

Bacteria in the area of influence of sewage treatment plant Gdynia - Dębogórze in 2009

Results of microbiological testing of water from Gulf of Puck in surrounding area of Mechelinki town, obtained as a part of a project: „Execution of a series of comprehensive, pre-investment assessments and measurements in Mechelinki area, in order to monitor the waters of Gulf of Puck in relation to a planned discharge of communal sewage and brine collected as a result of solution mining of salt caverns, using underwater pipelines

The Gulf of Puck is a basin into which surface waters from an approximate area of 774 km² are flowing. The Gulf of Puck is a receptacle of sewage water from Gdynia „Dębogórze” Sewage Treatment Plant. Sewage from the facility was discharged into the seawater using sewage pipeline located on the coast line, in Mechelinki town.

The aim of the test was to assess the influence of discharging communal sewage into the waters of Gulf of Gdańsk by sewage pipeline located in Mechelinki town area, on the sanitary condition of these waters.

Methods

Water samples were collected from the area of sewage influence at sites located along the coast line (five sites marked as B 1 to 5), and from open waters of Gulf of Puck (fourteen sites marked as SO 1 to 14) as water column profiles, measured at every 2,5 meters of depth, down to the sea bottom. Sample collection took place in two series on following dates: 28.06.2009, 19.08.2009.

The samples were subsequently analysed for:

The number of *Enterobacteriaceae* genus bacteria by Most Probable Number (MPN) method, with presumptive, confirmed and completed phases, in accordance with PN-EN ISO 9308-3.

The number of *Escherichia coli* bacteria by Most Probable Number (MPN) method, with presumptive, confirmed and completed phases, in accordance with PN-EN ISO 9308-3.

Conclusion:

Based on the results of undertaken tests, it was determined that the bacterial contamination was limited to a narrow belt of coastal water in the area of discharge unit of a sewage collector belonging to Gdynia „Dębogórze” Sewage Treatment Facility. The number of detected bacteria decreased the further from the coast line the samples were collected.