



*DoD Environmental Data Quality Workgroup:
(EDQW)
Integrating Data Quality
throughout the
Department of Defense*

Presented to:
DoD Environmental Monitoring and
Data Quality Workshop

May 2004

Topics

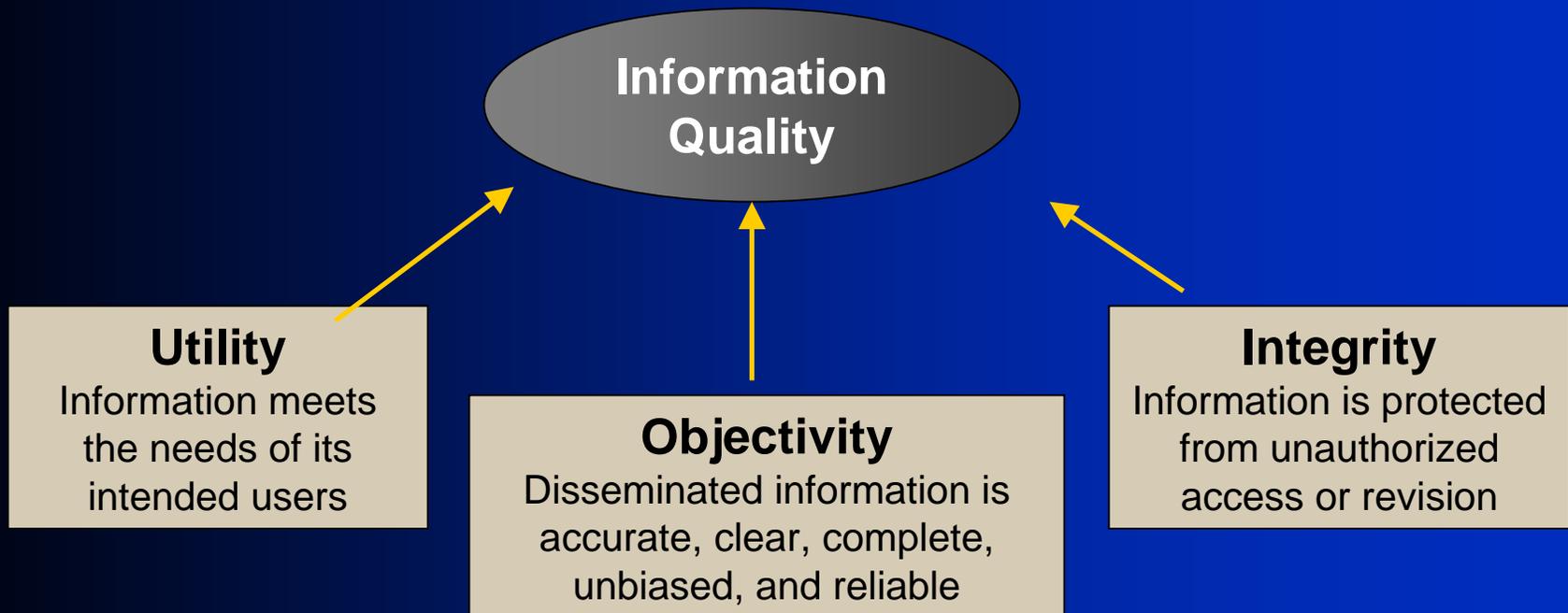
- Challenges and Opportunities
- DoD EDQW: Overview
- *DoD Quality Systems Manual for Environmental Laboratories*
- Quality Systems Implementation
- Promoting Sound Science:
Perchlorate analysis

Challenges and Opportunities: Promoting Environmental Stewardship and Operational Readiness



