

Introduction

CBARR's Environmental Chemical Monitoring Laboratory (ECML) recently became the first laboratory in the United States to meet requirements set forth by the Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP) for testing chemical warfare material. As a services laboratory that performs analysis of environmental and industrial hygiene samples for chemical agents and degradation products, ECML sought to satisfy a customer demand to meet a DoD environmental quality program, as well as, add quality-controlled stringency to their laboratory technique and sample analysis methods. Since the program didn't include requirements for chemical agents, ECML reached out to the DoD oversight group and offered to provide the requirements. In the end, ECML is now not only accredited but holds the only laboratory accreditation for chemical agents and degradation products.



Unique Mission

The ECML conducts air monitoring for chemical warfare material during tests involving neat agents, as well as field remediation and demilitarization operations and specializes in field operations that support Defense Environmental Restoration Programs that include the Recovered Chemical Warfare Material Program and Military Munition Response Program. Under these programs, one of the primary customers is the U.S. Army Corps of Engineers-Chemical Warfare Material. Providing support to remediation, installation restoration and investigation projects in Spring Valley Washington, D.C., Redstone Arsenal, AL, and Deseret Chemical Depot, UT are just a few that ECML routinely supports by processing thousands of samples per month. The ECML is called upon by clients to provide analytical services for many types of samples that require high quality, legally defensible data.



Why Did ECML Seek ELAP Accreditation?

The ECML is compliant with the U.S. Army Chemical Materials Activity (CMA) Laboratory and Monitoring Quality Assurance Plan (LMQAP) and the Chemical Agent Standard Analytical Reference Material (CASARM) Quality Assurance Plan for their day-to-day testing proficiency and operates under the stringency of a Quality Assurance Plan which specifies laboratory testing and proficiency testing requirements in accordance with standard methods and laboratory-developed methods. As a result of the 2008 Office of the Under Secretary of Defense Memorandum to establish a DoD-wide program to accredit laboratories that perform environmental testing in support of the DoD, ECML sought ELAP accreditation to pursue the objectives:

- Meet the rigor associated with laboratory assessments by third-party accrediting bodies
- Meet DoD Quality Systems Manual for Environmental Laboratories program requirements
- Promote interoperability within DoD components
- Meet customer requests and demand
- Reevaluate operational costs, competition and resource readiness

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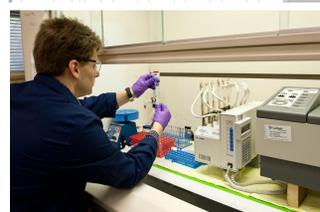
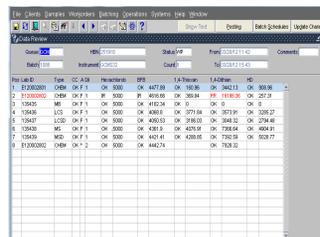
Major Accreditation Challenges

- Overall implementation of change impacted more than scope
- Complex staff challenges:
 - Travel commitments
 - Sequestration/Contractor support
 - Training requirements
 - Demonstration of Capability (DOC)
 - QA/QC team
- Documentation challenges:
 - Integration of existing QA manuals and Internal audits
 - Numerous new procedures and forms to fill in the gaps
 - Maintaining existing workload and turn around times
 - Laboratory Information Management System (LIMS) improvements



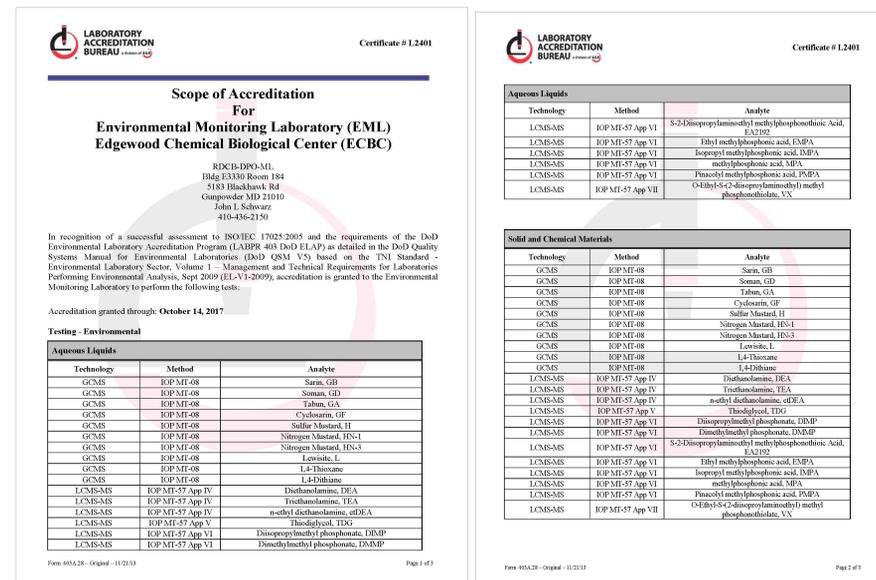
Other Accreditation Challenges

- Leverage weekly changes and manage details
- Establish acceptance criteria:
 - Tune checks
 - Initial Calibration Verification/Continuing Calibration Verification
 - Internal Standards, Method Blanks, Laboratory Control Sample
 - Matrix & Surrogate Spikes
 - Limit of Detection/Limit of Quantitation
 - Demonstration of Capability, QC limits
- Compile Data packages, Proficiency samples, Storage blanks
- Maintain Certificate of Analyses; calibrations for pipettes, balances, thermometers, and lot testing



Scope of Accreditation

Unique to ECML's path toward ELAP accreditation was the challenge that for environmental testing no requirements or standards existed for analysis of chemical warfare agents by GC/MS. This circumstance provided a distinct opportunity for ECML to reach out and provide the DoD Environmental Data Quality Working Group (EDQW) with the requirements for CWA analysis by GC/MS. As a result, Table 14 "Chemical Warfare Agents by GC/MS" was added to Appendix B of the DoD Quality Systems Manual for Environmental Laboratories, Ver. 5. The addition did not necessarily influence policy, but ECML did influence the DoD programmatic documents that affect all CWA analysis efforts. This CBARR success story has provided a laboratory quality management foundation piece that, not only meets the stringency of an ISO/IEC 17025:2005 accreditation bureau, but also, satisfies the requirements of a DoD Environmental Laboratory Accreditation Program as detailed in the DoD Quality Systems Manual for Environmental Laboratories (DoD QSM V5).



Customer and Support Areas

CBARR has provided remediation, demilitarization and demolition support to the Defense Threat Reduction Agency (DTRA); the Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA); the U.S. Army Chemical Materials Activity (CMA); and the U.S. Army Corps of Engineers (USACE) in the following core competency areas:

- Sustainment laboratory services to ECBC and Medical Research Institute for Chemical Defense
- Laboratory and air monitoring support to the U.S. Army Corps of Engineers remedial investigations
- Operational support for destruction of R chemical weapons materials
- Operational support to remaining US and global chemical agent stockpiles
- Homeland Defense services
- Laboratory services and support to non-government organizations



Acknowledgments

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