

REVIEWER'S REPORT

Manuscript No.: **IJAR-53105**

Date: August 1, 2025

Title: Risks assessment of heavy metals (Cd, Pb, Cu, Fe and Al) linked to the consumption of drilling water by local populations: case of the city of Bouaké (Cote d'Ivoire)

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		X		
Techn. Quality		X		
Clarity			X	
Significance			X	

Reviewer Name: Dr Lakhdar Guerine

Date: August 1, 2025

Detailed Reviewer's Report

This study assesses the health risks associated with the consumption of borehole water in Bouaké, Côte d'Ivoire, by analyzing five heavy metals (Cd, Pb, Cu, Fe, Al). Water samples were collected during both dry and rainy seasons and analyzed using graphite furnace atomic absorption spectroscopy (GFAAS). Non-carcinogenic risks were evaluated using the Hazard Quotient (HQ), and carcinogenic risks via the Incremental Lifetime Cancer Risk (ILCR). Results show significant risks from cadmium and lead, especially for children. The Hazard Index (HI) exceeded 1 at most sites. Ingestion is identified as the main exposure route.

Strengths:

- 1) Highly relevant topic addressing public health concerns in urban West Africa.
- 2) Robust methodology including dual-season sampling and standard risk assessment tools (HQ, ILCR).

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- 3) Clear presentation of results with appropriate statistical validation (Kruskal-Wallis test).
- 4) Well-supported by recent and context-specific references.

Weaknesses:

- a) Limited discussion on potential anthropogenic sources of contamination.
- b) Insufficient comparison between dry and rainy season findings.
- c) Figures could be improved in quality and visual clarity.
- d) The conclusion lacks practical recommendations or policy-oriented suggestions.

Recommendation: Minor revision

The manuscript would benefit from enhanced discussion, deeper interpretation, and improved graphical representation.