

The Future of Environmental Compliance:
The New Playbook
for Innovative
Leaders



ENCAMP

Table of Contents

Overview	3
Understanding Our Journey: The Evolution of EHS Compliance	4
The Changing Face of Compliance Management	6
Forward Focus: Embracing a New Era of Compliance Management	7
Continuous Compliance Assurance	9
Overview	10
Last-Mile Reporting: Federal, State, and Local	11
Getting Your Arms Around Reporting Challenges	12
Regulatory Applicability Tracking	13
Effective Project Management	15
Business Continuity	16
Overview	17
Training and Access to Compliance Experts	18
Standardized and Centralized data	20
Document Retention and Classification	22
Data Democratization and Integration	23
Data Intelligence and Insights	25
Overview	26
Facility Profile	26
Reconciling Records and Identifying Errors	29
Emerging Technology for Document Verification and Analysis	30
Where do we go from here?	32
How Encamp Helps	33

Overview

Encamp was founded by folks who have walked in your shoes. We're a team of former environmental consultants, in-house practitioners, and software engineers united by our mission: to make what's good for the environment, good for business.

Since our founding in 2017, we've spoken with thousands of environmental practitioners and leaders across various industries – and we're seeing a significant transformation. Now more than ever, environmental teams struggle with challenges including mitigating and managing risk by maintaining continuous compliance with emerging and complex regulations, ensuring business continuity and succession planning, and the ability to leverage existing data for fresh insights and analysis.

At Encamp, technology is at the heart of our operations. Developed, supported, and backed by environmental professionals, our platform powers the future of environmental compliance. It serves as the premier system for collecting, contextualizing, measuring, validating, and reporting compliance data at scale. Our unique methodology of understanding, managing, and complying is invaluable for companies managing compliance across multiple local facilities and enterprises spanning the US.

This guide is crafted for forward-thinking leaders and practitioners seeking solutions for those challenges. It provides insights on approaching these headwinds holistically, addressing them from a first principles perspective that encompasses all involved people, processes, and technology. Our aim is to empower you to shape the future of your organization and profession while driving tangible business value.

In the following sections, we delve into three thematic pillars: continuous compliance assurance, business continuity, and data intelligence and insights. Each of these pillars addresses critical components of a modern environmental compliance program that enables a successful business. Through expert insights, supporting statistics, and practical guidance, we aim to equip you with the knowledge and tools needed to navigate the complex landscape of environmental compliance effectively.



Luke Jacobs

Co-Founder and CEO, Encamp

Understanding Our Journey:

The Evolution of EHS Compliance

After speaking with thousands of environmental compliance professionals over the years, it's clear that traditional methods of achieving and maintaining environmental compliance no longer suffice to meet the demands of today's corporations, stakeholders and regulatory bodies. The landscape is rapidly evolving with increasingly convoluted laws, public expectations, and company goals all undergoing simultaneous transformation.

In response, environmental professionals are turning away from outdated practices like solely outsourcing compliance activities, and embracing innovative approaches including thoughtfully building succession plans, upskilling their existing workforce, and bringing more of their program in-house. These novel initiatives offer opportunities for competitive differentiation, efficiency enhancements, and corporate and individual growth.

When growth, including mergers and acquisitions and financing, require staying on the right side of regulations, environmental professionals need solutions that enable swiftly accessing operational and compliance data to inform smart business decisions.

They must navigate responsibilities, including collaborating with facility personnel to ensure compliance, while engaging in broader discussions on sustainability and expansion with senior leadership. Amidst these myriad tasks, organizations must prioritize continuous compliance assurance, business continuity, and effective utilization of data. By doing so, they can avoid operational disruptions and maintain and broaden their competitive edge.



From Localized to Centralized: A Shift in Strategy

Historically, state-level compliance tasks were often delegated to individual jurisdictions, allowing each region to interpret and enforce measures to meet regulations as they saw fit. While this approach was logical, it inadvertently led to challenges for companies operating across multiple states, particularly in meeting complex regulatory requirements such as those outlined in the Emergency Planning and Community Right-to-Know Act

(EPCRA) and the Resource Conservation and Recovery Act (RCRA). These federal mandates can be further complicated by state-specific regulations, creating a patchwork of compliance obligations that are difficult to navigate. The result is often a fragmented approach to environmental compliance, leading to a lack of processes, poor data quality and undue risk for the organization.

Impact of Legacy Approaches, Turnover and Resource Constraints

In many cases, individuals tasked with managing environmental compliance across various programs may lack a comprehensive understanding of regulations, and thus organizational risk. These responsibilities are often added to the duties of EHS staff, often whose priority is facility safety – a critical aspect of their role. Consequently, environmental compliance may not receive the attention and resources it requires, leading to potential gaps. The industry's high turnover rates, aging workforce, and expanding responsibilities further dilute focus, making the need for a centralized and modernized environmental compliance program even more critical.

On the technology side, despite their prevalence, spreadsheets have inherent limitations that hinder their effectiveness in meeting the evolving needs of environmental, health, safety, and sustainability (EHS&S) professionals. While spreadsheets excel at basic data management tasks, they often fall short when it comes

to managing complex datasets or integrating data from multiple sources. Crucially, they are ill-equipped to handle data from disparate sources and keep it consistently updated.

Finally, without streamlined processes, organizations have limited visibility into their compliance status, making it challenging to proactively manage existing risk and identify opportunities for improvement and risk mitigation. The reliance on manual, labor-intensive tasks, often managed through spreadsheets, has rendered compliance efforts not only error-prone but reactive. This ad hoc approach hampers organizations' ability to proactively manage risk and capitalize on opportunities for improvement. The shift toward more structured workflows and technological integration is thus not merely beneficial but essential for modern compliance management.

FORWARD FOCUS: EMBRACING A NEW ERA OF COMPLIANCE MANAGEMENT

The role of EHS professionals is evolving, aligning more closely with broader organizational goals such as sustainability and ESG initiatives. As Nicole Wilkinson explained in her recent NAEM [blog post](#),

