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EDXRF determination of heavy metals in the soil of an urban plot in Mexico City

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A project to develop a residential building in a previous industrial plot, in the urban zone of Mexico City, has required the application of the local Norm regarding the maximum permitted limits of heavy metals in soils. Though the Norm prescribes the Atomic Absorption method for the heavy metals determination, the Energy Dispersive X-Ray Fluorescence method was proposed for a quick and preliminary quantitative survey of the probable polluted areas. Samples were taken at 0.5 and 3.5 meters depth with a manual drilling equipment (Hand-Auger-AMS), dried and grinded. The spectra was obtained in a Si-Li detector (Princeton-GT-S30), operated to 450/900 , with a 30 mCi Pu-238 source and 3000 s of irradiation time. The polluted area reaches to one tenth of the total. The contaminants to be reduced or eliminated are: Cu, Zn, Pb and specially Cr whose concentration is several times higher than permitted. A background determination in the total area is being performed for a better precision of results, since the soil is a mixture of limestone and sand. A commentary is included related to other countries criteria (USA, Canada and The Netherlands) on this topic

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