

CCP-TP-008

Revision 9

CCP Solids Sampling Procedure

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APPROVED FOR USE

RECORD OF REVISION

Revision Number	Date Approved	Description of Revision
0	12/21/2004	Initial issue.
1	02/09/2005	Incorporated changes to ensure adequate safety and radiological control per BBWI.
2	02/18/2005	Incorporated changes to Sections 4.1.5, 4.1.6, 4.1.7, and Attachment 1.
3	04/15/2005	Addressed Carlsbad Field Office (CBFO) comments for Revision 1.
4	09/01/2005	Revised to address changes in operational procedures and reduction in the area to be sampled. Incorporated Carlsbad Field Office (CBFO) Document Review Record (DRR) comments.
5	06/08/2006	Enhancement to the procedure and in compliance with changes to CCP-PO-025 and changes as a result of CWI procedure changes.
6	08/08/2007	Revised to incorporate Grab Sampling from existing Accelerated Retrieval Project (ARP) drums in the Drum Packaging Station (DPS) units at ARP. Update to new review criteria and section 4 has been extensively rewritten.
7	03/18/2009	Revised in response to Central Characterization Project (CCP) Corrective Action Report (CAR) Number CAR-INL-0001-09. Also revised to add grab sampling from un-containerized waste retrieved from the Subsurface Disposal Area (SDA) at the Idaho National Laboratory (INL), and to update the location of the INL laboratory, which is no longer located at the Idaho Nuclear Technology and Engineering Center (INTEC) facility.
8	08/13/2009	Revised to incorporate cancellation of CCP-TP-161, <i>CCP Random Selection of Containers for Solids Sampling and Analysis</i> and addition of CCP-TP-162, <i>CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis</i> .
9	12/29/2010	Revised to clarify independent technical reviewer (ITR) independence.

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1.0 PURPOSE

This procedure provides instruction for obtaining random grab samples from trays of retrieved waste or selected containers of newly generated S3000 homogeneous solids and S4000 soil/gravel waste streams generated from retrieval of transuranic (TRU) waste from areas within the Subsurface Disposal Area (SDA) at the Idaho National Laboratory (INL) and assembling and reviewing solids sampling batch data reports (BDRs). Containers for sampling will be randomly selected as described in CCP-TP-162, *CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis*.

1.1 Scope

This procedure identifies the steps to collect, handle, and package samples; prepare sample data and records; and review BDRs.

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*
- CCP-TP-006, *CCP Visual Examination Technique for INL Newly Generated TRU Waste Retrieved from Pits*
- CCP-TP-162, *CCP Random Selection of Containers for Solids and Headspace Gas Sampling and Analysis*
- CCP-TP-180, *CCP Analytical Sample Management*

2.2 Training

- 2.2.1 Central Characterization Project (CCP) quality affecting 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.
- 2.2.2 Personnel who perform work in the Radioactive Waste Management Complex (RWMC) SDA must receive required site-specific training as identified by the RWMC Training Coordinator prior to performing this procedure.

2.3 Precautions and Limitations

- 2.3.1 Co-located samples are collected at a frequency of one per sampling batch, or once per week, whichever is more frequent. A sampling batch is a suite of homogeneous solids and/or soil/gravel 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.
- 2.3.2 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.
- 2.3.3 The first samples collected are for volatile organic compounds (VOCs). To minimize vaporization of VOCs, there is a one-hour time frame in which the sampling operation must be performed. For a container of waste, this is defined from the point the drum liner bag has been breached/opened until the sample vial(s) is/are capped. For waste that has not yet been packaged, it is defined from the point the waste tray is brought into the Drum Packaging Station (DPS).
- 2.3.4 For the purposes of this procedure, the word “clean” refers to U.S. Environmental Protection Agency (EPA) or environmentally clean (not radiological).

- 2.3.5 Samples will be shipped within a maximum of four calendar days of the time they are collected and removed from the DPS. If, for any reason beyond project control, the sample is **NOT** shipped within four calendar days, confer with INL Analytical Laboratories Department (ALD) Sample Custodian via phone to alert them as to the condition and expedite the shipment/processing as appropriate.
 - 2.3.6 The hammer will **NOT** come in contact with the sample. The hammer will be reused as needed and is not certified cleaned.
 - 2.3.7 Personnel must avoid excessive reaching and bending by accessing sample collection location from the nearest DPS gloveport; must use tools to sort waste, and must adjust working height access to DPSs using platforms or standing chairs as appropriate for individual.
 - 2.3.8 Industrial Hygiene (IH) monitoring for non-radiological contaminants must be performed.
 - 2.3.9 Hazardous closed inner containers found in waste in the DPSs will be removed without opening and returned promptly to the Retrieval Area (RA).
 - 2.3.10 Personnel performing the following: placing a new drum on port, drum changeout, or bagging items out of DPS are required to wear the personal protection equipment (PPE) directed by Radiological Control.
 - 2.3.11 Liquids in separate closed containers will not be deliberately mixed in liquid form during disposition.
 - 2.3.12 Waste handling will not be permitted when affected DPS fire suppression is inoperable.
- 2.4 Prerequisite Actions
- 2.4.1 Obtain concurrence from Accelerated Retrieval Project (ARP), Shift Operations Manager (SOM), or Operation Foreman (OF) that sampling can commence.
 - 2.4.2 Radiological Control Technician (RCT) coverage is required during DPS operations.
 - 2.4.3 ARP sample refrigerator is in operation and temperature is being maintained 4 ± 2 °C before samples are removed from the DPS for storage in the refrigerator.

