

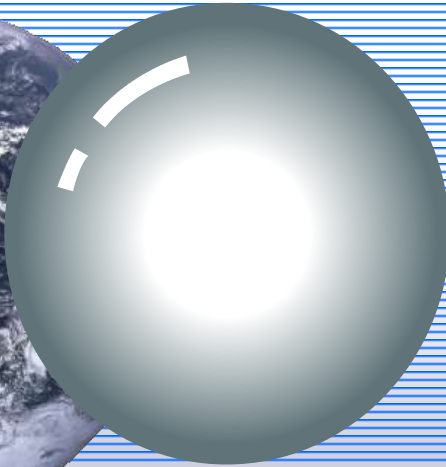
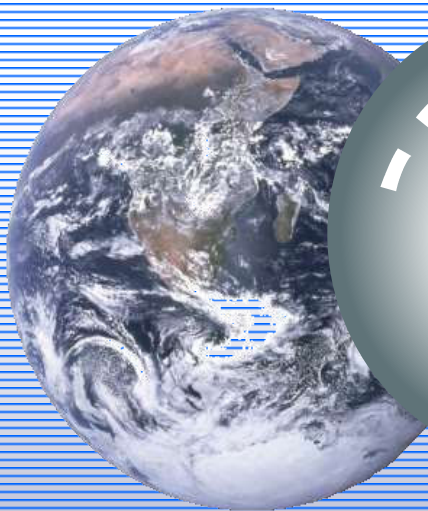
# EBD TECHNOLOGY FOR SEWAGE TREATMENT IN WASTEWATER TREATMENT PLANTS, SEWAGE LAGOONS, SEPTIC TANKS, SEWAGE DRAINS

## Environmental Balance Device Technology (EBD)



# FREYTECH INC.

Remediation: Air, Water and Soil



Ozone Layer Depletion

CO2

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Remediation: Air, Water and Soil

Global Warming

Acid Rain

Environmental Balance  
Natural Balance  
Human Balance

Desertification

Dioxin

Abnormal Weather

Marine Pollution

EBD systems are for use in municipal wastewater treatment applications to accelerate sewage decomposition, reduce effluent nutrient, chemical and pathogen concentrations, remediate Greenhouse Gas (GHG) and ammonia emissions while also providing effective odor control.

The EBD systems do not require electric power, chemicals, dosing equipment or any type of consumables and their service life exceeds 15 years. By placing them around the sewage collection areas, they cause native, indigenous microorganisms already present in the wastewater, to replicate exponentially consuming and biodegrading the sewage while providing the following additional benefits on an ongoing, flow through and long-term basis.

1. Accelerates the sludge decomposition process optimizing efficiency while reducing the need to upgrade sewage treatment infrastructure which is at or over peak capacity.
2. Provides continuous odor control and fully remediates and eliminates over 90% of all Greenhouse Gas and Ammonia Emissions on a 24/7 basis.
3. Affords 30% savings in electricity costs by enabling the aerated WWTP operator to reduce aeration / blower time while still ensuring effluent water quality.
4. Reduces pathogen, chemical and heavy metal concentrations in effluent water as well as in sludge.
5. Reduces sludge volume decreasing septic truck service intervals and sludge disposal costs.
6. Reduces nutrient concentrations in wastewater runoff. This enables the operator to irrigate more water without having to rent additional land. Also increases dissolved oxygen concentrations providing for cleaner waterways, reductions in algae growth and improved ecosystem environmental health.
7. Installation is easy and can usually be completed within one workday. Retrofitting in existing facilities and tanks is simple and, in most cases, there is no need to break concrete.
8. Long service life exceeding 15 years +.
9. Affordable, reliable system with very low maintenance requirements.
10. System is green, sustainable and contributes significantly towards restoring ecosystem health in rivers, lakes, wetlands, groundwater, and soil.



**EBD SOIL PACK**

Dimensions:  $\Phi$ 90mm x 16 mm

Contains proprietary composition organic minerals.



**EBD MUD PACK**

Dimensiones 11 cm x 11 cm

Contains proprietary composition organic minerals.

All matter is made up of atoms - tiny building blocks that include protons, neutrons, and electrons. Many natural and industrial processes depend on how electrons are transferred or shared, especially when it comes to pollution and environmental stress.

When air, water, or soil is polluted by chemicals, oil, heavy metals, GHG or other pollutants, it becomes toxic to the beneficial microbes that help ecosystems stay balanced and self-cleaning. A major culprit behind this damage is something called "oxidative stress", which is often caused by excessive levels of unstable Reactive Oxygen Species (ROS). The unstable ROS molecules behave like microscopic wrecking balls, stealing electrons from other molecules and triggering a chain reaction that harms biological systems.

Much like antioxidants protect our bodies from oxidative stress, the Environmental Balance Device (EBD) system helps neutralize the effects of ROS in the environment, restoring microbial balance and promoting recovery.

