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LEGAL PROBLEMS WITH THE TRANSFORMATION OF WASTE INTO THE PRODUCTS (a case study of phosphogypsum)

Marina A. Buchakova[1], Nikolai D. Vershilo[2], Oleg A. Dizer[3]

[1] *Omsk Academy of the Ministry of Internal Affairs of Russia, Omsk, Russia*

[2] *Russian University of Justice, Moscow, Russia*

[3] *Belgorod Law Institute of the Ministry of Internal Affairs of Russia named after I.D. Putilin, Belgorod, Russia*

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The subject. One of the problems of contemporary states is waste and the search for opportunities for transformation into products. In this aspect, phosphogypsum, which is a waste product of mineral fertilizers, is interesting. It is subject to recycling in a small amount now.

The purpose of the article is to identify legal possibilities for regulating relations related to industrial waste in terms of their secondary use.

The main results, scope of application. Phosphogypsum can be used for the construction of highways, dams; the production of fertilizers and salts; the production of construction products using non-recycled phosphogypsum; agriculture; in the production of gypsum binders and products made from them; in the cement industry; as a filler in various industries. With the technological possibility of recycling such waste as phosphogypsum, there is no legal possibility of their use. The absence of the necessary legal regulation of relations in the field of waste disposal, clear legally fixed criteria for classifying waste as secondary material resources and the possibility of their use, may entail certain negative consequences for economic entities.

Conclusions. The process of waste transformation into products from a legal point of view should consist of the following stages: waste disposal (both with and without pretreatment); the process of waste transformation into products directly (with a license for waste of hazard classes I – IV, compliance with licensing requirements, conclusion of the state environmental expertise on processing and disposal technologies, equipment used in this process, etc.). The following stage is legally correct and documented recognition of waste that is secondary material resources. The last stage is exclusion of said waste that is secondary material resources from approved waste generation standards and limits on their placement, as well as reflection of their movement in the journal of waste generation and movement.

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1. Introduvction

Currently, an urgent problem caused by the development and expansion of the industrial production, an increase in mining, an expansion of the range of goods consumed by a person, is the accumulated wastes from all these processes, which are so diverse that they cannot be covered by the term “garbage” [1, c. 402-418; 2, c. 185-200]. The emerging term "wastes", according to free wikipedia, means the substances or the objects that are formed in the process of production, performance of work, services provision or in the process of consumption, which are processed, disposed or buried. Subsequently, due to the various qualitative characteristics of wastes, they began to be divided into household and industrial (industrial) wastes.

The volumes of industrial wastes accumulated on the territory of the Russian Federation, according to the results of the inventory of the accumulated damage by the Ministry of Natural Resources and Ecology of the Russian Federation, include a list of 340 objects, amounting to more than 80 billion tons, they occupy an area of 77.6 thousand hectares with the volume of accumulated wastes and pollution of 371.9 million tons. In turn, according to some data, from 140 to 300 million tons fall on the dumps of phosphogypsum, which is calcium sulfate hydrate, formed as a by-product of the production of fertilizers from phosphorite rock. It acts as a waste from the production of mineral fertilizers and makes up about 75% of the feedstock. Most of the phosphogypsum is placed in the dumps for long-term storage due to low radioactivity. At the same time, the level of its secondary use is only 0.2%.

Scientific literature and legislative consolidation of production waste is available [3 - 10]. However, there were practically no separate studies devoted to phosphogypsum, the possibilities of its further processing.

In this study, we used general scientific methods. Methods of analysis and synthesis were used, which made it possible to analyze the experience of using production waste in the territory of the Russian Federation and make proposals aimed at improving the current legislation and law enforcement practice for the use of phosphogypsum. Methods such as observation and description are important tools in scientific research. This work is no exception, it represents a certain experience based on the systematization of practical skills in the use of phosphogypsum and subsequent conclusions related to its further processing. Scientific literature and legislative consolidation of production waste is available. However, there were practically no separate studies devoted to phosphogypsum, the possibilities of its further processing.

The process of transformation of waste into products from a legal point of view should consist of three stages: 1) waste disposal (both with and without pre-treatment), as a direct process of turning waste into products (subject to the necessary requirements: the availability of a license for the waste of the I - IV hazard class, the compliance with licensing requirements, a positive conclusion of the state environmental review on processing and disposal technologies, equipment used in this process, etc.); 2) legally correct and documented recognition of wastes, which are secondary material resources; 3) exclusion of the specified wastes, which are secondary material resources, from the approved standards for waste generation and limits on their disposal, as well as their movement in the register of waste generation and movement.

2. The characteristics and legislative regulation of the production waste

The definition of production waste is given in Article 1 of the Federal Law of June 24, 1998 № 89-FZ “On Production and Consumption Wastes” (as amended on July 2, 2021) according to which these are: “... substances or objects that formed in the process of production, performance of work, provision of services or in the process of consumption, which are removed, intended for removal or subject to removal”[1]. But this definition does not carry sufficient specificity and does not fully disclose the definition of production and consumption wastes.