- 2.4.4 Portable sample cooler(s) containing Blue Ice[®] packs are staged in the Airlock prior to commencing sampling operations.
- 2.4.5 Prior to opening the container to be sampled, or prior to introduction of waste tray that will be sampled, verify a DPS is available to receive the sample.

2.5 Sample Handling and Custody Requirements

NOTE

The field sample storage refrigerator has a temperature range of approximately ± 2 °C. The refrigerator temperature is monitored using a data logger calibrated per INL Measuring and Test Equipment (M&TE) program.

- 2.5.1 Samples will be cooled to 4 °C. Samples are to be transported in a shipping container packed with frozen Blue Ice[®] packs.
- 2.5.2 Chain of custody (COC) will be initiated after container and equipment inspection. Sample custody will be maintained by ensuring the samples are sealed or locked in the possession of or within the view of a Solids Sampler, in a sealed or locked container controlled by a Solids Sampler, or in a secure controlled-access location.
- 2.5.3 Tamper indicating devices (TIDs) have physical characteristics that would immediately indicate tampering should container integrity be violated. TIDs must be affixed to loaded shipping containers.

2.6 Supplies

- 2.6.1 Certified-clean clear glass, pre-weighed, labeled sample containers and lids will be provided by the INL Laboratory in accordance with CCP-TP-180, *Analytical Sample Management*. The labels will contain fields indicating the sample ID and the requested analysis. The tare weight for the sample container and lid will be provided by the INL Laboratory and documented at the laboratory.
- 2.6.2 One-time-use certified-clean sample collection equipment includes plastic spoons, stainless-steel scoopulas, stainless-steel chisels, and stainless-steel tongs in sealed packaging.

2.6.3 Other equipment includes:

- [A] Aluminum foil
- [B] Hammer – (will **NOT** come in contact with sample)
- [C] Black indelible pens
- [D] Large resealable plastic bags
- [E] Custody seals
- [F] Frozen Blue Ice[®] packs
- [G] TIDs
- [H] Kimwipes, Terri wipes, or suitable wipe-down cloths
- [I] Sample kit
- [J] Sample holding container
- [K] Tape
- [L] Bag out bag

3.0 RESPONSIBILITIES

3.1 Independent Technical Reviewer (ITR)

NOTE

The independent technical review will be performed by someone who is qualified to have done the work but shall not be involved in the generation or recording of the data under review.

3.1.1 Performs independent technical review of BDR.

3.2 Visual Examination Expert (VEE)

3.2.1 Ensures the compliant operation of the sampling process.

3.2.2 Approves Attachment 5, CCP Solids Sampling Batch Data Report Cover Sheet.

3.3 Solids Sampler

3.3.1 Inspects sample area to ensure that gross visible contamination (e.g., excessive waste in DPS, hydraulic fluid from hoses, etc.) that has the potential to contaminate waste samples is thoroughly removed prior to sampling.

3.3.2 Inspects sample containers and sampling equipment for cleanliness and damage before sampling.

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 BDRs.

3.3.6 Prepares samples for transfer and/or shipment.

3.4 Facility Records Custodian

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

- 3.5 INL Laboratory
 - 3.5.1 Provides certified-clean sample containers under CCP INL Laboratory procedures.
 - 3.5.2 Receives sample shipment.
 - 3.5.3 Performs sample analysis and validation in accordance with CCP certified INL Laboratory procedures.
- 3.6 Radiological Control Technician (RCT)
 - 3.6.1 Performs surveys and records results, when needed, on applicable forms and affixes labels, as needed, on items as required (**NOT** to pre-weighed Sample Vials).
- 3.7 Operations Foreman (OF)
 - 3.7.1 Ensures the safe operations of the sampling process.
- 3.8 Radiological Control Foreman/Radiological Control Lead (RCF/RCL)
 - 3.8.1 Provides direction for safe handling when external contamination or radiation exceeds established limits.

4.0 PROCEDURE

4.1 Preliminary Sample Collection Activities Within the DPS

NOTE

A hand survey is performed for contamination following removal of hands from DPS glove ports or as directed by RCTs.

Solids Sampler

- 4.1.1 Ensure the sample area within the DPS is visibly clean, **AND** indicate YES on Attachment 1, CCP Solids Sample Tracking Form (Item 3).
-

NOTE

When inspecting sample containers and equipment, bag integrity must be maintained prior to use.

