Presentation

On

WTP – 03 – Industrial Type

Prepared By

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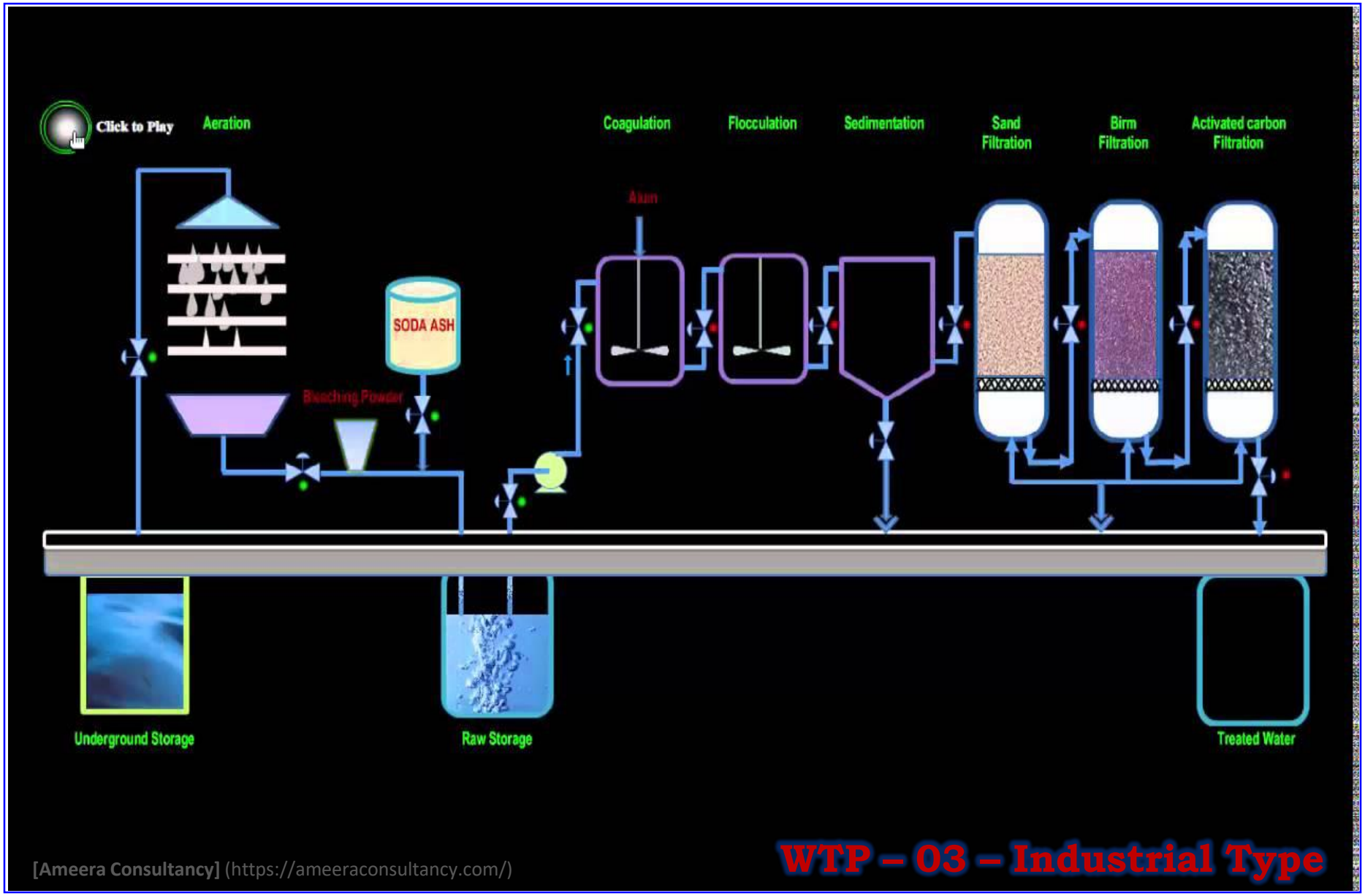
Introduction



Water Treatment Plant [Industrial]

