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CCP-TP-512

Revision 4

CCP
Remote-Handled Waste Sampling

EFFECTIVE DATE: 12/29/2010

Larry Porter

PRINTED NAME

APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	07/23/2008	Initial issue.
1	08/06/2008	Clarified when data may be pre-recorded for ALARA reasons.
2	04/16/2009	Revised to accommodate remote-handled (RH) transuranic (TRU) sampling event for various events.
3	05/04/2010	Add step to perform pre-job briefing of sampling plan.
4	12/29/2010	Revised to incorporate Permit Modification Independent Technical Review (ITR) language.

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1.0 PURPOSE

This procedure provides instructions for sampling (not analysis) remote-handled (RH) transuranic (TRU) waste forms. The physical and chemical diversity of RH TRU waste, as well as the dissimilarity of storage facilities and sampling equipment associated with them, require a specific Sampling Analysis Plan (SAP) for each waste stream. Therefore, the sampling is performed in conjunction with a U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) approved SAP. The SAP will provide specific sampling details/instructions required for the selected analysis for each waste stream. Depending on the specific SAP, the sampling is performed as defined by DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP), or as defined by the *Waste Isolation Pilot Plant Hazardous Waste Facility Permit,* Attachments C-C6, *Waste Analysis Plan* (WIPP-WAP).

1.1 Scope

This procedure applies to personnel responsible for collecting samples and sampling information, including preparation of the sampling batch data report (BDR). It also addresses the Independent Technical Review (ITR) and Site Project Manager (SPM) review of the BDR.

2.0 REQUIREMENTS

2.1 References

Baseline Documents

- CCP-PO-001, *CCP Transuranic Waste Characterization Quality Assurance Project Plan*
- CCP-PO-002, *CCP Transuranic Waste Certification Plan*
- 49 *Code of Federal Regulations* (CFR), *Transportation Regulations*

Referenced Documents

- CCP-QP-002, *CCP Training and Qualification Plan*
- CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*
- CCP-QP-008, *CCP Records Management*
- DOE/WIPP-02-3214, *Remote-Handled TRU Waste Characterization Program Implementation Plan* (WCPIP)

- *Waste Isolation Pilot Plant Hazardous Waste Facility Permit,* Attachments C-C6, *Waste Analysis Plan* (WIPP-WAP)

- EPA SW-846, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*

2.2 Training Requirements

2.2.1 Personnel identified in this procedure will be trained and qualified in accordance with CCP-QP-002, *CCP Training and Qualification Plan*, prior to performing this procedure.

2.3 Definitions

2.3.1 **Duplicate Samples**: Duplicate samples will be taken as co-located samples. Co-located samples are collected at a frequency of one per sampling batch, or once per week, whichever is more frequent. A co-located sample is collected side-by-side, as close as feasible, to the primary sample, handled in the same manner, and sampled in the same manner at the same randomly selected sample location(s). If inconsistencies, such as color, texture, or waste type in the waste at the sample location exist, another sampling location may be selected, or the samples may be invalidated and co-located samples may again be collected.

2.3.2 **Sampling Batch**: A sampling batch is a suite of samples collected consecutively using the same sample equipment within a specific time period. A sampling batch can be up to 20 samples (excluding field quality control [QC] samples), all of which shall be collected within 14 days of the first sample in the batch.

2.3.3 **Clean**: For the purposes of this procedure, the word “clean” refers to U.S. Environmental Protection Agency (EPA) environmentally clean.

2.3.4 **Chain of Custody (COC)**: Chain of custody (COC) will be initiated immediately after sampling. Sample custody will be maintained by ensuring the samples are sealed or locked in the possession of or within the view of a Sampler, in a sealed or locked container controlled by a Sampler, or in a secure controlled-access location.

2.3.5 **Tamper Indicating Device (TID)**: Tamper indicating devices (TIDs) have physical characteristics that would immediately indicate tampering should container integrity be violated. TIDs must be affixed to sample containers and to loaded shipping containers.

2.3.6 **Trip Blank (TB)**: A closed container which contains certified organic-free sand. This container is shipped/transferred with the sampling containers to the sampling site and with the sampling containers when shipped/transferred back to the Analytical Laboratory. This serves as a check of contamination during the shipment/transfer process. Trip blanks (TBs) are only required when volatile organic compounds (VOCs) and/or non-halogenated volatile organic compounds (NHVOCs) are being sampled.

