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Applying multivariate analysis as decision tool for evaluating sediment-specific remediation strategies - DTU Orbit (08/11/2017)

Applying multivariate analysis as decision tool for evaluating sediment-specific remediation strategies

Multivariate methodology was employed for finding optimum remediation conditions for electrodialytic remediation of harbour sediment from an Arctic location in Norway. The parts of the experimental domain in which both sediment- and technology-specific remediation objectives were met were identified. Objectives targeted were removal of the sediment-specific pollutants Cu and Pb, while minimising the effect on the sediment matrix by limiting the removal of naturally occurring metals while maintaining low energy consumption.
Two different cell designs for electrochemical remediation were tested and final concentrations of Cu and Pb were below background levels in large parts of the experimental domain when operating at low current densities (<0.12 mA/cm^2). However, energy consumption, remediation times and the effect on naturally occurring metals were different for the 2- and 3-compartment cells.

General information

State: Published
Organisations: Department of Civil Engineering, ARTEK, Section for Arctic Engineering and Sustainable Solutions, University of Tromsø
Authors: Pedersen, K. B. (Ekstern), Lejon, T. (Ekstern), Jensen, P. E. (Intern), Ottosen, L. M. (Intern)
Number of pages: 9
Pages: 59-67
Publication date: 2016
Main Research Area: Technical/natural sciences

Publication information

Journal: Chemosphere
Volume: 151
ISSN (Print): 0045-6535
Ratings:
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.39 SJR 1.417 SNIP 1.606
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.51 SNIP 1.57 CiteScore 4.04
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.593 SNIP 1.651 CiteScore 3.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.724 SNIP 1.767 CiteScore 3.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.818 SNIP 1.623 CiteScore 3.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.961 SNIP 1.515 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.867 SNIP 1.421
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.836 SNIP 1.573
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1

Scopus rating (2008): SJR 1.651 SNIP 1.591
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.511 SNIP 1.616
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.416 SNIP 1.676
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.478 SNIP 1.563
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.633 SNIP 1.494
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.324 SNIP 1.324
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.912 SNIP 1.066
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.928 SNIP 0.975
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.876 SNIP 0.876
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.048 SNIP 0.846
Original language: English
Electrodialytic remediation, Harbour sediments, Heavy metals, PLS
DOIs:
10.1016/j.chemosphere.2016.02.063
Source: FindIt
Source-ID: 2298662035
Publication: Research - peer-review › Journal article – Annual report year: 2016