American Journal of Political Science and Leadership Studies, Vol.1, No.5 (Sep, 2024),
E-ISSN: 2997-9420
American Journal of Political Science and Leadership Studies
https://semantjournals.org/index.php/AJPSLS

| Research Article

Check for updates

# Environmental Impact of Solid and Household Waste Generated By Construction Companies

**Keldiyarova Gulmira Farxadovna**
**Belyalova Leylya Enverovna**
**Boratova Muxtasar Ganiyevna**
**Niyazova Oybakhor Baxriddinovna**
Samarkand State University named after Sharof Rashidov

**Muxammedov Shuxrat Qosimovich**
Uzbekistan-Finland Pedagogical Institute

**Abstract:** This article describes the preparation of initial data for calculations of surface concentrations of pollutants, the use of inventory materials. Calculation of the dispersion of pollutants in the atmosphere according to universal programs. The rules of the field of dispersion of pollutants in the surface layer of the atmosphere are also given. The information on the types of household and industrial waste, their destruction and disposal is analyzed.

**Key words:** dispersion map, calculation, inventory, waste, pollutants, analysis, situational plan, industrial site, parameters.



## INTRODUCTION

The scale of waste produced by mankind is enormous. It is known that, on average, one European family produces about a ton of household waste per year. The UK produces 27 million tons of waste over the same period, Russia - 150 million tons, the USA - more than 250 million tons. If you add the number of industrial waste generated annually to these values, you will get just a crazy figure.

Incineration in open landfills and burial are the most well–known and affordable ways to dispose of garbage. But are they so effective? When burning garbage, harmful and toxic chemical compounds are released into the air in huge quantities. Open landfills, in addition to spreading a stench, are infested with insects and rodents – sources and vectors of many infectious diseases. The disposal of garbage, especially if it is carried out uncontrollably, which, unfortunately, is not uncommon, can lead to dangerous consequences: contamination of groundwater or uncontrolled fires that occur when biogas, formed as a result of decomposition of waste without air access, ignites. In addition, methane, which makes up 70% of the biogas released by rotting waste, leads to the death of vegetation at high concentrations.

The disposal of waste and the spread of open landfills cannot continue indefinitely, one day there will simply be no free territories for this. Judge for yourself, if we talk about our country, about 25 million tons of waste are generated in Moscow alone every year. Of these, only 10 percent of household waste and 59 percent of industrial waste are recycled. The remaining waste decomposes in gigantic spaces of landfills, the resources of which are rapidly being exhausted. Few people know, but in Krasnoyarsk, the capabilities of existing landfills will last for another three years, a maximum of four. And then?

Infectious diseases, pollution of groundwater, soil, and the release of a huge amount of methane into the atmospheric air are only a small fraction of what happens with this approach to waste disposal. How can we deal with pollution? Almost all ecologists of the world declare the need to recycle garbage for secondary raw materials with the prospect of further regenerative cremation.

Methodology. In itself, the study of changes in the environment as a result of the effects of human activity is a truly dimensionless task, and mechanically moving along this path, hoping to gain objective knowledge in an innumerable number of

relationships and patterns in the surrounding world, seems hopeless. In essence, the preparation of an EIA is closer to research activities than to project work. In this regard, the objectivity of the conclusions is largely determined by the methodology of the EIA. Among the most commonly used methods are the so-called systems of natural parameters studied during exposure. The cause-and-effect relationships between the possible directions of impacts are established by the matrix method. Modern map analysis is widespread, allowing to determine and demonstrate the extent of the spread of the impact. A flowchart system describing natural systems as complex mass transfer structures has proven itself well. A simulation method based on mass transfer flowcharts is used.