EBD works by interacting with Earth's electromagnetic field as well as positively charged particles which are ever present in the ecosystem (air, water and soil). These interactions influence the molecular and ionic behavior of material located within the EBD treatment zone, restoring balance and positively affecting redox reactions and microbial energy exchange. When installed in a polluted environment, EBD systems function to reestablish energy equilibrium, which in turn causes unstable and oxidizing ROS to stabilize thereby converting it back to healthy oxygen at the molecular level in air, water and soil.

Our team perfected the combination and integration of materials built into the EBD systems which reestablish energy equilibrium enabling ROS stabilization as well as resonance enhancement in all substances located within the EBD treatment zone. Enhanced resonance combined with oxygen stabilization triggers the native, indigenous microbes to secrete specialized and powerful degradative enzymes through biosynthesis. EBD induced enzymes enable the molecular degradation, breakdown and removal of total nitrogen, ammonia nitrogen, total phosphorus, heavy metals, E-coli, salmonella, clostridium perfringens and total coliforms. COD and BOD levels are also greatly reduced.

EBD greatly enhances this natural and sustainable process on an on-going 24/7 long term basis. EBD does not use any chemicals, consumables, or electric power.

EBD units are buried in the soil at equidistant intervals on both sides of the riverbanks. In lakes, EBD units are buried in the soil around the outer perimeter of the lake shore. EBD units are also buried along sewage ditches and parallel to sewage pipes draining into the rivers/lakes to establish energy particle equilibrium. Once the energy particle balance is reestablished, unstable ROS naturally reverts back to a healthy and stable form of oxygen enabling native microorganisms to function optimally, which then propagate exponentially and degrade the contaminants and pathogens present in river water, riverbeds, lake water and lakebeds much more effectively.

# Photos of EBD System Installation in Municipal Wastewater Treatment Plant in Malaysia

## Treatment Activities – Environmental Balance Device

*PTG 117 USJ 12, Subang Jaya*

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Globally, 80% of wastewater flows back into the ecosystem without being treated or reused, contributing to a situation where around 1.8 billion people use a source of drinking water contaminated with feces, putting them at risk of contracting cholera, dysentery, typhoid and polio. UNESCO 2017

Conventional wastewater treatment facilities are costly and take time to finance, design, build and put into operation. EBD Systems are exceptionally affordable and in a matter of hours can be installed anywhere in the open field, in existing or new septic or holding tanks/lagoons or in WWT facilities. Within a few months of installation, EBD Systems attain the required NEP- and PEP+ energy particle balance and thereafter effectively treat and remediate wastewater and sludge on a continuous 24/7 basis which is ongoing for 15 years +.

Another important benefit provided by the EBD system is that it causes microbial remediation of Greenhouse Gas and ammonia emissions emanating from wastewater streams. Certified laboratory studies confirm that EBD eliminates over 90 % of Methane, Ammonia, Nitrous Oxide and CO<sub>2</sub> from wastewater on a continuous 24/7 basis. This provides for very effective and permanent odor control without using any chemicals, electric power, consumables or dosing equipment.

