



Containerized greywater treatment plant for coal mining company

Industry Municipal Utility Sector
Type Biological Wastewater treatment
Task To implement Containerized Wastewater Treatment plant for company wastewater treatment fulfilling the requirements for the effluent to be disposed into the river.
Water source Greywater

About the project

The wastewater treatment plant consists of mechanical pre-treatment, equalizer tank, and the biological wastewater treatment plant.

Facts and figures

Mechanical pretreatment	m ³ /day	1200
Membrane bioreactor	m ³ /day	600
Activated carbon filtration	m ³ /day	800





PARAMETER	UNIT	INFLUENT	EFFLUENT
Suspended solids	mg/dm ³	165	≤ 2,0
Oil products	mg/dm ³	0,46	≤ 0,05
Total iron (Fe)	mg/dm ³	0,80	≤ 0,1
Manganese (Mn)	mg/dm ³	0,060	≤ 0,01
Copper (Cu)	mg/dm ³	0,003	≤ 0,001
Nickel (Ni)	mg/dm ³	0,005	≤ 0,002
Phosphates	mg/dm ³	0,31	≤ 0,05
Nitrite nitrogen	mg/dm ³	1,30	≤ 0,073
Nitrate nitrogen	mg/dm ³	17,0	≤ 2,77
Ammonium nitrogen	mg/dm ³	12,5	≤ 0,40
BOD	mg O ₂ /dm ³	28,2	≤ 3,0
Phenols	mg/dm ³	0,001	≤ 0,001
Chromium	mg/dm ³	0,005	≤ 0,002
Zinc	mg/dm ³	0,08	≤ 0,01

Summarize

This project was a challenge for our engineers because of source greywater differed from the domestic greywater characteristics: BOD was very low, high pH indicator, a large ratio of COD/BOD, which is atypical for greywater, and there were other pollutants, typical for industrial wastewater. Our engineers designed the containerized wastewater treatment plant with the Membrane bioreactor (MBR) with the flat sheet type MBR membranes. We have not only to meet the strict effluent requirements but also to make our equipment fit in the space-limited container.

The project was implemented successfully. The containerized wastewater treatment plant is reliably operating in a continuous mode and the treated effluent fulfills the requirement to be disposed into the river.

