

GEOSCIENCES AND ENGINEERING DIVISION

TECHNICAL OPERATING PROCEDURE

Proc. TOP-012

Rev. 5 Chg 2

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Title: **IDENTIFICATION AND CONTROL OF SAMPLES AND CHEMICAL REAGENTS AND STANDARDS**

EFFECTIVITY AND APPROVAL

Revision 5 of this procedure became effective on 08/13/2008. This procedure consists of the pages and changes listed below.

<u>Page No.</u>	<u>Change</u>	<u>Date Effective</u>
1	2	12/10/2010
2-3	0	08/13/2008
4-5	2	12/10/2010

Change 1 – Deletion of Sample Control Database

Change 2 – Revision of Section 4.5.4 and the addition of Sections 4.5.5 through 4.5.7

Supersedes Procedure No. TOP-012, Rev. 5, Chg 1, dated 06/26/2009

Prepared by

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Date

12/6/10

Approved by

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Date

12/6/2010

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IDENTIFICATION AND CONTROL OF SAMPLES AND CHEMICAL REAGENTS AND STANDARDS

1.0 PURPOSE

This procedure provides methods for identifying (including labeling), controlling, storing, handling, and shipping samples and for identifying and labeling chemical reagents. This procedure establishes controls required by Geosciences and Engineering Division (Division) Quality Assurance Manual Sections 8 and 13.

2.0 RESPONSIBILITY

Personnel performing tasks described in this procedure are responsible for complying with its requirements.

3.0 DEFINITION

Samples take many different forms, including manufactured or fabricated samples, natural geological samples, and synthesized samples. Sub-samples are physically separate from the original or base sample and may have been modified (e.g., polished, crushed, or chemically treated) for a specific use or analysis. Aliquots removed from samples or sub-samples that are otherwise identical to their sources do not require identification different from their sources.

4.0 PROCEDURE

4.1 Sample Identification

- 4.1.1 Samples and sub-samples shall be given a unique sample identification that is maintained throughout the life of the sample. Samples and sub-samples shall be identified as described in Section 4.2 of this procedure. In addition to the sample identification number, the scientific notebook number containing the information specified in Section 4.3 shall be identified (e.g., SN 3). Referenced notebooks shall be controlled in accordance with QAP-001, Scientific Notebook Control.
- 4.1.2 Any sample identification scheme may be used provided that a unique identification is provided. For example, the identification scheme may be based on the manufacturer's lot or heat number (for purchased samples) or a code relating to the sample collection location, date, or person collecting the sample.
- 4.1.3 Sub-samples, as defined in Section 3, shall be given a unique identification traceable to scientific notebook entries as described in Section 4.1.1 and to the original sample as described in Section 4.1.2. In general, sub-sample identification will use the base sample identification with an added suffix.

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- 4.1.4 While being analyzed, examined, or tested, samples, sub-samples, or aliquots need not maintain the formal identification provided that the investigator is able to maintain identification through alternative means (i.e., using an abbreviated identification, location in a sample holder, etc.).
- 4.1.5 As determined by the principal investigator (PI) or as required by contract, samples or sub-samples with no near-term anticipated use shall be retained for archival purposes. Archived samples and sub-samples shall retain their identification in accordance with this procedure.
- 4.2 Identification Methods
- 4.2.1 Large samples or sub-samples, such as plates, rock specimens, and containers of solutions, may be directly marked by indelible markers, indentation (punches, vibrating tools, etc.), or tags. Direct marking shall be such that the properties, characteristics, and eventual use of the item is not adversely affected.
- 4.2.2 Samples or sub-samples on which direct marking is not possible or is impractical shall be identified by marking on the bottle, jar, bag, or other means used to contain and segregate the sample or sub-sample.
- 4.3 Sample Information
- Scientific notebook entries relating to and traceable to a sample or sub-sample shall include, as appropriate
- Identification
 - General description (including sample collection location if applicable)
 - Date of receipt, collection, or synthesis
- 4.4 Sample Shipping, Storing, and Handling
- 4.4.1 Samples shall be shipped and handled in accordance with industry accepted or customary practices unless special requirements are identified by the contract or PI. Any special shipping requirements shall be noted on the sample container or in scientific notebooks traceable to the sample.
- 4.4.2 Routine storage shall protect from environmental extremes, prevent or mitigate deterioration, and minimize the potential loss of samples.
- 4.4.3 Samples requiring storage conditions beyond those provided in Section 4.4.2 shall have their special storage requirements clearly identified on a tag or label affixed to the sample or sub-sample.

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4.5 Identifying, Labeling, and Disposing Chemical Reagents and Standards

4.5.1 To the extent applicable to the materials and related health and safety requirements, chemical reagents and standards shall be labeled as required by AP-016, Hazard Communication Plan. Furthermore, a composite record of chemical reagents and standards shall be maintained as required by AP-010, Laboratory Chemical Hygiene Plan.

4.5.2 Scientific notebook entries shall document the use of chemical reagents and standards. Entries shall identify the lot numbers of the source reagents or standards.

4.5.3 Solutions prepared from chemical reagents and diluted solution standards that are retained for use beyond the day of preparation shall be labeled with the following information.

- Appropriate identification of the chemical solution or diluted solution standard corresponding to the entry in the scientific notebook
- Date of preparation, and as applicable, date of expiration
- Reference to the scientific notebook entry for the preparation by notebook control number and page number

Solutions to be used the same day as prepared shall be sufficiently identified to assure appropriate use that day.

4.5.4 In general, chemical reagents and standards shall not be used beyond the expiration date stated on the label. Staff selecting chemical reagents and standards for use shall examine the label for an expiration date to ensure that expired chemical reagents or standards are not used. For the purposes of this procedure, expiration shall occur on the last day of the expiration month.

4.5.5 Chemical reagents and standards having stated expiration dates may be used after the expiration date if the following conditions are met.

- For quality-affecting work, expired chemical reagents and standards may be used up to 30 days after the expiration date when no other unexpired chemical reagent or standard is available.
- For non-quality-affecting work (i.e., scoping work that will not form the basis of deliverable data), the expired chemical reagents and standards may be used at the discretion of the principal investigator.

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In either of these cases, the expired chemical reagents and standards shall be clearly marked on the label as expired and shall be segregated from nonexpired chemical reagents and standards. These exceptions do not apply to chemicals that become unstable when their shelf life is exceeded. When the expired chemical reagents and standards are not expected to have future use, these shall be appropriately disposed as chemical waste in accordance with Section 4.5.6 of this procedure. The use of any expired chemical reagents and standards shall be documented with a rationale justifying their use in the appropriate scientific notebook.

4.5.6 Every 3 months, the designated laboratory point of contact shall examine stocks of chemical reagents and standards and:

- For expired chemical reagents and standards, either appropriately dispose of them as chemical waste (if no acceptable future use is anticipated) or label them as expired and place them in the segregated storage area
- For chemical reagents and standards expiring in the next 3 months, place a prominent note on the container indicating the expiration date to potential users.

Depending upon the day of the month that examinations of stock occur, the expiration of a chemical reagent may take place prior to its segregation for a brief period of time.

4.5.7 Disposal of chemical wastes shall be in accordance with applicable safety and environmental requirements and regulations.

5.0 RECORDS

Scientific notebooks containing sample information shall be controlled in accordance with QAP-001, Scientific Notebook Control.