



Department of Energy Consolidated Audit Program(DOECAP)

2014 Environmental/Radiological Assistance Directory

George E. Detsis

Manager, Analytical Services Program Office of
Environment, Health, Safety and Security,
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Overall Program Objectives for Consolidated Audits and Proficiency Testing (PT)



- Provide environmental data of known, documented quality to field managers for use in making sound, confident decisions.
- Accountability/proper waste management disposition.



Purpose of the Department of Energy Consolidated Audit Program (DOECAP)



- Eliminate/minimize redundant audits.
- Standardize audit methodology, policies, and procedures.
- Share information and communicate lessons learned.



What DOECAP Provides



- DOECAP provides DOE environmental and waste managers confidence that:
 - Environmental analytical data quality is acceptable.
 - Risks and liabilities are minimized.
 - Corrective actions are implemented.
 - Continuous improvement is promoted.



What DOECAP Provides (cont.)



- DOECAP links to the DOE Mixed Analyte Performance Evaluation Program (MAPEP). Poor laboratory performance for MAPEP PT samples results in DOECAP findings that are tracked to closure.
- Consolidated audits provide consistent cost savings to the Department and taxpayers
 - It is estimated that DOECAP eliminates the potential for over 170 redundant field audits annually, with a cost savings of
 - \$7.2M per year.



Fiscal Year (FY) 2013 DOECAP Accomplishments



- 22 Laboratory Audits, including 1 Lab Closure Audit
- 9 Treatment, Storage, and Disposal Facility (TSDF) Audits, plus 1 TSDF Audit Scoping Visit
- Federal Partnership – Joint Department of Defense/ DOE *Quality Systems Manual (QSM) for Environmental Laboratories*
- Revised DOECAP laboratory and TSDF checklists
- Conducted field manager briefings on DOECAP process and audit results
- ASP Workshop – Asheville, North Carolina



FY 2013 DOECAP Accomplishments (cont.)





Active DOECAP Participants



Argonne National Laboratory Argonne Site Office	Brookhaven National Laboratory Brookhaven Site Office
Environmental Management Consolidated Business Center (EMCBC)	Fermi National Accelerator Laboratory Fermi Site Office
Hanford Site Office of River Protection (ORP)	Hanford Site Richland Operations Office (RL)
Idaho National Laboratory Idaho Operations Office	Lawrence Berkeley National Laboratory (LBNL) Berkeley Site Office
Lawrence Livermore National Laboratory (LLNL) Livermore Field Office	Los Alamos National Laboratory (LANL) Los Alamos Field Office
Nevada National Security Site (NNSS) Nevada Field Office	Oak Ridge National Laboratory (ORNL) ORNL Site Office
Oak Ridge Office of Environmental Management (OREM)	Oak Ridge Office Integrated Support Center (ORO ISC)
Office of Environmental Management (EM) DOE Headquarters	Office of Environment, Health, Safety and Security (EHSS) DOE Headquarters



