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NewFields Note

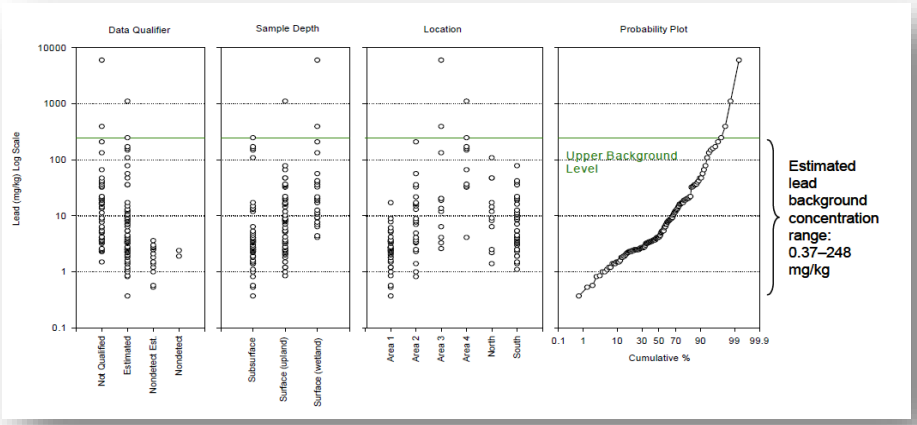
Geostatistics Series: Soil Background Analysis

NewFields Note: Technical information in a condensed, easily digestible format that is intended to promote environmental science education, knowledge transfer, and empowerment … *one note at a time.*

Background analysis is an integral component of most environmental site investigations. Soil contaminants detected in impacted sites often have **naturally occurring** and/or **anthropogenic** (man-made) components unrelated to site releases. In such instances, **representative soil background concentrations** are essential for distinguishing site-related versus background contaminants, establishing appropriate soil cleanup targets, delineating site impact, and developing effective monitoring programs. These tasks require collaborative use of statistical, geochemical, and forensic techniques.

Typically, representative soil background samples are collected in offsite **reference areas**, *i.e.*, areas that are physically, geochemically, and anthropogenically similar to the site but not impacted by site releases.

In many cases, especially in urban settings, identifying a suitable reference area is difficult, if not impossible. In such instances, statistical techniques may be applied to extract representative background concentrations from the site data. In this example (source: DON 2002, Fig. 5-6), background concentrations among site data are identified without the need for offsite sampling.



The NewFields team of experts have been the primary authors/co-authors of relevant guidance documents, including:

- Department of the Navy (DON), ***Guidance for Environmental Background Analysis, Volume I: Soil***, NFESC User's Guide, UG-2049-ENV, April 2002. Click here
- Interstate Technology & regulatory Council (ITRC), ***Soil Background and Risk Assessment***, January 2022. Click here

For additional information, please contact your NewFields Technical Lead. Or send us an email at Science_Info@newfields.com!

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