

Pollution Control Project – PCP



Compliance with the Technical Note CGPEG-DILIC-IBAMA

11/01

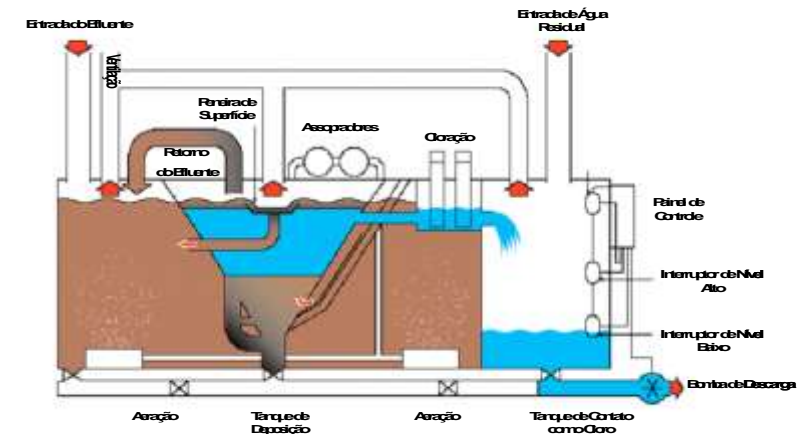


1. Generating the minimum possible amount of solid waste, liquid effluents and atmospheric emissions
2. Recycling the maximum possible amount of disembarked waste;
3. Proceeding to the appropriate final disposal, that is, in accordance with the current legal standards, with all disembarked and non-recycled waste;
4. Seek procedures that minimize the pollution generated by atmospheric emissions and by the solid waste and liquid effluents that may be disposed at sea;
5. Continually improving the aforementioned procedures.



Sanitary effluent

- From offshore units, they can be discarded from a distance of 3 nautical miles from the coast, only after passing through a treatment system.
- Volume Measurement
- Quarterly analysis:
- Input Data: DBO and DQO
- Output Data: DBO; DQO; TOG; total coliforms; pH; free chlorine; organochlorine compounds (include chlorobenzenes, dichloroethene, trichloroethene, chloroform, carbon tetrachloride, PCBs).



Atmospheric Emissions

Main sources:

- Boilers, heaters and burners
- Engines and turbines
- Amine desulfurization (Sweetening)
- Glycol dehydrator
- Flaring (Torch)
- *Venting*
- Storage Tanks
- Fugitive Emissions – from connectors, pumps, valves, flanges and other equipment



Atmospheric Emissions



Carry out mandatory semiannual inventory of atmospheric emissions, based on the different types of consumption and the generation of different types of gases, obtaining the results through the application of recognized mathematical models. Our Atmospheric Emissions data is released in EMIS

Solid waste

They are materials resulting from industrial, domestic, hospital, commercial, agricultural, service and sweeping activities, which cannot be classified as a product, that is, they can no longer be used for the purpose for which they were originally produced. (NBR 10,004/2004)

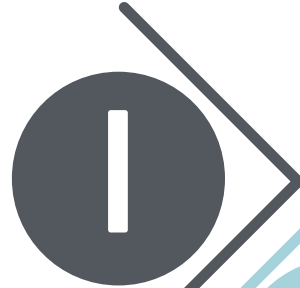
Solid Waste is classified into:

- ✓ Class I - Hazardous
- ✓ Class IIA - Non-Inert
- ✓ Class IIB - Inerts



HAZARDOUS WASTE - CLASS I

Those that present characteristics of flammability, corrosivity, reactivity, toxicity and pathogenicity and that may present risks to public health, causing or contributing to an increase in mortality or incidence of diseases and that present risks to the environment, when handled or disposed of in an inappropriate manner.



NON-HAZARDOUS WASTE – CLASS II "These are those that do not fit into the Class I waste classification. They may have one of the following properties: combustibility, biodegradability or water solubility.



