Accepted Manuscript

Graphical statistics to explore the natural and anthropogenic processes influencing the inorganic quality of drinking water, ground water and surface water

Belinda Flem, Clemens Reimann, Karl Fabian, Manfred Birke, Peter Filzmoser, David Banks

PII: S0883-2927(17)30063-X

DOI: 10.1016/j.apgeochem.2017.09.006

Reference: AG 3947

To appear in: Applied Geochemistry

Received Date: 18 January 2017

Revised Date: 28 August 2017

Accepted Date: 10 September 2017

Please cite this article as: Flem, B., Reimann, C., Fabian, K., Birke, M., Filzmoser, P., Banks, D., Graphical statistics to explore the natural and anthropogenic processes influencing the inorganic quality of drinking water, ground water and surface water, *Applied Geochemistry* (2017), doi: 10.1016/ j.apgeochem.2017.09.006.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Graphical statistics to explore the natural and anthropogenic processes 1 influencing the inorganic quality of drinking water, ground water and 2 surface water 3 4 5 Belinda Flem¹, Clemens Reimann¹, Karl Fabian¹, Manfred Birke², Peter Filzmoser³, David 6 Banks^{4,5} 7 8 9 ¹Geological Survey of Norway, Postboks 6315 Sluppen, 7491 Trondheim, Norway 10 ²Federal Institute for Geosciences and Natural Resources, Wilhelmstrasse 25 - 30, 13593 11 Berlin, Germany 12 ³Dept. of Statistics & Probability Theory, Vienna University of Technology, Wiedner 13 Hauptstraße 8-10, A-1040 Vienna, Austria 14 ⁴School of Engineering, James Watt Building (South), University of Glasgow, Glasgow, G12 15 8QQ, UK. 16 ⁵Holymoor Consultancy Ltd., 360 Ashgate Road, Chesterfield, Derbyshire, S40 4BW, UK. 17 18 19 Highlights • Cumulative distribution function plots are a powerful exploration data analysis tool. 20 Despite different origins of waters, median values and ranges are for many elements 21 • comparable. 22 • High concentration of B, Be, Br, Cs, F, Ge, Li, Rb, Te and Zr characterise deeper-23 seated, mature groundwaters. 24 Correlation heatmaps with dendrograms unveils unexpected elemental correlations 25 • from plumbing materials. 26 27 **Keywords** 28 Cumulative distribution function 29 30 Boxplot 31 Heatmap Compositional data 32 European surface water 33 Groundwater 34 European bottled water 35

- 36 European tap water
- 37
- 38
- 39

Download English Version:

https://daneshyari.com/en/article/8863220

Download Persian Version:

https://daneshyari.com/article/8863220

Daneshyari.com