

**2007 NASCIO Award Submission
Category: Government to Business**

**Project:
E-Forms Center,
Virginia Department of Mines, Minerals and Energy, Division of Gas and Oil**

Executive Summary

The natural gas industry has grown significantly through the years and today provides a meaningful contribution to the business revenue of the Commonwealth of Virginia. In 2006, 5,178 natural gas wells produced approximately 103 billion cubic feet of gas in the state. Approximately 7,000 wells have been drilled in search of natural gas. Natural gas produced in Virginia may be broken down into two categories, conventional and coalbed methane gas. Coalbed methane gas was first produced in Virginia in 1988, and through utilization of increased drilling and improved well completion technology, production has increased dramatically to account for nearly 80% of the natural gas produced in Virginia. Gas production in the state has increased by over 500% since 1990.

The Virginia Department of Mines Minerals and Energy (DMME) Division of Gas and Oil (DGO) regulates gas and oil operations, issues permits, client assistance programs, inspects well sites and gathering pipelines, reclaims of abandoned well sites, protects correlative rights, and promotes resource conservation practices.

In order to better support the regulatory reporting requirements for industry customers, DGO developed an electronic forms (DGO E-forms) capability using a Web-based interface. They also developed a customized Intranet version of the application that allows Division staff to review, approve, and/or reject the submitted information. Phase I of the DGO E-Forms system included a Drilling Report, Completion Report, Pit Disposal / Reclamation Application, Monthly Gas Production, Monthly Oil Production, Notifications, Incident Reporting, Annual Report, Complaint Reporting, and the Company Registration form. Presently, the Phase I forms are being utilized by 50% of DGO Customer base which accounts for 80% of transactions. Phase II will address the remaining forms.

The DGO system offers improved customer service and turnaround (50% improvement) by virtue of online approval, submission and signing. This system also offers online 24 hour service, rapid e-mail responses, simplified submittal forms/templates, Adobe PDF file access, public inquiry of public data and more rapid status tracking.

The E-forms center further provides DMME and its customers a major reduction of paper work and reduced mailing costs. By reducing DMME data entry errors and form data entry, the application is a significant time saver for DMME DGO staff. By virtue of its Web access and availability to submit 24/7, the system provides operators the freedom to work outside of agency office hours/post office constraints, another significant benefit in today's telecommuting and work-at-home environment. The DGO E-forms system was developed using current DMME staff.

Description of the Problem and Solution

The Virginia Department of Mines Minerals and Energy (DMME) Division of Gas and Oil's (DGO) responsibilities include regulating gas and oil operations, issuing permits, offering client assistance programs, inspection of well sites and gathering pipelines, reclamation of abandoned well sites, protection of correlative rights, and promotion of resource conservation practices.

As of the end of 2006, approximately 7,000 wells have been drilled in the Commonwealth of Virginia in search of oil or natural gas. The natural gas industry has grown significantly through the years and today provides a meaningful contribution to the business revenue of the state. In 2006, approximately 5,178 natural gas wells produced nearly 103 billion cubic feet (bcf) of gas (1487 conventional wells produced 21.2 bcf, and 3,691 coalbed methane wells produced 81.7 bcf).

Natural gas produced in Virginia may be broken down into two categories. As indicated above, over 1,487 wells currently produce gas from conventional reservoirs, while more than 3,691 wells are producing gas from coal seams. Coalbed methane gas was first produced in Virginia in 1988, and through increased drilling and improved well completion technology, production has increased dramatically to account for nearly 80% of the natural gas produced in Virginia. Gas production in the state has increased by over 500% since 1990.

The DGO E-Forms center provides a mechanism for its industry customers to quickly and easily submit legally required forms to DGO using a Web-based interface. In addition, DGO staff has a customized Intranet version of the application that allows them to review, approve, and/or reject the submitted information. Phase I of the DGO E-Forms center was demonstrated to the Virginia Gas and Oil Industry on August 11, 2006. Requests were made for volunteers to be part of a pilot group that would begin using the system October 2, 2006. Three companies were chosen for the pilot group, a small, a mid-size, and a large operator. Additionally, two consultant companies that submit information on behalf of the large operator were included in the group. Phase I was fully implemented January 16, 2007. During the pilot phase (4th quarter of 2006), 421 forms were submitted. During the first quarter of full implementation, 664 forms were submitted.

DGO E-Forms customers include employees of gas and oil exploration and production companies and their contractors and consultants, industry information gathering companies, and the general public. Because the program is primarily designed to accommodate the flow of required filings from operator to DGO, the preponderance of anticipated and actual use comes from the industry. At inception of the program, operators were consulted to determine their existing internal procedures, to request their design input, and to gauge their interest and likely participation. The program was introduced to the industry association at its annual convention and a hands-on introductory training session was held prior to commencement of the pilot phase.

Phase I of the DGO E-Forms system included a Drilling Report, Completion Report, Pit Disposal / Reclamation Application, Monthly Gas Production, Monthly Oil Production, Notifications, Incident Reporting, Annual Report, Complaint Reporting, and the Company Registration form.