2.3.7 **Shipment**: A shipment is when sample containers are shipped off site using an off-site shipping company.

2.3.8 **Transfer**: A transfer is when sample containers are transferred to another location, but a person is always in the physical custody of the sample containers.

2.4 Quality Assurance Objectives (QAOs)

2.4.1 **Precision**: Sampling precision is established by comparing the relative percent difference (RPD) between duplicate samples. A nonconformance report (NCR) shall be issued for any duplicate samples with RPDs greater that 25 percent. NCRs shall be initiated in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

2.4.2 **Accuracy**: Sampling accuracy through the use of standard reference materials shall not be measured. Because waste containers containing RH TRU waste with known quantities of radionuclides are not available, sampling accuracy cannot be determined. Sampling accuracy as a function of sampling cross-contamination will be measured. Sampling equipment will be verified as clean by the use of standard radiological control survey methods.

2.4.3 **Representativeness**: A sampling plan must be developed that describes the sampling strategy for obtaining representative samples. The sampling plan must be approved.

2.4.4 **Completeness**: Sampling completeness shall be expressed as the number of valid samples collected as a percent of the total number of samples collected for each waste stream. The participating sampling facilities are required to achieve a greater than or equal to 90 percent completeness.

2.4.5 **Comparability**: Compliance with the requirements of the WCPIP will ensure comparability between RH TRU waste sites.

2.5 Precautions and Limitations

2.5.1 When applicable, to minimize vaporization of VOCs, there is a one-hour time frame in which the sampling operation must be performed. For a sample for VOC analysis, this is defined as from the point the drum lid bag is opened until the sample collected in the sample container and sample container(s) is/are closed.

2.6 Prerequisite Actions

2.6.1 Personnel shall have signed applicable Radiation Work Permit (RWP) As Low As Reasonably Achievable (ALARA) Task and shall be wearing required dosimetry.

2.6.2 Document briefing of the applicable sampling plan prior to work.

2.6.3 Portable sample cooler(s) containing frozen Blue Ice® packs are staged prior to sampling, if needed.

2.7 Equipment

2.7.1 Certified-clean and free of radiological contamination sample collection equipment

2.7.2 Large re-sealable plastic bags

2.7.3 Frozen Blue Ice®

2.7.4 TIDs

2.7.5 Kimwipes, Terri wipes, or suitable wipe-down cloths

2.7.6 Tape

2.7.7 Bag-out bag

2.7.8 Calibrated balance capable of reading, at a minimum, ±0.01 grams

2.7.9 Calibrated check weights

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3.0 RESPONSIBILITIES

3.1 Independent Technical Reviewer (ITR)

NOTE

The independent technical review will be performed by someone, other than the individual who performed sampling or data generation, who is qualified to have performed the work. Independent Technical Reviewers shall not be involved in the generation or recording of the data.

3.1.1 Reviews the BDR using Attachment 3, Independent Technical Review Checklist.

3.2 Site Project Manager (SPM)

3.2.1 Reviews the Sampling BDR using Attachment 6, Site Project Manager Sampling Batch Data Report Checklist.

3.2.2 Reviews the Radiochemistry or Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Analytical BDR using Attachment 7, Site Project Manager Radiochemistry or ICP-MS Analytical Batch Data Report Checklist.

3.3 Sampler

3.3.1 Inspects sample area to ensure that gross visible contamination that has the potential to contaminate waste samples is thoroughly removed prior to sampling.

3.3.2 Inspects sample containers and sampling equipment for damage and proper documentation.

3.3.3 Collects samples, **AND** applies TIDs.

3.3.4 Completes sample tracking forms and/or log(s) and COC Form(s).

3.3.5 Assembles and paginates BDR.

3.3.6 Prepares samples for transfer or shipment.

3.4 Analytical Laboratories

3.4.1 Procures and provides certified-clean and free of radiological contamination sample containers.

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3.4.2 Provides TBs.

3.4.3 Analyzes samples.

3.5 Radiological Control Technician (RCT)

3.5.1 Performs surveys and records results, when needed, on applicable forms and affixes labels, as needed, on items, as required.

3.6 Lead Operator (LO)

3.6.1 Provides guidance in the event of abnormal conditions.

3.6.2 Performs Sampler duties.

3.7 Facility Records Custodian/Records Custodian

3.7.1 Receives, processes, and transmits, when applicable, all records generated by this procedure in accordance with CCP-QP-008, *CCP Records Management*.