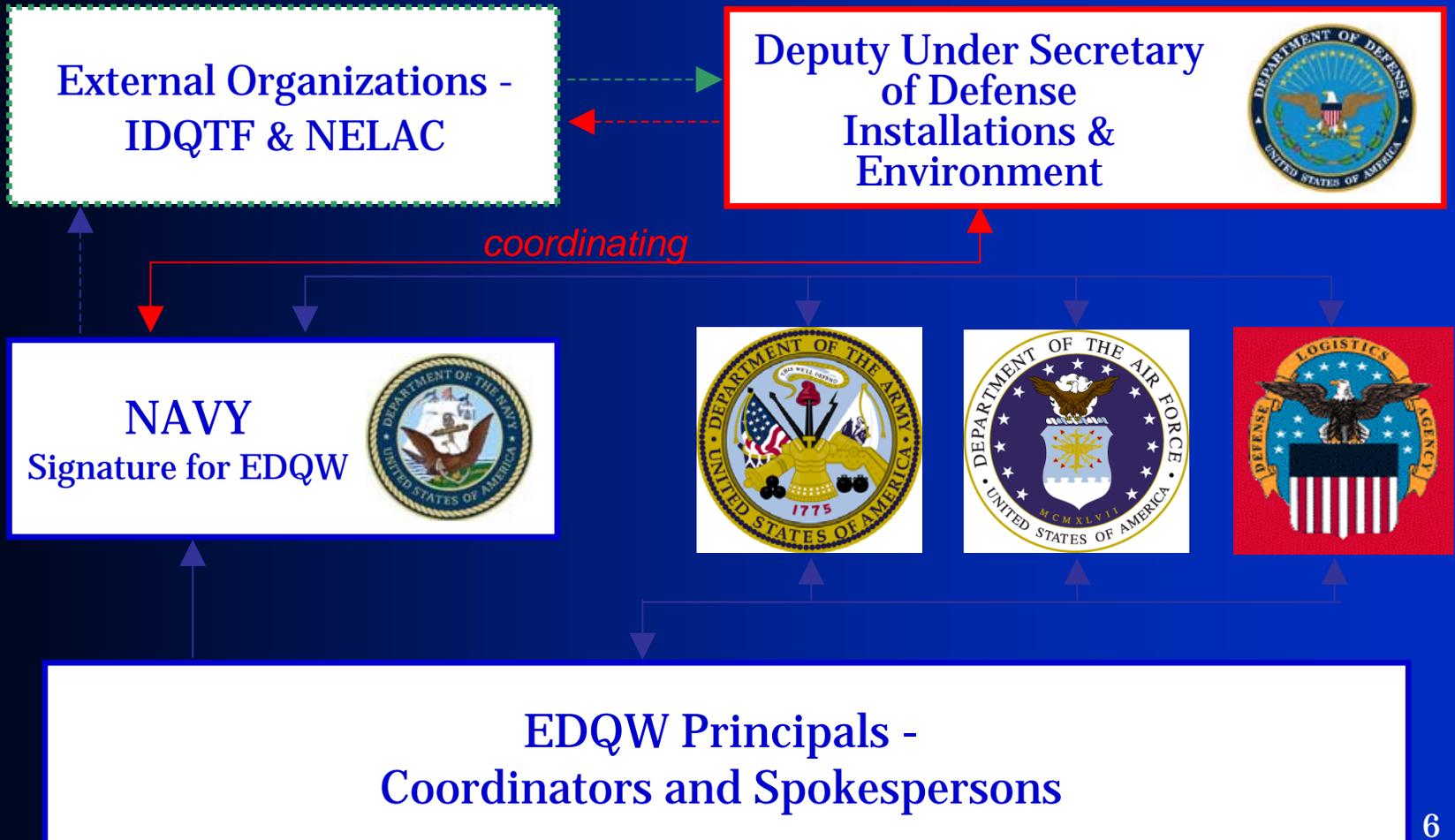
DoD Data Quality Policy

*Feb 2003 - Ensuring Quality of Information Disseminated to the Public
by the Department of Defense
(Based PL 106-554; H.R. 5658)*



Data must be *“capable of being substantially reproduced”*

DoD Environmental Data Quality Workgroup (EDQW) Navy, Lead Service



DoD EDQW

Charter

- Develop and recommend DoD policy on sampling, testing and data quality issues
- Coordinate responses to legislative and regulatory actions
- Represent DoD on Intergovernmental work groups
- Respond to DoD IG reports and related data quality issues

Ensure the generation of environmental data of known and documented quality

DoD EDQW

Operating through Key Partnerships

- **Federal/State**

- IDQTF

- Intergovernmental Data Quality Task Force

- NELAC

- National Environmental Laboratory Accreditation Conference

- NIST

- National Institute of Standards and Technology

- **International and Public/Private**

- INELA

- Institute for National Environmental Laboratory Accreditation

- ACIL

- American Council of Independent Laboratories

- SAME

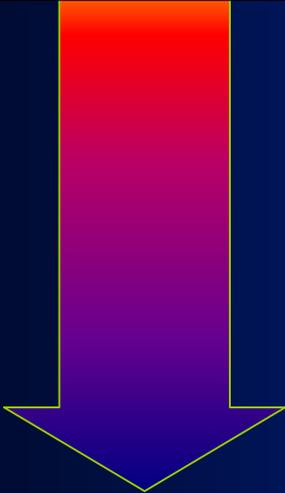
- Society of American Military Engineers

Data Quality Improvement Strategy

DoD Best Practices for Data Quality Oversight

1999, 2002

DoD Best
Practices



Save time, reduce program costs,
ensure decisions are based on
sound data

- Implement national and international standards
- Use a systematic planning process
- Improve management and contracting practices
- Issue QA/QC policy/guidance
- Improve oversight

