

Site Investigation | Risk Assessment

Investigation of Lead Contamination in Agricultural Soils near a Shooting Range – Northern Ireland

Introduction

Ecologia undertook a large site investigation on behalf of a leading insurance company to assess the significance of lead contamination in an agricultural field close to a shooting range. The field had been remediated by another company in 2005, but subsequent sampling had failed to demonstrate that the remediation had been successful and the site was the subject of a legal dispute. The situation was further complicated by anecdotal evidence suggesting that lead shot had continued to land on the affected field during the remedial work. The site occupied an area of over 4 hectares.



Site Investigation

Ecologia designed a site investigation to address the following questions;

- What was extent and distribution of lead contamination ?
- Had contamination occurred after remedial work was carried-out ?
- Did any lead contamination present a significant risk ?

A random grid sampling strategy was devised. Composite sampling was undertaken within a pre-designed grid to account for the high variability in data produced from previous investigations. Sampling was undertaken at two discrete levels within the upper soil strata to assist in interpretation of the time at which contamination occurred. Almost 700 sub-samples were collected.

Findings

Statistical analysis of the survey data was carried out in accordance with CLR7. Ecologia demonstrated that the previous remediation works had achieved a significant reduction in the lead contamination and that agreed remedial target of an average 450 mg/kg had been achieved.

The data showed that that the lead contamination did not derive from shooting activities carried out since remedial works were undertaken.