NOTE

The COC Form provided by the INL Laboratory provides some pre-printed information including the I-CHEM Container Production Number.

NOTE

A set of certified-clean sample collection equipment includes a plastic spoon, stainless-steel scoopula, stainless-steel chisel, and stainless-steel tongs in sealed packaging.

- 4.1.2 Obtain a set of regular and co-located sample containers and sampling equipment.

[A] Visually inspect sampling equipment and container bags for integrity.

- 4.1.3 **IF** damage to sampling equipment packaging or to the sample containers (including overpack jars) is observed, **THEN** perform the following:

[A] Discard the suspect or damaged kit.

[B] Obtain a new set.

[C] Perform visual inspection as necessary until an acceptable set is obtained.

4.1.4 **WHEN** an acceptable set of containers and equipment are obtained that meet the following criteria:

- Sample equipment and bags are not damaged
- Sample containers are not damaged and containers are visibly clean
- Kit acceptable and ready for use,

THEN check YES on Attachment 1 Items 4, 5, and 6.

NOTE

It is required that regular and co-located samples are collected on a 1:1 ratio. Therefore, if any of the sample containers are damaged prior to the start of sampling process, the complete set of regular and co-located sample containers will be replaced with a new set, and the corresponding COC Form will be voided and forwarded to the Facility Records Custodian. The INL Laboratory will be notified of the voided COC Form.

NOTE

During the sample collecting activity, if any containers are damaged only the unusable kit (regular or co-located) will be replaced. The remaining components of the damaged set will be discarded and the corresponding COC voided and forwarded to the Facility Records Custodian. The INL Laboratory will be notified of the voided COC Form. The unusable kit will be processed as Waste Added In Process (WAIP).

4.1.5 **IF** damage is observed to sampling equipment packaging, **OR** to the sample containers (including overpack jars), **THEN** segregate the sampling equipment and containers, **AND** repeat steps 4.1.2 through 4.1.4 as necessary to ensure only certified clean, undamaged equipment and containers are used.

4.1.6 Initiate the COC Form

[A] For previously packaged waste drums, use the Visual Examination (VE) Data Sheet, Attachment 1, from CCP-TP-006, *CCP Visual Examination Technique for INL Newly Generated TRU Waste Retrieved from Pits*, **AND** determine the Waste Matrix Code as identified in Section 5.

- [B] For waste not yet packaged placed into the DPS, the VE Operator will verify that the tray holds more than 50% of the selected waste that is being sampled.
- [C] Record the Waste Matrix Code (e.g., S3900 or S4200) Lot Number and Random Sample Number as the Sampling Batch Number on the COC, (e.g., S3900-Lot-XX-YY where XX is the Lot Number and YY is the Random Sample Number).
- [D] Record the waste container number associated with the sample on the COC Form.

4.1.7 Enter the following information on Attachment 1:

- [A] Sample Date (Item 7)
- [B] Co-Located Sample? (Item 8) Circle YES or NO
- [C] COC Form Number (Item 9)
- [D] Waste Drum Number (Item 10)
- [E] Sample Batch Number (Item 11)

4.1.8 Ensure that the sample containers are staged and ready for sampling.

4.1.9 Set aside the 250 milliliters (ml) semi-volatile organic compound (SVOC) jars for later use.

4.1.10 Notify the VEE or OF upon completion of step 4.1.9.

4.2 Sample Selection from Tray

NOTE

Additional radiological surveys may be performed at any step in this section as deemed necessary by the RCT.

- 4.2.1 Ensure the Random Sample Number and time the container was opened or the waste tray received in the DPS is recorded on Attachment 1 (Item 12).
-

NOTE

Each lot will require a minimum of five samples. Table 1, Identification of Assigned Tray Quadrant for Each Sample of Soil and Sludge, provides for up to ten samples per lot to allow for extra samples as needed.

Table 1. Identification of Assigned Tray Quadrant for Each Sample of Soil and Sludge

	Random Sample Number	Excel® "rand()" Number	Assigned Tray Quadrant		Random Sample Number	Excel® "rand()" Number	Assigned Tray Quadrant
Random Sample Lot 1	1	0.994269	4	Random Sample Lot 4	1	0.233844	1
	2	0.347857	2		2	0.794693	4
	3	0.522142	3		3	0.891395	4
	4	0.177662	1		4	0.609959	3
	5	0.033876	1		5	0.624622	3
	6	0.915488	4		6	0.624532	3
	7	0.224135	1		7	0.744433	3
	8	0.448786	2		8	0.296603	2
	9	0.747725	3		9	0.155278	1
	10	0.622587	3		10	0.205542	1
Random Sample Lot 2	1	0.639589	3	Random Sample Lot 5	1	0.843293	4
	2	0.621974	3		2	0.195634	1
	3	0.624304	3		3	0.535563	3
	4	0.508580	3		4	0.982452	4
	5	0.984154	4		5	0.872710	4
	6	0.591604	3		6	0.097449	1
	7	0.360183	2		7	0.261370	2
	8	0.574759	3		8	0.128330	1
	9	0.919905	4		9	0.545505	3
	10	0.604090	3		10	0.621211	3
Random Sample Lot 3	1	0.979728	4	Random Sample Lot 6	1	0.131662	1
	2	0.128751	1		2	0.267960	2
	3	0.684693	3		3	0.847529	4
	4	0.583278	3		4	0.795365	4
	5	0.592716	3		5	0.493783	2
	6	0.280865	2		6	0.657725	3
	7	0.591564	3		7	0.729289	3
	8	0.963153	4		8	0.561035	3
	9	0.341868	2		9	0.143969	1
	10	0.697996	3		10	0.133467	1

