

UAB "NEO GROUP" MONITORING REPORT FOR THE YEAR 2017

UAB "NEO GROUP" carries out activities based on the **Integrated Pollution Prevention and Control Permit (IPPC permit)**, which determines the requirements and standards, monitoring measurement locations and monitoring programme for its environmental protection measures.

NOISE

On 29 August 2017, a National Public Health Care laboratory carried out measurements of both the equivalent (average) and the ultimate levels of noise in the daytime (6:00 am – 7:00 pm), in the evening (7:00 pm – 10:00 pm) and at night (10:00 pm – 6:00 am) at the UAB "NEO GROUP" monitoring points No. 1, No. 2 and No. 4, indicated in *Figure 1*.

It was established that the noise emissions from the company are lower than the permitted standards for daytime, evening and night time (see *Figures 2 and 3*).

In 2017 Y, there were no complaints about the noise spreading from the factory.



Fig. 1 Points for the environmental monitoring of UAB "NEO GROUP"

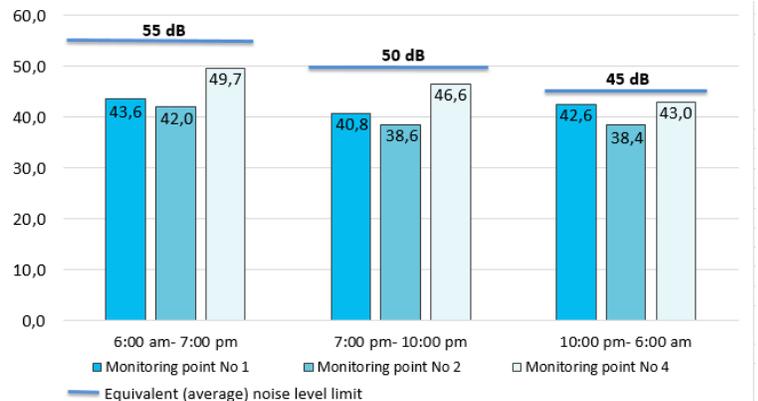


Fig. 2 Results of measurements of the equivalent (average) noise from UAB "NEO GROUP", dB

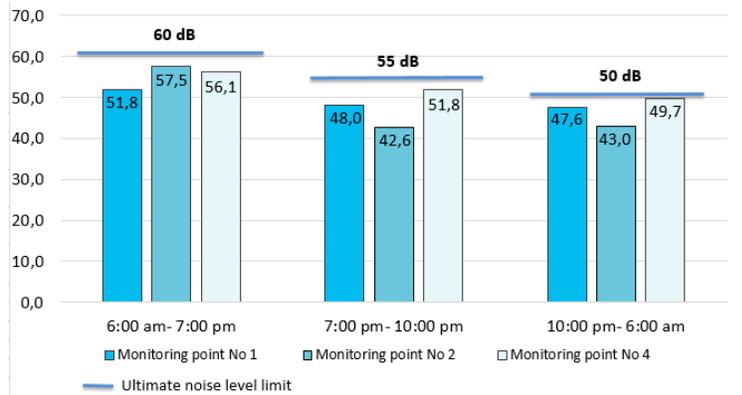


Fig. 3 Results of measurements of the ultimate noise from UAB "NEO GROUP", dB

MEASUREMENTS OF ACETALDEHYDE IN THE AMBIENT AIR

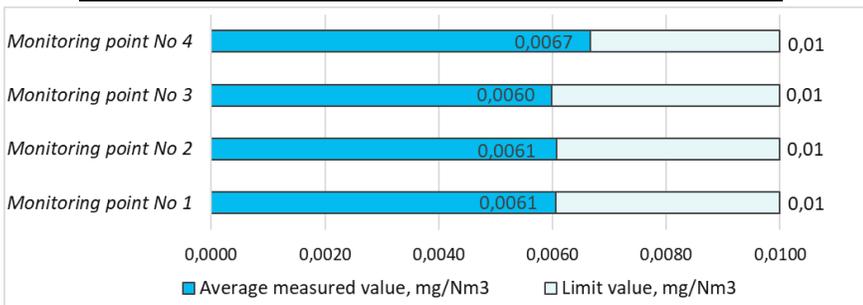


Fig. 4 Comparison of the acetaldehyde emissions at the monitoring points with the standards

In 2017 Y, the company carried out measurements of the acetaldehyde concentrations in the ambient air at 4 monitoring points (Fig. 1). The samples were taken at all 4 points on the same day. In this way, the concentrations of pollutants on the windward and leeward sides of the factory could be compared. The measured concentrations of acetaldehyde at all the points were lower than the requirements of the standards (Fig. 4).

