



SDI Review Form 1.6

Journal Name:	Advances in Research
Manuscript Number:	Ms_AIR_33307
Title of the Manuscript:	Evaluation of Radiation Health Risk Due to Gamma Exposure From River Water Around Oil Bunking Centre In Rivers State, Nigeria
Type of the Article	Original Research Article



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	Not applicable	
Minor REVISION comments	<p>Title: Suggests should read 'Determination of Radiological Health Risk Due to Gamma Exposure From River Water Around Oil Bunking Centres In Rivers State, Nigeria'</p> <p>Abstract: Effect corrections as indicated Line 5: kilometres; line 9: 4 weeks; line 13: adult citizens; line 14-16: 'The values of annual effective dose for infants and adults exceeded the reference levels of 0.26 and 0.2 0 mSvy⁻¹ respectively while that for children is within the 0.2 mSvy⁻¹ reference level.' Line 16: adult citizens</p> <p>Introduction: Line 13: water falls as rain, it picks...; line 14: moves...; lines 16-17: delete 'major sources of ' and delete 's' from results; Line 19: delete 'of elements including' and add 'which include, Also add Ra, Rn, Po and Pb after their appropriate elements; Lines 20-21: Rephrase thus 'Water can also become contaminated as it picks up radioactive materials from surrounding rocks, soils or cracked cement as it flows past'; line 22: add 'Th and U' appropriately; line 27: delete 'element'; line 33: replace 'thorium and uranium with Th and U respectively'; line 34: replace thorium with 'The former'; line 35: replace Thorium with 'This nuclide'; line 37: replace thorium with 'it'; line 38: should 'the radioactive decay of ²³⁴U'; line 39: include 'Rn gas'....; line 40: after exist, insert 'Of these, ²²²Rn isabundant'. delete from loss in this line up to chain in line 41; line 41: replace ²²²Rn with 'it'; line 42: replace Ra-</p>	<p>Thanks for the detailed review of our work. The suggested topic reflects the content of the work more than the former. Thank you.</p> <p>All the suggestions have been effected.</p>



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	<p>226 with '²²⁶Ra' for consistency; line 43: replace initial part with 'A $\frac{^{222}\text{Rn}}{^{226}\text{Ra}}$ activity ratio; line 44: change to 'contribution of Rn ...'; lines 47-48: delete 'illegalthe area'; line 49: 'State' and insert full stop after (soot) and delete 'covering everywheremetropolis'; line 54: For 'the' human race.....; line 61: 'Rivers State'; line 62: 'activities in the State';</p> <p>Materials and Methods</p> <p>2.1 Study Area</p> <p>Line 67: 'between Abia and Rivers States'....line 69: (Figure 1). 'It flows 240 km'...; line 70: after ocean replace with 'With an estuary of about 40 km wide, it has an annual'; line 71: ...'wetlands'. Its tributaries.....; line 71-72: 'the river serves'.....; lines 74-75: ...in this study.....formations. Delete 'respectively'; line 76: 'The former consists of; line 78: to the South-West; line 79: ..and Umana. The last two outcrop.....Imo.....; line 80: ...is composed; line 81: 70 m....., The Ebenebe sandstone; line 83: thickness of 130 m. The Ameki formation consists of; line 84: Its lithologic units fall into; line 91:showing....and study area</p> <p>2.2 Sample Collection and Preparation</p> <p>Line 94:to over seven kilometres along the Imo River.; lines 94-99: delete 'in ordercollected' and rephrase as follows 'The water samples (20 altogether) were collected with 1.5 l linearwhich were carefully washed using detergentcontainer'. ; line 100-101: rephrase as ' 20 ml of 1 MHNO₃ was added immediately to each sample in the containers so as to fix the contained radioactive elements'; line 102: 'NIRPR'; line 103-106: rephrase thus '250 ml of each of the samples were measured into cylindrical containers. These were tightly sealed using vinyl tapes and subsequently stored</p> <p>for 4 weeks so that secular equilibrium between ²³⁸U and ²³²Th and their respective progenies is attained</p> <p>2.3 Gamma Spectrometry</p>	
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	<p>Lines 111-114:rephrase thus ' Activity count of the radionuclides contained in the sample were performed using a gamma spectrometry system having a thallium activated 3" x 3" sodium iodide NaI(Tl) detector connected to an.....'; lines 116-119: ...of the spectrometry system, energy and efficiency calibrations of this system were carried out using ^{137}Cs and ^{60}Co; lines 120-126: rephrase as 'Standards of natural ... 0.0175 Bql⁻¹' (noting that litre is lower case) and transfer entire section to the end of 2.2; line 128: insert ' the background, standards and samples' for a period.....; line 129: Note the unit '<i>keV</i>'; lines 131-132: delete 'The detector.....' to avoid repetition;</p> <p>Include mentioning how the activity concentrations of the identified radionuclides were determined (i.e.quantification). Indicate which method was used (absolute/efficiency) and supply the appropriate equation</p> <p>3 Radiological Risk Estimation</p> <p>Lines 136-137:estimated using the obtained mean activity concentrations of the identified radionuclides</p> <p>Conclusion</p> <p>Line 307:concentrations; line 308:seven kilometres; line 311: replace are with is. Just edit this section to correct these slight grammatical</p> <p>Lines 329-331: restructure and be restricted to radiological health</p>	
Optional/General comments	As indicated	