Data Quality Improvement Strategy

Key Documents

DEPARTMENT OF DEFENSE
QUALITY SYSTEMS MANUAL FOR
ENVIRONMENTAL LABORATORIES



Prepared By
DoD Environmental Data
Quality Workgroup
Department of Navy,
Lead Service
Version 2

July 2002

*DoD Quality Systems
Manual for
Environmental
Laboratories*

Intergovernmental Data Quality Task
Force
Uniform Policy for Implementing
A Quality System

Evaluating, Assessing, and Documenting
Environmental Data Collections/Use and
Technology Programs



November 2002

*IDQTF-UFP
Uniform Federal Policy
for Implementing a
Quality System*

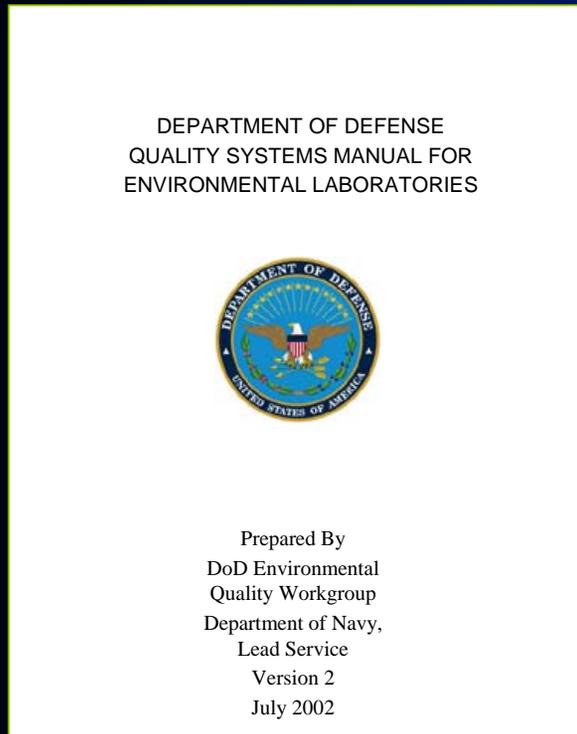
DoD MASTER
QUALITY ASSURANCE
PROJECT PLAN
SAMPLING AND TESTING FOR PERCHLORATE
AT DOD INSTALLATIONS



December 2004

*IDQTF-QAPP
Uniform Federal Policy
for Quality Assurance
Project Plans*

DoD Quality Systems Manual (QSM) for Environmental Laboratories Issued December 2000



- Applies to all laboratories performing work for DoD
- Defines DoD requirements (based on ISO 25/17025 and NELAC standards)
- Unifies common elements of Army, Navy, and Air Force QSMs
- Provides basis for shared DoD assessments and oversight

<https://www.denix.osd.mil/denix/denix.html>

DoD QSM Version 2

July 2002

- Incorporates NELAC Chapter 5 changes (July 2000)
- Adds four appendices
 - A: Reporting Requirements
 - B: Quality Control Requirements
 - C: Target Analyte Lists
 - D: Laboratory Control Sample (LCS) Control Limits

DoD Laboratory Control Sample Study

- Conducted in cooperation with ACIL
- LCS recovery data voluntarily submitted by ‘good-performing’ laboratories doing work for DoD
 - Approximately 20 laboratories
 - More than 40,000 data points
- LCS control limits established for each method
 - 3 standard deviations around the mean recovery for each analyte (exception – Method 8151A, herbicides)
 - ‘Sporadic marginal exceedances’ allowed for methods with more than 10 analytes

DoD LCS Study

Appendix D Control Limits:

- Indicate *routine performance* of commonly used SW-846 methods
- Provide basis for assessing batch acceptance when project-specific criteria have not been specified
- Provide benchmark to evaluate suitability of alternative methods
- Indicate the need for method optimization

DoD LCS Study

Important Notes

- Method performance can vary significantly based on preparation method used
 - e.g., for Method 8330, salting-out produced inferior results to solid-phase extraction (SPE)
 - DoD limits based on SPE preparation
- Herbicides by Method 8151A exhibit poor interlaboratory precision

DoD LCS Study

Important Notes

- Certain compounds exhibited poor performance (lower control limit of 10% or less) with certain methods
8270C (6), 8151A (1), and 8330 (1)
- Modified or alternative methods are required for analysis of poor-performing compounds

DoD QSM Version 3: Planned Updates

- Incorporate ISO 17025
- Address applicability to overseas laboratories
- Discuss measurement uncertainty
- Include joint laboratory assessment checklists
- Include implementation guidance for Project Managers

To be issued Fall 2004

Quality Systems Implementation

Proposed DoD Instruction 4715.XX

Environmental Data Quality Assurance

- Implements DoD *Data Integrity Policy and Procedural Guidance*
- Provides for formal issuance of key Quality Systems documents as DoD Manuals