CLASS IIA - NON-INERT:

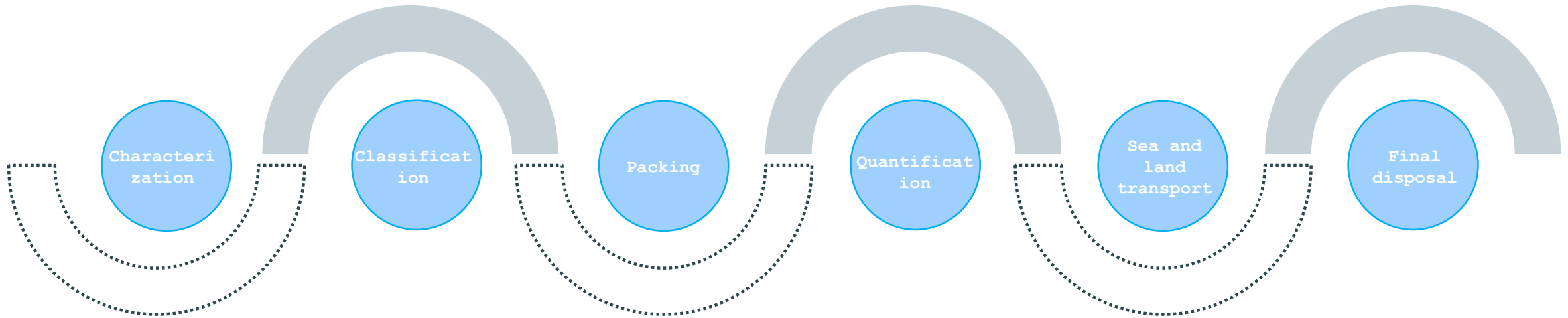
Those subject to changes during their degradation, which may generate some potential impact on health or the environment.



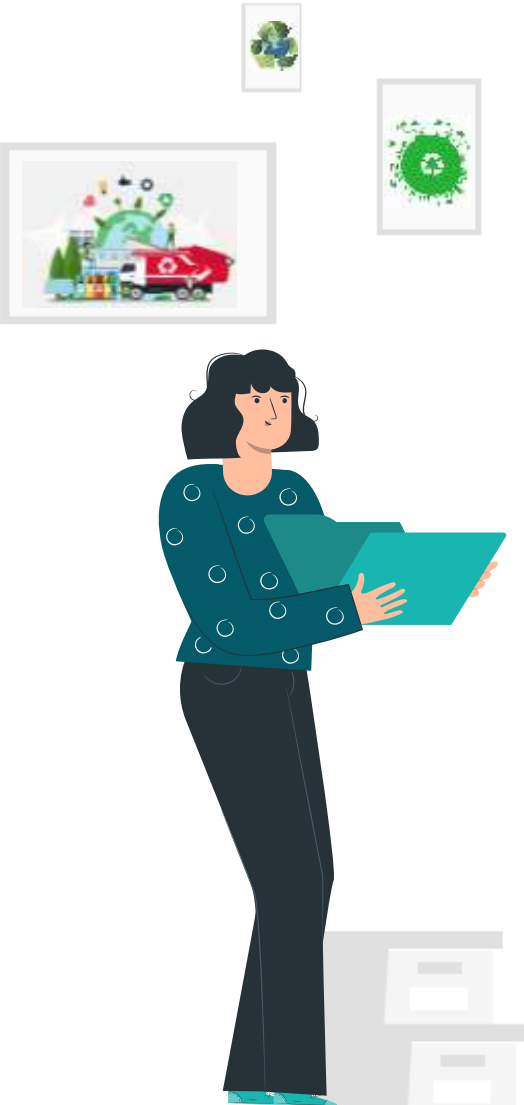
CLASS IIB - INERTS:

Those that do not undergo any change in their composition over time.

Waste management:



Waste Management



SELECTIVE COLLECTION

POLLUTION CONTROL PROJECT – PCP

Operating license no. 1535/2019



Waste segregation is the duty of everyone on board! Do your part!

