Quality Considerations for Munitions Investigations

SAGEEP 2018

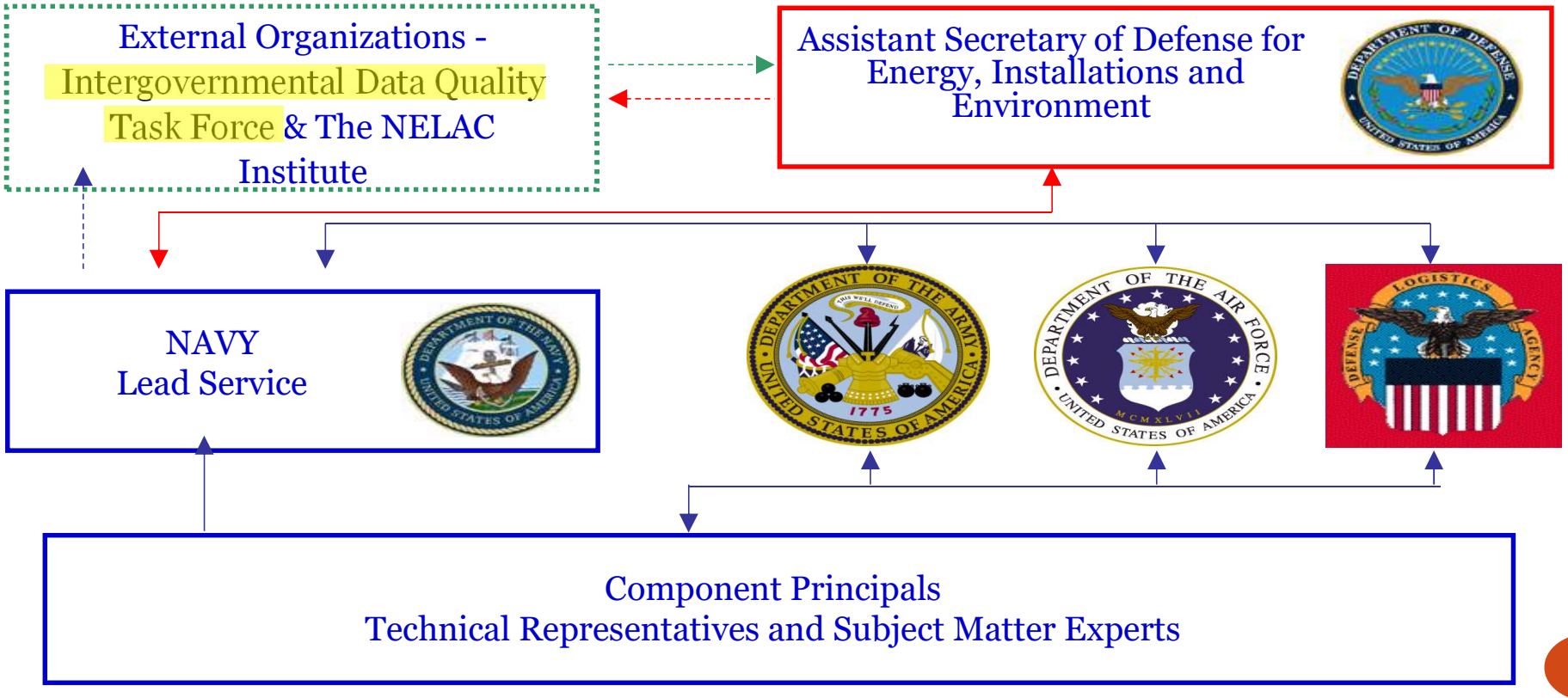
Jordan Adelson, Ph.D.
Chair DoD Environmental Data Quality Workgroup
Director Navy Laboratory Quality and Accreditation Office
Jordan.Adelson@navy.mil

Environmental Data Quality Workgroup

Charter Issued 01 October 2010

- Develop and recommend policy related to sampling, testing, and quality assurance for environmental programs to eliminate redundancy, streamline programs, improve data quality, and promote data integrity.
- Coordinate the exchange of information among DoD components.
- Develop DoD issuances to implement environmental quality systems and promote cost effective government oversight.
- Implement and provide oversight of the DoD ELAP.

