

PHYTOMELIORATIVE TREATMENT OF INDUSTRIAL WASTEWATER FROM PETROLEUM PRODUCTS

Relevance of the problem: Rational use of water resources is one of the urgent tasks for the southern regions of the country, where water sources are mainly represented by small rivers and are subject to seasonal fluctuations. At the enterprises of the oil and gas complex, a physical, physico-chemical and biological method is used for wastewater treatment. At the last stage, wastewater flows into aerotanks, where the design capacity assumes 85% purification of water from residual toxic substances. However, often, due to a violation of the technological parameters of purification or a decrease in the efficiency of biological wastewater treatment, multiple emergency discharges of untreated wastewater occur.

The purpose of the project: post-treatment of industrial wastewater.

Advantages over analogues: year-round use of native and introduced plant species. Degree of purification: 99.7-100.0% from chromium, lead, cadmium, copper, iron ions; 51.6-55.0% from nitrogen group ions, 48.5-50.0% from salinity.



Developers: a team of authors led by Doctor of Biological Sciences, Professor Issayeva A.U.

It comes from him↓

Commercialization of the results. The technology of phytomeliorative wastewater treatment has passed semi-industrial tests at Water Resources

Marketing LLP (Shymkent), at the treatment facilities of PetroKazakhstan Oil Products LLP.

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Patent protection. There are 4 patents for an invention and 1 patent for a utility model of the Republic of Kazakhstan.

№ п/п	Name	Output data	Authors
1	Способ наращивания активного ила для биологической очистки нефтесодержащих сточных вод	Патент РК №12383 от 14.07.2006, бюл.№7	Исаева А.У., Илялетдинов А.Н., Утебаева Ж.Ж., Ембердиев А.Ж., Жаркимбеков С.У., Манапова Н.М., Мамбетова Л., Оспанова Ж.
2	Способ очистки сточных вод от нефтепродуктов.	Предпатент РК №17235 от 14.04.2006, бюл.№4	Исаева А.У., Бишимбаев В.К., Оспанова Ж.К., Мырзабаева Ж.
3	Способ очистки сточных вод.	Инновационный патент РК №21204 2008/0469.1 от 21.04.2008, 15.05.2009, Б.№5	Исаева А.У., Ешибаев А.А., Бишимбаев В.К., Асамбаева Л.К.
4	Способ биологической очистки сточных вод	Инновационный патент № 24863, опубл. 15.11.2011, Б.№11	Исаева А.У., Бишимбаев В.К., Успабаева А.А., Таскараева К.А., Бишимбаев К.В.
5	Способ биологической очистки загрязненных вод	Патент на полезную модель №6578	Исаева А.У., Сейткулов Н.А., Тлеукеева А., Тлеукеев Ж.