



SDI Review Form 1.6

PART 1:

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	2013_BJAST_5391
Title of the Manuscript:	Geophysical contribution for the mapping the contaminant plume of leachate from rubbish dumpsite of Hevie, Benin
Type of the Article	Research paper

General guideline for Peer Review process is available in this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)

- This form has total 7 parts. Kindly note that you should use all the parts of this review form.



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PART 2: 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)
<u>Compulsory</u> REVISION comments	The paper is an interesting research paper of the application of geoelectrical/electromagnetic methods to environmental geophysics. The target is very interesting, however in order to publish it in a Journal at the level of British Journal of Applied Science&Technology , the manuscript should undergo <u>major revision</u> since in many cases it lacks the needed quality. - The English requires a general review: A review from an expert would be advisable. - Figures and figure captions must be reconsidered and rewritten. In general, figure captions were not very informative. The quality of Figure-1, Figure-2, Figure-5 are not sufficient and must be improved. - (202) "Logs of surveys EM showing the grounds of various resistivities" what shows the Figure 7 exactly? Are these interpreted or measured values? - (154) It is not clear, how did you obtained the continental aquifer resistivity (340 ohm-m). - (160) instead of "ground" -->subsurface - (182) "Fig. 6: Map of lateral extension of the leachate at 10m of depth using EM34"	Ok Ok Measured Using Archie's Law Ok



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	Why are the scale colours in fig 6 so unevenly distributed? In Figure 6 --> Y axes must "apparent resistivity". In text, "Ohm-m", but in Figure 6 "ohm-m" ?! - (241) The layers with values of resistivity lower than 400 Ohm.m, are polluted by the leachate and represent the in-depth plume of leachate. The layers with true resistivities higher than 400 Ohm.m are not polluted by the plume of leachate. The limit of this plume marks the contact between the zone polluted by the leachate and the not polluted zone" Please give more details and discuss the problem and results. - (259) Concerning the ERT and EM34 Modeling: It is not clear who and how did this modeling. Figure 9a and Figure 9b - Are these pseudosection or interpreted section. " Iteration and error", what is meant with that? Please give more details about the sections. How can you explain 0.175 ohm-m in the figure 9b. - (264) 1D logs ?? calculated? - (278) Limit of leachate infiltration in Figure 10 A more detailed discussion about the leachate and pollution zone with focus geological formations should be presented by the authors. - (287)Fig. 11: Map of Electrical conductivity of well water samples on the Hevie dumpsite Fig. 11 needs improvement. The relationship with geological formation?	with an aim of distinguishing the contaminated zones ok ok Ok Ok Interpreted "iteration" to increase the quality of inversion and "error" to measure the difference between the inversion and the measured data. Ok Ok Ok
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	Means of electrical conductivity in geophysics and in geochemistry are very different. Depths of wells for water samples are not given. - (291) "frequential electromagnetic profiling", what is meant? - (297) plume of leachate what made it possible to deduce that the contact between the plume of leachate and the top of the water table is rather discontinuous. - (298) "Because of the strong lead concentration of the leachate, this discontinuity implies heterogeneity of the degree of pollution on the surface of the water table like showed it the analysis of well water samples" Reference ??	Ok Ok frequencies of 6400, 1600 and 400 Hz On ERT section, distinct depths of low resistivities under 15m of water table Ok
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments	- 16 - 22 m instead of 22m	Ok