

SUMMARY

**Research Practice Report of 2nd year student, group BT-51M
specialty 8.05140101 - Industrial Biotechnology**

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**on “Groundwater treatment by improving biotechnological iron and
manganese removal”**

Research Practice Report is outlined on 29 pages of printed text. The report consists of an introduction, two chapters, conclusion and list of references and contains 4 figures and 4 tables.

There are literature review and experimental part chapters in the research practice report.

The importance of the chosen research topic, it's purpose and problems to solve are described in the Introduction.

The object of the study was iron and manganese containing underground water.

The paper used materials and methods described in the M. Kvartenko's and O. Kravchenko's works.

The main results of the method was the improvement of the process of iron and manganese removal on loads of zeolite filters while filtering water with high content of iron and manganese compounds.

As a result of research practice following tasks have been resolved:

- the role of microorganisms in the process of removing iron compounds by comparing the TVC of filters' flushing water and specific iron removal has been proved;

- the influence of oxidants - oxygen, ozone and hydrogen peroxide - on the process of underground water with iron and manganese compounds filtering has been proved, and it has been found that biological processes play as significant role as chemical ones;

- it has been proved that the usage of oxidants improves the efficiency of biological component in the water iron and manganese removal process and it has been shown the principal possibility of enhancing this process by small doses ozone treatment and filtering through a layer of zeolite loading.