“

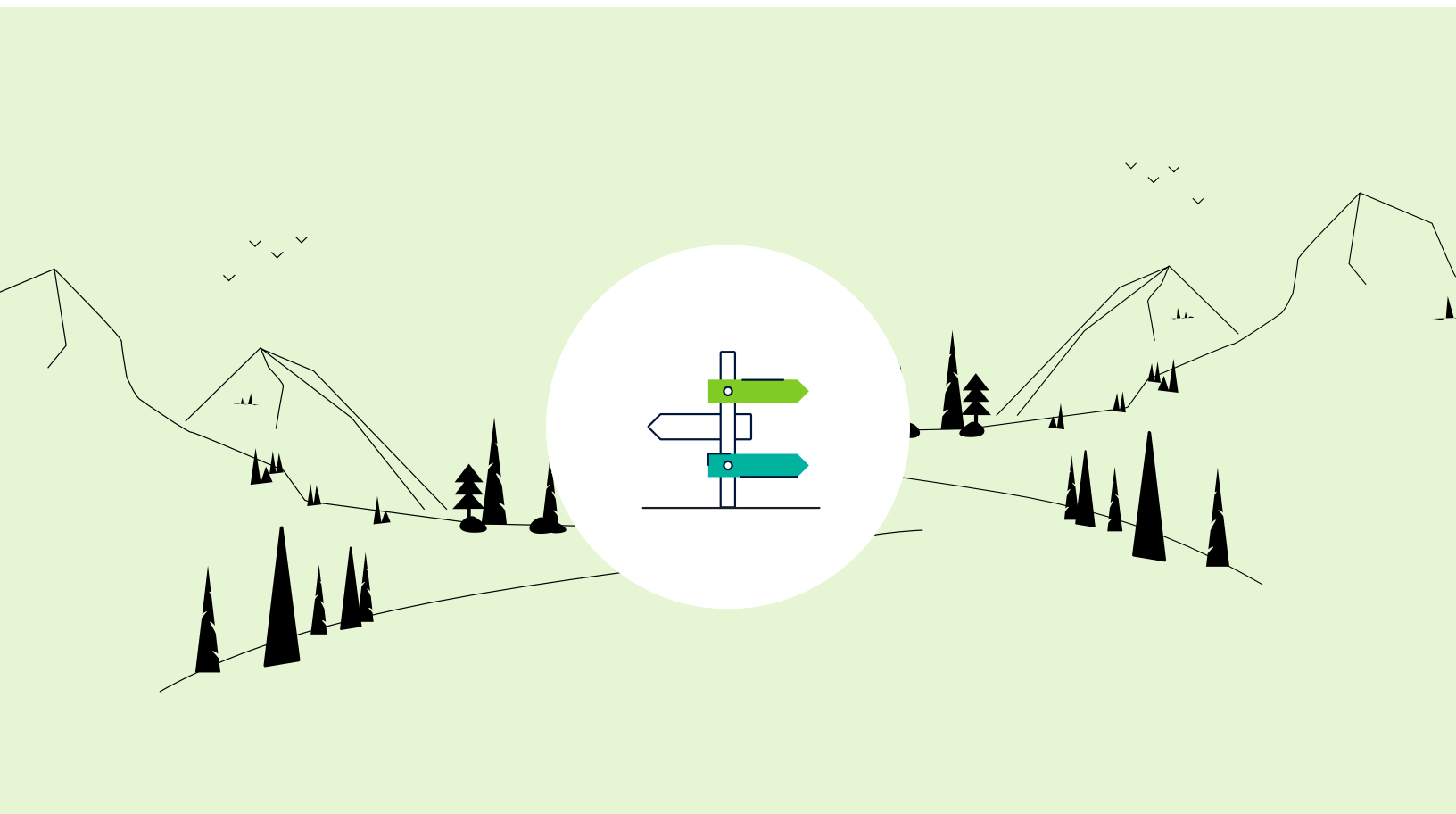
Many of us have responsibilities to setting or delivering on our company's science-based targets and ESG commitments.

Nicole Wilkinson

Executive Director of Corporate Health, Safety & Environment (HSE), CVS

As organizations embrace digital transformation initiatives, there is a heightened focus on agility and responsiveness to emerging science and regulations. For example, the ability to quickly identify and substitute hazardous substances like per- and polyfluoroalkyl substances ([PFAS](#)), is essential for maintaining compliance and mitigating risk. The stakes have never been higher, with the [EPA proposing](#) PFAS be listed as Hazardous, and regulated under RCRA.

As the landscape shifts towards a more integrated approach to compliance management, the emphasis on developing internal expertise and strategic use of consultants for transformational projects has become paramount. The future of environmental compliance lies in leveraging technology to streamline operations, enhance data visibility, and foster a proactive compliance posture.



Transforming Compliance Through People, Processes, and Technology

Digital transformation is revolutionizing how organizations manage environmental compliance and adapt to regulatory changes, such as those under the RCRA. Modern solutions allow for efficient tracking of hazardous waste streams and monitoring of generator statuses across facilities, offering a consolidated view of environmental compliance data. This integration enhances visibility, simplifies reporting, and supports proactive compliance strategies by breaking down data silos and automating tasks for real-time performance insights.

Advanced features provide deep insights into compliance statuses, identify gaps, and facilitate prompt issue resolution, thereby avoiding potential violations. By centralizing environmental data, organizations can identify improvement areas and mitigate compliance risks effectively. Stephanie Sparkman, Amazon's Global Environmental Governance & Systems Leader, emphasized the necessity of this transformation in [a recent case study](#), stating,

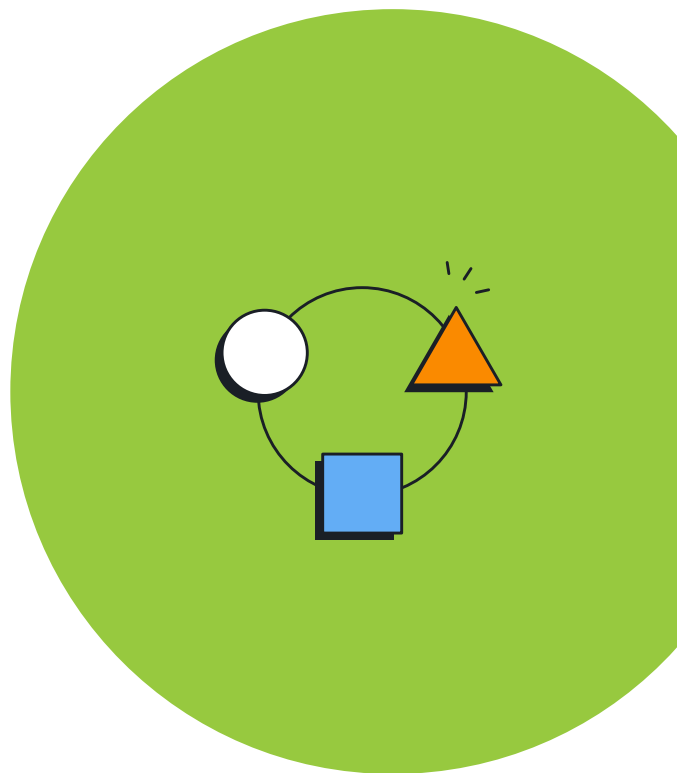
“

We knew that we needed to transform from this very manual way that we're managing compliance into a more systematic, a data-driven compliance methodology.

Stephanie Sparkman

Global Environmental Governance & Systems
Leader, Amazon

As organizations strive to navigate increasingly complex regulatory challenges, avoid operational interruptions, and remain competitive, mastering the following three critical areas is of paramount importance: continuous compliance assurance, business continuity, and leveraging data intelligence and insights. Transitioning from legacy compliance approaches to centralized management, enabled by technology-driven solutions is essential for achieving success in these areas. This shift not only facilitates proactive risk mitigation but also enables organizations to fulfill their ESG commitments, positioning them as leaders in their sectors.



