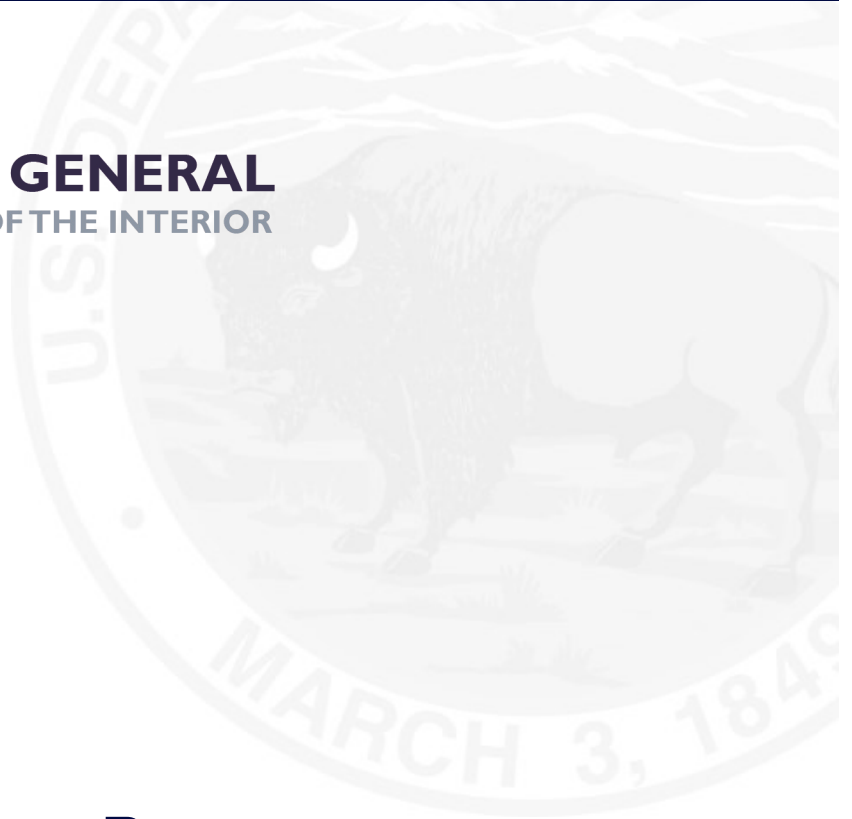




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ENERGY RESOURCES PROGRAM, U.S. GEOLOGICAL SURVEY

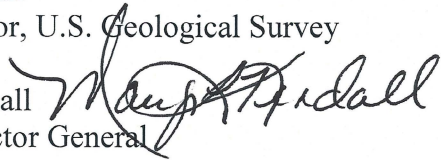


OFFICE OF
INSPECTOR GENERAL
U.S. DEPARTMENT OF THE INTERIOR

MAY 13 2015

Memorandum

To: Suzette Kimball
Acting Director, U.S. Geological Survey

From: Mary L. Kendall 
Deputy Inspector General

Subject: Final Evaluation Report – Energy Resources Program, U.S. Geological Survey
Report No. CR-EV-GSV-0003-2014

This memorandum transmits the findings of our evaluation of the U.S. Geological Survey's Energy Resources Program (ERP). Our objective was to assess the quality control process of ERP's science center laboratories, and to assess restrictions that prevent ERP from obtaining timely geological and geophysical information from the Bureau of Ocean Energy Management. This report primarily addresses the first objective. We covered the second objective in a separate inspection report issued in October 2014 (Report No. CR-IS-GSV-0008-2014).

We found ERP's system of quality controls has not always proven sufficient to detect significant quality-related issues in its science center laboratories. For example, in two instances, workers had violated established laboratory practices without detection for many years. In addition, quality related deficiencies discovered in 2013 at a major laboratory resulted in the postponement of an external quality audit. Accordingly, we concluded that ERP should replace its current system of controls with an effective and comprehensive quality management system. Also, because many Government and private organizations rely on ERP's products, the quality management system should incorporate a structured and recurring independent review process conducted by a recognized scientific organization.

The three recommendations in this report identify actions ERP can take to improve the quality controls and thereby enhance its credibility and help assure customers of reliable information. In response to the draft report, USGS concurred with all three recommendations and has begun to address them. Full implementation, however, will take time and we therefore consider the recommendations resolved but not implemented, and will refer them to the Assistant Secretary for Policy, Management and Budget for implementation tracking.

In addition, the response did not include target dates and specify the official responsible for completing the actions. We request that USGS provide this information in writing within 30 days. Please address your response to:

Ms. Kimberly Elmore
Assistant Inspector General for Audits, Inspections, and Evaluations
U.S. Department of the Interior
Office of Inspector General
Mail Stop 4428
1849 C Street, NW.
Washington, DC 20240

Although the quality control system has experienced occasional lapses, we also found noteworthy accomplishments at ERP. Specifically, ERP had effective planning processes and project tracking, and the workforce demonstrated impressive professionalism and dedication.

