



**NYE COUNTY NUCLEAR WASTE
REPOSITORY PROJECT OFFICE**

TECHNICAL PROCEDURE

TITLE: SAMPLE COLLECTION, IDENTIFICATION AND CONTROL FOR MINERALOGY-PETROLOGY STUDIES		Revision: 0 Date: 09-15-00 Page: 1 of 4
PROCEDURE No.: TP-8.3	SUPERSEDES: DRAFT, 02-21-95	
APPROVAL <i>[Signature]</i> <u>12.11.00</u> Project Manager Date	CONCURRENCE <i>[Signature]</i> _____ Principal Investigator Date <i>[Signature]</i> <u>15 DEC 2000</u> Project Quality Assurance Officer Date	

1.0 PURPOSE

The purpose of this procedure is to describe the methods used to track the origin, history, and disposition of samples collected for mineralogy-petrology, mineral-whole rock geochemistry, and physical and geophysical properties studies from samples collected by Nye County's independent oversight drilling program.

2.0 SCOPE

All samples that will be used to obtain Geosciences Management Institute, Inc. (GMI) mineralogy-petrology, mineral-whole rock geochemistry, physical and geophysical property characterization data for Nye County are covered under this procedure.



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2.1 APPLICABILITY

This procedure applies to the collection and identification of samples of core, cuttings, and other solid samples collected during Nye County's Independent oversight drilling program that have a *Nye County Transfer Of Custody Form* that releases these samples to GMI (liquids and vapors are not applicable). Applicability also extends to the creation of splits of the above samples (subsamples of the received samples) that have been collected by GMI personnel.

2.2 TRAINING

GMI personnel will be trained to this procedure before conducting work, and will document that they have read and understand this procedure. Personnel performing sample collection and identification for mineralogy-petrology studies shall review the Mineralogy-Petrology Analysis and Request Forms referenced in section 5.0 of this procedure.

3.0 DEFINITIONS

3.1 Sample- Any solid geologic material collected with the intent of use by the Nye County NWRPO.

3.2 Parent Sample – The parent is that mass of sample, which is received from the field or from the YMP sample facility under a sample transfer document.

3.3 Split – a portion of a parent sample to allow for various types of analysis and/or archival purposes. Each split is marked with a sample number and a sample split designation.

3.4 Subsplit – Subsplits are specimens taken from a split. Each subsplit will be uniquely identified.

4.0 RESPONSIBILITIES

4.1 The Principal Investigator is responsible for the preparation of this procedure.

4.2 GMI investigators collecting or handling Yucca Mountain Program-Nye County NWRPO mineralogy-petrology-geophysics-geochemistry samples are responsible for the performance of this procedure.

5.0 PROCESS

The major principle underlying this procedure is the provision of a continuous record of sample traceability from the time the sample is managed by GMI personnel, or has been collected by GMI personnel. This traceability must be maintained until the sample is removed from GMI management, or consumed.

Sample traceability is maintained with this procedure. Sample history can be reconstructed from the combined use of logbooks, and analysis and request forms. Applicable request forms exist in the individual NWRPO Technical Procedure that control various aspects of mineralogy-petrology-geophysics-geochemistry sample collection and identification.

<u>Technical Procedure</u>	<u>Min-Pet. Analysis and Request Form</u>
Multiple TPs	Nye County Transfer of Custody Form
TP-8.2, Thin Section Preparation Procedure	Thin Section Request Form
TP-8.5, Petrography and Modal Analysis Procedure	Petrography Analysis Form
TP-8.6, X-ray Diffraction Procedure	X-ray Analysis Form
TP-8.7, SEM, TEM, Electron Microprobe Procedure	SEM, TEM, and Electron Microprobe Analysis Form
TP-8.8, Magnetic Susceptibility for Core, Cuttings and Other Samples	Geophysics Analysis Form

Table 1. Applicable Analysis and Request Forms

Sample site traceability is maintained through the use of field notebooks, maps and photographs. Sample traceability may be enhanced through the use of video records of samples stored as image files in electronic databases. A Master Sample logbook shall record the following information: sample number and split identification numbers, description of sample, date of responsibility for parent sample, GMI person first taking responsibility, date-purpose-location-investigator-sample number-split number of all splits and subsplits.

The Master Sample Logbook is the primary record for this procedure. All analysis and sample preparation procedures contain analysis and request forms that trace the sample from the master sample record and these forms comprise backup forms for the master record.

5.1 EQUIPMENT AND MATERIAL

The equipment used for sample marking may include permanent or indelible pens and scribing pens for marking glass. The materials used for sample containers include bags, bottles, boxes, plastic dishes, metal mounts, or other containers. Sample tracking is by logbooks and analysis and request forms (see 5.0).

5.2 DATA ACQUISITION METHODOLOGY AND LIMITATIONS

All parent, split and subsplit materials are acceptable for use unless sample traceability is lost or unless sample numbers become duplicated and sample origins can not be reconstructed. Data acquired from mineralogy-petrology studies will be of the quantitative type and tied to specific physical locations in the field.

These data will be used to track the progress of the U.S. DoE during development activities at Yucca Mountain. All data derived from mineralogy-petrology studies may be used at U.S. Nuclear Regulatory Commission proceedings to evaluate DoE's License application.

Uncertainty attached to the methodology in the acquisition of mineralogy-petrology analyses includes the variability of the skill level of the field and laboratory personnel performing the analyses, and individual professional judgement.

Analytical reports of mineralogy-petrology studies will be submitted to the NWRPO Quality Assurance Records Center for capture and preservation in the project files.

6.0 REFERENCES

NWRPO Quality Assurance Program Plan

7.0 RECORDS

N/A

8.0 ATTACHMENTS

N/A