Continuous Compliance Assurance

OVERVIEW

The bedrock of any organization's environmental compliance program rests upon credible, trustworthy, and accurate data sets. Inaccurate or incomplete data poses significant risks, potentially leading to catastrophic events that could harm communities and the environment.

Despite the regulatory imperative and the compelling business case for ongoing data collection, many EHS departments struggle to proactively monitor and collect environmental data. According to a [2022 survey by ESG Today](#), more than 70% of executives surveyed across multiple industries and regions reported that they lack confidence in their organizations' own ESG data reported to stakeholders.

More than **70%**

of executives lack confidence in their organizations' own ESG data reported to stakeholders.

Continuous Data Collection and Monitoring

Large facility footprints spanning multiple states, under-equipped and under-trained EHS staff, and a lack of standardized processes poses challenges for ongoing data collection. Historically, a dearth of technology compounded these challenges, hindering environmental compliance from data collection to last-mile reporting.

The consequence of inadequate data availability is heightened non-compliance risk, potentially resulting in costly penalties and reputational damage. To fortify environmental compliance, organizations must establish a centralized compliance foundation to continuously monitor and manage data. Moreover, a continuous data collection process tethered to this foundation is imperative.



This dual approach serves two essential purposes:

- 1 Empowering businesses and their EHS teams to drive continuous environmental compliance via a single source of truth, and
- 2 Ensuring persistent data collection and enhanced data management, quality, visibility, and control, even as the organization scales and adds or acquires facilities.

The subsequent sections will delve into specific strategies and solutions for achieving continuous compliance assurance in the realms of last-mile reporting, regulatory applicability tracking, and task management.

LAST-MILE REPORTING: FEDERAL, STATE, AND LOCAL

Ensuring Compliance At All Jurisdictional Levels

Environmental compliance reporting, covering federal, state, and local levels, is a critical component of regulatory adherence. Often isolated to a silo within organizations, with only a few individuals possessing the knowledge to complete reports, last-mile reporting involves the meticulous compilation and submission of compliance reports to relevant authorities. The gravity of non-compliance, including potential enforcement actions, fines, and real-world consequences, highlights the significance of this process.

Real World Consequences



2023

In the fourth quarter of 2023, the EPA concluded 206 settlement agreements across the United States, resulting in fines totaling approximately **\$4.3 million**. Many of these penalties stemmed from violations of reporting requirements. For instance, a national environmental solutions provider in Minnesota faced a \$44,242 fine for breaching EPCRA regulations by failing to submit safety data sheets (SDSs) and annual inventory reports (Tier I/Tier II Forms) for hazardous chemicals exceeding threshold amounts at its facility. These enforcement actions highlight the critical need for robust reporting processes to avoid costly fines and regulatory scrutiny.

GETTING YOUR ARMS AROUND REPORTING CHALLENGES

Automating when it makes sense

Traditionally, achieving accuracy in reporting has been challenging, but with the advent of automation, there are now opportunities to significantly improve the precision of data collection, validation, and filing of compliance data in alignment with state and local reporting requirements. Automation streamlines reporting tasks, allowing EHS leaders to allocate resources more effectively. Moreover, automated reporting systems keep EHS professionals informed about state and local regulatory changes through automated alerts and notifications. Integrated automated checks and red flags within software applications ensure thorough adherence to all applicable regulations for each specific facility within an organization, instilling confidence in both reports and compliance status.

Furthermore, the demands of other pressing compliance initiatives, such as maintaining data for internal sustainability goals, often divert EHS employees away from reporting responsibilities, highlighting the critical need for efficient and streamlined processes. Automation not only addresses these challenges directly but also provides EHS professionals with more time by handling tasks such as report submissions and mailings. These tasks, depending on the regulatory program, can be confusing and vary significantly from jurisdiction to jurisdiction.

Other reporting challenges arise from organizations having insufficient processes in place, such as the failure of inventory management systems to effectively flag chemical inventories exceeding regulatory thresholds, leading to compliance lapses. Software solutions integrate applicable compliance thresholds and can identify when one has been met or exceeded. Essential measures, like SDS digitization and implementing comprehensive chemical review processes, are vital for ensuring compliance and minimizing liabilities.

Automation and technology-driven solutions streamline reporting processes and often create audit trails, enhancing accuracy, and mitigating compliance risks.

By embracing digital transformation and leveraging innovative tools, organizations can navigate the complexities of last-mile reporting with confidence and efficiency, ensuring continued regulatory compliance.

REGULATORY APPLICABILITY TRACKING

Regulatory applicability tracking is a paramount concern for EHS professionals navigating the complex landscape of environmental regulations. With regulations like EPCRA (including TRI), RCRA, Clean Air Act (CAA) and Clean Water Act (CWA), the intricacies and variations from one state or jurisdiction to another can be staggering.

Understanding Federal, State, and Local Requirements (Or, “Do I have to do something?”)

Companies are tasked with adhering to federal guidelines while also ensuring compliance with state and local requirements, which often supersede federal ones. In the past, achieving compliance typically involved reliance on localized expertise, leading to a

lack of transparency at the corporate level. However, now more than ever, as companies engage in emerging ESG and Corporate Social Responsibility (CSR) initiatives, there is a heightened need for transparency and understanding of compliance information at each facility.

Automating Compliance Processes

Advancements in technology now allow for a centralized and standardized approach to regulatory compliance. Rather than consulting with local experts, companies can leverage technology to query vast datasets of regulations, enabling efficient tracking and adherence to even the most complex requirements.

Previously, tasks like unit conversions and inventory checks against regulatory thresholds were labor-intensive and prone to errors. Now, companies can operationalize these processes, importing inventory data and automatically verifying compliance with jurisdiction-specific thresholds, such as those mandated by California’s Hazardous Materials Business Plan (HMBP) program, which includes unique reporting requirements for carbon dioxide (CO₂) and nitrogen (N₂) if they reach a quantity of 1,000 cubic feet.

As regulatory requirements become increasingly precise, determining their applicability to various facilities in

different states and locales becomes daunting. It can be very difficult for facilities storing chemicals to discern which have exceeded a reporting threshold and which regulations may apply to their chemicals and operations. For instance, as discussed in this [EPA Enforcement Alert](#), EPA inspections at chemical warehouses and distribution facilities often reveal the failure to file and implement Risk Management Plans (RMPs) for hazardous materials due to inadequate inventory management systems failing to flag chemical inventories exceeding regulatory thresholds. Adding to the complexity, in some cases for these warehouses and distribution facilities, such as in the case of ammonium nitrate, more than one law applies. Since ammonium nitrate, which is widely used in fertilizers and stored in chemical warehouses, may be deemed extremely hazardous under certain circumstances, it may fall under CAA requirements. Additionally, facilities with ammonium nitrate must comply with EPCRA Sections 311 and 312, which mandate the submission of Safety Data Sheets and Hazardous Chemical Inventory forms.