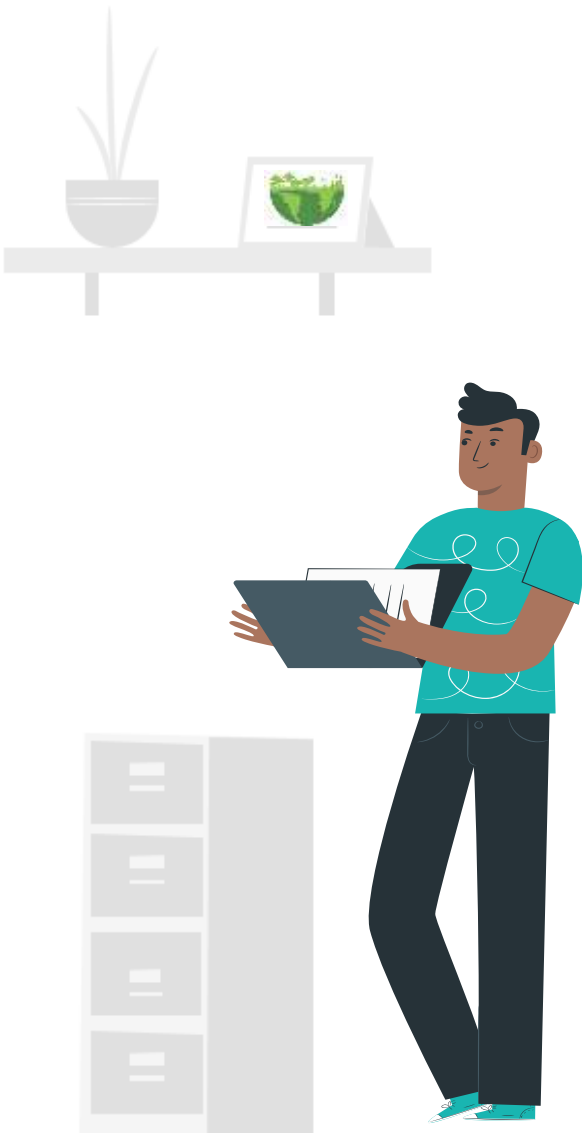
We must correctly dispose of our waste according to the following color pattern

BLUE	PAPEL / PAPER
RED	PLÁSTICO / PLASTIC
GREEN	VIDRO / GLASS
YELLOW	METAL
BLACK	MADEIRA / WOOD
ORANGE	PERIGOSO / HAZARDOUS
WHITE	SUBSTÂNCIA INFECTANTE / INFECTIOUS SUBSTANCE
BROWN	ORGÂNICO / ORGANIC
GREY	NÃO RECICLÁVEL / NOT RECYCLABLE

Standard according to CONAMA Resolution no. 275/2001

PERENCO

Waste collector identification standard
HSE-BRA-SUP-024
Date: September 10th, 2020
Revision: 00



SELECTIVE COLLECTION

POLLUTION CONTROL PROJECT – PCP

Operating license no. 1535/2019



Need help to separate the waste correctly?
PERENCO helps you!



Can dispose



CANNOT dispose

PERENCO



Plain paper;
cardboard;
tetrapack boxes*;
newspapers;
magazines;
notebooks;
books; envelopes

PET and acetate
packaging; caps;
plasticized bags;
Obs.: At Pargo Pole, you
can discard packages with
leftover food in the plastic
collector

Bottles;
bottles; canning
jars and jars;
cups and kitchen
utensils

Cans; aluminum
paper; scrap
metal; wires;
plates; tubes;
parts; scraps

Pallets; crates;
packaging and
wood scraps

Contaminated with oil or
chemicals; paint cans;
aerosols*;
Fluorescent lamps*;
Batteries*; home
appliances*

Food waste; fruit
peels; coffee
grounds; other
organic waste.

Dirty napkin toilet
paper; non-
separable
mixtures; bubble
gum



Toilet paper;
grease
contaminated
napkin; stickers
and adhesive
tapes

Stickers; metallic
packaging; foam;
contaminated

Mirrors; lamps;
glasses with
chemicals or oil

Paint cans; steel
sponges; paper
clips; aerosols;
insecticides;
cables with oil

Nails; screws;
wood
contaminated
with oil or
chemicals

Recyclable waste;
mixture of
hazardous in the
same collector

Bone remains*;
Cutlery; dirty
napkin; coffee
paper; bubble gum

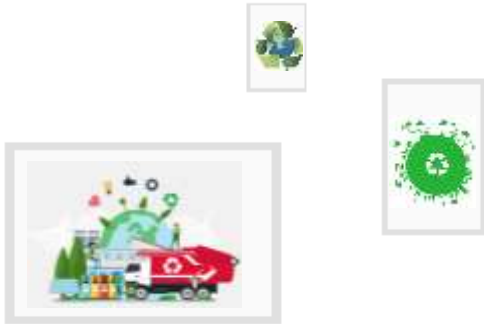
Recyclable waste;
contaminated with
oil or chemicals

**have a specific collector*

Waste segregation is the duty of everyone on board! Do your part!