DoD EDQW


External Organizations - Intergovernmental Data Quality Task Force & The NELAC Institute
Assistant Secretary of Defense for Energy, Installations and Environment
NAVY
Lead Service
Component Principals
Technical Representatives and Subject Matter Experts

Intergovernmental Data Quality Task Force

- IDQTF Executive Committee
  - EPA
    - OEI/Quality Staff Director
    - Lead Region QAM for OEI
    - Lead Region QAM for OSWER
  - DoD
    - EDQW Principals
- Work collaboratively to :
  - Address environmental issues of emerging concern at federal facilities
  - Promote implementation of consistent and transparent intergovernmental quality systems
  - Ensure a scientific basis for environmental decision-making.

IDQTF/EDQW Tasks

"Develop and implement a quality system based on national and international standards for the performance of Advanced Geophysical Classification at DoD Munitions Response Sites."

- Develop a Quality Assurance Project Plan template based on the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)

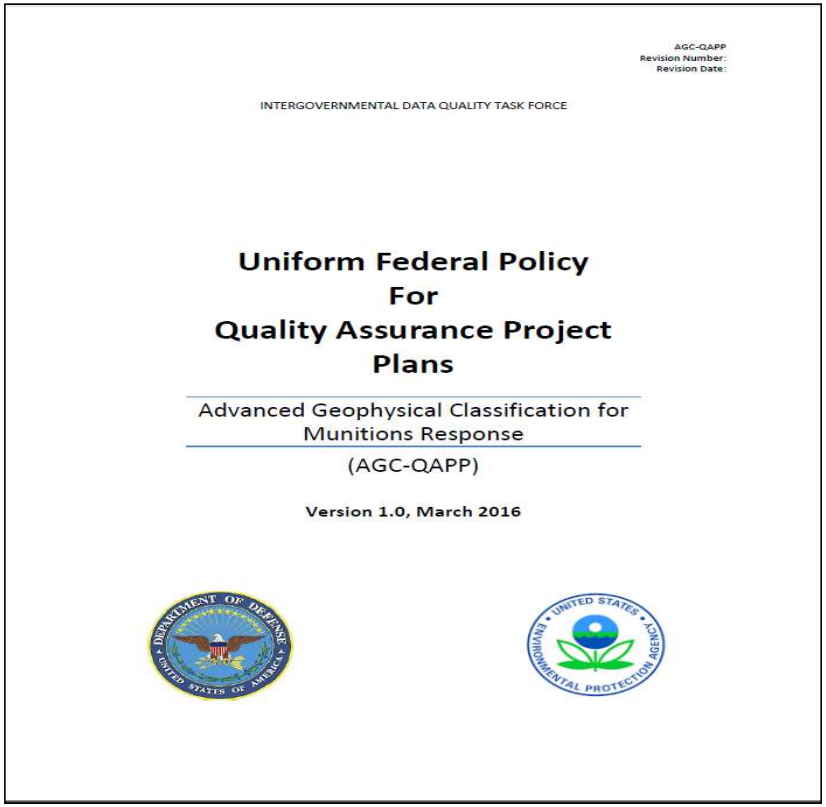
  ANSI/ASQ E4:2004 (IDQTF)

- Develop quality systems documentation for the 3rd-party accreditation of organizations performing geophysical classification

  ISO/IEC 17025-2005 (DoD EDQW)

AGCMR-QAPP Template

- Requirements based on extensive research and development conducted under the ESTCP
- Companion document to UFP-QAPP manual
- Consists of "optimized" UFP-QAPP worksheets that document the output of a systematic planning process
- Considers site-specific conditions, future land use and end-uses of data
- Facilitates project planning, quality systems implementation and assessment


AGC-QAPP
Revision Number:
Revision Date:

INTERGOVERNMENTAL DATA QUALITY TASK FORCE

Uniform Federal Policy For Quality Assurance Project Plans

Advanced Geophysical Classification for Munitions Response

(AGC-QAPP)

