



## Case Study: Ohio Environmental Protection Agency's Electronic Discharge Monitoring Report (eDMR) System Reaches 99% Adoption

### Introduction

This Case Study highlights how the Ohio EPA launched its eDMR system, which uses electronic reporting to allow permittees to report their discharge measurements quickly and easily online. This method of reporting, currently at a 99.9% adoption rate, has increased data quality and improved environmental protection, while also saving significant time and resources for all stakeholders. Through interviews and data collection, this case study covers the background, challenges, implementation and impacts that the eDMR system adoption had on both permittees and the state of Ohio.

### Background

The Clean Water Act of 1972 delegated to authorized states the authority to regulate surface water within their borders by maintaining a permit program. Any regulated entity discharging pollutants into surface water owned by the state is required to have a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits allow states to control the quantity of pollutants being discharged into their waters, and require permittees to monitor and report their discharges. This process is intended to ensure compliance with state and federal regulations that protect public health and the environment.

Since 1972, the US EPA has required the collection of water discharge monitoring data mainly through paper forms. Filling out these forms was labor intensive, requiring permittees to fill them in manually and submit them to either the state or federal agency. The state or the US EPA then manually scanned and verified the data. This process led to some data loss, making it difficult for states and the US EPA to monitor, enforce, and track the progress of clean surface water initiatives in the US.

*Nationally, it is reported that 11% of US EPA data analysis is solely dedicated to water discharge collection—the largest of any environmental program.*

Ohio EPA decided to collect its water discharge monitoring data electronically, eliminating paper forms. In 2005-2006, the Ohio EPA collected 70% of its water discharge information through a software program called SwimWare. The remaining 30% of their data was still collected through traditional paper forms. Unfortunately, both methods were labor intensive for permittee and the Ohio EPA. The SwimWare program required downloading, installation, and extensive technical knowledge. Data could not be easily updated for errors or for altered permit conditions. Meanwhile, paper forms were often illegible and data were often omitted. Therefore, both methods of data collection resulted in lower data quality.

### Challenge

Given their experience with SwimWare and permittees, the Ohio EPA sought a new data collection system that would allow permittees to input discharge amounts easily through an online application. The intent was to

reduce the labor associated with processing the information and increase data quality. Early in the development process of its eDMR system, the Ohio EPA recognized several challenges including outreach, buy-in, and training.

### Ohio Implementation

The Ohio EPA faced major challenges including raising permittee awareness and creating the desire and ability to learn and use a new eDMR system. To address these challenges, the Ohio EPA took a phased approach to roll out eDMR.

The Ohio EPA also included various methods to communicate the benefits of the eDMR system and to train permittees on the new system.

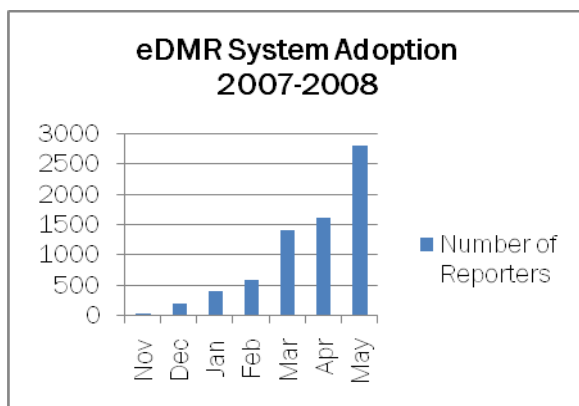
This approach appears to have led directly to the successful implementation and adoption of the Ohio eDMR system.

## **Roll Out**

The Ohio EPA focused on meeting the US EPA's technical requirements, including the Cross-Media Electronic Reporting Regulation (CROMERR) compliance, prior to roll out. CROMERR provides the legal framework for electronic signature verification and establishes standards for information systems that receive reports and other documents electronically.

The Ohio EPA also piloted early versions of the system with permittees that were SwimWare power-users in order to document their responses, incorporate their feedback, and refine the system in later versions. By focusing on meeting these requirements and engaging permittees from the beginning, Ohio EPA was able to develop a system that met long-term agency and permittee needs.

Next, the Ohio EPA focused on rolling out the eDMR system to each of the five Ohio EPA districts. Each month, the Ohio EPA invited each district, one by one, to use the new system. This allowed them to concentrate their communications and training on a smaller, individualized audience. Working with smaller groups allowed the Ohio EPA to address the unique needs of each district and create individualized training workshops, which further facilitated adoption. As Figure 1 indicates, the Ohio EPA was able to increase the number of eDMR users each month.



**Figure 1: Ohio eDMR system Adoption by Month**

Ohio EPA also designated a point of contact, or “relationship manager,” for each district. The relationship managers became the primary sources of information for permittees needing

assistance with the new system. The relationship managers were vital for increasing the number of permittees successfully using the system.

## **Communications**

The Ohio EPA realized that permittees who were unaware of the new system, or only had a limited understanding of its value, would be less likely to adopt it. So the Ohio EPA conducted a permit holder analysis to mitigate this risk. They found that a majority of permittees preferred phone calls and e-mail communications.

They also found that these permittees were not interested in complex videos or the latest technologies. These permittees were satisfied with simple and easy to understand communications that were timely and instructive. The communications focused on spreading awareness of the new system and its benefits so permittees would want to learn more. Ohio EPA also reached out to external governance groups and industry. They distributed flyers and brochures to water affiliates including the Ohio Water Environment Association to broaden their outreach.

