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# The NEW Dewatering Optimisation Test (DOT)

Aqua Enviro have developed the first sludge dewaterability test, capable of determining the ultimate dewaterability of any sludge type.

Consultancy and events in environmental  
science and engineering

# Dotty about Dewatering

This simple piece of equipment determines the Ultimate Dewaterability of any sludge or digestate in order to:

- Benchmark potential dewaterability of dewatering assets
- Predict achievable cake dry solids for new schemes
- Identify optimum polymer type/dose
- Implement improved control strategies
- Save money on chemical costs
- Meet environmental targets through improved process control

Efficient dewatering of sludges is essential to maximising cake dry solids and filtrate quality while minimising chemical costs, cake storage requirements and impact of liquor returns upon subsequent treatment processes. Rising transport costs and carbon emission targets have also led to an increased focus on further efficiency in dewatering.

The dewatering properties of sludges are highly variable and site specific, with a number of influencing factors such as feed stock characteristics, dewatering technology type, polymer (type/dose) and operational variables.

The DOT test can be calibrated to mimic effective full-scale dewatering. Once the required sludge conditions have been applied (e.g. poly dose), pressure is applied to the sludge through a membrane to produce a representative sample of

dewatered cake and filtrate. This allows for determination of:

- Optimum polymer type/dose
- Rate of dewaterability
- Filtrate quality
- Maximum achievable cake DS

Testing can take place in our Wakefield laboratory or we can do an optimisation audit at your site using the DOT test.

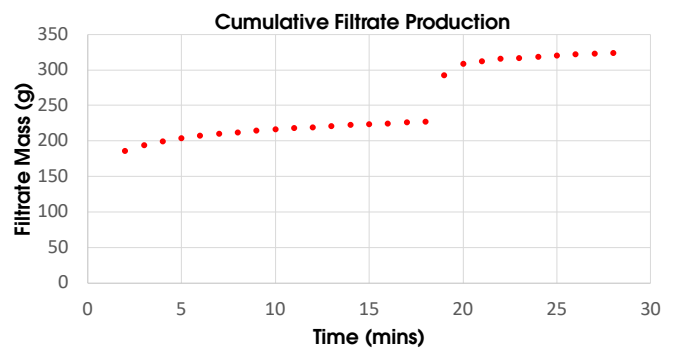
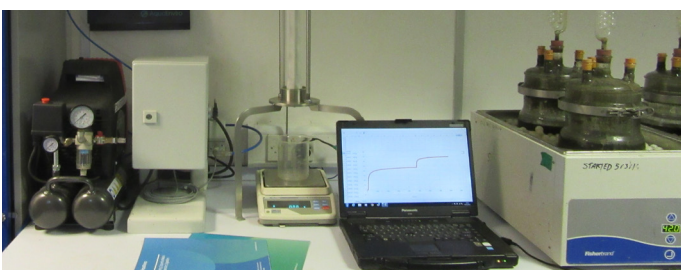


Figure 1: The rate of filtrate production is logged throughout the test to provide a curve. This information is used to calculate a resistance to filtration value for the sludge type.

Sample Description	Dry Solids	Optimisation Potential
Units	%	%
Site Feed Sludge	3.75	
Site Dewatered Cake (Normal Operations)	18.9	18
Site Dewatered Cake (Problematic Operations)	15	49
DOT Dewatered Cake	22.4	

Table 1: The DOT was operated with the same feed sludge sample and under the same conditions (including poly type and dose) as an on-site dewatering process. We found there was potential to improve case DS% by 18-49%.



For more information, please contact Andy Burgess, Laboratory Manager  
T: 01924 242255 or email. [andyburgess@aquaviro.co.uk](mailto:andyburgess@aquaviro.co.uk)

Aqua Enviro, 8 Appleton Court, Wakefield, West Yorkshire WF2 7AR, UK  
[www.aquaviro.co.uk](http://www.aquaviro.co.uk)

Consultancy: +44 (0)1924 242255 / Conferences and Training: +44 (0)1924 257891