Version 1.0, March 2016

Promotes the collection and use of data of the appropriate quality to ensure a scientific basis for making dig/no-dig decisions at Munitions Response Sites

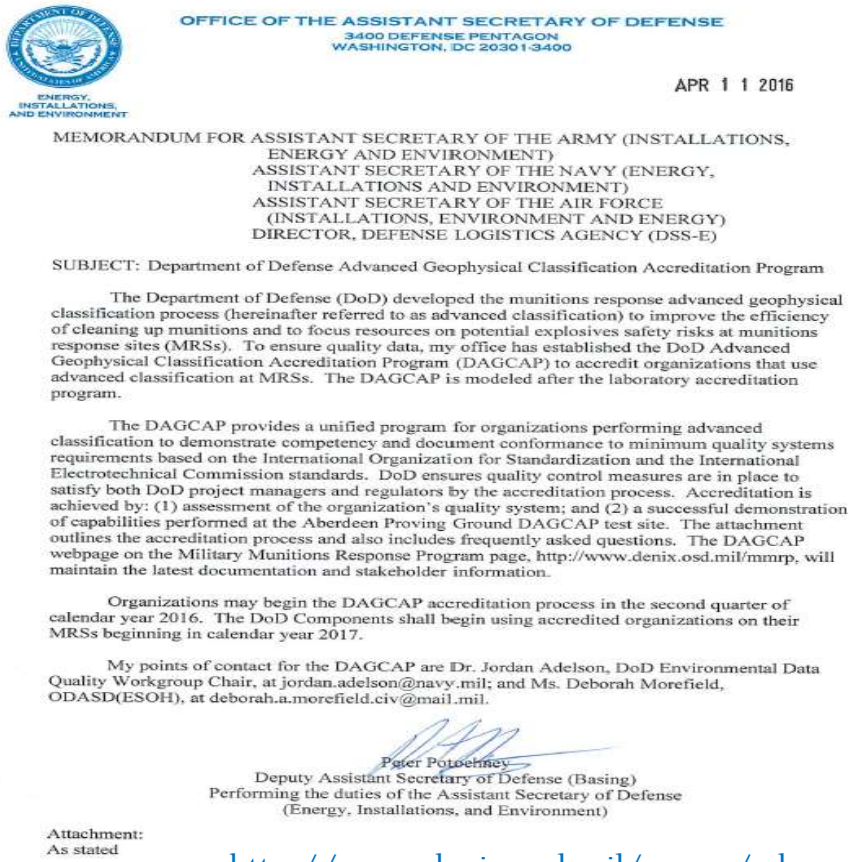
https://www.epa.gov/fedfac/uniform-federal-policy-quality-assurance-project-plans-template-advanced-geophysical

AGCMR-QAPP Template Update

- Currently working on updating template
- Updating MQOs based on implementation feedback and experience
- Addressing guidance on data review, verification and validation.
  - Assist regulatory oversight
  - Criteria for third-party validation

Updated targeted for Fall 2018

DoD Advanced Geophysical Classification Accreditation Program



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3400 DEFENSE PENTAGON
WASHINGTON, DC 20301-3400

ENERGY, INSTALLATIONS, AND ENVIRONMENT

APR 1 1 2016

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS, ENERGY AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (ENERGY, INSTALLATIONS AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (INSTALLATIONS, ENVIRONMENT AND ENERGY)
DIRECTOR, DEFENSE LOGISTICS AGENCY (DSS-E)

SUBJECT: Department of Defense Advanced Geophysical Classification Accreditation Program

The Department of Defense (DoD) developed the munitions response advanced geophysical classification process (hereinafter referred to as advanced classification) to improve the efficiency of cleaning up munitions and to focus resources on potential explosives safety risks at munitions response sites (MRSs). To ensure quality data, my office has established the DoD Advanced Geophysical Classification Accreditation Program (DAGCAP) to accredit organizations that use advanced classification at MRSs. The DAGCAP is modeled after the laboratory accreditation program.