Methodology Used for Tray Quadrant Assignment:

The MS-Excel® "rand()" function was used to generate a random number between 0 and 1 for each Random Sample. If the random number fell between 0.00 and 0.25, Quadrant 1 was assigned; if between 0.25 and 0.50, Quadrant 2 was assigned; if between 0.50 and 0.75, Quadrant 3 was assigned; and if between 0.75 and 1.00, Quadrant 4 was assigned.

RCT

- 4.2.2 Perform a radiation survey of the waste tray at the DPS wall/window during transition as the waste to be sampled is being brought into the DPS and during waste sampling.

Solids Sampler

NOTE

Information is to be documented describing the sample event, such as sample collection problems in the Comment section of Attachment 1, line 15.

- 4.2.3 **WHEN** directed by the OF,
THEN proceed with the sampling activity.

WARNING

Hands and DPS gloves may be damaged by sharp objects in the waste.

NOTE

RCT will perform oversight of work area and personnel Rad worker practices during sampling operations.

NOTE

A hand survey is performed for alpha following removal of hands from DPS glove ports as directed by RCT personnel.

- 4.2.4 Record the Assigned Tray Quadrant for the sample number from Table 1, on Attachment 1 (Item 13).
- 4.2.5 The sampling approach within the tray will be to obtain samples representative of the container contents. The tray will be divided into quadrants: 1-top left, 2-top right, 3-bottom left, and 4-bottom right. The sample will be collected from an assigned randomly selected quadrant. Table 1 designates the quadrant from which the samples will be collected for each container.
- 4.2.6 Using the Random Sample Number and Lot Number, identify and locate the assigned Tray Quadrant for sample collection per Figure 1, Diagram of Waste Tray Quadrant Locations below.

NOTE

Rocks or debris SHALL **NOT** be part of a sample.

NOTE

VOC sample collection is to be performed as quickly as possible to minimize VOC loss. To accommodate time considerations, all VOC and non-halogenated volatile organic compound (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 20 ml sample vials for these samples have been filled and capped.

NOTE

Trip Blanks are **NOT** to be opened.

4.2.10 **IF** the sample material in the identified quadrant is **NOT** solidified (i.e., **NOT** a monolith), **THEN** collect a sample from the identified quadrant associated with the sample number by performing the following:

[A] Remove the sample vial(s) from the overpack jar, excluding Trip Blanks working with only one overpack jar at a time.

NOTE

A sample amount of 2.5 – 3.0 grams is needed in each of the 20 ml vials.

[B] Place, using the clean stainless-steel sample equipment, the sample material into 20 ml glass sample vial(s), cap the **vial(s) immediately**, **AND** replace the vials in their original overpack containers with the plastic lids against the bottom, **AND** replace the lid on the overpack jar.

[C] Record the date and time each vial is closed on the COC.

[D] For Trip Blanks, the time and date are to be recorded to reflect when the 250 ml overpack jar that is associated with 20 ml sample jars is closed.

[E] Repeat this activity for each of the VOC and NHVOC (regular and co-located) sample vials.

[F] Upon completion of the filling process of ALL VOC and NHVOC (regular and co-located) sample vials, confirm that

the one-hour sample time limit is met, **AND** record Yes on line 16 of Attachment 1.

[F.1] **IF** one-hour sample time limit is **NOT** met, record No on line 16 of Attachment 1, **THEN** complete sample procedure, **AND** initiate a Nonconformance Report (NCR) in accordance with CCP-QP-005, *CCP TRU Nonconforming Item Reporting and Control*.

[F.2] Record any collection problems in comment section of line 15, Attachment 1.

[G] Record the sample equipment used on line 17 of Attachment 1, **AND GO TO** step 4.2.13.

NOTE

The hammer is **NOT** to come in contact with the sample material.

4.2.11 **IF** solidified waste is located in the sample quadrant, **THEN** proceed with the following:

[A] Notify OF and VEE of intent to sample solidified waste.

[B] Use the appropriate, certified-clean tool to reduce solid materials to a size appropriate for homogenization and sampling.

[C] Remove the sample vials from the overpack jar, excluding Trip Blanks working with only one overpack at a time.