The legislation creating the Office of Inspector General requires that we report to Congress semiannually on all audit, inspection, and evaluation reports issued; actions taken to implement our recommendations; and recommendations that have not been implemented.

We appreciate the cooperation and assistance of the ERP staff during our review. If you have any questions concerning this report, please do not hesitate to contact me at 202-208-5745.

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Results in Brief

The U.S. Geological Survey's (USGS) Energy Resources Program (ERP) researches and assesses the Nation's and world's energy resources. ERP's customers, which include the energy industry, academia, the U.S. Congress, and other Government agencies, rely on its publications for making decisions, often with long-term implications.

We found that many years after ERP's creation in 1995, it is still developing a quality management system (QMS). ERP's reputation depends on its laboratories producing impartial and reliable work products. An essential component for a high-functioning science laboratory is an effective QMS. A QMS helps ensure that laboratory operations comply with quality standards, and that its products are scientifically reliable.

Presently, ERP's quality assurance/quality controls (QA/QC) system includes policies, procedures, and documentation intended to assure the quality of its data and analyses. The QA/QC system adheres to bureau-wide principles that guide science research and monitoring activities, and includes peer reviews for individual projects and an occasional external review. By contrast, a strong QMS would incorporate a structured and recurring external review process conducted by a recognized scientific organization. This is the missing component of a high-functioning quality management system at ERP.

Our evaluation determined that the QA/QC system has not proven to be sufficient, as ERP has not timely detected occasional but significant quality-related issues. These issues included two incidents of scientists violating established laboratory practices, and deficiencies uncovered at research laboratories. ERP has taken important corrective steps to improve its existing QA/QC system after discovery of a major incident, but this shows that ERP could be more proactive in preventing violations of quality standards.

We make three recommendations for ERP to improve the quality controls for its science center laboratories despite limited resources. In doing so, ERP can enhance its credibility, and its clients can be assured of reliable information. USGS concurred with all of our recommendations and has begun to implement them.

Although the quality control system has experienced occasional serious lapses, we also found noteworthy accomplishments at ERP. We also found that management responded quickly to address incidents involving scientist conduct once identified.

Introduction

Objectives

Our objectives were to assess the—

- Energy Resources Program’s (ERP) science center laboratories’ quality control process, and
- restrictions that prevent ERP from obtaining timely geological and geophysical information from the Bureau of Ocean Energy Management (BOEM). We addressed this objective in a separate inspection report (see Appendix 1), and, accordingly, this objective is only described briefly in this report.

The scope and methodology for this evaluation are in Appendix 2. This is our first review of ERP.

Background

USGS’ mission is to provide reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water and energy as well as mineral and biological resources; and enhance and protect the quality of life. Its fiscal year (FY) 2014 budget was \$1.03 billion, which supports 8,277 full-time equivalent staff. ERP is a sub-activity under the Energy, Minerals, and Environmental Health mission area, which is one of six USGS mission areas. ERP’s FY 2014 budget was \$26 million, or about 2 percent of the USGS budget, supporting 141 full-time equivalent staff.

Established in 1995, ERP conducts research and assessment projects at its science centers located in Menlo Park, CA; Lakewood, CO; and Reston, VA. The projects describe the location, quantity, and quality of energy resources, including economic and environmental impacts. It can organize a project on a regional, national, or global scale. At any time, about 25 projects are ongoing. Projects typically take 5 or more years to complete and result in multiple written publications that may include fact sheets, scientific investigation reports and maps, and professional papers. ERP issues about 140 publications annually.

A Program Council composed of ERP managers, science center managers, as well as scientists representing diverse projects, oversees ERP’s operations. The Program Council annually reviews each project for short- and long-term relevance, focus, cost, potential impact, and alignment of project work plans with priorities, goals, policy, and congressional mandates.

Legislative mandates primarily drive ERP’s work plan. Three laws in particular, the Energy Policy and Conservation Act of 2000, Energy Policy Act of 2005, and the Energy Independence and Security Act of 2007, focus ERP’s research on diverse energy resources including geothermal, oil and gas, oil shale, tar sands,

coal, methane hydrates, and other petroleum resources. The 2007 Act, for example, requires USGS to conduct a national geologic carbon sequestration assessment for the underground disposal of produced carbon dioxide and a complete assessment of the Nation's geothermal resources. Because of its congressionally driven work plan, ERP has limited funding for discretionary projects.