The DAGCAP provides a unified program for organizations performing advanced classification to demonstrate competency and document conformance to minimum quality systems requirements based on the International Organization for Standardization and the International Electrotechnical Commission standards. DoD ensures quality control measures are in place to satisfy both DoD project managers and regulators by the accreditation process. Accreditation is achieved by: (1) assessment of the organization's quality system; and (2) a successful demonstration of capabilities performed at the Aberdeen Proving Ground DAGCAP test site. The attachment outlines the accreditation process and also includes frequently asked questions. The DAGCAP webpage on the Military Munitions Response Program page, http://www.denix.osd.mil/mmrp, will maintain the latest documentation and stakeholder information.

Organizations may begin the DAGCAP accreditation process in the second quarter of calendar year 2016. The DoD Components shall begin using accredited organizations on their MRSs beginning in calendar year 2017.

My points of contact for the DAGCAP are Dr. Jordan Adelson, DoD Environmental Data Quality Workgroup Chair, at jordan.adelson@navy.mil; and Ms. Deborah Morefield, ODASD(ESOH), at deborah.a.morefield.civ@mail.mil.

Peter Potochney
Deputy Assistant Secretary of Defense (Basing)
Performing the duties of the Assistant Secretary of Defense
(Energy, Installations, and Environment)

Attachment:
As stated

- Memo signed out requiring use of accredited organizations
- Program added to DoDI 4715.15 "Environmental Quality Systems"
- Developed Quality Systems Requirements (QSR)
  - Based on ISO 17025
  - Establishes personnel skill requirements
  - Reporting requirements for QA failures
- Multiple GCOs accredited

http://www.denix.osd.mil/mmrp/advanced-geophysical-classification-accreditation-and-other-tools

Munitions Response-QAPP

- Guidance document to assist project teams in planning munitions response actions conducted under the DERP at DoD installations and FUDS
- Based on the RI/FS phase of investigation (AGCMR-QAPP for RA phase)
- The draft worksheets include green text, which provides instructions and guidance; blue text, which provides examples of the types of information needed, based on a fictional site "Camp Example"; and **black text, which describes minimum recommended requirements**.
- Key Worksheets currently out for comment:
  - Certain worksheets also contain yellow, highlighted text, for which the IDQTF Subgroup is specifically seeking reviewer input.

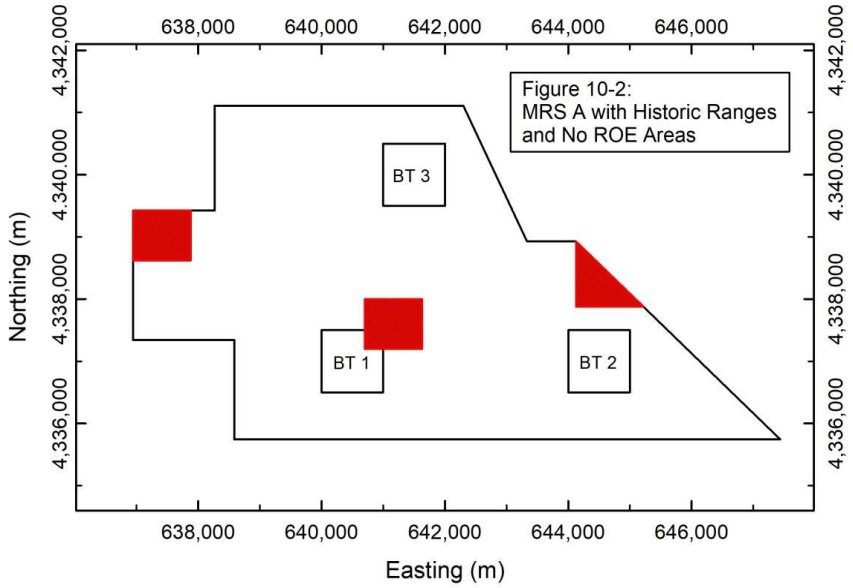
Munitions Response-QAPP

- Currently out for review (comments due by 2 April) :
  - Draft Worksheet #9 (including Figure 9-1): Project Planning
  - Draft Worksheet #10 (including Tables 10-1 and 10-2): Conceptual Site Model (CSM)
  - Draft Worksheet #11: Data Quality Objectives (DQOs)
  - Draft Worksheet #12: Measurement Performance Criteria (MPCs)
  - Draft Worksheet #17: (including Figure 17-1), Sample Design
  - Draft Worksheet #22: Measurement Quality Objectives (MQO)
  - Uses and Limitations of Analog Geophysical Technology (a fact sheet)

