

RADON SAMPLING FROM 1994 STUDY THROUGH WINTER 1997 STUDY

Radon canisters are deployed on both the ground floor (contact area) and the selected study area within a building. Prior to sampling, both the ground floor and study area floors are delineated with the appropriate scale to determine radon canister placement. An IADCS sample ID label is affixed to the bottom of every radon canister prior to sampling.

Sample Location

Ground level contact samples are deployed uniformly over the building footprint every 5,000 sq. ft., as well as at elevator shafts and stairwells located on this floor. The fixed site sampling convention is as follows provided that the study area can accommodate the configuration.

- Fixed Site 1: one sample and one duplicate sample¹
- Fixed Site 3: one sample
- Fixed Site 5: one sample and one blank sample²

Radon canisters are also placed near each stairwell and elevator shaft leading to the study area. Radon sampling is performed over a 72 hour time period with canisters deployed on Monday between 1 pm and 3 pm. The tape around the canister is removed, the top is placed inside of the box, and the bottom portion of the canister is then re-taped. The bottom portion of the sampler is placed on top of the closed box on the floor with the mesh side of the canister exposed. A “Do Not Disturb” monitoring sign is placed next to the canister to prevent premature removal.

Each canister is recorded on a logsheet to indicate the sample location, time of deployment, sample identification number, and specific environmental conditions (e.g. smoking lounge). Sample locations are also identified on the ground and sampling area floor plans.

1 Indoor duplicate samples may be collected at either site F1, F3, or F5 and may be placed based on site physical restrictions. Indoor duplicate samples shall not be collected across multiple fixed indoor sites (e.g., VOC duplicates at F1, particles at F3, and other duplicate samplers at F5).

2 Field blanks may be collected at either site F1, F3, or F5.

All radon canisters placed out on Monday are collected from all sites on Thursday, beginning with the first sample deployed. The tape is removed from the bottom portion of the sampler, re-capped with the canister top in the box, and sealed with the tape. Off-times and dates are denoted on the logsheet.

QC Samples

Two quality control (QC) samples, blanks and duplicates, are deployed and sent for analysis to the EPA. Blanks are set out based upon 5% of all field samples deployed in a particular building. Canisters are opened, exposed to the environment, re-tapped and placed back into the respective box, next to the associated field sample. Duplicates are set out based on 10% of all field samples deployed in a particular building. Canisters are opened at the same time as the field sample it duplicates and placed side by side with this associated sample.

Sample Shipping

A log book is kept to detail the exact sampling location and specific conditions under which the samples are collected. Data is then transferred manually to the IADCS database. Samples must be delivered to the laboratories within 24 hours of collection, as is specified by the BASE Protocol. Radon canisters are packaged and sent to the laboratory for analysis on Thursday. A documented chain of custody is required for all samples.

RADON SAMPLING FROM 1998 WINTER STUDY THROUGH 1998 SUMMER STUDY

Radon will be sampled using diffusion-barrier charcoal canisters. The canisters will be deployed on Monday soon after arrival of the field team. They will be retrieved 72 hours after being deployed and shipped to the laboratory on Thursday for analysis on Friday. The canisters will be deployed at each of the three indoor fixed sites and at entry locations to the study space. An IADCS sample ID label is affixed to the bottom of every radon canister prior to sampling.

SAMPLING LOCATIONS

The fixed site sampling convention is as follows provided that the study area can accommodate the configuration.

- Fixed Site 1: one sample and one duplicate sample³
- Fixed Site 3: one sample
- Fixed Site 5: one sample and one blank sample⁴

Radon canisters are also placed near each stairwell and elevator shaft leading to the study area.

QC SAMPLES

Two quality control (QC) samples, blanks and duplicates, are deployed and sent for analysis to the EPA. Blanks are set out at one indoor fixed site. Canisters are opened, exposed to the environment, re-tapped and placed back into the respective box, next to the associated field sample. A duplicate sample is deployed at a single fixed site. Canisters are opened at the same time as the field sample it duplicates and placed side by side with this associated sample.

SAMPLE SHIPPING

No changes in shipping protocol

³ Indoor duplicate samples may be collected at either site F1, F3, or F5 and may be placed based on site physical restrictions. Indoor duplicate samples shall not be collected across multiple fixed indoor sites (e.g., VOC duplicates at F1, particles at F3, and other duplicate samplers at F5).

⁴ Field blanks may be collected at either site F1, F3, or F5.