ERP's extensive and diverse customer base consists of the U.S. Department of the Interior's land and resource management bureaus, other land management agencies such as the U.S. Forest Service, Federal environmental and national security agencies, Congress, State government geological survey offices, the energy industry, the environmental community, the international energy community, non-governmental organizations, academia, and the general public. These customers use ERP's publications in many ways. For example, Congress uses ERP's publications for legislative purposes, and the energy industry uses the publications for researching energy development prospects. In fulfilling its mission of understanding energy resources, ERP helps shape the energy-related decisions and strategies of its many customers.

Oil, natural gas, coal, and other energy resources ERP researches, not only help provide power to the Nation, but contribute billions of dollars directly and indirectly to the Nation's economy. The energy industry employs over 1 million workers in the United States alone.

A set of philosophical premises and operational principles known as the "USGS Fundamental Science Practices" (FSP), serve as the foundation for all of USGS' research and monitoring activities. Fully implemented in January 2009, the FSP encompasses the basic elements of research including data collection, experimentation, analysis, writing results, peer review, management review, and USGS approval and publication of information products. It does not fully cover, however, specific laboratory requirements for quality control. Individual USGS units may augment the FSP by adding specific quality controls to their mission-specific quality management system (QMS). A comprehensive QMS consists of continual oversight, clearly defined and written procedures and instructions, internal reviews, management reviews, and training.

Findings

ERP Can Improve Laboratory Quality Controls

ERP's quality assurance/quality control (QA/QC) system has not always helped it detect significant quality-related weaknesses in its laboratories. An effective QMS is essential for facilitating a laboratory's compliance with quality standards, thereby ensuring the scientific validity of its publications. We found, however, that almost 20 years after ERP was created, it is still developing a QMS for its science center laboratories. ERP's QA/QC system represents the policies, procedures, and documentation intended to guide its analyses and thereby ensure the validity of its data, but the QA/QC system is not a complete QMS. The following incidents underscore the need for a properly developed and implemented QMS.

Unknown to ERP's management, for over a decade a staff laboratory worker violated laboratory controls at the Energy Geochemistry Laboratory (EGL), one of ERP's main laboratories and part of the Central Energy Resources Science Center in Lakewood, CO. When testing samples, the laboratory worker adjusted raw data to unacceptable standards and failed to retest samples properly. USGS said this practice apparently began in 1996 and lasted until 2008. A fellow researcher in 2004 examined some of the samples and found the test results did not make sense. In addition, other scientists submitted blind samples to the EGL laboratory and found the test results were not accurate. Science center officials initiated an investigation, but the employee resigned before the investigation concluded. Further examination revealed that the analyses for 10 to 12 coal-related projects were potentially compromised. Although financial data were not readily accessible, the funds expended on these projects would have totaled in the millions of dollars.

A subsequent review of this case by ERP officials, found that inorganic chemical analyses by the laboratory worker incorporated quality practices that did not meet acceptable standards. In 25 to 30 percent of the samples, some analyses were outside of acceptable standards by more than 20 percent. The acceptable standard was 10 percent. The significance of these errors prompted ERP to notify individual customers and publish a formal statement on ERP's page of USGS' website acknowledging that the data "should be described as 'semi-quantitative' and should be used with care." ERP posted the notice in 2010, almost 2 years after discovery of the errors. The science center presently lacks policy and procedures to notify affected customers upon discovering erroneous data, including whom to notify, when, and how.

The above incident led ERP to contract an external audit of EGL in 2012. The resulting report identified 29 deficiencies, and ERP developed an action plan to correct the issues. The most serious deficiencies at the laboratory included insufficient document controls and lab protocols, indeterminate limitations for

specific tests, and the absence of a fully developed and implemented program for assessing trends in quality control data. The plan called for most deficiencies to be resolved by the end of 2013 with final resolution of all deficiencies scheduled for June 2014. While progress is ongoing to address noted deficiencies, implementation of the corrective action plan has been slow. Eleven deficiencies remained unresolved in June 2014, including three rated as “serious.”

In addition, ERP may have underestimated some of the report’s findings. Specifically, ERP officials categorized the deficiencies and determined that only six were “serious.” The lack of a designated quality assurance (QA) officer was cited as a “mild” deficiency, the lowest category. ERP explained that they considered it “mild” because the laboratory manager could effectively perform the QA function. Having the same person serve a dual role of laboratory manager and QA officer is not a good practice due to a possible conflict of interest. This practice is also contrary to ERP’s QA manual, “Energy Geochemistry Laboratory Quality Assurance Manual: Version 3.0,” which calls for separating these two duties. Management acknowledged this, but cited insufficient funding to hire a QA officer. Funding is a legitimate concern, but we believe sufficient, qualified personnel are available in ERP or in other USGS mission areas to fill the QA position.

In another situation, ERP initiated plans in 2013 to conduct an external audit of its Eastern Energy Environmental Laboratory, which is part of the Eastern Energy Science Center in Reston, VA. Before beginning the procurement process to obtain an auditor, however, ERP determined the laboratory was not ready for an external review due to concerns with the laboratory’s QA/QC system. ERP then postponed the audit. Subsequently, ERP identified the needs of the laboratory, and management has begun to address the quality concerns.