Presently, the Phase I forms are being utilized by 50% of DGO Customer base which accounts for 80% of transactions. The project from start to finish took less than eight months to develop. It was designed and developed by DMME's internal application development staff with infrastructure support from onsite Virginia Information Technology Agency employees. There was no budget increase for the agency or additional costs incurred by the customers in order to develop this application.

The DGO E-Forms center is a state of the art ASP.NET application with Microsoft VB.NET/SQL server database technology running on a Windows 2003 server and IIS 6.0. This system is available to DGO customers 24/7. It allows submission of multiple document formats, produces final Adobe PDF document for public review and use, allows detailed and comprehensive security roles and responsibilities to be defined and established. By developing an Intranet version with Microsoft Active Directory Security integration and Internet version of the application, system functions can be customized for agency and customers based on specific business requirements. The applications also share common application functions, stored procedures, security setup, as well as database infrastructure.

The customer is notified automatically via e-mail when the final inspector has reviewed their applications. For the customer, the paper versions of the forms contained several fields which had to be hand-completed. These fields are now automatically populated in the application after the customer selects the appropriate DGO file number; customers are not allowed to submit information on DGO file numbers that aren't associated with their company. Lookups for the company and the operation name assist the customers in selecting the correct DGO File number. E-mail notification containing a link to the form goes to the responsible DGO staffer as soon as the company submits the data.

In addition, at one company's helpful request, the submission of the notification e-mail is also routed back to the submitter containing not only the DGO File number but information that the customer uses to route the e-mail internally to their staff that need to be aware of the action. As actions are taken by the inspectors and/or office staff, additional automated e-mails are routed back to the submitting company to notify them of the status. If the inspection staff or the administrative staff rejects the submission of a form, the customer is notified via e-mail and is allowed to correct the original form and resubmit it without requiring new forms to be filled out and sent to DGO. In addition to the emails, the company may review on-line at any time records that they have submitted by form type and see the current status and any comments that the reviewers have made. Prior to the DGO E-Forms center, operators had to call DGO to obtain the current status of their forms.

Upon final administrative approval of the forms, both the current DGO database and the old legacy data system are automatically updated, again replacing data entry that previously required DGO staff time. For the forms comprising Phase I, paper forms that come into DGO's office are now entered by DGO staff into the E-Forms center instead of the legacy system, centralizing one area for all entry and making that information available to the registered companies.

The Drilling and Completion forms are considered confidential for a time period specified in the regulations. The confidentiality date for these forms is automatically calculated upon submission. The data and final PDF versions of the forms are not accessible to the public until the confidentiality dates have passed.

In addition to data fields that are completed by the users and submitted to DGO, another area allows submission of attachments that were included as separate sheets attached with the DGO paper form. Copies of these attachments are stored on the DMME server and are used to produce an Adobe PDF document that the operator can print as a hard copy of the entire submission. There is an area on the DGO server that all DGO staff has access to that contains copies of all of the final Adobe PDF versions for their use.

Templates have been developed for most attachments by DGO to assist the operators in providing the correct information to DGO. When the final approval process is ready to be performed on each form, DGO prepares a final Adobe Acrobat PDF document that becomes the final copy of the form submission. Once the final Adobe Acrobat PDF has been prepared, the companies can view and print the PDF files as needed.

Information reports are also provided for the companies that can be printed as Adobe PDF documents or saved to Excel spreadsheets. The informational reports are comprised of data that previously were only available through the legacy system and required the customer to make a request to DGO, which DGO staff had to manually print and send via mail or fax to the customer.

Industry customers of the E-Forms center are comprised of three groups. A user may be inquiry only, may enter and save data, or may submit the form to DGO for review. Within the division, there are two levels of users. The inspector level may approve or reject those forms that require inspector review and the administrator level completes the final approval or rejection of the form. Prospective users of the DGO E-Forms Center complete an on-line form requesting access to the center and in the request they indicate the company or companies on whose behalf they will be submitting information and they also indicate which forms to which they request access. The user provides the user identification and the password that they want to use to access the system. The E-Forms center verifies that the user name is unique across all of the DMME E-Forms centers.

Phase II of this application is currently well under way. It will encompass the remaining forms submitted by the customers. Target dates for Phase II have the system being available to the pilot group October 15, 2007 and to the full customer base by January 15, 2008. Additionally, a mobile intranet field inspector version will be available to allow the DMME inspection staff to review and approve forms in the field and then to update the on-line version upon connection to the DMME network.

Significance to the operation of government

Prior to implementation of the E-Forms center, customers were required to complete paper versions of the forms and submit to the Gas and Oil Division using personal delivery or mailing. Due to the volume of the reporting, entry into the existing legacy data system of DGO could take days. Routing to the individuals that needed to review and or approve was delayed between submission and entry. Routing to the field staff required them to pick up large stacks of paper and to manually keep up with the review and approval process. Several of the forms could require the review of several inspectors that resulted in the paper copies being routed from inspector to inspector.