Meeting New Challenges with Proactive Strategies

At the federal level, evolving regulations like those governing “forever chemicals” such as PFAS pose additional challenges, necessitating thorough chemical reviews, inventory management, and SDS digitization. Failure to understand and comply with these new regulations can lead to potential liabilities for organizations, as non-compliance may result in fines and enforcement actions. Meanwhile, states like California are contributing to the complexity with initiatives like the [Warehouse Actions and Investments to Reduce Emissions \(WAIRE\) program](#), presenting further challenges for organizations that may struggle to navigate these complex regulatory landscapes without adequate tools and expertise.

To address these challenges, EHS professionals can leverage gap analyses, which some technology-driven solutions support. These analyses ensure comprehensive regulatory compliance and provide insights into areas requiring improvement.

By embracing technology-driven solutions and adopting proactive compliance strategies, organizations can navigate evolving regulatory landscapes with confidence and efficiency, safeguarding both the environment, and their reputations.



EFFECTIVE PROJECT MANAGEMENT

Implementing project and task management at the facility level of large organizations presents a significant opportunity to enhance environmental compliance assurance. By centralizing task management, organizations can ensure that no compliance obligation slips through the cracks, fostering a robust and forward-looking compliance program. Utilizing environmental management software (EMS) or project management software enables teams to break down complex regulatory requirements into manageable steps, creating an audit trail for auditors or regulators to reference later on. Moreover, these systems allow for the attachment of additional records or files for future reference, all within a secure cloud environment, minimizing the risk of data loss.

Real-Time Oversight, Standardization, and Optimization

These task management systems offer managers at various levels, whether facility-level, regional, or corporate, an unparalleled understanding of compliance activities across their facilities. This real-time visibility empowers decision-makers with timely insights into compliance activities, facilitating informed decision-making and proactive risk mitigation.

Furthermore, the data collected through task management systems enable standardization and optimization of compliance processes. All facilities within an organization can have standardized tasks with consistent guidance within them, ensuring compliance with federal regulatory requirements, while also accommodating additional tasks tailored to meet state and local-specific requirements. These systems can also facilitate tracking progress towards and the status of compliance deadlines, ensuring timely action and minimizing the risk of missed obligations. The fines for missed regulatory obligations can be substantial. In an era where organizations are challenged to do more with less and shift from cost centers to value drivers, the ability to measure and optimize processes becomes increasingly crucial.

Investing in robust task management solutions lays the foundation for efficiency, transparency, and accountability, and continuous improvement.

For example, per the RCRA Civil Penalty Policy, for the RCRA program, these penalties can be

up to

\$27,500

per day, per violation

As Peter Drucker famously said,

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You can't manage what you can't measure.

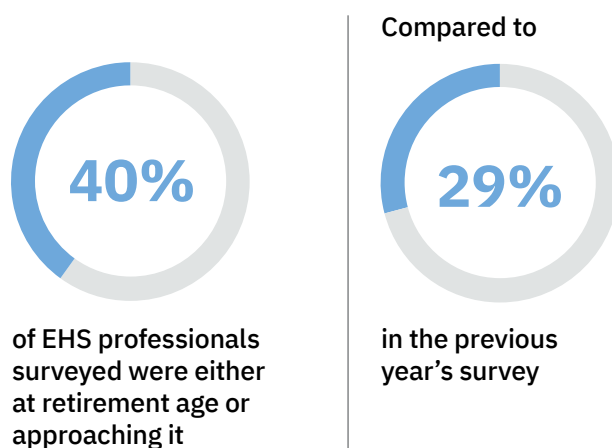
Business Continuity

Business continuity planning is often associated with preparing for emergencies or catastrophic events, such as technology failures or natural disasters. However, for EHS teams, business continuity encompasses much more: succession planning within the team and the ability to maintain business operations and regulatory compliance seamlessly. In practice, this means proactively focusing on training and knowledge transfers to uncover any potential gaps before their downstream effects are felt.

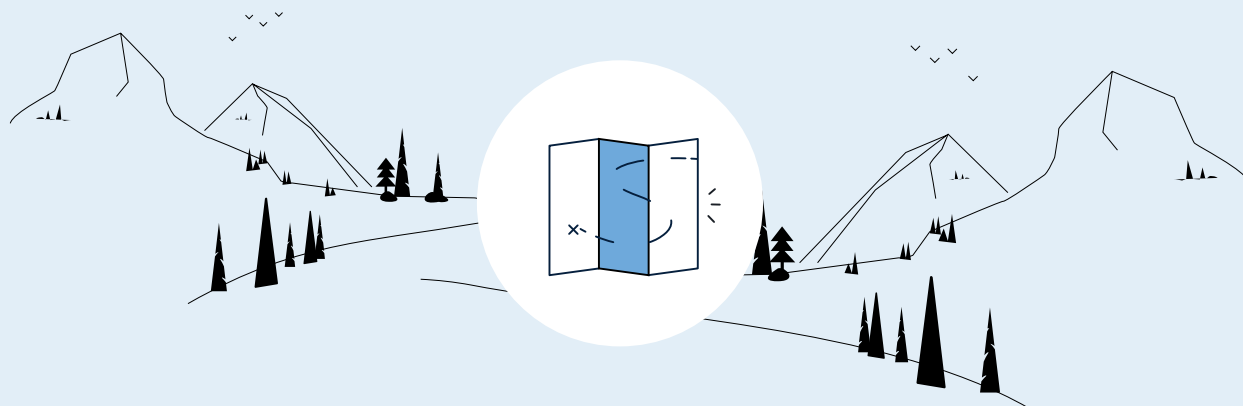
Knowledge Transfer Challenges and Succession Planning

In many EHS teams, crucial institutional knowledge of the reporting process is concentrated in only a few individuals. Limited staffing and bandwidth often result in these individuals becoming the sole authorities on compliance reporting for the entire facility or organization. They possess comprehensive understanding of regulatory requirements, maintain crucial connections with operational stakeholders, and navigate reporting portals with precision. This centralized expertise often manifests in the form of a designated “guru” or environmental program subject matter expert. This individual serves as the go-to resource for all compliance-related matters, managing intricate spreadsheets and navigating complex reporting portals with ease. However, with a significant portion of seasoned EHS professionals nearing retirement, organizations are facing the challenge of transferring this knowledge to the next generation.

According to a 2021 Salary Survey conducted by Safety+Health Magazine,



This demographic shift highlights the pressing need for effective succession planning and knowledge transfer strategies within EHS teams.



Bridging Generational Gaps

On the bright side, younger professionals are entering the EHS profession with a familiarity and comfort with technology that sets them apart from their predecessors. According to the same 2021 Salary Survey conducted by Safety+Health Magazine, one-third of the survey respondents had less than a decade of experience in the industry. This indicates a growing cohort of tech-savvy professionals poised to drive innovation and modernization in environmental compliance practices.

As organizations navigate this transition and devise strategies to capture and disseminate this institutional knowledge, they must prioritize standardized data practices, effective handoffs, and consistency between regions to ensure continuity and efficiency in compliance efforts.

TRAINING AND ACCESS TO COMPLIANCE EXPERTS

EHS leaders face numerous challenges in maintaining continuous compliance, including inconsistent processes and data management from internal and external teams, as well as scalability issues during major changes such as acquisitions. To address these pain points and ensure robust compliance practices, organizations can leverage expert-driven support and prioritize comprehensive training initiatives.