More recently, in October 2014, ERP discovered another analyst at EGL violated established laboratory practices. Although the investigation was in its early stage at the time of our report, ERP had learned that the analyst manipulated the results generated by a mass spectrometer. These violations dated to at least 2011 and may impact more than one research project. ERP had initiated corrective action, but the extent and magnitude of the situation was not yet fully known. Again, these incidents show the need for a QMS.

ERP took important steps to improve its existing QA/QC system after discovery of the above incidents, but this shows that ERP detects events primarily after they occur. A fully functioning QMS, on the other hand, would proactively assess controls to uncover any vulnerabilities and weaknesses prior to their occurrence. For example, in “proficiency testing,” known samples or specimens are submitted by an external entity to another laboratory to assess reliability. This preemptively detects quality issues and enables timely corrective action. ERP has begun using proficiency testing in its laboratories to test the reliability of laboratory results.

Although ERP is developing a QMS, it has not established a completion date. The QMS will take time to develop and implement. Complicating the issue, ERP has not yet defined what constitutes a laboratory, or developed an inventory of its laboratories. In addition, it has not prepared QA manuals for some laboratories. ERP's management stated that, depending on the definition, the science centers might have "dozens" of laboratories. Factors in defining a laboratory might include physical layout of the facility, functions performed, personnel assignments, and the unit's mission.

QA manuals are an important component of a QMS because they establish policies and procedures that cover all aspects of laboratory operations. ERP said it is developing a QA manual for its operations. Individual labs may choose to create supplemental manuals based on the unique work of each laboratory. Until the manuals are complete, however, the QMS cannot be finalized.

We concluded that a high management priority for ERP should be finalizing its QMS. Once accomplished, a robust QMS will provide enhanced assurance that laboratories operate in compliance with quality standards and that issued products are scientifically reliable.

ERP Does Not Undergo Regular External Reviews

As noted above, ERP's existing controls have not always helped it to detect significant quality-related issues in the laboratories. An external review of ERP's operations would help it to detect and eliminate improper laboratory practices. A QMS incorporates a strong external review process conducted by a recognized, outside scientific organization.

One common approach for external reviews used by laboratories throughout the Nation is to seek accreditation from recognized accrediting organizations such as the American Association for Laboratory Accreditation or the National Institute of Standards and Technology. Alternatively, instead of pursuing accreditation, many laboratories meet required standards using a review by an in-house unit that is independent of laboratory operations.

ERP management expressed confidence that the development of its QMS can be accomplished without formal accreditation. We noted, though, that other USGS mission area laboratories such as the Water program and other Federal agencies such as the National Renewable Energy Laboratory are accredited (see Figure 1). These could serve as models should ERP choose this course. Nevertheless, our position is that ERP would benefit from outside review, and at management's discretion this can be achieved through formal accreditation or internally by another mission area within USGS.



Figure 1. This laboratory at USGS' National Water Quality Laboratory in Lakewood, CO, is accredited by an outside organization.

An external review has the added benefit of enforcing timely correction of deficiencies. For example, while ERP has made progress on correcting the 29 deficiencies identified in the 2012 EGL audit, it has not demonstrated an urgency to complete the action. If the laboratory was formally accredited or had a high-functioning QMS already in place, timely correction of deficiencies would be required.

Based on our evaluation, all of ERP's laboratories, its overall mission, and its operations could benefit from periodic review from other science-based organizations such as the National Academy of Sciences or National Institute of Standards and Technology. This would provide an outside perspective of ERP's operations, particularly in the area of quality systems. ERP's only previous comprehensive program review was in 1999 by the National Academy of Sciences. As ERP develops its QMS, it could include such a review.

Other USGS mission areas have contracted with the National Academy of Sciences (NAS) for program reviews in recent years. For instance, in 2012, NAS reviewed spatial data infrastructure. Also in 2012, NAS reviewed USGS to help create a more coherent and proactive approach to international science. These reviews provided expert, external advice to the programs. Our interview of the Academy's officials disclosed that it is receptive to performing a review of ERP, but the cost would be approximately \$500,000. The National Institute of Standards and Technology stated it is willing to review ERP, but at no cost.

Information Sharing

As part of our evaluation, we discovered a matter concerning ERP's inability to obtain information from the Bureau of Ocean Energy Management (BOEM) reported separately in October 2014 (see Appendix 1). Specifically, we found that ERP's ongoing assessment known as the Gulf Coast Energy, Geohazards, and Environmental Health Issues project has been hindered because ERP does not have full access to the data needed to conduct important resource analyses. To develop a complete geologic understanding of the potential oil and gas reserves, ERP needs access to the data for offshore operations in the Outer Continental Shelf (OCS). The federally owned OCS is under BOEM's jurisdiction. While overseeing energy development on the OCS, BOEM acquires geologic and geophysical data from oil and gas operators. The operators consider the data proprietary and, accordingly, not for public release. BOEM is concerned that this proprietary information could be released to the public through ERP's publications.