### EBD System Implementation

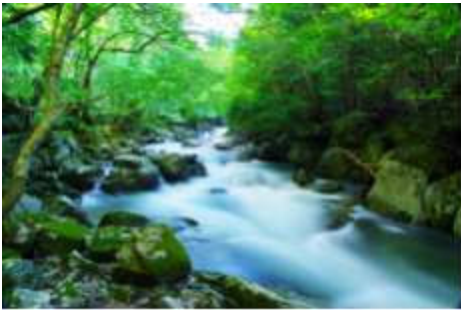


### Free Radicals and ROS Reduction



### Environmental Stability in Nature

# Common Sources of Water Contamination



Clear Stream



Rivers



Drinking Water

## Inflow of Toxic Substances

Inflow of Domestic Wastewater

Direct Discharge of Industrial Wastewater

Natural Disasters

Excessive Use of Agricultural Chemicals

Eutrophication

Livestock Waste

Decrease in Dissolved Oxygen

Industrial Waste

Inflow of Mining Wastewater

Inflow of Pathogens

Water Purification Plants

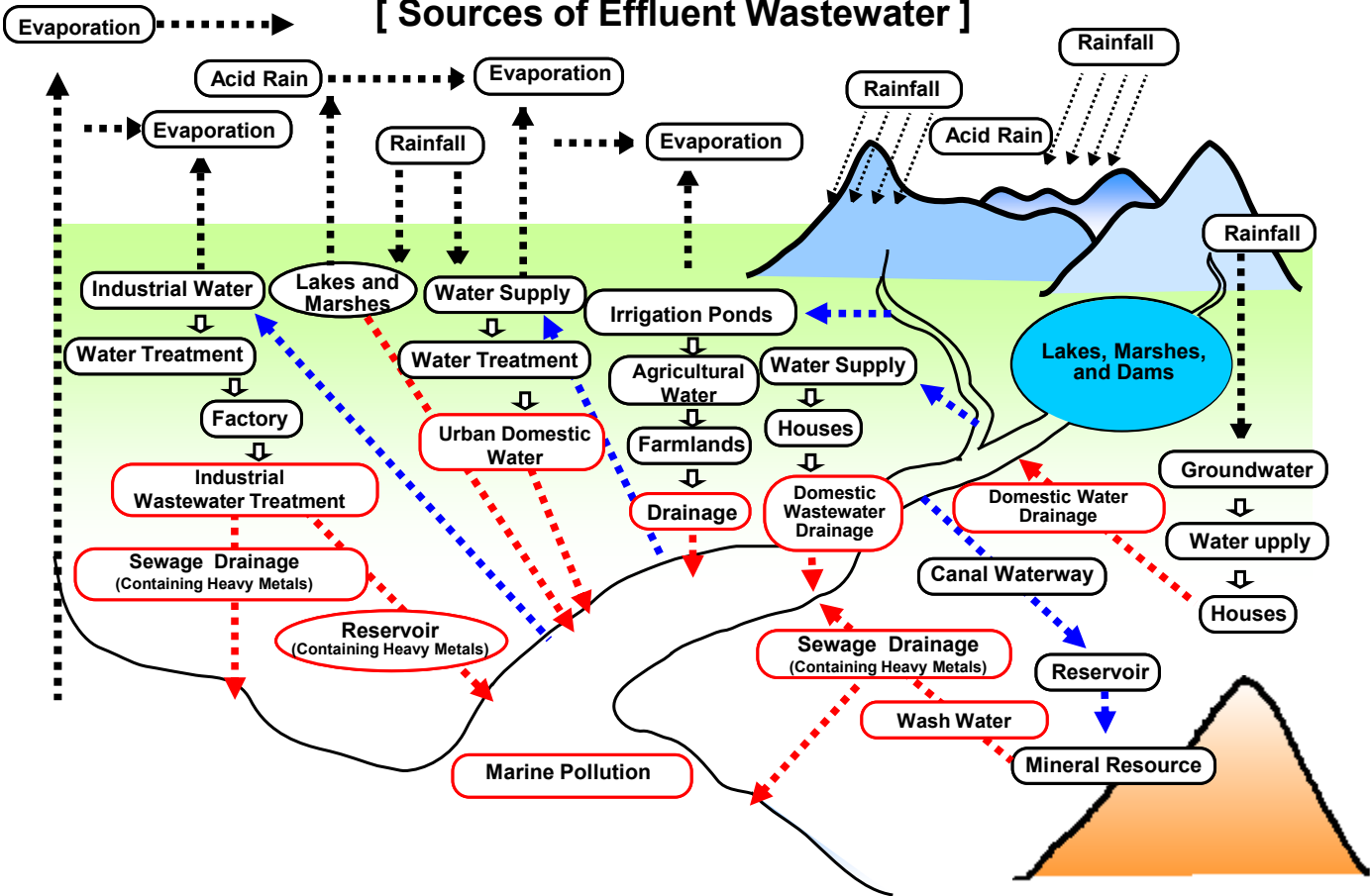
Industrial Wastewater Treatment Plants

Sewage Treatment Plants



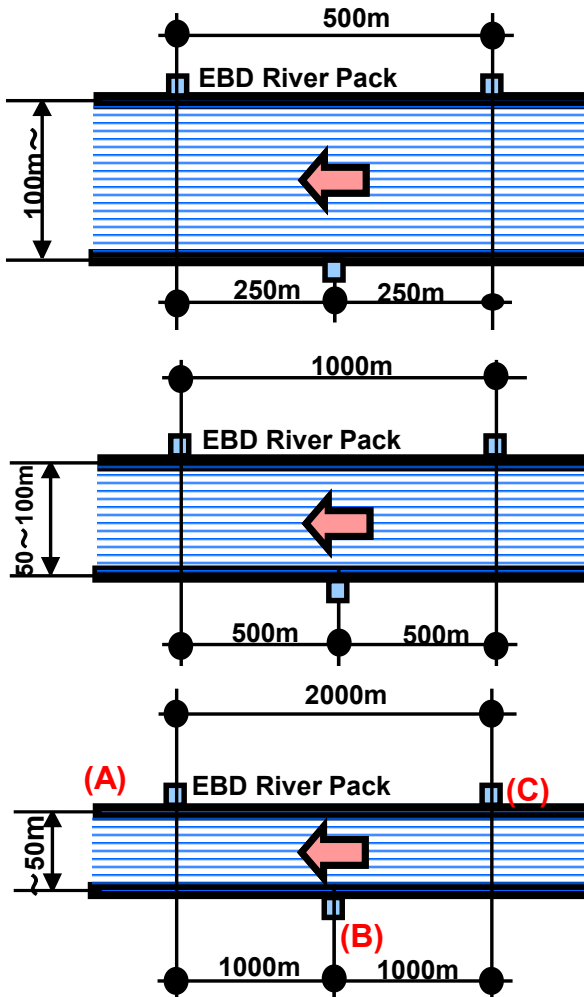
# EBD System Installation Intervals for River Remediation

## [ Sources of Effluent Wastewater ]



**BOD=80mg/l or Below**

**BOD= Over 80mg/l**



BOD 80~200mg/l	...	60m
BOD 200~500mg/l	...	30m
BOD 500~1000mg/l	...	20m
BOD 1000~1500mg/l	...	10m