The integral method, which, due to the prevailing social and economic conditions, should be preferred, is the method of expert groups. This method, despite its disadvantages (subjectivity of assessments, etc.), serves to determine the boundary area of influence, identifies specific parameters that are subject to more effective research by other methods. Nevertheless, we do not have any well-founded criteria that would make it possible to judge the degree of completeness and reliability of the research results obtained. On the contrary, identifying the range of expected consequences of the planned activity allows conducting research within the specified boundaries. However, designers and individual experts often impose their decisions on society, covering up with words about economic efficiency and scientifically based safety their actual ignorance of the true consequences of a particular activity.

The main task of the EIA is the need to identify the expected consequences of the planned activity and take them into account when designing. Of course, not all consequences can be prevented, but they can and should be compensated in one way or another, and this is the only civilized way to eliminate all environmental problems and conflicts. Thus, the general concept of EIA, its main features are as follows:

EIA is a means (or method) of project work that allows you to identify and take into account the consequences of the planned activity during design;

The EIA includes the identification, analysis and assessment of the expected impacts of the planned activities, environmental changes as a result of these impacts and the consequences of these changes for society;

The EIA largely predicts the consequences of the activities of enterprises. Regardless of how these forecasts are obtained, they are not factors, but only assumptions of a probabilistic nature and therefore must be subject to verification procedures. It is extremely important that the EIA assesses the consequences in all aspects of the environment, nevertheless, in each specific case, a specific research framework is set, determined by the range of identified consequences. There is one criterion of sufficiency: if the society has not presented significant consequences, then there are no impacts, and therefore special studies and special measures to protect against impacts are not needed;

The EIA helps to compare, "weigh" (evaluate) economic costs and profits, environmental and social consequences and measures to prevent or compensate for them. If this is done, then the likelihood of making unreasonable decisions decreases both in the case of the implementation of project plans and in the case of their rejection;

An EIA is an analysis of all reasonable alternatives to activities in a particular territory (including complete abandonment of activities) based on "balanced" socio—ecological and economic assessments of each of them;

An EIA is a form in which the initiator of the activity (the customer or the designer) records and presents what he has done in the process of developing and detailing the project plan;

The EIA is a tool for justifying a decision. The final task of the EIA is to provide the decision-maker with a clear picture of the studied alternative possibilities (with "balanced" socio-ecological and economic assessments of each of them). Only when the advantages and disadvantages of each of the alternatives are fixed and presented in a certain form, one can be sure that the decision is made in conditions of sufficient completeness of the initial information.

Having thus defined the main content of the EIA, its objectives can be formulated. The EIA is necessary:

- to comprehensively consider the expected benefits and losses of environmental, socio-economic development;
- to develop effective measures to reduce the level of adverse environmental impacts;
- to provide the decision-maker with the most complete information about the possible environmental, social and economic consequences of making these decisions;
- to resolve environmental conflicts in the territories arising from the implementation of various types of activities, including mining.

Fig. 1. industrial waste

Analysis. The Sofitel limited liability company's joint venture is situated in the industrial zone of Jizzakh city, in the Jizzakh region. The firm has a land area of 4.4 hectares. The closest habitation to the firm is located at a distance of 800 meters to the South and South-West. The primary focus of the firm is the manufacturing of Ultramarine pigment. The firm operates continuously, 24 hours per day and 290 days per year. The firm has a workforce of 180 employees.

The topography of the area where the firm is situated is characterized by a flat landscape, with a relief impact factor of 1. The cessation of the intense solar radiation occurs throughout the scorching summer months of the year. The duration of the propagation of intense radiation spans from 348 to 382 hours, accounting for 80 to 88 percent of the anticipated duration. The user did not provide any text. During the fall and winter seasons, the city of Jizzakh has prevailing winds originating from the West and South West directions.

- The average wind gusts are 2.64 meters per second. The mean annual air temperature is 19.3 degrees Celsius.
- The average air temperature during the hottest months of the year is 33.7 degrees Celsius.
- The average air temperature during the coldest month of the year is -3.70 degrees.
- The district is being developed to meet the seismic requirements of a 7-point seismic zone.
- The yearly precipitation amounts to 336.4 millimeters.

