

## **Effect of vibrations on solids transport in a high-solids decanter centrifuge**

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### **ABSTRACT**

In the application of a high-solids decanter centrifuge to dewater waste activated sludge, a hybrid torque differential control mechanism is used to compensate for the always changing conditions. During a two-week period of increasing decanter vibrations as result of wear of one of the bearings it was observed that increasing decanter centrifuge vibrations were going together with increasing differential speeds. To verify this observation, an extended data base was built with data of the decanter centrifuge over a period of approximately 2,5 year. From this study it was concluded that a higher vibrational performance of the high-solids decanter centrifuge resulted in a higher differential speed automatically applied by the control mechanism in order to convey the sludge cake out of the drum (at a constant solids throughput and constant G force), indicative for a more difficult sludge cake transportation with higher decanter vibrations.

### **KEYWORDS**

High-solids decanter centrifuge, sludge, vibrations, differential speed, solids transportation