



Risk Based Data Management System (RBDMS)

The RBDMS is a suite of integrated, electronic data management tools that assist state regulatory agencies in the oversight of oil and natural gas drilling and production operations. It was developed by the Ground Water Protection Council (GWPC)—a national nonprofit organization whose members are state regulatory and resource management agencies dedicated to protecting and conserving ground water—in partnership with the U.S. Department of Energy's (DOE's) Office of Oil and Natural Gas, the National Energy Technology Laboratory, and states. The majority of the nation's oil and gas producing states and the Osage Nation use RBDMS to manage environmental data related to oil, gas, underground injection control, water, and other associated activities.



Background

RBDMS users built the system from the bottom-up, and, since its inception in 1992, the system has been continuously improved and expanded to address the evolving needs associated with state regulatory program implementation. Originally created for underground injection control wells, RBDMS was expanded to address production wells and now includes modules for electronic permitting and reporting, field inspections, data mining, and environmental testing.



States using RBDMS.

Objectives and Benefits

RBDMS enables states to manage the baseline data needed to make informed regulatory and policy decisions. The system also supports states in promoting the conservation and efficient recovery of domestic oil and gas resources while protecting health, safety, and the environment. Through its use of non-proprietary software and flexibility to serve variations in state regulatory programs, RBDMS also provides a platform for facilitating rapid deployment of new innovations and sharing of best practices among states, covering a breadth of regulatory program topics while retaining a focus on ground water protection.

What It Does

RBDMS is a suite of integrated, electronic data management tools with interactive modules. The system facilitates responsible development, protection, and smart management of water resources, and effective regulation. RBDMS increases efficiency through automated workflows for regulatory data processing and analysis, reduces the cost of information exchange between industry and state agencies, and increases the public's access to information.

Next Steps

Future upgrades will include an updated user interface, expanded capabilities for regulatory analysis and risk assessment, additional data transparency, and greater connectivity with FracFocus.org—the national registry for public disclosure of the chemicals used in hydraulic fracturing.

“RBDMS is a mission critical tool for regulatory program management and environmental resource protection.”
Harold R. Fitch, Director, Office of Oil, Gas, and Minerals Michigan Department of Environmental Quality

Modules

	<p>RBDMS.NET</p> <p>This application manages the full range of oil and gas regulatory data features record retrieval by (1) keyword; (2) API, permit, complaint, payment application, and docket numbers; (3) GIS selection; and (4) user-defined queries. It integrates with RBDMS eForm, Data Mining, and RBDMS Environmental and displays chemical disclosure data from FracFocus.</p>
	<p>eForm</p> <p>eForm is the award-winning Web application for oil and gas operators' use in filing permit applications and regulatory forms such as production and injection reports. It integrates seamlessly with RBDMS Classic, RBDMS.NET, RBDMS Environmental, and Data Mining.</p>
	<p>Field Inspection</p> <p>Agencies use this to prioritize wells slated for inspection and to capture and preserve the data collected during the range of well inspection activities required for regulatory compliance.</p>
	<p>RBDMS Environmental</p> <p>This Web application is used for managing analytical laboratory and field sampling and results data for all environmental matrices with GIS. It includes secure log-on, electronic data deliverable formats, a full reporting module with multiple export options, and a sophisticated user notification service.</p>
	<p>Well Finder</p> <p>A mobile application that uses the device's GPS to display wells near the device's location on a map along with summary data. The data is fed from the Gateway, and the application is useful for emergency reporting and response.</p>
	<p>Well Tracker</p> <p>Developed with the support of regulatory agencies across the country, this module enables states to track water used in oil and gas development from source to well to final disposal.</p>
	<p>Data Mining</p> <p>This Web client with integrated GIS and reporting module is often used to serve data sets to the public, and it is compatible with non-RBDMS databases.</p>
	<p>National Oil and Gas Gateway</p> <p>Developed in collaboration with DOE's Energy Information Administration, this Web-based application aggregates information about oil and gas wells throughout the United States. The Gateway provides users with the ability to define a set of wells, view, and download production information for a given period of time. Users can select wells based on state or U.S. Congressional District, well type, well status, or via map.</p>

Timeline

RBDMS for injection wells is launched with support from DOE's Office of Oil and Natural Gas.	RBDMS is expanded to include oil and gas wells and modern data management in state regulatory agencies gains momentum.	Nevada, Nebraska, and Mississippi adopt RBDMS for Water (now RBDMS Environmental) to manage data associated with their source water protection programs.	Mississippi becomes the first state to roll out RBDMS.NET, coupled with enhanced RBDMS Data Mining and RBDMS eReport capabilities.	FracFocus.org is launched, supplementing initiatives by RBDMS states to ensure more effective regulatory oversight and increase public access to data about hydraulic fracturing operations.	The Well Finder app is launched featuring Oklahoma.						
1992	1997	2000	2001	2002	2003	2008	2009	2011	2013	2015	2016
RBDMS is expanded to include GIS, production reporting and tracking, and a field inspecting capability.	The Osage Nation implements RBDMS. RBDMS states expand data mining capabilities to assist state and industry data users.	The RBDMS eReport schema for production and injection reporting is completed, and API/PIDEX accepts it as a national standard.	Colorado eForm goes live, allowing the state's oil and gas well permit review process to become paperless and allow for public access and comment.	Design of the National Oil and Gas Gateway begins.	RBDMS is used by regulatory agencies in 24 states and the Osage Nation.						

For more information, please visit
energy.gov/fe/science-innovation/oil-gas-research