

TWS-QAS-QP-13.1, R0

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HANDLING, STORAGE, AND SHIPPING PROCEDURE

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HANDLING, STORAGE, AND SHIPPING PROCEDURE

1.0 PURPOSE

The purpose of this procedure is to prevent or avoid loss or deterioration of samples and/or equipment when such effects have the potential of adversely affecting Quality Assurance (QA) Levels I and II material or activities associated with the Nevada Nuclear Waste Storage Investigations (NNWSI) Project at Los Alamos National Laboratory (LANL).

2.0 SCOPE

This quality procedure (QP) defines the generic QA requirements related to the handling, marking, preservation, storage, packaging, shipping, record keeping, and documentation of samples and/or equipment.

These requirements must be addressed when developing or revising detailed technical procedures (DPs) for the NNWSI Project. The requirements stated in Section 5 of this QP must be addressed in either a DP developed specifically for the purposes of an entire group or included in existing Project DPs.

Procedures for the handling, storage, and shipping of data, records, and/or documents are addressed in the Records Management Procedure, TWS-QAS-QP-17.1, R0.

3.0 DEFINITIONS

3.1 Data

Data include hard copies or electronic representations of the results of scientific investigations, tasks, tests, experiments, reports, or publications.

3.2 Equipment

Equipment includes special tools, machinery, or laboratory apparatus or items used in the handling, storage, accumulation, shipping, measurement, and processing of samples.

3.3 Handling

Handling includes the care, transportation, and use of samples and equipment at LANL after arrival from the field or from other outside sources.

3.4 Marking

Marking is the process of uniquely identifying samples, including an indication of a need to maintain special environments or other special controls, in a manner that promotes sample identification as to its source and end use.

3.5 Packaging

Packaging refers to the preparation of samples for handling, shipping, and storage, including the cleaning, care, and marking of samples.

3.6 Preservation

Preservation refers to the maintenance of the samples in the same condition as they are procured or as their original state.

3.7 Samples

A sample is a small part of a material used for the NNWSI to show the quality, style, or nature of a larger portion of the experimental whole. The sample may have a critical, sensitive, perishable, or high-value nature as related to cost and/or rarity. Examples include surface or ground water samples, hand or core rock samples, and gaseous samples.

3.8 Shipping

Shipping refers to the movement of samples to and from LANL and within the laboratory.

3.9 Storage

Storage refers to the facilities used to ensure the preservation of samples.

4.0 RESPONSIBILITIES

The principal investigator (PI) or an individual designated by the PI shall have the responsibility for including these requirements in the appropriate DPs.

All persons involved in the LANL NNWSI Project should be suitably trained and cognizant of the appropriate procedures for the handling, marking, preservation, storage, packaging, shipping, record keeping, and documentation of samples and/or equipment.

5.0 REQUIREMENTS

5.1 Handling

Detailed instructions shall be included in the appropriate DPs for all samples that require special handling. Conditions, which may be considered in these procedures, include weight, height, fragility, or susceptibility to environmental influence.

Equipment operators, who are involved in the handling of samples, shall be suitably trained or experienced. This training information shall be documented as stated in Personnel Selection, Training, and Certification, TWS-QAS-QP-02.1, R0.

5.2 Preservation

If a PI determines that samples may incur damage or deterioration, he/she shall include methods in the DP to ensure preservation of the sample. If there is a life expectancy for the sample, it should also be noted on the sample or container. Examples of conditions requiring attention may include inert gas atmospheres, specific levels of moisture content, or temperature controls.

If sample deterioration is a possibility, the DP must describe the PI's responsibility for evaluating the usefulness of the sample. Subsequently, the PI shall document the results of the evaluation and make recommendations on the suitability of the sample for other experimental use.

5.3 Storage

Each participating LANL NNWSI group responsible for the storage of samples shall include specific storage information in the DP, if appropriate. The storage portion of the DP shall

- be coordinated with the sample preservation section of the DP;
- include an organizational plan of the storage area, which addresses access control, security, filing and location systems, cleanliness, housekeeping, and marking and/or labeling;
- provide for periodic reviews of storage procedures and facilities; and
- provide for written records of sample locations, reviews, and protective methods used at the facility.

5.4 Packaging and Shipping

The packaging portion of the DP ensures that samples are protected from corrosion, contamination, physical damage, or any effect that may lower their quality or cause their deterioration. Proper selection of containers must take into account shock absorption, cleanliness, and marking and/or labeling.

Caps, plugs, tapes, and adhesives shall consist of materials that enable them to perform their intended function adequately without causing deleterious effects on samples or equipment.

The shipment portion of the DP shall specify requirements for sample transportation where environmental protection, fragility, identification, and inspection are important. Shipping procedures and documentation shall be addressed in the DP. These procedures should be coordinated with the organizations responsible for the transportation of samples, as appropriate.

5.5 Marking and/or Labeling

Marking and/or labeling of samples is required. Proper documentation of the marking and/or labeling shall be made in Project logbooks. Investigators' and sample collectors' notebooks must provide traceability of samples using unique identifiers. The PI shall also take into consideration unique sample identification procedures as prescribed by the Sample Management Facility or the LANL group responsible for sampling activities. These procedures should assist in the retrievability and traceability of samples and in the facilitation and coordination of future work.

5.6 Exceptions for Use

In the event that samples have been damaged or deteriorated according to specifications outlined in the DP, the PI may determine if exceptions for

the use of samples are appropriate. Such exceptions must be recorded in the PI's laboratory notebook.

6.0 QUALITY ASSURANCE REQUIREMENTS

6.1 Records

Records that may be generated through the implementation of this QP are DPs.

6.2 Document Control

Approved DPs and QPs are maintained by the QAS in the Quality Assurance Manual. Personnel qualifications and certifications are maintained in accordance with TWS-QAS-QP-02.1, R0, NNWSI Personnel Selection, Training, and Certification Procedure. Notebooks are maintained in accordance with TWS-MSTQA-QP-14, R1, Research and Development Procedure.

7.0 REFERENCES

TWS-QAS-QP-02.1, R0--NNWSI Personnel Selection, Training, and Certification Procedure
TWS-QAS-QP-17.1, R0--Records Management Procedure
TWS-MSTQA-QP-14, R1--Research and Development Procedure

8.0 ATTACHMENTS

None.