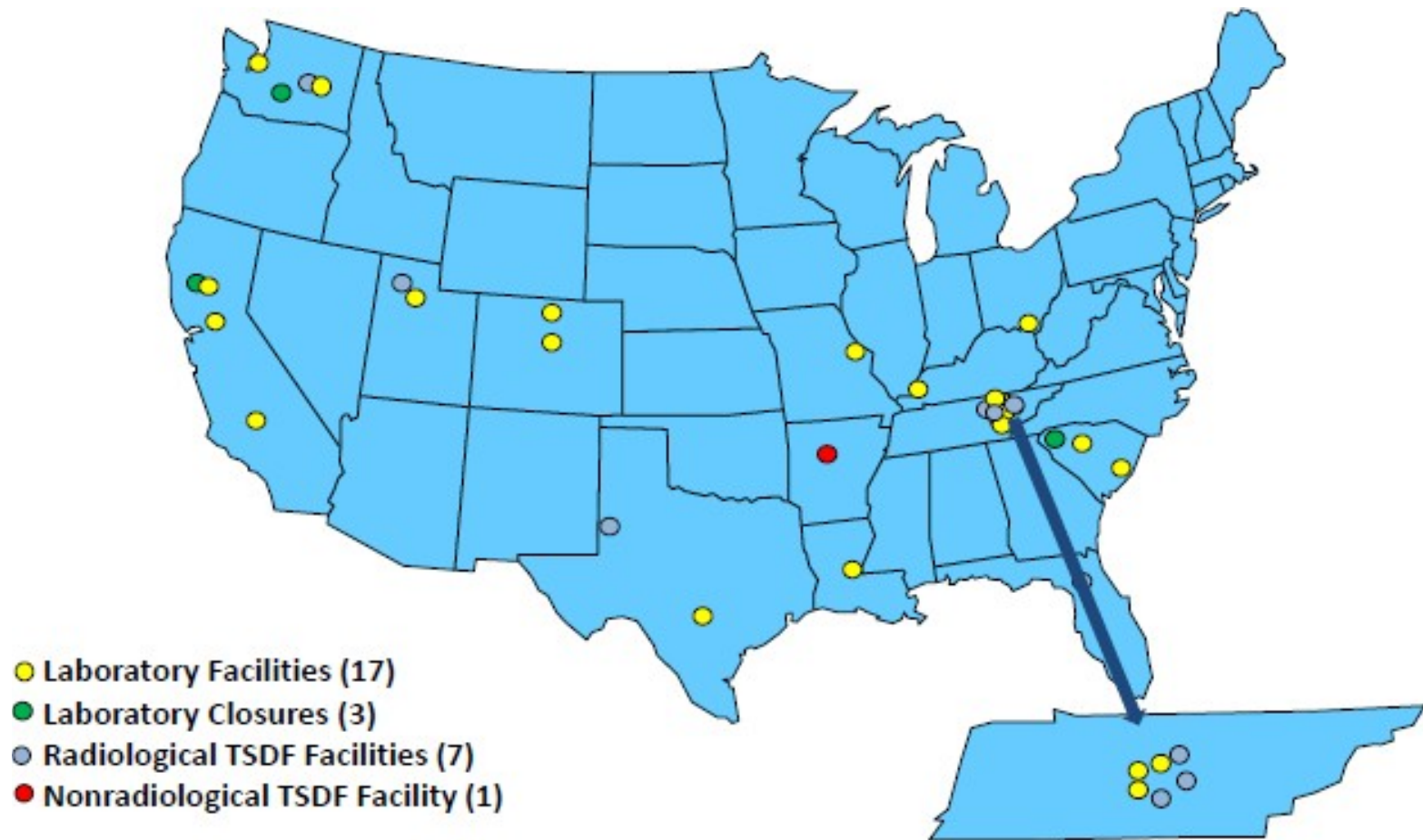
Active DOECAP Participants (Cont.)



Office of Fossil Energy, Planning & Engineering Office, DOE Headquarters	Office of Legacy Management DOE Headquarters
Pacific Northwest National Laboratory (PNNL) Pacific Northwest Site Office	Pantex Plant National Nuclear Security Administration (NNSA) Production Office Pantex
Portsmouth Site and Paducah Site Portsmouth/Paducah Project Office	Sandia National Laboratories NNSA Sandia Field Office
Savannah River Site Savannah River Operations Office	Separations Process Research Unit EMCBC
SLAC National Accelerator Laboratory SLAC Site Office	Thomas Jefferson National Accelerator Facility Thomas Jefferson Site Office
West Valley Demonstration Project EMCBC	Y-12 National Security Complex NNSA Production Office Y-12



FY 2014 DOECAP-Audited Laboratories and TSDFs





FY 2014 Audit Overview



- During FY 2014, DOECAP will conduct:
 - 8 TSDf Audits
 - 17 Lab Audits
 - 3 Lab Closure Audits
 - 28 TOTAL AUDITS

FY 2008 = 216

FY 2011 = 215

FY 2009 = 277

FY 2012 = 191

FY 2010 = 227

FY 2013 = 192



DOECAP Case Studies

- Laboratories:
 - Employee toxic chemical exposure monitoring and reporting
 - Facility bankruptcy; DOE samples not secure/derived waste management
 - Unauthorized waste disposal



DOECAP Case Studies (cont.)



