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## 1. PURPOSE

This Analytical Chemistry Laboratory Procedure (ACLP) describes the manner in which samples for analysis are received, handled, logged, stored, returned, or dispositioned at the Test Reactor Area (TRA) Radioanalytical Laboratory. The TRA Radioanalytical Laboratory is located in Materials Test Reactor (MTR)-604, MTR-661, and MTR-668. The Sample Receiving Area is in MTR-604, Lab 124.

## 2. SCOPE

The general procedures described in this ACLP may be used for all projects requiring sample custody tracking at the Test Reactor Area (TRA) Radioanalytical Laboratory. Soils, liquids, vegetation, and other sample matrices from various locations of the Idaho National Engineering and Environmental Laboratory (INEEL) are delivered or shipped to the TRA Radioanalytical Laboratory for requested analytical radioanalyses to be performed. These samples are submitted to the TRA Radioanalytical Sample Management Coordinator (SMC) who coordinates all phases of the analyses and sample tracking processes until the samples are either returned to the requestor, consumed in the radioanalytical process, or disposed by the TRA Radioanalytical Laboratory.

Guidance is provided in this procedure for sample documentation, control, and coordination of sample movement throughout the lab until the samples are returned to the requestor or placed in storage awaiting return to the customer. Guidance is also provided for samples transferred to a Satellite Accumulation Area (SAA) or RCRA 90-Day Storage Area (see MCP-3470) awaiting imminent waste disposal, or for archived samples held under pending litigation or under administrative controls by the Department of Energy (DOE).

## 3. DEFINITIONS

3.1 *Archived Samples.* Archival samples held in temporary storage are classified under pending litigation or administrative controls by the Department of Energy (DOE) and may be held pending future regulatory concerns. Archival justification may include enforcement issues, compliance issues, or be held in anticipation of additional requirements for testing or analysis.

3.2 *CERCLA Waste.* Some wastes not regulated under RCRA may be regulated under CERCLA hazardous substances.

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- 3.3 *Chain-of-Custody (COC)*. Documentation established to ensure sample custody is maintained.
- 3.4 *Customer Sample Number (CSN)*. An alpha-numeric identification assigned to a sample submitted to the laboratory by the customer. The sample may be designated as either alphabet designation or a numeric designation or both. This is determined by the customer. The CSN cannot be longer than 12 characters or digits.
- 3.5 *Data Report(s)*. A report submitted to the Project Manager or Sample Generator consisting of analyses results, summaries, and custody documentation. All INEEL sample results, QC sample results, and associated total propagated uncertainties are reported in scientific notation. The concentration values are rounded to the same decimal place as the uncertainty estimate. All uncertainties are reported as one standard deviation. Signatures from the technician performing the analysis and the persons responsible for reviewing the data sign Tier 1 and Tier 2 documents.
- A Tier 1 report (Level A) is an Internal Technical Report (ITR) or External Technical Report (ETR) and includes a Cover Page, COC, RFA, TOS reference, Form I, II, and III data summary package, QA/QC internal and external summaries, and raw data.
  - Form I – Contains project information (project title, SOW or TOS number, SDG number, lab report number, etc.) field sample and laboratory sample number cross-references, date of report, and the signature of the person responsible for release of the data from the laboratory.
  - Form II – Contains the required results from the analysis of QC samples analyzed in conjunction with the INEEL samples. This form (or laboratory equivalent form) contains results from the analysis of laboratory-generated method blanks, laboratory control samples, and laboratory-generated duplicates/splits. These results include: QC sample identification, QC sample type (blank, LCS, duplicate), analysis type, sample results, total one-sigma uncertainty of the sample results as described above, known value for laboratory controlled samples, total one-sigma uncertainty of known value which shall be the uncertainty of the LCS as proved by NIST or other acceptable source and any related dilution uncertainties, reporting units, percent recovery of laboratory control samples, analysis date, analysis yield when yield monitors or tracers are used, detector identification, and MDA.
  - Form III – Instrument Calibration Checklist. Contains the required calibration verifications for the analysis of INEEL samples. These verifications include the dates, control status, and Source ID's of the most recent primary calibration, calibration verification check, and background verification check for each detector used with the set of samples being

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reported. The documentation shall contain the signature of the person responsible for the calibration and the calibration status of the detector.