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4.0 PROCEDURE

NOTE

Sampling will be performed in conjunction with the applicable SAP for the waste stream being sampled. The SAP will provide specific sampling details/instructions required for the selected waste containers.

NOTE

Opening and closure of waste containers are performed by site-specific procedures.

Sampler

4.1 Preliminary Sample Collection Activities

4.1.1 Ensure all prerequisites have been met.

4.1.2 If applicable, verify the balance is operational by performing the following steps:

[A] **IF** the balance calibration has expired,
THEN DO **NOT** use and have the balance recalibrated, **OR** use a balance whose calibration has **NOT** expired.

[B] Record the calibration certification number of the balance in the Operational Logbook.

[C] **IF** the verification check weight calibration has expired,
THEN DO **NOT** use and have the weight calibrated, **OR** use a weight whose calibration has **NOT** expired.

[D] Record the calibration certification number of the check weight in the Operational Logbook.

[E] Place check weight on the balance.

[F] Record the reading of the weight of check weight in the Operational Logbook.

[G] **IF** the indicated weight of the check weight is **NOT** equal to or within the acceptable calibration tolerance of the check weight,
THEN weigh the check weight a second time.

[H] Record the reading of the weight of check weight in the Operational Logbook.

[I] **IF** the second weighing is performed and also fails, **THEN** use another operational balance and GO TO step 4.1.2[A].

4.1.3 Obtain a set of sample containers, co-located sample containers, and/or sampling equipment for each waste container, area, event, etc., to be sampled.

4.1.4 Obtain a copy or copies of the documentation that certifies the sampling equipment and sample containers are clean and/or radiologically free of contamination.

4.1.5 Visually inspect sampling equipment and container bags for integrity and damaged containers.

4.1.6 **IF** damage to sampling equipment packaging or to the sample containers is observed,
THEN discard the damaged package, **AND** RETURN TO step 4.1.3.

4.1.7 Obtain a copy of Attachment 1, Sample Tracking Form, for each container or number of items to be sampled.

4.1.8 Record sampling equipment set number and/or sampling container set number on Attachment 1.

4.1.9 Record sampling equipment certification number and/or sampling container certification number on Attachment 1.

NOTE

During the sample collecting activity, any damaged sample collection containers will be discarded.

4.1.10 Initiate an Attachment 1 for each sample by recording:

[A] SAP and Revision of SAP

[B] Sampling Date

[C] BDR Number in the format XXRHYYZZ, where XX is the site identification (ID), RH is remote-handled, YY is the last two digits of year, and ZZ is sequential numbers starting with 01 each year

[D] Sample ID Number in the format ZZMMDDYYXX, where ZZ is site identification, MMDDYY is the month, day, year, and XX is a consecutive number for that day beginning with 01

[E] Waste Container Number

[E.1] **IF** this is an area sample or not containerized waste, **THEN** mark as N/A.

[F] Sampling Facility (i.e., name of the site, facility, building, and room)

[G] Sampling Location (e.g., drum, can, top, middle, as appropriate)

[H] Sample Matrix (e.g., swipe, solid)

[I] Sample Type (e.g., co-located, blank)

[J] Sample Container Size

[K] Procedure Number and Revision

[L] Requested Laboratory

[M] Analysis Requested

4.2 Sampling

4.2.1 Inspect the sample area and sampling work area for cleanliness.

4.2.2 Visually inspect sampling equipment and container bags for integrity and damaged containers.

4.2.3 **IF** damage to sampling equipment or to the sample containers is observed,
THEN discard the equipment or sample container set, **AND** RETURN TO step 4.1.3.

4.2.4 Open a sampling equipment package, as needed.

4.2.5 Open a package containing the sample collection container(s), if applicable and as needed, and stage the sampling container(s) for receipt of sample material, if needed.

4.2.6 From an opened sampling equipment package and/or sample container package, visually inspect sampling equipment and sample containers for damage.

4.2.7 **IF** damage to sampling equipment or to the sample containers is observed,
THEN discard the equipment or sample container set, **AND** RETURN TO step 4.1.3.

4.2.8 Record the time waste container is opened on Attachment 1.

4.2.9 Weigh the sample container and record weight on Attachment 1, if applicable.

NOTE

VOC sample collection is to be performed as quickly as possible to minimize VOC loss. To accommodate time considerations, all VOC and NHVOC samples for regular and co-located samples will be collected first, including Matrix Spike (MS) and Matrix Spike Duplicate (MSD) samples. The one-hour time frame will be satisfied when the last of the sample containers for an individual waste container for VOC samples have been filled and closed.

