

ENVIRONMENTAL REPORT

*Extension of the universal quay on the Danube River at Giurgiulești
International Free Port (GIFP)*

ABSTRACT

This document constitutes the Environmental Report prepared and elaborated in the context of the EIA procedure in relation to the GIFP's planned activity. The report contains an analysis of the planned activity's impact on environmental and social components. It also provides methods for readjusting the predicted impacts and offers necessary alternatives.

Conseco Consulting SRL
2022

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List of abbreviations

AFDJ	Lower Danube River Administration
EA	Environment Agency
EBRD	European Bank for Reconstruction and Development
BTW	British Standard Whitworth (unit of measure)
UNECE	United Nations Economic Commission for Europe
MAC	Maximum Allowable Concentrations
EIA	Environmental Impact Assessment
GIFP	Giurgiuleşti International Free Port
PREIM	Program for the Realization of the Environmental Impact Assessment

INTRODUCTION

The present document constitute the Environmental Report for the planned activity „*Extension of the universal pier on the Danube River in Giurgiulesti International Free Port (GIFP), Cahul district, Giurgiulesti village*” and was prepared in accordance with the requirements of the Law 86 of 2014 on Environmental Impact Assessment (EIA) and the recommendations contained in the Guidelines for the performance of environmental impact assessment procedures, approved by the Ministerial Order no. 1 of 04.01.2019.

According to Law 86/2014¹, the planned activity „*Extension of the universal pier on the Danube River in Giurgiulesti International Free Port (GIFP), Cahul district, Giurgiulesti village*” falls under the scope of the law and involves carrying out the EIA. Considering the specificity of the location of the planned activity, the Environment Agency of the Republic of Moldova (EA) suggested notifying the neighbouring countries about their participation in EIA in transboundary context. The notification was submitted through diplomatic channels and Romania replied that it will not participate in the transboundary EIA procedure as the planned activity does not affect the protected habitats and species in the territory where the activity is planned to be expanded. Furthermore, the notified country welcomed the planned activity as it will lead to the construction of the quay wall and stop the process of bank erosion.

The environmental report is the document containing the information and conclusions in relation to the planned activity, i.e. „*Extension of the universal pier on the Danube River in Giurgiulesti International Free Port (GIFP), Cahul district, Giurgiulesti village*”, through the environmental impact assessment and comprehensive analysis of the planned activity from the perspective of its potential impact on environmental elements such as water, air, soil, habitat.

In accordance with the requirements of EIA Law 86/2014, the procedure for carrying out the environmental impact assessment for the planned activity included the following stages:

1. Preparation and consultation of the Environmental Impact Assessment Programme and its endorsement with the EA;
2. Notification of the potentially affected party;
3. Response from EA and Ministry of Environment of the Republic of Moldova that the work will be carried out at national level;
4. Preparation of the Draft Environmental Report and its consultation with the EA;
5. Submission of the draft environmental report for public consultation and debate by the competent authority and other authorities with the report holder.
6. On the basis of the opinions of the competent environmental authorities and other authorities/stakeholders together with the recommendations of the consulted public, the final version of the Environmental Report will be elaborated.

Upon endorsement of the Environmental Impact Assessment Programme, the information to be included in the Environmental Report was also established, and was actually included in this document.

¹ https://www.legis.md/cautare/getResults?doc_id=21797&lang=ro

1.1. GENERAL INFORMATION

It should be noted that in 2007, when the construction process of the Giurgiulești International Free Port was initiated, the national legislation was not harmonized with the *European Union acquis*, namely in terms of transposition of the provisions of *Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment*. This happened much later, only in 2014 when the *Law 86/2014 on environmental impact assessment* came into force. Although, until 2014, EIA was regulated tangentially by *Law No 851/1996 on environmental expertise and environmental impact assessment*, it had a very narrow application and was limited only to large-scale planned activities. Therefore, the Port's construction activity was not subject to the EIA procedure. However, it should be noted that the initiator, at that time, was very vigilant and voluntarily prepared an EIA report for the activity in question.

Thus, even though the EIA and the preparation of an Environmental Report was not required at the time, the initiator carried out this procedure and even entered into consultations with potentially affected parties. In this respect there is a set of confirmatory letters demonstrating the initiator's [participation in the EIA procedure in a transboundary context](#)², who also published the techniques to be applied in case of major risks, such as oil spills, information presented to the UNECE³. For some reasons the procedure was not completed up to obtaining the environmental permit. However, over the years the work has been initiated and carried out. The Environmental Report prepared at that time by Witteveen+Bos focused on the whole port section, including the quay which is to be currently developed, strengthened and put into operation. In this respect, the 2007 Environmental Report, even if it contains outdated data, is a fundamental document for this report as it provides extensive details about the entire territory of the Port, unlike the present document which only focuses on the quay extension, i.e. 100m within the territory of Giurgiulești International Free Port, as shown on the planned activity map (See **Figure 2**).

In this context, the initiator carried out the procedure step by step according to the legal provisions including public information and consultation. Thus, the public was consulted and informed about the Program for the Realization of the Environmental Impact Assessment (PREIM). According to the Information Report that can also be accessed on the website of the Environment Agency, in order to facilitate the process of informing the public and consulting them, the company's representatives visited the Giurgiulești Village Hall. They held a meeting with the members of the Local Council on 17 August 2022 (**Annex 5**), so that the latter could discuss and convey the information in a correct way to citizens who do not have the possibility to directly access the documents subject to consultation. The notice on public consultations for the interested public was placed in the local newspaper Cahul Expres and in the national newspaper Moldova Suverană. No comments on the PREIM were received, even though some citizens interested in the subject requested the documents. The Local Council mainly discussed issues of local interest which are in support of the development of the locality and the public consultations that were already carried out in the early 2000s on the segment of the Port to be developed.

² <https://unece.org/eia/info3-republic-moldova>

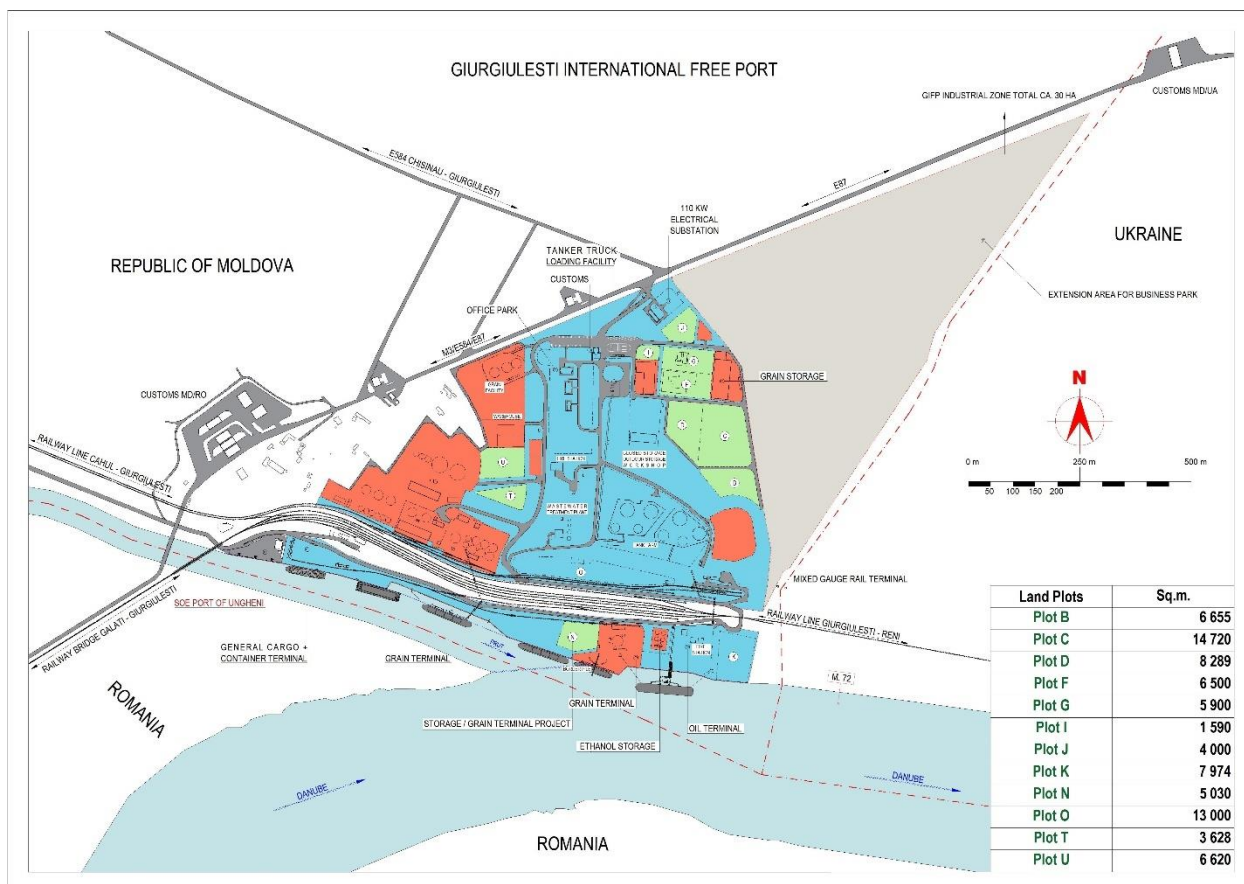
³ https://unece.org/fileadmin/DAM/env/teia/doc/Moldova_13-14_Dec_2011/10_Oil_terminal_Giugurlest_Planificare_interventii_de_urgenta_gifp_eng1.pdf

In order to provide an overview of the activity carried out by the initiator, it is necessary to mention that Danube Logistics planned in 2007 to build a berth for the cargo and passenger terminals along the Moldovan banks of the Danube and Prut Rivers. The construction was planned for the period 2007-2010. The EIA report included information on the activities during both the construction and operational phases.

GIFP has the status of international port status until 2030. Thanks to its location on the Lower Danube with available water depths of up to 7m, GIFP is able to receive both river and sea vessels. In this context, GIFP represents:

- the only point of direct sea-river distribution and transshipment to/from the Republic of Moldova
- a regional logistics hub at the border of the European Union with access to road, rail, inland waterway and maritime communications, and
- an excellent area for business development due to its strategic location, trimodal transport infrastructure, cost-effective pricing environment, and unique tax and customs regime.

Figure 1: Location of Giurgiuilești International Free Port on the map.



Source: <https://gifp.md/ro/services-facilities/master-plan/>

In 2022 the initiator has requested the expansion of the port and of the activity on an area which already had been subject to an Environmental Impact Assessment. However, as the said territory was neither

operated nor functional at that time but had to be developed in 2022, it fell under the provisions of Law 86/2014 on EIA in a transboundary context. Under such circumstances, the extension of the quay is also a strategic necessity aimed at facilitating urgently the flow of grain and other industrial goods in the emergency situation due to the war in Ukraine⁴. The implementation of the expansion project involves the construction of a 100 m long bank reinforcement wall (quay), technological platform, office, changing room, sanitary group, warehouse, mooring bollards, truck weighbridge, railway line, railway weighbridge for reception, storage and delivery of goods and two silos for grain storage (2x6000 tons).

1.2. Purpose of the Environmental Impact Assessment

The Environmental Impact Assessment is carried out in accordance with the requirements of Law no.86 of 2014 on Environmental Impact Assessment (EIA) in order to obtain the Environmental Permission – a document allowing and authorizing the planned activity „*Extension of the universal pier on the Danube River in Giurgiulesti International Free Port (GIFP), Cahul district, Giurgiulesti village*”.

The purpose of this procedure, as mentioned in the above-mentioned Law, is to assess the potential impact of the planned activity on environmental and social factors by defining and establishing measures and conditions for the prevention, reduction, mitigation and elimination of significant impacts, as well as by establishing an environmental impact monitoring regime (environmental monitoring).

The modern approach to environmental conservation and protection is based on the concept of sustainable development, i.e. the acceptability of projects **in terms of** facilities and activities, which ensures the development and the long-term use along with the preservation of natural resources, natural values and environmental factors.

The initiator is willing to show its commitment to working in accordance with national legislation, but also with the best practice in the field of environmental protection, in line with international standards, i.e. EU Directives. Based on the above, it can be concluded that the objectives of both the environmental impact assessment of the planned activity and this Report are the following:

- Analyzing and assessing the existing spatial and environmental situation of the defined and established area (the established location of the planned activity), based on existing data, relevant research and observations in the field, spatial planning, opinions and conditions of public authorities;
- Analyzing the potential environmental impact of the planned investment
- Definition of types of impact for which measures should be taken so in order to protect and monitor the environmental factors, ensure that the activity is sustainable and environmentally friendly and prevent significant damage.
- Consulting and informing the local, regional and countrywide public about the planned activity.

⁴ <https://gifp.md/en/news/moldovas-strategic-danube-port-offers-a-lifeline-for-ukraine/>

1.3. Initiator

Giurgiulești International Free Port (GIFP) operates under the Law 8 of 17.02.2005⁵ and in accordance with the Host Investment Agreement on Giurgiulești International Free Port between the Government of the Republic of Moldova and Azpetrol S.R.L., Azertrans S.R.L., Azpetrol Refinery S.R.L., the normative acts for their commissioning, and the Agreement between the Government of the Republic of Moldova and ÎCS Danube Logistics SRL of 21 April 2005⁶. Danube Logistics SRL is a wholly owned subsidiary of the Dutch company Danube Logistics Holding BV. The sole ultimate owner of Danube Logistics SRL is the European Bank for Reconstruction and Development (EBRD).

It was created and developed with the aim of accelerating the economic development of the southern part of the Republic of Moldova, ensuring the energy and transport security of the country, as well as the development of international trade. The territory of the International Port is no more than 120 hectares and includes:

- a) Oil Terminal area.
- (b) General Cargo Terminal area;
- c) Passenger Terminal area;
- d) International Port development area.

In the short to medium term, GIFP is planning to develop the 100m quay and the logistics that would enable the full operation of this quay. According to the project documentation, this project includes the following two stages:

Stage I:

- construction of a 100 m long bank reinforcement wall (quay), technological platform, office, changing room, toilet block, warehouse, mooring bollards, truck weighbridge, railway line, railway weighbridge for reception, storage and delivery of goods;

Phase II:

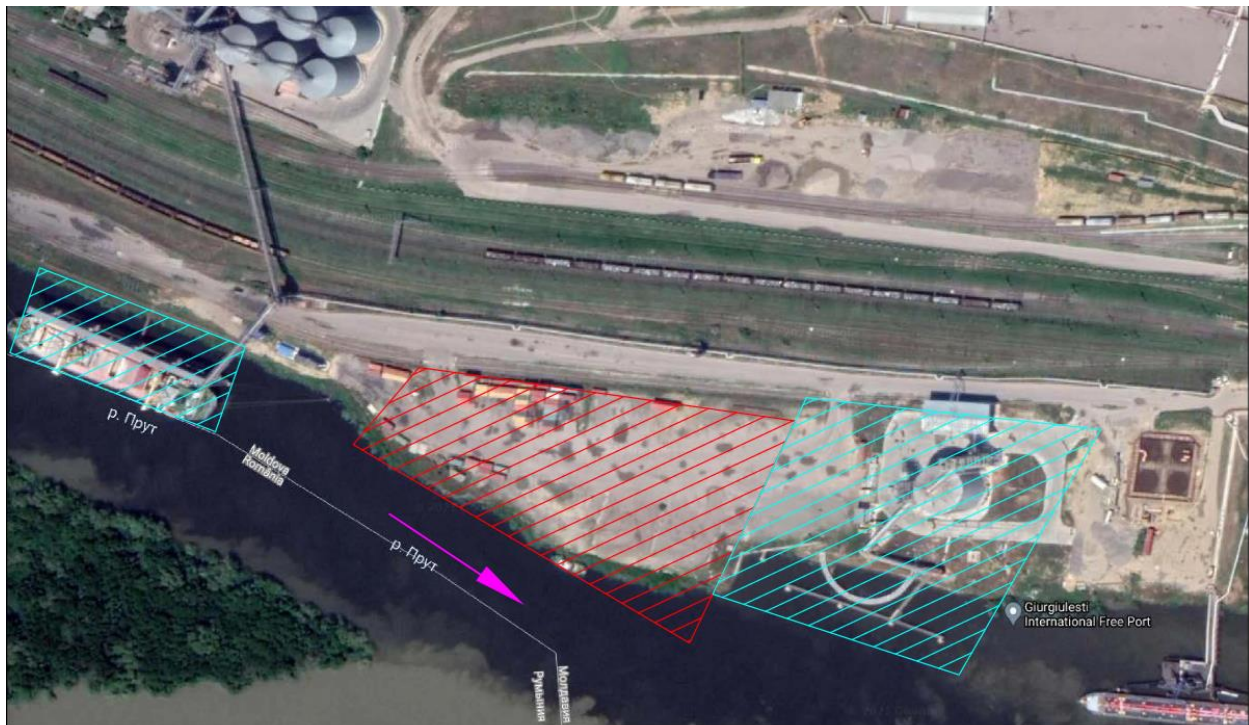
- construction of two grain silos (2x6000 tons) and the necessary infrastructure for transshipment of grain from truck/railway wagon to silos and from silos to sea/river vessels.

The proposed project is an expansion of the capacity of the existing general cargo terminal at Giurgiulești International Free Port, which will allow the transshipment of dry bulk cargo, general cargo and containers. It will be located between two existing terminals which are operational since 2007, directly at the confluence of the Prut and Danube Rivers.

Figure 2: The 100m stretch subject to EIA procedure

⁵ https://www.legis.md/cautare/getResults?doc_id=83724&lang=ro

⁶ https://date.gov.md/ro/system/files/resources/2020-12/activitate-port-giurgiulesti-sem-i-2020_0.pdf



Source: Giurgiulești International Free Port. The area hatched in red, including the quay area, is the object of the technical project.

1.4. Authors of the Environmental Impact Assessment Report

The EIA Report for the planned activity was prepared by Conseco Consulting SRL. Considering that the planned activity is rather insignificant both technically and in terms of environmental impact, it was not necessary to involve a large number of experts on various sectors. Also, this was partly covered by the 2007 Environmental Report, which serves now as basic information for this Report.