Waste collector identification standard
HSE-BRA-SUP-024
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Environmental Projects Waste Management



Resíduos Perigosos Hazardous Waste

PROJETO DE
CONTROLE DA
POLUIÇÃO - PCP

O que podemos descartar / What we can dispose of :

- ✓ Resíduos oleosos ou contaminados com óleo / *Oily waste or contaminated with oil.*
- ✓ Resíduos de produtos químicos e suas embalagens / *Chemical products waste and its packages.*
- ✓ Para resíduos líquidos perigosos usar preferencialmente tambor metálico laranja com cinta / *For hazardous liquid waste, preferably use orange metallic drum.*



O que NÃO podemos descartar / What we can NOT dispose of :

- ✗ Diferentes tipo de resíduos perigosos no mesmo coletor (atenção incompatibilidade química) / *Do not dispose of different types of hazardous waste in the same collector (attention to chemical incompatibility).*
Existem coletores perigosos específicos para lâmpadas fluorescentes, aerossóis, cartuchos de tinta e eletrônicos / *There are specific hazardous collectors for fluorescent lamps, aerosols, ink cartridges and electronic scrap.*
- ✗ Não descartar nenhum tipo de resíduo reciclável não contaminado como papel, papelão ou plásticos limpos / *Do not dispose of any type of non-contaminated recyclable waste such as paper, cardboard or plastics.*



Environmental Projects

Waste Management



Metal e Sucata Metálica *Metal Scrap*

PROJETO DE
CONTROLE DA
POLUIÇÃO - PCP

O que podemos descartar / What we can dispose of :

- ✓ Latas de alumínio ou flandres. Ex: refrigerantes ou creme de leite. / *Discard here only Aluminum can or tin (soda).*
- ✓ Sucata metálica não contaminadas (chapas metálicas, pedaços de metal e etc.) / *Uncontaminated metal scrap such as metal sheets, pieces and structures.*

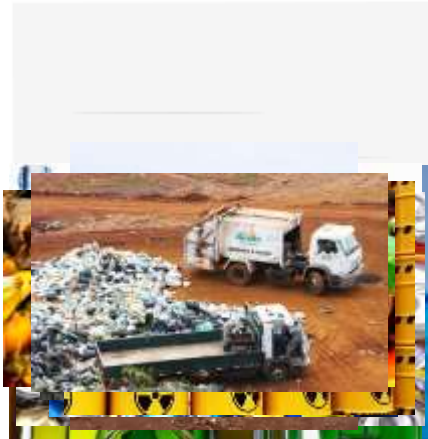


O que **NÃO** podemos descartar / What we can **NOT** dispose of :

- ✗ Não descartar aqui resíduos metálicos contaminados com óleo / *Do not dispose of any type of oily metal.*
- ✗ Não descartar aqui qualquer embalagem contaminada com produtos químicos como lata de tinta, lata de solvente, aerossol, pilhas e baterias, inseticidas e de demais produtos perigosos. / *Do not dispose of any metal packaging contaminated with chemicals here, such as paint, solvent can and others hazardous wastes.*
- ✗ Atenção aos pós metálicos (combustível) e objetos cortantes (risco ao trabalhador e danos ao coletor) / *Attention to metallic dust (combustible) and sharp objects.*
- ✗ Não descartar aqui sucata eletrônica / *Do not dispose of any electronic scrap here.*