For example, in foreign legislative acts and

[1] Federal Law of June 24, 1998 No. 89-FZ “On Production and Consumption Wastes”. Consultant Plus.

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scientific and technical literature [11 - 14], waste is understood as any substance that appeared in the process of production or consumption, which is not the purpose of the process and can have a negative impact on the environment, regardless of whether what is formed is emitted into the atmosphere, whether it is discharged into water bodies or placed in landfills, storage facilities, etc. [15, p. 7]. And as we can see, this concept, although rather abstract, is also comprehensive, because it allows us to classify any derivative substance as a waste.

There are other definitions of this concept, so in some works it is proposed to understand the waste of production and consumption as the remains of materials, raw materials, semi-finished products formed during the manufacture of products and which have lost their useful or physical properties in whole or in part (the products formed as a result of physical and chemical processing raw materials, extraction and enrichment of minerals, the production of which is not the purpose of this production process, substances captured during the purification of exhaust gases and wastewater) [16, p. 78-89; 17, p. 184]. Production waste is the remains of raw materials, materials, semi-finished products, formed during the production of products or the performance of work and which have lost their original consumer properties in whole or in part; associated substances newly formed in the production process that are not used [18, p. 2265-2276; 19, p. 96]. Production waste also includes residues of various composition and physical and chemical properties formed during the production process: ore fines, trimmings, shavings, etc .; ballast part of mineral raw materials and fuel, separated during enrichment; ash and slag formed during the combustion of fuel, etc. [20, p. 106-109; 21, p. 136].

In turn, production waste is divided into: recyclable waste which is the part of the waste that can be used in the same production. These include the remains of raw materials and other types of material resources formed in the process of goods production, work performance, services provision. Due to the partial loss of some consumer properties, returnable waste must be used in conditions with reduced requirements for the product, or with increased consumption, sometimes it is not used for their intended purpose, but it can only be used in other production [22, p. 114-120]; secondary raw materials are waste that can no longer be used within the framework of this production, but it can be used in other industries; irretrievable losses are waste that is inexpedient to be processed at this stage of economic development, it is first neutralized, in case of danger, and then placed in landfills.

Consequently, waste may also have consumer properties, due to which it is possible now or later to use it for the production of goods (products) or in the work performance, that complies with the norm of the current Federal Law “On production waste and consumption”[2], which states that the waste disposal is the use of waste for the goods (products) production, work performance, services provision, including the waste reuse for its intended purpose, their return to the production cycle after appropriate preparation, as well as extraction of useful components for their reuse.

It follows from this that giving waste the status of "secondary raw materials", "secondary resources" does not exempt the owner from paying a fee for its disposal, depending on the degree of negative impact on the environment.

3. Legal issues associated with phosphogypsum processing

Phosphogypsum, for example, apatite phosphogypsum, contains 1.6% phosphorus pentoxide and 0.3% fluorine, that is, one ton of phosphogypsum contains up to 22.3 kg of acids and up to 3 kg of pure fluorine in the form of fluorine-containing salts. A number of scientists, based on an analysis of its properties, believe that phosphogypsum poses a radiation hazard. At the same time, based on the analysis of the regulations of European countries, there is a point of view that, with full compliance with the requirements for storage facilities, phosphogypsum does not pose any danger to the environment. So, for example, the Law of Lithuania of June 16, 1998. This type of waste is classified as non-hazardous waste. After the

[2] Federal Law of June 24, 1998 No. 89-FZ “On Production and Consumption Wastes”. Consultant Plus.

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completion of the operation of phosphogypsum storage facilities, a rapid restoration of the soil layer and biodiversity was noted [20-23].

Based on the foregoing, it should be assumed that in the case when this type of waste (phosphogypsum) does not pose a danger to the environment, but is also a by-product that can be sold for use in the national economy, which means that if the enterprise has the appropriate documentary evidence of classifying it as a product it will be considered as a product. Therefore, to give phosphogypsum the status of a product, the following documents are required: specifications for products, which must be eleborated on the basis of state and/or industry standards for such products; certificates of products conformity to the standard requirements; technological regulations for the production of goods; an agreement for the products sale (including on a gratuitous basis) and / or for own needs in accordance with the statutory and other documentation, as well as the reflection of the operations with the specified material (phosphogypsum) as operations with products in the enterprise's economic and accounting records. This conclusion of classifying phosphogypsum as a product is based, among other things, on the basis of GOST P 58821-2020[3], which states that phosphogypsum is a by-product of the extractive phosphoric acid production. In addition, based on the information contained in the Information and Technical Handbook on the best available technologies for the ammonia, mineral fertilizers and inorganic acids production[4].