1.5. Signatories (holders)

Company Name	Signature
Conseco Consulting SRL	
Environmental Expert, Natalia GURANDA	

2. Environmental Legislation

2.1. Law on Environmental Impact Assessment

EIA Law 86 of 2014 partially transposes *Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment*, published in the Official Journal L 26 of the European Union of 1 January 2012.

According to the requirements of this law, the EIA shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect effects of a project on the following factors:

- a) human beings, fauna and flora;
- b) soil, subsoil, water, air, climate and landscape;
- c) material assets and the cultural heritage;
- (d) the interaction between the factors referred to in points (a), (b) and (c) and their long-term and cumulative consequences.

The conduct of this procedure is based on several principles, namely:

- **The principle of preventive action**, which means that environmental impact assessment is carried out at the early stage of planning, design and decision-making on the planned activity, based on the technical and scientific information available at the time, with measures being established to reduce or prevent potential environmental impacts, taking into account the sustainable development of the country;
- **The principle of correctness and completeness of information**, which means that the environmental impact assessment is carried out based on the information about the planned activity submitted by the initiator, the information on the current state of the environment and natural resources, and the information received from the relevant central and local public authorities in whose jurisdiction the planned activity is to be carried out, taking into account the proposals put forward during the public debate.

- **The principle of transparency and accessibility**, which means that the public is entitled to timely receive information about the planned activity, before the planned activity is carried out, in accordance with the requirements of this Law (86/2014) and the legislation on transparency of decision-making, and to participate in the public debates organised in the environmental impact assessment process.
- **The participatory principle**, which means that the developer ensures that all interested participants have access to the environmental impact assessment documentation, to public consultations on impact assessment of the planned activity at a place and time as accessible to the public.
- **The precautionary principle**, which means that the resolution of issues related to negative environmental impacts should begin before scientific evidence of the negative environmental impacts of the planned activity is received in full. If there are reasonable grounds for concern about the negative environmental impact of the planned activity, precautionary measures should be taken. In case of a significant and irreversible impact, the activity should be prohibited.
- **The "polluter pays" principle** requires that the initiator of the planned activity bears the costs of assessing the environmental impact and minimising the negative environmental impact of the planned activity.

The EIA procedure was conducted in line with the above-mentioned and the provisions of Law 86/2014.

2.2. Policy (provisions) of the Espoo Convention

In 1993 the Republic of Moldova ratified the *Convention on Environmental Impact Assessment in a Transboundary Context* (ESPOO, 1991). This Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage. The Convention also sets out the general obligation of States to notify and consult each other on major projects under consideration where significant adverse transboundary environmental impacts are likely.

In 2007, when the Environmental Report was prepared, the team of experts was guided by the provisions of the Convention to which Moldova was a party, but which had not been transposed into a regulatory framework. Thus, the procedure was carried out in accordance with the provisions of the Convention. As stated above, for the envisaged quay extension activity, the initiator will be guided by the national law which in 2014 partially transposed the provisions of *Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment*. Annex 1 of the above-mentioned Moldovan Law stipulates those activities related to commercial ports, quays of seaports and river ports for loading and unloading (except for ferry quays) that allow the traffic of vessels over 1350 tons, as well as their expansion, modification or development are subject to the Environmental Impact Assessment procedure.

3. Extension of the universal quay on the Danube River from Giurgiulești International Free Port (GIFP) in Giurgiulești village, Cahul district

3.1. Initiative

At the beginning of 2022 GIFP planned to develop the quay located between two terminals which are operational since 2007 directly at the confluence of the Prut and Danube Rivers. In order to bring the quay

to a functional stage, the initiator *needs to reinforce the 100m long bank by building a retaining wall*. It is located on the maritime section of the Danube River, at km 133.8 of the Danube/Maritime Mile 72.2. GIFP coordinates: latitude 45° 28' 12" N and longitude 28° 12' 36" E.

3.1.1. In general

In 1992, the Ministry of Transport of the Republic of Moldova initiated a feasibility study for the development of port facilities for maritime vessels on the Danube River near the village of Giurgiulesti, which includes an oil terminal, a container terminal and export facilities for concrete products. In 1994 the Moldovan Government decided to give priority to the oil terminal because of Moldova's urgent need to have its own import facilities for petroleum products. The location of the Free Port was chosen because it is Moldova's only link to the Danube River and the Black Sea.

Over the years, GIFP has developed and at present it consists of the following terminals:

Oil Terminal

The terminal consists of a jetty on the Danube River, a tank farm consisting of eight tanks, a truck loading ramp and, since mid-2012, a loading/unloading ramp for mixed gauge (European and wide gauge) railway tankers. The water depth at the berth of the oil terminal is at least 7 m and can therefore operate both sea vessels and river barges. Up to three different types of oil products can be loaded or unloaded from the vessels.

The total storage capacity of 63,600 cubic metres is divided between 8 tanks with capacities ranging from 4,200 to 12,600 cubic metres. Four of the eight tanks have been equipped with floating membranes for the storage of petrol and other light products. Currently, 6 tanks are used for diesel storage and 2 tanks are used for petrol storage.

Grain Terminal

The Grain Terminal has been operating at Giurgiulești International Free Port (GIFP) since July 2009. Trans Cargo Terminal SRL, a subsidiary of Trans Oil Group, built and operates the grain terminal together with Danube Logistics. The Grain Terminal, with a storage capacity of over 50,000 metric tons, can receive up to 3,000 metric tons of grain per day via road and rail transport. At the same time, ships with a capacity of up to 7,000 tonnes can be loaded at a speed of up to 800 tonnes per hour via the two berths.

Figure 3: Grain Terminal



Source: <https://gifp.md/ro/services-facilities/grain-terminal/>

Vegetable Oil Terminal

The Vegetable Oil Terminal at GIFP has been in operation since November 2011. Trans Bulk Logistics SRL, a subsidiary of Trans Oil Group, built and operates the vegetable oil terminal together with Danube Logistics. The terminal has a storage capacity of 6,000 metric tons and can receive vessels with a gross transport capacity of up to 10,000 tons.

Bulk Cargo Terminal

Located on the banks of the Prut River, on an area of 4 hectares, GIFP's Bulk Terminal is owned and managed by Danube Logistics. Through the terminal are transhipped mostly petroleum coke products, crushed stone, fertilizers, scrap metal, coal and other commodities. Transshipment is carried out, using mobile harbour cranes, Fuchs manipulators or floating cranes, from ships directly into trucks, railway wagons or open warehouses.

Container and General Cargo Terminal

In January 2012, Danube Logistics put into operation its new General Cargo and Container Terminal (GCCT - Figure 4). The terminal has an open storage area of 2 hectares, direct connection to the railway and 48 reefer container slots. The terminal equipment consists of a Sennebogen mobile harbour crane with a maximum lifting capacity of 80 tonnes, a Kalmar extended jib crane forklift and two front forklifts. The minimum water depth at the terminal is 5 metres. Danube Logistics has the possibility to transport containers from GIFP to Constanta by river, sea and rail.

Figure 4: Container Terminal



Source: <https://gifp.md/ro/services-facilities/container-general-cargo-terminal/>

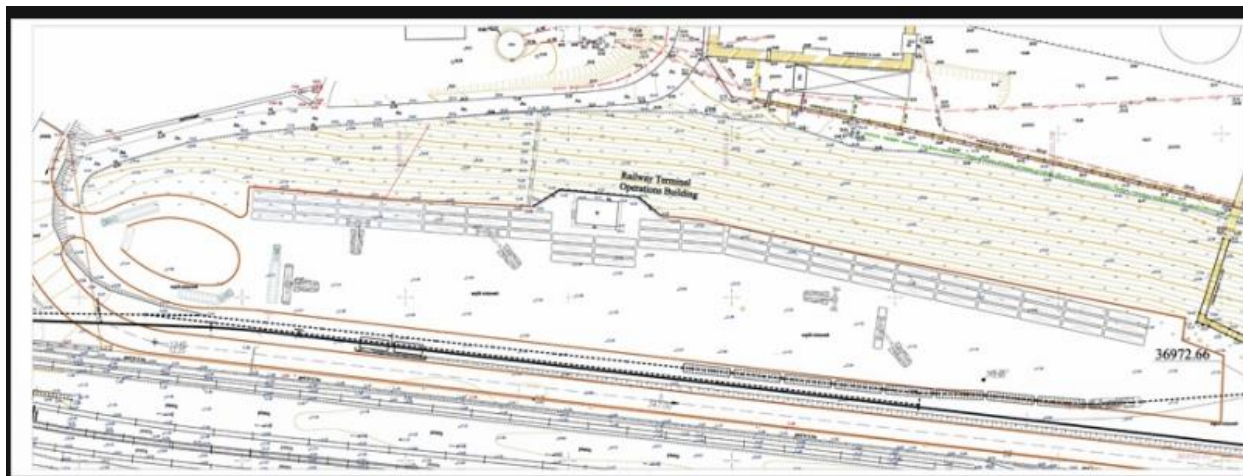
Ro-Ro ramp

The RORO ramp is under construction.

Combined-gauge railway terminal

In September 2014, Danube Logistics inaugurated the Bulk Liquid Rail Terminal. As the first combined-gauge railway terminal (**Figure 5**), the facility enables the transportation of liquid, dry and containerised goods on wide and narrow-gauge railways from/to Moldova, CIS and EU countries.

Figure 5: Railway terminal



Source: <https://gifp.md/ro/services-facilities/mixed-gauge-rail-terminal/>

The development and improvement of the 100m quay is scheduled to be completed in the first half of 2024. Once the permit documents have been received, the quay consolidation works will start.

The land area is 1391 ha, while the land area for construction is 5141 m², the percentage of land occupation is 36.95%.

The capacity of the boats and river vessels could be from 500 tonnes to 10 000 tonnes.

For the loading/unloading of grain and other general cargo onto/from ships, transshipment from trucks or rail wagons onto ships and vice versa is planned.

3.1.2. Final status

The transshipment capacity of the planned 100m section of quay will be around 750,000 tonnes per year, depending on the type of cargo. The vast majority of the transshipment volume will include grain exports from the Republic of Moldova and Ukraine. Thus, the expansion of the quay will help facilitate and accelerate the traffic of grain and other industrial goods in the context of the emergency situation caused by the war in Ukraine.

The access roads for car transport are already operational and are used throughout GIFP.

For the reinforcement of the 100m bank and the whole extension of the quay platform, the project will include the construction of a bank retaining wall made of metal sheet piling. The upper part of the construction will have a monolithic embankment. To stabilise the wall, the whole construction will be anchored with metal structures. Excavation of the embankment and compaction work will be carried out according to standards.

The technology platform will be suitable for a heavy weight mobile crane and a wide gauge railway line along the quay.

The platform/land of the quay will be provided with shoreline reinforcement and resistance constructions, including "bollards" for anchoring ships and barges. On the platform there will be an office, a changing

room, a sanitary block, a 60-tonne-capacity truck weighbridge and a 150-tonne-capacity rail weighbridge, two silos with a capacity of 6000 tonnes each, equipped with loading and unloading equipment, railway line, truck access roads to/from the terminal, wagon unloader, a Sennebogen 6200 crane.

The final state and location of the key are shown in **Figure 2**, which in fact shows the object of the EIM.

3.1.3. Construction activities

The main construction works are:

Excavation of the construction site and selection of soil fertility and unsuitable materials. Also, the quay bank will be aligned as much as possible with the other existing quays in order not to create situations of hindrance to the process of mooring, entry and exit of vessels both for the quay subject to EIA and for the quays in the immediate vicinity. At the same time, the project documentation contains a detailed presentation of the work process for the quay consolidation and the constructions to be carried out. The envisaged construction of the quay provides for sheet piling to be placed in such a way as to allow subsequent dredging during the operation of the quay, and the quay's strength structure is designed to withstand mechanical shock and water pressure during dredging. According to preliminary and approximate estimates, the volume of excavated soil from the Prut River bed/bank where the planned activity will be located is 56154 m³. The excavated soil will be temporarily stored on the territory of the Port for drying, and later it will be taken to a nearby vilage (Slobozia Mare) and stored in a sector allocated by contract with Slobozia Mare, land owned by the local authority, in order to an eroded area (ravine) be consolidated. The scheme that technically represents the works and the planned construction is in Annex 6 of this Report. Moreover, the scheme also represents the technical information related to the dredging works of the navigable channel up to 7m deep.

Land and river bank reinforcement with sheet piling and monolithic embankment.

Reinforcement by jetting - cementing of the ground to depths in accordance with the calculations of the bearing loads of the quay

Additional reinforcement by anchoring walls

In-water consolidation of the river bottom relief by the jet-cementing method

In-water construction of stone embankments

Monolithic foundations of land constructions

Meteoric water drainage facilities

Utility constructions and networks will be made with materials corresponding to EU standards

The bearing surfaces of the quay will be paved with special concrete slabs

Railway lines equipped with a weighbridge

Access roads equipped with a weighbridge

Silo-type grain storage warehouses

The quay constructions are made of durable materials, i.e. metal and high class hydrostatic monolith.

During both the construction and operation stages, safety and protection conditions will be provided for the workers and persons involved and records will be kept. Also, technical inspections and surveys of the quay and its construction will be carried out. These measures are provided for in the technical design document as well as in GIFF's internal policies. All the materials of the designed constructions are in accordance with the standards of the Republic of Moldova and the standards of the European Union.

3.2. Construction planning

The consolidation of the quay subject to the EIA procedure is planned to be carried out in 2023. The total work is planned to be completed in 2024.

3.3. Port activities

The quay will be put into services as soon as the quay development work is completed. At the moment, the approximate calculation of the quay loading and utilization is based on assumptions and previous experience. Such calculation will also be influenced by the demand and operational intensity caused by the conflict in the neighbouring country. Once the conflict subsides there is a possibility that the quay will not be exploited as much as initially assumed.

3.4. Logistics

The transshipment capacity of the planned 100m section of quay will be around 750,000 tonnes per year, depending on the type of cargo. The capacity of the river craft and vessels could range from 500 tonnes to 10,000 tonnes. For the loading/unloading of grain and other general cargo onto/from ships, transshipment from trucks or rail wagons onto ships and vice versa is planned.

Dredging the canal

Dredging is carried out in order to ensure safe navigation, prevent damage to the inland waterways of the Republic of Moldova and ensure the guaranteed dimensions of the fairway. The decision of dredging is taken on a yearly basis, after studying the depths in conjunction with AFDJ – Galati Lower Danube River Administration. The procedure for coordination of the dredging process is carried out in accordance with the **Regulation on the procedure for coordination of execution and supervision of maintenance works on the internal fairway of the Republic of Moldova 84/90 of 10.04.2019, approved by the Ministry of Economy and Infrastructure and the Ministry of Environment**⁷.

3.5. Options considered

This point is not relevant to the EIA for the planned activity as the wharf already exists within the port. At the moment it will just be strengthened and developed. For this reason, the **alternative** has not been considered. Also, the Port has only one location and there are no other alternatives where to build the Port and the quay.

⁷ https://www.legis.md/cautare/getResults?doc_id=114511&lang=ro

4. Basic conditions

4.1. Data collection methods

In order to have a clear view of the current situation of environmental factors in the area of development of the planned activity, the Environmental Agency Laboratory took and examined samples of sediment, water and air and the Cahul Public Health Centre took and examined air samples. The collected samples date back to 2021 and 2022. At the same time, a research based on related bibliographical sources was conducted to establish the baseline ecological conditions. Both the reports prepared in the framework of cross-border projects and the social-economic development documents of Giurgiulești village and Cahul district were analyzed. Respectively, data and findings processed from both quantitative and qualitative information were included in the preparation of the report. Field observations was also used as a method of observation and collection of information for this report. In addition, information from the technical design was included, in the part where the technical and construction aspect was inserted and documented.

4.2. Soil quality and shoreline condition

In Cahul district the soil cover is varied and on most of the territory prevails soils of common and carbonate chernozems, low salinized meadow chernozems, in the Prut floodplain - alluvial soils of marshy meadow. The average soil quality at the current stage, according to the information taken from the *Programme of socio-economic development of Cahul district for 2017-2020* on the territory of the district according to data from the Land Cadastre of the Republic of Moldova is 58 points, the average soil quality on the territory of the Republic of Moldova is 64 points⁸.

Hydrological processes are subjecting the floodplain to continuous transformation, with their intensity varying greatly over the course of a year as a result of hydrological changes in the riverbed, with high intensity at maximum levels. Accumulations are prevailing among those processes, due to the continuous tendency of formation and build-up of alluvial bed. Sloping, erosion and bank break processes also occur in the floodplain. The alluvial process is specific to the formation of alluvial soils, which are characterised by short formation time and excess moisture due to flood waters.

The Reference Laboratory of the Southern Environment Agency Sediment took samples at GIFP in early 2022 from three points, namely, from the Prut River, from the Prut River at the confluence with the Danube River, and from the Danube River. (**Annex 1**)

In particular, the sediment samples were analysed for heavy metals. The reference table showed that the results are well below the maximum allowable concentration (MAC) limits, which indicates that the limit of pollution with NO₃, NH₄, petroleum products, Zn, Cu, or Pb and Cd is not exceeded even during the operational period.

4.3. Water quality

The Environment Agency is the institution in charge at national level with the hydrobiological, hydrochemical and hydrological monitoring of surface waters. From January 2022 to September 2022, the Reference Laboratory of the Environment Agency took water samples; physical-chemical indicators, oxygen regime indicators, mineralization indicators and biogenic elements were analyzed to identify the

⁸ South RDA "Socio-economic Development Program of Cahul district for 2017-2020"

current situation. The water was collected from the surface of the Danube River in the immediate vicinity of GIFF. According to the test reports provided by the Environment Agency, only in some cases there are small deviations from the MAC, and this concerns pH, N-NO₂, etc. (**Annex 4**). In general, the laboratory results showed that the water quality in the Danube River is of 3rd degree, i.e. moderately polluted, which has been confirmed by other researches in the region, such as in the framework of the Romania-Moldova-Ukraine projects⁹.

