

INDUSTRIAL OIL TANK CLEANING

SOLPOWER INDIA PVT. LTD. has developed the **NON-MAN ENTRY- ABOVE GROUND TANK CLEANING** technology for various petroleum product storage tanks such as **Furnace Oil (FO), Heavy Fuel Oil (HFO), Light Diesel Oil (LDO) and Low Sulphur Heavy Stock Oil (LSHS)**





PREREQUISITES



WHAT IS SLUDGE?

- ◇ Most oils have a propensity to separate into heavier and lighter hydrocarbons before refining.
- ◇ Such problems are often **exacerbated** by cool temperatures, venting of volatile components from the oil and by the static condition of the fluid during storage.
- ◇ The heavy ends that are separated from the oil are deposited at the bottom of the storage tanks which are known as tank bottoms or **Sludge**.





- 3% to 5% of all oil produced is ultimately unusable.
- Sludge is defined by the EPA as a Pollutant.
- It corrodes the tank surfaces and reduces the fuel quality.
- Inconsistency of the fuel increases due to Sludge formation.
- Inhalation / Exposure to the environment can cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions or physically deformed organisms.





THE TANK CLEANING MACHINE (TCM)

The **Important** Elements of the Machine are listed below:

- ◇ 4 Stage Filtration includes **Magnetic Strainer, Cyclone Filter** and **Micron Filters**
- ◇ **ENZYME** feed tank
- ◇ **Pump**
- ◇ **Steam Heater**
- ◇ **Dust Collector**





DETAILS OF TCM

- ❖ The capacity of our machine is 300 LPM and the cleaning can progress without human labour entering the tank.
- ❖ In this process, the machine suction line is connected to the tank bottom drain valve and the discharge line is connected back to the tank. ENZYMES are injected in controlled dosage at the suction point to ensure thorough mixing of ENZYMES for best results.
- ❖ Our method can deliver upto 90% bio-remediation of sludge and extraction of fuel.



DETAILS OF TCM

- ❖ Fuel is passed through 4 stage filtration which which removes all types of impurities
- ❖ Enzyme is added according to proper ratio through the enzyme feed tank and passed through the heavy-duty pump where oil is mixed with Sludge properly
- ❖ In between the process Steam is provided by steam heater continuously(if available)
- ❖ Dusts are collected in dust collecting unit.