NOTE

A sample amount of 2.5 – 3.0 grams is needed in each of the 20 ml vials.

[D] Place, using the clean stainless-steel sample equipment, the sample material into 20 ml glass sample vial(s), cap the vial immediately, **AND** replace the vial(s) in their original overpack containers with the plastic lids against the bottom, **AND** replace the lid on the overpack jar.

[E] Record the date and time each vial is closed on the COC.

[F] For Trip Blanks, the time and date are to be recorded to reflect when the 250 ml overpack jar that is associated with 20 ml sample jars is closed.

- [G] Repeat this activity for each of the VOC and NHVOC (regular and co-located) sample vials.
- [H] Upon completion of the filling process of ALL VOC and NHVOC (regular and co-located) sample vials, confirm that the one-hour sample time limit is met, **AND** record Yes on line 16 of Attachment 1.
 - [H.1] **IF** one-hour sample time limit is **NOT** met, record No on line 16 of Attachment 1, **THEN** complete sample procedure, **AND** initiate a Nonconformance Report (NCR) in accordance with CCP-QP-005.
- [I] Record the sample equipment used on line 17 of Attachment 1.

4.2.12 Wipe down the outside of the overpack jar(s) using a dry wipe.

4.2.13 Record the following on each label on all overpack jars:

- [A] Time, using repeat backs from the times previously recorded on the COC form,
- [B] Date,
- [C] Sample description, and
- [D] Operator initials on each of the overpack jar labels.

NOTE

A minimum sample amount of 35 grams is needed for Metals, **AND** SVOC sample.

4.2.14 Place, using either plastic or stainless-steel sample tools, the Metals and SVOC sample into the 250 ml sample containers (regular and co-located), **AND** CLOSE the containers.

4.2.15 Record the date and time each 250 ml jar is closed on the COC.

4.2.16 Wipe down the outside of the container using a dry wipe.

4.2.17 Record the following on each jar:

- [A] Time, using repeat backs from the times previously recorded on the COC form,
- [B] Date,
- [C] Sample description, and
- [D] Operator initials on each of the jar labels.

4.2.18 Apply a TID to all 250 ml jars containing samples, **AND** record the operator's initials on the TID.

NOTE

The following implements a **RCT HOLD** requirement.

RCT

4.2.19 Perform a contamination/radiation survey of 250 ml containers per Host site procedures.

NOTE

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

NOTE

Samples must be refrigerated as soon as possible.

Solids Sampler

4.2.20 Samples are to be bagged out of the DPS as follows:

4.2.21 Ensure line of sight is maintained by solids sampler having custody of sample at all times.

4.2.22 Ensure bag is pulled outside of the port.

4.2.23 Set up a High-Efficiency Particulate Air (HEPA)-filtered vacuum at the bag cut area.

4.2.24 While supporting the item(s) to be bagged out, slowly push the item(s) through the port and into the bag.

4.2.25 Prepare the bag for cutting.

4.2.26 Cut the bag at the prepared area.

4.2.27 Tape the exposed ends of the cut bag.

RCT

4.2.28 Ensure that the bagged-out item(s) are packaged per Host site procedures.

4.2.29 Ensure applicable radioactive material labels are placed on the bagged-out item(s).

Solids Sampler

4.2.30 Place the bagged-out items in the sample holding containers with frozen Blue Ice[®] packs.

4.2.31 Print name, sign, and date all COC Forms, **AND** Item 18 on Attachment 1.

NOTE

Attachment 1 accompanies the COC Form for data entry and signature.

4.2.32 Transport samples to sample refrigerator and secure.

4.2.33 Document COC, as necessary.

NOTE

Personnel may perform non-WIPP sampling activities at this point. No CCP records will be generated from non-WIPP sampling activities.

4.3 Sample Movement

NOTE

Additional radiological surveys are performed at any step in this section as deemed necessary by the RCT.

NOTE

The remaining sections will be performed after all field sampling activities have been completed.

Solids Sampler

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

4.3.2 **IF** formal transfer of custody is **NOT** performed and documented on the COC, **THEN** ensure sample integrity by remaining in the same room, within eye contact of all unsecured samples for the duration of monitoring activities, **AND** until all samples are returned to the refrigerator and secured.

4.3.3 Document any change of custody, as necessary, on the COC Form.

4.4 Sample Transfer/Shipment and COC

Solids Sampler

4.4.1 Ensure that the required site Shipment Request Form(s), or equivalent, has been completed.

4.4.2 Ensure that the sample container(s) are obtained from the refrigerator.

- 4.4.3 Ensure sample ID numbers on Attachment 1 match the information on the COC form and record Yes on Attachment 1, item 19.
- 4.4.4 Ensure that the samples are packaged in frozen Blue Ice[®] packs to ensure and maintain sample temperature.
- 4.4.5 Ensure that the sample is secured.
- 4.4.6 Ensure the TID number used on the shipping container is recorded on Attachment 1, Item 20, **AND** on the COC Form in the Comments section located at the bottom of the page, if applicable.
- 4.4.7 Sign, date, and enter time on the COC to relinquish custody of samples for shipment.
- 4.4.8 Complete Attachment 1 by entering the sampler(s) printed name, signature, and date on Attachment 1, Item 21.
- 4.4.9 Photocopy the COC Form(s) and Attachment 1.
- 4.4.10 Confirm the following accompanies the samples:
 - [A] COC (original)
 - [B] Attachment 1 (copy)

NOTE

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

- 4.4.11 Ensure that the original COC Form(s) is/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 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.