- TSDFs:
 - Legacy aged waste
 - Repeat quality assurance (QA) deficiencies
 - Confined space inventory and postings, waste accountability, and electrical hazards



FY 2014 Laboratory Auditors



<u>Site</u>	<u>Total</u>	<u>Site</u>	<u>Total</u>	<u>Site</u>	<u>Total</u>
Albuquerque	3	Oak Ridge:	9	NNSS	5
Brookhaven	1	ORO ISC	4	Paducah	4
DOE HQ EHSS	3	ORNL	1	Portsmouth	1
Idaho:	8	UCOR	3	Hanford:	8
DOE Idaho	1	Y-12	1	PNNL	2
CWI	3	Sandia	1	WCH	1
BEA	4	Savannah River	6	MSA	1
LANL	1	Legacy Mgmt.	3	DOE ORP	1
LBNL	3	LLNL	4	WRPS	3



Laboratory Auditors in FY 2014 (Cont.)



<u>Audit Disciplines</u>	<u>Total</u>		
QA	35		
Data Quality for Organic	17	Total Lab Auditors:	60
Data Quality for Inorganic	19	Total Lead Auditors:	14
Data Quality for Radio- Chemistry	16	Total Audit Disciplines Covered:	115
Laboratory Information Management System	6	Auditors-In-Training to Schedule in 2014:	14
Hazardous & Radiological Materials Management	16		
Geotechnical	1		
Aquatic Toxicity	2		
Nondestructive Assay	3		



Recurring Laboratory Audit Findings



- Lack of timely review/approval of operating procedures tied to analytical methods
- Failure to Implement training associated with the latest operating procedures and methods
- Failure to maintain personnel training records for initial and continuing demonstrations of capability
- Lack of worker chemical exposure monitoring data



TSDF Auditors in FY 2014



<u>Site</u>	<u>Total</u>	<u>Site</u>	<u>Total</u>	<u>Site</u>	<u>Total</u>
Brookhaven	5	Oak Ridge:	15	NNSS	4
EMCBC	5	ORO ISC	6	Pantex	1
DOE HQ EM	3	OREM	1	Paducah	2
Idaho:	5	ORNL	4	Portsmouth	3
DOE Idaho	1	Y-12	3	Hanford:	8
CWI	3	TWPC	1	PNNL	2
BEA	1	Sandia	2	DOE RL	2
LANL	5	Jefferson Lab	1	CHPRC	1
LBNL	1	Savannah River	7	WRPS	3
		LLNL	2		



TSDF Auditors in FY 2014 (Cont.)



<u>Audit Disciplines</u>	<u>Total</u>		
QA	22		
Data Quality	12	Total TSDF Auditors:	69
Waste Operations	31	Total Lead Auditors:	12
Env. Compliance and Permitting	16	Total Audit Disciplines Covered:	121
Radiological Control	12		
Industrial and Chemical Safety	11	Auditors-In-Training to Schedule in 2014:	12
Transportation Mgmt.	17		



Recurring TSDF Audit Findings



- Lack of adherence to operating procedures
- Lack of conformity with QA requirements (e.g., training completion and records, updating the QA Plan)
- Lack of compliance with regulatory and waste management requirements/practices:
 - Aisle spacing
 - Drum stacking
 - Identifying and posting confined spaces
 - Exposed electrical boxes