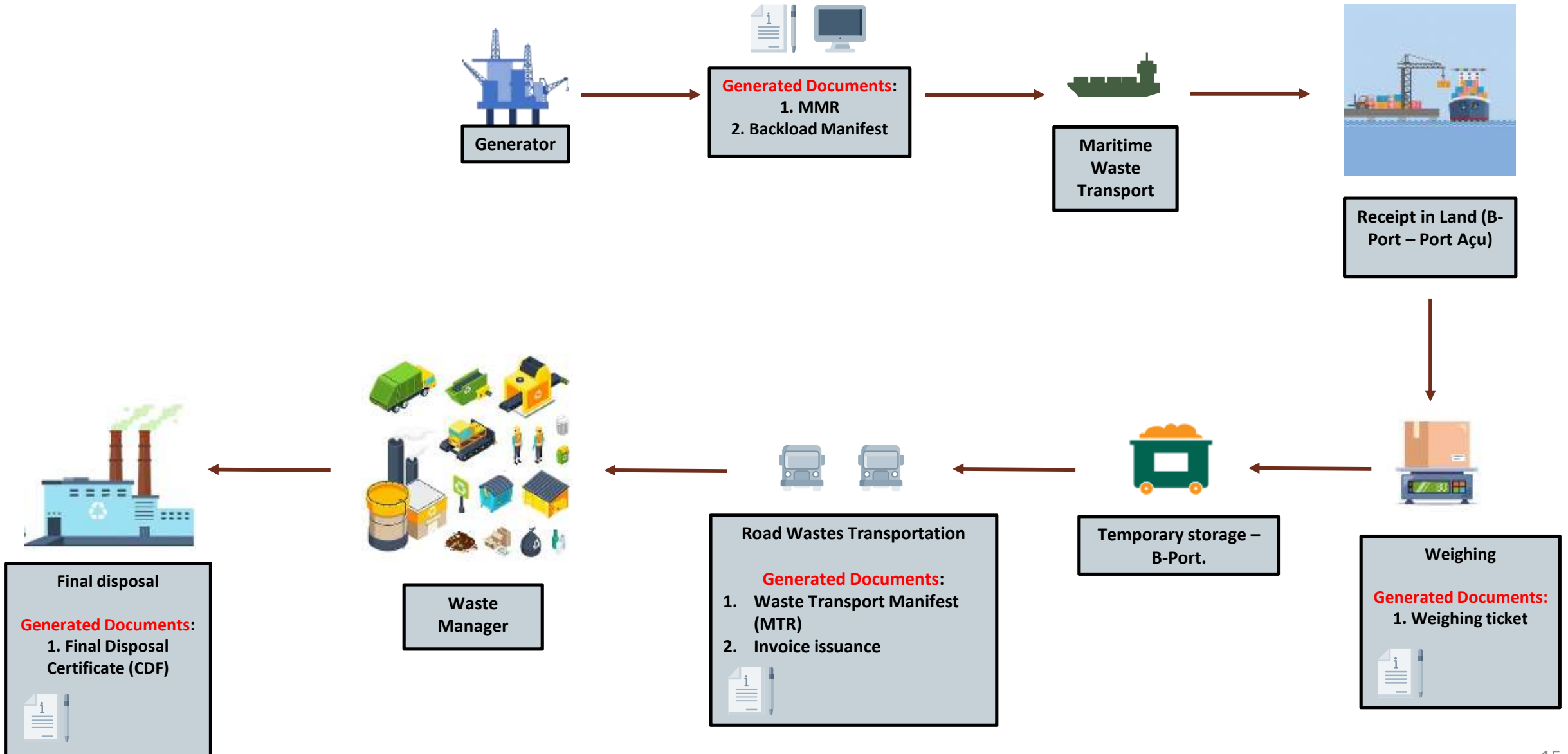


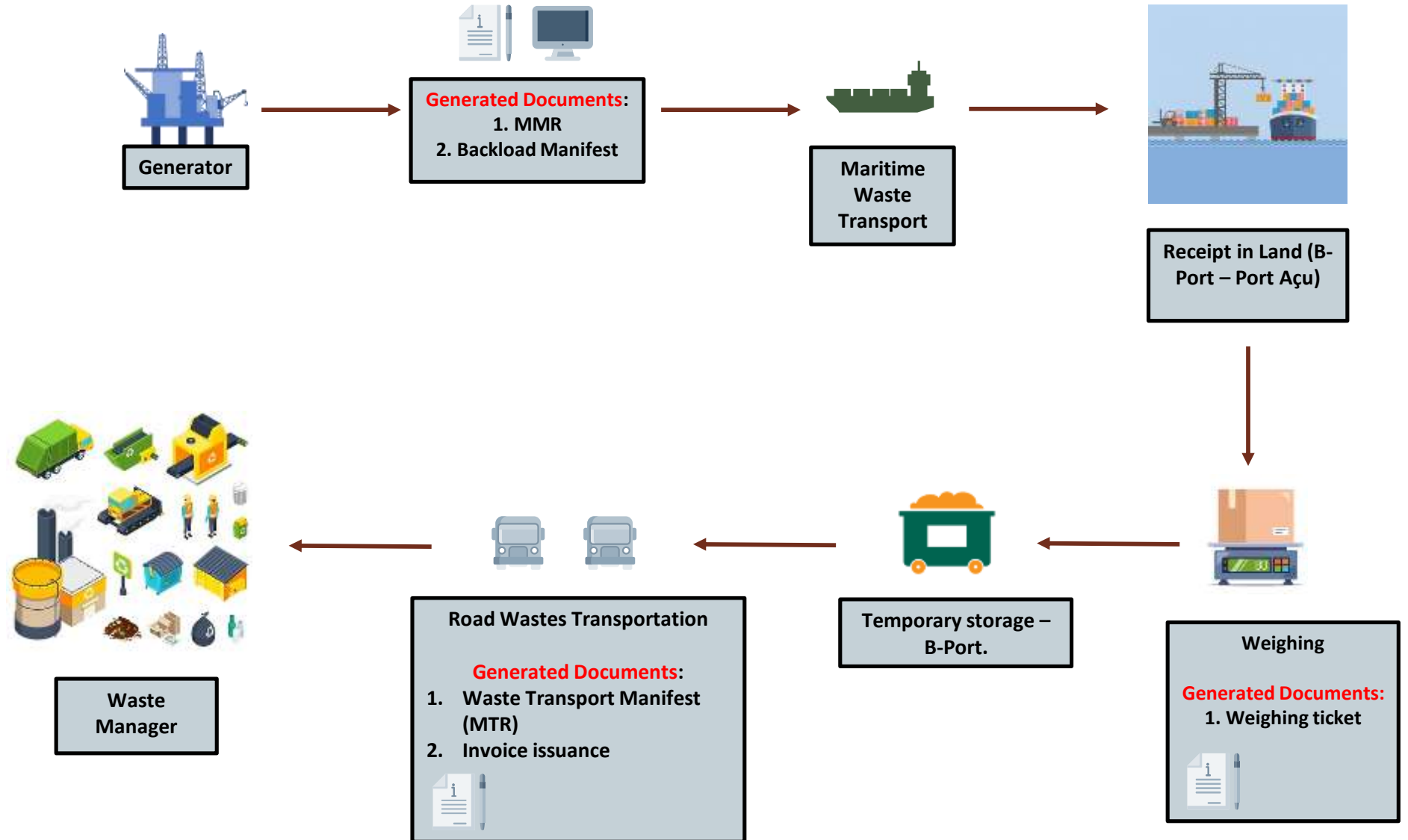
CONAMA Resolution 275/2001: It defines, in accordance with international standards, the color code for waste separation

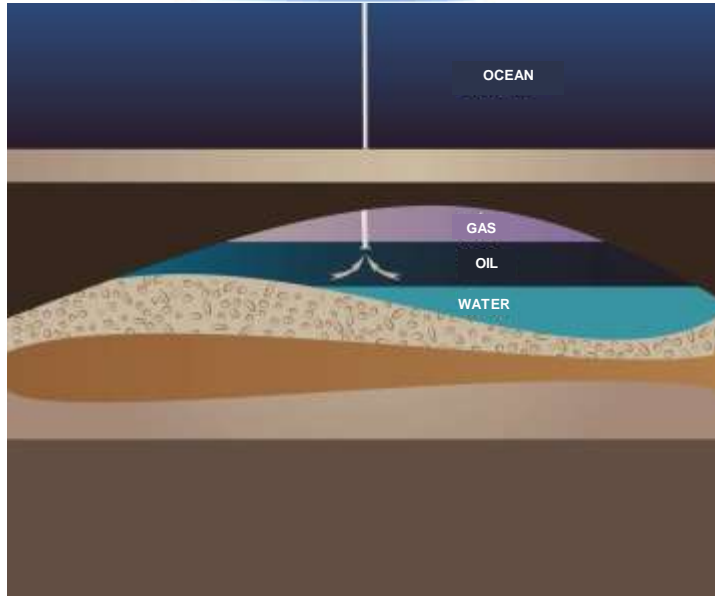


BLUE	Paper, cardboard
RED	Plastic
GREEN	Glass
YELLOW	Metal
BLACK	Wood
ORANGE	Hazardous waste
WHITE	Outpatient and health care waste
PURPLE	Radioactive waste
BROWN	Organic waste
GREY	General non-recyclable or mixed waste









Oil is a **natural fuel**, originated from decomposition processes of thousands of years. As it originates from a long process, it is also called fossil fuel.

It is found in deposits in the deepest layers of oceans, seas and lakes, and can also be found on land.

