

Review Form 1.7

Journal Name:	International Journal of Environment and Climate Change
Manuscript Number:	Ms_IJECC_111502
Title of the Manuscript:	Characterization of Dominant Hydrogeochemical Processes in Groundwater in Onitsha Area, Southeastern 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)
<p>Compulsory REVISION comments</p> <p>1. Is the manuscript important for scientific community? (Please write few sentences on this manuscript)</p> <p>2. Is the title of the article suitable? (If not please suggest an alternative title)</p> <p>3. Is the abstract of the article comprehensive?</p> <p>4. Are subsections and structure of the manuscript appropriate?</p> <p>5. Do you think the manuscript is scientifically correct?</p> <p>6. Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</p> <p>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</p>	<p>Manuscript shows the major ionic approach to elucidating geochemical processes. Data analyses are illustrative of accepted scientific approaches.</p> <p>Yes</p> <p>Abstract needs work.</p> <p>Yes</p> <p>Yes</p> <p>References comprehensive</p> <p>Manuscript is not ready for publication. The information is present but the writing needs attention. It appears the manuscript is a "ROUGH DRAFT" at best.</p>	
<p>Minor REVISION comments</p> <p>1. Is language/English quality of the article suitable for scholarly communications?</p>	<p>No. Writing is sloppy, Figures are blurry. References are not formatted consistently and sloppy as well. A reference cited in the text is missing from the reference list. Formatting of the draft as reviewed is sloppy and not consistent throughout the manuscript.</p> <p>I have provided a more detailed response to the issues involved but as it stands now, this manuscript needs serious attention in order to be published. See the Word file "Detailed review" accompanying this review.</p>	
<p>Optional/General comments</p>	<p>Page 1 - Abstract.</p> <p>In the first sentence the argument is circular. The first sentence needs to be broken into two sentences, simpler and less confusing. You don't characterize "dominant hydrogeochemical processes" by assessing the "dominant hydrogeochemical processes."</p> <p>Line 7, change word "though" to although.</p> <p>Line 8, change the word "some" to six.</p> <p>Line 9, delete the starting word "The" in sentence beginning with "The Piper diagrams . . . " Superfluous.</p> <p>Line 10, delete the starting word "also," and rewrite. There are four words "water" in one sentence. Really needs help there.</p>	