Our review concluded that existing agreements between BOEM and USGS allow exchanging information and stipulates safeguards for protecting proprietary data. The October 2014 report recommended that USGS work with BOEM and the U.S. Department of the Interior's Office of the Solicitor to enable the timely exchange of proprietary data.

Conclusion and Recommendations

Conclusion

ERP plays an important role in helping its customers understand the energy resources of the Nation and the world. To ensure the highest value of its products, ERP has the opportunity to improve the QMS for its science center laboratories. Implementing our recommendations should enhance the office's reputation for producing respected, science-based publications.

Finally, although the quality control system has experienced occasional serious lapses, we also found noteworthy accomplishments at ERP. Specifically, ERP had effective planning processes and project tracking, and the workforce demonstrated impressive professionalism and dedication. In particular, management responded quickly to address incidents involving scientist conduct once identified.

Recommendations and Summary of USGS Response to Our Draft Report

ERP should:

1. Expedite completion of the QMS for the science center laboratories. This should include, but not be limited to, the following:
 - a. Correct deficiencies noted in laboratory reviews timely.
 - b. Appoint separate persons as QA officer and laboratory manager.
 - c. Define what a laboratory is, and then establish an inventory of laboratories at each science center.
 - d. Complete the QA manuals for the laboratories, as needed.
 - e. Determine whether the laboratories should pursue formal accreditation or, alternatively, undertake a QMS approach that includes periodic quality reviews from a qualified, independent body external to ERP. The review could be conducted by an outside organization or by another mission area within USGS.
2. Resolve all remaining open findings from the 2012 external audit of the Energy Geochemistry Laboratory, and correct the identified weaknesses in the Eastern Energy Environmental Laboratory.
3. Request an outside, reputable organization to periodically review ERP's overall mission and operations, including the science center laboratories. Potential organizations include the National Institute of Standards and Technology, and the National Academy of Sciences.

In its response to our draft report, USGS concurred with all of the recommendations and has begun to address them. Full implementation will take time. We consider, therefore, the recommendations resolved but not implemented and we will refer them to the Assistant Secretary for Policy, Management and Budget for implementation tracking. In addition, USGS' response did not include target dates and specify officials responsible for completing the actions, and so we are requesting that USGS provide this information.

See Appendix 3 for the full text of USGS' response. Appendix 4 lists the current status of the recommendations.

Appendix I: Previous Report

Our October 2014 report, “Information Sharing Between the U.S. Geological Survey and the Bureau of Ocean Energy Management” follows on page 12.



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INFORMATION SHARING BETWEEN THE U.S. GEOLOGICAL SURVEY AND THE BUREAU OF OCEAN ENERGY MANAGEMENT

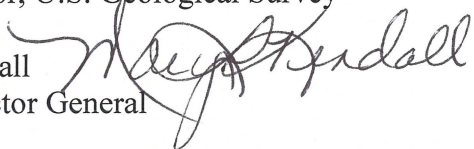


OFFICE OF
INSPECTOR GENERAL
U.S. DEPARTMENT OF THE INTERIOR

OCT 23 2014

Memorandum

To: Suzette Kimball
Acting Director, U.S. Geological Survey

From: Mary L. Kendall 
Deputy Inspector General

Subject: Inspection Report – Information Sharing Between the U.S. Geological Survey and
the Bureau of Ocean Energy Management
Report No. CR-IS-GSV-0008-2014

The Office of Inspector General is currently evaluating the quality assurance controls of the U.S. Geological Survey's (USGS) Energy Resources Program (ERP). During our evaluation of the USGS energy resources program, we learned of a problem that affects ERP's ability to conduct a resource assessment for the States bordering the Gulf of Mexico. We found that ERP has been unable to obtain certain information from the Bureau of Ocean Energy Management (BOEM) that ERP needs in order to conduct analytical work. The purpose of this report is to inform you of the issue so that USGS can take corrective action.

Background

ERP's mission is to understand the processes related to geologically based energy resources, assess those resources, and study their impact on environmental and human health. In accomplishing this mission, ERP conducts research and assessment projects, relying on laboratory work performed in three science centers across the Nation. About 25 projects are in progress at a time, and each one results in one or more written publications. ERP's publications are openly available to the public.