- A Tier 2 (Level B) report is an ITR and contains forms comparable to I, II, and III with the exception of the internal instrument QA/QC documentation, external QA/QC documentation, and raw data.
- A Tier 3 (Level C) report contains a data summary, a copy of the request for analysis (RFA), and of the COC, if submitted.
- A letter report includes a formal letter along with the summary of data.
- Preliminary report - – Results transmitted to the customer as a fax or with or without a cover letter and are stamped or designated “Preliminary” or “Draft.”

**NOTE:** *These results have not been completely evaluated, verified, QA checked, or formally approved and are subject to change. Preliminary results are transmitted to a customer when there is an urgent investigation and time constraints are of fundamental importance.*

- A summary report includes data only - – Results which are computer-generated gamma or alpha/beta analysis summary printouts.

**NOTE:** *Summary results are generally checked, edited, and signed by the analyst but are not intended to be used as “official results.” The laboratory will not be responsible for misidentification or misinterpretation of summary results.*

- 3.6 *Day.* A day shall mean a 24-hour period unless it falls just before a holiday or on a Thursday. Then a day shall include the weekend or holiday.
- 3.7 *EDF.* An EDF is a form outlining minimum requirements for profiling hazardous waste.
- 3.8 *Hazardous Waste.* Hazardous Waste (HW) is any solid waste that can be dangerous to the health of humans and/or the environment. The RCRA Regulations and Keyword Index lists the most common HW materials in four different lists (the F, K, P, or U lists). Hazardous waste also includes waste exhibiting ignitable, corrosive, reactive or toxic characteristics.
- 3.9  *Holding Time.* The maximum permissible time allowed between time of sample receipt at the laboratory and time of analysis.
- 3.10 *Field Duplicates.* Two separate independent samples collected from the same source and as close as possible to the same place and time. Duplicate matrices are stored in separate containers and analyzed independently.

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- 3.11 *Field Reference Samples.* Standard samples containing known concentrations of target analytes introduced in a sampling matrix throughout the sampling manifold. Field reference standards are received blind to the laboratory.
- 3.12 *Laboratory Sample Duplicate.* A duplicate gamma count may be performed on the same sample using a different detector system for quality control. An aliquot from the same sample may be analyzed using the same procedural process for quality control.
- 3.13 *Laboratory Sample Number.* A unique identification number is assigned to each sample. The laboratory sample number is different from the Customer sample identification.
- 3.14 *RCRA.* The Resource Conservation and Recovery Act of 1976 (RCRA) provides “cradle-to-grave” policies for the handling of hazardous waste. RCRA was amended in 1984 with the Hazardous and Solid Waste provisions.
- 3.15 *RML.* The Radiation Measurements Laboratory (RML) is the gamma radiation measurement analysis section of the TRA Radioanalytical Laboratory.
- 3.16 *RL.* The Radiochemistry Laboratory (RL) is the alpha and beta radiochemical analysis section of the TRA Radioanalytical Laboratory.
- 3.17 *Routine samples.* Sample(s) submitted on a regular basis at an agreed-upon *Receiving Group.* A set of samples received on the same day which are grouped together for purposes of analysis, tracking, and reporting.
- 3.18 *Request for Analysis (RFA).* A form (410.03) is generated for each analytical batch or receiving group which provides the following information: field and laboratory sample numbers, charge number, requested analyses, SOW OR TOS numbers, collection dates and times, hazard information, reporting requirements, and the name of the submitter, technical, reporting, disposal or return sample contacts with their current addresses and phone numbers, comments, and due dates.
- 3.19 *Sample.* A portion of material to be analyzed that is contained in single or multiple containers and identified by a unique sample number.
- 3.20 *Sample Aliquot.* A quantity or portion removed from the original sample placed into another container.
- 3.21 *Sample Custodian.* An individual assigned and authorized to receive and analyze sample while at the laboratory.