Thanks to the E-Forms center, DGO inspection staff can now review the forms simultaneously. A public inquiry version of the DGO E-Forms system, online at <http://www.dmme.virginia.gov/dgo inquiry>, allows the public to view the non-confidential final Adobe PDF versions of the DGO data, as well as produce copies of the informational. This significantly reduces the number of telephone requests from both customers and citizens for publicly available gas and oil information. Due to the close proximity of wells to citizen homes and business interests, the ability for the public to review, search, and find information related to wells is critical. The online inquiry system is also integrated with a complete archive of electronic well logs recently scanned by an external vendor at no cost to the agency.

By allowing customers to submit their own application data, and by performing data validation checks on submission, there are fewer opportunities for data entry and transcription errors. This system insures that the most current DGO information is available for operators and public, thereby improving DMME's quality of service and customer response times. The DGO E-Forms system significantly reduces routine telephone or mail based requests for information, providing more time to address critical issues and to respond to customer requests. This system represents significant productivity improvements for both DGO and its customers.

Benefits

The DGO application has several significant benefits to DGO's customers. The system offers improved customer service and turnaround (50% improvement) by virtue of online approval, submission and signing. This system also offers online 24 hour service, rapid e-mail responses, simplified submittal forms/templates, Adobe PDF file access, public inquiry of public data and immediate status tracking.

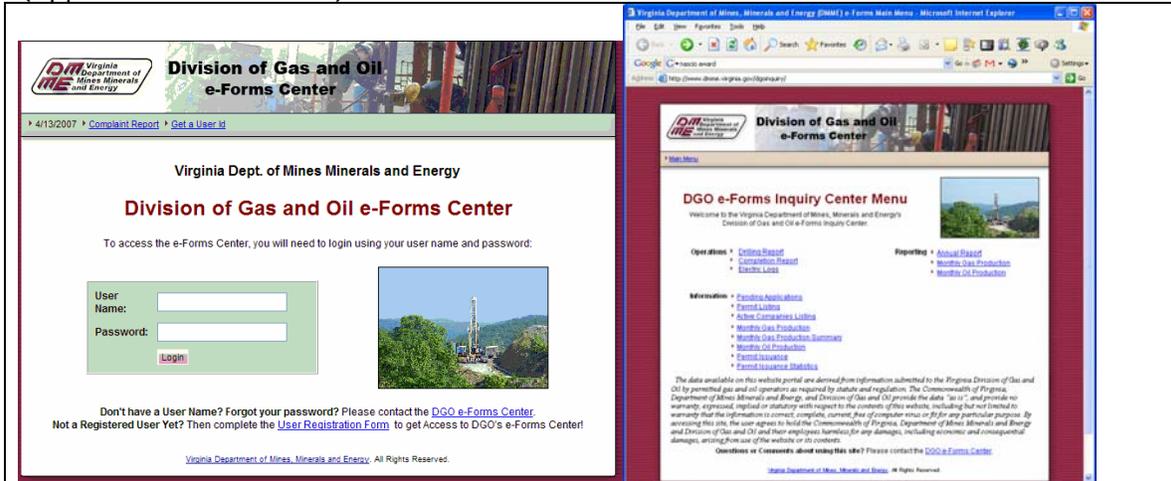
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Another benefit to DMME and its customers is the collaborative aspect of the permit application process which now allows customers and their partners to work together on submittals. Customers can review and approve work submitted by contractors prior to DMME review. This speeds the process of submittal as well as DMME's approval processes. Customers can also have multiple submissions working at one time, allowing submissions to be built by multiple staff over time. With Gas and Oil operators being able to verify the status of a submission in the approval workflow, time and expense of trying to get verification from DGO is saved. Also, since inspectors can access submitted forms online without the need for hard copy to be delivered to the office, there is much faster turnaround on approval time.

A critical aspect to customers in dealing with Pit Disposals is that the paper trail can eliminate violations that may have been otherwise issued. In the past, once mailed / e-mailed , the company had no verification that required notifications had been submitted to DGO. With the E-forms centers, applications are tracked from the time that they begin work approved.

DMME has developed a public and Intranet version of application. Employees of DGO currently use a custom intranet version for submittal of paper-based submissions until all users utilize e-forms.

DGO E-Forms Center Application Screenshot (Application Screenshot)



All major DGO operators and the vast majority of smaller operators have embraced the E-Forms program and are using the system to submit all currently available forms. As mentioned, 664 forms that would formerly have been submitted as multi-page hard copy documents were submitted electronically in the first quarter of 2007. Web-based access allows employees to enter data as it becomes available and submit forms when complete.

Customer comments have been overwhelmingly favorable and indicate that the DGO E-Forms process has gone a long way toward facilitating operator compliance with regulatory reporting requirements. Consultant and contracting companies with direct access to the E-Forms center are able to submit required applications for permit operations without transfer of paper or interim company approval processes. Operators credit this arrangement with speeding up the process of required operations such as drillsite waste management. It has resulted in operator savings of time, paper, and money. DGO has received numerous inquiries and input regarding Phase II of the project development indicating that operators are eager for its implementation.