

浄化槽放流水の生物化学的酸素要求量(BOD)の 測定における精度管理調査について

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概 要

浄化槽放流水のBODの法令による測定法は、JISに基づき行なうこととされているが、詳細な方法については、検査機関によりかなりの違いがある。そこで、浄化槽放流水を用いてBODに関する精度管理調査(参加23機関)を実施し、BOD測定における溶存酸素測定法などいくつかのパラメータによる分析精度等の解析を行なった。精度管理調査の試料は市内の浄化槽2基の放流水にグルコース、グルタミン酸混合液(G&G液)を添加して調製したもの、同試料に次亜塩素酸ナトリウム(NaClO)を添加したものであり、標準試料はG&G液を用いた。分析精度等の結果から、NaClO添加の2試料については機関間精度の変動係数(CVx)が18%、43%と大きく、残留塩素の処理や硝化作用の抑制の取り扱い方法の重要性が確認できた。また、標準試料については植種液不使用機関のCVxが38%で使用機関のCVx 5.7%とくらべるとかなり大きく、標準試料における植種液の使用の必要性が確認できた。

Investigation on the Quality Control in Measurement of Biochemical Oxygen Demand of Treated Water from Johkasou

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Abstract

According to the laws relating with BOD, the measurement of treated water from on-site human waste water treatment tank (Johkasou) shall be carried out,

based on the JIS methods. However, the methods for-routine analysis of BOD is are considerably different among the inspection laboratories. In this study, the investigation on the quality control of BOD analysis of treated water from Johkasou was made by the participation of 23 laboratories. For the samples to be investigated on the analytical quality treated waste water from two Johkasou in the city was added with a mixed liquid of glucose and glutamic acid (G&G liquid). The treated waste water was further added with sodium hypochlorite (NaClO) for another samples. The G&G mixed liquid was used as the standard sample. For the analytical precision for the samples added with the NaClO, the coefficients of variation (CVx) of the between laboratories were 18% and 43% respectively. These results show that the pre treatment of residual chlorine and the inhibition of nitrification of sample are very important factors in order to anticipate higher precise result. For the standard sample, the CVx for the laboratories which apply no seeding of bacteria was 38%. This value was significantly large, as compared with 5.7% for the laboratorey which apply seeding of bacteria. This shows that for the standard sample, it is indispensable to use seeding liquids.