**Note-1** Name of device: EBD River Pack

BOD 80~200mg/l	...	125m
BOD 200~500mg/l	...	60m
BOD 500~1000mg/l	...	30m
BOD 1000~1500mg/l	...	20m

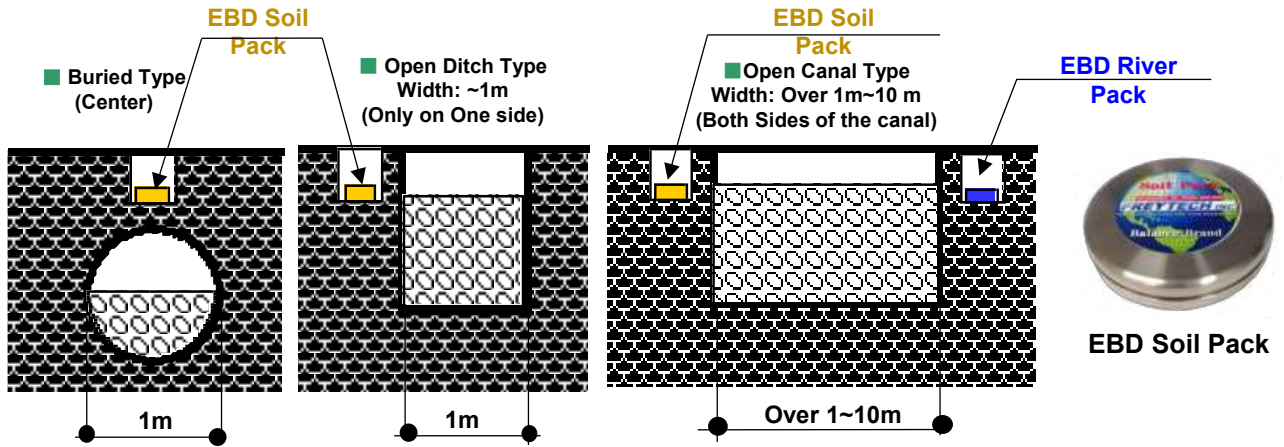
**Note-2** Interval of device installation: (A)-(B)-(C)

BOD 80~200mg/l	...	250m
BOD 200~500mg/l	...	125m
BOD 500~1000mg/l	...	60m
BOD 1000~1500mg/l	...	30m

**Note-3** EBD Units should be installed horizontally

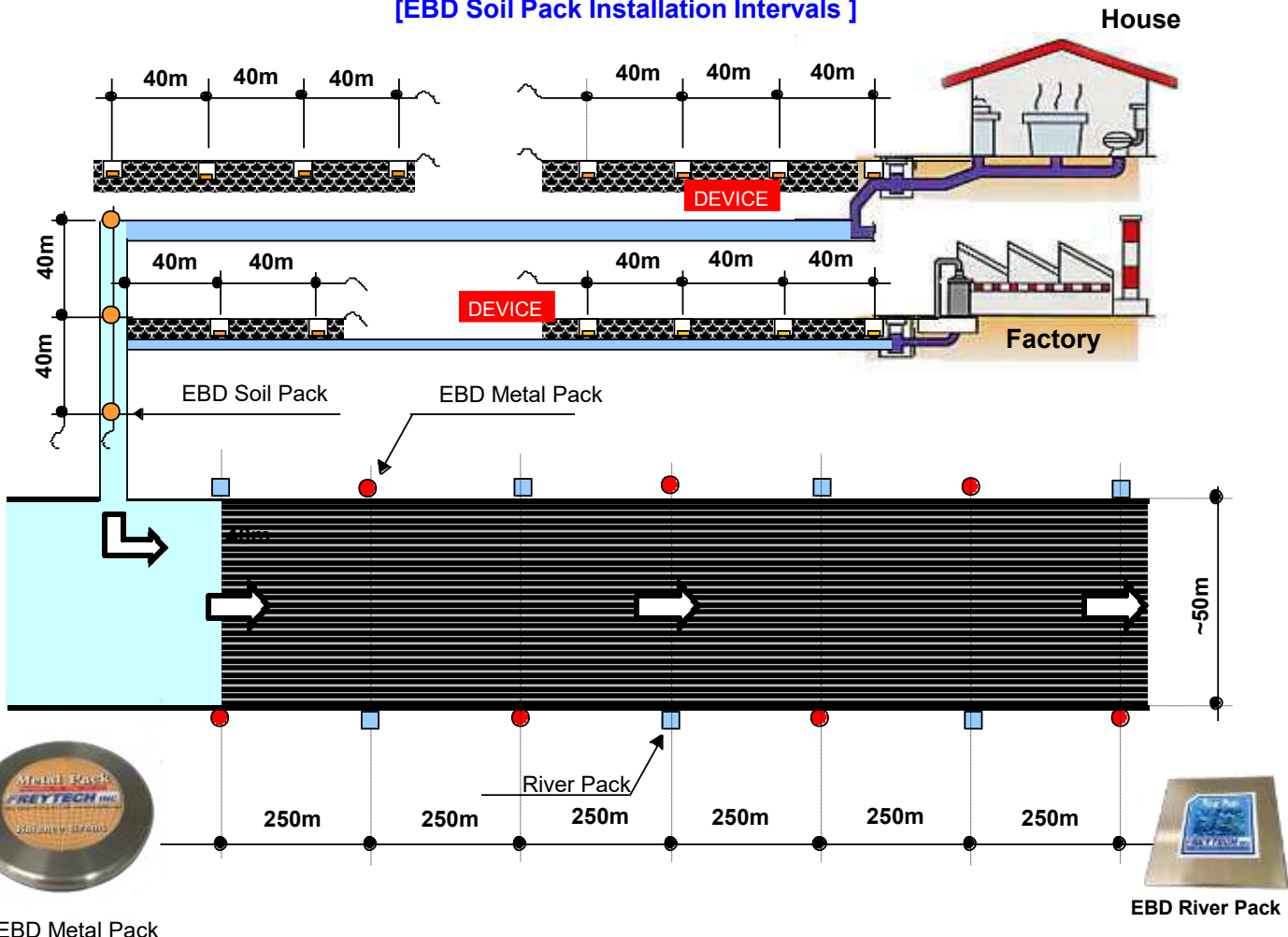
# EBD Soil Pack / River Pack Installation for Sewage Pipes, Ditches & Canals