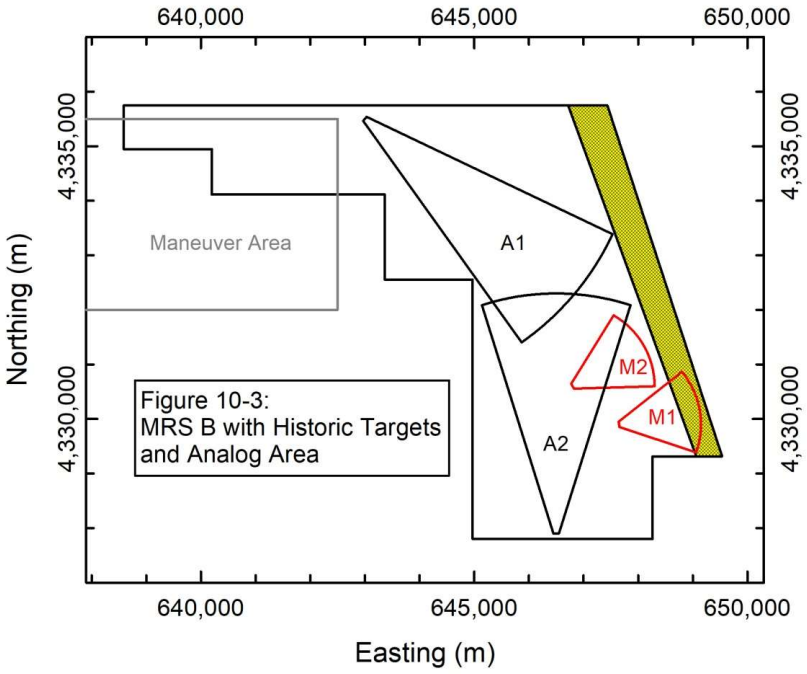
Munitions Response-QAPP

Draft Worksheet #10 : Conceptual Site Model (CSM)

MRS A



MRS B



Munitions Response-QAPP

Draft Worksheet #11: Data Quality Objectives (DQOs)--- New terms

- HD Area: High density area. Area within an MRS where the anomaly density has been determined to be ≥ critical density

- LD Area: Low density area. Area(s) within an MRS where the anomaly density has been determined to be < critical density). LD areas can include both areas of low munitions use (LUA) and areas where no munitions were used (NUA).

- LUA: Low use area. LD area where the potential presence of munitions cannot be ruled out. Examples of LUA include buffer zones, certain portions of range fans between large caliber firing points and target areas, and maneuver areas.

