

Compliance with Operating License conditions and restrictions: a case study in the Port of Pelotas-RS

Atendimento às condições e restrições da Licença de Operação: um estudo de caso no Porto de Pelotas-RS

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ABSTRACT

Port activities can cause several negative impacts to the environment, and these are intensified in ports present in urban areas. Environmental licensing allows public administration to establish conditions and restrictions of activities that interfere with quality of environmental resources. CONAMA classifies port activities as potentially polluting, so this industry enterprises must pass through environmental licensing process and be following current legislation in order to avoid or minimize negative environmental impacts, with the Operation License (OL) being one of main compliance tools. From the above, the objective of the work was to evaluate the attendance, by Port of Pelotas, to the conformities and restrictions contained in its OL, granted in the year 2015 by FEPAM. The study was carried out through the analysis of the CONAMA Audit Report 306/2 of April 2018 and visits to the enterprise. The data obtained were analyzed based on evaluation criteria. The final diagnosis of compliance with the constraints and restrictions of the OL showed an unsatisfactory attendance, since the score obtained in the total sum reached only 122 points out of a total 327. Thus, it was verified the necessity of adaptation of the enterprise regarding the constraints and restrictions predicted in the OL.

Keywords: Port activities; Environmental licensing; Assessment of environmental impacts; OL; Environmental impacts

RESUMO

As atividades portuárias podem causar diversos impactos negativos ao meio ambiente, intensificados nos portos presentes em áreas urbanas. O licenciamento ambiental permite à administração pública estabelecer condições e restrições de atividades que interfiram na qualidade dos recursos ambientais. O CONAMA classifica as atividades portuárias como potencialmente poluidoras, portanto, as empresas desse setor devem passar pelo processo de licenciamento ambiental e seguir a legislação vigente para evitar ou minimizar os impactos ambientais negativos, sendo a Licença de Operação (LO) uma das principais ferramentas de conformidade. Diante do exposto, o objetivo do trabalho foi avaliar o atendimento, por parte do Porto de Pelotas, às conformidades e restrições contidas em sua LO, concedido no ano de 2015 pela FEPAM. O estudo foi realizado por meio da análise do Relatório de Auditoria CONAMA 306/2 de abril de 2018 e visitas ao empreendimento. Os dados obtidos foram analisados com base em critérios de avaliação. O diagnóstico final de cumprimento das restrições e restrições da LO mostrou um atendimento insatisfatório, uma vez que o escore obtido na soma total

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alcançou apenas 122 pontos em um total de 327. Dessa forma, verificou-se a necessidade de adaptação do empreendimento quanto às condições e restrições previstas na LO.

Palavras-chave: Atividades portuárias; Licenciamento ambiental; Avaliação de impactos ambientais; LO; Impactos ambientais

1 INTRODUCTION

A port is characterized as a set of facilities responsible for providing shelter, mooring, storage and movement functions on land and at sea, thus developing intense and uninterrupted activities, which can generate serious environmental disturbances (CASTRO; ALMEIDA, 2012). Ports inserted in urban areas have their environmental impacts accentuated, presenting a vast demand, from inherited environmental liabilities arising from the environment and its cultural structure, as well as from assets continually created during their activities (DARBRA et al., 2005; KITZMANN; ASMUS, 2006).

Seaports represent a source of environmental impacts on marine and terrestrial habitats, given the high complexity of their environmental aspects, which usually involve: atmospheric emissions of gases, solid particles and energy; effluent discharges into water or accidental escape during loading and unloading operations; releases to the ground; sediment release and dredging; noise generation; waste generation and disposal; odor generation; consumption of natural resources; port development related to land and sea occupation (DARBRA et al., 2005).

According to Saengsupavanich (2011), the following are examples of marine physical impacts of port activity and its operations: increased tidal spread, severe flooding and saline intrusion; alteration of bathymetry due to construction and dredging, generating changes in the wave pattern; sediment transport obstruction; margin erosion and accelerated margins; change in sedimentation pattern; dredged waste dispersion; increased maritime traffic, increasing the risk of maritime accident.

Regardless of damage resulting from accidents or negligence, damage to natural habitats is recurrent during boarding operations (NG; SONG, 2010). Errors in port operations can, for example, generate intense environmental impacts on water

resources, due to the need to use water as the medium occupied by the vessel (TISCOSKI; CAMPOS, 2013). Thus, the sector needs constant confrontation and adjustment of nonconformities to ensure correct operation without economic and socio-environmental damages. (KITZMANN; ASMUS, 2006).

Part of a port's technical infrastructure is also the channels through which the cargo ships arrive, however, the same waters through which the vessels pass can serve as a source of fishing resources or even play tourist roles, which may cause social and environmental conflicts (CUNHA, 2006). In view of the economic importance represented by the ports, it is necessary to search for a high efficiency that produces more and more cargo handling with minimal environmental impact (LEAL JUNIOR; GUIMARÃES, 2013), through daily environmental measures, which guarantee a safe and sustainable performance, as well as continued support from investors in the operations and development of the port chain (PUIG, 2015).

Brazil has a port sector that transports 700 million tons per year on a coast of about 8.5 thousand navigable kilometers (TISCOSKI; CAMPOS, 2013). The country has several areas that legally demarcate and regulate environmental and port security demands, such as international conventions and agreements, national legislation and public policies in different spheres (KITZMANN; ASMUS, 2006). Thus, environmental conflicts over port operations involve a wide range of government agencies with control responsibilities, port management, local governments, population groups that somehow use environmental resources threatened by branch enterprises (CUNHA, 2006).

