

RADEVORMWALD MUNICIPAL WWTP

Germany

MODEL OF DEHYDRATOR MDQ-101

DATE OF PILOT TESTS June, 2017

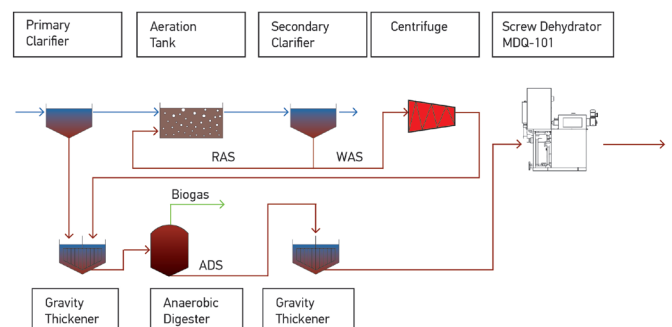
ISSUE

R&W Filtertechnik GmbH (Wuppertal, Germany) as a company that specializes in the field of filtering and dewatering of sludges and slurries was interested in on-site testing of a multi-disc screw dehydrator to verify its dewatering efficiency and operation parameters at the real facility as this kind of equipment is not widespread in Germany.

SOLUTION

EKOTON company together with R&W Filtertechnik GmbH performed on-site pilot tests of multi-disc screw dehydrator MDQ-101 in municipal WWTP in Radevormwald. The object of the study was the mixture of primary and excess activated sludge after anaerobic digestion and thickening. Initially, selection of optimum polymer type and dose was carried out and then optimal operating parameters of dewatering process were adjusted. The unit showed high process efficiency with high automation level along with its simplicity and was jointly recommended for the sludge treatment. At the same time, dewatering process based on multi-disc screw technology allowed to reduce electricity, polymer and water consumption compared with the existing chamber membrane filter presses assuring all requirements for further cake transportation and disposal.

RESULTS



TYPE OF SLUDGE

Thickened and anaerobically digested mixture of primary and waste activated sludge

UNIT SLUDGE SUPPLY

0.09–0.26 m³/h (0.40–1.15 GPM)
2.4–6.8 kg DS/h (5.3–15.0 lb DS/h)

FEED SLUDGE DS CONCENTRATION

2.60–2.70 %

CAKE DS CONCENTRATION

19.1–25.0 %

AVERAGE POLYMER DOSE

5.5–9.7 g/kg DS
(11.0–19.4 lb/ton DS)

FILTRATE SS CONCENTRATION

60–700 mg/l (60–700 ppm)

SOLIDS CAPTURE

97.9–99.8 %