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Interactive comment on “Potential ecological risk assessment and prediction of soil heavy metal pollution around coal gangue dump” by X. Jiang et al.

Anonymous Referee #2

Received and published: 3 April 2014

General Comments: The paper investigates the potential ecological risk and development trend of heavy metal pollutants from windblown dust from a coal gangue dump to the surrounding soils. The level of English is at times, below what would be desired and can make sections of the paper a little difficult to follow. Hence, the paper would benefit from a revision to improve the use of English. Some restructuring will also help with the readability of the paper. For example, in section 3.1, the authors note that soil from a ‘depth of 0.4 m was chosen to evaluate the potential ecological risk’. This would be better stated in section 2.2.1 so that the sample depth used for heavy metal analysis is immediately clear. Any information on soil properties would also be useful in either

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section 2.1 or 2.2.1, particularly properties which may affect erosion and windblown transportation such as soil texture. The number of tables used is slightly excessive and could be reduced by combining some of them together. For example, the heavy metal concentrations of the Coal gangue in Table 3 could be included as a final column in Table 4.

Specific comments: Page 1978, lines 9 – 12: I found the following sentence in the abstract to be a little difficult to follow, ‘Based on the Cd pollution history, the cumulative acceleration and cumulative rate of Cd were estimated, and the fixed number of years exceeding the standard prediction model was established, which was used to predict the pollution trend of Cd under the accelerated accumulation mode and the uniform mode.’ Could this sentence be more concise or clarified to more clearly express what was achieved?

Page 1979, line 24 – 26: The sentence should read ‘However, the development trend of soil heavy metal pollution around coal gangue dumps has received less formal attention than it should have.’

Page 1985, lines 18 - 21: The authors should clarify what they are stating with this sentence. I assume that they are suggesting that ‘increased industrial development will not change the impact on soil quality if strong environmental protection methods are implemented and hence, the accumulation of pollutants in soil will remain uniform’ as opposed to ‘develop with an increasing speed’?

Page 1987, line 4-7: The authors state that the topsoil is highly complex and so soil from a depth of 0.4 m was chosen for heavy metal pollution analysis. Would heavy metal contamination by wind-driven transport and risk to human health via ingestion and dermal-contact not be most significant in the topsoil? Was any analysis performed on the topsoil? Do the concentrations of heavy metals differ significantly from the soil from 0.4 m?

Page 2009, Fig.5: A more precise caption would be beneficial. For example ‘Corre-

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spondence map of the relationship between. . . .’

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 1977, 2014.

NHESSD

2, C304–C306, 2014

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