NOTE

TBs are **NOT** to be opened.

4.2.10 Collect the appropriate sample matrix and sample amount for sample container size and analysis required by the appropriate SAP, **AND** place it into sample container.

4.2.11 Close the sample collection container immediately, **AND** record the sampling time on Attachment 1.

NOTE

For ALARA reasons, sample container/package label information (excluding time and sampler initials) may be pre-filled out as necessary/applicable.

NOTE

Due to sampling dynamics/conditions, the sample container/package label may be affixed after the sample is removed from the sampling environment.

4.2.12 Record the following on the sample container/package label and affix to sample container/package, as necessary/applicable:

[A] Requested Analysis

[B] Date of sampling

[C] Time of sampling

[D] Sample ID Number

[E] Sampler initials

[F] Sampler organization

[G] Sample description

[H] QC designation, if applicable

4.2.13 Initiate COC using Attachment 2, Chain-of-Custody, by recording the following:

NOTE

More than one COC may be needed for the same BDR; therefore, information is entered on the first COC and as needed on each additional COC.

[A] COC number in the format COCXXRHYYZZ# where the XXRHYYZZ is the BDR number and # is consecutive numbers starting with 1

[B] BDR Number

[C] Waste Container Number

[D] Sampling location (name of the site, facility, building, room, and glovebox, as appropriate)

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[E] Sample Matrix (e.g., smear, solid)

[F] Sample Type

[G] Off-site shipping information (Method of Transfer, Shipping Organization, Bill of Lading Number)

[G.1] **IF NOT** applicable,
THEN mark N/A.

[H] Sample ID number

[I] Sampling date

[J] Sampling time

[K] Requested sample analysis

[L] Preservation method

[L.1] **IF NOT** applicable,
THEN mark N/A.

4.2.14 Weigh the sample/container and record the weight on Attachment 1, if applicable.

4.2.15 Sampler initiating custody: print name, sign, date, and enter time to initiate COC.

4.2.16 Record the COC number(s) on Attachment 1.

4.2.17 For any additional samples needed for this container, GO TO step 4.2.1 but skip step 4.2.8.

4.2.18 **IF** samples for VOC and NHVOC analysis were taken,
THEN upon completion of the sample collecting of VOC and NHVOC samples, confirm that the one-hour sample time limit is met, **AND** record in Comments section of Attachment 1(s) along with any collection problems.

[A] **IF** one-hour sample time limit is **NOT** met,
THEN complete sample procedure, **AND** initiate an NCR in accordance with CCP-QP-005.

NOTE

Due to sampling dynamics/conditions, TID's may be attached to the sample container/package after the sample is removed from the sampling environment.

4.2.19 Attach a TID to each sample container/package, if applicable.

[A] Date and sign/initial, as applicable.

4.2.20 Record TID number(s) on Attachment 1 in the comments section, if applicable.

NOTE

TIDs shall be installed such that the sample collection container(s) CAN **NOT** be opened without breaking one or more seals. TIDs or seals will be traceable to the individual who affixed these items.

4.2.21 Remove sample containers from sampling area according to facility procedures.

4.2.22 **IF** required by SAP,
THEN place the bagged-out sample containers in the sample holding containers with frozen Blue Ice®.

4.2.23 **IF** any TID applied to any part of the sample package is found to be broken during the process of transfer,
THEN initiate **AND** document this event on an NCR in accordance with CCP-QP-005.

4.2.24 **IF** additional waste containers are to be sampled,
THEN return to step 4.2.1.

4.3 Sample Transfer or Shipment

4.3.1 Sample Shipment

NOTE

Shipping will be processed through the Host site shipping/transportation department.

[A] **IF** samples are to be shipped,
THEN ensure that the required site Shipment Request Form(s), or equivalent, has been completed, if applicable.

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[B] **IF** samples are required to be packaged in frozen Blue Ice®, **THEN** ensure that the samples are packaged in frozen Blue Ice®.

[C] Ensure that the samples are secured.

[D] Ensure the TID number used on the shipping container is recorded on Attachment 1(s) **AND** on Attachment 2(s) in the Comments section located at the bottom of the page.

[E] Sign, date, and enter time on Attachment 2(s) to relinquish custody of samples for shipment.