Leveraging Expertise

Navigating the intricacies of environmental compliance requires expert-driven support to ensure organizations remain compliant with regulatory requirements and mitigate potential risks. With varying regulations across different jurisdictions and evolving compliance standards, having access to experts who possess a deep understanding of regulatory nuances and maintain established relationships with regulators is critical. These experts can serve as liaisons between organizations and regulatory bodies, facilitating communication and

providing guidance on compliance matters, from seeking clarification on regulatory requirements to determining the applicability of regulations for a particular facility. Expert-driven support not only provides organizations with access to specialized knowledge and expertise but also offers peace of mind, knowing that compliance matters are being handled effectively and efficiently.

Nurturing Talent Through Investment in Development

In order to foster a culture of compliance and empower employees to effectively contribute to environmental compliance efforts, comprehensive training initiatives are crucial. Learning from past incidents such as the West, TX disaster, EHS leaders are increasingly focusing on engaging their teams in training. According to the Verdantix 2023 Green Quadrant Report,

88% of respondents

considered increasing engagement levels with EHS training to be a high or moderate priority, highlighting the importance of investing in training initiatives to drive compliance excellence.

By engaging employees from the grassroots level and nurturing partnerships with training providers, organizations can go beyond mere compliance box-checking and create a workforce that is truly invested in environmental compliance.

Providing regular annual or semi-annual training sessions, as well as one-off training opportunities, equips employees with the knowledge and skills needed to do their jobs effectively. Additionally, leaders can serve their teams and organizations by providing the necessary tools for job execution and offering opportunities for upskilling and career advancement within the organization. Beyond traditional training formats, participation in industry-specific or environmental program-specific conferences, webinars, and events can also be invaluable for staying updated on regulatory changes, learning best practices, and anticipating upcoming regulatory or portal changes. Participation in these training formats also facilitates networking opportunities with other environmental professionals in the industry or local regulators and agencies, providing valuable insights and fostering collaboration.

By combining expert-driven support with comprehensive training initiatives, organizations can strengthen their compliance posture, reduce regulatory risks, and foster a culture of compliance excellence across the organization.

STANDARDIZED AND CENTRALIZED DATA

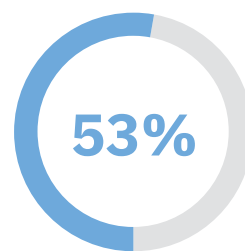
Standardized and centralized data is paramount for EHS teams striving for efficient and effective compliance reporting across distributed facilities.

The Challenge of Fragmented Data

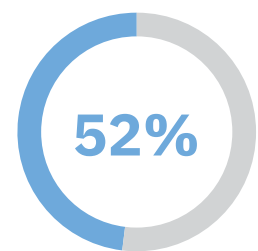
A common challenge faced by many organizations is the siloed nature of information sources, coupled with the absence of established data pipelines to each operational site. This fragmented approach often leads to manual data collection processes, reliance on disorganized spreadsheets, and limited visibility into compliance data. Additionally, employee turnover can further disrupt data collection and processing tasks, exacerbating compliance risks.

Given hurdles like these, digital transformation firm Softengi has uncovered what they term “[some sad statistics](#)” for EHS teams in general.

Among these statistics,



of teams manage data using manual processes in an attempt to get data in one view.

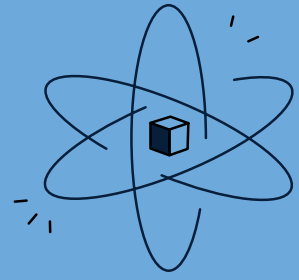


spend excessive time updating spreadsheets.



Utilizing Standardized and Centralized Data Practices

To address these challenges, a dual strategy of standardizing and centralizing data collection emerges as a pivotal strategy for ensuring accurate and timely EHS compliance reporting.



STANDARDIZING VERSUS CENTRALIZING, WHAT'S THE DIFFERENCE?

Standardizing data collection processes ensures consistency and uniformity in how data is collected across all facilities or departments within an organization. This includes standardizing data formats, collection methods, and reporting standards, reducing errors and enhancing data quality. For example, when completing Tier II reporting requirements, having all product data among all facilities in the organization in a common chemical catalog ensures that chemicals can be standardized and reported consistently from facility to facility within the organization.

Centralizing data collection involves consolidating data from dispersed facilities into a single repository, allowing for enhanced data visibility across sites and streamlining the compliance process. Centralizing data not only improves data visibility but also enhances control throughout the compliance process. It allows stakeholders at every level to better understand reporting requirements and ensure regulatory compliance.

Standardized and centralized data increases visibility for tracking and validating data, simplifying tasks such as confirming chemical inventories, identifying threshold exceedances, and ensuring SDSs are valid and up-to-date. Moreover, it enables proactive monitoring,

allowing intervention to address potential issues before they escalate. Accessible data centralized in one location enables stakeholders beyond EHS professionals, including those in other departments, to monitor compliance risks and exceedances so that they can be mitigated in a timely manner. This approach fosters a culture of accountability and transparency, empowering organizations to demonstrate compliance to regulators and stakeholders with confidence.

Centralizing data collection enables EHS teams to make informed decisions, reduce compliance risks, and drive operational excellence across the organization.

Document retention and classification play a pivotal role in ensuring regulatory compliance and business continuity for EHS teams. Historically, records retention has been a cumbersome and fragmented process, often characterized by disparate documentation stored in various locations. This outdated approach has typically involved storing these documents in physical binders, filing cabinets, or even secure vaults managed by third-party providers like Iron Mountain.

Grappling With Limited Accessibility and Decentralized Repositories

Within this decentralized model, documents are often dispersed across multiple platforms and locations, leading to challenges in accessibility and oversight. Some documents may reside in individual employees' personal desktop folders, while others are housed within facility offices or corporate databases. Additionally, external partners such as waste vendors may hold pertinent documentation relevant to compliance efforts. A notable risk associated with this decentralized approach is the loss of critical knowledge during turnover. Without a centralized system for document retention and classification, organizations struggle to track who has access to documents and where they are stored. This lack of centralization often leads to documents being overlooked or not retained at all.

Document retention violations often emerge as a common finding during audits and regulatory site visits.

EHS teams frequently find themselves scrambling to locate specific reports or inspection records, underscoring the need for robust document management practices.

Enhanced Document Management with Centralized and Digitized Systems

To address these challenges, modern EHS teams are transitioning towards centralized and digitized document management systems. These systems offer a secure and centralized repository for storing and organizing documents, ensuring easy access for authorized personnel while maintaining compliance with data governance requirements. By implementing standardized classification protocols within these systems,

organizations can also establish consistent methods for categorizing and organizing documents. This streamlines the process of retrieving documents when needed. Furthermore, leveraging technology solutions such as cloud-based document management platforms enables seamless collaboration and version control, facilitating efficient information sharing and reducing the risk of data loss or corruption.

