FORENSIC GEOCHEMISTRY AS TOOL TO SUPPORT ENVIRONMENTAL LIABILITY INVESTIGATIONS – A CASE STUDY FROM A FUEL STATION IN GERMANY

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Abstract. *For a definite declaration of the pollution causer results of a conventional investigation is in many cases insufficient. The detected pollutants are often on the first view identical and therefore cannot assign conclusively to one of the potential causers. This is particularly the case if there are several users at the same location, but at different times operating. For such problems the analytics offers proceeding methods to examine the origin and age of contaminations. The present case study has the investigation of soil pollution in Berlin-Neukölln, Germany in the focus to assess the pollution cause. The studied object is a former fuel station with BTEX and TPHs pollution. For the characterization and the dating of the pollutions were investigated the hydrocarbon composition in soil and water as well as the biomarker distribution patterns and lead isotope compositions.*

Keywords: causer of soil pollution, environmental liability, fuel pollution

Introduction

In April 2004, the Directive 2004/35/EC on environmental liability with regard to the prevention and remedying of ecological damage came into force (Directive, 2004). According to § 3 the scope of the Environmental Liability Directive is limited to the security for soil and water as well as protected species and natural habitats. Germany implemented the requirements of the Environmental Liability Directive with the Environmental Liability Law (last update 23 Nov. 2007, I, p. 2631, 2670). The Directive constitutes a public responsibility of the contributors to ecological damage, and the corresponding powers of intervention of the authorities. In this way it brings innovations to the German law at some points, in particular in terms of strengthening of the polluter pays principle.

For a clear identification of the causer the damage, the results of historical and conventional technical exploration in many cases are not enough. The pollutants

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