One of the main compliance tools currently being met by industry ventures in Brazil is the Operating License (OL), since according to CONAMA Resolutions 01/86 and 237/97 port activity is considered to be potentially polluting (ANTAQ, 2011; KITZMANN; ASMUS, 2006). However, despite the wide regulation on the environmental issue, its practical effectiveness faces complications arising from the lack of awareness, lack of infrastructure, financial resources, technologies and also the training by the port staff and regulators (KITZMANN; ASMUS, 2006).

Environmental licensing is still pointed out as one of the fundamental instruments of the National Environmental Policy, because it is through it that the Public Administration establishes limits and conditions for the activities that use environmental resources to be performed (MODA, 2014). The Environmental Impact Study (EIS), which takes place within the licensing process, is essential to ensure that port management can cope with environmental contingencies and emergencies that may occur (DARBRA et al., 2009).

Considering the potential of environmental degradation represented by the activity and the licensing process as an essential tool to regulate the sector and ensure that the activity occurs in order to promote the minimum environmental impact, the objective of this work was to evaluate the attendance of Port of Pelotas, RS, to the conditions and restrictions contained in its OL, No. 8162/2015-DL, granted on December 3, 2015, by the State Environmental Protection Foundation Henrique Luiz Roessler - RS (FEPAM) through of Case No. 10697-05.67 / 14-1.

2 METHODOLOGY

The study was conducted by applying data collected through on-site visit and analysis of the CONAMA Audit Report 306/2, conducted in April 2018, in a method developed based on the conditions and restrictions of the enterprise OL. The developed method is based on the application of an evaluation criterion (Table 1) for each item of each topic addressed in the enterprise OL.

Table 1 – Rating criteria

Rating criteria	
Non availability of information or not attendance of condition/restriction (N.A.)	0
Unsatisfactory attendance of condition/restriction (U.A)	1
Partial attendance of condition/restriction (P.A.)	2

Total attendance of condition/restriction (T.A.)	3
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Source: authors

The method allows a diagnosis of the company's situation regarding compliance with the OL, the sum achieved in each topic (Table 2) indicates the level of compliance of each sector of the enterprise and the totality of all topics results in a final diagnosis about the fulfillment of the port in relation to the license, where a total of 0 to 108 indicates the non-fulfillment of the conditions/restrictions, 109 to 217 indicates the unsatisfactory fulfillment of the conditions/restrictions, 218 to 326 indicates the partial fulfillment of the conditions/restrictions and 327 full compliance with the conditions/restrictions. These values are obtained from the number of items in each OL topic of the project in question.

Table 2 - Items for Evaluation for Final Diagnostics

Item	Item Criteri a Numbe r	N.A.	U.A	P.A.	T.A.
Environmental Control Measures	11	0	11	22	33
Environmental Supervision	5	0	5	10	15
Liquid effluents	14	0	14	28	42
Solid waste	16	0	16	32	48
Atmospheric emissions	8	0	8	16	24
Water Quality Monitoring	8	0	8	16	24
Air Quality Monitoring	7	0	7	14	21
Storage and Supply of Combustible and	11	0	11	22	33

Flammable Liquids					
Groundwater Monitoring	3	0	3	6	9
Liquefied Petroleum Gas (LPG) Storage	3	0	3	6	9
Dredging	10	0	10	20	30
Environmental Management in Porto	6	0	6	12	18
Risk management	4	0	4	8	12
Environmental Audit	1	0	1	2	3
License Advertising	2	0	2	4	6
TOTAL	109	0	109	218	327

Source: authors

3 RESULTS AND DISCUSSION

About environmental control measures (Table 3), the first item addressed in the OL, the enterprise must ensure the control and preservation of the Environmental Preservation Area (EPA), as well as sensitive areas. According to Embrapa (2011), environmentally sensitive areas are those that are most susceptible to negative environmental impacts. Although the project area comprises an EPA area, it was already without vegetation cover when the OL was granted to Porto, so despite the environmental degradation being visible in the EPA area, the project was not responsible for it, ensuring compliance with such criterion. The Environmental Impact Assessment (EIA) carried out during the licensing process considers in its forecasts the condition that the environment to be affected by the project is during the process, which is the starting point for the elaboration of compensatory measures, such as those of mitigation. Thus, environmental indicators used to assess the sustainability

of the project structure a prognosis of changes, or not, only in the space-time considered for such project (SICHE et. al, 2007).

Table 3 - Results of the item regarding environmental control measures

Environmental Control Measures	
Control and preservation of EPA	3
Adoption of preventive and mitigating measures to maintain soil integrity in relation to degradation, erosion and geotechnical stability.	0
Adoption of preventive and mitigating measures for locations/points identified as environmentally sensitive, such as potential ecological corridors, EPAs, forest remnants, water sources	3
Adoption of preventive and mitigating measures signaling the location of	0

environmentally sensitive areas, areas susceptible to soil contamination, areas critical for environmental pollution, potential ecological corridors, fauna nooks, water resources, with emphasis also on the conservation of remnants native forest;	
No use of fire and chemical processes (chemical weeding) for any form of intervention in the native vegetation of the enterprise	3
Uses of upstream and downstream water	3
Waterproofing the floor of Porto's productive areas in order to avoid soil contamination	0
Adoption of preventive measures by vessels regarding	1

water contamination during supply, oil change and cleaning, and must comply with the specific rules of the Port or Terminal Administration.	
Adoption of preventive measures by cargo transport vessels to avoid the dumping of products in the water during loading / unloading, respecting the rules and procedures established by the Port Authority of Rio Grande do Sul and respective decrees.	2
Receipt or dispatch of hazardous products by road transport only by vehicles licensed for Mobile Pollution Sources at FEPAM	2
TOTAL	17 (U.A)

Source: authors

Overall, this OL item is poorly serviced. Regarding the specific rules for the supply, oil change and cleaning of vessels, it is in the preparation phase, for this reason, the condition is met unsatisfactorily. Measures are taken to prevent the dumping of products into the water during logging, but no evidence has been made available for other moves, so compliance with the conditioner is partial.