One of those projects, known as the Gulf Coast Energy, Geohazards, and Environmental Health Issues (Gulf Coast Project), is assessing the energy resources located onshore and in State-owned waters along the Gulf of Mexico. A task, titled "Assessment of Undiscovered Hydrocarbons in Deep Tertiary Strata," will provide an understanding of the undiscovered oil and gas reserves generally below 15,000 feet underlying Texas and Louisiana. The task is the focus of this report. ERP has assigned 12 employees to the task. Work on the task began in October 2011 and the results will be distributed in a factsheet publication projected for fiscal year 2017.

Results of Review

The Gulf Coast Project's task assessment work is hindered because ERP does not have full access to the data needed for its resource analysis. To develop a complete geologic

understanding of the potential oil and gas reserves, ERP needs access to the data for offshore areas known as the Outer Continental Shelf (OCS). The federally owned OCS is under BOEM's jurisdiction. While overseeing energy development on the OCS, BOEM acquires geologic and geophysical data on the OCS from oil and gas operators. The operators consider the data proprietary, not for public release.

As with other types of confidential business information held by the Federal Government, proprietary information held by BOEM is protected from public release by the Trade Secrets Act as stipulated in the U.S. Code (18 U.S.C. § 1905); exemption 4 of the Freedom of Information Act (5 U.S.C. § 552(b)(4)); and related departmental regulations on handling confidential information as in the Code of Federal Regulations (43 C.F.R. §§ 2.26-2.36). More specifically, the Outer Continental Shelf Lands Act, at 43 U.S.C. § 1352, requires the Secretary to issue regulations that "assure the confidentiality of privileged or proprietary information received . . . will be maintained." The act also limits the disclosure of proprietary information to the States. In accordance with the statute, BOEM's regulations such as 30 C.F.R. § 551.14, restrict disclosure of the information to the public and to States, not to USGS or other bureaus or agencies within the Department of the Interior or the Federal Government.

The data consist of geologic structural and isopach maps,¹ along with supporting information from oil and gas operators' drilling activity. This information provides insight into the oil and gas resources, including location, composition, and estimated volume. OCS operators generate the data during their exploration, development, and production activities on Federal leases. The data's public release could harm the operators' competitive advantage or position. Nevertheless, access to the data would increase ERP's understanding of the Gulf States' geology and result in better estimates of the potential undiscovered oil and gas resources in State waters and lands. The data would also help assure consistent geologic interpretations across USGS' and BOEM's boundaries of responsibility.

BOEM is concerned that proprietary information on OCS resources could be released to the public through ERP's publications on separate State waters and land. BOEM has not identified, however, any specific legal authorities that prevent the information sharing, nor has it cited specific USGS deficiencies that would make the information vulnerable to release. BOEM has made the information available for visual inspection at its offices, but has not allowed ERP to use this information.

ERP has stated it will protect the BOEM-acquired data from improper public release, as required by law. Specifically, ERP has agreed to prepare publications without showing precise well locations in the OCS, and to avoid demonstrating geologic continuity over each bureau's jurisdictional boundaries. ERP will also provide manuscripts containing its interpretations of proprietary data for BOEM's review prior to publication. Further, ERP has assured BOEM that it has extensive experience in using and safeguarding proprietary data.

A Memorandum of Understanding dated 1987 between USGS and the Minerals Management Service (now BOEM), as amended, identified and clarified the responsibilities of both bureaus. The memorandum expressly allows the bureaus to use and safeguard each other's

¹ An isopach map illustrates the thickness of the individual layers (or strata) of rock and other formations.

data, and specifies procedures for problem resolution. In actual practice, however, ERP has received BOEM data only after expiration of the proprietary terms specified in the C.F.R.s. As stated in 30 C.F.R. parts 551 and 580, these terms are 10, 25, and 50 years, depending on the type of geologic or geophysical data and whether the data have been processed. This practice appears contrary to the Memorandum of Understanding. In addition, due to the memorandum's age, its terms may be due for updating and reissuance.

To date, USGS has not asked the U.S. Department of the Interior's Office of the Solicitor to assist in this matter.

Scope and Methodology

As part of our evaluation of the quality control assurance process for ERP's science center laboratories, we assessed the effectiveness of ERP's collaboration with other entities. We focused on ERP's working relationship with BOEM because of the significance of the Gulf Coast Project and the related access issues raised by ERP officials. We reviewed pertinent laws and regulations, reviewed applicable agreements signed by ERP and BOEM, and interviewed officials and staff for both bureaus. We conducted our fieldwork April through August 2014.

We conducted our inspection in accordance with the Quality Standards for Inspection and Evaluation as put forth by the Council of the Inspectors General on Integrity and Efficiency. We believe that the work performed provides a reasonable basis for our conclusions and recommendations.

Recommendation

We recommend that USGS work with BOEM and the Office of the Solicitor to enable the timely exchange of proprietary OCS data. This effort should abide by the problem resolution provisions contained in the 1987 Memorandum of Understanding and include any necessary changes to the memorandum to enhance communication between the bureaus and prevent unauthorized public release of proprietary data.