Laboratory Audit Schedule for FY 2014



Laboratory	Month/Year
TestAmerica, Inc., Knoxville, TN	January 2014
Eberline Analytical Corporation, Oak Ridge, TN	January 2014
ALS Laboratory Group, Salt Lake City, UT	February 2014
Davis and Floyd, Inc., Greenwood, SC – Closure Audit	March 2014
TestAmerica, Inc., Earth City, MO	March 2014
GEL Laboratories, LLC, Charleston, SC	April 2014
ALS Laboratory Group, Cincinnati, OH	April 2014
American Radiation Services, Inc., Port Allen, LA	May 2014
Shealy Environmental Services, Inc., West Columbia, SC	May 2014
TestAmerica, Inc., Arvada, CO	May 2014



Laboratory Audit Schedule for FY 2014 (cont.)



Laboratory	Month/Year
ALS Environmental Fort Collins Laboratory, Fort Collins, CO	May 2014
TestAmerica, Inc., Richland, WA	May 2014
Brooks Rand Laboratory, Seattle, WA	June 2014
CEBAM Analytical, Inc., Bothell, WA – Closure Audit	June 2014
Materials & Chemistry Laboratory, Inc., Oak Ridge, TN	June 2014
Southwest Research Institute, San Antonio, TX	June 2014
BCL Laboratories, Inc., Bakersfield, CA	Proposed June 2014
Curtis and Tompkins Laboratory, Berkeley, CA	Proposed June 2014
Caltest Analytical Laboratory, Napa, CA	Proposed June 2014
Eberline Analytical Corporation, Richmond, CA – Closure Audit	Proposed June 2014



TSDF Audit Schedule for FY 2014



TSDF	Month/Year
Diversified Scientific Services, Inc., Kingston, TN	January 2014
Clean Harbors Environmental Services, El Dorado, AR (nonradiological hazardous waste incineration)	February 2014
EnergySolutions, LLC, Oak Ridge, TN	February 2014
Materials and Energy Corporation, Oak Ridge, TN	March 2014
Perma-Fix Northwest, Inc., Richland, WA	May 2014
EnergySolutions, LLC, Clive, UT	June 2014
Perma-Fix Environmental Services of Florida, Gainesville, FL	June 2014
Waste Control Specialists LLC, Andrews, TX	June 2014



Consolidated Audit Program Summary Remarks



- DOECAP saves taxpayers significant amounts of money (\$7.2 million a year).
- Voluntary participation continues to be vital to the success and viability of DOECAP.
- Participation in DOECAP includes the contribution of auditors and their travel funds, as well as the identification of federal and contractor points of contact.



DOECAP Website



<https://www.energy.gov/ehss/environmental-policy-and-assistance/analytical-services-program#DOECAP>

- Protected Side – DOE participants receive an identification code and password for access to Official Use Only information:
 - Audit Reports
 - Corrective Action Plans – response to audit findings/observations
- Public Side – Access to:
 - DoD/DOE *Quality Systems Manual (QSM) for Environmental Laboratories*
 - Checklists – Laboratory and TSDF audit disciplines
 - Current FY audit schedules
 - ASP Workshop presentations



DOECAP Contacts



George E. Detsis – DOE, EHSS, Office of Sustainability Support

Analytical Services Program Manager

Phone: (301) 903-1488

Email: george.detsis@hq.doe.gov

Jorge Ferrer – DOE Oak Ridge Office

Federal DOECAP Manager

Phone: (865) 576-6638

Email: ferrerja@oro.doe.gov

Richard Martin – DOE Oak Ridge Office

Federal DOECAP Deputy Manager

Email: martinrw@oro.doe.gov

Todd Hardt – Pro2Serve, Inc.

DOECAP Operations Team Lead

Email: hardttl@oro.doe.gov

Joe Pardue – Pro2Serve, Inc.

DOECAP Laboratory Lead

Email: parduegjr@oro.doe.gov

Susan Aderholdt – Pro2Serve, Inc.

