Review Form 1.6

Journal Name:	**Asian Journal of Environment & Ecology**
Manuscript Number:	**Ms_AJEE_94167**
Title of the Manuscript:	**Concentration and Estimated Human Health Risk of Polycyclic Aromatic Hydrocarbons in Water Samples around Automobile Repair Workshops in Eket Metropolis, Akwa Ibom State, Nigeria**
Type of the Article	

General guideline for 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 guideline for Peer Review process, reviewers are requested to visit this link:

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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	**Reviewer's comments for Ms_AJEE_94167** The manuscript titled as "Concentration and Estimated Human Health Risk of Polycyclic Aromatic Hydrocarbons in Water Samples around Automobile Repair Workshops in Eket Metropolis, Akwa Ibom State, Nigeria" aimed to study the cancer risk exposure of PAHs in borehole water collected around five automobile repair workshops within Eket metropolis. It is reported about the toxicity of PAHs. This investigation reported that samples were collected between June - August (2018) in wet season and November (2018) – January(2019) in dry season from boreholes around the vicinity of five (5) automobile repair workshops within Eket metropolis. It is reported that the water sample are prepared by following standard procedures and analysed for 16 United States Environmental Protection Agency (US EPA) priority PAHs using Gas Chromatography–Mass Spectrometer (GC–MS). A total of fifteen PAH congeners were detected in the samples. The experimental results reported the estimated cancer risks of exposure to PAHs by ingestion in the water samples were ranged from 7.10×10^{-7} to 1.12×10^{-4} and 6.76×10^{-6} to 3.69×10^{-1} for adults and children respectively in the both seasons. This present study highlighted that the estimated cancer risks due to dermal exposure to PAHs in the water samples were ranged from to 7.18×10^{-3} to 1.07×10^{-1} and 5.67×10^{-3} to 1.08×10^{-1} for adults and children respectively in both seasons. This manuscript concluded that Carcinogenic risks due to dermal exposure calculated for both adults and children were higher than the US EPA acceptable cancer risk and much higher for children. This paper suggested that children could be prone to cancer and need to be monitored. This manuscript is written methodically, logically and technically. Nonetheless, some points and errors should be rectified before the publication of this manuscript. This manuscript needs further refinement. The reviewer therefore recommends the publication of this manuscript after **Major revision** according to the following comments. **Comment 1:** Author is advised to use equation editor instead of picture tool to insert mathematical equations in the manuscript. **Comment 2:** In the introduction section, the author should explain more about the urgency of the research in this field. **Comment 3:** There are many grammatical errors found throughout the manuscript. Therefore, authors are advised to go through the entire manuscript carefully and rectify the grammatical mistakes. **Comment 4:** What are the challenges faced by authors during the investigation in this field? **Comment 5:** What is the further scope of research in this field? Please incorporate it in revised manuscript. **Comment 6**: Please refer the statement "around the vicinity of five (5) automobile repair workshops". Correct it as ""around the vicinity of five automobile repair workshops". **Comment 7**: What remedial measures should be taken to reduce the adverse effects of dermal exposure in activities such as bathing in water polluted with PAHs? Please discuss. **Comment 8**: It was reported that the total concentration (Σ16 EPA PAHs) of PAHs are ranged from 1.71 mg/L (W2) to 16.07 mg/L (W5) in the dry season and 1.07 mg/L (W2) to 12.97 mg/L (W5) in the wet season. What are the reasons behind it? Please clarify it. **Comment 19:** In this manuscript, the presence of toxic Polycyclic aromatic hydrocarbons (PAHs) in borehole water and its adverse effects on children are discussed. However, author has not suggested any remedial measures for the purification of this borehole polluted water. In view of this, please suggest different methods for the treatment of borehole polluted water. This polluted water can be purified by using conventional methods such as chlorination, potassium permanganate, homogenous catalysis and advanced oxidation processes using UV/nanomaterials. Aerogels can also be used to remove polycyclic aromatic hydrocarbons (PAHs) present in borehole water and avoid its adverse effects on	

	children. Please read these published manuscripts and incorporate the changes in revised manuscripts. Adsorptive removals of pollutants using aerogels and its composites, VS Bhamare, RM Kulkarni, AAP Khan, Advances in Aerogel Composites for Environmental Remediation, 171-199 Oxidative transformation of antiretroviral drug zidovudine during water treatment with permanganate: reaction kinetics and pathways, Desalination and Water Treatment 1 (DOI: 10.1080/19443994.2016.1149110), 1-12 Mechanistic and spectroscopic investigations of Ru3+-catalyzed oxidative degradation of azidothymidine by heptavalent manganese at environmentally relevant pH, Desalination and Water treatment 1 (DOI: 10.1080/19443994.2016.1187090), 1-14 Palladium (II)-catalyzed oxidation kinetics of azidothymidine by heptavalent manganese during water treatment: kinetics, mechanism, and degradation, Desalination and Water treatment 144, 211-223 Photocatalytic degradation of pharmaceutical drug zidovudine by undoped and 5% barium doped zinc oxide nanoparticles during water treatment: Synthesis and characterization, International Journal of Applied Pharmaceutics, 2019. **Comment 10:** There are some minor errors found in list of references. The name for all journals needs to be written properly in list of references. Page numbers, Punctuations and volume are not written properly for a few references. It is advised that please follow the same style of references throughout. Author needs to follow the guidelines of the journal and uniformity. Author can download recently published papers to follow it properly. So, it is advised that please check all the references properly and rectify all the mistakes such as author's name, punctuations (, .etc), year, volume, journal name abbreviations, page numbers etc. I am sure that these suggestions will certainly improve the present manuscript.	
Minor REVISION comments	NIL	
Optional/General comments	NIL	

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)*	

Reviewer Details:

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