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- 3.22 *Sample Delivery Group.* A group of samples from a sampling effort to be processed as a unit within a specific time frame. An analytical batch can be from 1 to 20 samples (excluding laboratory Quality Control samples), all of which must be received by the laboratory within 14 days of validated sample receipt of the first sample in the batch.
- 3.23 *Sample Inventory Database (SID).* A current inventory of samples located at the TRA Radioanalytical Laboratory Receiving Area can be retrieved from the Sample Tracking Database (STDB). This inventory report is used to determine when it is appropriate to notify sample generators to pick up their samples and to indicate where samples are stored.
- 3.24 *Sample Label.* A label affixed to a sample container at collection time listing the Sample ID and collection information (Date, Time, Location, Sample Initials, Preservatives, etc.).
- 3.25 *Sample Management Coordinator.* An individual assigned and authorized to receive, log, and track samples for the TRA Radioanalytical Laboratory.
- 3.26 *Sample Management Coordinator Alternate.* An alternate individual assigned and authorized to receive, log, and track samples for the TRA Radioanalytical Laboratory.
- 3.27 *Sample Receipt Log (SRL).* The SRL is maintained and updated on a continuing basis by the SMC. It is a management tool accessible to laboratory personnel reflecting day to day operations and sample completion as analytical batches are transferred throughout the laboratory for gamma, beta, and alpha analyses. It is used for planning and trending purposes.
- 3.28 *Sample Tracking Database (STDB).* The STDB is used to track information relevant to each sample and includes customer information, disposal contact, technical contact, addresses, phone numbers, laboratory barcode sample identification number, customer identification number, collection date and time, matrix, volume or weight. Analyses requested, due date, RML spectral identification number(s), radioactivity level, special hazards, analyses report number(s), report issue date, and special instructions are also included. Customer return and waste disposal information is also tracked.
- 3.29 *Satellite Accumulation Areas (SAA).* SAAs are areas established, managed, and operated to provide safe and controlled storage of hazardous and hazardous mixed waste at or near the activity or process generating the waste.
- 3.30 *Resource Conservation and Recovery Act (RCRA) 90-Day Storage Area.* RCRA 90-Day Storage Areas are areas established for the accumulation of RCRA

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hazardous waste, mixed waste, partially characterized waste, and unknown waste. (See MCP-3470).

- 3.31 *Validated Time of Sample Receipt (VTSR)*. The date and time when a sample or group of samples are received at the TRL as recorded on the Field COC documentation and the RFA. The VTSR is used to determine sampling holding times and data report due dates.
- 3.32 *Waste Generator Services (WGS)*. WGS determines sample disposition pathways by comparing the acceptance criteria of the receiving facility and provides assistance to the laboratory in the waste disposal process.
- 3.33 *Waste Management Authority (WMA)*. The WMA is responsible for review and approval of non-containerized waste streams generated at TRA. Waste streams subject to WMA review and approval include liquid, semi-liquid, solid hazardous waste, mixed waste, radioactive waste, and liquid industrial and municipal waste streams (Draft ES&H Document).

## 4. PROCEDURES

The Project Manager, Sample Generator, or Requestor must meet the following minimum requirements when submitting a sample(s) to the SMC at the TRA Radioanalytical Laboratory for analysis.

### 4.1 Sample Submittal Instructions

- 4.1.1 If quantitative gamma analysis results are required, collect the sample(s) using a standardized Radiation Measurements Laboratory (RML) geometry container(s) and label with the sample identification, location, size (weight or volume), and sample collection date.

