RESEARCH CORRELATION BETWEEN WASTEWATER INDICATORS FOR OPERATIONAL CONTROL

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On the basis of studies of waste water. Slavutich developed image depends determining COD and suspended solids concentration by transparency for operational control of the cleaning process.

Wastewater chemical oxygen demand (COD), suspended solids (SVR), water clarity.

Relevant objectives laid National Program "Drinking Water of Ukraine" for 2011-2020 for the protection of water resources and the realization of the constitutional rights of citizens of Ukraine to ensure drinking water is to protect water resources (including through a reduction of the overall environmental pollution and water pollution insufficiently treated waste water), improve laboratory quality control process wastewater treatment [1 - 3]. We know that almost 100% of operating specialized channel-izational-treatment plants (WWTP) do not provide the required level of treatment for the individual components [4]. Due to the fact that wastewater CBS are in limited time (eg, in KOS m. Slavutich wastewater are from 7 to 13 hours) still need operational control method of purification for the timely implementation of management actions.

Recently in Ukraine harmonized significant number of international standards on water supply and sanitation, some relating to methods of monitoring and embody international experience [5]. But in addition to these robust (but lengthy methods) in real conditions existing wastewater treatment is the need for operational methods of process control because, in particular, is working on the creation of operational control methods using conductivity fluids [6,7]. Among the existing methods of surgical method is the determination of water clarity (defined according to GOST 3351 - 74 almost instantly). Water clarity is caused by the presence of suspended and colloidal impurities, and there is a correlation between the indicators used for

assessment of sea water, potable water [8 - 12], but we have not found publications on assessment of concentration of suspended solids and COD waste water through this Operational index.

Given the specifics of sewage treatment plants need their operational methods and process control products) and the fact that transparency is defined very quickly, we conclude that the study depends on water clarity of suspended solids, chemical oxygen demand is a promising direction for the development of surgical techniques control.

The aim - to study relationship between water transparency and concentration of suspended solids; transparency and chemical oxygen demand of waste water, the development of operational control method of purification of waste water.

Materials and methods of research. Performance analysis of wastewater in CBS m. Slavutich for the period 2001-2013 gg. Under monthly reports laboratory chemical-analytical control, "Journal of the contents of suspended solids in wastewater" and "Workbook from COD LHAK and transparency of wastewater" that provided the sample size - 106 measurements. Measurement transparency is delivered in the font Snellena №1 according to GOST 3351-74 [13, 14], determining COD - according to gain 211.1.4.021-95 and QD 05/16/2002 [15,16] determination of suspended solids - according to gain 211.1 .4.039-95 and QD 05/03/2002 [17, 18]

Results. We conducted a study to identify the relationship between transparency and some other indicators of waste water, the determination of which requires considerable time, including COD and suspended solids. To develop mathematical models we used indicators of waste water are presented in Table. 1, Table 2.

Experimental data processed using Excel packet analysis by the method of least squares. It was established that the experimental data show a nonlinear relationship between indicators considered. It is therefore advisable to use transparency instead of the inverse function, ie 1 / transparency. Graph the inverse of transparency.

The equation depending on the concentration of suspended matter from the inverse transparency:

The results make it possible to use the indicator of transparency for operational control personnel treatment plant concentration of suspended solids and chemical oxygen demand using built our schedules.

Conclusions

1. Mathematical models depending on the chemical oxygen demand and suspended solids concentration dependence of the inverse of transparency wastewater.

2. Got the further development of the method of quality control of waste water using graphs, which received to build mathematical dependence "transparency - the concentration of suspended solids", "transparency -HSK", which gives an opportunity to control the quality of the cleaning process and normalized rates of water, duration of control reduced to 3-7 hours, which is of practical importance for the timely implementation of management actions.