Phosphogypsum can be used for the construction of roads, dams; fertilizers and salts production; building units production using non-recycled phosphogypsum; agriculture; in the production of gypsum binders and products from them; in the cement industry; as a filler in various industries.

Als, many enterprises whose economic activity is related to the generation or management of waste face the need to strictly comply with the requirements of waste management, despite the fact that many of such waste may not be intended for disposal in any known way, but be reused. This is especially relevant when these wastes are valuable secondary material resources (or contain them), which themselves (or their components) can be reused after processing or without it as an independent type of product and represent a certain consumer value, this type of waste also includes phosphogypsum formed as a result of the technological process for the production of phosphoric acid.

At the same time, the need to comply with the waste generation standards approved for the enterprise and with the limits on their placement, and other documentation regulating waste management, often leads to a situation where, with the technological possibility of recycling such waste, there is no legal possibility of their use [24]. A quite natural question arises as to how it is most correct from a legal point of view to formalize the process of converting waste into goods (products) in order to avoid later claims from state environmental supervision bodies or bringing them to legal liability.

The lack of the necessary legal regulation of relations in the field of waste disposal, clear legally fixed criteria for classifying waste as secondary material resources and the possibility of their use, may lead to certain negative consequences for business entities. Non-compliance or violation by the organization of the requirements for the proper legal registration of the process of transferring waste to the category of products can lead to administrative impact of the state environmental supervision authorities, up to the application of measures of various types of legal liability, particularly administrative, criminal and civil law.

The definition of the concept "secondary material resources", as you know, is given in the paragraph 3.3. GOST 30772-2001. "Interstate standard. Resource saving. Waste management.

[3] Order of Rosstandart dated March 5, 2020. No. 114. ConsultantPlus.

[4] Order of Rosstandart dated December 12, 2019 No. 2983 "On approval of the information and technical guide on the best available technologies "Production of ammonia, mineral fertilizers and inorganic acids". ConsultantPlus.

Terms and definitions"[5] according to which they are the production and consumption wastes generated in the national economy, for which there is the possibility of reuse directly or after additional processing.

Based on this definition, secondary material resources are waste for which there is a possibility of their utilization, that is, based on the definition of the corresponding concept provided for in the Article 1 of the Federal Law of June 24, 1998 № 89-FZ "On Production and Consumption Waste"[6], the use of waste for various purposes, including for the production of goods (products), work performance, services provision, including recycling use of waste through recycling, regeneration or recuperation.

At the same time, as follows from the norms of the current legislation, the utilization of the waste of the I-IV hazard classes is a licensed activity, while for the utilization of waste of the V hazard class, to which, for example, phosphogypsum belongs, there is need to obtain an appropriate license.

It should also be noted that if new equipment, technology is used in the procedure of utilization and waste processing, which are secondary material resources, for the goods production, then draft technical documentation for new equipment, technology, the use of which may have an impact on the environment, should receive a positive conclusion of the state ecological expertise.

At the same time, it should be noted that although these activities are currently legal, they are actually carried out outside any legal field, that is, in the absence of the necessary legal regulation [25].

Moreover, the absence in the legislation of an appropriate definition of the concept "secondary material resources" is also supplemented by the fact that the regulatory legal acts lack the necessary criteria that allow unambiguously classifying waste as secondary material resources. It is obvious that waste, which should be recognized as secondary material resources, legally should no longer be waste, but products that can be used after additional processing or without it for the production of any goods or for performing any work, providing any services (that is, to be reusable).

Certain criteria for classifying waste as secondary material resources (although not sufficiently specific, in our opinion), the use of which is possible both in law enforcement practice when resolving possible disputes with state environmental supervision authorities, and with a possible improvement of regulatory legal acts, are contained in GOST P 54098-2010 "Resource saving. Secondary material resources. Terms and definitions"[7]. According to clause 3.2.1. specified by GOST P, secondary material resources are recognized:

1. Production and consumption waste, which in the future (potentially) or immediately (actually) are suitable for use in industrial production to obtain raw materials, products and (or) energy;

2. Production and consumption waste specially collected and prepared for use for economic purposes or for processing into secondary raw materials;

3. Products of primary (preliminary) waste processing that meet the requirements of certain regulatory (GOST, GOST P, Standard of organization) and / or technical (specification requirements, maintenance) documents;

4. Wastes specially stored in technogenic resource accumulations for their use in a certain or indefinite (remote) future as secondary raw materials.

With the relevant inspections of the state environmental supervision bodies (Federal Service for Supervision of Natural Resources, its territorial bodies, authorized executive bodies of the constituent entities of the Russian Federation), additional questions may arise both regarding the

[5] GOST 30772-2001. Interstate standard. Resource saving. Waste management. Terms and definitions" (introduced by the Decree of the State Standard of Russia dated December 28, 2001 No. 607-st). ConsultantPlus.