Regarding the criterion that determines that the receipt or dispatch of hazardous products by road transport occurs only by vehicles licensed by FEPAM, there was no evidence of licensing to transport batteries, one of the cargos received in Porto, all other occur as provided in OL. Dangerous goods road transportation companies have their logistics highly regulated. Among the various decision processes present in the activity we have, for example, the choice of the best time schedule for loading and unloading according to the route and legal requirements and the routing of the transport unit according to safety criteria (LIEGGIO JUNIOR, 2012), since the risks involved in this type of road transport are directly related to the properties of the substances involved, the quality of the road network, the presence of densely populated areas in the surroundings and the presence of pedestrians on the road (NARDOCCI, 2006). Since the port in question only carries batteries, we can consider the risk as small. If other dangerous products were transported by non-regularized carriers, the risks would be much greater.

Prado Filho and Souza (2004) report that among the recurrent inconsistencies in EIS is precisely between the indication and implementation of environmental control measures established in the EIS, since, in general, measures established in the licensing phase commonly remain only listed as proposals for impact mitigation occupying a purely formal role rather than actually being implemented.

Table 4 presents the results related to the environmental supervision item, where it can be observed that, as in the previous item, there is an unsatisfactory OL service by Porto. Such failure occurs, for example, in the environmental supervision of the activities by technicians qualified with semi-annual reports, such attendance is due to the fact that despite the monitoring and reporting in 2016 and 2017, the environmental supervision in Porto is not performed by duly qualified technicians. In

the case of the annual presentation of semiannual Environmental Supervision Reports regarding the continuous monitoring of the operation of Porto and compliance with the conditions and restrictions of this license, accompanied by the TRA (Technical Responsibility Annotation) of those responsible, the attendance was partial, since existing reports do not include compliance with all conditions and restrictions.

Table 4 - Results of environmental supervision item

Environmental Supervision	
Environmental supervision of activities in the enterprise by duly qualified technicians and have semi-annual reports	1
Continuous supervision to control and minimize impacts from proposed activity on existing soil, water resources and biodiversity; monitoring of disturbances and possible imbalances in terrestrial fauna caused by the implementation of the enterprise and emergency interventions in	0

native vegetation and permanent preservation area, complying with the conditions and restrictions of this license	
Notification to the environmental agency of any breaches or irregularities regarding the conditions and restrictions of the current environmental licensing	0
Annual presentation of semiannual Environmental Supervision Reports regarding the continuous monitoring of the Porto operation and compliance with the conditions and restrictions of this license, accompanied by the TRA of those responsible	2
Immediate	3

contact with the inspection agency in case of accident or incident with risk of damage to the environment	
TOTAL	6 (U.A)

Source: authors

According to Silva et al. (2015), environmental supervision consists of inspecting all phases of the project to ensure that the implementation of actions is in accordance with the conditions and technical specifications established, highlighting the need to comply with environmental programs. Environmental supervision in road works, for example, corresponds to monitoring and monitoring activities that seek to anticipate and identify possible environmental deficiencies or damages, in order to act in a preventive and guiding manner, directing the implementation of actions, measures or tools capable of avoiding, minimize or mitigate negative environmental impacts (COSTA, 2010), thus allowing the identification of impacts that were not anticipated during the EIS and the adoption of long-term preventive and/or immediate corrective measures with comparatively smaller financial disbursements, contributing to reduce or even avoid larger liabilities, and consequently higher recovery costs (DE JORGE, 2001; VICENTINI, 1999).

In the item about liquid effluents (Table 5), there was no score, since the information was not available. It is noted that as for the disposal of ballast water, it was informed in the report that vessels only perform inland navigation. However, no specification has been provided in accordance with international standards and with the implementation of emergency claims plans for ballast water discharge and specification in accordance with the standards and guidelines stipulated in the Maritime Authority Specific Maritime Authority Rules, for the disposal of ballast water.

Table 5- Results of wastewater item

Liquid effluents	
No discharge of untreated liquid effluent into water bodies or soil	0
Destination of effluents generated in Porto activities for treatment system, according to technical standards	0
Routed from domestic wastewater to the sewage system of Porto - septic tanks and sink - or receive appropriate treatment and disposal at a licensed location	0
Septic tank cleaning every year and proof of final destination to FEPAM	0
Effluents from productive areas in general with convergent to the effluent	0

<p>treatment system, according to technical standards</p>	
<p>Compliance with emission standards in accordance with current legislation on liquid effluents discharged into receiving water bodies</p>	<p>0</p>
<p>Non-compliance with the water body, characteristics in disagreement with its classification, according to CONAMA Resolution 357/2005, art. 28th</p>	<p>0</p>
<p>Semi-annual collection of samples from the separator box (es) that serve as treatment of liquid effluents from the different activities, to perform the analysis of the physicochemical parameters</p>	<p>0</p>

determined by the FEPAM Ordinance No. 43/2009.	
Annual presentation of Environmental Supervision report, the two analysis reports of each separator box, containing the result of the analysis, signature of the responsible technician, registration of the Class Council, date of analysis;	0
WOSB analysis report accompanied by the collection reports of liquid effluents, signed by the responsible for the collection, the technical responsible for the company and responsible for the enterprise (model available on the FEPAM website, according to FEPAM	0