4.4. Groundwater quality and quantity

The port surface is paved. A drainage system collects rainwater. The natural flow of groundwater will not be influenced by the earthworks (raising of level). On the shore side of the sheet piling screen of the quay a layer of gravel will be deposited to collect the water flowing in this direction and the accumulated water to be discharged into the Danube and Prut in a “natural” way. Danube Logistics is monitoring regularly the quality of the groundwater. Recent results from the first half of 2022 elaborated for the existing artesian well on the territory of the port are attached in **Annex 5**.

4.5. River characteristics (hydrology)

The Prut River is one of the largest rivers in Western Ukraine, the Republic of Moldova and Romania, being one of the main tributaries of the Danube River. The Prut River basin is a transboundary basin shared by the three countries. Of the basin’s total area, 28% is in the Republic of Moldova, 33% in Ukraine and 39% in Romania. The Prut River flows from the south-western slope of the Hoverla mountain, about 15 km south-south-east of the village of Vorokhta in the Cernahora massif of the Carpathian Mountains, and flows into the Danube River, south of the village of Giurgiulești, about 164 km from the mouth of the Danube. The Prut River is about 967 km long and the catchment area is 27 540 km.

Within the territory of the Republic of Moldova, the Prut Basin consists of sedimentary rocks of Neogene, Cretaceous and Silurian age (shales, sands, clayey sands, clays, limestones and marl). The soils are predominantly chernozemic. As the Prut River is divided into several sectors, a representative sector for the GIFF area is the village of Stoianovca, which is the river mouth (confluence with the Danube River). The valley is slightly winding, in the shape of a box, with a width of 5.0-8.5 km; towards the mouth of the river it widens up to 12 km. The slopes are concave, 80-120 m high, steep and very steep, practically everywhere very broken up by gullies and ravines.

The river bank is winding, especially in the sector of villages Cucoara - Slobozia-Prut. No branching of the riverbed is observed. It is 60-80 m wide, maximum - 104 m, near the village of Crihana. The depths are 2-4 m, maximum 15 m (2 km upstream of Zârnești vilalge). The velocity of the watercourse varies between 0.4-0.6 m/s, maximum - 1.0 m/s (Crihana village).

The annual water levels are characterised by springtime rises, driven by melting snow and frequent summer floods - heavy rainfall. For the autumn period lower and more stable levels are typical, which in turn are sometimes still breached by rainfall¹⁰.

Every year the channel is dredged to maintain the depth to maritime navigation standards. The volume of dredging is determined according to the water level and the amount of silt deposited. From past experience, in order to maintain the GIFF aquatorium in a safe regime for mooring ships and barges, a

⁹ <https://environment.md/public/files/caed8202fb5b8d7440325d5429606211.pdf>

¹⁰ <http://www.apelemoldovei.gov.md/pageview.php?l=ro&idc=139>

volume of approximately 20000 m³ of sedimented material (silt) has to be dredged annually. This volume is dredged along the harbour, including from the quay front which is the object of the EIA.

4.6. Air quality

Every year, GIFP is subject to control by the environmental authorities. Thus, according to the protocols provided by the state authorities, it is important to mention that the activity of the port is managed in accordance with the legislation in force, holding the necessary permit documents (including the Authorisation for Emissions of Pollutants into the Atmosphere from Stationary Sources).

At the same time, GIFP is in contact with the air quality monitoring services from the Cahul Health Centre. According to the latest results from 2021, which show the current state of air quality (Minutes 162 dated 01.07.2021 and Minutes 163 dated 01.07.2021 - **Annex 3**) it was found that no exceedances of MACs were recorded, which confirms compliance with *Law 1422/1997 on Atmospheric Air Protection*¹¹ and the provisions of *Law 1515/1993 on Environmental Protection*¹².

4.7. Noise level

There is no official data available on the current state of noise. There is a railway in the immediate vicinity of the project area. Further up the hill is the motorway between Ukraine and Romania. The noise sources present on the proposed project site are the natural background and the specific port activities (cargo loading/unloading). The technological execution processes (excavation, filling at the quay, conveying of construction materials, etc.) involve the use of groups of machinery with appropriate functions. These working machines are sources of noise. In section 6.3.6 the potential noise from both the construction process and the operation of the port is described.

4.8. Traffic

According to GIFP's Annual Activity Report, for the year 2020, 600 different types of vessels docked and were serviced at GIFP (about 1.64 vessels per day), of which - 208 are service craft (tugs), which do not carry cargo but only service non-propelled cargo units. During the reporting period 934.7 thousand tons of miscellaneous cargo or 14.3% less than in 2019 were transhipped through the river terminals of the International Port. The average amount of cargo per vessel berthing in the reporting period was about 1.6 thousand tonnes, decreasing from the previous period by 15.8%¹³.

In 2020, 211.8 thousand tons of petroleum products were transhipped through GIFP's oil terminal, or 20.2% more than in 2019, of which 26.7 thousand tons of petroleum products were exported, or 13.1 thousand tons more than in the same period of 2019, and 185.1 thousand tons of petroleum products were imported (87.4% of total transhipments through the oil terminal), or 13.9% more than in the corresponding period of 2019. Therefore, it can be seen that during 2020 the oil terminal platform was mainly used for importing petroleum products, and there was an increase in transhipped production (especially imported production) in the reporting year compared to the previous period.

¹¹ https://www.legis.md/cautare/getResults?doc_id=108699&lang=ro

¹² https://www.legis.md/cautare/getResults?doc_id=112032&lang=ro

¹³ https://date.gov.md/ro/system/files/resources/2020-12/activitate-port-giurgiulesti-sem-i-2020_0.pdf

During 2020 the general cargo terminal increased its activity and was mainly used for importing goods. Thus, 370.5 thousand tons of cargo were transhipped through the terminal, or 12.7% less than in 2019, of which, 23.9 thousand tons of cargo were exported, or 79.5% less than in 2019, and 346.6 thousand tons of cargo were imported (93.5% of total cargo transhipped), or 12.8% more than in 2019. Among the transhipped goods can be highlighted construction materials, containerized grain, alcoholic beverages, etc. During the reporting period, 234.5 thousand tons of grain were transhipped through the grain terminal, which is a decrease of 40.7% compared to the previous period. The majority of the production was exported (233.0 thousand tonnes), which is similar to the previous year. In 2020 transhipment of vegetable oil through the Port continued. Essentially, during the year, 117.9 thousand tonnes of oil were transhipped, or 24.2% more than in 2019, with all production being directed solely for export, a situation similar to the previous year.

The Danube is an important navigable waterway, but not on the scale of the Rhine, for example. Ships carry almost all bulk cargo and very few special vessels use the Maritime Danube Seaway. Seagoing ships passing through Giurgiulești sail only to and from Galati or Braila in Romania. The maximum ship size is limited to 7 metres draught, so up to 10 000 dM, but usually 5 000. Inland vessels are basically Europa IIb barges, carrying about 1 600 tonnes and sailing in convoys of up to 6 barges with a pusher tug.

Current traffic intensity

The motorway between Ukraine and Romania passing through the project territory and Giurgiulești is used by cars and trucks. The traffic is quite heavy, but this does not imply that all traffic is to and from port activities. As some parts of the road have been repaired, the route to Giurgiulești customs has become more intensified, especially with heavy goods vehicles. Another aspect that has influenced the increase in the number of vehicles transiting this area is the conflict in Ukraine, which has destabilised the traffic to and from Ukraine. According to the information collected from the Customs Service of the Republic of Moldova, the traffic has intensified largely because some carriers from Ukraine opt for transit with cargo through the Republic of Moldova (entering through Giurgiulești 2 PVFI, road (3030) and exiting through Giurgiulești 1 PVFI, road (3020)).

At the same time, economic agents from the Republic of Moldova, who previously exported goods to Ukraine, have re-routed their path towards the EU market, and for this reason customs posts located on the Moldovan-Romanian border have become overloaded¹⁴.

If we are to make a rough calculation of the intensity of road traffic caused by GIFP activity, we can mention that there are about 4500 trips per year.

4.9. Climate

Climate change is a challenge of the 21st century. Every major activity must be controlled and monitored to avoid emissions that can have a negative impact on the environment and human health. In this context,

¹⁴ <https://trm.md/ro/social/trafic-sporit-de-camioane-cu-marfa-in-postul-vamal-Giurgiulesti>

GIFP annually monitors CO₂ concentration and elaborates the necessary reports requested by the relevant institutions.

Thus, according to the information presented for **2021**, Danube Logistics has issued the fifth edition of the Annual Carbon Footprint Report prepared in accordance with the Greenhouse Gas Protocol. As in previous years, the Carbon Footprint Report presents and analyzes data on CO₂ and CO₂ equivalent (CO₂e) emissions generated from the activities carried out by Danube Logistics in 2020 on the territory of Giurgiulești International Free Port. While total CO₂e emissions in 2020 increased by 5.4% compared to 2019, CO₂e emissions per tonne of cargo transhipped further decreased by 3.8% compared to the previous year. This decrease points to the fact that port facilities and port equipment have been used more efficiently in terms of emissions, as transshipment volumes have increased and despite the extensive use of fuel to transport materials from dredging works. Overall, over the last five years, the main factors reducing CO₂e emissions per tonne of cargo transhipped have been increased efficiency, which is due to increased volumes, and the switch from conventional to LED lighting. Danube Logistics will continue to investigate new optimisation possibilities to reduce CO₂e emissions¹⁵.

4.10. Tectonics

Port activities will not induce or influence any tectonic activity, Tectonics is not the subject or an affected factor in this EIA.

4.11. Radiation

There are no plans to use any nuclear or radioactive components in the large-scale port. Possibly some measurements will be carried out with special equipment. Normal use of this equipment will not have any significant environmental impact. Therefore, the radiation issue is not analysed in the EIA.

4.12. Landscape and habitat

The immediate area comprising the 100m quay which makes the object of this Environmental Report is already covered by a developed port which has been in operation for more than 15 years. Consequently, the change in the natural landscape is not something recent. That is to say, the natural situation has been modified almost completely along the entire shoreline of the port during the consolidation and brushing of the shoreline, building of quays, construction and furnishing of the port platform.

4.13. Flora, vegetation

The territory of Giurgiulești village is part of the territory of the Lower Prut Biosphere Reserve, established in 2018 with the aim of preserving physico-geographical elements and formations, plant and animal species of national and international importance, to carry out research contributing to the global monitoring system, but also to ensure ecologically sustainable economic and social-cultural development, knowledge accumulation and transfer, and environmental education. In general, the flora of the Lower Prut is represented by a wide variety of species, but they are more centered in the upper part of the river in the region of the villages Slobozia Mare, Văleni, Manta (in total, the area with integral protection included in 2013, 132 species of vascular plants, 5 species of vascular plants white water lily, included in

¹⁵ https://gifp.md/ro/wp-content/files_mf/16207363582020_ReportonCarbonFootprint.pdf

the Red Book¹⁶). The vegetation for the most part is typical for the forest-steppe area. Pure pedunculate oak stands predominate, with a high percentage of partly derived and mostly artificial forests. Artificial stands can be found on 83% of the area occupied by forest; these have undergone more or less intensive interventions that have diverted them from the natural types. The animal world is represented by species characteristic of the forest-steppe area. Birds can be found in the area: woodpeckers, titmice, crows; as well as insectivorous mammals - hedgehogs; rodents - squirrels; reptiles - snakes, lizards; amphibians - toads, frogs; and numerous species of insects. The aquatic ponds are populated by various species of fish - bream, flounder, carp and phytophagous, as well as waterfowl - ducks, geese. Animal and bird numbers are affected by unauthorised hunting and poaching. In 2020, the Reserve's information materials mentioned that the vegetation mostly consists of reed thickets, as well as floodplain water plants (typha, rush, flowering rush, fringed water lily - in total 312 species throughout the reserve)¹⁷.

At the same time, it is important to mention that these species are not necessarily found on the territory of the Port as the information was taken from the Socio-Economic Development Plan of the locality. This implies that the identified species may be in the village but not in the Port. In 2007, when field visits were carried out by specialists contracted for the preparation of the Environmental Report, the possible species identified in the Port were *Salix*, *Eleagus*, *Ailanthus*.

4.14. Fish

The fish community at the mouth of the Prut was identified by Crepis (2007). In general, the project area is not considered an important spawning and nursery area for fingerlings. Spawning substrates such as vegetation, rocks or gravel are absent. Steep, smooth banks contain limited places where 'fingerlings' (minnows) can hide, e.g. spawning habitat for both *Aspius aspius* and *Romanogobio vladykovi* is absent. The former prefers the gravel and the latter tends to spawn in fords upstream, such as flood valleys. *Neogobius fluviatilis* hides under rocks and other structures not present in the project area.

The mouth of the Prut River is generally populated by common fish species; only 3 species included in the IUCN Red List are found in large numbers in the lower Prut River region (see Table 1). All 3 species are listed by IUCN as species for which no data are known, i.e. the status of Red List species is unknown because of insufficient data. Other known species from the lower Prut River included in the Red List and are at least rare in the region. The mouth of the Prut River is considered of minor importance for these species. At the same time, the upper part of the aquatic fauna is characterized by more than 32 species of fish (2020) including rare species such as the ziege, the European mudminnow, the zingel etc¹⁸.

Table 1 contains information about the fish species in the Lower Prut region, their relative abundance and status in national and international Red Books.

Table 1. Fish species in the Lower Prut region¹⁹

¹⁶ Gheorghe Postolache *Integral Protection Area of the Lower Prutul Reserve*, Mediul Ambient 2013
https://ibn.idsi.md/sites/default/files/imag_file/6.Zona%20cu%20protectie%20integrala%20din%20rezervatia%20Prutul%20de%20jos.pdf

¹⁷ <https://antrim.md/wp-content/uploads/2020/09/leaflet-prutul-de-jos.pdf>

¹⁸ <https://antrim.md/wp-content/uploads/2020/09/leaflet-prutul-de-jos.pdf>

¹⁹ Boss Witteveen Environmental Report for GIFF Cargo and Passenger Terminal, 2007

English	Latin	Status Lower Prut	Red Book of Moldova	Red Book of IUCN
Monkey goby	<i>Neogobius fluviatilis</i>	common		
Asp	<i>Aspius aspius</i>	Relatively common		x
Danube whitefin gudgeon	<i>Romanogobio vladykovi</i>	Relatively common		x
Weatherfish	<i>Misgurnus fossilis</i>	Rare		x
Ziege	<i>Pelecus cultratus</i>	Rare		x
Kessler's gudgeon	<i>Romanogobio kessleri</i>	Rare		x
Sterlet	<i>Acipenser ruthenus</i>	Very rare		x
Starry sturgeon	<i>Acipenser stellatus</i>	Very rare	x	x
Schraetzer	<i>Gymnocephalus schraetser</i>	Very rare		x
Ide	<i>Leuciscus idus</i>	Very rare	x	
Vyrezub	<i>Rutilus frisii</i>	Very rare	x	x
	<i>Sabanejewia aurata</i>	Very rare		x
Volga pikerperch	<i>Sander volgensis</i>	Very rare		x
Zingel	<i>Zingel zingel</i>	Very rare		x
Danube salmon	<i>Hucho hucho</i>	No data for 20 years	x	x
Beluga sturgeon	<i>Huso huso</i>	No data for 20 years	x	x
Burbot	<i>Lotta lotta</i>	No data for 20 years	x	
European mudminnow	<i>Umbra krameri</i>	No data for 20 years	x	x
Streber	<i>Zingel streber</i>	No data for 20 years	x	x

4.15. Amphibians

During the field visit which was carried in the framework of the preparation of the environmental report in 2007, big marsh frogs (*Rana ridibunda*) were seen in abundant numbers on the banks of the Prut River. Apart from frogs no other amphibian species were recorded. This species has a relatively broad ecological range, living in a variety of habitats. The project area is characterized by steep river banks and missing stagnant water; it does not meet the habitat requirements for rarer species occurring in the region (Prut River Basin) especially in terms of habitat necessary for breeding (e.g. ponds, flood valleys). That is why only common amphibian species can be found in the territory²⁰. Surveys carried out on the territory of the Lower Prut Reserve in 2021 revealed the existence of 9 species of amphibians, including some that

²⁰ Ibidem

are attested in Annex II of the Bern Convention. The table below shows the information on the biotopic predilection and level of protection of amphibians in the Lower Prut Reserve²¹.

Table 2: Biotopic predilection and level of protection of amphibians in the Lower Prut Reserve

No.	Species	Habitats			Level of protection	
		Aqua-palustrine biotope	Forest biotope	Open land	Red Book of Moldova	- Berne Convention
1	<i>Triturus cristatus</i> Northern crested newt	+	+	-	+	+
2	<i>Lissotriton vulgaris</i> Smooth newt	+	+	-	-	-
3	<i>Pelophylax ridibundus</i> Marsh frog	+	-	-	+	-
4	<i>Pelophylax lessone</i> Pool frog	+	-	-	+	-
5	<i>Bufo bufo</i> Common toad	-	+	-	+	-
6	<i>Bufo viridis</i> European green toad	-	+	+	-	+
7	<i>Bombina bombina</i> European fire-bellied toad	+	-	-	+	+
8	<i>Hyla arborea</i> European tree frog	+	+	-	+	+
9	<i>Pelobates fuscus</i> European common spadefoot	-	+	+	-	+

Recently, as a result of cytogenetic research, *T. dobrogicus* has been separated from *T. cristatus*. The former was described as a subspecies and is considered as a Danube endemic. It has also been recorded in the Lower Prut valley on the Cahul-Giurgiulești range. At the same time, researchers in the field mentioned that additional molecular-genetic research is needed to confirm this type of species.