As the volume and diversity of data sources across various industries continue to grow, organizations must maintain control over the data sources they are creating, and prioritize the ability to access their data efficiently and effectively.

Breaking Down Data Silos For a Comprehensive View

A key aspect of data accessibility is the ability to seamlessly integrate data from third-party sources. Integrating data from external sources such as regulatory agencies, vendors, and partners enables organizations to enrich their datasets and gain comprehensive insights into compliance performance. For example, organizations can aggregate data from regulatory agencies to stay updated on changing compliance requirements and ensure they are meeting all necessary regulations. This could include importing data on permit limits, regulatory

thresholds, or new environmental regulation information. Similarly, integrating product composition data from vendors can facilitate the calculation of quantities of hazardous materials on-site, thereby enhancing accuracy in compliance reporting and inventory management. Incorporating data integration processes fosters greater efficiency and optimization of compliance processes.

Enabling Seamless Collaboration with Export Functionalities

Another crucial aspect of data accessibility is the capability to export data to external third-party software solutions. This capability enhances collaboration and data sharing among stakeholders. For instance, exporting data to environmental reporting software allows organizations to streamline regulatory reporting processes and ensure accuracy and consistency in compliance submissions. Similarly, exporting data to auditing platforms enables seamless communication and data exchange with auditors, facilitating efficient and transparent audit processes. By leveraging export functionalities, organizations can optimize data accessibility and utilization, driving better decision-making and compliance outcomes.



Empowering Data-Driven Decisions with Aggregated Data

Data accessibility extends beyond scheduled intervals to accommodate ad-hoc requests and real-time data retrieval. EHS teams must have the flexibility to access relevant data whenever necessary, whether it's for regulatory reporting, internal audits, or decision-making processes. As highlighted by Bill Pennington during a [Q&A session](#) with Encamp,

“

To get the most value out of new technology, you need to be able to leverage data quickly and accurately.

Bill Pennington

VP of Research, EHS and Risk, Verdantix

By establishing robust data integration frameworks and leveraging advanced technologies, organizations can streamline data accessibility workflows and empower stakeholders with timely and accurate information.

Furthermore, data integration enables organizations to consolidate disparate datasets into a centralized repository, providing a holistic view of compliance performance across all operational facets. This centralized approach enhances data integrity, reduces duplicative efforts, and facilitates cross-functional collaboration among different departments and facilities within the organization.

Prioritizing data accessibility and integration empowers EHS teams to efficiently manage compliance, anticipate risks, and pursue ongoing improvement. Through the strategic adoption of technology and a commitment to data-driven decision-making, organizations can proactively address regulatory shifts, minimize compliance challenges, and excel in a rapidly evolving business landscape.



Data Intelligence and Insights

OVERVIEW

In today's increasingly complex regulatory landscape, the ability to leverage data effectively can make the difference between proactive risk management and reactive compliance measures. This section delves into various aspects of data intelligence and insights, ranging from understanding one's facility profiles to harnessing technology for document verification and analysis. By harnessing the power of data, organizations can gain deeper insights into their compliance performance, identify potential risks, and make informed decisions to safeguard both their employees and the environment.

FACILITY PROFILE

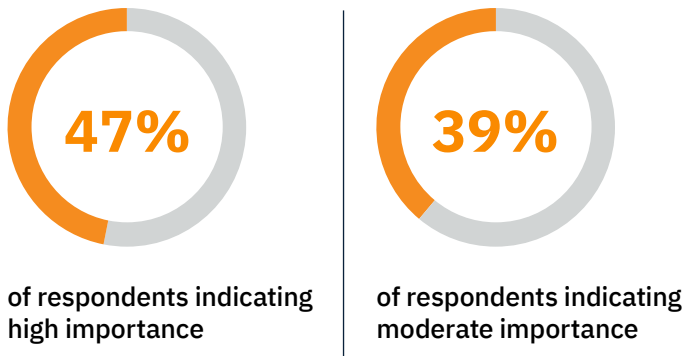
Historically, it has been incredibly challenging for regional managers or corporate teams to get an at-a-glance view of governance, compliance statuses, and related records and documents associated with their facilities. By aggregating all facility-level metadata, contacts, tasks, and documentation, teams can maintain an ongoing and up to date understanding of what is happening at each facility, even when those number in the thousands.

The ability to quickly zero-in on a specific facility can prove invaluable during an internal audit, external inspection, and to maintain agility and operational efficiency.



The Need for Enhanced Visibility

According to the Verdantix 2023 Green Quadrant Report, improving contractor management and visibility emerges as a critical priority,



This data underscores the role of visibility in achieving operational excellence.

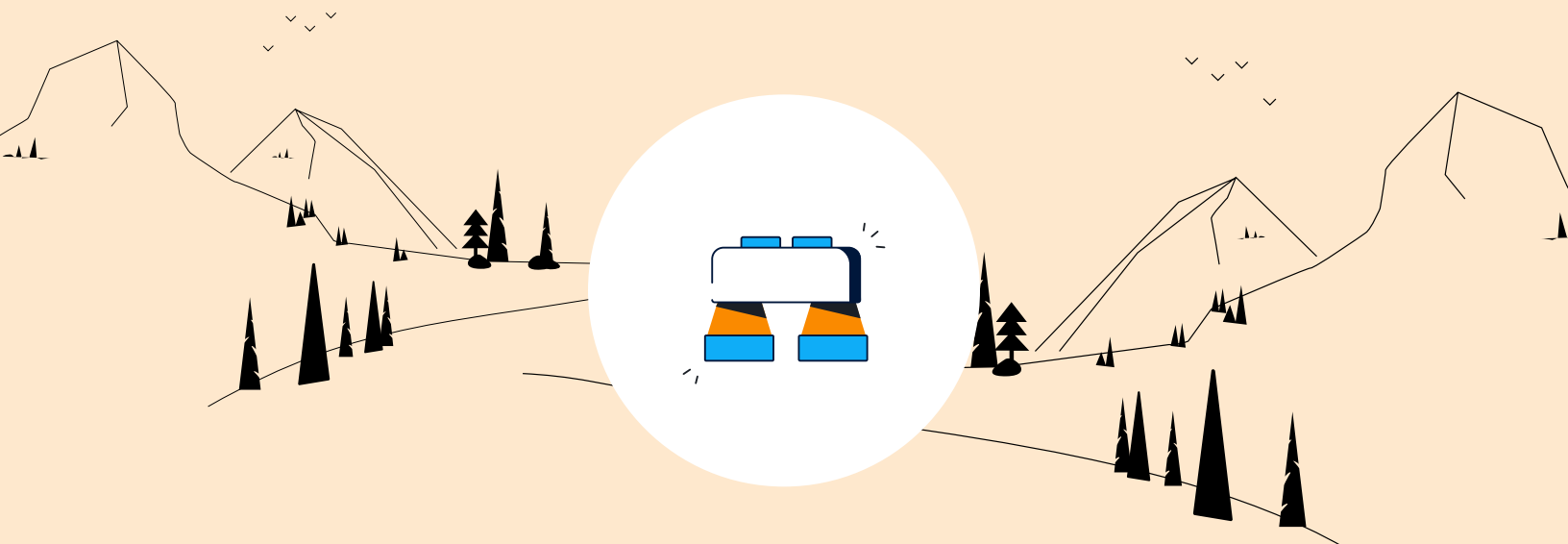
In [a conversation with Nicole McClure](#), the complexities of managing compliance across multiple facilities were brought to light. Nicole emphasized the difficulties in organizing and staying current with diverse regulatory demands spread across different jurisdictions.