It is a non-renewable natural energy source, as the exploitation of this resource without control can eliminate existing reserves. It is mainly used as a raw material in the production of gasoline and diesel oil.

There is the production of gas and produced water in oil production activities.

Produced water is a mixture of different organic and inorganic compounds present in the rock as well as oil and gas, it is the largest effluent generated in oil exploration and production.

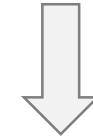
The produced water has a similar composition to sea water, but with different concentrations, in addition to **oil and grease fractions**. In addition to oils and greases, some substances present in this water can be toxic to the environment (inorganic salts, metals, organic compounds, radioisotopes, dissolved hydrocarbons and chemicals added to injection wells).

The disposal of produced water must meet the limits established in CONAMA Resolution No. 393/07.

- ✓ The Pargo Hub unit that discards produced water is only PPG-1
- ✓ Disposal of produced water must comply with the simple monthly arithmetic average concentration of 29 mg/l, with a maximum daily value of 42 mg/l.



IMPORTANTE

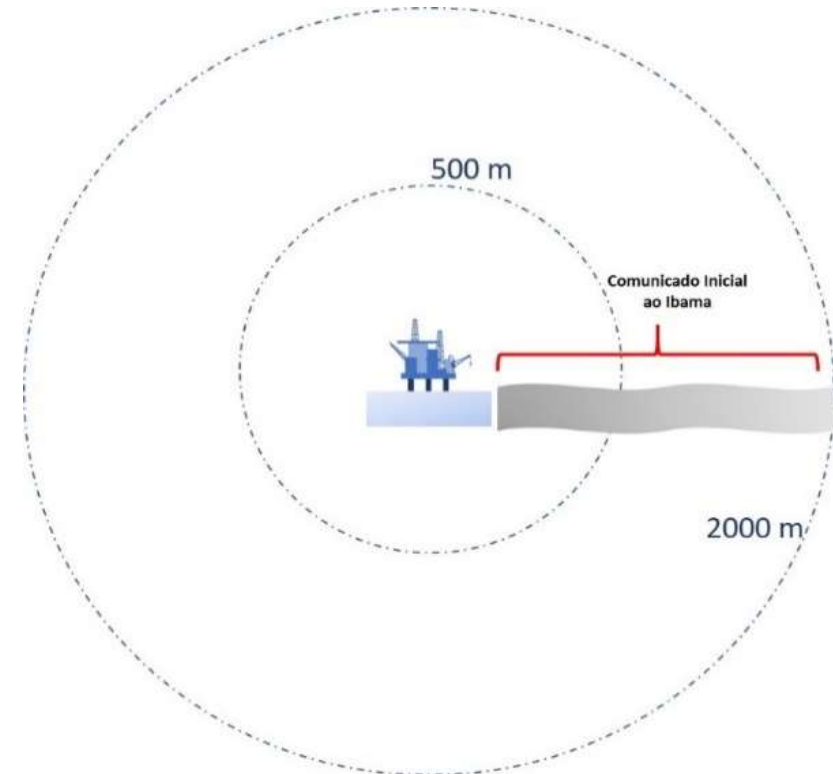


Whenever the
Maximum Daily TOG Value >42 mg/l,
is detected, there must be immediate communication to
IBAMA

Whenever the **Monthly Average TOG > 29mg/l,** there
must be immediate communication to IBAMA. **A report
identifying the non-compliance must be presented
within 30 days.**



- ✓ The mixing zone is limited to a radius of 500 m from the point of disposal.
- ✓ In 2021, Ibama issued a Technical Opinion No. 193/21, COPROD/CGMAC/DILIC, which recommends the immediate communication of any occurrence of iridescence in its mixing zone, as well as within a 2 km radius of the unit





- ✓ The TOG concentration must be determined by the gravimetric method.
- ✓ The analyzes of the gravimetric method are carried out in the laboratory on land.
- ✓ Samples are collected daily on board by the chemist technician and disembarkation takes place once a week for analysis in the laboratory on land.
- ✓ The daily sample is a composite sample carried out through 4 collections at standardized times.
- ✓ The produced water collection schedules are:

**Compliance with
the
Resolution
CONAMA
393/07**

8 am
2 pm
8 pm
2 am



Biannual Monitoring

I - Inorganic compounds: arsenic, barium, cadmium, chromium, copper, iron, mercury, manganese, nickel, lead, vanadium, zinc;