4.16. Reptiles

The dry coast and adjacent territory are inhabited by common reptile species. During the field visit, 2 species were recorded: *Lacerta viridis* (green lizard) and the snake *Dolichopis caspius*. Both species are common in the region. No other reptile species were recorded in the project area. Based on these results and in the absence of suitable habitat (especially for the pond turtle *Emys orbicularis* living in ponds and small lakes), rare species cannot be found in the given territory²². The biotopic predilection and level of

²¹ Turcan Vladimir, "Herpetofauna of the Lower Prut Nature Reserve", Institute of Zoology 2021, https://ibn.idsi.md/sites/default/files/imag_file/p-104-106_0.pdf

²² Boss Wittevee Environmental Report for GIFP Cargo and Passenger Terminal, 2007

protection of reptiles in the Lower Prut Reserve shows that currently (2021)²³ there are 9 populating species of reptiles. Some of these species are included in the Red Book of Moldova or/and in Annex II of the Bern Convention. Among the common ones identified in 2007 on the land adjacent to GIFP, but also on the Reserve's grounds in 2021, are the green lizards (*Lacerta viridis*).

Table 3: Biotopic predilection and protection level of reptiles in the Lower Prut Reserve

No.	Species	Habitat			Level of protection	
		Habitats - biotope aqua- palustrine	forest biotope	open land	Red Book of Moldova	Berne Convention
1	<i>Emys orbicularis</i> European pond turtle	+	-	-	+	+
2	<i>Anguis fragilis</i> Slow worm	-	+	-	-	-
3	<i>Lacerta agilis</i> Sand lizard	-	-	+	-	+
4	<i>Lacerta viridis</i> European green lizard	-	+	-	-	+
5	<i>Podarcis taurica</i> Balkan wall lizard	-	-	+	+	+
6	<i>Natrix natrix</i> Grass snake	+	+	+	-	-
7	<i>Natrix tessellata</i> Dice snake	+	-	+	-	+
8	<i>Coluber caspius</i> Caspian whipsnake	-	-	+	+	+
9	<i>Coronella austriaca</i> Smooth snake	-	+	+	+	+

4.17. Mammals

During the field visit the European ground squirrel (*Spermophilus Citellus*) was noticed and the Eurasian otter's (*Lutra Lutra*) tracks were found along the river bank. Both species are included in the IUCN Red Book and the Red Book of Moldova. The European ground squirrel occurs in relatively large numbers in and near the project area. Apart from these rare species only common species can be found on the territory of the project.²⁴ In the area, research was carried out mainly in the Lower Prut Reserve, where initially 22 species of small mammals were recorded and later the list was extended to 23 species. The researches were carried out in the period 2003-2021 in various types of ecosystems of the Lower Prut

²³ Turcan Vladimir, "Herpetofauna of the Lower Prut Nature Reserve", Institute of Zoology 2021, https://ibn.idsi.md/sites/default/files/imag_file/p-104-106_0.pdf

²⁴ Ibid.

Lakes Ramsar wetland. Although the researches were carried out neither in the project area nor in its vicinity, the presence of the following species was recorded: the species *Erinaceus roumanicus* of order *Erinaceomorpha*, 6 species of order *Soricomorpha* (*Talpa europaea*, *Sorex araneus*, *S. minutus*, *Neomys anomalus*, *Crocidura leucodon*, *C. suaveolens*) and 18 species of order *Rodentia* (*Spermophilus suslicus*, *Dryomys nitedula*, *Muscardinus avellanarius*, *Spalax leucodon*, *Apodemus sylvaticus*, *A. uralensis*, *A. flavicollis*, *A. agrarius*, *Mus musculus*, *M. spicilegus*, *Rattus norvegicus*, *Mycromys minutus*, *Cricetus cricetus*, *Ondatra zibethicus*, *Arvicola terrestris*, *Clethrionomys glareolus*, *Microtus arvalis*, *M. rossiaemeridionalis*), which makes up 25 species of small mammals in total²⁵.

4.18. Birds

The land is dry and without floodplains or marshes. This makes it unsuitable for typical water species found in the nearby Danube Delta or Lower Prut Lakes. The land is not used for feeding or resting by the birds that breed in the Danube Delta or Lower Prut Lakes. That is why species such as *Egretta Alba* (great egret), *Pelecanus onocrotalus* (great white pelican) or *Platalea leucorodia* (Eurasian spoonbill) do not occur in this territory. This means that the territory has no ecological function for these protected bird species, nor for their breeding, feeding or resting.

The port territory is intensively exploited by people and little has remained of the former riverside forests. During the field visit common bird species were observed such as the common kingfisher (*Alcedo attis*), the grey-headed woodpecker (*Picus canus*), the common kestrel (*Falco tinunculus*) and the crested lark (*Galerida cristata*). No rare or Red Book species are expected to occur in the project area²⁶. At the same time, in the nearby region, i.e. in the Lower Prut Floodplain, according to the research carried out in the region, an important migration route has been identified, and the water basins with rush-beds, bulrush, willow forests create favourable conditions for roosting, feeding, breeding and wintering for 192 bird species, which constitute 67% of the total number of wild bird species in the country. Of the total number of avifauna found in the area, 6 species are listed in the IUCN Red Book: red-breasted goose (*Branta ruficollis*), lesser white-fronted goose (*Anser erythropus*), ferruginous duck (*Aythya nyroca*), corn crake cress (*Crex crex*), pygmy cormorant (*Phalacrocorax pygmeus*), white-headed duck (*Oxyura leucocephala*); 22 species are included in the list of species of conservation concern for birds in Europe SPEC (Species of Conservation Concern); 21 species are rare for the Republic of Moldova: pygmy cormorant (*Phalacrocorax pygmeus*), great white pelican (*Pelecanus onocrotalus*), Eurasian spoonbill (*Platalea leucorodia*), white-tailed eagle (*Haliaeetus albicilla*), great egret (*Egretta alba*), squacco heron (*Ardeola ralloides*), black stork (*Ciconia nigra*), glossy ibis (*Plegadis falcinellus*), mute swan (*Cygnus olor*), whooper swan (*Cygnus cygnus*)²⁷.

4.19. Invertebrates

During the field visit, only common invertebrate species (e.g. butterflies, crickets, dragonflies) were observed. Based on the study of written sources and the given habitat, it is expected that only common

²⁵ Victoria Nistreanu, Victoria Burlacu, Alina Larion. *Fauna of Small Mammals in the Habitats of the Ramsar Wetland Lower Prut Lakes*, Institute of Zoology, Chisinau, 2021 https://ibn.idsi.md/sites/default/files/imag_file/p-74-77_1.pdf

²⁶ Ibid.

²⁷ Viorica Paladi. *Ecological Values of the Lower Prut Nature Reserve*. Noosfera, 2013, available at https://ibn.idsi.md/sites/default/files/imag_file/Valorile%20ecologice%20ale%20rezervatiei%20naturale%20Prutul%20de%20jos.pdf.

species will be encountered in the field²⁸. At the same time, in the area of the Lower Prut Nature Reserve, in the years 2019-2021, during the expeditions, have been identified 37 species of invertebrates from two classes *Collembola* and *Insecta* (*Coleoptera* and *Hymenoptera*) belonging to 33 genera and 16 families (Tables 1, 2, 3). For each species the number of individuals, the microhabitat and some ecological data are presented. On the territory of the Lower Prut Nature Reserve, 6 species of rare insects have been detected and included in the 3rd edition of the Red Book of the Republic of Moldova. Therefore, the role of the nature reserve for the conservation and restoration of biodiversity is enormous.²⁹

4.20. Ecology

The Prut River forms an important ecological corridor for species. It is recognised as an important international ecological corridor. The river's downstream reaches include extensive floodplains with riparian forests and wetlands. These territories are linked to the Danube by the Prut River. Fish can migrate upstream for spawning, and mammals and other fauna can use the banks for spread and migration. The project territory is part of this ecological corridor. For more details see section 4.22.

4.21. Archaeology

According to the Register of State-Protected Monuments, the village of Giurgiulești has monuments under protection regime. At the same time, their location is not in the immediate vicinity of GIFP. The registered monuments include the following:

1. Saint George's Church;
2. Monument in memory of countrymen fallen in WWII (1941-1945);
3. Monument at the common tomb of three soldiers fallen in WWII (1941-1945);
4. Monument to Mihail Sadoveanu.

Burial mounds are also recorded in the locality, but they are not taken under protection.

The integrity of historical and architectural monuments is not the subject of this Environmental Report as they will not be affected by the planned activity.³⁰

4.22. National and international protected areas

The following protected areas and areas of national/international interest are located in the GIFP area:

Lower Prut Biosphere Reserve was established by *Law 132/2018 regarding the foundation of the Lower Prut Biosphere Reserve*³¹, and is included in the UNESCO World Network of Biosphere Reserves. The total area of the Reserve is 14771,1 ha, including public state property (state forest fund: 2772,48 ha), local public authority land and private property, as shown in Annex 2. 416,84 ha of the protected area are located in the village of Giurgiulești. According to the zoning plan, this territory is part of the *transition*

²⁸ Ibid.

²⁹ Svetlana Bacal, Galina Bușmachi, Viorica Paladi. *Contribution to the knowledge of invertebrates from the Lower Prut Nature Reserve*, Institute of Zoology, Chisinau, 2021 available at https://ibn.idsi.md/sites/default/files/imag_file/p-8-11_0.pdf.

³⁰ <https://date.gov.md/ckan/ro/dataset/5180-registrul-monumentelor-republicii-moldova>

³¹ https://www.legis.md/cautare/getResults?doc_id=105493&lang=ro

zone where traditional land use activities related to agriculture, forestry, grazing, fishing and other economic activities using new non-polluting technologies are allowed in compliance with the legal requirements of environmental protection.

GIFP's activity is controlled annually by both the institutions responsible for control and by the company, which has an annual Environmental Programme.

In this regard, the extension of the quay will not have a significant impact on the protected area as the species and habitats are directly concentrated in the core areas of the reserve, namely in the villages of Colibași, Brâna, Manta.

Ramsar Wetland of Lower Prut Lakes

This wetland of international importance is located between the town of Cahul and the village of Giurgiulești, in the lower part of the Prut. The wetland is listed under Ramsar number 1029 since 20 June 2000. The site is bordered to the west by the Prut River and to the south by the river estuary in the Danube. It contains three Ramsar wetland types: O (permanent freshwater lakes), M (permanent river) and 1 (fish reservoirs). The site meets criterion 2 for vulnerable species and criterion 3 for biodiversity. Lakes Beleu and Manta are unique ecosystems, described as the last natural floodplains of the Lower Danube region. The system is important for its groundwater circuit, flood control and sediment trapping, but also for its long list of rare and vulnerable flora and fauna species.³² The area is also home to the important avifaunal area of Lake Manta and Lake Beleu, which contains 115 breeding species, 53 passage species, 7 summer guest species, 1 winter guest species. Aquatic species predominate.³³

The project does not include development actions that would lead to physical changes in protected areas. The projected works generate a specific impact in the two life stages of the infrastructure, namely:

Construction stage:

Operational stage:

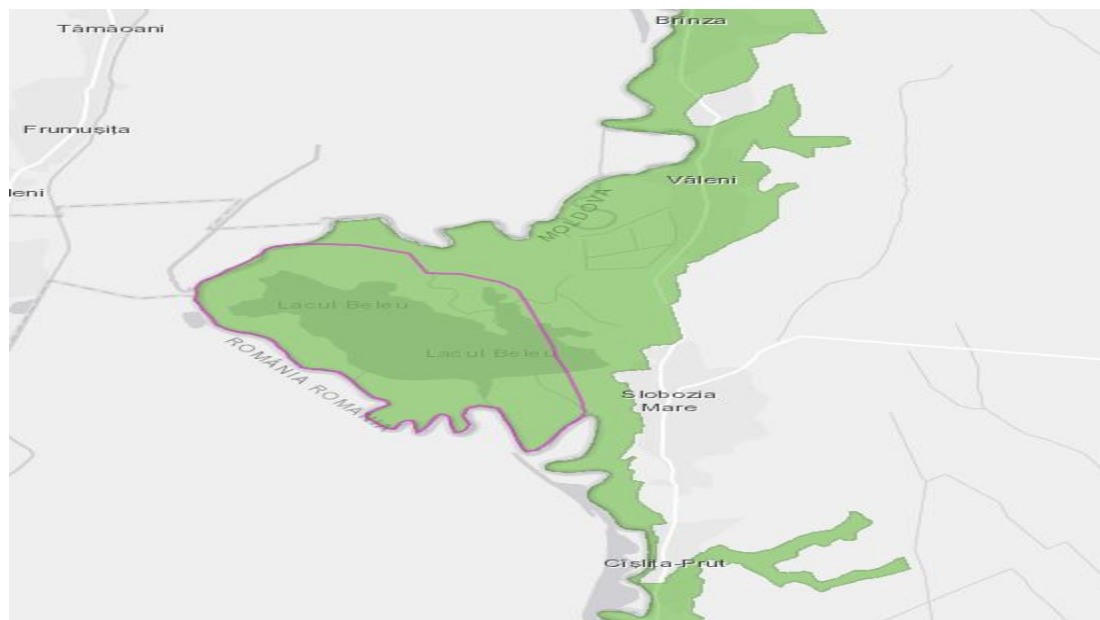
- The activities *during the construction stage* of the hydrotechnical works are summarised as follows:
 - ✓ Transportation of materials and workers to the working sites;
 - ✓ Deployment of the construction machinery at the working sites;
 - ✓ Land preparation by clearing and digging for the creation of granular fills;
 - ✓ Driving in the sheet piling, piling;
 - ✓ Laying of crushed stone layers, ballast, putting the pitching into operation;
 - ✓ Execution of concrete platforms;
 - ✓ Moving crane tracks and moving cranes;
 - ✓ Ecological land restoration works consisting in the removal of remaining waste;
 - ✓ In the site area, dismantling of any annexes related to the construction stage.

Emerald Site of Lower Prut Lakes

³² <https://web.archive.org/web/20170227092202/https://rsis.ramsar.org/ris/1029>

³³ <https://web.archive.org/web/20150227201910/https://rsis.ramsar.org/RISapp/files/RISrep/MD1029RIS.pdf>

The Emerald site of Lower Prut Lakes is included in the list of Emerald sites under number MD0000001, and has an area of 1721.0 ha counting 53 bird species and 18 other species, with a total of 8 habitats. As can be seen on the Emerald network map, it is located in the upper part of the network, close to Slobozia Mare. Given the amendment added to the *Law no. 94/2007 on the ecological network*, the Emerald network and the assessment of natural habitat types and species of natural fauna and flora will be created.³⁴



Picture 1: Map showing the location of the Emerald MD0000001 site

It should be noted that no natural resources within the protected area are foreseen for the implementation of the project. At the same time, the effects of anthropogenic activity have already established the configuration of the fauna and flora spectrum in the area.

During the *operational stage*, ship traffic may present a potential danger of damage to protected areas through accidental spillage of substances or materials during loading and unloading operations.

5. Evaluation methods

5.1. General

The assessment methods used in this study are based on quantitative and qualitative data and criteria formulated from established environmental principles. Decisions on impact predictions are based on published written sources and expert opinion. Where possible, the assessment will be divided into impacts occurring during the construction stage and those occurring during the operational stage.

³⁴ https://www.legis.md/cautare/getResults?doc_id=107337&lang=ro#

Impacts also include those that are expected to be direct, indirect, temporary, permanent, cumulative, reversible or irreversible.

5.2. Soil and sediment

Sediment samples were taken from three points, namely, from the Prut River, from the Prut River at the confluence with the Danube River, and from the Danube. The samples were taken by the Reference Laboratory of the Southern Environment Agency (Annex 1).

5.3. Air

The information on air quality was taken from previous activity reports from the control acts carried out by the responsible institutions. Moreover, the information was also taken from the two Minutes issued as a result of the control carried out by Cahul Public Health Centre.

5.4. Noise

The noise sources present at the proposed project site are the natural background and specific port activities. Respectively, the estimation was made based on the approximate amount of decibels emitted by the equipment that will operate during the construction stage. For this component, international literature and standards were also considered, which are also followed by the relevant Moldovan authorities. At the same time, noise is not a subject of the EIA, as the nearest dwellings are about 1000m away from the port.

5.5. Landscape

The landscape information was assessed based on the research carried out on site by the expert team in 2007. As this activity only involves the development of an existing but unconsolidated quay, no landscape impact will occur.

5.6. Flora, fauna and ecology

The significance of ecological influences was assessed using the following criteria:

- The ecological values that will be affected by the impact;
- The ecological function that will be affected by the impact (e.g.: breeding territories, territories for shelter and food, corridors for migration and breeding);
- Type of impact: the impact can be positive or negative;
- Impact magnitude: refers to the “scale” or “amount” of the impact. Usually, the greater the magnitude of the environmental change, the more significant the impact;
- Proportion of the impact: the territory where the impact occurs and the part of the habitat/population affected. The impact will be greater if a larger territory or habitat or a larger number of organisms is affected;
- Impact duration: the time for which the impact is expected to last until the ecological feature is restored or replaced. The duration of an activity may be different from the duration of the impact caused by the activity. Long-term impacts are usually more significant than short-term impacts;
- Reversibility of impacts: impacts can be permanent or temporary. Permanent impacts are usually more significant than temporary ones;

- Synchronisation and frequency of impact: some changes can only be influential if they coincide with life stages or critical periods. The frequency of an activity and the resulting impact can also be taken into account.

The ecological importance of a species is determined by its protected status and relative abundance (rarity). Therefore, the information provided by the Red Book of Moldova and the IUCN Red List was analysed.

The most important criteria used to assess the ecological importance of a habitat area are:

- Naturalness: the habitats that have been less modified by man will be valued more;
- Size: in general, a larger area of habitat(s) will be more valuable than smaller ones;
- Diversity: the more diverse the assemblages and communities of species within the territory, the greater its conservation value;
- Rarity: the presence of one or more habitats and species will give the territory a higher value than those which are not characterised by rarity;
- Recreation ability: habitats that are more difficult to recreate naturally or artificially have higher value;
- Fragmentation: the more fragmented a habitat is, the lower its value;
- Ecological linkage: the value of a habitat increases if it is close to and/or functionally linked to a high value habitat;
- Ecological functioning: e.g. territories for breeding, food, shelter, corridors for migration and spread, etc.). Territories important for the regeneration and long-term survival of organisms and their populations usually have a higher value.

6. Estimated environmental impact

6.1. General

As can be seen from the description of the planned activity, as well as the construction and operation of the pier, the impact is assessed as unlikely. Moreover, the port has been operated for 15 years, and the whole port platform is an artificial, anthropized ecosystem, consisting of fills, buildings, concrete platforms, roads and railways on the surface.

