



United States Department of the Interior

U. S. GEOLOGICAL SURVEY
Reston, VA 20192

To: Regional Directors, Water Science Center Directors

From: Jerad Bales, Acting Associate Director for Water

Date: November 5, 2013

Subject: Water Mission Area Technical Memorandum 2014.01—Technical Review of Water Science Activities

For more than four decades, it has been the policy of the USGS Water Mission Area (WMA, and its organizational predecessors) to conduct technical reviews of water science activities in USGS Water Science Centers (WSC). Priorities for the WMA identified at the [2011 National Water Science Center Directors Meeting](#) and in the [2012 Water Headquarters Review Report](#) confirm the value WSCs place on these reviews. This policy is consistent with USGS [Fundamental Science Practices](#).

The purpose of this memorandum is to update the purpose, logistics, scope, reporting, and response to these reviews in the current organizational structure of the USGS. This memo addresses technical (surface water, groundwater, and water quality) reviews. Information Technology reviews conducted by the WMA are addressed in a separate memorandum.

Purpose of Technical Reviews

The primary purpose of technical reviews is to ensure that water data and interpretive products are of the highest quality and that these data and interpretive products are generated using approaches that adhere to USGS national policies and guidelines, or using the best available approach should specific guidelines not exist. Secondary purposes of the reviews are to (1) allow face-to-face exchange between WSCs and Water Headquarters to identify recurring national science issues and needs; (2) promote technical exchange, including demonstration of new capabilities by both WSCs and Water Headquarters; and (3) provide input to WSC and Regional management on water science activities.

Technical Review Logistics

Technical reviews of each WSC are conducted every three years. Because of the national scope and purpose of the reviews, technical reviews are conducted by the WMA's Offices of Groundwater, Surface Water, and Water Quality (Technical Offices) in collaboration with the Water Science Field Team (WSFT) Technical Specialists. Surface water reviews are conducted separately; groundwater and water quality reviews are conducted jointly. As a result, each WSC can anticipate two technical reviews during each three-year period. Reviews are conducted in a manner that minimizes travel costs and disruptions to WSC routine activities, while ensuring that the purposes of the review process are met.

Prior to the start of a fiscal year, the WSFT Technical Specialists work with WSCs to schedule reviews for the upcoming year. The resulting review dates are provided to the Technical Offices who consolidate and publish the [annual review schedule](#). The Regional Directors (RDs) are notified of the annual review schedule, and each RD or designee is invited to participate in the reviews occurring in his/her region.

The WSC Director is contacted to designate a point of contact to coordinate with the designated technical review team coordinator. The review process is formally initiated for each Center by a memorandum to the Center Director from the appropriate Technical Office Chief(s) in advance of the scheduled review, with a copy to the appropriate RD, WSFT Chief, and participating review team members.

Technical Office staff, in collaboration with WSFT Technical Specialists, are responsible for establishing the final review schedule and agenda content. Teams typically are composed of representatives from appropriate Technical Offices, WSFT Technical Specialists, data reviewers selected from other WSCs, and other scientists with particular expertise relevant to the WSC under review, as needed. National Research Program (NRP) scientists are invited to participate Technical Review Teams where appropriate.

Scope of Technical Reviews

Technical reviews are comprehensive assessments of water science activities and involve a high degree of interaction between review teams and the WSCs, including technical and scientific staff at all levels, as well as WSC management. Technical reviews serve the necessary function of assuring that (1) all routine hydrologic data collected by WSCs, including data for interpretive projects, conform to national standards; (2) data and information are appropriately managed, reported, and archived; and (3) interpretive projects are technically well planned, conducted, reported, and are consistent with the USGS mission.

A review typically includes the following activities:

- An entrance meeting with key WSC staff and the review team;
- Visits to field sites to observe field methods, equipment, and instrumentation for adequacy and compliance with technical policies and guidelines;
- Inspections of vehicles, equipment, instrumentation, and facilities for adequacy and compliance with technical policies and guidelines;
- Thorough examination of a representative sample of network and project records and analyses;
- Automated screening, testing, and assessment of WSC data, both project and network;
- Review of quality-assurance plans and procedures, flood plans, and other items, such as selected WSC web content;
- Technical discussions of active interpretive projects and proposals;
- Documentation of progress in correcting deficiencies identified in previous technical reviews; and
- An exit meeting with key WSC and Regional staff and the review team at which major recommendations and findings are presented by the review team.

On-site reviews may be supplemented by conference calls or webinars involving specialized subject matter experts. The WSC also is encouraged to organize informal sessions for technical exchange while the review team is on site.

Selected WSFT Technical Specialists also will participate in annual NRP Science Reviews. Specialists will provide input on relevant methods, quality assurance activities, technical policies, and will use what they learn at the meeting to facilitate future technical exchange between WSC and NRP scientists.

Reporting of Technical Review Findings

As previously noted, on the final day of the review, the review team will meet with the WSC Director, other key WSC staff, and Regional staff. The review team leader will present major recommendations and findings, and will lead a discussion by review team members of other specific findings. WSC and Regional staff will have an opportunity to ask clarifying questions and to provide other feedback.

The final written report will be transmitted no later than eight weeks from the conclusion of the review by the Chief(s) of the appropriate Technical Office to the WSC Director, with copies to review team members, Chief of the WSFT, responsible RD, and Associate Director of the Water Mission Area.

Response to Technical Review Findings

The WSFT is responsible for tracking review response, including implementation of recommendations. Within eight weeks of receipt of the final report, the WSC will provide a formal written response to the major comments and recommendations in the review report, directed to the appropriate Office Chief(s) and the WSFT Chief, with a copy to the responsible RD. The response will address those recommendations and findings identified in the final report as requiring a written response. The WSFT will be available to assist in formulating an appropriate response, as needed.

Responsible WSFT members will perform, as needed, periodic follow up with the WSC to assist Center staff where appropriate in resolving major technical issues and tracking the WSC's progress toward resolution of remaining issues. Technical Office staff assist WSFT members with technical issues when applicable.

In some rare occasions, the Technical Office Chief(s), WSFT, or the responsible Regional Director may recommend another formal review prior to the next scheduled triennial review. Such a follow-up review will be coordinated with all interested parties.

Summary

Technical reviews of WMA activities are an essential component of a robust national water-resources program. WSCs are encouraged to utilize the reviews to strengthen their data programs, science activities, and to foster collaboration across the WMA and USGS programs.

Supersedes:

OFFICE OF GROUND WATER TECHNICAL MEMORANDUM 94.03
OFFICE OF WATER QUALITY TECHNICAL MEMORANDUM 94.15

Copy to: Water Science Field Team
Water Senior Staff
National Research Program Branch Chiefs