



SDI Review Form 1.6

PART 1:

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	MS: 2012 BJASt 2619
Title of the Manuscript:	Evaluation of the Status of Heavy Metal Pollution of Water (Surface and Ground) and Aquatic Macrophyte (<i>Ceratophyllum demersum</i>) of Agbabu Bitumen deposit area, Nigeria

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 9 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)
Compulsory REVISION comments	The work as such present small data set nevertheless, this could be interesting for the international audience if provided with better precision and after some major changes. It seems to be worth of publishing after English improvement and after at least the changes suggested below: l. 27 determination of heavy metals concentrations l. 30 Content of... Give number of sampling sites of surface waters, ground waters and macrophytes l. 38 except one site l. 40 -44 The lowest concentrations you ca not compare different metals because all occur in a specific concentration ranges so state here which metals were higher in rainy and dry season, respectively (without values) l. 47 with heavy metals l. 53 baseline for monitoring of metal contamination l. 67 bitumen belt consist of... l. 69 Temidire village inhabited by... l. 71-75 give height of precipitations, discharge of Okwa river, average depth of groundwaters Fig. 1 map of poor quality l. 80 h. metals migrate from terrestrial to aquatic environment l. 81-82 non-point sources. Antropogenic sources include combustion... l. 84 in the environment controlled by biological and physicochemical processes. l. 87 are farming, fishing...	Corrected Corrected Numbers given Corrected Corrected Corrected Corrected. Row 34 Corrected. Row 36 Corrected. Row 42 – 48 Corrected. Row 49 Corrected. Row 50 – 51 Corrected. Row 53 - 54 Corrected. Row – 56



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	l. 89-95 remove. Heavy metal pollution... l. 98-100 remove whole sentence l. 103 and are considered as indicators.... l. 104-106 2 sentences remove l. 111-114 local geochemical background in sediments of this region affected by coal mining shown values to which the present investigations are referred. Moreover, organic chemical and elemental... was studied in bituminous sands of Nigeria (,) l. 13-124 to rework l. 130 threat to aquatic organisms l. 131-136 remove, give in l. 130 Nevertheless, studies of metal contamination with heavy metals in the bitumen belt are lacking and the present work is aimed to evaluate l. 141 give name of sites, where from the macrophyte was taken? How many individuals? l. 146 were collected to 0,5 l bottles... l. 147 ... collected to... l. 151 were prepared according to standard analytical procedures ; give detection limits and accuracy for particular elements (important for low concentrations you have) l. 159 indicate how many plant individuals per sample ; improve English l. 160 A representative sample ... l. 160-162 give volumes of acids, was it made also on a hot plate - indicate l. 164-166 ... Factor (BCF) was calculated as... in surface water l. 172 2.3 Validation procedure l. 173 which instrument? Was any reference sample used or intercalibration? l. 140 you must give there a map with location of particular sampling sites with description of each site in the text (for surface water, ground water and	Removed Corrected. Row 64 Removed Corrected. Row 69 – 74 Removed. Corrected. Row 78 – 79 Corrected. Row 83 – 85 Corrected. Row 88 – 89 Corrected. Row 100- 102 Corrected. Row 104 – 105 Corrected. Row 105 Corrected. Row 106 -107 Corrected. Row 108 Corrected. Row 110 – 111 Corrected. Row 118 Corrected. Row 119 - 126
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	macrophyte) in Table 1 give data for water for each year in one Table for dry and rainy season for each sample. In Table 2 for macrophyte in both seasons and organise table 3 and 4 in the same manner for year 2009 (remove accuracy from the table and give into the 2.3 section (rename it: Analytical precision and accuracy) Fig. 2 Remove- it repeat previously given informations l. 222mercury was not detected in which samples? l. 222-228 it make no sense to compare concentrations of different metals because they obviously have different and specific Clark values l. 229-240 it is hard to follow because of lack of site characteristic what is control station? What is OLSW4 river, stream, well?; characterise exploitation details It is not explained well: give more reasons to differences in behaviour of Cu, Cd, Ni vs other metals 3.2 Again give rain and dry period in one table for year 2008 and for year 2009 in the another table, remove bar charts, remove accuracy limits from here to the analytical description l. 270 -271 precise statement l. 270-278 do not compare content between different metals l. 280 the highest concentrations of heavy metals among all sites – precise it l. 283 description of surface water here make confusion l. 280-316 describe samples of each well separately according to one scheme- by comparing eg to WHO levels. Emphasize characteristic of elements at the most elevated levels. Conclude whether water pollution is related to bitumen extraction or to natural enrichment in the area. l. 314 if Zn, Ni, V and Fe were raised in bitumen	Corrected. Figure 1 Corrected. Row 157 – 159 Corrected. Row 160 – 162 Corrected. Row 162 – 168 Corrected. Row 131 – 132 Removed Corrected. Row 142 Corrected. Row 143 – 200 Corrected. Row 143 – 200 Corrected. Row 202 – 203 Corrected. Row 143 – 200 Corrected. Row 143 – 200 Corrected. Row 206 – 209 Corrected. Row 281 – 286 Corrected. Row 289 – 331 Corrected. Row 289 – 331 Corrected. Row 289 – 331
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	components explain why Cr and Mn is high in your samples Join Tables 9 and 10 Join Tables 11 and 12 Characterize sampling sites Why your result show poor accuracy $\pm 20-30\%$ Table 13 what is critical range? Ceratophyllum is known as resistant species l. 345 give BCF in a separate Table at 34 section If minimum BCF as for Ni in dry season is low you can not suggest it for phytoremediation of water from Ni. The conception of water remediation is risky, better it may be used as one of contaminants indicator l. 358-360 remove l. 369 so differences are significant or no? l. 379 what it means ...presently has been impacted by the presence of bitumen (bitumen have been here from much longer than present)	Corrected. Row 289 – 331 Corected. Row 341 – 347 Corrected. Row 160 – 162 Corrected. Row 166 – 168 Corrected. Row 228- 241 Corrected. Row 235 – 236 Corrected. Row 244 – 247 Removed Corrected. Row 358 - 369 Corrected. Row 372 – 374
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Minor REVISION comments		
Optional/General comments		