6.2. Cross-border impact

The GIFF's activity is not considered relevant for cross-border impact. This was also confirmed by the refusal of the notified country to participate in the EIA in a cross-border context.

At the same time, it is important to note that the construction works do not significantly affect the environment in neighbouring countries.

Fish populations migrating or spreading in the Danube and Black Sea are not affected in their movements because no dam is to be built on the Prut River. The territory is not substantially used as a feeding, breeding or resting area by important bird species from neighbouring countries or protected areas such as Natura 2000. The territory is not significantly affected by the planned construction of the port. The

impact is minor compared to the remaining Natura 2000 habitat and no substantial populations of protected species are found in the project area.

Designated and protected fish species such as the spined loach (*Cobitis taenia*) and the loach (*Misgurnus fossilis*) do not have significant populations in the project area. Such species are restricted to flooded territories and shallow waters. In addition, the mouth of the Prut River is not a specific spawning ground for protected fish species. Otters are certainly found in the territory in question, but this territory can be considered part of the feeding habitat of an animal or a pair. The loss cannot be considered significant in the light of the total remaining territory in Natura 2000 from the mouth of the river northwards and including important habitats along the extensive floodplains.

6.3. Impact per component

6.3.1. Impact on soil quality, bank condition and sediment quality

From an environmental point of view, the “soil” factor in the case of the analysed objective of the quay modernisation and development of GIFF is irrelevant. All the rehabilitation and modernization works of the port are carried out in the port premises, which have been built in 2007.

The entire port platform is an artificial, man-made ecosystem, consisting on the surface of fills, buildings, concrete platforms, roads and railways. The dynamic penetration tests intercepted on the first 3 to 4 m a fill material resulting from the port development works, then a layer of weak cohesive material represented by a sandy dust, about 3 m thick. In the port area there are no known exceedances of pollutant concentrations in the soil or cases of accidental pollution. Consequently, it is considered that the pollutants are close to the normal values under the legal provisions. It can be assessed that the activities carried out in the port so far have not caused soil pollution.

The construction of sheet piles does not require digging or excavation, the sheet piles are laid by driving. The excavation work envisaged at the construction stage will only have a mechanical impact on the soil in the area of the bank, without encouraging erosion or silting. The works planned for the reinforcement of the quay and the provision of the necessary infrastructure will ensure adequate protection of the soil, including in the event of accidental spillage of polluting substances.

6.3.2. Impact on water quality

Impact of the construction site

Of interest for the port expansion project is the Lower Prut River. The works designed on the quay platform (ballast and crushed stone fills, walls) are carried out on dry land, outside the bed of the Prut. The impact of these works on the waters is insignificant. On the site, during periods of heavy rainfall, some erosion may occur due to floodwater; given the backfill materials used (ballast, crushed stone), it is not possible for large quantities of these materials to be washed into the Prut.

Pile driving for the quay, the pier and the rebuilding of the existing pitching do not pollute the Prut waters. Similarly, the execution of the works to strengthen the embankment in front of the quay (execution of the crushed stone layer and the rockfill prism) are not polluting works. It should be noted that all the materials used for construction are non-hazardous and do not produce chemical reactions in contact with water. There may be some minor pollution of the water with petroleum products, representing fuel losses from the fuelling of machinery or its operation. Piling hammer, floating cranes are being considered. Such

potential pollution can be easily observed at the water surface and the necessary intervention measures can be taken urgently.

Impact during port operational stage

Port loading/unloading operations involve some loss of products, mainly in the case of bulk materials. Some of these losses may occur on the ship-to-ship route and end up in the Prut River.

Malfunctions, i.e. the occurrence of dust emissions from product handling processes can occur as a result of:

- improper handling of bulk cargo both on the berth platform and on barges moored at the quay, resulting in loss of materials;
- loss of petroleum products from loading and transport equipment.

Depending on the nature of the losses and their quantity, the effects on water quality and even bank morphology can be significant. Discussions with the port operator showed that he is concerned about reducing losses, in many cases losses being less than 0.01% of the amount of cargo transhipped.

6.3.3. Impact on groundwater

Projected impact during the construction site:

Normally, construction activities for the expansion of port infrastructure are not polluting to groundwater. The designed works (granular material fills - ballast or crushed stone, concrete, pitching, etc.) use inert materials, which are not dangerous in terms of water pollution. The proposed solution for the pier-quay, on driven piles, is also non-polluting for groundwater.

A pollution of the groundwater aquifer during the construction stage of the port expansion works can only occur in case of accidents with significant loss of fuel, engine oil or other hazardous substances. Such accidental situations are visible and it is the builder's task to take all measures to avoid their occurrence and to intervene promptly to clean up the area. As a radical intervention measure, the removal of the contaminated land and its transportation to a specialised decontamination company may be considered.

Projected impact during operation

It can be stated that groundwater in the GIFP area benefits from both natural and artificial protection.

Port activities are carried out on concrete platforms made of 25cm thick concrete slabs on a 30cm thick layer of crushed stone. The concrete platforms cover the entire land behind the quay for a width of about 30 m and a length corresponding to the docks. The platforms are designed with a 2.5% cross slope inwards and roadside rainwater collection and drainage channels.

It is considered that the concrete platforms and roads ensure an adequate waterproofing of the land surface; also, the slopes of the platform and the gutters do not allow stagnation of possibly polluted water and its infiltration into the land.

It can be concluded that the impact of port activities on groundwater is insignificant, as the solutions adopted by the project and the favourable hydrogeological situation ensure adequate groundwater protection.

6.3.4. Impact on river characteristics (hydrology)

When carrying out the works, in order to mitigate and eliminate the impact on water quality, it is recommended to strictly observe the work technology and specific work measures. Due to the dredging process in the Prut River the water depth will increase by 2,0m – so the final depth will be 7,0m. The reshaping of the Prut River cross-section will cover a distance of about 100 meters. Due to this cross-section the current velocity will decrease, which will lead to sedimentation of the riverbed. It is assumed that changes in velocity and sediment deposition in the quay area will require periodic dredging to maintain the water depth of at least 7m. The periodicity of the need for dredging is yet to be studied. The hydrological regime will practically not change.

6.3.5. Impact on air

The geographical location, in the southern part of the country, together with the relief of the meadow, is one of the important factors that characterize the climate of this territory. The climatic and topoclimatic peculiarities are part of a temperate transitional climate with aridity influences from the eastern part of the territory.

Sources of air pollution in the port premises

At the construction stage

The execution of the projected works to modernise the port requires the use of a fleet of machinery that are sources of air pollution. Specific pollutants are CO, NO_x, SO₂, VOC (volatile organic compounds), CH₄, CO₂, etc. resulting from the combustion of fuels in engines and particulate matter and sedimentable dust resulting from traffic and material handling.

During the operation stage in the port premises

Air pollution is caused by the combustion of fuels in the engines of port machinery and means of transport (CO, NO_x, SO₂, etc.), on the one hand, and by car traffic and the movement of materials (dust) on the other.

Impact of port activities on air quality

It is estimated that the predicted maximum air pollutant concentrations in the port area will not exceed the MAC (Maximum Allowable Concentration) values and will be in the range of 0.2-0.5 MAC. The upper limit of the range is likely to be achieved during the construction + operational stage, while the lower limit is likely to be achieved during the operational stage.

With regard to particulate air pollution, experience from construction sites shows that during periods without precipitation, the MAC values of 0.5 mg/m³ may be exceeded 2-3 times on transport routes and in areas where machinery is working.

The areas of particulate matter pollution are limited in extent. According to international calculation methodologies, particles larger than 100 µm in diameter are deposited in a short time, with the deposition area not exceeding 10 m from the roadside. Particles between 30 µm and 100 µm in diameter are

deposited up to 100 m from the roadside and only particles smaller than 30 μm , i.e. suspended particulates, are deposited at distances greater than 100 m and may extend beyond the port enclosure. It is difficult to make an assessment of air pollution by particulate matter, as the quantities and distances of deposition depend on the nature of the road (asphalt, concrete, earth), the nature of the materials transported and the weather conditions. Emissions of harmful compounds from internal combustion engines are relatively low, both in concentration and in mass flow rates, which will not have a significant harmful effect on the environment. The impact on human settlements will be negligible as the distance from the target to the nearest inhabited areas is approx. 1000m.

6.3.6. Noise impact

The noise sources present on the proposed project site are the natural background and specific port activities (loading and unloading of cargo). The technological execution processes (excavation, filling at the quay, conveying of construction materials, etc.) involve the use of groups of machinery with appropriate functions. These working machines are sources of noise. At the construction stage, the noise sources are grouped as follows:

- At working sites, noise is produced by the operation of construction machinery specific to the work (excavation and cleaning on site, construction of the designed structures, etc.) plus the supply of materials.
- On and off site, noise is produced by the movement of vehicles transporting materials necessary for the execution of the work.

Noise propagation conditions depend either on the nature of the machinery and its layout or on additional external factors such as:

- meteorological phenomena and in particular: wind speed and direction, temperature degree;
- absorption of sound waves by the ground;
- absorption of sound waves in air, depending on pressure, temperature;
- relative humidity;
- topography of the land;
- vegetation.

Based on the sound power levels of the main machines used and the number of machines on a given working site, some judgements can be made about noise levels and the distances at which they are recorded.

The tools used and approximate associated acoustic powers:

- bulldozer L_w - 115 dB(A)
- loader L_w - 112 dB(A)
- excavator L_w - 117 dB(A)
- compactor L_w - 105 dB(A)
- L_w finisher - 115 dB(A)
- Dumper trucks L_w - 107 dB(A)
- Crane --112 dB(A)
- Locomotive - 115 dB(A)

In addition to the acoustic impact, construction machinery with large masses of its own, through its movements or through its activity at work points, is a source of vibration. In addition to the acoustic impact, construction machinery with large masses of its own, due to its movements or activity at workplaces, is a source of vibration. At the construction stage, noise at source and near-field noise have acoustic characteristics appropriate to the nature and layout of the machinery.

Far-field noise is influenced by several external factors, including wind speed and direction, temperature and wind gradient, absorption of sound waves by the ground (ground effect), air absorption (a function of pressure, temperature, relative humidity, noise frequency), terrain topography and vegetation type.

6.3.7. Impact on traffic

At the moment traffic is quite heavy in the region, but this does not mean that it is directly dependent on the port's activity. Intensity has increased considerably as a consequence of the conflict in the neighbouring state, but also intensity at the customs point.

The extension of the quay, and its consolidation, is not expected to increase traffic in the region very much, but it is recommended to monitor it, and, if necessary, select alternative routes.

6.3.8. Impact on climate

As the scale of the project is not large, the cumulative climate impact is not expected to be greater than existing one. At the same time, GIFP carries out annual carbon footprint reporting, thus tracking and monitoring emissions and potential climate impacts.

6.3.9. Impact on tectonics and radiation

The project will not affect the earth's tectonics and radiation.

6.3.10. Impact caused by possible accidents

The construction of the quay and the ships that will dock here increase the likelihood of accidents in the area. Such accidents may have a cross-border impact. The port has strict rules and protective measures for minimising the effects of accidents. Traffic is organised and carried out according to a series of permits and coordination. It is forecast that the port construction will increase traffic by 0.5 ships per day (i.e. approximately one ship every 2 days will anchor at this quay). According to port rules, only one ship can berth at a time, while the other ships are anchored at the berth or anchored outside the handling area.

If an accident does occur, however, the port has a well-developed and well-prepared action plan that includes the necessary equipment to prevent the dispersal of chemicals outside the direct territory of the port. Protective booms and changeover barriers are available on the port's territory for use in case of emergency. An action plan implemented with regularly trained personnel. In addition, agreements have been made to obtain national and international assistance (fire brigade, adjacent port services, (inter)national teams) in case of emergency.

The most impactful accidents, however, are considered in the case of oil spills. Respectively, in the case of spills of petroleum products from the vessel, the following activities have been established:

1. Oil spill response plan;
2. There are a protective dam and skimmer;
3. To ensure adequate preparedness in case of major spills, agreements have been concluded with: the nearby port of Galați; an international company specialising in case of oil spill response;

4. In case of fire on the territory of the Oil Terminal there are 2 fire extinguishing stations : 1 in the tank farm and 2 at the oil berth. The Oil Terminal also has an automatic fire extinguishing system.
5. There is an Operative Emergency Action Plan.

These precautions and activities will minimise the possible cross-border impacts of accidents. In the event that the general cargo includes certain dangerous goods as listed and stipulated in Government Resolution 672 of 28.05.2022, both the legal provisions and the regulations established for the transport of this type of cargo, such as insurance, drawing up the necessary documents, will be taken into account. Therefore accidents may only include minor fuel leaks from vessels. Protective measures reduce the risk of cross-border impact on nature, the environment or the landscape.

No major accidents are forecast for the quay which is the subject of this report. It will be used for the transport of mainly grain and general cargo (a wide range of goods and products, which do not require special transport conditions). Therefore, accidents that may occur due to a specific cause will be handled in accordance with internal rules and port safety standards.

It is important to mention that Danube Logistics has the HAZID study – Hazard Identification Study – developed at the beginning of the construction of the Port, taking into account all the designed berths (including the construction of the quay mentioned in this report). A total of 77 scenarios were analysed for all existing and planned port facilities, with the final identification of:

- 29 scenarios representing a low level of risk,
- 48 scenarios presenting a medium level of risk

For all types of risks, the technical and/or organisational security measures applied are described in detail. E.g.: Limitation of spill proportions with oil boom/spill collection system and auxiliary absorbent boom, availability of a comprehensive firefighting system, existence of a procedure for exceptional situations, contract with SEACOR to react in case of oil spill, etc.

6.3.11. Impact on landscape

Projected impact during the construction period

The construction stage is a time-limited stage, and it is considered that the natural balance and landscape will be restored after the works are completed. Consequently, during the construction stage it is not necessary to restore the landscaping.

Impact on the landscape during exploitation

The land on which the planned works are located is used exclusively for port activities. The proposed constructions do not change the use or category of use of the land.

The natural landscape of the area will not be significantly altered by the projected works. Concrete platforms will be built behind the sheet pile and behind the pier-quay. Finally, it can be estimated that, in terms of modification of the existing landscape, the effects of the projected works will be minor and of a quantitative nature; in terms of quality, the final impact will be positive through the sanitation and systematisation works in the area. The restoration of the existing pitching, the completion of the pitching with sheet piling, the installation of the water supply and sewerage system, all these elements do not significantly alter the existing landscape.

It is considered that no measures are necessary to mitigate the impact on the landscape, the impact is insignificant and for some aspects even positive.

6.3.12. Impact on flora, vegetation

The port construction will destroy common types of vegetation and habitat. Given the limited amount of flora and vegetation in the project area and the limited (local) scale of the project, the effects are considered minor.

6.3.13. Impact on fish

None of the species included in the Red Book of Moldova use the lower Prut River. There are 3 known species included in the IUCN Red List that are relatively common for the Lower Prut.

During the excavation activities, no large displacements of fine sediment are predicted, so turbidity will not be a threat to fish that overwinter predominantly in the Lower Danube. As the area is not considered suitable for spawning and nursery, there will be no substantial effects during the summer works, provided oxygen levels are normal. However insignificant the impact may not be, it is recommended to stop the works during the migration of such species as the asp and the ziege. These species migrate predominantly upstream from March to June. Impacts on fish are minor. Fish populations in neighbouring countries will not be affected.

6.3.14. Impact on amphibians

The construction of the wharf will not affect the habitat of common species or the impact is limited, taking into account that the species continue to inhabit during the port operations period.

6.3.15. Impact on reptiles

The port development will destroy habitat for *Lacerta viridis* (green lizard) and *Dolichophis caspius* (Caspian whipsnake) (Red List of Moldova, rare but common species in the region). The effects are on a local scale. As the habitat in the region is abundant, the impact is considered minor. However, for the Caspian whipsnake (*Dolichophis caspius*) it is recommended to include an ecological corridor between the railway and the port to ensure future migration and spreading possibilities.

6.3.16. Impact on mammals

It is considered that the species identified in 2007, such as the otter *Lutra lutra* and the European ground squirrel *Spermophilus citellus* (both species included in the IUCN Red List and the Red List of Moldova) have changed their habitat in the context of the port operability and the lack of resources for these species.

6.3.17. Impact on birds

The projected hydrotechnical works do not restrict the reproduction of the species of community interest in the area; such works are provided for at a distance of more than 1 km from the boundary of the protected area. In the area where the works are being carried out, the necessary conditions for nesting or roosting have not been identified for birds transiting the area. The project does not involve the use of resources on which biological diversity in the area depends. There will be no exploitation of surface and groundwater in the protected area. No surface mining activities will be carried out within the project for the extraction of: sand, clay, gravel. Bird species will not be affected by the activity itself because their presence on the site of the populations is rare and the conditions found here force them to move to quieter places with abundant food within the site. The balance of the existing ecosystem at the site cannot

be affected by new bird populations because the site does not currently support large bird populations. The planned works are specific to hydro-technical works. They do not provide for tall structures that would obstruct bird flight or affect migration routes. As regards the specific emissions (noise, pollutants) during both the construction and the operational stages, it can be estimated that they will not affect bird migration, taking into account their dispersion in relation to the flight altitude of the birds.

The predicted impact on wildlife species on the site and in the adjacent area is negligible. The impact on vegetation populations is considered insignificant due to the low conservation value and due to the lack of habitat on the site and its marginal position to the sites.

6.3.18. Impact on invertebrates

It is considered that the expansion and consolidation of the quay will not have an impact on the destruction of common species as they have been limited by the port operability.

6.3.19. Impact on ecology

The corridor function of the Prut River is not affected. The construction territory is part of an ecological corridor area, but its size is extremely limited compared to the vast natural and semi-natural areas along the Prut River. The aquatic corridor is not affected as no dams or weirs are planned. So fish and other aquatic species can migrate and spread freely from the mouth of the river upstream or vice versa. Terrestrial or shore-dwelling species are affected because the corridor is interrupted in the port. This does not mean that spreading is impossible, just disturbed.