Please provide us with your written response to this report within 30 days. The response should provide information on actions taken or planned to address the recommendations, as well as target dates and title(s) of the official(s) responsible for implementation. Please send your response to:

Ms. Kimberly Elmore
Assistant Inspector General for Audits, Inspections, and Evaluations
U.S. Department of the Interior
Office of Inspector General
Mail Stop 4428
1849 C Street, NW
Washington, DC 20240

The legislation creating the Office of Inspector General requires that we report to Congress semiannually on all audit, inspection, and evaluation reports issued; actions taken to implement our recommendations; and recommendations that have not been implemented.

If you have any questions regarding this report, please contact me at 202-208-5745.

Report Fraud, Waste, and Mismanagement



Fraud, waste, and mismanagement in Government concern everyone: Office of Inspector General staff, departmental employees, and the general public. We actively solicit allegations of any inefficient and wasteful practices, fraud, and mismanagement related to departmental or Insular Area programs and operations. You can report allegations to us in several ways.



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	Washington Metro Area:	202-208-5300
By Fax:	703-487-5402	
By Mail:	U.S. Department of the Interior Office of Inspector General Mail Stop 4428 MIB 1849 C Street, NW. Washington, DC 20240	

Appendix 2: Scope and Methodology

Scope

Our evaluation of the United States Geological Survey (USGS) focused on its Energy Resources Program (ERP), as this is the principle energy program of the bureau. The team reviewed ERP's activity from FY 2009 to the present.

Methodology

We conducted this review from February through August 2014. We identified, evaluated, and summarized the quality assurance and quality controls (QA/QC) system for ERP's laboratory operations in its science centers including accreditation, internal controls, and internal audits. We interviewed ERP officials and toured ERP's science center laboratories and USGS' laboratories external to the ERP program. We visited various science laboratories to understand the process of becoming accredited; interviewed laboratory personnel and management; reviewed standard operating procedures, manuals, and other accreditation-related documentation; and reviewed computer-generated data pertaining to ERP's research and assessment projects. We visited or contacted accrediting organizations to understand their processes and requirements, and assessed the advantages and disadvantages of accreditation. We also identified and summarized available non-accreditation options for ERP that could satisfy QA/QC requirements for laboratory operations, and assessed ERP's progress in correcting the weaknesses identified in internal audits of its science center laboratories.

We visited or contacted the—

- USGS, Headquarters, Reston, VA;
- ERP's Eastern Energy Resources Science Center, Reston, VA;
- ERP's Central Energy Resources Science Center, Lakewood, CO;
- USGS, National Water Quality Laboratory, Lakewood, CO;
- U.S. Fish and Wildlife Service, Arlington, VA;
- Bureau of Ocean Energy Management, Herndon, VA;
- Bureau of Land Management, Washington, DC;
- National Renewable Energy Laboratory, U.S. Department of Energy, Golden, CO;
- Colorado School of Mines, Golden, CO;
- National Academy of Sciences, Washington, DC;
- American Association for Laboratory Accreditation, Frederick, MD, and
- National Institute for Standards and Technology, Gaithersburg, MD.

We conducted our evaluation in accordance with the Quality Standards for Inspection and Evaluation as put forth by the Council of the Inspectors General on

Integrity and Efficiency. We believe the work performed provides a reasonable basis for our conclusions and recommendations.

Appendix 3: USGS' Response to Draft Report

The USGS response to our draft report follows on page 21.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Office of the Director
Reston, Virginia 20192

Memorandum

MAR 31 2015

To: Mary L. Kendall
Deputy Inspector General

Through: Jennifer Gimbel *Jennifer Gimbel*
Principal Deputy Assistant Secretary for Water and Science

From: Suzette M. Kimball *Suzette M Kimball*
Acting Director

Subject: Office of the Inspector General Draft Evaluation Report -- Energy Resources Program, U.S. Geological Survey Report No. CR-EV-GSV-0003-2014

In the subject report, dated February 12, 2015, the Department of the Interior's Office of the Inspector General made three recommendations identifying actions the U.S. Geological Survey (USGS) Energy Resources Program (ERP) could take to improve the quality control processes of its science center laboratories. This memorandum provides the USGS response to those recommendations.

Recommendation:

1. Expedite completion of the Quality Management System (QMS) for the science center laboratories.

Response: The USGS concurs. Work on establishing a QMS for all ERP-funded laboratories was initiated after ERP management became aware of significant quality-related issues in its Energy Geochemistry Laboratory (EGL). That work, underway for over 5 years, will continue with increased management attention. Accomplishments at the EGL to date include:

- (a) the completion of a comprehensive Quality Assurance (QA) manual linked to the USGS Fundamental Science Practices;
- (b) completion of method documentation for all analyses;
- (c) establishment of a Corrective Action/Preventive Action Program;
- (d) establishment of a document control program;
- (e) integration of a Laboratory Management System database with analytical result collection and reporting; and,
- (f) completion of a laboratory-wide audit.