**NOTE:** *If only qualitative results are needed for gamma analyses, RML sample geometry can be waived.*

- The RML geometry for liquids is either a 4 L marinelli, 1 L marinelli, 540 mL polyethylene bottle or 60 mL polyethylene bottle.
  - The RML geometry for solids (soil, vegetation, etc.) is a 500 mL (16 oz. squat jar) or a 120 mL pill vial.
  - The RML also has efficiencies for point sources at different distances and 2 and 4-inch filters.
- 4.1.2 If sample is collected in a radiologically controlled area, have a Radiological Control Technician (RCT) certify the outside of sample

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container(s) are contamination free and label all sample(s) with radiation dose/rate levels, if present, before sample(s) are delivered to the SMC.

- 4.1.3 Fill out a Request for Analysis (INEEL Form No. 410.03) for each sample group unless the samples are routine.

**NOTE:** *Paperwork for routine samples must be filled out at the beginning of each project submittal and notification should be made to the SMC if there are any changes in the agreed plan during the project duration.*

- 4.1.4 Fill out a Sample Management Office (SMO) Request form (INEEL Form No. 435.26) as specified by MCP-2864, *Sample Management*, for each sample group or waste stream unless a waste stream has already been profiled and approved by an INEEL waste management authority (WMA).

**NOTE:** *Under emergency sampling conditions, samples may be accepted for gamma analysis by TRA Radioanalytical Laboratory without the Form L-0435.26, but radiochemistry will not be performed until this form is received unless the sample waste stream has been previously profiled. This form must be completed and submitted with-in five working days of laboratory acceptance (see MCP-2864, 4.1.4, p.2). Sample turn-around time requirements may be adjusted because of paperwork delay.*

- 4.1.5 Fill out and provide each sample group with a proper chain-of-custody form(s) if there are more than two samples from the receiving group submitted for analysis and/or if the analyses or information required for each sample differs. Chain-of-Custody (COC) documentation (see MCP-2002, *Analytical Chain of Custody*), is maintained electronically and/or by hardcopy for all samples received for analysis by the TRA Radioanalytical Laboratory. A sample is under custody if one or more of the following conditions apply:

- It is in the custody of the TRA Radioanalytical Laboratory Sample Receiving Area.
- It is being analyzed in a TRA Research and Development Laboratory (RDL) and in possession of laboratory personnel.
- It is in TRA RDL possession and locked in a secure area or secured with a signed custody seal.
- It is in a designated secure area.

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- 4.1.6 For samples needing “No Radioactivity Added Certification,” comply with procedure TPR-713, *Radioactive Contamination Added Determination*, and submit a Form 435.02 for each sample.
- 4.1.7 Incorporate a sample disposal/archival plan into the Sampling Analysis Plan (SAP) or provide a Point of Contact (POC) for reasonable sample return after radioanalysis is completed unless arrangements have been made with the TRA Radioanalytical Facility Manager previously for sample disposal in TRA waste streams.
- 4.1.8 After receipt of analytical data, implement the sample disposal/archival plan and initiate and complete sample retrieval as soon as possible.

**NOTE:** *The TRA Radioanalytical Laboratory stores samples in Radioactive Material Areas (RMA 's) as defined in MCP-121, Areas Containing Radioactive Material. If samples cannot be retrieved by the disposal contact or Project Manager within one (1) year after issuing the final approved analytical data to the generator, written justification must be provided to the SMC, Laboratory Manager, and Facility ES&H Manager (See MCP-2864, 4.2.3 and 4.2.4). The reason for needing an extended storage holding time and the expected duration of that proposed time extension must be defined.*

## 4.2 General Guidelines

- 4.2.1 The following steps outline general guidelines to be followed upon receipt, transfer, and return of samples. The SMC or alternate shall verify the following items upon receipt:
- 4.2.1.1 Ensure exterior of sample container(s) have been smeared by RCT and are contamination free and current dose rate level(s) are provided.
- 4.2.1.2 Notify SMC and RML, TRA Radiological Control Supervisor, and Facility Manager if any samples are above 200 mR/hr. IF laboratory or facility limits are compromised, THEN special handling will be required, per current SAR.
- 4.2.1.3 Ensure sample(s) are in proper geometry and sample matrices are placed in appropriate containers.

