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Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_8279
Title of the Manuscript:	Estimation of environmental chemical pollution of Al-Baiji Oil Refinery in Iraq
Type of the Article	Original Research 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:

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



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PART 1: Review Comments

	Reviewer's comment	Author's comment <i>(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)</i>
<u>Compulsory</u> REVISION comments	General Comments: 1. The manuscript tried to assess the pollution effects of chemical substances associated with activities of Iraqi Al-Baiji Oil Refinery on the various environmental media- soil, water and air. 2. While it is praiseworthy that the author acquires these very important data, however, the manuscript is very difficult to read because of the poor technical skill and grammar with which it was prepared, and this also affected clear understanding of whatever message the author wants to pass across. I am therefore of the opinion that the author needs to benefit from the	



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	experience of an established scientific writer to make meaning out of his/or her data and convey same to the scientific community. 3. Design: It is not too clear to me whether the study wants to assess the effect of the refinery activities on the refinery environment itself (which to me appears to be the focus of the study, and makes little sense, because it is a known fact that industrial activities impacts on the immediate environment. For this purpose, a study of the levels of these pollutants in the workers or within-refinery settlers, using their biological samples, would have made a better study) or on the adjoining communities (which makes more meaning). If the latter is the case, the sampling sites should have spread across such	
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	communities within defined radius from the external boundary of the company. The present samples were all collected from clusters within the refinery itself. <u>Abstract:</u> The method adopted for analyses should be stated in the abstract, albeit briefly <u>Introduction:</u> 1. Very sparse, and lacks good literature base. 2. More current literature on the theme, though available on the internet, was not reflected on the manuscript There is no clear separation between the cited literature and ideas of the author. The author should endeavour to make his own ideas very lucid so that his readers should be able to separate his/her own ideas from those of the literature, which ought to be used to embellish/back up those ideas.	
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	<u>Materials and Methods:</u> 1. "S1, near Xylene unit; S2, near Storages; S3, near Fuel oil system; S4, near Vacuum gas oil; S5, near Kerosene unit". This quoted was given as legend to Table 1, but should form part of the description for Sample collection under materials & method section. 2. I do not know the special value of these statements (marked in yellow font below) in this section. Otherwise, I suggest that you go ahead to describe the method of collecting the samples while you expunge the statements "The samples accomplished the following criteria: ● using wooden spoon in digging and filling. ● The absence of both ground sliding and existence of alluvial ● Samples are not of new soil(Suciu <i>et al.</i>, 2006)" 3. There should have been a control soil sample taken from a site far removed from the vicinity	
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	and influence of the refinery, the result of which should offer a baseline data for comparing the parameters (unless a baseline data for Iraqi soil had been established previously. However, no evidence of this was provided in the manuscript. MAL of USEPA or WHO, though very important in themselves, cannot replace this important local control (or Iraqi) data necessary for meaningful local comparisons to support a more assured (firmer ground) for pronouncing a verdict of refinery-associated pollution or otherwise. <u>Result & Discussion:</u> 1. The units of the parameters were not provided for Table 2. Please indicate in the result table or in the title, the unit of measurements for both the measured variables and the MAL ”	
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	2. *Maximum Allowable Levels by WHO (2003) and USEPA (2007)” refers. Please state whether MAL values is for water or soil medium. 3. The author stated” Statistical analysis shows no significant differences (using Anova test $p \leq 0.05$) among the five soil samples for all the six heavy metals tested”. The statement is inconsistent with the quoted P-value ($P < 0.05$ ought to be significant). $P > 0.05$ is not significant) <u>Conclusion:</u> This is visibly absent , but should be added to tie up the major highlights of the research findings	
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<u>Minor</u> REVISION comments	In both the abstract and the main document, the author should recast the statement “This study was conducted to assess the degree of chemical pollution caused by Al-Baiji Oil Refinery of Iraq”(to include the target) i.e. on the refinery environment OR on communities adjoining the refinery(which ever applies). This is important to define the focus of the assessment in the paper (see comments above under Design)	
<u>Optional/General</u> comments	1. Author should endeavour to back up this paper with very current literature. A great deal of recent works are available on metals. 2. With due respect, I suggest a recast of this manuscript to conform to acceptable standard of scientific paper. It is usually good to consult a senior colleague to double as a mentor and co-author, or consult published paper dealing on similar theme as the one wants to present. Gradually, with several attempts, one finds himself/herself doing better. Though not a perfect paper in itself, I recommend a consultation of the paper on Environmental Metals Pollutant Load (Ezejiolor et al., 2013), which measured soil metal contents. The structure addresses most of the issues raised, and therefore may be of value to the author (if he/she so wishes). Not necessary, since the research was conducted not on humans/animals but on environmental samples	

Note: Anonymous Reviewer