Ordinance No. 43/2009)	
Ballast water discharge in accordance with international standards and with the implementation of emergency claims plans	0
Compliance with Maritime Authority-specific NORMAM guidelines for the disposal of ballast water shall	0
TOTAL	0 (N.A)

Source: authors

Calixto (2000) reports that, in general, the effluents generated by the port activity have three sources, the first being from sanitary origin of bathrooms, kitchens and washing areas, the second from industrial processes that may contain heavy metals, oils, greases, sulphides, phenols, cyanides, fluorides and organic chemicals in general, and finally those coming from vessels generated on board ships anchoring in the port generated in restrooms and onboard kitchens, loading and unloading of bulk liquids and washing processes, deck and storage tanks having a composition dependent on the nature of the cargo carried. The excess organic load of such effluents, if discharged directly into the port entrance channel, can cause processes of eutrophication of the environment causing the death of the local fauna (GORMAN, 1993), while the toxic elements contained in the effluents can cause direct death (Vernier, 1994). The port under study does not carry out industrial activities, being the

effluents generated in its sanitary facilities of bathrooms, kitchens and washing areas, and the effluents generated on board the operating ships.

In the conditions and restrictions on solid waste (Table 6) the final score found unsatisfactory service, since failures were observed, for example, in the execution of the Solid Waste Management Plan (SWMP), such as the non-implementation of the waste and an internal standard to regulate the boat waste removal service, which received a score for unsatisfactory compliance with the conditioner.

Since the Annual Technical Reports for 2016 and 2017 were not presented, the item received a zero score. Regarding the segregation, identification, classification and conditioning of the solid waste generated, it was considered unsatisfactory compliance with the condition, as failures were identified in the identification of solid waste generated for temporary storage in the Porto area, in disagreement with NBR 12.235 and NBR 11.174, from ABNT.

Table 6 - Results of solid waste item

Solid waste	
Execution of PGRS and presentation, every six months, Technical Report of actions included in SWMP	1
Implementation of the SWMP accompanied by the Environmental Oversight Team to integrate the Environmental Oversight Report	3

Annual SWMP Technical Report Presentation	0
No use of permanent preservation areas for the disposal or disposal of waste of any kind	3
Failure to dispose of or dispose of waste and effluent in violation of applicable environmental regulations	0
Does not burn solid waste of any kind outdoors, as well as any kind of thermal processing for waste processing, without prior environmental licensing	3
Disposal of waste to licensed enterprises, and records proving disposal must be kept filed with the entrepreneur at the disposal of	3

the Environmental Inspectorate	
Temporary waste storage performed in covered area, with containment basin and according to the guidelines of ABNT NBR 12235 - Hazardous Solid Waste Storage	0
Segregated solid waste generated, identified, classified and conditioned, following ABNT NBR 12.235/1992 and 11.174/1990, according to the type of waste, until their destination	1
Collection, storage and disposal of waste generated or arising from the use, movement and storage of harmful or hazardous substances and oils, as defined	0

by Federal Law No. 9966/2000	
Packaging of correctly used and correctly identified fluorescent lamps in the waste center, individually wrapped, in paper or cardboard of origin in a horizontal position safely for later transport to companies that carry out their decontamination	1
Annual submission to FEPAM of the "Solid Waste Generation Worksheet" for all waste generated	0
Annual presentation to FEPAM listing the numbers of MTRs issued during the year, aiming to comply with art. 12, paragraph 3 of State Decree No. 38,356/1998;	3
Verification of	3

the environmental licensing validity of the companies or central to which the waste is sent	
Voluntary return of plastic packaging of lubricating oils purchased at point of purchase in the retail trade, being the collection point of immediate suppliers (wholesaler / manufacturer), to collect post-consumer plastic packaging	0
Collection of all used or contaminated lubricating oil and disposal for recycling through the refilling process in accordance with CONAMA Resolution No. 362/2005	3
TOTAL	24 (U.A)

Source: authors

In addition, according to CONSEMA Resolution No. 333/2016 (RIO GRANDE DO SUL, 2016) and DT FEPAM No. 02/2015 (FEPAM, 2015), the packaging of lamps must be carried out in original packaging, boxes or containers without the use of plastic film or tape, segregated and packaged according to format and type. Such caution is due to the presence of mercury in fluorescent lamps (BACILA et al., 2014), which may promote contamination of natural resources due to its volatility and toxicity to the environment (POLANCO, 2007), and serious damage to human health (JÚNIOR et al., 2013), such as elevation of blood pressure, neurological damage and seizures (Walker et al., 1996). The fluorescent lamps generated and packaged in the port were packaged in their entirety, but were not individually packaged, were not correctly identified, nor were they stored in a waste center, thus being attributed unsatisfactory care of the conditioner. Regarding the annual submission to FEPAM of the Waste Generation Worksheet for all the waste generated, it appears in the audit that it was not possible to verify its existence, so that a score equal to zero was attributed to this criterion.

A study conducted at the Porto Novo Terminal in the Port of Rio Grande indicates that although the project meets legal specifications, there is no structured management of waste. The authors report that even in enterprises that fully comply with the rules and laws on solid waste management, in general, there is only concern to comply with the legal requirement regarding the existence of a well-structured management document, thus characterizing a bureaucratic management, without care as to the practice of the operations developed in its activity regarding the theme (OAK; ABDALLAH, 2012).

