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ENVIRONMENTAL HAZARD ASSESSMENT OF ATMOSPHERIC AIR OF TARAZ CITY

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ANNOTATION

In this article shows the relevance of atmospheric air in the world.The relevance of our topic is due to the fact that the problem of air pollution is one of the most serious global problems that mankind has encountered. The environmental problems of the city of Taraz are the most acute, the city is among the most polluted in Kazakhstan. Sources of pollution are emissions from vehicles and stationary objects.

Main words: Atmospheric air, the greenhouse effect, anthropogenic impact, acid rain, chemical compounds .

The issue of human exposure to the atmosphere is the focus of attention of experts and ecologists around the world. And this is no coincidence, since the global environmental problems of our time are “the greenhouse effect”, the violation of the ozone layer, the loss of acid rain, are associated precisely with anthropogenic pollution of the atmosphere.

Object of study and research method. Air protection is a key issue in improving the environment. Atmospheric air occupies a special position among other components of the biosphere. Its significance for all life on Earth cannot be overestimated. A person can be without food for five weeks, without water for five days, and without air for only five minutes. In this case, the air must have a certain purity and any deviation from the norm is dangerous to health. [1]

Air pollution affects human health and the environment in various ways. This can be a direct and delayed threat, such as smog, or slow gradual destruction of various life support systems of the body. in many cases, air pollution disrupts the structural components of the ecosystem to such an extent that perulatory processes are not able to return them to their original state and the mechanism of homeostasis does not work. The destructive effect of industrial pollution depends on the type of substance:

- Chlorine damages the organs of vision and respiration;
- Fluorides, entering the body through the digestive tract, wash calcium from the bones and remove its content in the blood; when inhaled, they adversely affect the respiratory tract;
- Compounds of heavy metals are dangerous for inhalation, among suspended solids the most dangerous are particles smaller than 5 microns in size, which are able to penetrate the lymph nodes, linger in the alveoli of the lungs, clog the mucous membranes; lead, benz (a) pyrene, phosphorus, cadmium, arsenic, cobalt, cause negative consequences over a huge interval of time with small volumes, inhibiting the circulatory system, cause cancer, reduce the body's resistance to infections; cause dysfunction of the reproductive system and defects in newborns;
- Sulfur dioxide affects the airways; combining with moisture, it can form sulfuric acid, which destroys the lung tissue of man and animals;
- Nitrogen oxides irritate, in severe cases, and corrode the mucous membranes of the eye, lungs, causing bronchitis and pneumonia; participate in the formation of poisonous mists; in the presence of sulfur dioxide, a synergistic effect is possible, i.e. increased toxicity of the entire gaseous mixture; may increase the susceptibility of the body to viral diseases (such as flu);
- Carbon dioxide interferes with the transfer of oxygen, which causes oxygen starvation of the body; [2]

Relatively recently, changes in the composition of air caused by technogenesis (human production activities) have begun. The consequences of these changes are extremely unpleasant: leaching of acids from the atmosphere – “Acid rain”; thinning and perforation of the stratospheric ozone layer O_3, which protects earthly life from the ultraviolet radiation of the Sun; Climate warming caused by the accumulation in the atmosphere of gases absorbing infrared radiation and preventing its scattering is “the greenhouse effect”; corrosion of materials in the open air; photochemical cities, etc. [3]

Air pollution is one of the major problems facing ecologists in the city of Taraz, which is typical for major cities, which are the center of production.The leading industries of Zhambyl region were mining and chemical industries. But due to economic difficulties, institutions in these industries are in complete disconnection. Nevertheless, private farms, small enterprises, especially vehicles, are still at a high level of air pollution.Although the anthropogenic impact has been decreasing lately, the overall ecological situation in the region has not yet improved. 15% of the region lies in an environmentally unfavorable region and 5%

is in an ecological crisis (crisis zone). This 5% territory is located along the foothills of Chu, Talas and Asa rivers, as well as Taraz and its surroundings.The city of Taraz, the vast majority of the population of the region, has a direct impact on people's health as a key component of the environment. The main pollutants in the city air are organic dust, ash, CO, NO, NO2, SO2 . This is due to the fact that obsolete installations and technologies are the result of the use of unhealthy fuels, decentralization of the heating system and insufficient control of emissions.The problem of contamination of the Zhambyl region with chemical industry for a long time has not diminished. In this case, the most important problem of the environmental quality control strategy is the organization of the biosphere elements detection system that identifies the factors and sources that have the greatest impact on the health of the population and the biosphere. This system includes monitoring of anthropogenic changes in the environment.According to environmental monitoring of atmospheric air, the air pollution index of the regional center in September of 2019 was 5.4 units, which indicates a decrease in pollution.

According to the press service of the akim of the Zhambyl region, there are five stationary posts for monitoring atmospheric air pollution in Taraz, including one SCAT, an automatic atmosphere control station.

According to a stationary observation network, the level of air pollution in the city is characterized as an increased level of pollution.

According to the RSE "Kazhydromet", the average daily concentration of pollutants in September of 2019 amounted to: nitrogen dioxide - 1.8 MPC, sulfur dioxide - 1.3 MPC.The average monthly concentration of nitrogen dioxide was 1.8 MPC.s, ozone (surface) - 1.2 MPC.s, concentrations of other pollutants and heavy

metals in atmospheric air did not exceed MPC.The maximum single concentration of suspended particles RM-10 amounted to 1.0 MPC.R., carbon monoxide - 1.4 MPC.R., nitrogen dioxide - 1.4 MPC.R., hydrogen sulfide - 1.5 MPC.r., the concentration of other pollutants in atmospheric air did not exceed MPC. Cases of high pollution (VZ) and extremely high pollution (EVZ) atmospheric air is not fixed. [4]

An increase in the concentration of most impurities is observed in the cold season, when emissions of thermal power plants, heating plants, the private sector increase and the frequency of adverse weather conditions contributing to their accumulation increases. In the warm season and especially in the springtime (April-May), when the wind speed increases, the frequency of precipitation increases, and emissions from stationary sources decrease, the concentrations of harmful impurities in the air are significantly reduced. The climatic features of the city of Taraz create adverse conditions for the dispersion of impurities entering the atmosphere from numerous high and low emission sources. the territory of the city is the most unfavorable place for self-cleaning of the atmosphere from harmful impurities. On average over the year, the frequency of occurrence of atmospheric processes that contribute to the accumulation of harmful pollutants is more than four times greater than the frequency of processes that ensure their dispersion. [5]

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