“

I think one of the biggest challenges we see is finding an organized way to document and keep up with all of the different regulatory requirements across all of these facilities.

Nicole McClure

Senior Environmental Sustainability Specialist
at Domino's Pizza



Centralized Compliance Data for Improved Collaboration and Efficiency

By leveraging advanced environmental compliance software solutions, companies can consolidate all pertinent compliance data and insights into a single pane view. This allows for a holistic view of compliance statuses, reporting progress, task completions, and applicable deadlines across all facilities.

This centralized approach not only simplifies compliance management but also enhances efficiency and reduces the risk of oversights or non-compliance issues.

Centralizing compliance data within environmental compliance software solutions provides organizations with a comprehensive and actionable overview of their compliance statuses across all distributed facilities.

MEASURING AND MANAGING AT-A-GLANCE

The single-pane profile view offered by these solutions facilitates easier assignment and monitoring of tasks by EHS leaders at both the facility and corporate levels. Leaders can track reporting progress and task statuses effortlessly, allowing for timely interventions when needed. Additionally, this centralized view fosters collaboration and teamwork across departments within the facility and with external contractors. By having all relevant information accessible in one place, EHS professionals can collaborate more effectively, share best practices, and collectively work towards compliance goals, fostering a culture of collaboration and shared responsibility for compliance excellence. This approach not only simplifies compliance management but also enhances visibility for contractors and employees, improves efficiency, mitigates risks, and ensures consistent adherence to regulatory requirements.

Having a centralized compliance profile for each facility within an environmental compliance software solution enables organizations to:

- **Monitor compliance statuses in real-time**
- **Gain immediate access to facility-specific compliance data**
- **Ensure consistency in compliance efforts across all locations**

Gaining insights into your organization's compliance efforts from the perspective of regulatory agencies is essential for effective EHS management. Environmental Compliance History Online (ECHO) and Resource Conservation and Recovery Act Information (RCRAInfo) which offer comprehensive insights into environmental compliance history and waste management practices. However, the interfaces tend to be clunky, slow, resulting in low usage. Cutting edge technology now allows organizations to aggregate this ECHO and RCRAInfo data for all of their associated sites or facilities, offering an unprecedented understanding of how regulators view their compliance posture.

Utilizing Regulatory Insights to Ensure Data Accuracy

By aggregating and analyzing data from these programs, organizations can gain a comprehensive view of how regulators perceive their compliance status and operations.

This includes any enforcement actions, violations, inspections, and compliance history associated with their facilities. Understanding this perspective allows organizations to identify areas of improvement, address compliance gaps, and prioritize resources more effectively.

Verifying the accuracy of the data held by regulatory agencies is essential for organizations. Discrepancies or inaccuracies in regulatory data can lead to misunderstandings or misinterpretations of compliance statuses, undermining the credibility of compliance efforts. Therefore, organizations must proactively review and validate the information regulators have to ensure its accuracy and completeness. It's common for this data to be outdated or invalid. By identifying and correcting any discrepancies or outdated information, organizations can ensure that their facility and organizational representation from a regulator's view is accurate and reflective of their current operations. This accuracy is particularly crucial in emergencies, where precise data facilitates appropriate responses and actions. Moreover, maintaining accurate regulatory records is vital for

avoiding fines, penalties, and other legal consequences associated with compliance violations. By proactively verifying and updating regulatory data, organizations not only mitigate risks but also enhance compliance efforts and maintain a positive regulatory relationship.



Opening the Doors to Benchmarking Opportunities

Accessing and analyzing regulatory data through software solutions not only ensures accuracy but also opens doors to valuable benchmarking opportunities. By comparing your organization's compliance performance to industry peers, you gain valuable insights. Benchmarking against similar facilities or industries allows for a thorough assessment of your relative compliance standing, highlighting areas where enhancements can be made. This comparative analysis facilitates informed decision-making and strategic planning to elevate compliance performance effectively.

Leveraging data from regulatory programs like ECHO and RCRAInfo through environmental software solutions empowers organizations to gain insights into how regulators perceive their compliance efforts, benchmark against industry peers, and verify the accuracy of regulatory data.

By harnessing these insights, organizations can enhance their compliance management strategies, mitigate risks, and demonstrate a commitment to environmental stewardship and regulatory compliance.

EMERGING TECHNOLOGY FOR DOCUMENT VERIFICATION AND ANALYSIS

Utilizing technology for document verification and analysis plays a crucial role in ensuring compliance and safety within organizations. One of the key challenges faced by compliance stakeholders is keeping documents, such as SDSs, up to date. Even when SDSs are filed to meet reporting requirements, they often become outdated and fail to meet regulatory standards, such as OSHA's modified Hazard Communication Standard ([HCS](#)), which aligns with the Globally Harmonized System of Classification and Labeling of Chemicals ([GHS](#)). Given that compliance stakeholders must sometimes manage hundreds, or in some cases thousands, of SDSs for their product inventory, HCS and GHS guidelines can easily get overlooked. This oversight can lead to EPA report violations and, more critically, endanger first responders and communities when crucial safety information for hazardous chemicals is not readily available.

Outdated Safety Data Sheets can put first responders and communities in danger when the latest safety information for hazardous chemicals isn't fully made available.

Ensuring Comprehensive and Accurate Documentation

Fortunately, advancements in EHS technology now enable the extraction and updating of information in documents to ensure accuracy and compliance. By leveraging leading technologies, such as Artificial Intelligence (AI)-powered document analysis, organizations can effectively manage and maintain their document repositories with the click of a button. AI models can analyze regulatory documents to identify outdated information, missing compliance data, and potential violations. They can also review regulatory documents, like permits and sections of regulations, to readily extract pertinent information on regulatory requirements, and can assist organizations in simplifying gap assessments between their current compliance processes and the requirements outlined within the regulatory documents. This not only saves time and resources but also enhances accuracy and ensures regulatory compliance.



Streamlining Document Storage and Workflows

In addition to AI, other technologies and software solutions can aid in document verification and analysis. These include digital document management systems, which centralize document storage and facilitate version control, ensuring that stakeholders have access to the most recent and accurate information. Furthermore, integrated compliance platforms can streamline document workflows, automate notifications for document updates, and provide real-time insights into compliance statuses across facilities and regulatory requirements.

By harnessing the power of technology for document verification and analysis, organizations can mitigate compliance risks, improve operational efficiency, and enhance safety for both employees and surrounding communities. These technological solutions empower compliance stakeholders to proactively manage their document compliance efforts, stay abreast of regulatory changes, and uphold their commitment to environmental stewardship and regulatory compliance.