Munitions Response-QAPP

Draft Worksheet #11: Data Quality Objectives (DQOs)--- New terms

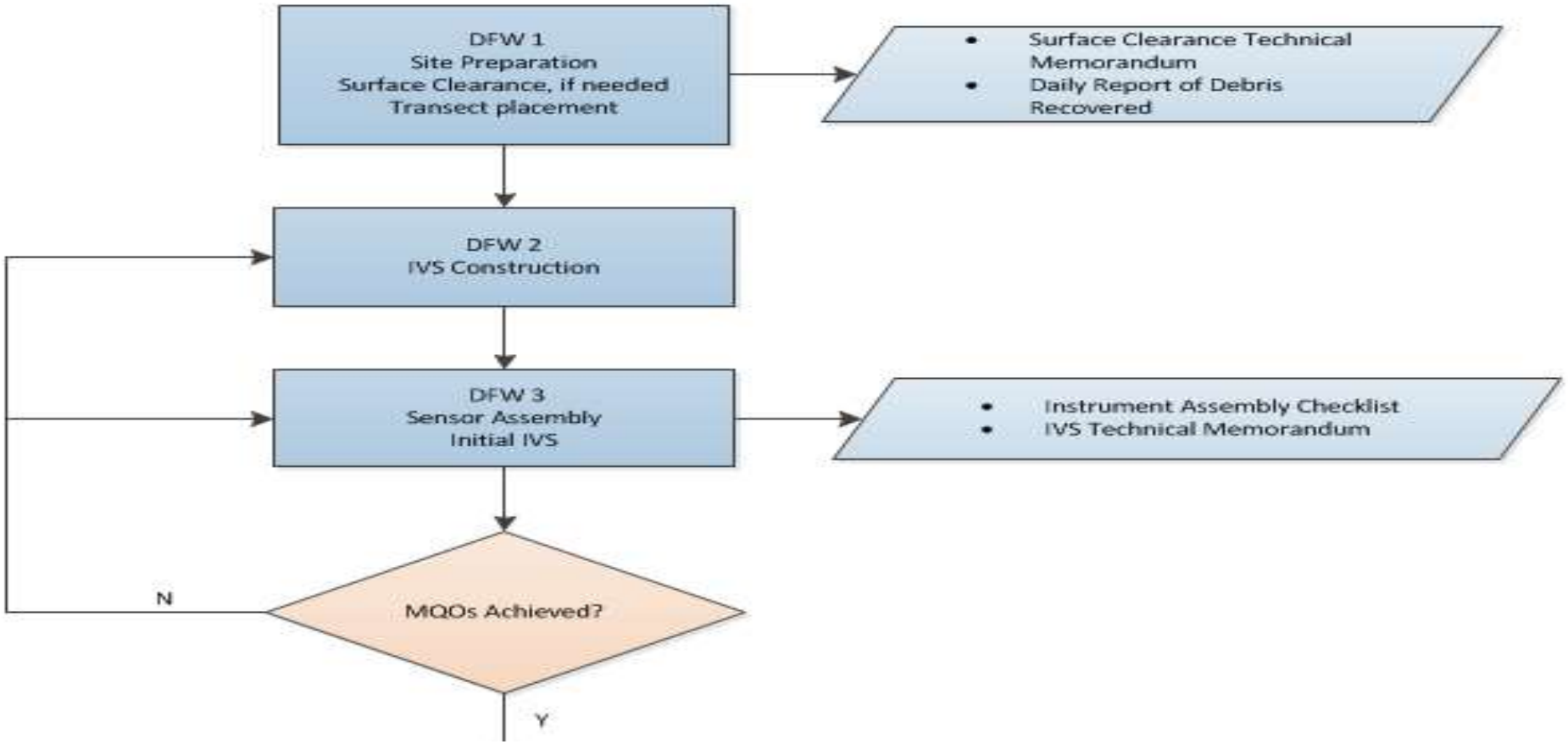
- HUA: High use area. HD area where munitions use has been confirmed. Unexploded ordnance (UXO) and/or discarded military munitions (DMM) are anticipated to be present in HUAs.

- NUA: No use area. 1) LD area for which CSM contains no evidence of munitions use, or 2) HD area determined to be not related to munitions use. All lines of evidence necessary for this delineation (e.g., historical records review (HRR), historical photo interpretation, visual observations, and interviews) must be considered.