EMISSIONS FROM STATIONARY SOURCES OF ATMOSPHERIC POLLUTION

In 2017 Y, the control of the pollutants emitted into the atmosphere from stationary sources of pollution was carried out in accordance with the monitoring schedule of the IPPC permit. The laboratory measurements were carried out by the UAB "Vakarų centrīnē laboratorija", UAB "NEO Group" and the "Latvian Environment, geology and meteorology centre" laboratories. During the monitoring, it was found that the factual emissions were lower than the standards of the IPPC permit. In 2017 Y, the Ministry of Environment carried out the state control of emissions from stationary sources of atmospheric pollution. The control measurements revealed that company satisfies the conditions specified in the IPPC. In the second quarter of 2017, environmental measures to reduce the air pollution were implemented – cleaning equipment (a scrubber) was installed in the source of the environmental pollution. The measurement carried out show that the pollution from this source has significantly decreased, and was 0.2 percent of the permitted standard. In addition, the factual annual emissions from the stationary sources of atmospheric pollution were 77% of the permitted

emissions (Fig. 5). The major part of the necessary energy production in 2017 Y was gained from the burning the biofuel (wood chips and a mixture of lignin and wood) in the biofuel heater, while the remaining part of the energy was gained from natural gas burning in high temperature heaters. About 98 percent of all the emissions into the ambient air consisted of emissions from the heaters. In 2017 Y, the amount of pollutants emitted into the ambient air decreased by 2.9 % compared with 2016 Y. This decrease was achieved by the lower amount of solid particle emissions from the biofuel heater, which was caused by a higher efficiency of the electrostatic filter cleaning than was indicated in the project (average annual efficiency of the electrostatic filter in 2017 Y was 99.7%, while the efficiency in project was 98%).

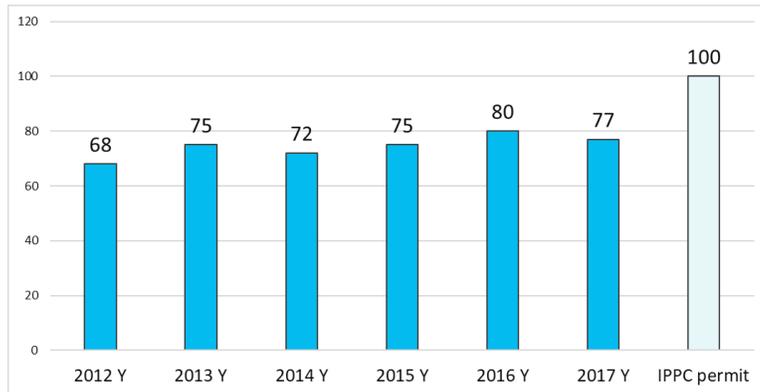


Fig. 5. Comparison of factual emissions (%) with IPPC permit's standards

GREENHOUSE GASES (GHG)

In order to contribute to the climate change mitigation initiatives, we have significantly reduced the carbon emissions (Fig. 6) in our production process by using natural gas to replace biofuels: in 2017 Y, in the biofuel heater was produced 63% of the total heat demand, and 37% of the heat was produced from natural gas burning.