Compliance with the conditions and restrictions of atmospheric emissions occurs partially (Table 7), since the annual proper maintenance and the presentation of the Maintenance Report are not recorded since the operation of Porto until 2016, as well as The non-discharge of products that generate emission of particulate matter to the atmosphere resulting from the operation of the ship's unloader, without control measures, has been proven to avoid the displacement of the atmospheric plume. The port activity involves a variety of sources of air pollution besides

navigation, such as the transit of diesel trucks, trains, nearby industrial complexes or even the movement of cargo (BAILEY; SOLOMON, 2004). Antó et al. (1989) report the occurrence of an asthma epidemic in Barcelona between 1985 and 1986 caused by the inhalation of soy dust from the discharge of the product in the city's port.

Table 7 - Results of atmospheric emissions item

Atmospheric emissions	
Annual proper maintenance of the vapor control devices (pressure and vacuum valves) in the vents of the underground fuel tanks, according to the manufacturer's recommendations	2
Presentation of the Maintenance Report of the Fuel Storage Tanks Emissions Control System related to the maintenance of the vapor control devices (pressure and vacuum valves), annually	2
No emission of odorous substances into the atmosphere in quantities that may be noticeable outside the limits of its property	3

Adoption of control measures to prevent the spread of atmospheric emissions (release of substances or energy into the air)	3
ABNT NBR 10151 compliance regarding noise levels generated by the company's activity	3
Air quality standards and air pollutant conditions in accordance with current legislation	3
No discharge of products that generate emission of particulate matter to the atmosphere resulting from the operation of the ship unloader, without control measures, to avoid the displacement of the atmospheric plume.	0
Cleaning crew in the area during the unloading	3

operation, collecting the spilled cargo	
TOTAL	19 (P.A .)

Source: authors

In addition, it is important to highlight the occurrence of fertilizer loads in the port in question, since Hüttner and Moreira (2000) report that workers exposed to this product had an increased prevalence of respiratory symptoms in relation to unexposed workers. The authors report that the problem affects even people not directly exposed to the product due to the spread of particulates.

Water quality monitoring (Table 8) poorly meets OL conditionings and restrictions. Although water quality monitoring was performed, all parameters defined in CONAMA Resolution No. 357/2005 were not analyzed, thus constituting partial compliance with the conditioner. Analyses are performed in a laboratory with a register certified by FEPAM. However, one of the analyzed parameters is not included in the list of parameters registered with FEPAM, and no sample collection report was presented, thus attributing unsatisfactory compliance with the condition. Regarding the collection of water body samples simultaneously with the operation of Porto, it is stated in the audit that Porto is aware of the condition; however, no collection dates are recorded, making it impossible to confirm the data.

Monitoring water quality is essential, as the water body in use can be degraded by port operations such as vessel maintenance and supply, cargo handling, transportation and storage, vehicle and machinery maintenance, effluent generation in port facilities; oil or fuel spills or spills during supply and transfer operations, contamination with pathogens and harmful aquatic organisms through ballast water and contamination through toxic inks used on vessels (TAVARES, 2012).

Table 8 - Results of water quality monitoring item

Water Quality Monitoring	
Semi-annual monitoring of water quality upstream and downstream of Porto in São Gonçalo Channel, using composite sampling and analysis of parameters defined in CONAMA Resolution n ° 357/2005	2
Presentation of water quality monitoring program with number of sampling campaigns, geographical coordinates of sampling points and color satellite image identification of sampling points	3
Performing the analyzes in a laboratory registered with this Foundation, accompanied by the respective collection report.	1
Collection of	0

water body samples simultaneously with the Porto operation	
Annex to the analytical reports issued by the laboratory conducting the analyzes which must guarantee a quantification limit compatible with the accuracy provided for in CONAMA Resolution 357/2005 to the report.	3
Presentation of the results of the physicochemical analysis together with the operational and photographic report, accompanied by the technical responsible	3
Results accompanied by report with interpretation of analytical data and comparison with previous campaigns, relating to CONAMA Resolution No.	3

357/2005	
Referral of Technical Report to FEPAM if any parameter analyzed exceeds the values of the class of framing, including the causes of extrapolation, corrective measures adopted, and implementation schedule prepared by the responsible technician.	0
TOTAL	15 (U.A)

Source: authors

The item related to air quality monitoring resulted in a partial attendance of OL (Table 9). Four samples were taken on air quality monitoring between 2016 and 2017. However, in 2016 both samples were taken in the second half, and in 2017 both samples were taken in the first half. Thus, the service occurred partially. The report covering the conditions, results obtained, and analysis reports was sent to FEPAM, but within a period that exceeded the 60 days required by the OL, and for this reason there was a partial compliance with the item.

Table 9 - Results of air quality item

Air Quality Monitoring	
Semiannual monitoring of air quality at the points	2

determined by OL, with parameters analyzed are those defined in CONAMA Resolution No. 03/1990	
Performing the fully functioning monitoring of Porto	3
Sampling air at a time when there is no operation around these points in order to obtain the "white point"	3
Inform FEPAM of the date of the sampling, 30 (thirty) days in advance	0
Presentation of report covering the conditions, the results obtained and the analysis reports	2
Interpretive and conclusive technical report, containing the monitored parameters, the average values obtained in each sample, the collection periods	3

and the classification of the result of each parameter against the limits established by CONAMA Resolution No. 03/1990, followed by a description of the methodologies and equipment used, together with equipment calibration certificates, accompanied by the respective TRA and Individual Taxpayer Registration of the legally qualified professional(s)	
Use of current standards for sampling methodology	3
TOTAL	16 (P.A.)