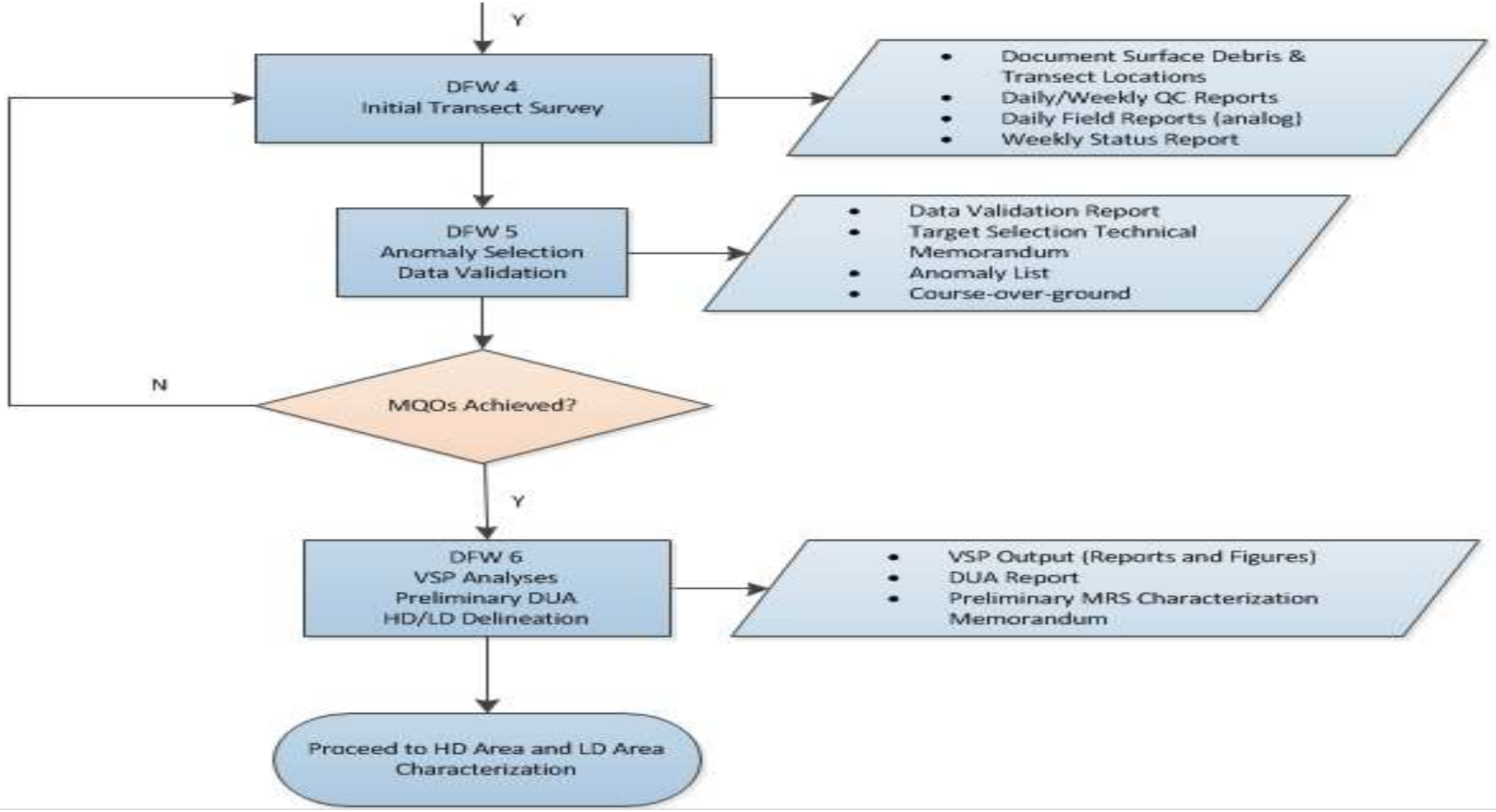
- Buffer zone: LD area within a defined distance to the boundary of a confirmed High Use Area (HUA). This distance depends on the size of the munition and the manner in which the HUA was used. Within a buffer zone, the presence of intact munitions is not expected but has not been ruled out.

Measurement	Data Quality Indicator	Specification	Activity Used to Assess Performance
QC seeding (AGC and DGM)	Accuracy/ Completeness	(HD Area Characterization) Contractors will place blind QC seeds at the rate of 1 seed/system/day. Planning documents must describe the blind seed firewall.	Lead agency verifies all QC seed failures are explained and corrective action implemented
QC seeding (analog)	Accuracy/ Completeness	QC seeding is recommended during all steps, but not required.	
QA Seeding: transects and grids (analog)	Sensitivity/Representativeness/ Completeness	Preliminary Characterization: Blind QA seeds will be placed by third party [seed plan TBD]. HD Area Characterization: Blind QA seeds will be placed at the site by the government/independent third party at the rate of 5-6/person/day. The entire transect or grid must be re-surveyed until all seeds are located. Blind QA seeds must be detectable as defined by the DQOs and located at depth (defined in Worksheet #11 Step 4) throughout the horizontal survey boundaries defined in the DQOs.	Preliminary Characterization: Statistical sampling program (e.g., VSP) analysis identifies seeded section as a potential HUA. HD Area Characterization: Lead agency oversight