The table displays the meteorological data and coefficients of the specific territory where the firm is situated. The firm was discovered to possess 14 distinct categories of production and home garbage.

- The enterprise-9 generates garbage from many sources, totaling 13 locations where waste accumulates.
- The cumulative quantity of garbage is 63,105 metric tons per year

  Comprising: Primary pollutants:

The company does not possess any hazardous waste classified as Class I .

Class II hazardous waste includes the following quantities per year:

- Electrolyte: 0.013 metric tons
- Lead plate: 0.0744 metric tons
- Motor oil: 0.135 metric tons

Class III emissions that are dangerous include 0.114 tons per year of tire trash and 0.0216 tons per year of oil rag waste.

In addition, there is 5.6 tons per year of inorganic dust, which is considered harmless and falls under Class IV waste.

Other types of garbage include 0.014 tons per year of battery housing waste,

9.0 tons per year of solid household waste

14.4 tons per year of sweep-last waste.

V-Class non-hazardous garbage: 1.92 metric tons per year of black metal waste; 0.072 metric tons per year of food waste; 31.2 metric tons per year of broken jugs; 0.232 metric tons per year of paper waste; and 0.309 metric tons per year of output from special apparel.

From the trash indicated above, the black metal waste is sent to the "Enterprise double- black metal" and the lead plate is transferred to the "Enterprise double- non-ferrous metal ". The garbage from the batteries is sent to the Enterprise for processing plastic products, while the used tires are sent to the Enterprise for processing tires. The electrolyte battery is recycled for its own energy requirements in the charging process of the workshop. Recycled motor oil is utilized for lubricating

machinery and equipment within the firm. Oil-soaked cloths are temporarily gathered in the transportation department within the premises of the company and subsequently disposed of in the municipal landfill.

The firm gathers inorganic dust on its premises and subsequently reutilizes it in the production process. The fractured jug is crushed and then recycled within the company. Entrepreneurs receive specialized garment waste for the purpose of processing the material. Food waste is utilized as fodder for the sustenance of productive staff members. The transfer of the paper's discharge is directed to the receiving enterprise for the paper. Both solid domestic waste and industrial waste are segregated and transported to the landfill in dedicated containers.

The waste generated from the manufacture of the factory is in the form of inorganic dust. In Factory, the production of inorganic dust waste occurs during the grinding, sieving, and other manufacturing operations of equipment. Annually, the firm produces 4000 tons of Ultramarine pigment during its production process. The precise measurement of the inorganic dust emission resulting from the developed product is q=0.12-0.16%. The quantity of inorganic dust produced can be calculated using the formula:

M dust = q * Q / 100 = 0.14 * 4000/100 = 5.6 t/Year

Here, Q represents the yearly output of the product. The resultant inorganic dust is gathered and incorporated into the utilized product.

Identification of the waste's hazard classification. The inorganic dust waste that has been generated falls under the category of Class III waste as defined in Appendix 15 of the Cabinet of Ministers of the Republic of Uzbekistan's regulation on the procedure for the development and implementation of environmental regulatory projects, dated January 21, 2014, No. 14. The study of the facility is the final stage of the "Environmental Impact Assessment Report". The emissions of pollutants into the atmosphere resulting from the activities of the facility were analyzed.

Conclusion. In the course of the company's activities, there are 11 non-volatile sources that emit pollutants into the atmosphere. Of these, 7 sources are organized, 4 are unorganized.

The volume of pollutants released into the atmosphere from these sources is 46.934615 tons per year. It was noted that the amount of pollutants released into the atmosphere from the air does not exceed the permissible norm (REM).

For the needs of the enterprise, water is taken from the water supply network of the special industrial zone of the city of Jizzakh, used for agricultural and drinking purposes, as well as for production.