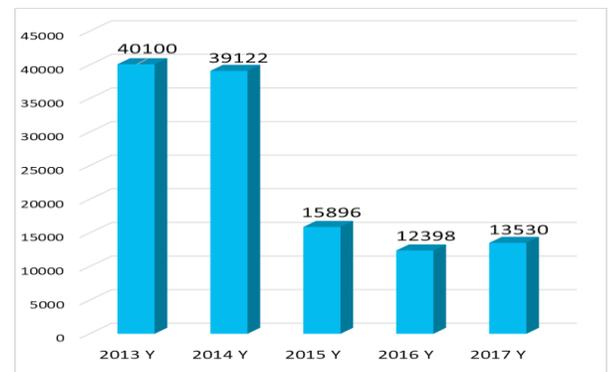


Fig. 6 Change of the CO₂ equivalent GHG emissions in tons from UAB „NEO GROUP”

INDUSTRIAL- HOUSEHOLD WASTEWATER

The monitoring of the industrial and household wastewater discharged into the AB “Klaipėdos vanduo” network was carried out in accordance with the monitoring schedule of the IPPC permit. Measurements were carried out by the laboratories of the UAB “NEO GROUP” and the Agrochemical Research Laboratory of the branch of the

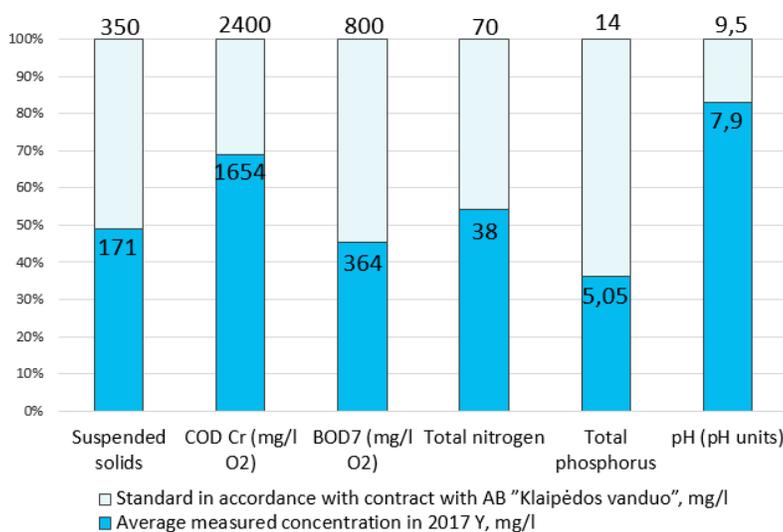


Fig. 8 Pollution of industrial and household wastewater from UAB “NEO GROUP” released into the networks of AB “Klaipėdos vanduo” in the year 2017



Fig. 7 Aerotanks – part of the biological cleaning equipment for wastewater

Lithuanian Research Centre for Agriculture and Forestry. The measured average annual concentrations of pollutants are given in Figure 8.

During the monitoring of the industrial and household wastewater of UAB “NEO GROUP” in 2017 Y, the wastewater pollution was found to be within the standard and corresponding to the conditions of the permit. During the year, AB “Klaipėdos vanduo” also controlled the pollution of the released wastewater – and it was found that the measurements satisfied the standards.

SURFACE WASTEWATER

Surface wastewater from the factory site locations (asphalted roads and car parking lots) and the relatively clean industrial wastewater (cooler water) collected after cleaning (Fig. 9) are released into a drainage ditch. In 2017, monitoring was carried out in accordance with the monitoring programme. The researched wastewater parameters were: BOD₇, total nitrogen, total phosphorus, sulphates, chlorides, suspended solids, oil products. Measurements were carried out by UAB “NEO GROUP” and by the Agrochemical Research Laboratory of the branch of the Lithuanian Research Centre for Agriculture and Forestry.



Fig. 9 Location of surface wastewater cleaning equipment – oil catcher

The measured wastewater concentrations did not exceed the IPPC permit standards – the comparisons of the concentrations are given in Figure 10. During the state control carried out by the Ministry of Environment, the surface water pollution did not exceed the standards.