[6] Federal Law of June 24, 1998 No. 89-FZ "On Production and Consumption Wastes". Consultant Plus.

[7] GOST R 54098-2010 "Resource saving. Secondary material resources. Terms and Definitions. ConsultantPlus.

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procedure for accounting for waste as secondary material resources, and regarding the absence of these wastes in the waste generation standards and limits on their placement [26].

The absence of such waste in the standards and limits can be qualified as a violation of environmental requirements for waste management, which falls under the administrative offense under Art. 8.2. Code of Administrative Offenses of the Russian Federation of December 30, 2001 № 195-FZ “Failure to meet ecological and sanitary-and-epidemiological requirements, when handling production and consumption waste, substances that deplete the ozone layer, or other dangerous substances”[8].

And also as an unreasonable exclusion of the indicated volumes of waste from the payment base when calculating the fee for the negative impact on the environment during their placement, accordingly, an order may be issued to pay a debt on the specified fee, the failure to comply with which may become the basis for applying to the court to enforce the collection of this debt.

Submission of these documents will make it possible to justify the non-inclusion of the specified waste in Draft Waste Generation Standards and Waste Disposal Limits (DWGSWDL) upon its approval (if the technological process for the recycling of specific wastes for the entire period of validity of the standards and limits is already clear), or to justify the exclusion of these wastes from already previously approved Draft.

It is very important to reflect correctly the transfer of the relevant waste for disposal and production of secondary products in the documents of the “primary accounting of waste movement” (for example, in the register of waste generation and movement).

In order to officially “legalize” the process of transforming waste into products, such products made from waste, which are secondary material resources, must be identified from a legal point of view. In this case, in order to reduce possible risks, it is necessary to prepare the necessary set of documents to recognize the waste as a secondary material resource and legally formalize the process of waste transformation of these resources. Obviously, in order to reduce such risks, it is necessary to submit this set of documents to the appropriate territorial body of the Federal Service for Supervision of Natural Resources.

In order to classify waste containing secondary material resources as a certain type of product, and legally correct fixing of this fact, it seems necessary:

1) to establish the belonging of secondary material resources to a certain type of product using existing product classifiers;

2) to confirm the compliance of secondary material resources with the requirements of regulatory (GOST, GOST P, Standard of organization) and / or technical (specification requirements, maintenance) documents for this type of product (or develop new technical documents - for example, Technical specifications for products or Technological instructions for product manufacturing);

3) to ensure compliance of secondary material resources with the requirements of technical regulations (may be applicable depending on the type of product) by certification or declaration of conformity (for some types of products, mandatory certification is required, carried out in accordance with the requirements of Federal Law of December 27, 2002 № 184-FZ "On technical regulation"[15], the procedure of which should be completed with the receipt of either a declaration of conformity or a certificate of conformity).

4. Conclusions

In our opinion, the process of waste transforming into products from a legal point of view should consist of three stages:

1. Waste disposal (both with and without pre-treatment), as a direct process of turning waste into products (subject to the necessary requirements: a license for waste of the I-IV hazard classes availability, compliance with license requirements, a positive conclusion of the state environmental expertise on technology processing and disposal, the technique used in this process,

[8] Code of the Russian Federation on Administrative Offenses of December 30, 2001 No. 195-FZ. ConsultantPlus.

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etc.);

2. Legally correct and documented recognition of waste, which is secondary material resources, and recycled as a result of disposal, as a certain type of product (and fixing this fact in the relevant documents);

1. 3. Exclusion of the specified wastes, which are secondary material resources, from the approved standards for the waste generation standards and waste disposal limits, as well as their movement in the register of waste generation and movement.

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INFORMATION ABOUT AUTHORS

Marina A. Buchakova – Doctor of Law, Associate Professor; Head, Department of Constitutional and International Law
Omsk Academy of the Ministry of Internal Affairs of Russia
7, Komarova pr., Omsk, 644092, Russia
E-mail: mb290163@mail.ru
ORCID: 0000-0002-1149-5315
RSCI SPIN-code: 3462-2377; AuthorID: 283452

Nikolai D. Vershilo – Doctor of Law, Associate Professor; Professor, Department of Environmental and Land Law
Russian State University of Justice
69, Novocheremushkinskaya ul., Moscow, 117418, Russia
E-mail: tvershilo@yandex.ru
ORCID: 0000-0001-8978-7900

Oleg A. Dizer – Doctor of Law, Associate Professor; Deputy Head for Scientific Work
Belgorod Law Institute of the Ministry of Internal Affairs of Russia named after I.D. Putilin
71, Gor'kogo ul., Belgorod, 308024, Russia E-mail: dizer77@mail.ru
RSCI SPIN-code: 5636-8259; AuthorID: 312006

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