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	<p>Line 13, change verb tense from “was” to were to agree with the plural subject processes.</p> <p>Line 14, change strating sentence from “Furthermore, the ionic . . .” to “The ionic . . . “</p> <p>Line 16, strange text for starting word ”The . . .” and change verb from is to was to be consistent with the remainder of the abstract.</p> <p>Line 18, complete the thought for the sentence ending in attributed to silicate weathering by adding “. . . confirming the Na/Cl plot conclusions.”</p> <p>Page 1 – 1.0 Introduction</p> <p>Page 1, Begin paragraph with “The use of groundwater as a critical resource can’t be overstated.” Then go on to discuss urban, rural, etc. The existing first sentence is awkward. Make it simpler and more direct. The added first sentence firmly fixes the importance of groundwater.</p> <p>Page 2, top sentence, cited reference “Kurwadkar et al., 2020” is missing from the reference list in References section, which by the way is not numbered.</p> <p>Page 2, first large paragraph, lines 8-11: discussion of “issues” versus “factors” is not consistent, use one or the other to be clearer.</p> <p>Page 2, Line 11, the sentence “The groundwater chemistry depends on different hydrogeochemical processes that the groundwater undergoes over space and time.” is an introductory sentence for this paragraph, what is it doing in the middle of the paragraph? Move and incorporate or delete.</p> <p>Page 2, Line 25, change word “carry” to “carried”</p> <p>Page 2, Line 25, change word “researches” to “researchers”</p> <p>Page 2, paragraph starting with “This procedure . . .” NEVER, NEVER start a sentence with the indefinite word “this” – be specific in your reference back to a statement you’ve already made.</p> <p>Page 2, second paragraph, milliequivalents is the correct spelling of the word “milliequivalent”</p> <p>End of paragraph 2 has a run on sentence starting with “This study . . . “ and it makes a good introduction sentence that currently is nowhere. Either place it properly or delete.</p> <p>Page 3, line 4, (Figure.1), remove “. ” And add space to read (Figure 1).</p> <p>Page 3, line 6, add punctuation to sentence to read . . “major climatic seasons, namely the . . .”</p> <p>Page 3, lines 8-9, change to read “ The rainy season is characterized by high rainfall amount and good groundwater recharge because of good porosity and permeability of the underlying geological formations.” If that is what you are discussing; if only discussing surface geology, please be more specific.</p> <p>Page 3, Figure 1 is proportionally off, it had been stretched so the words are elongated, just provide the original figure and trust in the editors to scale it properly.</p> <p>Section 2.0 Materials and Methods</p> <p>Page 3, reference to one-liter bottles, are they glass, Teflon, polyethylene, etc.? Please be specific.</p> <p>Page 4, line 7, sentence starting with “This . . . “ - never start a sentence with the word THIS. What are you referring to in this sentence? Further on in the sentence, do you really mean “corked” or “sealed” . . . My uncertainty goes back to how the samples were collected, types of bottles, did they have caps, or just corks??? Please fix.</p>	
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	<p>Page 4, line 21, Delete starting word “Also” in sentence “Also graphical methods such as Piper . . .” to read “Graphical methods such as . . .”</p> <p>Section 3.0 Results and Discussion</p> <p>Page 4, line 3 in Section 3.0 change the word “some” to “six” – after all you have 12 samples and 6 of them has excess turbidity. By specific please. Further on in that sentence remove the word “imply” and use the word “indicate”. People imply, data indicate.</p> <p>Page 4, Table 1, significant figures are allover depending upon the data, is it 2 significant figures in the data or is it three? Any more than three, are more really necessary. Should be consistent here please.</p> <p>Page 5, Section 3.1, line 2, remove the words “. . . to the interpretation proposed by . . .” to read “The classification of water samples using Piper diagram is shown in Figure 2 and the interpretation was carried out according to Back and Hanshaw (1965) (Figure 3).”</p> <p>Page 5, line 8. Do not start the sentence with the word “This . . .” Reword to “The observed order . . .” so the reader knows what you are discussing.</p> <p>Page 5, line 11, sentence starting with the word “This . . .” To what are you referring to specifically??? Are you trying to say something like . . . “The results show that the alkaline . . .”</p> <p>Page 5, next paragraph, line 1, delete the phrase “. . . using the interpretation proposed by . . .” and substitute the word “following”</p> <p>Page 5, discussion of entire paragraph is convoluted and unclear. Please rewrite. If you are saying that your data show Na replacement, please say so specifically and then you can say that type of thing has been previously reported by Mussa and Meimah (2023). You need to lay out a step by step discussion according to Figure 4 so that that the reader can follow along in the diagram, but you have not done that in this paragraph. Need a rewrite. And, please, please, be specific and avoid the words “this” and “these” and refer the reader to the data specifically that you are discussing.</p> <p>Page 6. Second sentence of paragraph, sentence reading “The processes are responsible for the presence of the major ions in the water.” is and introduction type of sentence, why is it here? It contributes nothing to the discussion save interruption of the train of thought.</p> <p>Page 6, line 4, sentence starting: “The Gibbs plot was plotted using . . .” is awkward, as in the plot was plotted. How about the “The Gibbs plots were constructed . . .”?</p> <p>Page 6, Figure 2, no key is provided and again the plot has been stretched and is blurry. Just provide the original plot and trust the editors to integrate the figures properly.</p> <p>Page 7, Figures 3 and 4 are blurry. Provide the original plots and the editors can handle them from there. Glad to see the keys provided in these two figures.</p> <p>Page 8, Figure 5, same comments blurry and needs to be much clearer for publication.</p> <p>Page 8, several of the sentences using ions have charges sometimes and sometimes they do not. Please fix to be consistent in the manuscript.</p> <p>Page 8, line 4-5, needs to be a paragraph break removed.</p> <p>Page 8, lines 5-8, sentences reading “This process can be identified by use of Na and Cl- ions. The depletion of Na ions with respect to Cl- ions is an evidence of cation exchange reaction. Rajmohan and Elango (2004) also made similar observation in their study area.” Again, which process? Are</p>	
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	<p>you discussing cation exchange reactions? If so, say so, and don't just say this process . . .</p> <p>Page 8, lines 5-8, in the remainder of sentence please rephrase to: "The depletion of Na⁺ ions with respect to Cl⁻ ions is evidence for cation exchange. Rajmohan and Elango (2004) reached similar conclusions."</p> <p>Page 8, line 12, for the sentence "The research of Senthilkumar and Elango (2013) made similar observations." Just rephrase the sentence to read "Furthermore, in the reverse ion exchange reaction Na⁺ ion is retained by the aquifer material and Ca²⁺ ion released into the water, in a manner similar to results reported by Senthilkumar and Elango (2013).</p> <p>Page 8, next paragraph, sentence starting with "Also, . . ." delete the wording "Also," and make the sentence read: "The plot of Ca + Mg versus CO₃ showed that almost all plotted points were above the 1:1 equiline with the exception of one point, indicating an excess of Ca²⁺ and Mg²⁺ ions for the bulk of the sample locations." And please fix the inconsistent charges ion cations and anions in the text. Don't use the word implies. Data show, people imply.</p> <p>Page 8, sentence reading "Therefore, the highest contribution of Na and K ions to dissolved cations is from silicate weathering this was also the conclusion arrived at by Mohan et al., (2000), and Rajmohan and Elango et al., (2004)." Rewrite to read "Therefore, the highest contribution of Na and K ions to dissolved cations was from silicate weathering, a conclusion consistent with observations of Mohan et al., (2000), and Rajmohan and Elango et al., (2004)."</p> <p>Page 9, Figures 6 a-d, blurry. Please provide the original and trust the editors to integrate a clearer figure into the paper.</p> <p>Page 10, 4.0 Conclusions.</p> <p>Line 3, start sentence with "Equally, the water . . ."</p> <p>Line 8, substitute "was consistent with" for the word supports.</p> <p>Page 10, References needs to have a section number. I have major problems with the references section. The authors need to find the instructions to the authors and format the references cited CONSISTENTLY in the manuscript before this can be published.</p> <p>Get rid of inconsistent punctuation and formatting. The references section needs a great deal of work and is a complete mess.</p> <p>For example, is it 2023. Or is it (2023) in citations.</p> <p>Is it "Baghdadi, M.E., I. Zantar, A. Jouider, S. Nadem, and R. Medah., 2019. Or is it "Baghdadi, M.E., Zantar, I., Jouider, A., Nadem, S. and Medah.R. 2019.</p> <p>Needs major thought to be consistent with the journal's requirements. I'm not going fix the very large number of individual errors in this entire reference section; that's one of the author's main responsibilities.</p>	
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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?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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Reviewer Details:

Name:	Michael J. Wade
Department, University & Country	USA