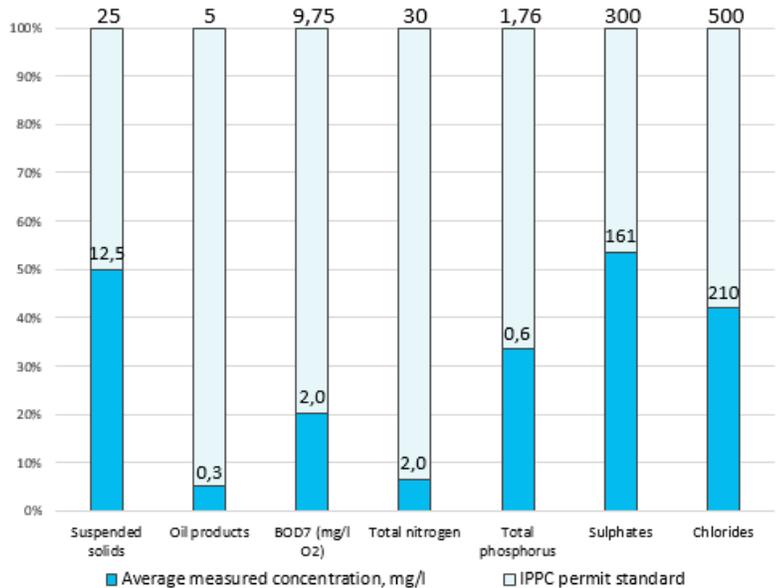


Fig.10 Pollution of the UAB “NEO GROUP” surface wastewater in 2017

UNDERGROUND WATER

The hydrogeological sector of the Institute of Geology and Geography of the Natural Research Centre carried out the monitoring of the impact of UAB “NEO GROUP” on the underground water. This monitoring has been carried out since the establishment of the enterprise – since 2005.

In 2017, the following examinations of the underground water were carried out:

- physical and chemical indicators of the water (temperature, pH, special electrical conductivity, O₂);
- chemical composition indicators of the total concentrations in the water (Cl⁻, SO₄²⁻, HCO₃⁻, CO₃²⁻, Na⁺, K⁺, Ca²⁺, Ca²⁺, Mg²⁺, hardness, general mineralisation);
- concentration of biogenic indicators in the water (NH₄⁺, NO₂⁻, NO₃⁻, permanganate index, ChDS_{Cr}, total phenols, total phosphorus);
- concentration of metals in the water (Fe, Pb, Zn, Mn);
- concentrations of aromatic, gasoline, diesel and oil hydrocarbons in the water.

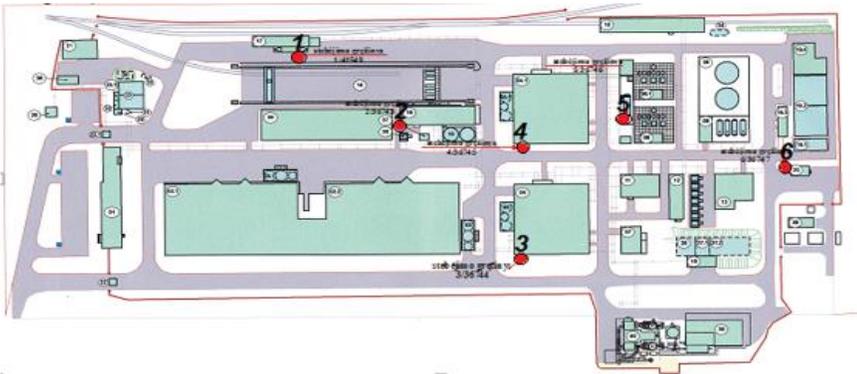


Fig. 11. Boreholes for the underground water monitoring

The location of the boreholes for the monitoring is shown in Figure 11.

In 2017 Y, the groundwater of all the boreholes in the territory of UAB “NEO GROUP” was of a high quality, indicating fresh water. The concentrations of

metals were lower than the permitted standards by tens or hundreds of times. The concentrations of aromatic and petrol hydrocarbons in the groundwater were also very low and did not reach the limits of the sensitivity of the devices. The chemical indicators of the groundwater did not exceed the standards of hygiene set for water pollution in low-polluted areas. For these reasons, it is not expedient to investigate the following components of the remaining effects in the groundwater monitoring programme for the period of 2018-2019 Y: phenol number, aromatic and petrol hydrocarbons, lead, zinc, iron and manganese.



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