In addition:

- (a) draft technical procedure documents have been prepared for the ERP-funded Eastern Energy Environmental Laboratory (EEEL);
- (b) the hiring of a temporary QA specialist via the National Defense Authorization Act rehired annuitant program is underway to help with implementation of a QMS for the EEEL, and throughout the ERP; and
- (c) implementation of a QMS is anticipated across all ERP-funded laboratories in 2-3 years depending on funding and human resource availability.

Please note that ongoing investigation and implementation of corrective actions resulting from the 2014 EGL data integrity issue is requiring substantial resources and may delay implementation of wider QMS goals. However, following completion of the initial ERP laboratory QMS implementation, there is the expectation that the QMS will continue to evolve. Continuous process improvements to the QMS will be necessary for the life of the QMS to maintain the program's effectiveness.

This should include, but not be limited to, the following:

- a) Correct deficiencies noted in laboratory reviews in a timely manner.

Response: The USGS concurs. Reviews of ERP-funded laboratories will result in an evaluation of the findings and the establishment of reasonable deadlines for completion of any corrective actions. Following the audit of the EGL, the Director of the EGL established aggressive targets for closing all findings. These targets turned out to be optimistic. The ERP now plans to include a process for establishing deadlines for corrective action closure in the QMS.

- b) Appoint separate persons as QA officer and laboratory manager.

Response: The USGS concurs. In fiscal year 2015, the ERP has had to accommodate a net \$1.0M budget cut, which will require re-evaluating how to fund and manage shared positions. Initial discussions are underway to determine the best organizational location for the QA officer, and whether other USGS programs that fund laboratories could share in the funding of the position. Establishment of the position and recruiting a qualified candidate will follow. In the interim, the ERP will temporarily hire a QA specialist. This temporary QA specialist will continue with the implementation of a QMS throughout the ERP, and help identify and train a qualified permanent QA Officer.

- c) Define what a laboratory is, and then establish an inventory of laboratories at each science center.

Response: The USGS concurs. Whereas implementation of a QMS was initiated with two ERP-funded laboratories, planning and execution of a comprehensive QMS across all ERP-funded laboratories, including defining what constitutes a laboratory, will continue with increased management attention. The ERP will define and inventory all ERP-funded laboratories during 2015.

- d) Complete the QA manuals for the laboratories, as needed.

Response: The USGS concurs. To date:

- (a) the EGL has completed the development of a comprehensive QA manual. The ERP will continue to periodically update the QA manual and make it available through the ERP website.
 - (b) The EEEL has prepared draft technical procedure documents, and the development of a comprehensive laboratory specific QA manual will continue in 2015.
- e) Determine whether the laboratories should pursue formal accreditation or, alternatively, undertake a QMS approach that includes periodic quality reviews from a qualified, independent body external to the ERP. The review could be conducted by an outside organization or by another mission area within the USGS.

Response: The USGS concurs. The ERP is evaluating options for ERP-funded laboratories and, funding permitting, will initiate actions to implement this recommendation in 2016.

Recommendation:

2. Resolve all remaining open findings from the 2012 external audit of the EGL, and correct the identified weaknesses in the EEEL.

Response: The USGS concurs. All EGL corrective actions have been completed. As noted above,

- (a) the ERP will initiate an independent review of the completed EGL corrective actions to ensure that audit findings have been addressed;
- (b) draft technical procedure documents have been prepared for the EEEL;
- (c) the hiring of a temporary QA specialist is underway to continue with the development and implementation of a QMS for all ERP-funded laboratories.

Recommendation

3. Request an outside, reputable organization to periodically review ERP's overall mission and operations, including the science center laboratories.

Response: The USGS concurs. The ERP is currently seeking a cost-effective outside, reputable organization to review the efficiency and effectiveness of ERP's operations, including ERP-funded laboratories.

If you have any questions, please contact Paul Young, Acting Associate Director for the USGS Energy and Minerals, and Environmental Health Mission Areas, at (703) 648-5115 or pyoung@usgs.gov.

cc: Director's Chron, MS 114
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Response memo 3-3-2015v2.doc\GS15000435

Appendix 4: Recommendations’ Status

In response to our draft report, USGS concurred with all of our recommendations and stated that it was working to implement them. The response, however, did not include target dates and the official or officials responsible for each recommendation (see Appendix 3). We consider the three recommendations resolved but not implemented.

Recommendations	Status	Action Required
1, 2, and 3	Resolved but not implemented	Provide target dates and titles of officials responsible for action. The recommendations will be referred to the Assistant Secretary, Policy, Management and Budget for tracking of implementation.

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