## [ Location of EBD Systems in Sewage Drainage Systems ]



Note: If the width of the raw sewage ditch measures between 1m to 10m, both River Packs and Soil Packs are required.

## [ EBD Soil Pack Installation Intervals ]

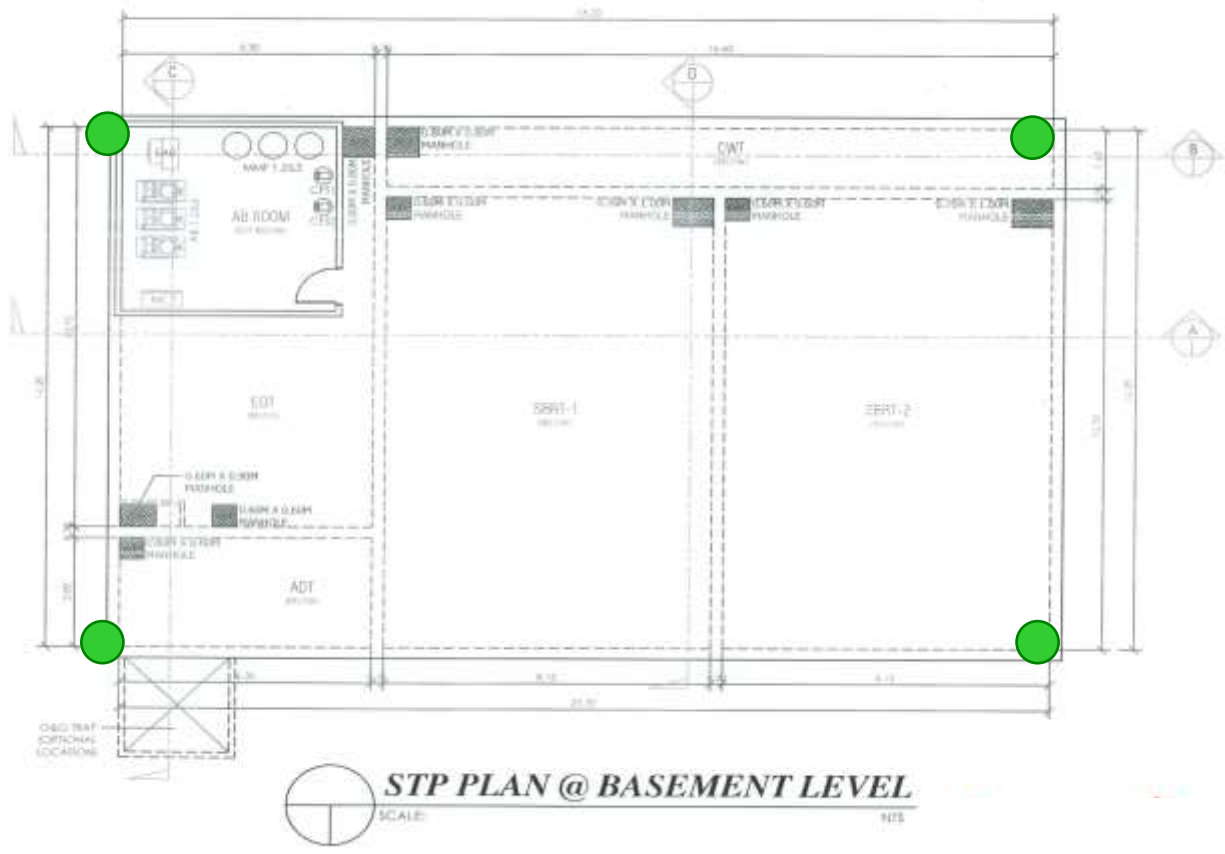


Note1: EBD System Installation intervals are calculated based on width & water quality of rivers and lakes  
 Note2: EBD Metal packs are required for discharged water containing high concentrations of heavy metals.