DOECAP Corrective Action Coordinator

Email: aderholdtsl@oro.doe.gov

Rhonda Jobe – Pro2Serve, Inc.

DOECAP Document Control Coordinator

Email: joberd@oro.doe.gov

Karen Brown – Pro2Serve, Inc.

DOECAP Field Quality Engineer

Email: brownc@oro.doe.gov



Radiological and Environmental Sciences Laboratory (RESL)

Idaho National Laboratory



Mixed Analyte Performance Evaluation Program (MAPEP)



- RESL manages the DOE Mixed Analyte Performance Evaluation Program (MAPEP)
- MAPEP evaluates laboratories performing radiological/nonradiological environmental analyses and provides:
 - Performance-based evaluation of laboratories' capabilities
 - Support for DOE's cleanup mission, monitoring, and surveillance



Why is MAPEP Important?



- Federal government spends a lot of money on commercial environmental analytical work:
 - Environmental remediation
 - Worker protection
- Commercial analytical results can be inaccurate
- DOE must ensure the quality of environmental analytical data reported to state and federal agencies, workers, and the public



MAPEP Proficiency Testing (PT)



- Semiannual MAPEP PT samples to environmental analytical laboratories supporting DOE's missions and interests
- MAPEP PT is provided at no cost to participating laboratories
- PT samples are provided in four natural matrices:
 - Water (groundwater, surface, etc.)
 - Soil
 - Air Filters
 - Vegetation



MAPEP PT (cont.)



- PT Samples Contain Mixed Analytes:
 - Radiological analytes (alpha, beta, gamma)
 - Inorganic analytes (priority pollutant for Resource Conservation and Recovery Act and universal treatment standards)
 - Organic analytes (semivolatiles, pesticides)



MAPEP Provides Real-World PT Samples



- MAPEP offers PT samples that simulate real-world DOE samples
- MAPEP challenges the laboratories' analytical performance with these specialized tests:
 - False positive testing
 - Sensitivity/false negative testing
 - Unique isotopic ratios
 - Varying sample matrices and concentrations
 - Natural matrices (soil, water, air filters, vegetation)

