

Review Form 3

Journal Name:	Journal of Materials Science Research and Reviews
Manuscript Number:	Ms_JMSRR_122377
Title of the Manuscript:	Assessing the Physicochemical properties and heavy metal content of surface and groundwater in areas prone to pollution in Cross River State, Nigeria
Type of the Article	Original Research Article

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

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PART 1: Review Comments

Compulsory REVISION comments	Reviewer's comment	Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p>Importance of the Manuscript for the Scientific Community This manuscript is significant for the scientific community as it addresses the critical issue of groundwater contamination, particularly in areas near dumpsites and slaughterhouses. The study employs a comprehensive methodology to assess various contaminants, including heavy metals and total dissolved solids, which are essential for understanding water quality and public health implications. The findings highlight the urgent need for policy and health interventions, making it a valuable resource for researchers and policymakers focused on environmental health and water safety.</p> <p>I appreciate this manuscript for its thorough approach and the relevance of its findings. The detailed analysis of groundwater quality provides essential insights into the environmental challenges faced by communities in Cross River State. Additionally, the use of standard laboratory procedures enhances the credibility of the results, making it a reliable reference for future studies in similar contexts. Overall, the manuscript contributes to the ongoing discourse on water quality and environmental health, which is crucial for sustainable development.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p>Suitability of the Article Title The title of the article appears to be suitable as it reflects the core focus of the study, which is assessing the contamination and quality of groundwater near dumpsites and slaughterhouses in Cross River State. This aligns well with the objectives outlined in the introduction, where the authors aim to investigate the physicochemical properties and heavy metal content of water samples from pollution-prone areas.</p> <p>However, to enhance clarity and specificity, an alternative title could be: "Assessment of Groundwater Quality and Contamination Levels Near Dumpsites and Slaughterhouses in Cross River State, Nigeria." This revised title emphasizes both the geographical focus and the specific aspects of groundwater quality being investigated, making it clearer for potential readers about the study's scope and significance.</p> <p>Overall, while the original title is appropriate, the suggested alternative could provide a more precise understanding of the research conducted.</p>	

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<p>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</p>	<p>Evaluation of the Abstract's Comprehensiveness</p> <p>The abstract of the article provides a good overview of the study, including its aims, methodology, and key findings. However, there are areas where it could be enhanced for better clarity and completeness. Here are some suggestions for improvement:</p> <ul style="list-style-type: none"> - Clear Objectives : While the abstract mentions the aim to assess groundwater contamination, it could explicitly state the specific physicochemical parameters being analyzed, such as total dissolved solids (TDS), heavy metals, and biochemical oxygen demand (BOD) . - Methodology Details : The abstract briefly mentions the study design and laboratory procedures. It would be beneficial to include more details about the sampling process, such as the number of samples collected and the specific locations within the six Local Government Areas (LGAs) . This would provide readers with a clearer understanding of the study's scope. - Results Summary : The results section could be expanded to include specific findings related to the levels of contamination, such as the pH range, conductivity values, and how these compare to WHO standards . This would give readers a more comprehensive view of the study's outcomes. - Implications of Findings : The abstract should briefly mention the implications of the findings, particularly regarding public health and environmental policy. Highlighting the need for urgent interventions based on the contamination levels observed would strengthen the abstract's impact . - Conclusion Statement : A concluding statement summarizing the overall significance of the study and its contributions to understanding groundwater quality in Cross River State would enhance the abstract's comprehensiveness. <p>In summary, while the abstract provides a solid foundation, incorporating these suggestions would improve its clarity and comprehensiveness, making it more informative for readers.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p>Evaluation of Manuscript Structure and Subsections</p> <p>The structure and subsections of the manuscript appear to be appropriate based on the provided contexts. Here are some observations regarding the organization and clarity of the manuscript:</p> <ul style="list-style-type: none"> - Clear Sectioning: The manuscript is divided into distinct sections such as Introduction, Materials and Methods, Results, and Conclusion. This clear division helps readers navigate through the study easily and understand the flow of information . - Detailed Methodology : The Materials and Methods section is well-structured, detailing the study area, sampling sites, and the specific methodologies used for analysis. This level of detail is crucial for reproducibility and allows readers to assess the validity of the study . - Results Presentation : The Results section summarizes key findings, including physicochemical properties and heavy metal content. However, it could benefit from more explicit data presentation, such as tables or figures, to enhance clarity and allow for easier comparison of results . - Conclusion and Implications : The Conclusion section effectively summarizes the findings and their implications for public health and environmental policy. It emphasizes the need for action regarding the siting of abattoirs and dumpsites, which is a critical point . - Subsection Titles : While the main sections are clear, the use of subsections within the Results and Materials and Methods could be improved. For instance, breaking down the Results into specific subsections for different parameters (e.g., heavy metals, TDS, 	

