Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 01, Issue 07, July 2025
Website: ecomindspress.com

THE STATE OF WATER RESOURCES IN RESIDENTIAL AREAS

Sherkuziyeva G. F.
Bakhriddinova M. N.
Toshpulatov B. M.
Latipova M. Z.
Tashkent State Medical University, Tashkent, Uzbekistan

Abstract
The article analyzes the current state of pollution in open water bodies. According to literature review and personal observations, the water in these reservoirs is mainly contaminated with sulfates and iron. Additionally, water oxidizability and turbidity are also considered key indicators of water quality.

Keywords: Population, water resources, hygienic requirements, oxidizability, sulfates, iron, ecology.

Introduction

The United Nations Educational, Scientific and Cultural Organization (UNESCO) disseminates information on environmental protection, promotes research into environmental conditions, and encourages the rational use of natural resources. It is well known that the Central Uzbekistan region has long had extensive irrigated lands. However, it is also characterized by an unequal and limited distribution of water resources across its territories.

Each year, around 160 cubic kilometers of industrial wastewater are discharged into rivers, more than 500 million tons of mineral fertilizers and approximately 3 million tons of toxic chemical substances are applied to agricultural lands. These pollutants are washed off by surface runoff into water bodies, causing significant water pollution. As a result, the quantity of water suitable for irrigation and drinking has decreased.

Furthermore, the use of steam turbines in thermal and nuclear power plants increases the demand for water. Currently, the issue of disposing of hazardous radioactive waste from nearly 300 nuclear power plants remains a pressing concern.

Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 01, Issue 07, July 2025
Website: ecomindspress.com

In Uzbekistan, the development of industry and agriculture, the improvement of living standards, and the urban and rural beautification efforts are all directly dependent on water. As these factors grow, so too does the demand for high-quality water.In recent years, the global community has faced numerous disasters that have severely impacted the economy, sustainable development, human well-being, and the environment. In its World Water Development Report, the UN highlights that the increasing variability in water resources—caused by climate change—has led to growing risks of floods and droughts. These phenomena result in greater losses for both humanity and the economy.

Today, it is vitally important to promote the rational use and protection of water resources. Encouraging the protection of water resources also ensures the sustainable use and legal ecological protection of other natural assets. Promoting the ecological and legal protection and rational use of water resources requires not only the safeguarding of water and aquatic ecosystems, but also the environmental and legal protection of other natural resources.

Research Objective:

Based on the aforementioned issues, the aim of this research is to observe the pollution status of open water bodies in residential areas over a period of years and to provide a hygienic assessment of the obtained results.

Results:

In the investigation of the pollution status of water bodies, laboratory analysis revealed the following: In 2018, a total of 104 water samples were collected and examined for dry residue, total hardness, chlorides, sulfates, iron content, nitrates, color, turbidity, hydrogen index (pH), and oxidizability. This is because managing water quality involves reducing the amount of dissolved salts (desalination), decreasing water hardness, lowering the iron content, and minimizing the amount of suspended particles, among other measures. Therefore, determining these indicators is of significant importance.

During the observation year, the analysis of laboratory test results revealed the following:In 2018, out of the samples taken from open water bodies: 16 samples (13.3%) did not meet hygienic standards for dry residue, 38 samples (36.5%) for total hardness, 3 samples (2.8%) for chlorides, 16 samples (13.3%) for sulfates, 50 samples

Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 01, Issue 07, July 2025
Website: ecomindspress.com

(48.0%) for iron content, and 82 samples for turbidity did not meet hygienic requirements.

Table No. 1 Results of Sample Testing in 2018

№	Total Samples	Dry Residue	Total Hardness	Chlorides	Sulfates	Iron
Absolute Number	104	16	38	3	16	50
Percentage (%)	100%	13.3%	36.5%	2.8%	13.3%	48%

Protecting open water bodies from pollution, as well as preserving their biological resources and ensuring their rational use, is an extremely important task. Polluted water makes it difficult for aquatic animals to survive and may lead to their extinction. In 2019, a total of 173 samples were collected. Among these, 2 samples (1.1%) did not meet hygienic standards for dry residue, 2 samples (1.1%) for sulfates, 5 samples (2.8%) for iron content, and 12 samples for oxidizability failed to meet hygienic requirements.

Conclusion:

From the obtained results, it can be concluded that, based on the sanitary-chemical analysis of water from the reservoirs, some of the samples did not meet hygienic standards—particularly regarding turbidity, total hardness, and sulfate content. These findings form the basis for developing preventive measures aimed at protecting water resources from pollution through sanitary safeguards.

References

1. Decree of the President of the Republic of Uzbekistan No. PF-5863 dated October 30, 2019, “On Approval of the Concept of Environmental Protection of the Republic of Uzbekistan for the Period up to 2030”.
2. Resolution of the President of the Republic of Uzbekistan No. PQ-2910 dated April 22, 2017, “On the Program for the Comprehensive Development and Modernization of Drinking Water Supply and Sewerage Systems for 2017–2021”.
3. Akhmedov, A. // "Provision of Drinking Water and Demand for Water Resources (Based on the Example of Khorezm Region)," Scientific Electronic Journal “Economics and Innovative Technologies”, No. 4, July–August, 2015.

Global Economic Review: Journal of Economics, Policy, and Business Development
ISSN: 2980-5287
Volume 01, Issue 07, July 2025
Website: ecomindspress.com

4. Vasilieva, M. V., & Natarova, A. A. (2016). The Impact of Wastewater on Water Bodies in the Voronezh Region. Science. Thought, No. 7, pp. 34–39.
Iskandarova, Sh. T., & Usmanov, I. A. (2018). Forecast of Changes in Water Quality in the Zeravshan River under Conditions in Uzbekistan. Ecology and Construction, No. 3, Moscow, pp. 4–10.
5. Norbekov, O. "Water is the Source of Life," Journal “Agriculture of Uzbekistan”, 2011, Issue No. 3.
6. Sherkuzieva, G. F., Danaev, B. F., Juraeva, N. T., & Saifutdinova, Z. A. (2016). Hygienic Assessment of the Sanitary Condition of the Surkhan River. Young Scientist, (1), pp. 104–107.
7. Sherkuzieva, G. F., Samigova, N. R., Rustamova, M. K., Khadzhaeva, U. A., & Musaev, E. V. (2019). Results of Drinking Water Quality Monitoring in the Republic of Uzbekistan. International Scientific Review of the Problems of Natural Sciences and Medicine: Collection of Scientific Articles of the IX International Correspondence Scientific Specialized Conference. Boston, 2019.
8. Sherkuzieva, G. F., Danaev, B. F., Juraeva, N. T., & Saifutdinova, Z. A. (2016). Hygienic Assessment of the Sanitary Condition of the Surkhan River. Young Scientist, (1), pp. 104–107. (duplicate entry) .