UFP-QS, UFP-QAPP, DoD QSM

- Promotes systematic planning for environmental data collection

Quality Systems Implementation

Draft DoD Procurement Policy

- Implements DoD and Intergovernmental Quality Systems
- Implements *Higher-level Contract Quality Requirements* (FAR 46.202-4)
- Provides sample language for incorporation into solicitations and contracts
- Defines laboratory oversight roles
- Specifies prohibited laboratory practices

Quality Systems Implementation

Joint DoD Laboratory Assessments and Oversight

- NELAP provides baseline credentials
- Laboratory Quality Systems must conform to DoD QSM
- Joint DoD assessments focus resources on project-specific requirements
- Joint laboratory database permits sharing of laboratory information

(e.g., assessments, corrective action, proficiency testing)

Promoting Sound Science

October 2003 Perchlorate Testing Roundtable

- Jointly sponsored by IDQTF & EDQW
- Objectives:
 - Discuss state of the art in perchlorate testing
 - Identify most promising technologies
 - Recommend path forward for method development

*Presentations and Summary can be
viewed and downloaded*

www.navylabs.navy.mil

Promoting Sound Science

October 2003 Perchlorate Testing Roundtable

Recommendations:

- Proposed SW-846 Method 9058 should not be finalized as written
- Method 314.0 modifications can improve sensitivity but not selectivity
- Positive results for perchlorate obtained using Method 314.0 should be confirmed using definitive technology (e.g. MS)

Promoting Sound Science

October 2003 Perchlorate Testing Roundtable

Suggested Next Steps:

- Address proposed method 9058
- Facilitate process for development/approval of methods employing MS
- Characterize background occurrence of perchlorate
- Institutionalize the joint roundtable approach for technical problem-solving
- DoD: Pursue development of DoD Guidance for sampling and testing of perchlorate

Promoting Sound Science Perchlorate Testing Update

DoD:

- EDQW Interim Guidance issued Feb '04
- QAPP Handbook under development

EPA:

- 314.1 – IC/Conductivity
MRL – 0.5 ug/L
- 330.0 – IC/MS
MRL – 0.2 ug/L
- 331.0 – LC/MS/MS
MRL – 0.1 ug/L

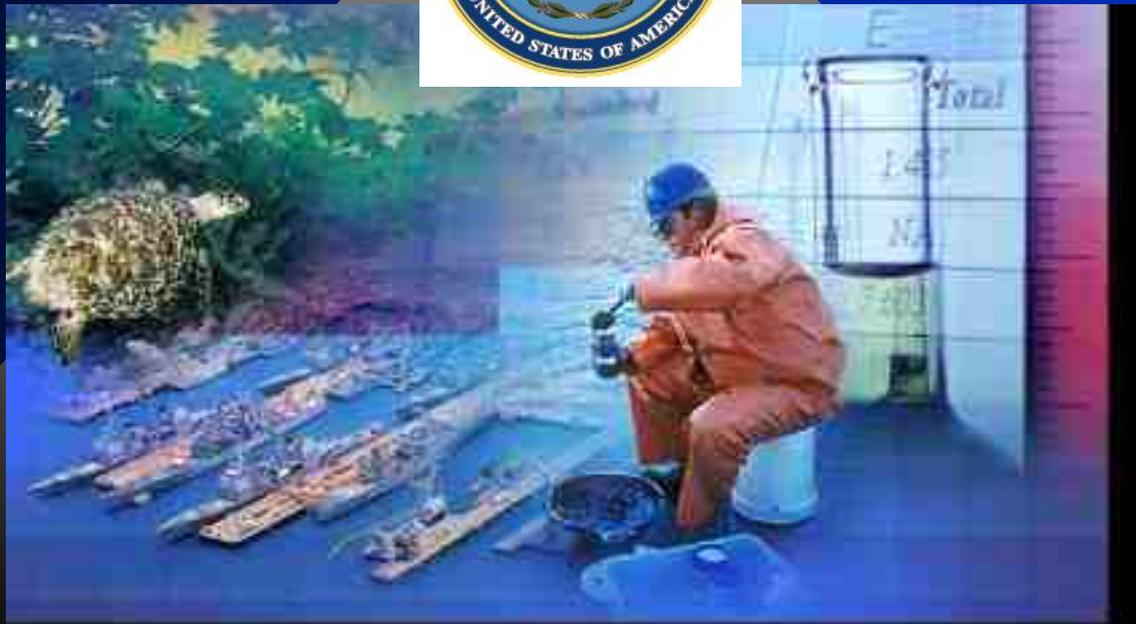
The Payoff

- Sound science for environmental testing
- Best-value procurements and improved oversight
- Reduced costs
- Sustained operational readiness

Cost-effective data collection
Sound environmental decisions

Improving Environmental Data Quality

... Because the Right Decisions Require Quality Data



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