The waste water generated in the production is reused in the technological processes of the enterprise. Wastewater generated from the production of beverages on farms is discharged into the municipal sewer network. Thus, contamination of soil and groundwater from the action of wastewater is not expected.

Snow and rainwater enters the terrain through sewer networks. In the process of work, an inventory of waste sources and a draft waste disposal limit are presented. Within the framework of the project, the formation of 14 different types of waste was noted, the total amount of which is 63,105 tons per year, and it was noted that these wastes do not exceed the norm. There are no exhaust gases of Class I;

Class II - 0.22224 tons per year;

Grade III - 0.1356 tons/year;

Grade IV - 29,014 tons/year;

Grade V - 33,733 tons/year.

For each type of waste, a waste passport, a waste hazard class, a temporary waste disposal rate and a waste disposal method are indicated.

## References


1. G.F. Keldiyarova, T.R. Madjidova Environmental impact assessment of industrial enterprises (on the example of objects of category I,II of environmental impact in the Samarkand region) E3S Web of Conferences 265, 04025 (2021) APEEM 2021
2. Keldiyarova, G., Boboeva, G., Khusanova, M., Dadayev, M., Rakhmanova, N. Issues of increasing the economic efficiency of manufacturing enterprises on the impact on the environment. *E3S Web of Conferences* 2024, 486, 01003
3. G.F. Keldiyarova, T.R. Madjidova. Calculation of ground-level concentrations and mapping of pollutant dispersion fields. E3S Web of Conferences 265, 02012 (2021) APEEM 2021
4. Maere, S.; Bodt, SD; Raes, J.; Kasnev, T.; Montague, M.V.; Kuiper, M.; de Per, Y.V. Modeling of gene and genome duplication in eukaryotes. Studies. Natl. Academy of Sciences. USA 2005 , 102 , 5454-5459
5. Azamat Fozilov, Shodi Kholikulov, The dynamics of the Akhangaran basin's groundwater level in relation to physical-geographical and anthropogenic factors. E3S Web of Conferences 431, 04016 ITSE-2023. XI International Scientific and Practical Conference Innovative Technologies in Environmental Science and Education (ITSE-2023). DOI:
6. Azamat Fozilov, Ziyodullo Ganiyev, Rasuljon Mamajanov, Dilbar Jurakulova, Oytula Abdurayimova, The effect of the Almalyk-Akhangaran industrial zone on changes in the groundwater level of the Ahangaran river basin. E3S Web of

Conferences 494, 01014 (2024), International Conference on Ensuring Sustainable Development: Ecology, Energy, Earth Science and Agriculture (AEES2023),

7. Keldiyarova, G.F. Evaluation of the efficiency of dust and gas treatment plants in asphalt plants. *International Journal of Scientific and Technology Research*, 2020, 9(1), p. 3210–3212
8. Murat, F.; Van de Poer, Y.; Sals, J. Decoding the plasticity of the genome of plants and animals based on differential paleoevolutionary patterns and processes. The Biol genome. Evol. 2012 , 4 , 917-928
9. Zhang J. Evolution by gene duplication: an update. Environmental trends. Evol. 2003 , 18 , 292-298.
10. Jiao, Yu.; Wickett, New Jersey; Ayyampalayam, S.; Chanderbali, A.S.; Landherr, L.; Ralph, PE; Tomsho, LP; Hu, Yu.; Liang, H.; Soltis, P.S.; and others. Ancestral polyploidy in seed plants and angiosperms. Nature 2011 , 473 , 97-100
11. Doyle, J.J.; Lakou, M.A. The rest of the iceberg. The diversity and evolution of legumes in a phylogenetic context. The physiol of plants. 2003 , 131 , 900-910.
12. Jayon, O.; Ori, J.-M.; Noel, B.; Polycriti, A.; Klepet, K.; Casagrande, A.; Shuang, N.; Aubur, S.; Vitulo, N.; Jubin, K.; and others. The sequence of the vine genome suggests