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

4.4.13 Ensure the shipping container lid is installed, **AND** TID is applied.

4.4.14 Ensure that transportation of the shipping container to INL Laboratory has been arranged.

4.4.15 Place the photocopied COC Form(s) and Attachment 1(original) in the BDR Holding File.

4.4.16 **WHEN** the signed COC Form(s) is/are received from INL Laboratory, **THEN** update COC records, **AND** place a copy of the completed COC Form(s) in the BDR Holding File.

Solids Sampler

4.4.17 Obtain a copy of Attachment 1, Waste Data and Approvals Sections, of CCP-TP-006.

4.4.18 Place a copy of Attachment 1, Waste Data and Approvals Section, of CCP-TP-006 in the BDR Holding File.

4.5 BDR Preparation and Submission

Solids Sampler

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

- [A] Attach and complete CCP Solids Sampling Batch Data Report Cover Sheet (Attachment 5).
- [B] Attach CCP Solids Sampling Batch Data Report Table of Contents (Attachment 4).
- [C] Attach CCP Solids Sample Tracking Form (Attachment 1).

- [D] Attach CCP Solids Sample Chain of Custody Form (see Attachment 2, CCP Solids Sampling Chain-of-Custody Form, for an example).
- [E] Attach CCP Solids Sampling Independent Technical Review Checklist (Attachment 3).
- [F] Attach copy of Temperature Data Logger Sheets for the time period that the sample is in field sample refrigerator.
- [G] Attach copy of NCRs, if applicable.
- [H] Attach copy of cleanliness certification for the sampling equipment.
- [I] Attach copy of Attachment 1, CCP Waste Visual Examination Technique Data Form, the Waste Data and Approvals Sections, of CCP-TP-006.

4.5.2 Ensure that the assembly order of BDR matches BDR Table of Contents.

4.5.3 Paginate the BDR, labeling each page with a sequential number.

4.5.4 Complete Attachment 4, CCP Solids Sampling Batch Data Report Table of Contents.

4.5.5 Submit the BDR package to the ITR.

4.6 Independent Technical Review

NOTE

If any item on the Attachment 3, CCP Solids Sampling Independent Technical Review Checklist, is marked NO, an NCR will be initiated if the condition **CAN NOT** be mitigated, in accordance with CCP-QP-005, **AND** only as a single NCR that identifies all deficiencies. If any item in Attachment 3 is marked N/A, an explanation shall be provided in the comments block.

ITR

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

4.6.2 Print name, sign, and date Attachment 3 and Attachment 5.

4.6.3 Forward BDR to the VEE for review.

4.7 VEE Review

4.7.1 Review BDR for completeness.

4.7.2 Print name, sign, and date Attachment 5.

4.7.3 Forward the completed BDR to the Facility Records Custodian for records processing.

4.8 Batch Data Report Submission

Facility Records Custodian

4.8.1 Receive, process, and transmit original completed BDR in accordance with CCP-QP-008 into the CCP INL Records Center.

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 1, CCP Solids Sample Tracking Form
- [A.2] CCP Solids Sample Chain-of-Custody Form (Example)
- [A.3] Attachment 3, CCP Solids Sampling Independent Technical Review Checklist
- [A.4] Attachment 4, CCP Solids Sampling Batch Data Report Table of Contents
- [A.5] Attachment 5, CCP Solids Sampling Batch Data Report Cover Sheet
- [A.6] Copy of Attachment 1, the Waste Data and Approvals Sections, of CCP-TP-006
- [A.7] Copy of NCRs, if applicable
- [A.8] Copy of Temperature Data Logger Sheets
- [A.9] Copy of Certification of Cleanliness for Sampling Equipment

Attachment 1 – CCP Solids Sample Tracking Form

General Information – Complete form in indelible ink. Make correction with a single line strikeout. Initial and date changes.