**NOTE:** *Glass container(s) are not accepted unless notification and approval has been obtained from the Technical Leader.*



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- 4.2.2 Ensure sample(s), field reference standards, and/or field duplicates are received with appropriate documentation as listed below.
- Request for Analysis (RFA) (if applicable).
  - Chain-of-custody (COC) documentation (if applicable).  
**NOTE:** *COC documentation is usually required when more than two samples are submitted (MCP-2002).*
  - INEEL Form 435.26 as required by MCP-2864 (if applicable).  
**NOTE:** *435.25 form is required for all samples not having an associated TRA Waste Management Authority (WMA) waste stream previously assigned.*
  - Task Order Statements (TOS) or Statements of Work (SOW) (if applicable).  
**NOTE:** *TOS or SOW paperwork are generally submitted to the laboratory with Environmental Monitoring and Environmental Restoration project samples.*
  - Sampling Analyses Plan (SAP) (if applicable).  
**NOTE:** *SAP paperwork is normally submitted with Waste Generator Services (WGS) project samples.*
- 4.2.3 Observe and note any evidence of tampering with custody seals.
- 4.2.4 If sample condition has been compromised in transit, notify the sample generator.
- 4.2.5 Document findings by noting anything unusual in correspondence to the Customer, under "Remarks" on the COC or RFA, or under "Special Instructions" in the Sample Tracking Database.
- 4.2.6 Ensure sample information agrees between the sample labels (see definition), the RFA, and the COC. Obtain clarification for any documentation that may be illegible.
- 4.2.7 Establish holding times and determine if special handling or storage requirements are applicable (i.e., samples to be sent offsite for metals analyses must be kept cold).
- 4.2.8 Attach pertinent paperwork to RFA to inform radiochemists of any special hazards, RCRA metals, PCB's, preservatives, listed constituents, known incompatibilities, etc. for proper handling of sample residues.

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- 4.2.9 Determine and validate date and time of receipt on the RFA and/or COC. Ensure the date and the sample collection time is included for each sample.
- 4.2.10 Ensure the analysis requested is marked on the RFA and applicable to the sample matrix.
- 4.2.11 Ensure the project name is descriptive enough to identify data to enable retrieval later if necessary. Note any other applicable information in comment section.
- 4.2.12 Obtain the signature of the person relinquishing the sample. The SMC or SMC Alternate receiving the sample will acknowledge receipt of the sample by signing and dating the COC record.
- 4.2.13 If discrepancies are identified in the receiving documentation, document the anomaly, contact the Sample Generator, field sampling personnel, and/or shipping personnel in an attempt to resolve the problems encountered.
- 4.2.14 Determine if gamma duplicate counts are required. Establish count times relative to the matrix and analysis results needed.
- 4.2.15 Determine due date(s). Gamma screen samples for shipping samples offsite should be processed in a timely manner to ensure a 24-hour fax/verbal turn-around requirement.

### 4.3 Sample Management

- 4.3.1 Enter data for the sample delivery group into the Sample Tracking Database (STDB). Internal in-house possession of sample(s) is tracked using the STDB as Laboratory personnel are required to enter sample transfer information into the STDB whenever they receive, dispose, consume in the radioanalytical process, or relinquish a sample. Laboratory personnel also enter their report and letter identification numbers and issue dates to maintain current up-to-date accessible information for reference purposes and for timely customer interface.
- 4.3.2 Attach the laboratory barcode labels to paperwork and samples for cross-referencing, tracking, and retrieval purposes.