METHODOLOGY



STEP 1 : INSPECT THE STORAGE TANK





STEP 2 : OBSERVE THE SLUDGE FORMATION IN THE TANK





STEP 3 : INITIATE THE TANK CLEANING MACHINE



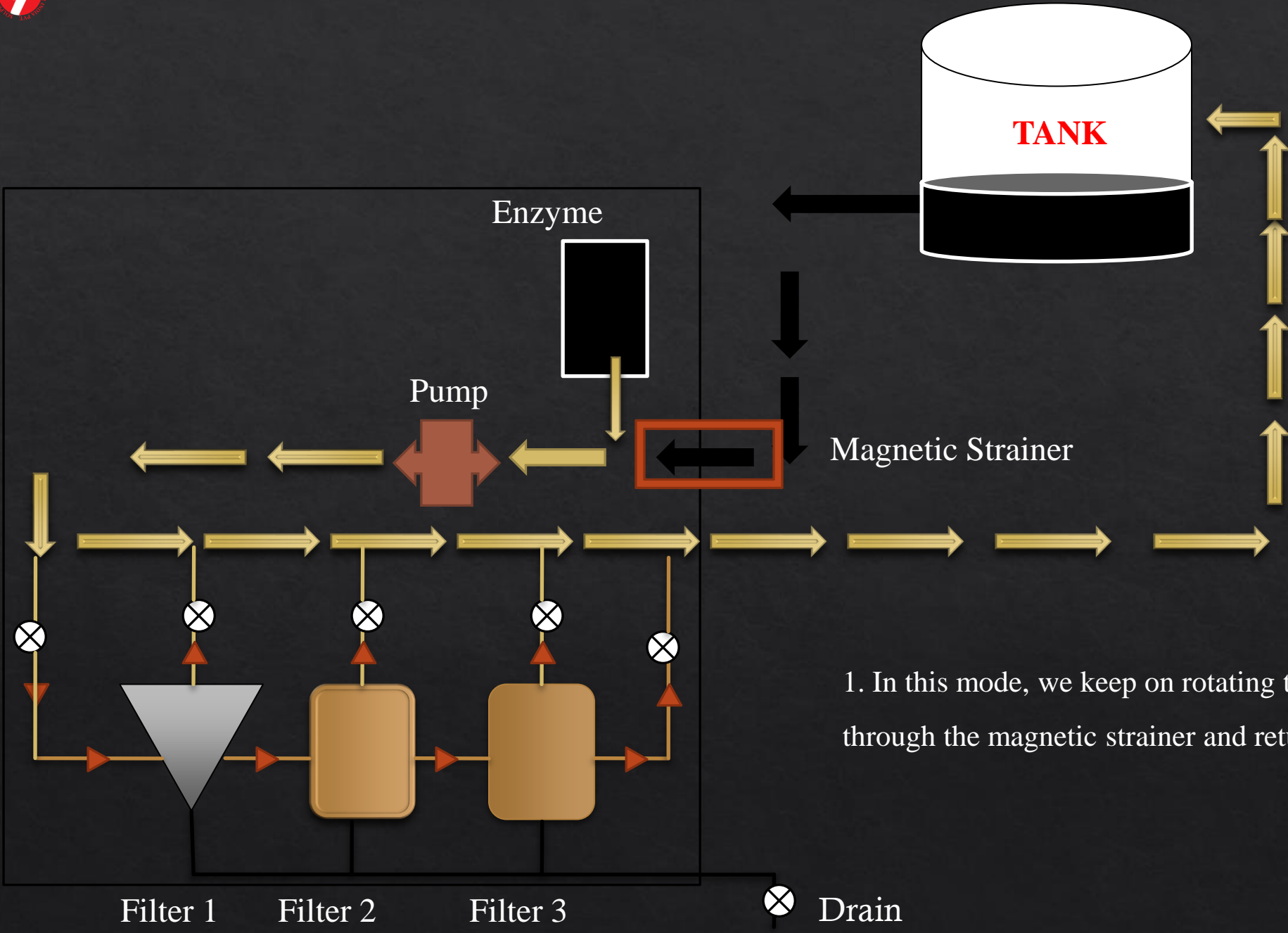


PROCESS OF CLEANING

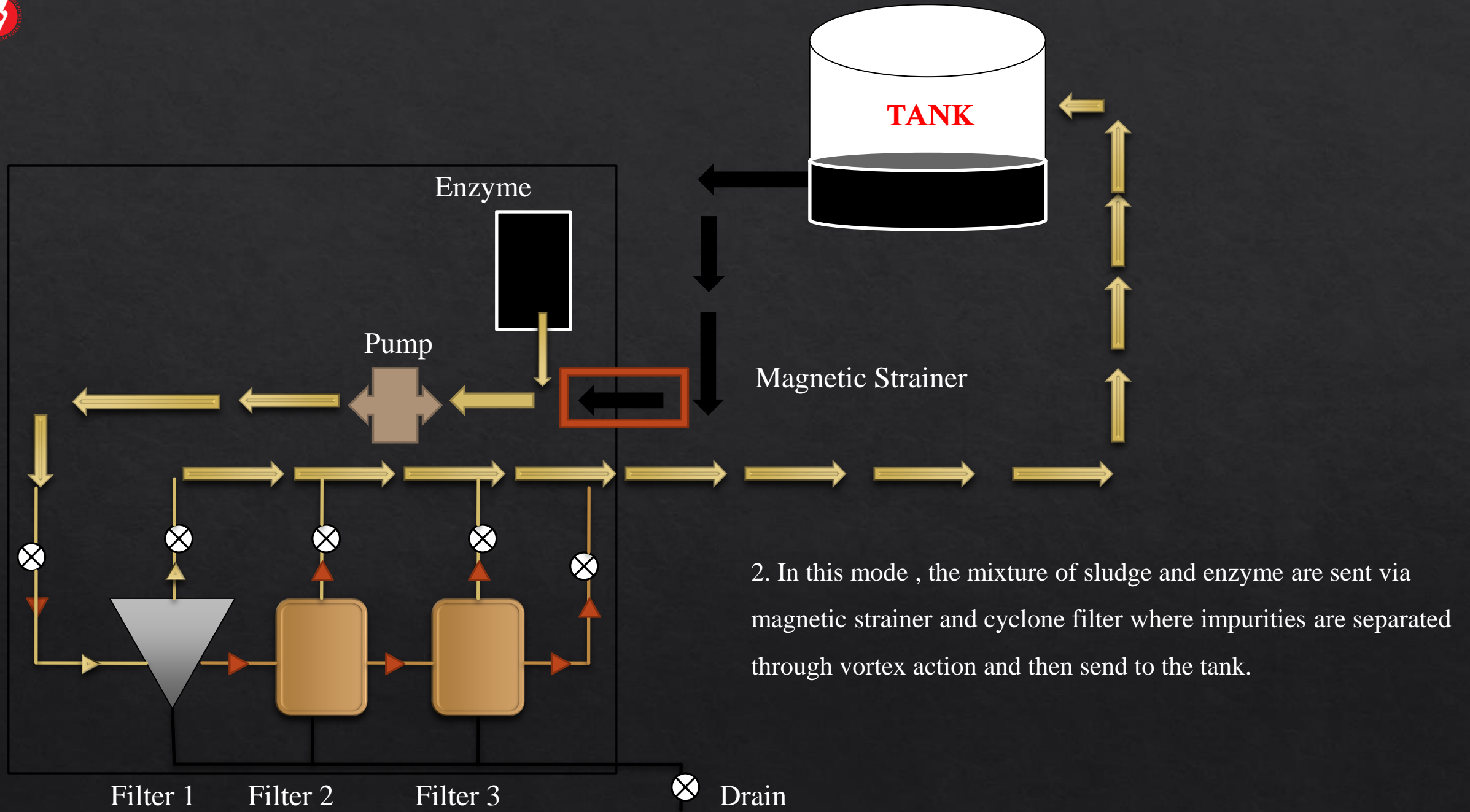




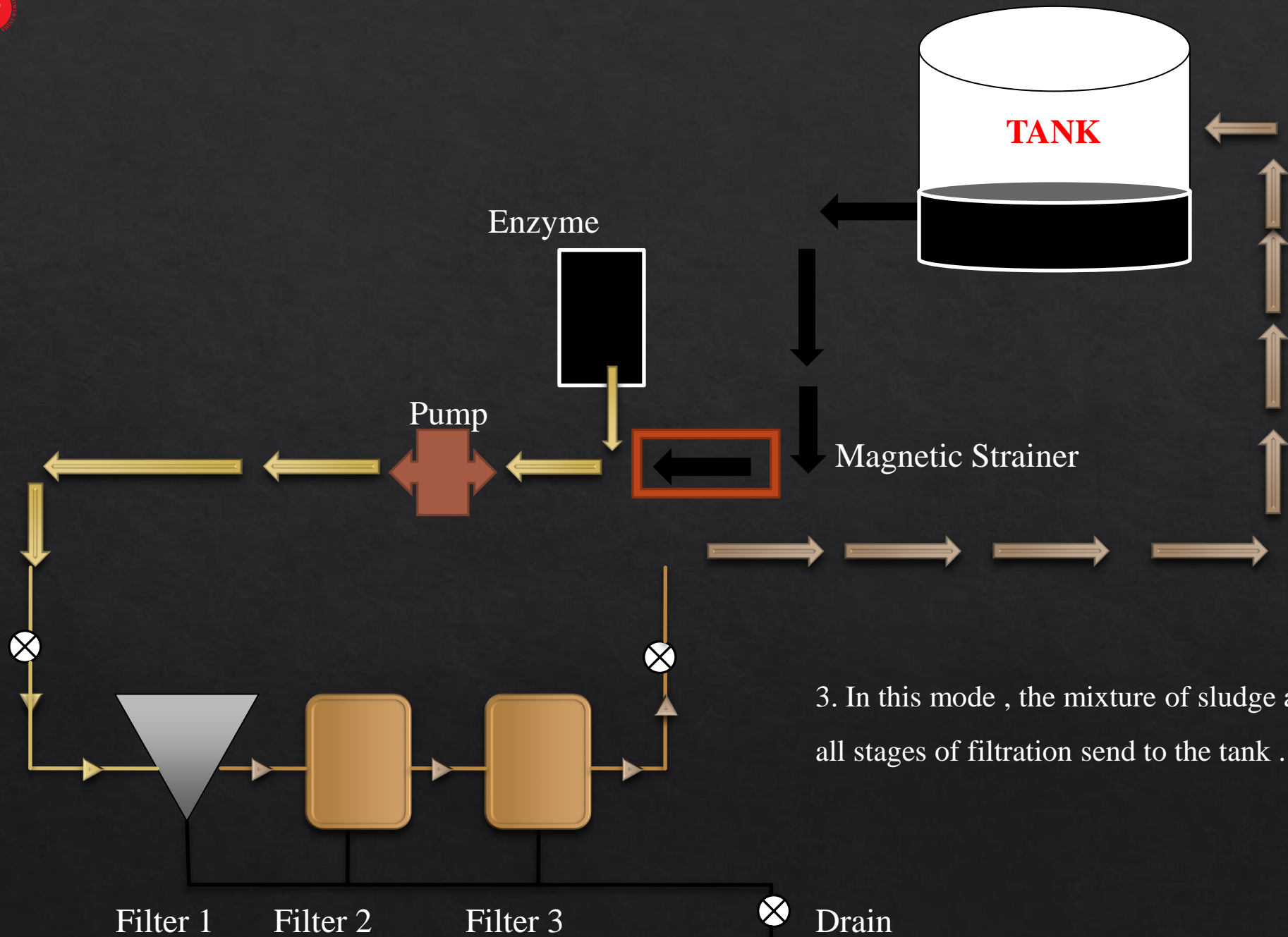
WORKING



1. In this mode, we keep on rotating the sludge mixed with enzymes through the magnetic strainer and return it to the tank.



2. In this mode , the mixture of sludge and enzyme are sent via magnetic strainer and cyclone filter where impurities are separated through vortex action and then send to the tank.



3. In this mode , the mixture of sludge and enzyme are passed through all stages of filtration send to the tank .



ADVANTAGES

1. SAFETY

- ✓ Reduce / Eliminate personnel in tanks
- ✓ Mitigate all worker hazards associated with tank cleaning explosives / toxic environments
- ✓ Eliminate physiological stress

2. PRODUCTIVITY

- ✓ Time : On the right projects time savings over the course of the project can be very significant
- ✓ Adaptability : Integrated system allows for varied approaches to different tank configurations

3. ECONOMICAL

- ✓ Large tank projects (mobilization crews vs. equipment)
- ✓ Consumables
- ✓ Time Saving



CONCLUSION

- ❖ Enzymes are **highly effective & efficient**
- ❖ Enzymes comprises of **bio tech fuel catalyst** (eco-friendly)
- ❖ Can be used for various fuel applications
- ❖ Tank cleaning equipments are **cost effective**



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