Where do we go from here?

Our journey through environmental compliance management highlights the evolving strategies and technologies pivotal in ensuring regulatory compliance and operational resilience for organizations. From the historical reliance on outsourcing for managing compliance tasks to the present and future outlook of leveraging advanced technologies and expert-driven support, the shift towards proactive compliance management has become not just evident, but an imperative for companies aiming to remain competitive.

By operationalizing continuous compliance assurance methodologies, such as last-mile reporting, regulatory applicability tracking, and task management, organizations can navigate the complex regulatory landscape with confidence. Moreover, prioritizing business continuity through standardized data management, access to compliance expertise, and streamlined document retention and classification processes ensures resilience in the face of regulatory challenges. By harnessing the power of data intelligence and insights, organizations gain valuable perspectives into facility profiles, regulatory viewpoints, and utilize technology for efficient document verification and analysis. Through these integrated approaches, organizations can not only meet regulatory requirements but also drive operational excellence, mitigate risks, and uphold their commitment to environmental stewardship and regulatory compliance.

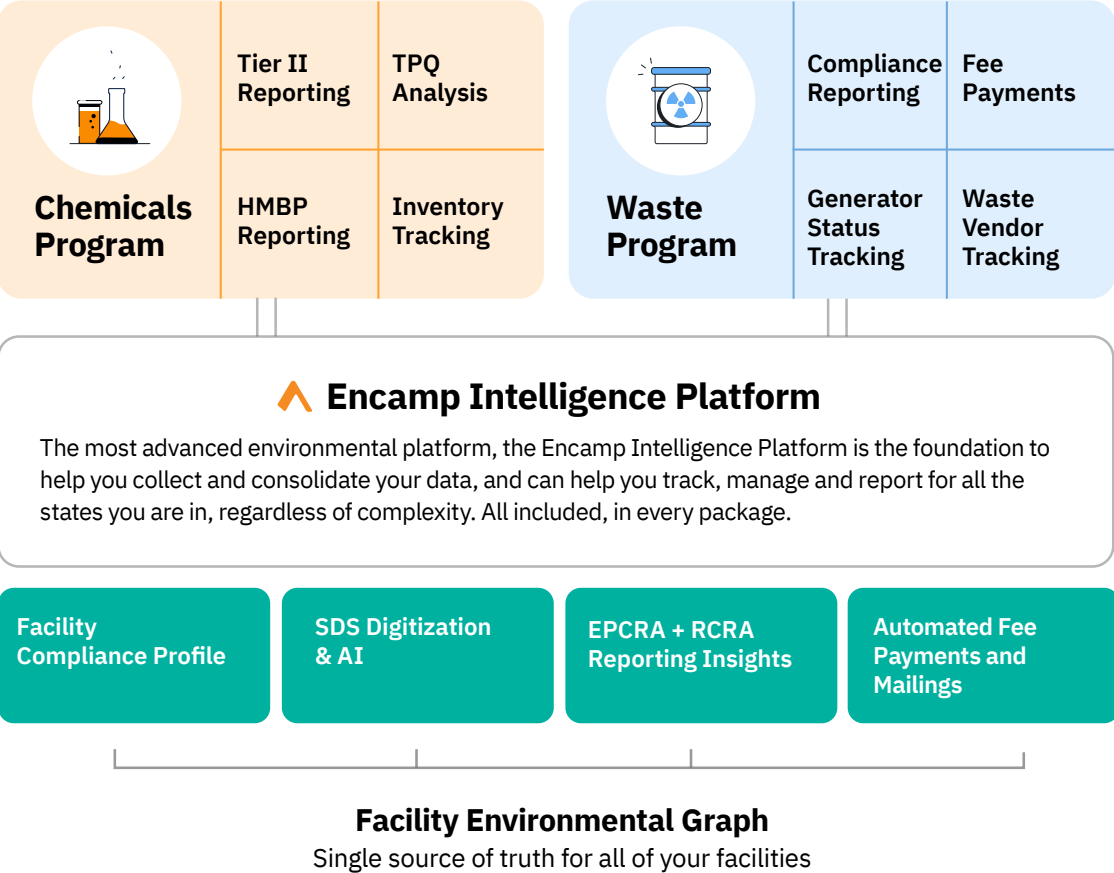
The organizations that effectively achieve depth and breadth in management of these areas will emerge as the winners in their sectors.

How Encamp Helps

Encamp empowers your team with the most visible, transparent and accurate view of your environmental compliance data so you can effectively mitigate and manage risk and demonstrate business value and impact. Automate manual compliance processes and have year-round access to our technology and regulatory experts to maintain compliance with complex and evolving regulations.



Achieve the most visible and accurate view of your chemical and waste compliance program with the Encamp Intelligence Platform

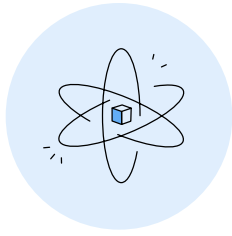


ENCAMP
Methodology

- Expert Support
- Training & Knowledge Base
- End-to-End Compliance
- Unified Data
- Year Round Visibility & Control

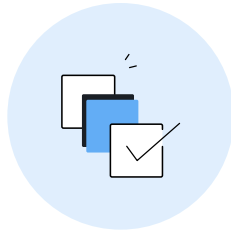
Don't just survive —
thrive.

One Unified Platform, Endless Benefits



Maintain continuous compliance

Determine regulatory applicability and submit last mile EPCRA Tier II and RCRA reports to all 50+ state portals, pay fees and collate mailers, digitize SDSs, monitor generator statuses, and manage your tasks and projects.



Discover new insights

A single pane view gives you visibility into previously blackboxed processes and proprietary and governmental data sets, so you can standardize and centralize data across your footprint, empowering your team to optimize for results that drive value and impact.



Drive business continuity

Bolster business continuity plans by standardizing compliance data collection, records retention repositories, and training processes to ensure operational continuity and consistency in the face of disruptions.

The most innovative EHS teams are transforming their compliance programs with Encamp

47%

Increase in data confidence

By accessing all the data in one single place.

60K+

Hours saved annually

By automating report submissions, fee payments and more.

\$MM

Environmental risk protection

Can save millions of dollars in time savings and fines.

 **TopBuild**



Nutrien

 **HEXION**

 **SOUTHERN STATES**

FirstEnergy



"We needed to transform from this very manual way that we were managing compliance into a more systematic, a data-driven compliance methodology."

Stephanie Sparkman,
Amazon



"Your solution is unique in that it's the only one in the industry that can automate data collection and standardize it, while automating the reporting, submissions and fee payments. It's been a game-changer for us."

Mason Baziw, Sr. Manager
of ESG and Sustainability,
TopBuild



"I work with a lot of different kinds of vendors and consultants, but Encamp is in a league of its own with its quality and service."

Andrew Kavanaugh,
EHS Manager, World Group

Join them

Speak with an expert