

UDC 504.06, 502.573

Proshutynsky Serhii,

Student of Bachelor's degree of specialty 183,

Kondratenko Oleksandr,

Professor of the Department of Fire and Technogenic Safety of Objects and Technologies, Educational and Scientific Institute of Fire and Technogenic Safety, DSc(Engineering), Professor

National University of Civil Protection of Ukraine of SES of Ukraine

ANALYSIS OF ASPECTS OF POLLUTION OF ENVIRONMENTAL COMPONENTS FROM SPONTANEOUS LANDFILL

Relevance of the study topic is due to the following components. Compliance with the Order of the State Emergency Service of Ukraine № 618 dated 09/20/2013 «On approval of the Regulations on the organization of environmental support of the State Emergency Service of Ukraine» (<https://zakon.rada.gov.ua/rada/show/v0618388-13#Text>), the Decree of the President of Ukraine № 722/2019 dated 09/30/2019 «On the Sustainable Development Goals of Ukraine for the period until 2030» (<https://zakon.rada.gov.ua/laws/show/722/2019#Text>), the Resolution of the Cabinet of Ministers of Ukraine № 476 dated 04/30/2024 «On approval of the list of priority thematic areas of scientific research and scientific and technical developments for the period until December 31 of the year following the termination or abolition of martial law in Ukraine» (<https://zakon.rada.gov.ua/laws/show/476-2024-%D0%BF#Text>), the Specialty Passport of 21.06.01 «Ecological Safety», approved by Resolution of the Presidium of the Higher Attestation Commission of Ukraine № 33-07/7 dated 04.07.2001 (https://zakon.rada.gov.ua/rada/show/va7_7330-01#Text), the Law of Ukraine № 3769-IX dated 04.06.2024 «On Amendments to Some Laws of Ukraine Regarding the Mandatory Use of Liquid Biofuels (Biocomponents) in the Transport Sector» (<https://zakon.rada.gov.ua/laws/show/3769-20#Text>), the Standard of Higher Education in Specialty 183 «Environmental Protection Technologies» of the Third (Educational and Scientific) Level in the Field of Knowledge 18 «Production and Technologies», approved by Order of the Ministry of Education and Science of Ukraine № 1427 dated 23.12.2021 (<https://mon.gov.ua/static-objects/mon/sites/1/vishcha-osvita/zatverdzeni%20standarty/2021/12/24/183-Tekhn.zakh.navk.seredovyshcha-dokt.filos.pdf>), the Topics of Scientific Research and Scientific and Technical (Experimental) Developments for 2025-2029, approved by Order of the Ministry of Internal Affairs of Ukraine № 326 dated 21.05.2024 (<https://mvs.gov.ua/normativno-pravovi-akti/nakaz-mvs-vid-21052024-326-pro-zatverdzenia-tematiki-naukovix-dosliden-i-naukovo-texnicnix-eksperimentalnix-rozrobok-na-2025-2029-rok>), the Civil Protection Code of Ukraine in its current version dated 12.09.2025, Article 108 (<https://zakon.rada.gov.ua/laws/show/5403-17#Text>).

Purpose of the study. To analyze aspects of pollution of environmental components from a spontaneous landfill.

Results of the study. The study is dedicated to one of the most acute environmental problems of Ukraine – the problem of solid waste [1-3], which is especially acute in the Cherkasy region. According to the Environmental Passports of the Cherkasy region for 2021–2024, a major environmental problem is manifested: uncontrolled growth in the volume of solid waste and discharges of polluted water near them, against the background of an extremely low degree of their processing. The landfill in the village of Hrushkivka is a vivid example of such inaction. Its official status does not prevent it from continuously exerting a negative technogenic impact on environmental components on a daily basis. This produces highly toxic leachate and greenhouse gases, which practically freely penetrate our ecosystems through groundwater and air, thereby affecting the ecological security of future generations – safe food, clean water, and clear air. This analysis is a tool for building a clear action plan, the main technical component of which is the development and implementation of environmental protection technologies. This roadmap provides for the elimination of all unauthorized landfills, full technical reclamation of the land object in the village of Hrushkivtsi with the creation of anti-filtration barriers, leachate purification systems and gas utilization. The final step will be biological restoration of the territories and long-term monitoring, which will guarantee the sustainability of the results.

Conclusions. Thus, this study analyzed qualitative and quantitative indicators characterizing the negative technogenic impact on environmental components from a spontaneous landfill.

References

1. Research of Properties and Rational Composition of Ecosafe Building Materials with Ash-and-Slag Waste from Masute Fuel And Coal Combustion / O. Kondratenko, V. Koloskov, H. Koloskova, V. Babakin // Key Engineering Materials. – 2023. – Vol. 935, pp. 85–97. – DOI: 10.4028/p-RwzP9p.

2. Research of Technical and Economic Properties of Material of Porous Fuel Briquettes from the Solid Combustible Waste Impregnated with Liquid Combustible Waste / O. Kondratenko, V. Koloskov, S. Kovalenko, Y. Derkach // Materials Science Forum, 2021, № 1038, pp. 303–314. – DOI: <https://doi.org/10.4028/www.scientific.net/msf.1038.303>.

3. Substantiation of expedience of application of high-temperature utilization of used tires for liquefied methane production / S. Vambol, V. Vambol, O. Kondratenko, V. Koloskov, Y. Suchikova // Journal of Achievements in Materials and Manufacturing Engineering. 2018. Volume 87. Issue 2. pp. 77–84. – DOI: 10.5604/01.3001.0012.2830.