**NOTE:** *A computer-generated laboratory barcode identification number is assigned to each sample to cross-reference customer sample identification numbers, customer sample Ids, and RML spectral identification numbers.*

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- 4.3.3 Scan each sample barcode into a sample inventory database (SID) and designate the storage locker number after samples have been analyzed and returned to the Sample Receiving Area. If the sample is in process or being analyzed, specify that the sample is in the laboratory being analyzed.
- 4.3.4 Coordinate the most appropriate sample movement through gamma, beta, and alpha labs. Consult and interface with technical leaders and laboratory personnel when workloads are heavy to establish priorities.
- 4.3.5 Laboratory personnel must notify the SMC or SMC Alternate if an aliquot is removed from the original sample and not consumed in the radioanalytical process. The sample group associated with this newly created sample will then be updated to include an additional sample. The sample aliquot will be given a unique barcode to indicate it is a subset of the original sample. This will ensure appropriate tracking, sample return and/or waste disposal actions are pursued for any associated sample aliquots created by our laboratory.
- 4.3.6 Attach 435.26 form and/or add a note to RFA for laboratory personnel if sample glassware and associated residues must be kept because of RCRA, PCB, or listed waste issues. Include any relevant notes regarding any additional requirements.
- 4.3.7 After the gamma sample measurements are completed, run a shuttle file, attach associated paperwork packet (TOS, SOW, RFA, 435.26, correspondence, etc.), and submit to RML analysts for data reporting.
- 4.3.8 Deliver a copy of sample documentation and paperwork to radiochemistry analyst(s) with samples.
- 4.3.9 Analysts issue results to the Sample Generators after analysis completion. Listed below are categories of results the laboratory provides:
- Official Results – Results which have been thoroughly evaluated, verified, QA checked, signed by the analyst, and approved and signed by a senior staff member or a designated alternate.
    - (1) External Technical Report (also referred to as a Tier 1 report)
    - (2) Internal Technical Report (also referred to as a Tier 1 or 2 report)
    - (3) Tier 3 report – (see definition)
  - Letter Report (see definition)
  - Preliminary Results (see definition)
  - Summary Results (see definition)

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4.3.10 Document report and letter numbers in the STDB after analyses are completed.

**NOTE:** *Laboratory personnel provide a hard copy of the sample analyses to the SMC for tracking, documentation, and sample return or disposal issues.*

4.3.11 Update the SID to indicate the new sample storage location after the sample(s) or the unused portion of the sample(s) are relinquished back to the SMC by laboratory personnel.

4.3.12 If sample residues are generated during sample analysis, it should be noted in the report or this information should be given to the Sample Generator or WGS for dispositioning.

4.3.13 Laboratory personnel will monitor their laboratory inventories on a regular basis to ensure analyzed samples are returned to the Sample Receiving Area for return to the customer or for dispositioning. The SMC or SMC Alternate will monitor the SID for the one year sample retention criteria at least on a quarterly basis to ensure that samples are dispositioned properly within the one year criteria.

**NOTE 1:** *The Idaho Department of Environmental Quality (DEQ) has indicated that the RCRA sample exclusion [40 CFR 261.4(d)] does not apply to samples over one year old unless adequate written justification for continued storage is provided for the sample. If a hazardous waste sample with no retention justification is stored for a period of one year and is not picked up by the generator, the sample will be placed into an SAA and managed as laboratory-generated hazardous waste. The generator and appropriate supervision will be notified. If a non-waste sample with no retention justification is stored for a period of one year and is not picked up by the generator, then a hazardous waste characterization of the sample will be performed. If the sample is found to be a hazardous waste it will be placed into a SAA and managed as laboratory-generated hazardous waste. The generator and appropriate supervision will be notified.*

**NOTE 2:** *All sample residues are managed in the laboratories by laboratory personnel per INEEL requirements.*

4.3.14 Store processed samples in a secure area in an RMA or lockers in the Sample Receiving Area (SRA) located in the Sample Management Coordinator's office at TRA, MTR-604, Room 124.