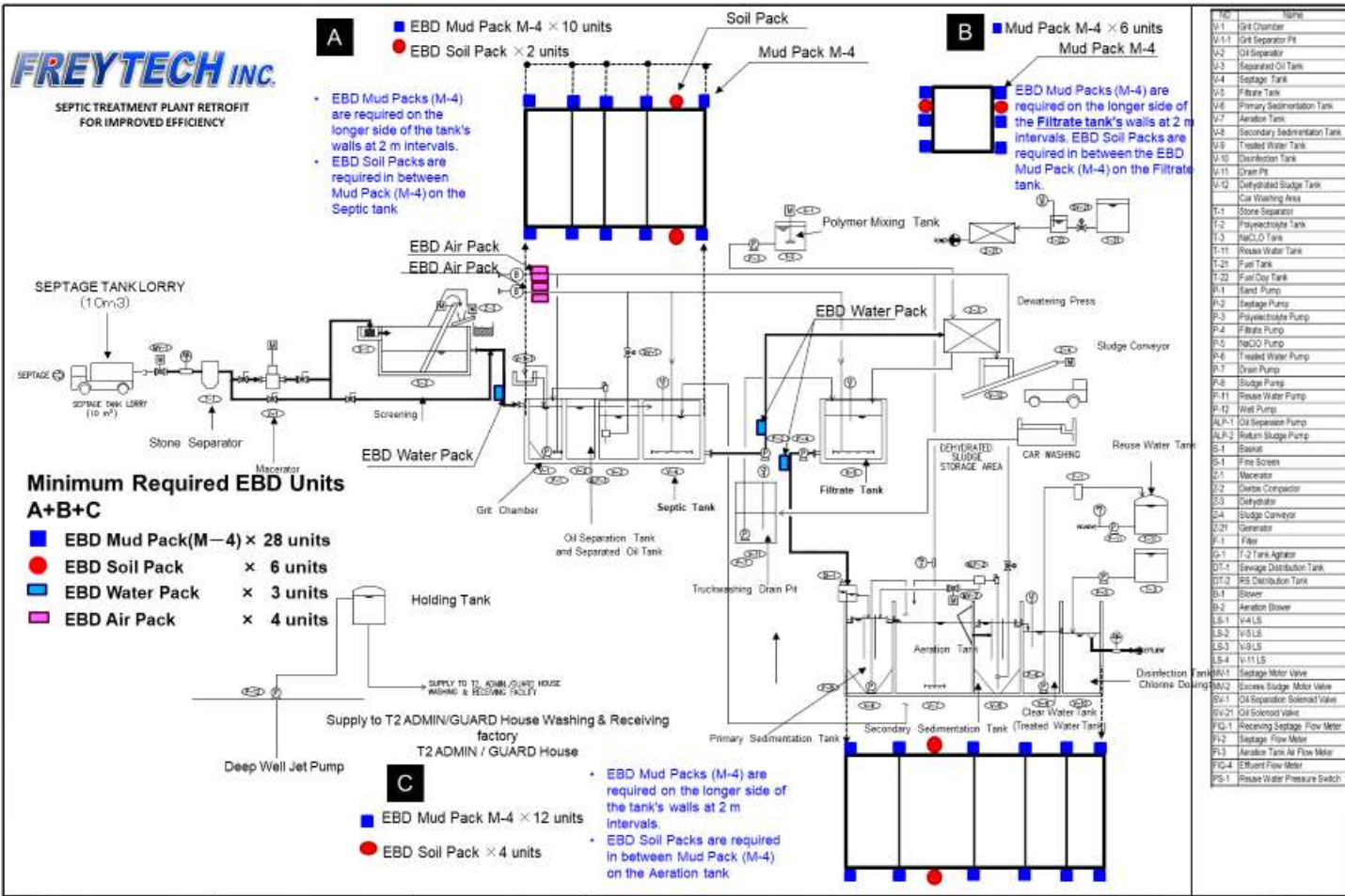
# EBD Sewage Packs for Residential Sewage Treatment Plants

For basic residential Sewage Treatment Plants (STPs): Place one EBD Sewage Pack on the corners of the tanking system. Will permanently increase treatment efficiency without having to add expensive new infrastructure. Affordable solution to upgrade existing or new STP facilities.