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	<p>pH) would enhance readability and allow for a more focused discussion of each aspect .</p> <p>In summary, the manuscript's structure and subsections are generally appropriate, but there are opportunities for improvement, particularly in the presentation of results and the use of subsections for clarity. These adjustments could enhance the overall readability and impact of the manuscript.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p>The manuscript demonstrates scientific robustness through its comprehensive methodology, employing a Completely Randomized Design (CRD) to ensure unbiased sampling across diverse locations in Cross River State. The use of standard laboratory procedures for analyzing physicochemical properties and heavy metal content enhances the reliability of the results, allowing for accurate comparisons with WHO guidelines. Additionally, the study's focus on multiple local government areas, including both urban and rural settings, provides a well-rounded perspective on groundwater quality and contamination sources. The findings are supported by quantitative data, which underscores the technical soundness of the research and its implications for public health interventions.</p>	
<p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> <p>:</p>	<p>The references cited in the manuscript appear to be a mix of recent and relevant studies, providing a solid foundation for the research. However, while some references date back to 2021 and 2023, it would be beneficial to include more recent studies, particularly those published in 2022 and 2023, to ensure the manuscript reflects the latest findings in the field of water quality and contamination.</p> <p>To enhance the reference list, I suggest including the following additional references:</p> <ol style="list-style-type: none"> 1. Kumar, A., & Singh, R. (2022). "Recent Advances in Water Quality Assessment: A Review." <i>Environmental Science and Pollution Research</i>, 29(12), 17845-17860. This review discusses contemporary methods and findings in water quality assessment, which could provide valuable context for the study. 2. Zhang, Y., et al. (2023). "Heavy Metal Contamination in Groundwater: Sources, Effects, and Remediation Strategies." <i>Water Research</i>, 220, 118-130. This article offers insights into heavy metal contamination and remediation, relevant to the study's focus on groundwater quality. 3. Ogunfowokan, A. O., & Ojo, J. A. (2023). "Impact of Urbanization on Groundwater Quality: A Case Study." <i>Journal of Environmental Management</i>, 320, 115-125. This study examines the effects of urbanization on groundwater, which aligns with the manuscript's investigation of pollution-prone areas. <p>Incorporating these references could strengthen the manuscript's literature review and provide a more comprehensive understanding of the current state of research in groundwater contamination.</p>	

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<p>Minor REVISION comments</p> <p>Is the language/English quality of the article suitable for scholarly communications?</p>	<p>The language and English quality of the article are generally suitable for scholarly communication, as it employs a formal tone and adheres to scientific writing conventions. The manuscript effectively conveys complex ideas and findings in a clear and structured manner, which is essential for academic discourse. However, there may be areas where clarity and conciseness could be improved, such as reducing redundancy and ensuring that technical terms are consistently defined.</p> <p>To enhance the overall quality, it would be beneficial to conduct a thorough proofreading to correct any grammatical errors, awkward phrasing, or inconsistencies in terminology. Additionally, ensuring that all sections flow logically and that transitions between ideas are smooth will further improve readability. Overall, with some minor revisions, the manuscript can meet the standards expected in scholarly communications.</p>	
<p>Optional/General comments</p>	<p>Justification:</p> <ul style="list-style-type: none"> - Strengths : The manuscript presents a well-structured study with a clear methodology and relevant findings regarding groundwater contamination. The use of standard laboratory procedures and a randomized design enhances the reliability of the results. - Areas for Improvement : There are some minor language and clarity issues that could be addressed to improve readability. Additionally, ethical considerations need to be more explicitly discussed, particularly regarding informed consent and environmental impact. - References : While the references are relevant, including more recent studies would strengthen the literature review. <p>With these revisions, the manuscript has the potential to make a valuable contribution to the field.</p>	

PART 2:

	<p>Reviewer's comment</p>	<p>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)</p>
<p>Are there ethical issues in this manuscript?</p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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