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**NOTE 1:** *Samples awaiting return to the generator after sample analysis are exempt and should not be in an SAA.*

**NOTE 2:** *Samples stored in a RMA may not be >5 mR/hr @ 30 cm. Samples >10 mr/hr at contact will be placed in a designated Radiation Area or behind lead shielding in the labs. Samples stored in a High Radiation area must be >100 mR/hr @ 30 cm.*

4.3.15 Check storage locations periodically to ensure sample container integrity is maintained.

**NOTE:** *RMA locker storage areas, work surfaces, and floors are surveyed once a week by an RCT.*

#### 4.4 Sample Disposition

4.4.1 The SMC returns samples to the customer in the following manner:

4.4.1.1 Record analysis report identification(s) in the SRL and STDB to indicate sample measurement and/or radioanalytical chemistry has been completed.

4.4.1.2 Contact Sample Generators who need reminding regarding sample retrieval or disposition when analytical results have been issued, validated, accepted, and no further analyses are required

4.4.2 Complete COC transfer when samples are picked up. Retain the yellow copy for the file and return the original white copy of the COC to the customer or person(s) designated to pick up the samples.

4.4.3 Update the Sample Inventory database, document sample return or disposal in the STDB, retain proper documentation in the project file. As a courtesy the SMC may notify the Project Manager documenting the sample return date, who picked up the sample(s), sample identification, matrix, volume, COC reference, and sample receipt date.

4.4.4 Coordinate shipping with the onsite radioactive shipper and customer if samples are shipped back to the Sample Generator. All radioactive samples leaving or entering the sample receiving area should be smeared and surveyed by an RCT and labeled appropriately.

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**NOTE:** *SMC responsibilities may involve providing copies of radiological data, providing sample matrix, volume, weights, obtaining RCT sample and outer package radiation readings or other known informational data that the customer cannot readily provide to the Certified Radioactive Materials Shipper.*

4.4.5 Notify SMO when Environmental Restoration (ER) samples are removed from the TRA Radiochemistry Laboratory.

#### 4.5 Sample Disposal

**NOTE:** *Sample(s) are not considered waste until the Sample Generator declares or designates them as waste and has no future use for the sample(s). Waste Generator Services (WGS) sample disposal actions at TRA are regulated pursuant to the approval of the TRA Waste Management Organization (WMO) after sample characterization by the Sample Generator.*

4.5.1 If sample(s) declared as waste by the Sample Generator are to be disposed of by the TRA Radioanalytical Laboratory or by WGS at TRA, “hazardous” sample(s) at a minimum, should be partially characterized before being placed in a Satellite Accumulation Area (SAA). (See MCP-62, MCP-69, and MCP-442). No unknown waste is allowed in a SAA.

4.5.2 When complete and necessary documentation and approvals are obtained for their disposal, the Sample Generator may make arrangements with WGS to move samples into a RCRA 90-day storage area (MCP-3470).

4.5.3 WGS must be notified and receive the necessary analyses information to complete a Waste Determination and Disposal Form (435.39) (WDDF) for chemicals, mixed waste liquids, and solids. Radioanalytical data are provided to WGS for samples analyzed at the TRA Radioanalytical Laboratory if the customer cannot supply the necessary information.

**NOTE 1:** *The Sample Generator supplies outside laboratory analyses and process information to WGS for samples disposed at TRA. The TRA Radioanalytical Lab is not responsible for supplying information on RCRA waste, volatiles, listed waste, PCB constituents, and CERCLA waste, etc. because hazardous constituents usually have not been quantified when samples are received. Analyses results and other characterization data must be*

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*submitted by the Sample Generator to the area WMA before approved disposal of liquid samples at TRA or for sample inclusion in TRA liquid waste streams. Each waste stream must be profiled, approved, identified and assigned an identification number before sample or sample group disposal.*

**NOTE 2:** *WGS tracks disposal and dispositioning of Laboratory SAA sample(s) and sample residues they manage.*

4.5.4 Store archived samples classified under pending litigation or administrative controls by the Department of Energy (DOE) in the sample receiving area. These samples must have a letter in the project file authorizing the extended storage holding time.

**NOTE:** *Samples pending litigation or having administrative controls are exempt and should not go into a SAA.*

4.5.5 Obtain approval from the State of Idaho for elementary neutralization. The one-time Land Disposal Restriction (LDR) notification/certification as required by 40 CFR 268.9(d) shall be available upon request and maintained in the files.

