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C-A OPERATIONS PROCEDURES MANUAL

9.5.15 Sampling Activated Soil Areas Near Known Beam Loss Locations

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Approved: _____ *Signature on File* _____
Collider-Accelerator Department Chairman Date

M. Van Essendelft

9.5.15 Sampling Activated Soil Areas Near Known Beam Loss Locations

1. Purpose

This procedure provides guidance for obtaining and analyzing soil samples from soil activation areas, near known beam loss locations at the AGS, Booster, and the RHIC.

2. Responsibilities

The C-A Facility Support (FS) Representative is responsible for maintaining records of activated soil samples, indicating location of sampling, date of sampling, and sample results.

The FS Representative, or a qualified representative from the Analytical Service Laboratory, will perform the sampling and analysis.

The FS Representative will forward the analysis results to C-A ESHQ Division Head, the C-A Environmental Compliance Representative (ECR), and the BNL Groundwater Protection Subject Matter Expert.

The Environmental Compliance Representative will consult with the C-A ESHQ Division Head in evaluating sites requiring soil sampling.

3. Prerequisites

None

4. Precautions

Access to the sampling locations may be controlled. Personnel obtaining the samples must comply with applicable Radiation Work Permits and Access Controls.

5. Procedures

5.1 Evaluate the need to obtain baseline or other verification soil activation samples from the following locations:

- Booster Beam dumps (old and new)
- RHIC Yellow line beam dump
- RHIC Blue line beam dump
- RHIC W line beam dump
- VQ12 Magnet
- RHIC Collimators (2) at 8 o'clock position
- LINAC HEBT Water Stop
- LINAC "Y" Chamber
- LINAC ND249 Magnet
- AGS J-10 Scraper

- 5.2 In addition, evaluate the necessity to obtain soil samples for other beam loss locations identified since the last evaluation.
- 5.3 Soil samples placed in the area of planned beam loss locations shall be analyzed to establish a baseline to gauge future activation resulting from beam operation. A list of soil sample locations can be found in [C-A-OPM-ATT 9.5.15.a, "List of Soil Coupon Locations"](#). The need to obtain samples can also be based on a change in the experimental apparatus, change in location of apparatus, discrepancies noted on protective soil cap inspections, or large increases in beam energies or intensities.
- 5.4 Obtain and analyze soil samples in accordance with EM-SOP-601, Collection of Soil Samples. Samples shall analyzed annually at the end of the physics run (or prior to the next running period) in areas as determined by the Environmental Compliance Representative and ESHQ Division Head.
- 5.5 Results of analysis should be forwarded to the C-A ESHQ Division Head, the C-A Environmental Compliance Representative, the C-A Facility Support Representative, and the BNL Groundwater Protection Subject Matter Expert.

6. Documentation

None

7. References

- 7.1 EM-SOP-601, "Collection of Soil Samples".

8. Attachments

- 8.1 [C-A-OPM-ATT 9.5.15.a, "List of Soil Coupon Locations"](#).