

NewFields Note

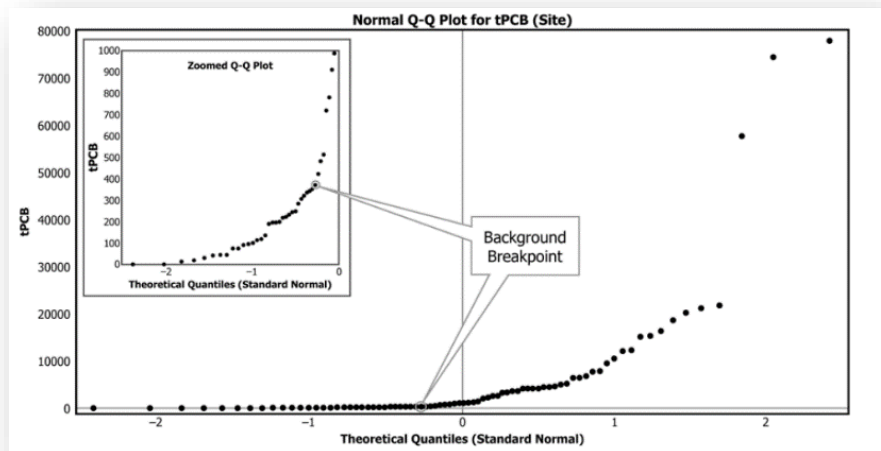
Geostatistics Series: Sediment Background Analysis

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. Sediment contaminants detected in impacted sites often have **naturally occurring** and/or **anthropogenic** (man-made) components unrelated to site releases. In such instances, **representative sediment background concentrations** are essential for distinguishing site-related versus background contaminants, establishing appropriate sediment cleanup targets, delineating site impact, and developing effective monitoring plans. These tasks require collaborative use of statistical, geochemical, and forensic techniques.

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

In many cases, especially in urban settings, identifying a suitable reference sediment 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: ASTM E3242-20, Fig. X3.4), background concentrations among site sediment data are identified without the need for offsite sediment sampling.



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 II: Sediment** NFESC User's Guide, UG-2054-ENV, April 2003. [Click here](#)

ASTM International, **Standard Guide for Determination of Representative Sediment Background Concentrations**, E3242 – 20, 2020. [Click here](#)

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