1. Sample Location: Accelerated Retrieval Project Site

2. Sample Purpose: Support of Acceptable Knowledge

3. Sampling area within DPS is visibly clean?

YES

4. Sample equipment and bags are **NOT** damaged?

YES

5. Sampling containers are **NOT** damaged and the containers are visibly clean?

YES

6. Kit acceptable and ready for use?

YES

7. Sample date: _____ 8. Co-Located Sample? Circle Yes or NO

9. Chain of Custody Form Number: _____

10. Waste Drum Number: _____

11. Sample Batch Number: _____

12. Random Sample Number: _____ Time container opened or waste tray brought into DPS: _____

13. Assigned Tray Quadrant: _____ Alternate Tray Quadrant: _____

14. Sample Description:

Homogeneous Solids (Waste Matrix Code S3900 Waste Stream ID-SDA-Sludge)

Soil/Gravel (Waste Matrix Code S4200, Waste Stream ID-SDA-Soil)

15. Comments (Include sample collection problems, if any): _____

16. One Hour sample time limit met: YES NO

17. Sampling equipment used: _____

18. Name of Solids Sampler: Print: _____ Sign: _____ Date: _____

19. Sample ID numbers match the information recorded on the COC Form: YES N/A NO

20. Shipping Container TID S/N: _____

21. Name of Solids Sampler: _____
Printed Name Signature Date

Attachment 2 – CCP Solids Sample Chain-of-Custody Form (Example)

Form #
AR4 rev 0
24Sep04

Accelerated Retrieval Project Chain Of Custody

COC No. **AR4«Fid_ID
_Num»R1**

Sampling Location: RWMC AR Lab: INL Type Sample: Regular Waste Container ID Number: _____

Sample Matrix.....: SOLIDS Homogeneous Solids Soil/Gravel Sampling Batch No: _____

Sampler(s): _____
Printed Signature Date/Time

Sample ID Number	Sample Date	Sample Time	Container Size (mL)	I-CHEM Container Production No	Sample Analysis	Comments	Disposition*
AR4«Fid_ID			1 x 20		VOC Sample		
AR4«Fid_ID			1 x 20		VOC Spare		
AR4«Fid_ID			1 x 20		VOC Trip Blank Sample		
AR4«Fid_ID			1 x 20		VOC Trip Blank Spare		
AR4«Fid_ID			1 x 20		NHVOC Sample		
AR4«Fid_ID			1 x 20		NHVOC Spare		
AR4«Fid_ID			1 x 20		NHVOC Trip Blank Sample		
AR4«Fid_ID			1 x 20		NHVOC Trip Blank Spare		

NOTE: For preservation, all samples were stored at a controlled temperature of 4° C, then packed with chemical ice for shipment.

Samples Relinquished by (Signature):	Date	Time	Samples Received by (Signature):	Date	Time

Comments: * Disposition fields are completed by the laboratory.

All samples analysis complete and samples removed from custody control and dispositioned

Signature Date

Attachment 2 – CCP Solids Sample Chain-of-Custody Form (Example) (Continued)

Form #
AR4 rev 0
24Sep04

Accelerated Retrieval Project Chain Of Custody

COC No. **AR4«Fid_ID
_Num»R2**

Sampling Location: RWMC AR Lab: INL Type Sample: Regular Waste Container ID Number: _____

Sample Matrix.....: SOLIDS Homogeneous Solids Soil/Gravel Sampling Batch No: _____

Sampler(s): _____

Printed

Signature

Date/Time

Sample ID Number	Sample Date	Sample Time	Container Size (mL)	I-CHEM Container Production No	Sample Analysis	Comments	Disposition*
AR4«Fid_ID			1 x		Metals and SVOC		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: For preservation, all samples were stored at a controlled temperature of 4° C, then packed with chemical ice for shipment.

Samples Relinquished by (Signature):	Date	Time	Samples Received by (Signature):	Date	Time

Comments: * Disposition fields are completed by the laboratory.

All samples analysis complete and samples removed from custody control and dispositioned _____
Signature Date

Attachment 2 – CCP Solids Sample Chain-of-Custody Form (Example) (Continued)

Form #
AR4 rev 0
24Sep04

Accelerated Retrieval Project Chain Of Custody

COC No. **AR4«Fid_ID_**
Num»C1

Sampling Location: **RWMC AR** Lab: **INL** Type Sample: **Co-located** Waste Container ID Number: _____

Sample Matrix.....: **SOLIDS** Homogeneous Solids Soil/Gravel Sampling Batch No: _____

Sampler(s): _____
Printed Signature Date/Time

Sample ID Number	Sample Date	Sample Time	Container Size (mL)	I-CHEM Container Production No	Sample Analysis	Comments	Disposition*
AR4«Fid_ID			1 x 20		VOC Sample		
AR4«Fid_ID			1 x 20		VOC Spare		
AR4«Fid_ID			1 x 20		VOC MS		
AR4«Fid_ID			1 x 20		VOC MSD		
AR4«Fid_ID			1 x 20		VOC Trip Blank Sample		
AR4«Fid_ID			1 x 20		VOC Trip Blank Spare		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: For preservation, all samples were stored at a controlled temperature of 4° C, then packed with chemical ice for shipment.

Samples Relinquished by (Signature):	Date	Time	Samples Received by (Signature):	Date	Time

Comments: * Disposition fields are completed by the laboratory.