II Radioisotopes: radium-226 and radium-228;

III - organic compounds: polycyclic aromatic hydrocarbons - HPA, benzene, toluene, ethylbenzene and xylenes - BTEX, phenols and evaluation of total petroleum hydrocarbons - HTP through chromatographic profile;

IV - Chronic toxicity of produced water determined through a standardized ecotoxicological method with marine organisms; and

V - Complementary parameters: total organic carbon - TOC, pH, salinity, temperature and total ammoniacal nitrogen

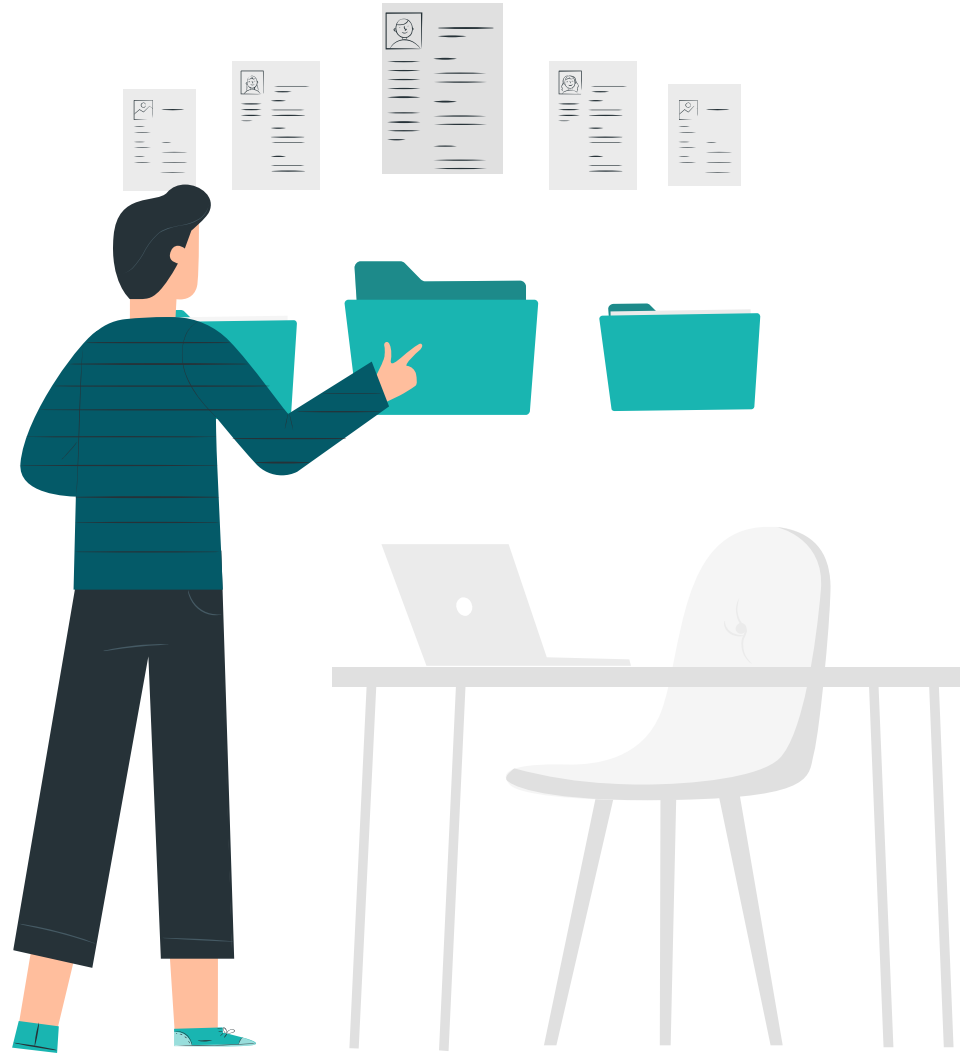
Annually, until March 31 of each year, a report regarding the previous calendar year must be presented referring to: Daily Reviews and Biannual Reviews.



Eliminating Paradigms and Prejudices Industries and Consumers



Challenges in the Correct Separation



■ Team resistance

■ Training

■ Awareness

Challenges in the Correct Separation



Challenges in the Correct Separation



Challenges in the Correct Separation



Challenges in the Correct Separation



Challenges in the Correct Separation





P E R E N C O



Thank you