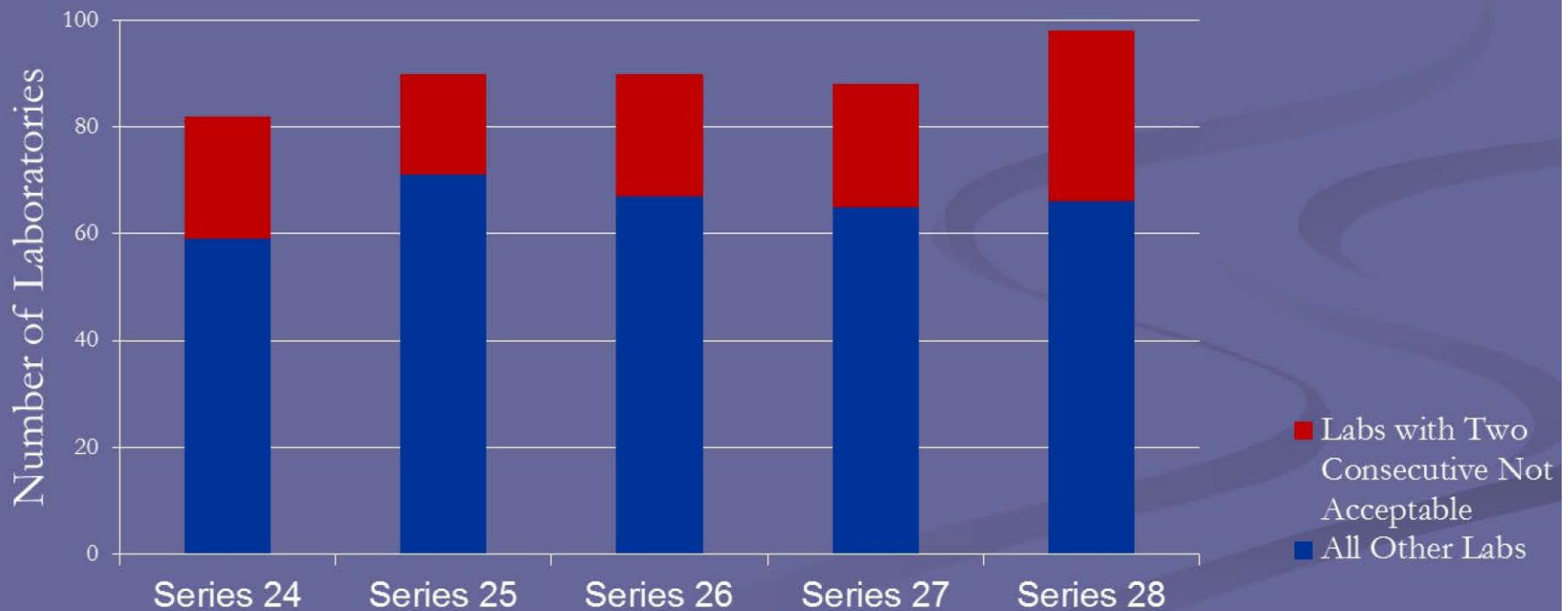


MAPEP Links to DOECAP



Two MAPEP PT Failures Result in a DOECAP Priority I Finding

Two Consecutive Not Acceptable Performances





MAPEP Highlights



- MAPEP has over 130 national and international participating laboratories.
- Over 12,000 results are evaluated each year.
- RESL issues MAPEP Performance Reports and Letters of Concern.
- RESL has administered MAPEP for over 18 years.



RESL Provides Certified Reference Materials



Certified Reference Material
Certificate of Traceability


U.S. Department of Energy
Radiological and Environmental Sciences Laboratory
1955 Fremont Avenue, MS 2112
Idaho Falls, Idaho 83415
(208) 526-8031


CRM ID: RESL-CON-081513

This Certified Reference Material (CRM) contains a known quantity of analyte(s) in a stable and homogeneous matrix. This material is intended for the verification of the accuracy and precision of analytical measurements. The reference value listed for each analyte is mathematically derived from a certified value traceable to a national or international standard. The traceability of the CRM is maintained through an unbroken chain of comparisons, all having stated uncertainties, calculated according to ISO and NIST Guidelines.

This CRM was prepared and the reference value(s) were verified by the Radiological and Environmental Sciences Laboratory (RESL). RESL maintains direct traceability to the United States National Institute of Standards and Technology (NIST) through successful participation in the NIST/RESL Radiological Traceability Program. RESL is accredited to ISO 17043 (2377.02) as a Performance Testing Provider, ISO 17025 (2377.01) as a Chemical Testing Laboratory, and ISO G34 (2377.03) as a Reference Material Producer by The American Association for Laboratory Accreditation.

David S. Sdli
Senior Technical Manager – Chemistry

 **RESL CRM**
Certified Reference Material

 **ACCREDITED**
AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

Certificates of Traceability



RESL's ISO Accreditations



- RESL has three International Organization for Standardization (ISO) accreditations:
 - ISO 17025 for Chemical Testing (*General Requirements for the Competence of Testing and Calibration Laboratories*)
 - ISO 17043 for PT Provider (*Conformity Assessment - General Requirements for Proficiency Testing*)
 - ISO G34 for Certified Reference Materials Producer (*General Requirements for the Competence of Reference Material Producers*)



MAPEP Website



<http://www.id.energy.gov/resl/mapep/mapep.html>

DOE/NNSA program and field element personnel, DOECAP DOE points of contact and auditors, regulators, and other approved users have access to the MAPEP website to:

- View laboratories' PT performance.
- View individual laboratory performance reports.
- View session summary reports for each MAPEP series.
- Query for historical trending by analyte and/or matrix.



Questions??

