Review Form 1.7

Journal Name:	**Asian Journal of Geological Research**
Manuscript Number:	**Ms_AJOGER_106432**
Title of the Manuscript:	**Integration of Elevation, Lithology and Geoelectric Parameters Using Analytical Hierarchy Process for Groundwater Potential Evaluation in Part of Akure Metropolis, Southwestern Nigeria**
Type of the Article	

Review Form 1.7

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 1. **Is the manuscript important for scientific community?** (Please write few sentences on this manuscript) 2. **Is the title of the article suitable?** (If not please suggest an alternative title) 3. **Is the abstract of the article comprehensive?** 4. **Are subsections and structure of the manuscript appropriate?** 5. **Do you think the manuscript is scientifically correct?** 6. **Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.** **(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)**	**Title:** The title effectively conveys the subject and scope of the study. It's clear and concise, mentioning key elements like "Elevation, Lithology, Geoelectric Parameters," "Analytical Hierarchy Process," and "Groundwater Potential Evaluation." **Abstract:** The abstract provides a good overview of the study's objectives, methods, and findings. It mentions the specific location and problem the study aims to address, the methodology used (Schlumberger configuration and AHP), and key findings about groundwater potential zones. However, it could be improved by briefly mentioning the significance of the study's findings. - It should clearly state the aim, objectives, and methodology of the study. - Geology and geometry of the area should be briefly discussed in the abstract. - The use of resistivity technique for groundwater investigation is mentioned, but it's recommended to include a reference to borehole drilling done by the author as a means of direct confirmation. - The abstract should provide a concise summary of the key findings and their implications. **Introduction:** This section effectively introduces the importance of groundwater and its prevalence in many developing countries. It also explains the relevance of groundwater in Nigeria and the specific context of the Federal University of Technology, Akure (FUTA). However, it might benefit from more specific information about the challenges faced by FUTA in securing a reliable water source, which would make the problem more tangible to readers. **Materials and Method of Study:** This section provides a clear and comprehensive overview of the materials and methods used in the study. It describes the rationale for choosing electrical resistivity, the Schlumberger configuration, and the number of data points collected. The explanations of data presentation and interpretation are concise and informative. This section needs significant improvement: - More information about the study area, including local and regional geology, hydrogeology, topography, and drainage, should be included. - The AHP process and GIS methodology used should be discussed in detail. - The lack of consultation of relevant literature on AHP, GIS, and geospatial processes is a concern. This should be addressed, and a proper literature review should be conducted. - The methodology for building the model maps, such as aquifer resistivity, thickness, and others, should be described in detail. **Discussion of Results:** This section is well-structured and provides a detailed analysis of the various parameters studied, including lithology, elevation, and different geoelectric parameters. It effectively uses maps and figures to illustrate the findings, making it easier for the reader to understand. The discussion of each parameter is comprehensive, and the relationships between them are well-explained. However, this section needs to be more comprehensive and should include the following: - Flow net analysis should be included since the manuscript contains data that can be used for this purpose, this will help establish direction of flow. - The figures mentioned, including Location map, Elevation map, Aquifer resistivity map, Aquifer thickness map, Longitudinal conductance map, Resistance map, Longitudinal resistivity map, and Coefficient of anisotropy map, should be discussed in detail. Their significance and implications for groundwater potential evaluation should be explained. - Detailed methodology procedures on how the model maps in those figures were constructed should be provided. - The results should be discussed in the context of existing literature, particularly in relation to the AHP methodology and its application in hydrogeological prospecting. **Conclusion:** The conclusion effectively summarizes the key findings of the study, emphasizing the groundwater	

	potential zones and their distribution within the study area. It also mentions the validation of the model, which adds credibility to the results. However, it could benefit from a brief discussion of the practical implications of these findings for groundwater management in the area. **Overall Comments:** 1. The manuscript is well-organized and structured, with clear section headings. 2. The use of maps, figures, and equations enhances the clarity of the presentation. 3. The abstract could be improved by briefly discussing the practical implications or applications of the study's findings. 4. The introduction could provide more specific details about the water supply challenges at FUTA to make the problem more relatable to readers. 5. Consider adding a section on the limitations of the study, addressing any potential sources of error or uncertainty in the findings. 6. The conclusion could include a brief discussion of the practical implications of the groundwater potential zones for future water resource management in the area. Overall, the manuscript provides valuable insights into groundwater potential evaluation using geophysical and geological parameters and is well-structured for a scientific publication. The manuscript has potential, but it requires significant revisions to improve clarity, detail, and relevance. Addressing the issues mentioned will enhance the quality and impact of the research. Additionally, careful proofreading is needed to correct grammar and typographical errors.	
Minor REVISION comments **1. Is language/English quality of the article suitable for scholarly communications?**		
Optional/General comments		

PART 2:

	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)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

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