The territory does not include feeding grounds for birds or other species found in neighbouring areas or the Prut Lakes or Danube Delta. Because of this, the impact on ecological relationships between the reserves and neighbouring territories is not affected.

At the same time, GIFP contains several corridors that allow reptile, amphibian species to cross the GIFP territory safely. These corridors are located underneath the railway track on GIFP territory, where different species can cross from the water to the ground, GIFP territory and then into the village.



Photo 2: Passage corridor for reptiles and amphibians, and other small species

6.3.20. Impact on archaeology

There are no archaeological features in the project area. Archaeological monuments in the region will not be affected by the construction of GIFP.

6.3.21. Impact on national and international protected areas

It is estimated that protected species within these sites will not be affected by ships docking at the proposed quays, as the quay is at a sufficient distance for the noise generated by loading and unloading operations not to exceed the permissible level.

Physical changes through project implementation related to nearby protected areas

The project does not include development actions that would lead to physical changes in protected areas.

The projected works generate a specific impact in the two life stages of the infrastructure, namely:

- Construction stage;
- Operational stage.

The activities during the construction of the hydrotechnical works are summarised as follows:

- Transport of materials and workers to the work sites;
- Deployment of construction machinery on site;
- Land preparation by clearing and excavation for the creation of granular fills;
- Beating of sheet piling, piles;
- Laying the layers of crushed stone, ballast, laying the wall;
- Construction of concrete platforms;
- Ecological restoration works consisting of the removal of the remaining waste in the site area, the dismantling of any annexes from the construction stage.

The atmospheric emissions due to construction works as well as emissions from traffic during the operational stage will have no impact on the protected area because the dispersion area at 100 m roadside has concentrations well below the limits allowed for the protection of ecosystems.

The effects of human activity have already determined the configuration of the fauna and flora spectrum in the area.

Waste management:

During construction, solid waste will be produced, but it will not affect the protected areas because it will be disposed of in a rhythmic way, as it is generated, and at the end of the construction work, it is planned to green and restore the temporarily occupied areas. The purpose of this work is to remove waste of any kind remaining in the area and to dismantle the temporary facilities.

Impact of collateral activities

The project does not foresee related developments in the areas within the protected areas and no cumulative impacts with other existing or proposed projects have been identified. It can be said that the impacts produced by the activity in the area are already consumed.

Impact on the conservation units of the protected area

At the construction and operational stage, the impact will be negligible, as the surface area used is reduced, on the one hand, and, on the other hand, the technological flows are created so that the existing operating roads are used efficiently. The use of high-performance technologies makes it possible to

maintain environmental and biological parameters at acceptable levels. The direct negative impact on wildlife species is reduced as a result of their mobility. In all phases of work, they will avoid the area due to disturbance caused by construction activities and will occupy abundant feeding areas within the site.

The implementation of the plan will not result in any loss of habitat area that is used as a feeding, resting or breeding ground for species of Community interest.

7. Impact mitigation measures

Measures to reduce negative impacts on groundwater

As presented above, the solutions adopted in the project comprising the sewerage network, ecological toilets, drainable basins, all these works ensure adequate protection of the groundwater aquifer. It is considered that no additional measures are necessary. During the execution of the construction works, possible situations of underground pollution may occur only in case of accidents.

The preventive measures are usual measures adopted on construction sites, including checking the technical condition of machinery and means of transport, traffic signs and markings, possibly barriers, refuelling and repairs in specially equipped areas.

Measures to reduce/eliminate impacts on surface water

In general, it can be assessed that the proposed port modernisation works, in addition to ensuring the operability of the port for traffic values higher than the current ones, also have the role of increasing the safety of transshipment operations and reducing their pollution potential.

Providing a depth of -3.00m from the low water in front of the quay will allow ships to berth at the quay, reducing ship-to-shore distance and material losses from the crane lift. The construction of the quays will ensure safe berthing of barges at the quay.

Two-step transshipment of materials from ship to car and vice versa, i.e. via concrete platforms at the quay, will simplify the work of port cranes and reduce losses. It is the task of the port operator to constantly monitor the flow of ship operations and to intervene, if necessary, with measures to protect river waters.

Measures to reduce air pollution

For the reduction of air pollution with exhaust gas pollutants, effective measures include:

- The use, both on the construction site and in the loading, unloading and transportation of goods/materials, of high-performance machinery and means of transport, suitable in terms of efficiency and with low specific fuel consumption. The use of EURO compliant machinery is recommended.
- The technical condition of machinery and means of transport must be checked regularly.
- On the access roads where lorries drive, spraying will be carried out cyclically to reduce or eliminate dust pollution in the area.

The following measures are recommended to reduce air pollution with particulate suspended and/or settleable matter:

- The use of tarpaulin-covered trucks for transporting powdery materials susceptible to wind entrainment/spoiling.
- The use of tarpaulins is also indicated for the temporary protection of some deposits from wind action.
- For inert materials, spraying with water is a solution to reduce wind entrainment of fine particles.
- It is useful to monitor the air quality, especially dust pollution.

Measures to reduce the impact of the project on the protected area

The planned works must be carried out for reasons of public interest, including social or economic reasons. From an environmental protection point of view, the impact generated in the area where the route approaches the boundary of protected areas must be as low as possible so as not to affect the habitats and species of protected birds. Furthermore, the implementation of the project and environmental protection measures must not affect or delay actions for the conservation of species and habitats of Community importance.

In this regard, it is recommended measures for the protection of the protected area were consisting of:

- Avoiding the location of construction sites in areas close to the protected area;
- Avoiding the circulation of heavy vehicles used for transporting materials through protected areas
- Proper waste management with the rhythmic disposal of waste without using intermediate landfills;
- Adoption of a work schedule aimed at reducing execution time in the end sections of the quay
- Compliance with execution technologies;

8. Procedure

This report has been prepared once the competent authority has approved the Environmental Impact Assessment Programme.

This Environmental Report is written in the Romanian language. This version has been commented on by GIFP. The final version was then submitted to GIFP for preliminary approval by the competent authority before public consultation was initiated.

GIFP will maintain communication with the Environment Agency, the Ministry of Environment (as appropriate), third parties (APL- Giurgiulesti) and the public. If (minor) changes are required as a result of the communication, they will be made.

9. References

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10. Attachments

Annex 1: Sediment sample results



AGENȚIA DE MEDIU
LABORATORUL DE REFERINȚĂ DE MEDIU
 MD 2072 Republica Moldova, or. Chișinău, str. Grenoble, 134,
 tel. 022 82 07 47, 022 82 07 96

Laboratorul pentru Calitatea Solului_ (LCS)

Exemplar nr. 2

RAPORT DE ÎNCERCARE

Nr. 96 din 31.10.2022

Denumire beneficiar: SRL „DANUBE LOGISTICS”
 Descrierea obiectului de încercare: Probe de sedimente
 Cantitatea și denumirea (codul) obiectului de încercare: 3 probe, S1-1, S2-1, S3-1.
 Date despre eșantionare: AEOÎnc(cpex)-7.3-S din 21.09.2022
 Data recepționării obiectului de încercare: 21.09.2022
 Perioada de efectuare a încercărilor: 21.09- 31.10.2022

Raportul este întocmit în 2 exemplare (1 ex.- LRM, 2 ex.- beneficiar).

TABELUL CU REZULTATELE ÎNCERCĂRILOR

Nr. d/o	Sonda	Adâncimea prelevării, cm	Parametrii investigați	Unități de măsură	Valori determinate	Incertitudinea de măsurare, U (k=2, P=95%)	Valoarea concentrației maxime admisibile (CMA)	Metoda de încercare	Documentul Normativ
1	S1	-	Humus	%	2,06	±0,41	-	titrimetrică	PO-Hum-S 7.2.1-02
2	S2	-			1,93	±0,39			
3	S3	-			1,70	±0,43			
4	S1	-	pH		8,5	±0,26	-	ionometrică	Gost 26423-85
5	S2	-			8,8	±0,28			
6	S3	-			8,8	±0,30			
7	S1	-	NO3	mg/kg	8,30	-	130,0 mg/kg	spectrofotometrică	Sol 02.05.05
8	S2	-			1,40				
9	S3	-			0,080				
10	S1	-	NH4	mg/kg	7,50	-	270,2 mg/kg	spectrofotometrică	Sol 02.07.05
11	S2	-			3,50				
12	S3	-			10,50				
13	S1	-	Produse petroliere	mg/kg	311,50	-	1000,0 mg/kg	gravimetrică	Sol 02.08.05
14	S2	-			120,50				
15	S3	-			186,50				
16	S1	-	Reziduu uscat	%	0,105	±0,025	0,200 %	gravimetrică	ГОСТ 26423-85
17	S2	-			0,072	±0,018			
18	S3	-			0,078	±0,022			
19	S1	-	Umiditate	%	60,85	-	-	gravimetrică	Sol 02.01.09
20	S2	-			32,78				
21	S3	-			43,86				
Metale grele									
22	S1	-	Zn	mg/kg	102,95	-	220,0 mg/kg	Spectrometrică	PO-MEFT-5.4-07
23	S2	-			136,40				
24	S3	-			128,45				
25	S1	-	Cu	mg/kg	20,29	-	132,0 mg/kg	Spectrometrică	PO-MEFT-5.4-07
26	S2	-			24,50				
27	S3	-			24,84				
28	S1	-			25,38			Spectrom	

Nr. d/o	Sonda	Adâncimea prelevării, cm	Parametrii investigați	Unități de măsură	Valori determinate	Incertitudinea de măsurare, U (k=2, P=95%)	Valoarea concentrației maxime admisibile (CMA)	Metoda de încercare	Documentul Normativ
31	S1	-	Cr	mg/kg	≤LOD	-	6,0 mg/kg	Spectrometrică	PO-MEFT-5.4-07
32	S2	-			≤LOD				
33	S3	-			≤LOD				
34	S1	-	Pb	mg/kg	≤LOD	-	220,0 mg/kg	Spectrometrică	PO-MEFT-5.4-07
35	S2	-			0,24				
36	S3	-			≤LOD				
37	S1	-	Cd	mg/kg	≤LOD	-	2,0 mg/kg	Spectrometrică	PO-MEFT-5.4-07
38	S2	-			≤LOD				
39	S3	-			≤LOD				

Note:

1. Rezultatele notate cu semnul "<" reprezintă valorile situate sub limita de detecție a metodei.
2. Rezultatele prezentate se referă strict la obiectul supus încercării.
3. Laboratorul nu emite opinii și interpretări.
4. * Încercare - încercările marcate cu "*" sunt prezentate de subcontractant.

Declarația de conformitate: _____

Documente ce stabilesc valorile limită admisibile:

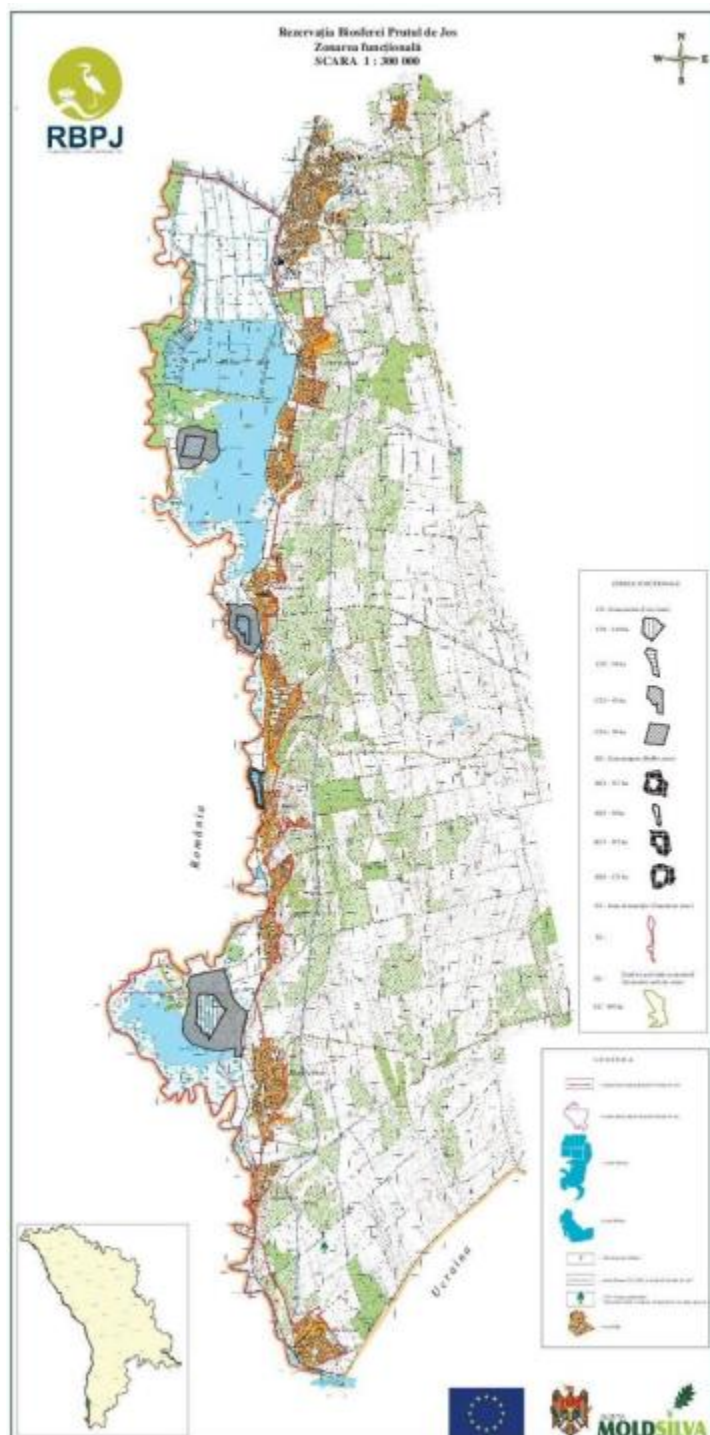
1. „Concentrațiile maxime admisibile în sol,, Monitorul Oficial al Republicii Moldova nr.112-114 din 05 septembrie 2000.

Abateri, adăugări sau excluderi din metoda de încercare: nu sunt

Șeful Laboratorului de Referință de Mediu _____ Marina LUNGU

Șef Laboratorului pentru Calitatea Solului _____ Vasile PARAȘCIUC

Annex 2. Map of the Lower Prutul Reserve



Source: Annex 4 of the GD for the approval of the Regulation on the functioning of the Lower Prutul Biosphere Reserve

Annex 3: Air investigation reports

Ministerul Sănătății, Muncii și Protecției Sociale al Republicii Moldova Министерство Здравоохранения, Труда и Социальной Защиты Республики Молдова	DOCUMENTAȚIE MEDICALĂ
<u>CSP Cahul</u> Denumirea subdiviziunii Наименование отделения	Formular Nr 329/e Форма Aprobat de MS al RM 31.10.11 Nr 828 Утверждена МЗ РМ

**PROCES-VERBAL Nr 163
DE INVESTIGAȚIE A AERULUI
ПРОТОКОЛ
ИССЛЕДОВАНИЯ ВОЗДУХА
din " 01 " 07 2021**

Locul recoltării probelor de aer ÎCS „ DANUBE LOGISTICS” SRL, sat. Giurgiulesti, r-l Cahul
Место отбора проб воздуха

Scorul recoltării Controlul calității aerului
Цель отбора

Felul probei (unică, medie diurnă) unică
Вид пробы (разовая, среднесуточная)

DNT, conform căreia s-a efectuat recoltarea PD 52.04.186-89 „Руководство по контролю загрязнения атмосферы”
НТД, согласно которой произведен отбор

Data și ora recoltării 30.06.2021 ora 10¹⁰, aducerii 30.06.2021 ora 12⁰⁰
Дата и время отбора доставки

Condițiile de transportare auto, păstrare probele s-au păstrat 1 zile
Условия транспортировки хранения

Metodele de conservare s-au conservat 2 probe de xilen în soluție de acid acetic diluat 9:1
Методы консервации

Mijloacele de măsură, folosite la recoltare Aspirator de gaze ПУ-4Э nr. 5997, Buletin de verificare nr. 2.3.7.49-2231 din 07.12.2020 valabil pina la 07.12.2021;
Средства измерений, применяемые при отборе

Informații despre controlul de Stat
Сведения о государственной поверке

Caracteristica terenului: relieful _____ spații verzi _____
Характеристика местности: рельеф зеленый массив

Înălțimea _____, distanța de la sursa poluantă _____
его высота расстояние от источника загрязнения

Planul de sistematizare _____
Планировочная ситуация

Caracteristica sursei poluante _____
Характеристика источника загрязнения

Înălțimea și puterea de anasie _____
Высота и мощность выброса

Formă feciei _____
Форма фекала

Schița teritoriului cu indicarea sursei poluante și punctele de recoltare a probelor de aer (numerele de ordine al punctelor de recoltare a probelor)
Эскиз местности с указанием источника загрязнения и точек отбора проб воздуха (порядкового номера точек отбора проб)

Funcția, numele, prenumele persoanei,
care a efectuat recoltarea probelor Felcer laborant E. Avram
Должность, Ф.И.О., проводившего отбор проб

Semnătura _____
Подпись _____



Ministerul Sănătății, Muncii și Protecției Sociale al Republicii Moldova
 Министерство Здравоохранения, Труда и Социальной Защиты
 Республики Молдова

