


Manual for certification of sludge

2.3 Calculations of 60 trace elements

Municipality of Höganäs

2013

 HÖGANÄS KOMMUN SAMHÄLLSBYGGNADSFÖRVALTNINGEN	Manual för certifiering av avloppsslam	Revised	2013-11-11
		Edition:	1.4
2.3.	Beräkning av ackumulerings- takt för 60 spårämnen	Approved by:	Fredrik Arthursson
		Established by:	Kristina Bruhn
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Purpose

To evaluate the trace elements that need to be prioritized for an improved sludge quality.



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Range

The sample to be analyzed should be the yearly sampling test of dewatered sludge.

Analysis and calculation includes the 60 trace elements listed in the Naturvårdsverkets Report 5148 , Appendix 6 (Ag to Zr) .

Supervisor

VA - manager is responsible for the routine. Lab Technician is responsible for the performed calculation. Report is made to the management review, after which action to reduce priority trace elements are planned.

Instruction

Sampling of sludge

Sludge sampled according to routine 2.1.

Analysis of trace elements

Yearly sampling test sent for analysis in the month of January every year. Analysis should be performed in the manner and at least with the accuracy defined in the Naturvårdsverkets report 5148.

Entering analysis results

Analysis results are filled in blue shaded column in the Excel file "60 spårämnen_årtal" .


Average number of TS ($t / (ha * year)$) for the year sludge tested, printed in blue shaded box in the same document. TS value is on the second page of the Excel file "metaller och Cd_P-kvot_årtal".

Calculating pace of accumulation

In column "Ackumuleringstakt (%)" in the Excel file "60 spårämnen" pace of accumulation is read. All substances exceeding pace of accumulation 0.2% have a YES in column "Ack.takt > 0.2%".

Prioritization and Control

On page 2 in the Excel file "60 spårämnen", substances that exceed pace of accumulation 0.2% are listed. This is done in order of size (maximum pace of accumulation first). The elements on *Latest edition of this document is stored in binder "Manual för certifiering av avloppsslam"*.

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the list are prioritized trace elements and measures should be planned so that no essential trace element exceeds 0.2% pace of accumulation year 2025.

The trace elements where the mean exceeds pace of accumulation 0.2% will be analyzed as frequently as the statutory metals, i.e. each month. Other analyzes like the yearly sampling test each year.

Subcontractor compare analysis results with Table 11 before spreading .

Documentation

Calculations and calculated values are in the folder VA-avdelningen\REVAQ\6_Beräkningar..

Analysis Protocol are to be filed in binder ”Analyser ackrediterat lab. årtal”.

The results of the analysis will be reported in the Annual Report to Svenskt Vatten.

References

Naturvårdsverkets report No 5148, Eriksson J., *Halter av 61 spårämnen i avloppsslam, stallgödsel, handsgödsel, nederbörd samt i jord och gröda*. The values for the soil samples used in the calculation file are contained in Appendix 6. The report is stored in the folder "Slamcertifiering" tab 10.

Routine 2.1. Sampling of sludge

Latest edition of this document is stored in binder ”Manual för certifiering av avloppsslam”.

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