Ohio EPA focused on the remaining 800 “paper form” permittees. Each year, they sent out new blank discharge monitoring forms to those permittees along with an attached flyer recommending that they use the eDMR system and eventually transitioned them to a request only procedure. The Ohio EPA made personal phone calls to the paper form permittees to individually encourage them to use the eDMR system. Many permittees quickly transitioned because the focus on personal contact remained central to the Ohio EPA's approach.

## **Training**

Many permittees cite the difficulty of learning new systems as an impediment to frequent and correct usage. The Ohio EPA supported the need for robust training to draw permittees into the new system. Efficient and diverse training opportunities and information dissemination eased permittees into the new system and reduced the time needed to engage interest.

First, Ohio EPA created an online “All in One” training document that had screenshots and descriptions of the entire reporting process. Continuing their focus on personal attention, the Ohio EPA also held in-person training at the various districts each month. They filled over 100 seats at each training event.

The Ohio EPA was aware that Operators, who often prepare reports for permittees, were required by the state to complete a certain amount of training/coursework each year. The Ohio EPA leveraged this requirement to gain approval for their free three-hour eDMR system training workshop to fulfill certification requirements to maintain an Operator’s license.

The Ohio EPA started each training session with an hour and a half PowerPoint presentation followed by a live demonstration of the system with a permit holder or Operator from the audience. The “permit holder” would create his/her account on the spot to exhibit the system’s ease of use. Eventually, positive word of mouth about Ohio EPA’s eDMR system and the ease of submitting discharge monitoring reports electronically led to more invitations to conduct workshops at regional conferences and other events.

## Result/Outcome

The Ohio EPA made significant strides in increasing the number of electronically reporting permittees, decreased the amount of time spent managing the program, and improved data quality to ensure compliance. Ohio’s successful implementation of

“I used to dedicate over 40 hours a week to this program answering hundreds of e-mails and phone calls by permit holders. After the deployment of Ohio eDMR system, I’ve been able to reduce my level of effort 75 percent to just 10 hours a week.” – Ohio EPA Employee

its eDMR system was due in part to a well-planned and executed roll out strategy that included diverse communication and training. Over 99% of Ohio permittees now use the eDMR system (Figure 2).

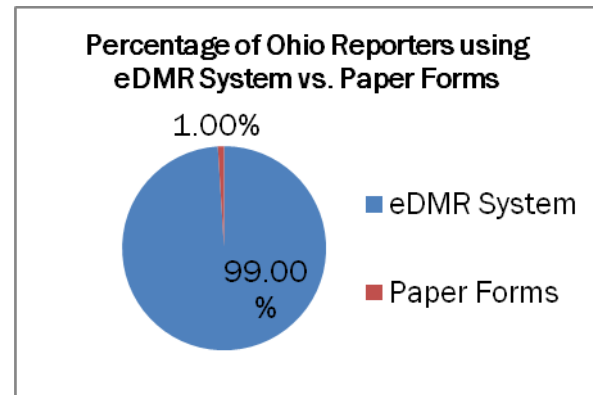


Figure 2: Ohio Permittees using eDMR system

Prior to eDMR, Ohio EPA needed five full time staff members to support the DMR program. During eDMR roll-out they reduced support to two staff members. They now run the program without any full-time staff. The automated compliance tools within the eDMR system inform permittees if their discharges exceed their authorized permit limits or if there are data errors. Most of the data errors are user errors and with the new system permittees can go back quickly to correct the errors. As a result, errors have dropped from 50,000 per month to 5,000 per month, giving the Ohio EPA more accurate and robust data, which translates into improved data quality. With improved data quality, Ohio EPA is able to better target areas of pollution, which further improves Ohio’s enforcement and compliance program.

## Conclusion

The Ohio EPA created an eDMR system that saves time and resources for the state and permit holders while dramatically improving data quality. The implementation of the eDMR system has improved the ability of Ohio EPA to monitor and enforce compliance with the Clean Water Act.

Higher data quality and operational efficiency facilitates the agency’s mission to protect human health and the environment.

## Key Lessons Learned

### Roll Out

- Ensure CROMERR-compliance, and engage permittees from the beginning to develop your system
- Segment the roll out of an eDMR system to allow for customized communication and training
- Provide a relationship manager to alleviate anxiety and address pressing questions and concerns

### Communications

- Understand your stakeholders and their communication preferences
- Consider using time intensive tactics such as phone calls to win over resisters
- Develop partnerships with associations and other like-minded organizations in your state to broaden your outreach

### Training

- Receive accreditation for eDMR system training to provide an incentive for attendance
- Build out Help resources for the eDMR system and use forum boards or e-mail to answer questions quickly
- Offer training both in person and virtually to increase speed of adoption

## Ohio EPA eDMR System Team and EPA NetDMRs Contacts:

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## Additional Information/Resources

Ohio EPA eDMR system Information Page: <http://www.epa.ohio.gov/dsw/edmr/eDMR.aspx>

Ohio EPA eDMR system Training Guide: <http://www.epa.ohio.gov/dsw/edmr/eDMRtraining.aspx>

Ohio EPA Link to Answer Place: [http://ohioepa.custhelp.com/cgi-bin/ohioepa.cfg/php/enduser/std\\_alp.php?p\\_sid= NxrDJ-j](http://ohioepa.custhelp.com/cgi-bin/ohioepa.cfg/php/enduser/std_alp.php?p_sid= NxrDJ-j)