DOCUMENTAȚIE MEDICALĂ

CSP Cahul
 Denumirea subdiviziunii
 Наименование отделения

Formular Nr 329/e
 Forma
 Aprobat de MS al RM 31.10.11 Nr 828
 Утверждено МЗ РМ

PROCES-VERBAL Nr 162
 DE INVESTIGAȚIE A AERULUI
 ПРОТОКОЛ
 ИССЛЕДОВАНИЯ ВОЗДУХА
 din " 01 " 07 2021

Locul recoltării probelor de aer ÎCS „ DANUBE LOGISTICS” SRL, sat. Giurgiulești, r-1 Cahul
 Место отбора проб воздуха
 Scopul recoltării Controlul calității aerului
 Цель отбора
 Felul probei (unică, medie diurnă) unică
 Вид пробы (разовая, среднесуточная)
 DNT, conform căreia s-a efectuat recoltarea PD 52.04.186-89 „Руководство по контролю загрязнения атмосферы”
 НТД, согласно которой произведен отбор
 Data și ora recoltării 30.06.2021 ora 09³⁰, aducerii 30.06.2021 ora 12⁰⁰
 Дата и время отбора доставки
 Condițiile de transportare auto, păstrare probele s-au păstrat 1 zile
 Условия транспортировки хранения
 Metodele de conservare s-au conservat 2 probe de xilen in solutie de acid acetic diluat 9:1
 Методы консервации
 Mijloacele de măsură, folosite la recoltare Aspirator de gaze ПУ-4Э nr. 5997, Buletin de verificare nr. 2.3.7.49-2231 din 07.12.2020 valabil pînă la 07.12.2021;
 Средства измерений, применяемые при отборе


Informații despre controlul de Stat
 Сведения о государственной поверке
 Caracteristica terenului: relieful spații verzi
 Характеристика местности: рельеф зеленый массив
 Înălțimea distanța de la sursa poluată
 его высота расстояние от источника загрязнения
 Planul de sistematizare
 Планировочная ситуация
 Caracteristica sursei poluante
 Характеристика источника загрязнения
 Înălțimea și puterea de anasie
 Высота и мощность выброса
 Formă facliei
 Форма факела

Schița teritoriului cu indicarea sursei poluante și punctele de recoltare a probelor de aer (numerele de ordine al punctelor de recoltare a probelor)
 Эскиз местности с указанием источника загрязнения и точек отбора проб воздуха (порядкового номера точек отбора проб)

Funcția, numele, prenumele persoanei,
 care a efectuat recoltarea probelor Felcer laborant E. Avram
 Должность, Ф.И.О., проводившего отбор проб

Semnătura 
 Подпись
 AGENTIA NAȚIONALĂ DE PROTECȚIE
 НАЦИОНАЛЬНОЕ УПРАВЛЕНИЕ
 ВЕЩТА ЗАЩИТЫ
 DE LA CONTAMINARE
 ИОНОСФЕРЫ

Annex 4: Water quality report March 2022 (other reports available on request)

	AGENȚIA DE MEDIU LABORATORUL DE REFERINȚĂ DE MEDIU MD 2072 Republica Moldova, str. Chișinău, str. Grenoble, 134, tel. 022 82 07 46	Marca Națională de Acreditare				
	<i>Laboratorul pentru Calitatea APEI (LCA)</i>					
RAPORT DE ÎNCERCARE						
Nr. 31 din 02.03.2022						
<p>1. Descrierea obiectului de încercare – apă de suprafață din fl. Dunăre, s. Giurgiulești</p> <p>2. Scopul prelevării – monitorizarea stării apei fl. Dunăre în secțiunea de control s. Giurgiulești (conform Acordului Bilateral și HG 932 din 20.11.2013, Anexa 1)</p> <p>3. Date despre esanțonare: AEO(inc)AS-7.3-A-040 din data de 16.02.2022</p> <p>4. Volumele probei – 1 probă * 6,0 l, cod: 52-AS-22</p> <p>5. Condițiile de prelevare a probei – normale</p> <p>6. Data și ora prelevării probei – 16.02.2022, ora: 12⁰⁰</p> <p>7. Data recepționării obiectului de încercare: 17.02.2022</p> <p>8. Perioada de efectuare a încercărilor: 17.02.2022-28.02.2022</p> <p>Raportul este întocmit în 2 exemplare (1 ex.- LRM, 2 ex.- beneficiar).</p>						
TABELUL CU REZULTATELE ÎNCERCĂRILOR						
Nr. de înregistrare	Parametrii investigați	Unități de măsură	Valori determinate	Valoarea concentrării și mărimea admisibilă (CMA)	Metoda de încercare	Documentul Normativ
I. INDICATORI FIZICO-CHIMICI						
1.	Calitate	-	14,0			Îndrumar privind analiza chimică a apelor de suprafață, Leningrad, 2009
2.	Măci	[unit]	0			Îndrumar privind analiza chimică a apelor de suprafață, Leningrad, 2009
3.	Temperatura aerului	[°C]	9,0/5,0			-
4.	Măci în suspensie	[mg/dm ³]	14,0	≤4,0	gravimetrică	PO-MS-A-7.2.1-05 (pe baza SM STAS 6953-2007)
5.	pH	[unit. pH]	8,03	±0,10	potențometrică	PO-pH-A-7.2.1-02 (pe baza SM SR EN ISO 10523:2014)
II. INDICATORI REGIMUL DE OXIGEN						
6.	Oxigen dizolvat	[mg/O ₂ /dm ³]	11,87	±0,38		PO-OD-A-7.2.1-18 (pe baza SR EN 25813:2005)
7.	Consumul biocimic de	[mg/O ₂ /dm ³]	1,51	±0,39	titrimetrică	PO-CBO-A-7.2.1-04
III. INDICATORI DE MINERALIZARE						
8.	oxigen (CBO ₂)					(pe baza SM SR EN 1899-2:2012)
9.	Rezidu fix	[mg/dm ³]	278,0	±10,0		gravimetrică PO - RU-A-7.2.1-10 (pe baza SM STAS 9187-2007)
10.	Cloruri (Cl ⁻)	[mg/dm ³]	31,26	±2,34		titrimetrică PO-Cl-A-7.2.1-07 (pe baza SM SR ISO 9297:2012) PO-Cl-A-7.2.1-12
11.	Sulfaj (SO ₄ ²⁻)	[mg/dm ³]	38,42	±4,71		spectrofotometrică de absorbție moleculară (pe îndrumarului privind analiza chimică a apelor de suprafață, Leningrad, 2009)
12.	Duritatea totală	[mmol/dm ³]	2,33	±0,12		titrimetrică PO-DiCa ²⁺ /Mg ²⁺ -A-7.2.1-05 (pe baza SM SR ISO 6059:2012)
13.	Calciu (Ca ²⁺)	[mg/dm ³]	62,85	±4,36		titrimetrică (pe îndrumarului privind analiza chimică a apelor de suprafață, Leningrad, 2009)
14.	Magneziu (Mg ²⁺)	[mg/dm ³]	19,02	±0,27		titrimetrică PO-DiCa ²⁺ /Mg ²⁺ -A-7.2.1-05 (pe baza îndrumarului privind analiza chimică a apelor de suprafață, Leningrad, 2009)
15.	(Na ⁺ + K ⁺)	[mg/dm ³]	26,5			PO-NaK-A-7.2.1-13 (pe baza SM STAS 8295-2007)
IV. ELEMENTE BIOGENE						
16.	Azot amoniacal (NH ₄ ⁺)	[mgN/dm ³]	0,116	±0,008		spectrofotometrică de absorbție moleculară (pe îndrumarului privind analiza chimică a apelor de suprafață, Leningrad, 2009)
17.	Azot de nitrit (NO ₂ ⁻)	[mgN/dm ³]	0,012	±0,006		spectrofotometrică de absorbție moleculară (pe îndrumarului privind analiza chimică a apelor de suprafață, Leningrad, 2009)
18.	Azot de nitrat (NO ₃ ⁻)	[mgN/dm ³]	0,114			spectrofotometrică de absorbție moleculară PO-NO ₃ -A-7.2.1-06 (pe baza SM SR ISO 7890-3:2006)
19.	Fosfor mineral (PO ₄ ³⁻)	[mgP/dm ³]	0,118	±0,013		spectrofotometrică de absorbție moleculară PO - P _{tot} (P-PO ₄ ³⁻ -A-7.2.1-11 (pe baza SM SR EN

Annex 5: Laboratory test report (artesian well water)

Ministerul Sănătății al Republicii Moldova
 Agenția Națională Sănătatea Publică CSP Cahul
 Secția diagnostic de laborator
 Laboratorul sanitaro-igienic
 Laboratorul microbiologic

DOCUMENTAȚIE MEDICALĂ
 Formular nr. 343/o
 Aprobat de MS al RM Nr. 826 din 31.10.2011

RAPORT a încercărilor de laborator

Nr. 52 Din 20.04.2022

- | | |
|---|---|
| 1. Denumirea întreprinderii, organizației (beneficiarul) | I.C.S. DANUBE LOGISTICS S.R.L. |
| 2. Adresa juridică | Satul Giurgiulești, r-l Cahul |
| 3. Denumirea instalat, data producerii | Apă din F/A nr. 13-C, satul Giurgiulești, r-l Cahul |
| 4. Producătorul (firma, organizația, instituția) | - |
| 5. Data și ora prelevării | 12.04.2022, 11 ⁰⁰ |
| N.P. - funcția | Asistentul medical la igienă Panfiven Galina |
| Condițiile de transportare | - |
| | Cantitatea prezentată în laboratorul clinică - 5,0l |
| 6. Data expirării: locul prelevării probei | Apă din F/A nr. 13-C, satul Giurgiulești, r-l Cahul |
| 7. D.N. la producție | BG nr. 1466 din 30.12.2016 |
| 8. D.N. privind reglementarea volumului cercetărilor de laborator și aprecierea lor | SM ISO 5667-11:2010 |

I. Analiza chimică cantitativă

Mostră a apei	12.04.2022, 11 ⁰⁰	Cahul
Nr. de înregistrare	În registru	52-27
	Proces - verbal de transfer de încredințare	Diag -
	chimică nr. -	

Nr. din	Indicii determinați	Rezultatele cercetărilor, unități de măsură	Nivelul maxim admisibil, unități de măsură	DN a metodelor de investigație
1/2	Miros/Gust	Apă fără miros și fără gust specific	Acceptabilă consumatorului și nici o modificare anormală	SM SR EN 1422:2011 (Anexa C)
3	Culoarea	Apă incoloră și fără sediment	Acceptabilă consumatorului și nici o modificare anormală	SM SR EN 7887:2012 Secțiunea 2
4	Turbiditatea, UTN Turbiditatea, mg/l	<0,5 <0,3	≤	SM EN ISO 7027-1:2017
5	pH, unități de pH	8,8	6,5-9,5	SM SR EN ISO 10533:2014
6	Conductivitatea, μS/cm	798,9	≤2500	SM SR EN 27888:2005
7	Oxidabilitatea, mgO ₂ /l	0,16	≤5	SM SR EN ISO 8467:2012
8	Amoniu (NH ₄ ⁺), mg/l	0,35	≤2,0	GOST 4192-82 pct. 3 (Anulat)
9	Nitrit, (NO ₂ ⁻), mg/l	0,25	≤2,0	GOST 4192-82 pct. 4 (Anulat)
10	Nitrat, (NO ₃ ⁻), mg/l	1,0	≤50,0	GOST 18926-73 (Anulat)
11	Duritate, grade germane	3,22	Min.5	SM SR ISO 6059:2012

12	Reziduu nec solubil total, mg/l	572,0	≤1500	SM STAS 9187:2007
13	Cloruri, mg/l	23,0	≤350	GOST 4245-72
14	Sulfati, mg/l	143,8	≤500	GOST 4389-72 (Amplas)
15	Fier, mg/l	<0,05	≤1,0	SM SR ISO 8288:2006
16	Cupru, mg/l	<0,05	≤1,0	SM SR ISO 8288:2006
17	Arsen, mg/l	<0,01	<0,01	GOST 4152-89
18	Seleniu, µg/l	4,0	≤10	СЭВ «Унифицированные методы исследования качества вод», Часть 1, Методы хим. анализа вод, Том 1, 1987 стр. 816
19	Fluor, mg/l	0,12	≤1,5	GOST 4386-89
20	Bor, mg/l	1,0	≤1,0	POS 1.1
21	Mangan, mg/l	<0,025	≤0,5	SM SR ISO 8288:2006
22	Zinc, mg/l	<0,2	≤3	SM SR ISO 8288:2006
23	Plumb, µg/l	<10	≤10	SM SR ISO 8288:2006
24	Cadmiu, µg/l	<3	≤3	SM SR ISO 8288:2006
25	Calciu, mg/l	15,0	Nu se normează	SM SR EN ISO 7980:2012
26	Magneziu, mg/l	4,9	Nu se normează	СЭВ «Унифицированные методы исследования качества вод», Часть 1, Том 1, 1987 стр. 451
27	Hidrocarbonați, mg/l	347,8	Nu se normează	СЭВ «Унифицированные методы исследования качества вод», Часть 1, Методы хим. анализа вод, Том 1, 1987 стр. 1213
28	Σ(Ca ²⁺ + K ⁺), mg/l	204,7	Nu se normează	POS 1.2
29	Mineralizarea, g/l	0,74	Nu se normează	Методические рекомендации "Современные методы исследования вод" Ленинград 1980, стр. 19

Şef secție diagnostic de laborator – Cărlia Lădule H

Responsabil de încercări fizico-chimice-Tarabara Tamara H

Rezultatul se referă numai la proba analizată.

Procedura de probare nu este obiectul activității laboratorului.

Responsabilitatea pentru probare și evaluare îi revine solicitantului.

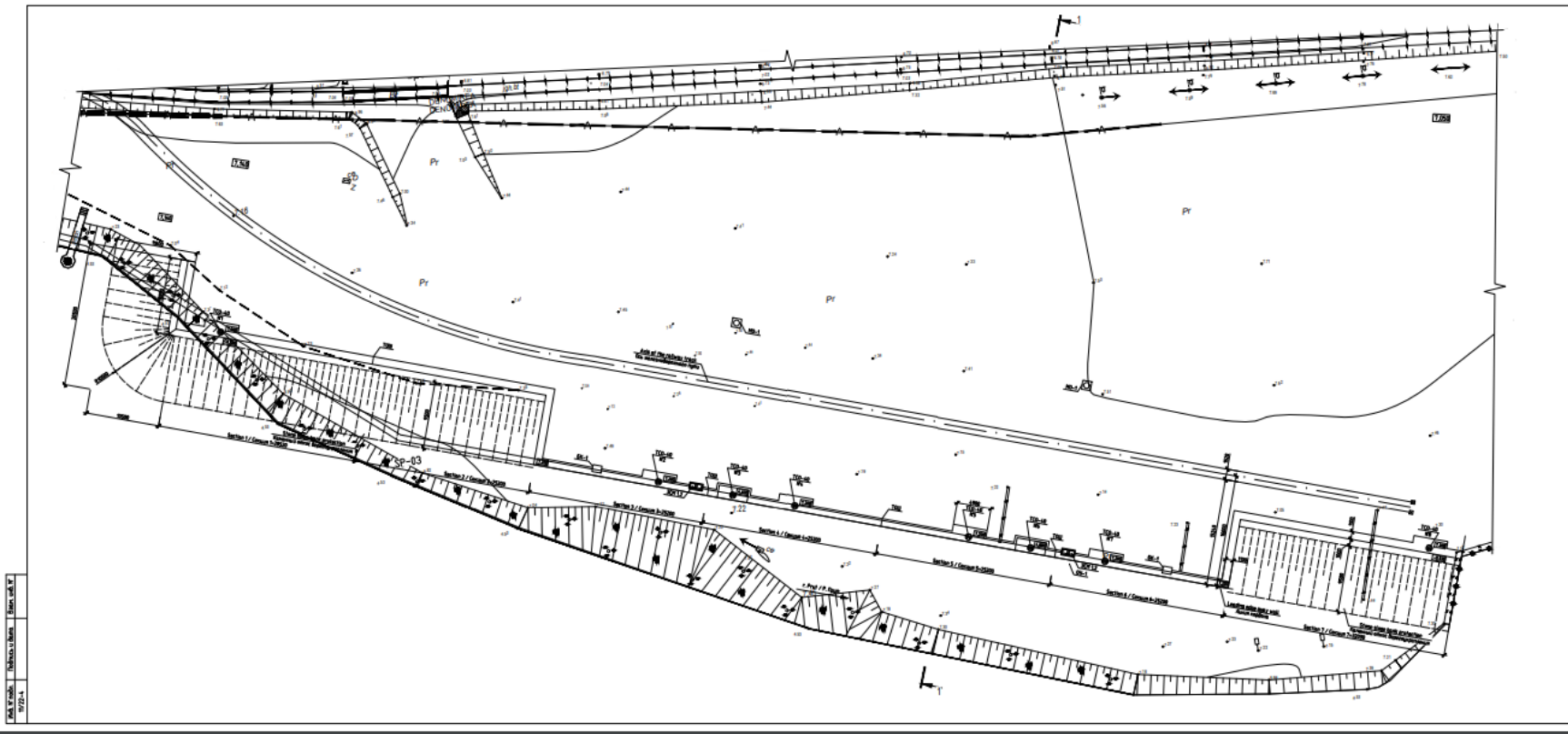
Este strict interzisă reproducerea parțială sau integrală a rezultatului

Concluzie : Conform raportului de încercări de laborator nr.52 din 20.04.2022 și 130 din 14.04.2022 a probei de apă colectată din F/A Nr.13-C satul Giurgiuoștii, gestionar ÎCS Danube Logistics SRL, rezultă că valoarea concentrațiilor la parametrii calității apei potabile, aprobat prin HG RM 1466 din 30.12.2016, cu excepție nesemnificativă din punct de vedere al impactului asupra sănătății consumatorilor: concentrațiile de Seleniu și duritate minimă, îndeplinesc condițiile de potabilitate și se permite utilizarea acestora pentru consumul uman, al animalelor și pentru irigații.