#### **4.6 Quality Assurance**

4.6.1 The TRA Radioanalytical Laboratory adheres to the Quality Assurance and Control Program Plan (PLN-153).

4.6.2 Quality control measurements relative to spectrometric systems, standards, backgrounds, and laboratory equipment are performed regularly per TRA Radioanalytical Laboratory procedures. Results from in-house laboratory quality control-monitored measurements (i.e. backgrounds, standards, duplicates, blanks, etc.) are reported with the data for Tier 1 and Tier 2 reports. The TRA Radioanalytical Laboratory also participates in numerous onsite and offsite quality performance programs. Blind field quality control checks are also submitted with many samples (i.e., duplicates, replicates, blanks, and standards).

4.6.3 Laboratory balances are calibrated yearly by the INEEL Calibration and Standards Laboratory.

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## 5. RECORDS

Records Description	Uniform File Code	Disposition Authority	Retention Period
Electronic Data Base	7101	See MCP-2007, <i>Analytical Records Management</i>	

## 6. REFERENCES

- 6.1 ACLP-0.21, *Work Control for Analysis of Non-routine Samples*
- 6.2 ACLP-0.40, *Laboratory Practices Affecting Waste Generation*
- 6.3 MCP-7, *Radiological Work Permit*
- 6.4 MCP-2864, *Sample Management*
- 6.5 MCP-242, *Obtaining Laboratory Services for Environmental Management Funded Activities*
- 6.6 *An Informal RML User's Guide to Sample Tracking Database*, written by Doug Femec
- 6.7 *Operator's Guide for VAXGAP, a Gamma-Ray Spectrum Analysis Package*, E. Wayne Killian, Douglas A. Femec, EGG-2672, August 1992
- 6.8 TPR-713 (Rev. 1), *Radioactive Contamination Added Determination*
- 6.9 MCP-2002, *Analytical Chain of Custody*
- 6.10 Statement of Work for Radiological Analyses
- 6.11 Radiological Control Manual (MCP-91), *ALARA Program and Implementation*
- 6.12 49 CFR (Code of Federal Regulations) 173.403 (y)
- 6.13 40 CFR 268.9(d)
- 6.14 MCP-121, *Areas Containing Radioactive Materials*
- 6.15 LST-23, *INEEL CONDUCT OF OPERATIONS CONFORMANCE MATRICES (DOE ORDER 5480.19)*
- 6.16 MCP-2007, *Analytical Records Management*
- 6.17 MCP-2008, *Analytical Data Recording, Review and Reporting*
- 6.18 MCP-2011, *Analytical Logbooks*
- 6.19 MCP-62, *Waste Generator Services – Low-Level Waste Management*
- 6.20 MCP-69, *Waste Generator Services – Hazardous Waste Management*



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- 6.21 MCP-444, *Characterization Requirements for Solid and Hazardous Waste*
- 6.22 MCP-3470, *RCRA 90-Day Storage Areas*
- 6.23 ER-SOW-163, *Idaho National Engineering Laboratory Sample Management Office Statement of Work for Radionuclide Analysis*
- 6.24 PLN-153, *Quality Assurance Project Plan for the Analytical Laboratories Department, Radioanalytical Section.*

**7. APPROVALS**

POSITION TITLE	SIGNATURE	DATE
Procedure Author	<i>[Signature]</i>	12/12/01 <del>11-08-01</del>
Responsible ALD Tech Leader	<i>[Signature]</i>	12-11-01
Responsible ALD Supervisor	<i>[Signature]</i>	12/11/01
ALD QA Officer	<i>[Signature]</i>	12/11/01
ALD Manager	<i>[Signature]</i>	12/12/01
ALD Facility Manager	<i>[Signature]</i>	12/11/01

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**APPENDIX A**

**Procedure Basis**

Step	Basis/Summary	Source
4.5.1	Hazardous Waste	MCPs-62, 69