EBD SEWAGE PACK ON THE FOUR CORNERS OF THE STP

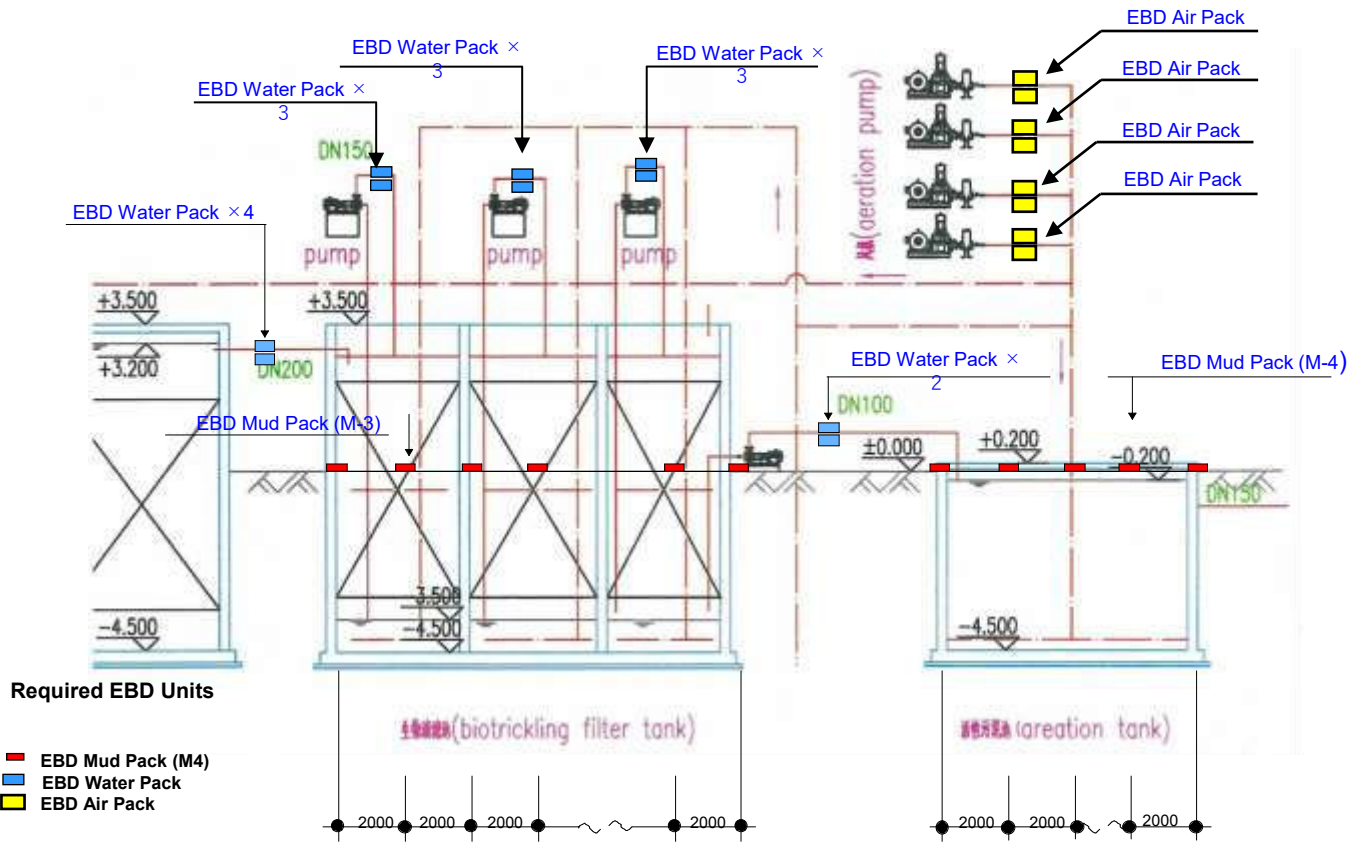


# EBD Soil Packs, Air Packs, Water Packs and Mud Packs for Industrial & Residential Wastewater Treatment Plants Using Aerobic Bacteria



# EBD Air Packs, Water Packs and Mud Packs for Industrial & Residential Wastewater Treatment Plants Using Anaerobic Bacteria

## EBD Installation for the Wastewater Treatment Plant: Anaerobic

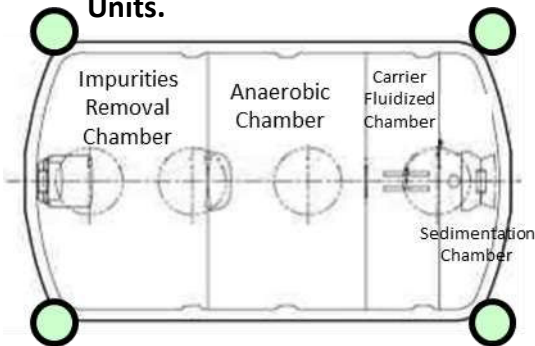


Note: EBD Mud Packs must be installed on the longer sides of the tanks at 2-meter intervals.

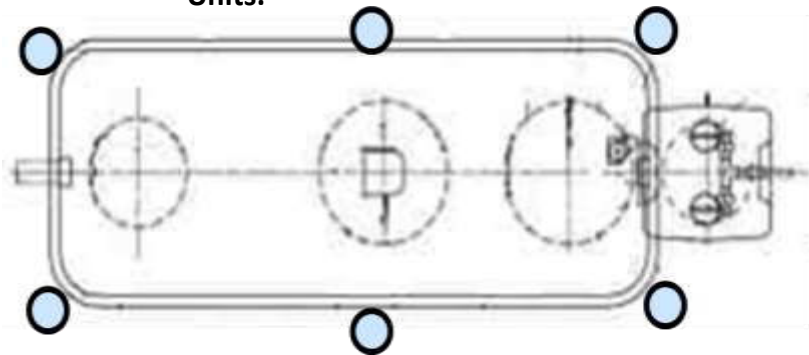
# EBD Flush Packs for Septic and Holding Tanks

- EBD Flush Pack units are for use with septic tanks, holding tanks, portable toilets as well as recreational vehicle (RV) toilets to accelerate residential sewage decomposition, reduce nutrient and pathogen concentrations, remediate Greenhouse Gas (GHG) and ammonia emissions while also providing effective odor control.