Source: authors

According to Vieira (2007), places with heavy traffic of motor vehicles, such as port areas with diesel trucks, should have air quality monitored. In addition, Bailey and Solomon (2004) report that air pollutants emitted from port activities include diesel exhaust, particulate matter, nitrogen oxides, ozone and sulfur oxides, carbon monoxide, formaldehydes, heavy metals, dioxins and pesticides. The studied port has

a constant traffic of trucks carrying logs, besides the movement of fertilizers, which can contaminate the air by the emission of particulate matter.

The storage and supply of combustible and flammable liquids as it is done at the port in question does not comply with the restrictions and conditions of OL provided by FEPAM (Table 10). The item totaled only 5 points, and to have unsatisfactory service should have reached at least 11 points. The criteria for cleaning and periodic maintenance of the water/oil separator boxes received a maximum score since it is not in operation, which makes it impossible to comply with it.

Accident and spill prevention during fuel tank refueling operations, as well as materials and equipment available for emergency containment and mitigation actions partially complies with the license, as no information on accident and spill prevention measures was made available during fueling operations of vessels' fuel tanks. However, materials for emergency containment and mitigation actions are available, being stored in warehouse and container.

Table 10 - Results of item concerning storage and supply of combustible and flammable liquids

Storage and Supply of Combustible and Flammable Liquids	
Waterproofing of the tank and oil injection area	0
Isolation of the tanking area that prevents access by strangers; safety signs identifying the facility for site access	0

hazards	
<p>Waterproofing of the floor, with peripheral drainage system with the function of rainwater capture and eventual spillage of fuel to the water and oil separator box (WOSB), from the areas where the fuel tanks, loading and unloading platforms are located, as well as locations for changing lubricating oils</p>	0
<p>I use a concrete floor containment basin for oil and fuel storage in vats. Underground tanks for storage of used lubricating oil will not be accepted.</p>	0
Cleaning and periodic	3

maintenance of water/oil separator boxes (WOSB)	
Compliance with technical standards for fuel and flammable storage	0
Controlled and restricted access to the isolation area with security signage that identifies the facility for site access hazards	0
Accident and spill prevention measures during fuel tank supply operations, as well as materials and equipment for emergency containment and mitigation actions	2
Annual Presentation of the Fuel Storage Tank Emissions Control System	0

<p>Maintenance Report”, containing a descriptive and photographic memorial of the annual maintenance of pressure and vacuum valves installed in the fuel tank vents, signed by a qualified technician, in accordance with FEPAM Ordinance No. 43/2009, art. 7°</p>	
<p>Soil and groundwater analysis for the parameters: BTEX and TPH in the area, which was removed from the underground fuel storage system (SASC) within ninety (90) days</p>	<p>0</p>
<p>Installation of monitoring wells in the underground tank area in operation,</p>	<p>0</p>

and within 90 days (March 2015) submit to FEPAM technical report of this adequacy	
TOTAL	5 (N.A.)

Source: authors

All other items covered in the topic are not addressed by the venture. It is important to note that as for the waterproofing of the tank and oil injection area, the supply of vessels and machinery from the underground tank ceased in 2016. However, as it is a license condition, the item non-compliance assessment criterion was assigned. It is important to point out that the incorrect storage and supply of petroleum-derived liquid fuels is a problem that has been addressed in several studies and discussions in the last decade, as it occurs in contamination of soils and water sources (VIVIAN, 2015). Such contamination is complex due to its various interactions with the environment and the high number of areas affected by such contamination, besides offering a high risk of accidents involving explosions and fires, which may cause degradation of the population's health quality around the affected environment (FREIRE; TRANNIN; SIMONES, 2014).

As for groundwater monitoring, the project does not meet the OL (Table 11), since the semi-annual collection of well samples and annual reports are not performed, as no monitoring wells have been installed in the underground fuel tank area in operation until 2016

Table 11 - Results of groundwater monitoring item

Groundwater Monitoring	
Semi-annual	0

<p>collection of samples from monitoring wells for analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylene and xylene (BTEX) and volatile organic compounds (VOC) aiming at controlling and detecting leaks from the underground supply system. (SASC) according to ABNT NBR 13784.</p>	
<p>Annual presentation of two monitoring well analysis reports, containing the result of the analysis, signature of the technical manager, registration with the Class Council and</p>	<p>0</p>

date and responsible for the semiannual collection performed	
TOTAL	0 (N.A.)

Source: authors

Failure to install wells arouses great environmental concern, since groundwater quality monitoring is a prime requirement to ensure proper management of this resource, allowing monitoring and results of contamination risks and promotes the measurement of the effectiveness of mitigation measures aimed at protecting water quality (MAGALHÃES, 2000; FOSTER et al., 2006), since, according to Farlin et al. (2019), groundwater quality monitoring networks are operated to enable the detection of significant changes in water quality, providing a better overview of the status and trend of aquifer quality.

The OL item for Liquefied Petroleum Gas (LPG) storage is met unsatisfactorily (Table 12), considering that only the storage of transportable LPG containers is performed as stated in the LO, on flat, level and paved floor, so it allows a surface that supports loading and unloading, with natural ventilation.