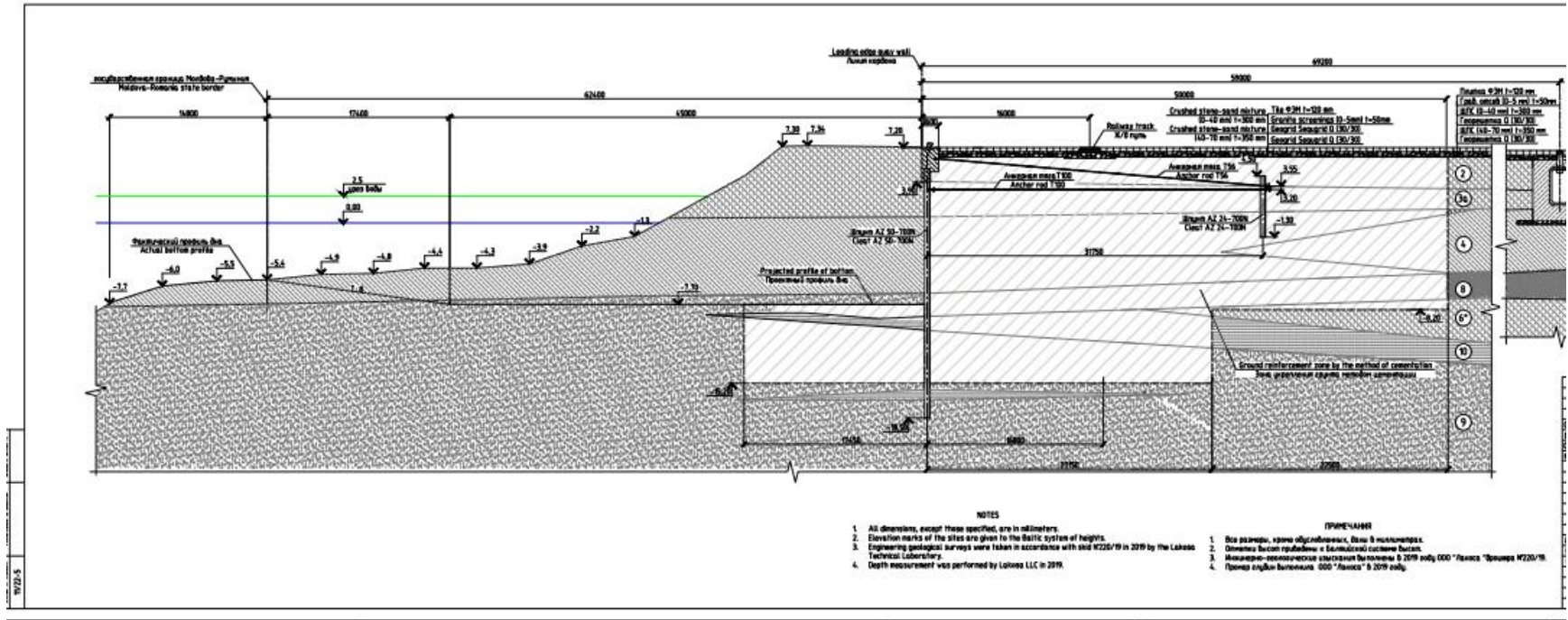
Şef secție, DCSP Cahul

Veaceslav Carp

Annex 6. Schematic planning of the planned works for the planned activity



Source: The project document of the planned activity, GIFP



Source: The project document of the planned activity, GIFP



Annex 7: Work plan and technical data sheet for the works to maintain the navigable channel on the Prut river section at the confluence with fl. Danube and the waters of the International Free Port of Giurgiulesti (PILG) Source: PILG. 2022 planning document.

The sector planned for the works

The maintenance of the port water area is carried out in order to ensure safe navigation, prevent damages on the internal waterways and ensure both the guaranteed dimensions of the navigable channel on the Prut river and fl. Danube, on the water sector of the Giurgiulești Free International Port.

The maintenance of the navigable channel and the port water area consists of the following basic actions: the periodic removal, usually annually, or sporadically in exceptional cases with low water level, of the deposited alluvial material.

The Giurgiulești Free International Port is located at mile 72.3 on the Danube, where the Prut flows into the Danube. From this point the coastline of the Giurgiulești Free International Port, next to fl. Danube, extends downstream for approximately 430 m from mile 72.3, and the shoreline alongside the Prut extends for approximately 735 m upstream. The main dredging activities will be carried out in certain locations in the Prut river section and fl. Danube.

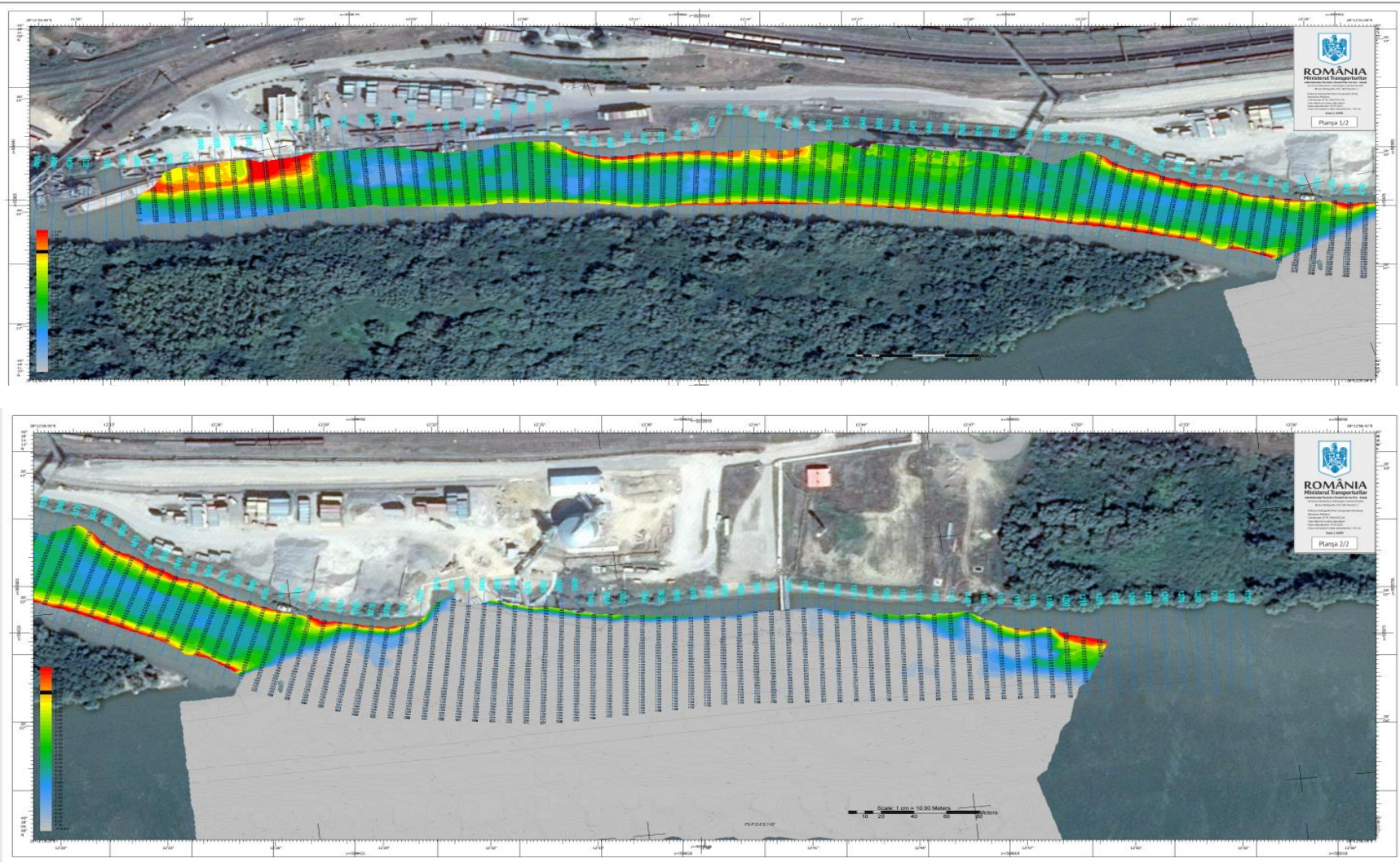
Geodetic measurements

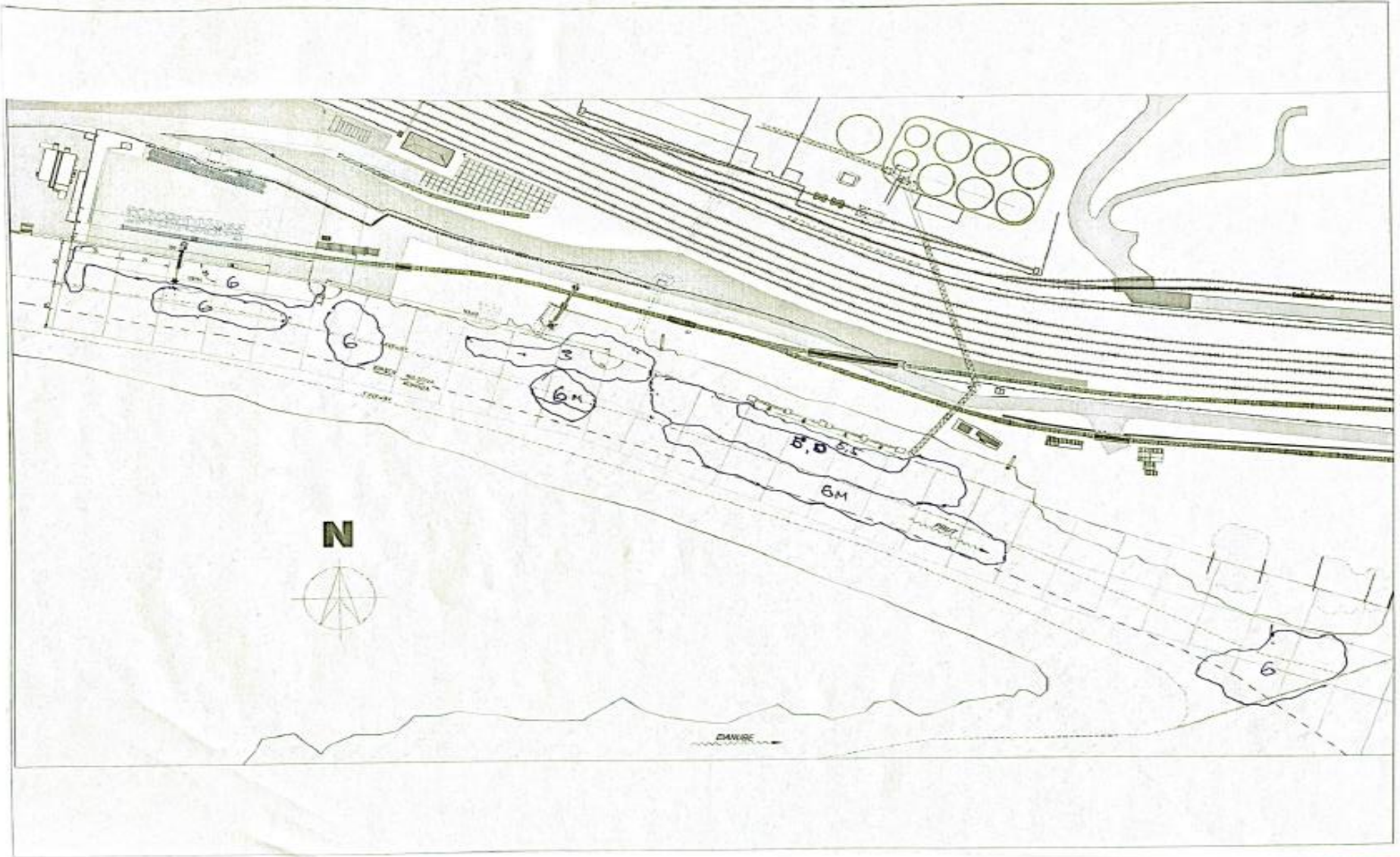
The preliminary geodetic measurements of the water depths in the waters of the Giurgiulesti International Free Port were carried out with the DANLOG TUG, the tugboat owned and operated by ICS "Danube Logistics" SRL. The measurement results are shown in fig. 1. To obtain effective depths, an additional 2.00 m must be added to the indicated values.

The following locations have been identified for dredging: the lower part of the Prut Canal, including the mouth of the Prut, certain areas of the Prut Grain Wharf and General Cargo Terminal, and at fl. Danube downstream of the oil berth.

The most recent measurements carried out by AFDJ Romania took place on July 29, 2022.

Figure 6: The geodetic plan - the hydrographic scheme of the depths of the Prut river and the Danube river







The volume of works

In connection with the hydrological situation in the summer of 2022 regarding the decrease in the water level in fl. Danube and Prut rivers and the high sediment load of the rivers, we expect a significant sedimentation on the river beds in the waters of the Giurgiulești Free International Port. To ensure the safe access of ships to the berths of the Danube and the Prut, unclogging works must be carried out in critical areas.

In general, the dredging volume is determined according to the water level and the amount of sedimented alluvium. From our experience, in order to maintain the PILG water area in a safe regime for the mooring of ships and barges, an approximate volume of 20,000 m³ of sedimented material (mud) must be dredged annually. At the current stage, it is estimated that the volume will be dredged between 15,000 and 20,000 m³. This will be verified as soon as the measurement results from the Romanian Lower Danube River Administration are available.

Condition of depth measurements

According to the multi-year data, the month of September is characterized as the period with low water levels throughout the territory of the Republic of Moldova that initiates the Autumn season, which is conditioned by the amount of low precipitation in the Carpathian mountains in Ukraine, as well as in the territory of the country.

The autumn low level - is the systematically observed phase of the river's water regime, which is characterized by low water levels and flows. The autumn low water period lasts from the end of the high spring waters until the autumn floods, and in their absence it extends until the beginning of the winter season, which is manifested by the appearance of frost phenomena.

Minimum water levels are usually observed in August - September.

In the region of the Giurgiulesti International Port, the water level will continue to decrease by about 0.1 - 0.2 m, compared to the level of the previous period, the water flow is forecast to be below the norm and will constitute about 80% of the norm for the months of July and August.

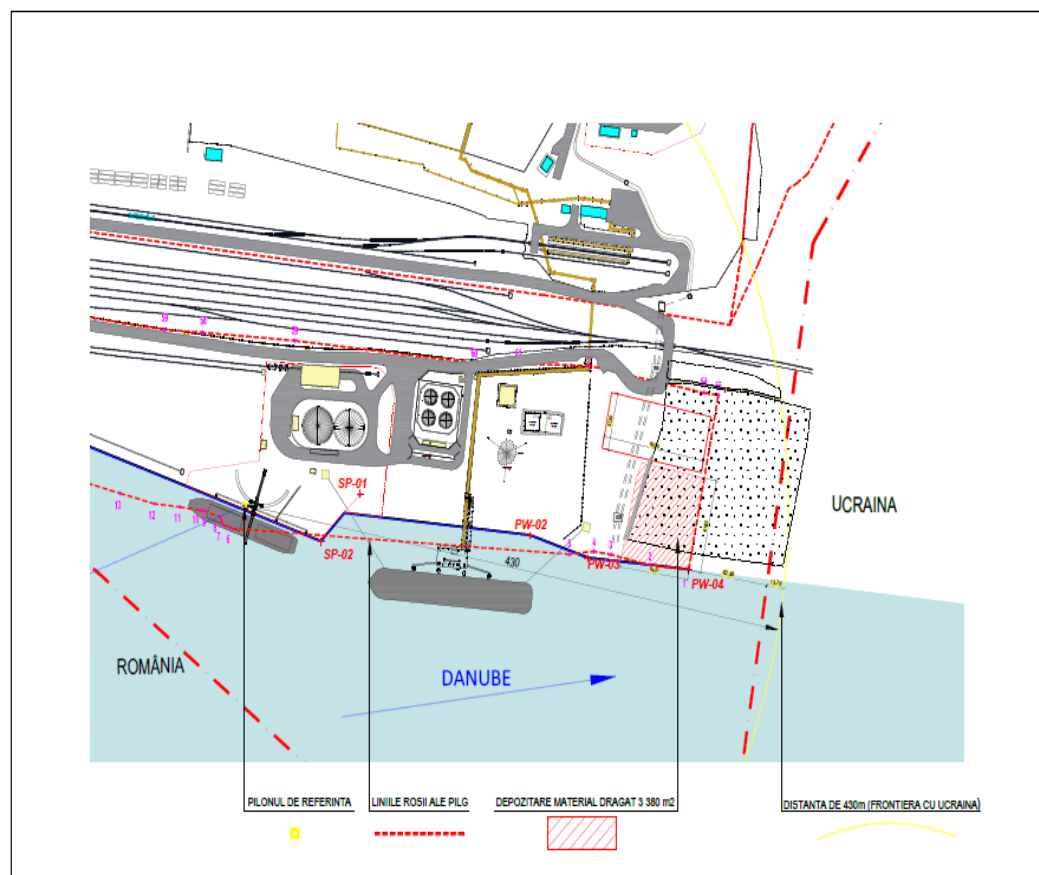
The data were taken from the hydrological characteristic of September 2022 issued by the Hydrological Center of the State Hydrometeorological Service.

The location for the deposition of sedimentary alluvium

In case of the urgent start of dredging activities, Danube Logistics SRL will deposit the dredging material at one of the following locations:

- (i) Intermediate storage on the known area between the oil terminal area and the border of the Republic of Moldova with Ukraine on the territory of PILG.
- (ii) Final deposit on the road between Giurgiulești and Cășlița-Prut, according to the Notice issued by the Cășlița-Prut City Hall and coordinated with the Cahul District Council. Based on the said Notice, the dredged material was previously transported in this eroded portion.
- (iii) Deposit at the river Prut, upstream, before Cășlița-Prut, designated for the Ungheni River Port.

Figure 8: The intermediate storage place for alluvial material (diagram)



Technological process

For the execution of the dredging works, the company ICS "Danube Logistics" SRL will contract a company specialized in the execution of dredging works and which has qualified personnel and the necessary equipment for the execution of the given works, namely: a floating crane (excavator) and a barge for transporting mud .

The service provider will carry out the work with a 16-tonne floating crane and a normal barge used to transport the dredged material to the place where the material is unloaded at a shore dump. In some cases, close to shore, it is possible to deposit the temporary material directly on the shore within the PILG with subsequent transport to the intermediate storage pit.

In the current year, the material dredged in 2021 was transported from the intermediate storage (storage pit) in PILG to the (permanent) storage site, which is located near the Giurgiuleşti-Câşliţa-Prut road. Thus, the necessary storage space was created for the material that will be dredged this year. The terms can be adjusted according to the Loading Chart of the ships at the respective berths and the weather conditions. There are NO water intakes and suction heads on this sector.