[F] Complete Attachment 1(s) by entering the Sampler(s) printed name, signature, and date on Attachment 1(s).

[G] Photocopy the Attachment 2(s) and Attachment 1(s).

[H] Confirm the following accompanies the samples:

[H.1] Attachment 2(s) (original)

[H.2] Attachment 1(s) (copy)

NOTE

The Attachment 2(s) MUST be placed inside the sealed shipping container. Transfer of custody is complete when the Analytical Laboratory Sample Custodian receives the shipping container, opens the shipping container, **AND** signs, dates, and enters the time on the Attachment 2(s). The shipping documentation will serve to track physical transfer of the samples between the two Sample Custodians.

[I] Ensure that the original Attachment 2(s) and copies of Attachment 1(s) are in a re-sealable bag **AND** attached to the underneath (interior) of the shipping container lid.

NOTE

TIDs shall be installed such that the shipping container CAN **NOT** be opened without breaking one or more seals. Old or broken seals shall be completely removed from the shipping container **AND** replaced with a new seal(s) prior to shipment.

[J] Ensure the shipping container lid is installed **AND** TID is applied.

[K] Place the photocopied Attachment 2(s) and original Attachment 1(s) in the BDR Holding File.

4.3.2 Sample Transfer

[A] **IF** samples are required to be packaged in frozen Blue Ice®, **THEN** ensure that the samples are packaged in frozen Blue Ice®.

[B] Ensure that the samples are secured.

[C] Complete Attachment 1(s) by entering the sampler(s) printed name, signature, and date.

[D] Photocopy the Attachment 1(s).

[E] Place original Attachment 1(s) in the BDR holding file.

[F] Confirm that the original Attachment 2(s) and copies of Attachment 1(s) accompany the sample containers.

[G] Transfer sample containers to new location.

[H] Sign, date, and enter time on the Attachment 2(s) to relinquish custody of sample containers.

[I] After the receiving person at new location signs, dates, and enters the time on Attachment 2(s), photocopy Attachment 2(s).

[J] Place copies of Attachment 2(s) in the BDR holding file.

4.4 BDR Preparation and Submission

4.4.1 Assemble the following data for the BDR by performing the following:

[A] Attach and complete (minus the name, signature, and date) Attachment 5, Batch Data Report Cover Sheet.

[B] Attach Attachment 4, Batch Data Report Table of Contents.

[C] Attach Attachment 1(s), Sample Tracking Form.

[D] Attach Attachment 2(s), Chain-of-Custody.

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[E] Attach Attachment 3, Independent Technical Review Checklist.

[F] Attach copy of NCRs, if applicable.

[G] Attach copy of cleanliness and/or radiological contamination certification for the sampling equipment, if applicable.

[H] Attach copy of cleanliness and/or radiological contamination certification for the sampling containers, if applicable.

[I] Any applicable documentation required by the SAP.

4.4.2 Paginate the BDR, numbering each page with a sequential number.

4.4.3 Complete Attachment 4.

4.4.4 Ensure that the assembly order of BDR matches Attachment 4.

4.4.5 Print name, sign, and date Attachment 5.

4.4.6 Forward the BDR package to the ITR.

ITR

4.4.7 Review the BDR to the criteria in Attachment 3, **AND** document on Attachment 3.

4.4.8 Notify the Sampler of all errors or omissions found during the review.

4.4.9 Recheck the data after the errors or omissions have been rectified.

4.4.10 Ensure Attachment 3 is complete, print name, sign, and date Attachment 3 and Attachment 5.

4.4.11 Submit BDR to the Facility Records Custodian.

Facility Records Custodian

4.4.12 Receive, process, and transmit BDR(s) generated by this procedure in accordance with CCP-QP-008.

SPM

4.4.13 Retrieve copy of BDR from CCP Records.

4.4.14 Review the BDR to the criteria in Attachment 6, and document on Attachment 6.

4.4.15 Notify the Sampler or ITR of all errors or omissions found during the review.

4.4.16 Recheck the data after the errors or omissions have been rectified.

4.4.17 Ensure Attachment 6 is complete, print name, sign, and date Attachment 6.

4.4.18 Submit the completed Attachment 6 to Facility Records Custodian/Records Custodian.

Facility Records Custodian/Records Custodian

4.4.19 Receive, process, and transmit, when applicable, the Attachment 6 in accordance with CCP-QP-008.

4.5 Site Project Manager (SPM) Radiochemistry or ICP-MS Analytical Batch Data Report (BDR) Review

SPM

4.5.1 Obtain a copy of the Radiochemistry or ICP-MS Analytical BDR from CCP Records.

4.5.2 Review the BDR to the criteria in Attachment 7, and document on Attachment 7.

4.5.3 **IF** quality affecting problem is identified,
THEN initiate an NCR in accordance with CCP-QP-005, **AND** resolve accordingly.