Table 12 - Results about LPG storage

LPG Storage	
Compliance with ABNT NBR 15514/2007 regarding safety criteria, location and form of storage and conditions recommended	0

in the Fire Brigade Prevention and Protection Plan - Military Brigade	
Storage of transportable LPG containers on level and level floor, concrete or paved to allow a surface to support loading and unloading, in a ventilated place, outdoors, whether or not the storage area (s) be covered (s);	3
Fire Department License Update	0
TOTAL	3 (U.A)

Source: authors

Regarding compliance with NBR 15514/2007, the LPG storage area does not obey the minimum safety distance of 1 m of buildings and there are LPG containers stored outside the storage area, in the machine shop (cylinders of 20 kg). In addition to the above, the project does not have a fire department license in force, however, was presented the PPCI Inspection Protocol Voucher No. 8228/2 - of 14/07/2017. Although LPG is widely used because it causes less pollution, when mixed with air it presents a high risk of fire and explosion so LPG production and storage must be

subjected to strict supervision, especially with regard to storage tanks that present higher risk potential (HU et al., 2018).

The project received maximum criteria in the topic regarding dredging (Table 13), since the last maintenance dredging took place in December 2013 within the restrictions and conditions imposed by OL.

Table 13 - Results from dredging topic

Dredging	
Dredging to maintain draft at berths, evolution basins and navigation channel	3
Presentation within ninety (90) days prior to the dredging operation, the Dredging Plan	3
No dredging of the Pelotas Organized Port, on the São Gonçalo Channel, during the closed season (fish breeding season), according to IBAMA Normative Instruction No. 197/2008	3
Dredged	3

<p>sediments disposed parallel to the silted channels (disposal basin) by keeping the minimum distance from the banks in order to protect the ichthyofauna</p>	
<p>No degradation of the banks of rivers and islands, and must obey the existing natural inclination</p>	<p>3</p>
<p>Not reaching riparian vegetation by the dredger anchor system or any other activities developed. Preservation of potential shelters for fish such as water hyacinths, reeds, concentration of branches, stones and others.</p>	<p>3</p>

Suspension of activities in case of harmful action against ichthyofauna until alternatives to normalize the situation are analyzed	3
Do not use suction pumps that do not have a protective screen to avoid the passage through them of fish and fingerlings	3
Annual monitoring of the Asian Clam (<i>Corbicula fluminea</i>) freshwater bivalve, an invasive alien species, on the shores of the venture's Direct Influence Area (IDA). Identifying the places of presence of this organism with	3

geographic coordinates (in decimal degrees) and plotting on color satellite image, with Technical Responsibility Annotation (ART) of the professional responsible for the information provided.	
Environmental supervision by duly qualified technicians	3
TOTAL	30 (A.INT)

Source: authors

Dredging is a necessity not only for deployment, deepening or maintenance, but also for remediation as it promotes cleaning, clearing, removing, dropping or excavating material from the bottom of water bodies recovering contaminated areas by removing contaminated rock and sediment for disposal at a dumping site (GOES FILHO, 2004). However, the activity generates several social and environmental conflicts related to the level of contamination of dredged sediments and the selected disposal site. The problems involve damage to the aquatic biota, with consequences to the local population, alteration of water quality during sediment suspension, interference with air quality through the emission of particulates and gases by ships, handling equipment and cargo transportation involved in the activity, emission of bad odors generated by the movement of contaminated dredged material as well as disturbance by noise and vibration (LEAL NETO, 2000; TORRES, 2000; THEODORO,

2005; CASTRO; ALMEIDA, 2012). Thus, failure to carry out dredging in the port avoids the generation of such negative impacts while promoting the environmental liability related to the non-removal of possibly contaminated sediments accumulated since 2013 and which may be causing negative environmental impacts to the environment.

According to the data and information obtained from the audit and visits, Porto's environmental management partially meets OL (Table 14). Regarding the elaboration and execution of the Environmental Management Plan (EMP), there was no evidence available that the permissionaires elaborated and executed it. As for the execution of the EMP by Porto, there were flaws, the Environmental Management, Health and Environmental Safety Centers were not implemented, while other programs were partially implemented. However, the port EMP filed in FEPAM includes all program groups established in the condition.

Table 14 - Results of port environmental management topic

Environmental Management in Porto	
Environmental regularization of the entire company that develops activities in the Porto area, through the Environmental Licensing - at FEPAM or the Pelotas Municipal Secretariat of the Environment (SMAM)	3
Preparation and execution of EMP by all permit holders	0

Implementation of the integrated EMP defining the duties of the port authority, port facilities and port terminals in the Organized Port area, establishing an administrative structure for coordination and implementation, presenting its organization chart with definition of hierarchy and attributions.	1
Contemplation of programs EMP Prevention and Control Measures	3
Contemplation of EMP Monitoring programs	3
Contemplation of Socio-environmental programs in the EMP	3
TOTAL	13 (P.A.)

Source: authors

According to data collected by the National Waterway Transportation Agency (ANTAQ) in 2004, 90% of the port authorities had some type of environmental unit, which is a good indicator of environmental management. However, Kitzmann and

Asmus (2006) report that, in order for the effectiveness and real applicability of port environmental management, an interinstitutional adjustment that must encompass the public sector is necessary, so that it actually operates as a regulator of the port system, the private sector, which must assume a social and environmental character, and society as a whole, monitoring and overseeing the actions of both.

As shown in Table 15, the project does not comply with risk management conditions, since there is no Fire Prevention and Fire Brigade - Military Brigade license in force (Proof of Inspection Protocol PPCI No. 8228/2 - of 14/07/2017), the Mutual Assistance Plan (PAM) was not prepared, nor the Emergency Control Plan (PCE), according to the Regulatory Standard - NR 29 (Safety and health at port work) and the Individual Emergency Plans (PEI) were not presented. In addition to the above, the port operations were altered by the inclusion of the CMPC log terminal, and the Organized Port Risk Analysis was outdated.