All samples analysis complete and samples removed from custody control and dispositioned _____
Signature Date

Attachment 2 – CCP Solids Sample Chain-of-Custody Form (Example) (Continued)

Form #
AR4 rev 0
24Sep04

Accelerated Retrieval Project Chain Of Custody

COC No. **AR4«Fid_ID_**
Num»C2

Sampling Location: RWMC AR Lab: INL Type Sample: Co-located Waste Container ID Number: _____

Sample Matrix.....: SOLIDS Homogeneous Solids Soil/Gravel Sampling Batch No: _____

Sampler(s): _____
Printed Signature Date/Time

Sample ID Number	Sample Date	Sample Time	Container Size (mL)	I-CHEM Container Production No	Sample Analysis	Comments	Disposition*
AR4«Fid_ID			1 x 20		NHVOC Sample		
AR4«Fid_ID			1 x 20		NHVOC Spare		
AR4«Fid_ID			1 x 20		NHVOC MS		
AR4«Fid_ID			1 x 20		NHVOC MSD		
AR4«Fid_ID			1 x 20		NHVOC Trip Blank		
AR4«Fid_ID			1 x 20		NHVOC Trip Blank Spare		
AR4«Fid_ID			1 x 250		Metals and SVOC		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: For preservation, all samples were stored at a controlled temperature of 4° C, then packed with chemical ice for shipment.

Samples Relinquished by (Signature):	Date	Time	Samples Received by (Signature):	Date	Time

Comments: * Disposition fields are completed by the laboratory.

All samples analysis complete and samples removed from custody control and dispositioned _____
Signature Date

Attachment 3 – CCP Solids Sampling Independent Technical Review Checklist

Batch Data Report No.: _____

Description	YES	NO	N/A
1. Were data generation and reduction conducted in a technically correct manner in accordance with the methods used?			
2. Was the correct revision of operating procedure used? Rev. _____			
3. Were the data reviewed for transcription errors?			
4. Are BDR contents and field sampling records complete and do they match the CCP Solids Sampling Batch Data Report Table of Contents (Attachment 4)?			
5. Does the Sample Batch Report include up to 20 samples all taken within 14 days of the first sample?			
6. Were the sampling equipment and sample containers (e.g., spoons, sub-samplers, vials) used for all samples in this batch cleaned (or purchased clean)?			
7. Was a co-located sample collected once per sampling batch or every seven days (whichever is more frequent)? (Attachment 1)			
8. Was the co-located sample collected from the same quadrant? (Attachment 1)			
9. Was a trip blank included in each sample package?			
10. Were samples cooled to 4° C for storage and/or were samples transported in a shipping container with frozen Blue Ice®?			
11. For each sample taken, were the data complete in Attachments 1 and 2 for the following?			
a. Name of sampling facility			
b. Waste container ID number			
c. Sample ID number			
d. Type of sample matrix (i.e., solids or soil/gravel)			
e. Type of sampling equipment used (e.g., scoop, chisel)			
f. Type of sample container used and manufacturer's lot number assigned to that container.			
g. Analysis requested			
h. QC designation, if applicable (e.g., trip blank, field duplicate [co-located])			
i. COC form number			
j. Analytical laboratory requested to do analysis			
k. Names, signatures, dates, times of sample handlers (from sample collection [initiation of custody] through acceptance by analytical laboratory.)			
l. Comments pertinent to sampling activities			
m. Randomly selected quadrant(s)			
n. Sample size [container size] Note that sample weights are included in analytical BDR			
12. Is all the data provided using indelible ink and by the individual(s) generating it?			
13. Is all data entered clearly, legibly, and accurately?			
14. All changes to original data lined out, initialed and dated by the individual making the changes?			
15. Was justification made for changing the original data?			
16. Were data changes made by a qualified individual?			
17. Individual sample VOC containers were closed within one-hour of the sample being brought into the DPS or when the liner bag of the selected drum has been breached/opened.			
Comments:			

I have reviewed 100% of the container specific and batch data in this report and find it acceptable for VEE review.

Independent Technical Reviewer:

Printed Name

Signature

Date

Attachment 4 – CCP Solids Sampling Batch Data Report Table of Contents

Sampling Batch No.: _____ Date: _____

Table of Contents		
Item	Description	Page No.
1	CCP Solids Sampling Batch Data Report Cover Sheet	
2	CCP Solids Sampling Batch Data Report Table of Contents	
3	CCP Solids Sampling Tracking Form	
4	CCP Solids Sampling Independent Technical Review Checklist	
5	Copy of NCRs (N/A, if NOT applicable)	
6	Copy of Temperature Data Logger Sheets	
7	Copy of Chain of Custody (COC) Form	
8	Copy of Certification of cleanliness for sampling equipment	
9	Copy of Attachment 1, the Waste Data and Approvals Sections, of CCP-TP-006	

Attachment 5 – CCP Solids Sampling Batch Data Report Cover Sheet

Batch Data Report No.: _____

Waste Container ID Number	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

ITR:

Printed Name **Signature** **Date**

VEE:

Printed Name **Signature** **Date**