4.5.4 Ensure Attachment 7 is complete, print, sign, and date Attachment 7.

4.5.5 Submit Attachment 7 to the Facility Records Custodian/Records Custodian.

Facility Records Custodian/Records Custodian

4.5.6 Receive, process, and transmit, when applicable, all records generated by this procedure in accordance with CCP-QP-008.

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5.0 RECORDS

5.1 Records generated during the performance of this procedure are maintained as quality assurance (QA) records in accordance with CCP-QP-008. The records are the following:

5.1.1 **QA/Lifetime**

[A] BDR:

[A.1] Attachment 5, Batch Data Report Cover Sheet

[A.2] Attachment 4, Batch Data Report Table of Contents

[A.3] Attachment 1(s), Sample Tracking Form

[A.4] Attachment 2(s), Chain-of-Custody

[A.5] Attachment 3, Independent Technical Review Checklist

[A.6] Copy of NCRs, if applicable

[A.7] Copy of cleanliness and/or radiological contamination certification for the sampling equipment, if applicable

[A.8] Copy of cleanliness and/or radiological contamination certification for the sampling containers, if applicable

[B] Attachment 7, Site Project Manager Radiochemistry or ICP-MS Analytical Batch Data Report Checklist

[C] Attachment 6, Site Project Manager Batch Data Report Checklist

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Attachment 1 – Sample Tracking Form

SAP and Revision of SAP	
Sampling Date	*Sampling Time*
Waste Container Open Time	
BDR Number	
Sampling Equipment Set Number	
Sampling Container Set Number	
Sampling Equipment Certification Number	
Sampling Container Certification Number	
Sample ID Number	
Waste Container Number	
Sampling Facility	
Sampling Location	
Sample Matrix	
Sample Type	
Sample Container Size	
Sample Container Weight (Grams)	
Sample/Container Weight (Grams)	
Procedure Number and Revision	
Requested Laboratory	
Analysis Requested:	
Comments:	
COC No.	
Samplers: *Print Name:*_____*Signature:*_____*Date:*_____ *Print Name:*_____*Signature:*_____*Date*_____	

Attachment 2 – Chain-of-Custody

COC No.: _____BDR No.:_____ Waste Container No.:_____

Sampling Facility:_____ Sample Matrix:_____ Sample Type:_____

Method of Transfer:_____ Shipping Organization: _____Bill of Lading Number:_____

Sample ID Number	Sampling Date	Sampling Time	Requested Sample Analysis	Preservation Method	Comments	Disposition

Sampler Initiating Custody:_____
Print Name Signature Date Time

Samples relinquished by:	Date:	Time:	Samples received by:	Date:	Time:

Comments:_____

Sample Disposition: Signature:_____ Printed Name: _____Date: _____Time:_____

Attachment 3 – Independent Technical Review Checklist

BDR No.:			
DESCRIPTION	**YES**	**NO**	**N/A**
1. Were data generation and reduction conducted in a technically correct manner with the methods used?			
2. Was the correct revision of operating procedure used? Record the revision number:_____			
3. Were all VOC and NHVOC samples for regular and co-located samples collected in 1 hour?			
4. If the 1 hour requirement was not met, was an NCR initiated?			
5. Was the correct SAP and revision used? Record the revision number:_____			
6. Were the data reviewed for transcription errors?			
7. Are BDR contents and field sampling records complete and do they match the Sampling Batch Data Report Table of Contents (Attachment 4)?			
8. Does the Sample Batch Report include no more than 20 samples (excluding field Quality Control samples), all of which have been collected within 14 days of the first sample in the batch?			
9. Were the sampling equipment and sample containers (e.g., spoons, sub-samplers, sampling containers) used for all samples in this batch clean (or purchased clean)?			
10. Are there acceptable cleanliness certificates for the sampling equipment used?			
11. Was a co-located sample (field duplicate), collected once per sampling batch or every seven days (whichever is more frequent)? (Attachment 1)			
12. Are the field sampling records complete and include acceptable sample area and sampling equipment inspections?			
13. Are data properly reported (e.g., data are reported in the correct units and with the correct number of significant figures)?			
14. Was the COC initiated after sample collection?			
15. Is all the data provided using reproducible ink and by the individual(s) generating it?			
16. Is all data entered clearly, legibly, and accurately and include sample identification numbers?			
17. All changes to original data lined out, initialed and dated by the individual making the changes?			
18. Was justification made for changing the original data?			
19. Were data changes made by a qualified individual?			
20. Have calculations been verified by a valid calculation program, a spot check of verified calculation programs, or 100 percent check of all hand calculations?			
21. Are values that are not verifiable to within rounding or significant difference discrepancies rectified?			
22. Was the QAO for precision met for collection of a field duplicate?			
23. Was the QAO for representativeness met (an approved sampling plan is established for this activity)?			
24. Was the QAO for completeness met (acceptance criteria is equal to or greater than 90 percent)?[1]			
Comments:			
[1] The completeness QAO is determined by dividing the number of samples that are acceptable for analyses by the number of samples that were attempted to be collected.			

I have reviewed 100 percent of the container specific and batch data in this report.

Independent Technical Reviewer:

_____ _____ _____

Printed Name Signature Date

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Attachment 4 – Batch Data Report Table of Contents

BDR No.:_____ **Date: _____**

Table of Contents		
Item	Description	Page No.
1		
2		
3		
4		
5		
7		
8		
9		
10		
11		

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Attachment 5 – Batch Data Report Cover Sheet

BDR No.: _____

Waste Container Number	
1	
2	
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Sampler:

_____	_____	_____
Printed Name	Signature	Date

ITR:

_____	_____	_____
Printed Name	Signature	Date

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Attachment 6 – Site Project Manager Sampling Batch Data Report Checklist

BDR No.:			
	YES	**NO**	**N/A**
1. Was the Independent Technical Review checklist completed and signed?			
2. Are Batch Data Report contents and field sampling records complete and do they match the Batch Data Report Table of Contents (Attachment 5)?			
3. Was the data reported in the correct units and with the correct number of significant figures?			
4. Was a Field Duplicate collected?			
5. Was the RPD criteria met?[1] (Precision)			
6. Was the sampling equipment certified free of radiological contamination? (Accuracy)			
7. Was the Sampling Plan approved? (Representativeness)			
8. Was the completeness $\geq$ 90 percent? (Completeness)?			
9. Was the procedure approved? (Comparability)			
Comments:			

[1] The precision criteria will be evaluated after analysis.

I have reviewed 100 percent of the container specific and batch data in this report.

Site Project Manager:

_____ _____ _____
Printed Name Signature Date

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Attachment 7 – Site Project Manager Radiochemistry or ICP-MS Analytical Batch Data Report Checklist

BDR No.: _____

DESCRIPTION	YES	NO	N/A
1. Date generation level independent technical review, validation, and verification are complete as evidenced by a completed, signed Independent Technical Review checklist?			
2. Are BDR contents complete (do they match the table of contents and include the Independent Technical Review checklist deliverable)?			
3. Are data properly reported (e.g., data are reported in the correct units and with the correct number of significant figures)?			
4. Have the analytical QAOs been met? (QAOs acceptance criteria may be altered if the analytical laboratory has other acceptable QC controls, see the waste-stream specific sampling and analysis plan.)			
a. Precision – relative percent difference (RPD) derived from laboratory duplicates ≤ 40?			
b. Accuracy – percent R derived from laboratory control samples 75 percent to 125 percent R and matrix spikes/matrix spike duplicates 50 to 150 percent R (when applicable)?			
c. Representativeness – collection of unbiased samples, mark as "N/A"			
d. Completeness – ratio of the number of samples accepted by this review to the number of samples submitted for analysis >90 percent?			
e. Comparability – did the analysts have current qualifications?			
5. Have the analytical QCs been met as evidenced by an acceptable laboratory ITR that used the QC acceptance criteria as specified in the waste-stream specific sampling and analysis plan?			
6. Has the sampling precision QAO been met for sample duplicates (RPD ≤ 25) when sampling duplicates are included in this BDR?			
Comments:			

I have reviewed 100 percent of the container specific and batch data in this report.

Site Project Manager:

_____	_____	_____
Printed Name	Signature	Date