Table 15 - Risk Management Topic Results

Risk management	
Fire Brigade Prevention and Fire Protection Update - Military Brigade, in force	0
Update of the Mutual Assistance Plan (PAM) and Emergency Control (PCE), according to Regulatory Standard - NR 29 (Safety and	0

health at port work)	
Update of Individual Emergency Plans (PEI) of all terminals and port facilities in Organized Port, in accordance with CONAMA Resolution No. 398/2008	0
Organized Port Risk Analysis Update according to Environmental Risk Analysis Manual No. 01/2001, available on the FEPAM website	0
TOTAL	0 (N.A.)

Source: authors

According to Poffo (2007), the intense handling of chemical and oily substances by ships, barges, pipelines and terminals in port regions characterize it as an area of risk activity so that the implementation of risk management programs at terminals and ports can help to reduce accidents and environmental incidents, minimizing the occurrence of negative environmental impacts. Thus, such non-compliance with OL conditions warns of the possibility of aggravating potential negative impacts to be

generated by the enterprise, especially considering that the port is in a residential and university area.

The environmental audit did not comply with the periodicity required by the license, as it was performed only in April 2018 since the LO's expedition in December 2015, so that the service is unsatisfactory (Table 16).

Table 16 - Results of environmental audit topic

Environmental Audit	
Presentation of Environmental Audit Report, according to CONAMA Resolution No. 306/2002, considering that expressed in Chapter XII of State Law No. 11.520 / 2000, with biennial frequency.	1
TOTAL	1 (U.A)

Source: authors

According to the panorama presented by ANTAQ in 2004 about the situation of ports in Brazil, the lowest compliance rates were related to operating licenses, individual emergency plans and environmental audits, with only 23% of organized ports having environmental audit was carried out, while the others were out of date. Kitzmann and Asmus (2006) indicate the small number of auditors qualified to perform such audits or the non-compliance of the port to update it within the requested period.

According to Santos (2002), environmental audits can be defined as:

“An instrument used by companies to assist them in controlling compliance with policies, practices, procedures and/or requirements set forth to prevent environmental degradation. It has aroused growing interest in the business community and governments and is considered a basic tool for greater control and safety of environmental performance, as well as to prevent accidents.”

Environmental audits serve not only to verify whether companies are complying with environmental legislation, but also to verify whether organizations are meeting their objectives (SCHENINI; SANTOS; OLIVEIRA, 2007). Neto (2001) clarifies that environmental auditing is a management tool that, through an environmental performance check, can help determine which improvements should be made. Thus, this tool has an important application for environmental management, as well as for the entire management of the company (SCHENINI; SANTOS; OLIVEIRA, 2007).

As for license advertising, the OL grant (Table 17) was published in a local newspaper on December 29, 2015, and in the Official Gazette on December 11, 2015, Copies of the publications were filed with FEPAM on January 12, 2016, and the LO disclosure board is affixed to the outside of a venture warehouse, so that the topic fully meets the license.

Table 17 - Results of License Advertising Topic

License Advertising	
Disclosure of the License grant through publications (in periodicals with regional/state circulation) and referral to FEPAM as attached to this	3

Administrative Proceeding;	
Installation of a plate for the disclosure of this Environmental License, according to FEPAM Ordinance No. 17/2009 - DPRES and model available on the FEPAM website.	3
TOTAL	6 (T.A.)

Source: authors

Publicity is one of the requirements of environmental licensing, resulting from the constitutional right to information, allowing the analysis of the forms of public participation in this procedure, ensuring access to company information (JOHN; ODORISSI, 2012). It has great importance, because through it that population can check if the enterprises are in compliance with the legislation, fulfilling it in order to reduce the impacts caused to the environment and the neighborhood, besides respecting the interests of the population (SÁNCHEZ, 2008).

As the environment is a common good of the people, and it is the duty of the Public Administration to manage it, it is evident that advertising must exist in all acts and procedures related to the environment, to ensure its preservation for future generations (JOHN; ODORISSI, 2012).

The final diagnosis of compliance with OL conditions and restrictions resulted in unsatisfactory service, since the total sum score reached only 138 points, ranging from 109 to 218 points, regarding unsatisfactory service. This score represents that,

despite the fulfillment of several conditions and restrictions of OL, there are still several points to be worked on in the enterprise. We consider it extremely important to take steps to comply with them, not only from the environmental point of view, with a view to mitigating negative impacts and expanding positive impacts, such as risk management, avoiding accidents, and also from the legal point of view, so that Port is in compliance with FEPAM, the body responsible for its licensing, since non-compliance may result in fines and even in the closure or non-operation of projects.

4 CONCLUSIONS

Through the study, it was possible to verify the need of adequacy of the enterprise regarding the conditions and restrictions provided for in the OL, since the obtained result indicated an unsatisfactory service. This result occurred through the occurrence of seven items among the seventeen presents in the OL, which presented such unsatisfactory service result. Failure to comply with the conditions, in addition to being able to cause sanctions in the criminal, civil and administrative spheres, represents a risk to the environment, since the conditions have the objective of avoiding and mitigating environmental impacts.

The study also found critical points in the monitoring of groundwater, storage and supply of flammable fuel liquids, risk management and liquid effluents, where the results indicated non-compliance with conditions and restrictions, so that such sectors require emergency adaptation by so that the venture effectively meets the requirements of OL.

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