

MEMORANDUM FOR

Commander, Kansas City District
Commander, Omaha District
Commander, Portland District
Commander, Seattle District
Commander, Walla Walla District

SUBJECT: Northwestern Division (NWD) Policy Memorandum #2-04 – Chemical Data Quality Requirements

1. Purpose: Establish a standard laboratory Electronic Data Deliverable (EDD) for all programs generating chemical data from commercial laboratories and establish minimum requirements regarding chemical data review documentation. Implementation of this policy will improve the Districts' ability to share, store, and access chemical data, assess analytical data quality and determine the usability of data for its intended purpose, as well as promote the development of standard tools to handle analytical data. The implementation of this policy should also free resources that can be applied to detect and deter laboratory fraud.
2. History: The decision to require laboratories to provide results in an electronic format and the format of that EDD has varied not only from district to district, but even within each district. This has resulted in laboratories producing many different formats for Corps of Engineers work, and has led to inaccessibility and incompatibility of the data with other uses. Often, non-standard data formats are dictated by a specific software package, which makes transition to other software or sharing of data difficult. In addition, several laboratory fraud cases in recent years have pointed out a potential vulnerability in our use of analytical data. A standard minimum level of data review is required to reduce this vulnerability. A standard laboratory data deliverable would greatly facilitate this review by allowing vendors to develop data review software to meet various client needs. The Environmental Protection Agency and the US Army Corps of Engineers have developed a flexible standard EDD format based on the industry-standard Extensible Markup Language (XML). The interim Engineering Regulation 200-3-1, which covers the Formerly Used Defense Sites program, requires the use of this Staged Electronic Data Deliverable (SEDD) format. Information about SEDD is available at <http://www.epa.gov/superfund/programs/clp/sedd.htm>, and

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<http://www.environmental.usace.army.mil/info/technical/chem/chemtopics/chemedd/chemedd.html>. The Corps has funded the adaptation of a data review software package to utilize this data format which is available at no cost to all Corps activities. As this data format is more widely used, further applications are expected to become available, as well as existing applications adapting to the format. Chemists from the NWD districts with the largest workload in chemical analysis met with Division, HTRW CX and HQ representatives to determine the best course of action. Further discussions were held with representatives from NWD Water Management and Dredging offices. This policy is the result of those discussions.

3. Applicability: This policy will apply to all work where an incorrect or fraudulent chemical result can cause significant problems with data usability or project decision-making. Exceptions from this policy shall be summarized, approved and documented in the project file by the Corps district project chemist or the district senior chemist during project planning efforts.

4. Requirements for all programs:

a. The Project Delivery Team (PDT) shall include appropriate Corps technical personnel.

b. Data Quality Objectives shall be developed through a systematic planning process similar to that defined in EM 200-1-2, Technical Project Planning (TPP) Process, for all appropriate projects. This process will include all stakeholders, data users and generators – including all appropriate technical disciplines, laboratories, contractors/AEs, regulators and customers.

c. All appropriate projects shall require a minimum SEDD stage 2a deliverable from analytical laboratories at the end of the first quarter FY 2005. Stage 2a contains the minimum number of analytical data elements to convey sample results plus method and instrument Quality Control data. It is intended that the deliverable from the lab will evolve to higher SEDD levels based on the intended use of the data as available and appropriate.

5. In addition to the requirements above, the minimum data review elements for HTRW and appropriate other work will include:

a. Data Quality Review: This review is intended to determine that the appropriate quality control procedures were followed and if there are any impacts to the sample results.

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- (1) General integrity of Sample/Compliance with Contract:
 - (a) Holding times
 - (b) Sample Preservation
 - (c) Temperature of samples upon receipt at the laboratory
 - (d) Chain of Custody issues (omissions/errors)
 - (e) Other issues noted on the cooler receipt form
 - (f) Preparation and Analytical Method
- (2) Data's ability to meet sensitivity goals:
 - (a) Reporting Limits (RL) and Detection Limits (DL)
 - (b) Comparison of RL/DL and results to regulatory limits
- (3) Instrument/Method Performance:
 - (a) Initial and continuing calibration
 - (b) Standard Reference Material – per contract requirements
 - (c) Performance Evaluation Samples – per contract requirements
 - (d) Internal Standards
 - (e) Method Blanks
 - (f) Laboratory Control Samples
- (4) Project Matrix Evaluation and Performance:
 - (a) Blanks – trip, field, equipment – as appropriate for analytes and method
 - (b) Surrogates for Organic analysis
 - (c) Blind duplicates or splits - per contract requirements

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(d) Laboratory duplicates

(e) Quality Assurance splits to referee laboratory – per contract requirements

(f) Matrix Spike/Matrix Spike Duplicate samples

b. Data Usability: This review is intended to answer the question “Are the data useful for their intended purpose?” and compares the results of the data quality review with the data quality objectives that were prepared at the beginning of the process. A data usability determination will be documented for all HTRW work as required by ER 1110-1-263.

6. Automation of this review is strongly encouraged to maximize the use of resources, and focus on a more detailed technical data assessment when necessary to determine any impacts to data usability. While a significant portion of the review can be automated, a chemist or other technically qualified individual is still necessary to resolve issues identified by the software and determine their impact. The software should also be auditable. Several software products for data review are available and more can be expected. More detailed information regarding the implementation of fraud detection and deterrence activities can be found at <http://www.epa.gov/region9/qa/pdfs/labfraud.pdf>.

7. Although this policy will address the uncertainty in chemical data generated at commercial laboratories, the districts are encouraged to maximize their use of the Triad approach. The Triad approach includes systematic planning, dynamic work strategies and real-time measurement to address the more significant sources of uncertainty, such as sampling error. The goal for each project should be to generate data that are representative for their intended use as determined by the project delivery team.

8. This policy will remain effective until superseded or rescinded.

/s/

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Commanding