Munitions Response-QAPP



Munitions Response-QAPP



Munitions Response-QAPP

Draft Worksheet #22: Measurement Quality Objectives (MQO)

- Documents procedures for performing testing, inspections and quality control
- References to the applicable definable feature of work (DFW)
- Failure response must include a RCA to determine the appropriate CA
- Project-specific QAPP must explain and justify any changes to black text, which are subject to regulatory approval. An appendix may be used for this purpose.

Munitions Response-QAPP

Uses and Limitations of Analog Geophysical Technology

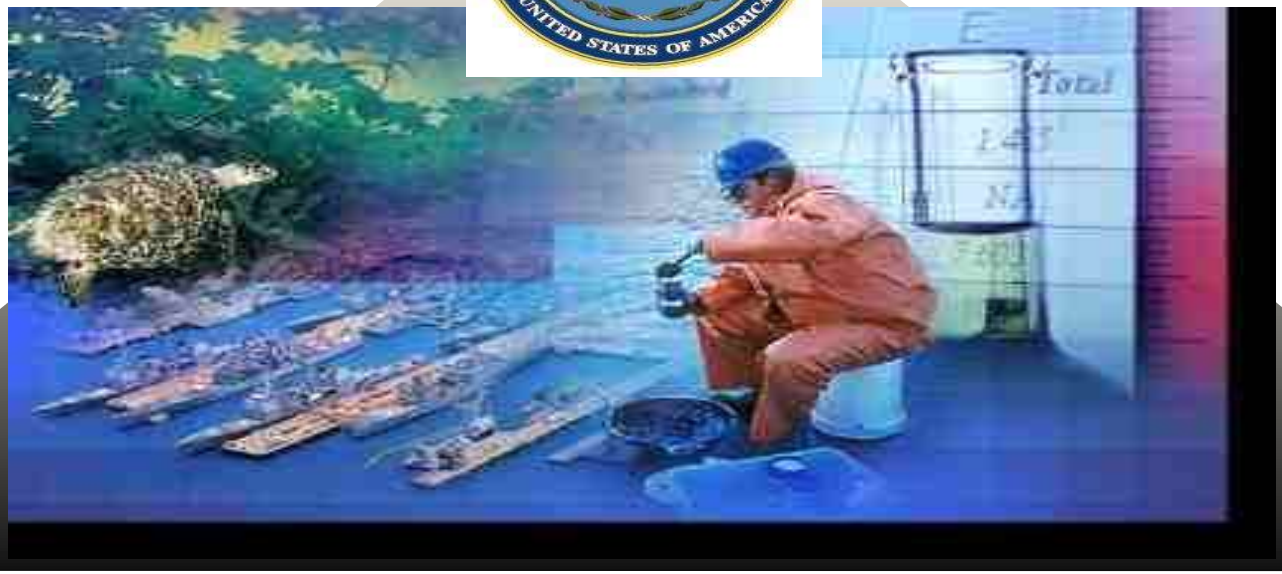
- Analog tools do not represent the best available science
- Not the most effective detection technologies
- No permanent record of the data, and cannot generate data capable of being substantially reproduced.
- Analog geophysical tools should not be used, except in rare cases where threatened or endangered vegetation dangerous terrain precludes the use of digital tools.
- If analog technology is used projects must disclose the uses and limitations of the data

Munitions Response-QAPP Status

- Currently out for comment (comments due 2 April)
- Subgroup will review comments and make appropriate adjustments and complete the Draft MR-QAPP worksheets
- Send it back out for comment (Summer FY18)
- Finalize MR-QAPP Fall/Winter CY 18

Improving Environmental Data Quality

… Because the Right Decisions Require Quality Data



Jordan.Adelson@navy.mil (EDQW Chair)
www.denix.osd.mil/edqw/