increasing regulatory scrutiny, growing volumes of environmental data, and higher expectations around data quality and transparency. Despite this, many organisations still rely on disconnected spreadsheets, paper records, and manual processes. This paper explores the challenges faced by environmental managers and demonstrates how an Environmental Data Management System (EDMS) helps manage environmental data, reduces compliance risks, and provides greater confidence to the wider organisation and external stakeholders.

Challenges for an Environmental Manager

Modern environmental permits and compliance obligations have evolved significantly, creating increasingly complicated monitoring, reporting, and data management requirements. Environmental managers need to be able to navigate this complicated regulatory landscape.

Regulated industries such as mining and landfill have large monitoring networks, and the amount of data generated by these can be significant. Within these networks, data can be collected or provided by several sources and at different frequencies, including equipment on site (e.g. data loggers), field data from site visits, and laboratory results.

Historically, compliance requirements were reasonably simple. Typically, site permits would have fixed limits for specific parameters, or possibly site or bore specific limits. Today's compliance environment is evolving to be more complicated, so compliance may be specifically calculated for each data point, utilising results from other parameters collected, or considers the results from other locations collected at the same time. This can make compliance assessment a significant challenge for Environmental Managers.

Risk of Managing Environmental Data Without an EDMS

Without an EDMS in place, it can be difficult to identify and track what data has been collected and whether any data has been missed, especially when there are large volumes of data arriving in a system.

Assessing compliance can be done through spreadsheets, but this can be a time-consuming process often subject to errors. Assessing complex compliance requirements in modern permits can also be difficult and unlikely to be automated. This can result in reporting deadlines being missed, or incomplete datasets being submitted to regulatory bodies.

Utilising multiple dispersed spreadsheets can also result in accidental deletion or data loss, with little to no option for data recovery. In addition, changes made to data in spreadsheets cannot be tracked, meaning anyone can make edits to a spreadsheet without an auditable trail. Errors may enter the spreadsheet, or incorrect values may be deleted or entered. This makes it difficult to defend data if audited.

The above issues can cause significant financial and reputational risk if an operations compliance and permitting obligations are not met.

What does an Environmental Manager Actually Need?

To effectively manage environmental compliance obligations, environmental managers require visibility, confidence, and control over their monitoring and data. Regardless of industry or site complexity, their objectives are to:

- Ensure required monitoring has been completed and on time
- Identify missing data before reporting deadlines
- Demonstrate compliance at any time
- Quickly identify non-compliances and trends
- Maintain confidence in the quality and integrity of environmental data
- Reduce manual data processing and administrative effort
- Produce accurate reports within the required timescales
- Provide a clear audit trail for regulators and stakeholders

How an EDMS Helps Environmental Managers Achieve These Objectives

An EDMS is aware of what data has been received and what data still requires collecting, meaning if data is missed it can be highlighted with alerts or reminders sent. It will also provide an overview of the percentage completion of the monitoring plan.



Using a digital collection tool removes the need for paper-based data collection and the corresponding data transcription which often results in missed data or input errors and can take a considerable amount of time to complete. In-built navigation means users can easily find the locations required, and if a site or data is missed it will be highlighted to the user, so data collection is not missed. Unlike paper documents these tools can also provide a means of data validation, with users unable to input unrealistic or physically impossible data values, and values highlighted when they are above compliance limits.

An EDMS can perform validation checks on data entering the system, rejecting values above predetermined limits and highlighting them for approval so incorrect values do not end up in the system.

Having an EDMS in place means environmental data from disparate sources and different locations can be compared and analysed all in one centralised location. This is essential when operating over multiple sites in different locations, which may also be processing different materials. This makes further reporting both internally and externally much easier and saves a significant amount of time compared to using multiple spreadsheets from multiple locations.

EDMS systems provide users with options to complete calculations on the data, along with the ability to create graphs, tables and reports. In addition, if a regulator requires a specific format, data can be exported from the EDMS in that format for direct upload into a regulator's system. An EDMS can also provide the ability to create alerts for reports to be submitted, ensuring the required report submission schedule is not missed.

An EDMS sets user roles so only those required can edit the data, others can be set to read-only roles. In addition, any edits data or objects is tracked meaning there is a full audit trail of the data. Users within a dedicated EDMS typically logon via a secure method, such as their organisations SSO, or utilising MFA.

Conclusion

The primary benefit of an EDMS is not just the storage of environmental data. Its value is derived from helping environmental managers reduce compliance risk, improve confidence data to help in decision-making, and ensure regulatory obligations are met efficiently and consistently. As environmental monitoring obligations become increasingly complex, manual and spreadsheet-based approaches become difficult to manage and scale within an organisation. An EDMS helps environmental managers

reduce risk, improve efficiency, and maintain confidence in their environmental data and compliance.