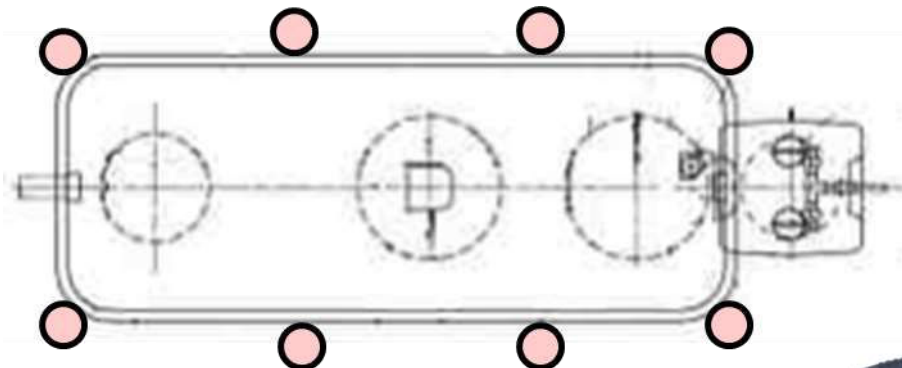
**Septic or Holding Tank for up to 30 users. 4 EBD Flush Pack Units.**



**Septic or Holding Tank for up to 42 users. 6 EBD Flush Pack Units.**



**Septic or Holding Tank for up to 50 users. 8 EBD Flush Pack Units.**



**EBD Flush Pack**

Dimensions:  $\Phi 90\text{mm} \times 3.1\text{mm}$

Materials: ABS plastic mixed with proprietary composition organic minerals.

# EBD Pollutant Treatment Mechanism



**Pollution of Rivers and Lakes**

Increase in the Negative Energy Particles (NEP (-))

Increase in Negative Energy Particles NEP (-)

## Pollutants

## Imbalance of Ultra-elementary Particles

## List of Transmuted Elements

- ◆ Household
  - Excrement
  - Cooking Wastewater
  - Bath Drainage
  - Detergents
  - Nutrition
  - Solids
  - Grease
  - Salinities
  - Cooking Liquid Waste
- ◆ Factory
  - Free Chlorine (Paper Production)
  - Sulfite (Pulp Production)
  - Salinity (Battery)
  - Cyan, Nickel, Cadmium, Zinc, Hexavalent Chromium (Metal Gilding)
  - Phenol (Chemical)
  - Cleaning (Alkaline)
  - Lead, Nickel, Hexavalent Chromium (Mine)

Destruction of the Food Chain

Increase in ROS

Decrease in Microorganisms

EBD Device Installation

Decrease in ROS

Increase in Extremophiles

Preying on Contaminants

Secretion of Element Transmutation Enzymes

H<sub>2</sub>O & Co<sub>2</sub>  
+  
Transmutation Materials

Detoxification of Pollutants

Ecosystem Balance

- Zn ↔ Mg ↔ CO<sub>2</sub>
- Fe ↔ Ca ↔ O
- Cu ↔ Ca ↔ O
- Si ↔ C ↔ CO<sub>2</sub>
- B ↔ N
- O ↔ Cl
- Pb ↔ Co ↔ N
- Na ↔ Ti ↔ CO<sub>2</sub>
- Al ↔ F ↔ N
- H ↔ Mn
- K ↔ Ni ↔ Ne
- Ag ↔ Sn
- S ↔ C
- As ↔ He
- Li ↔ W ↔ Xe
- Cr ↔ O
- P ↔ Ne
- Hg ↔ O
- Cd ↔ N
- Ge ↔ C
- Se ↔ O
- Au ↔ Cu ↔ Ar
- Pt ↔ V ↔ He
- I ↔ Ag ↔ O
- Cs ↔ Mo ↔ N
- Ra ↔ Au ↔ O
- U ↔ H

• EBD Systems produce a balanced environment reducing free radical reactions. This leads to a dramatic activation of indigenous microorganisms which in turn decompose organic and inorganic substances.

◆ ROS = Reactive Oxygen Species

## EBD SOIL PACK BIOREMEDIATION TIMELINE IN A 500-METER-LONG UNDERGROUND UNTREATED SEWAGE PIPE LINE DRAINING INTO RIVER July 31, 2017



Agitated Sewage Water With EBD Treatment

July 31, 2017



Agitated Sewage Water Without EBD Treatment

The water sample in this darker colored jar was taken from a control sewage pipe not treated by EBD units which is running immediately parallel to the EBD treated sewage pipe. Both sewage pipes originate from the same raw sewage collection source.