Referee comments are in red text.

Our replies to comments are in black text (Times New Roman)

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Referees' comments:

Referee #1 (Remarks to the Author):

We thank Reviewer #1 for their review and helpful comments. The revisions we made after reflecting on these comments have improved the manuscript.

Numerical errors: -In the results and discussion section, the maximum activity concentration in soil for both Uranium-238 and Thorium-232 is mentioned as 50 Bq/Kg. This is mentioned in both the text body and the Maximum tab in Table 1. However, this is not indicated by any of the readings in table 1.

We thank Reviewer #1 for their recommendation to revisit Table1. Please see the modifications on page 6

Grammatical errors: -There are 7 instances where the first-person pronoun 'we' is used.

We thank Reviewer #1 for their recommendation. Please check the modifications on pages 3,4,5,and 9.

Formatting errors: -Paper number (#23073) should be included in the top right corner.

We thank Reviewer #1 for their recommendation. Please check the modifications on text pages.

- In the affiliation section, the super-script '3' is not affiliated with any of the authors.

We thank Reviewer #1 for their recommendation. The affiliations have been modified please check page1.

- In the second paragraph on the third page, the authors list the elements to be detected, but 'Potassium-40' is not written properly.

We thank Reviewer #1 for their recommendation. It has been modified please check page3.

- On the fifth page, following equation (2), the isotopes are formatted in a non-conventional manner, where the mass number should be in super-script.

We thank Reviewer #1 for their recommendation. The super-script has been modified please check page5.

- On the fifth page, prior to equation (3), radium equivalent is not formatted properly. The 'eq' part should be in sub-script.

We thank Reviewer #1 for their recommendation. The super-script has been modified please check page5.

-On the fifth page, prior to equation (5), Radon-222 is not formatted properly.

We thank Reviewer #1 for their recommendation. It has been modified please check page5.

-In equation 6, the following should be in sub-script (Ra, Th, K).

We thank Reviewer #1 for their recommendation. All elements have been modified please check page5.

-In the second line on the sixth page, Thorium-232 is not formatted properly.

We thank Reviewer #1 for their recommendation. The super-script has been modified please check page6.

Ambiguity errors: -On page 2, line 6 in the last paragraph, the sentence that starts with "Because terrestrial ..." needs to be rephrased as it lacks clarity in its current state.

We thank Reviewer #1 for their recommendation. The sentence has ben rewriting, please check page2.

Repetition errors: -The coordinates mentioned under 'B. Analytical methods' are unnecessary since they were already mentioned in the previous section.

We thank Reviewer #1 for their recommendation. The sentence has been deleted, please check page 4.