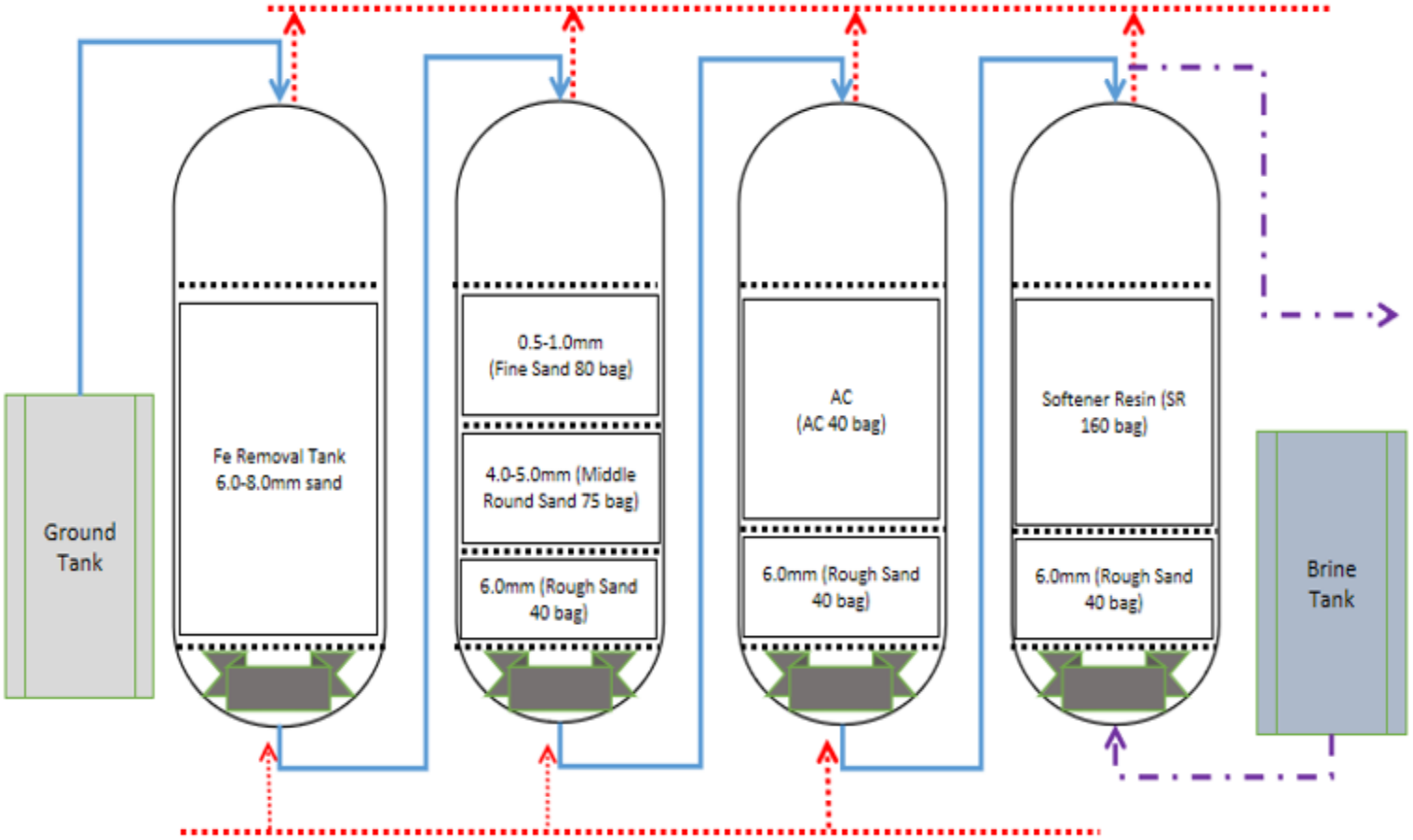


Figure: Water Treatment (Industrial Type)

Water Treatment Plant [Industrial Type]

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Water Treatment Plant [Industrial]

Water Treatment Plant [Industrial Type]

In industry, water used basically **for Production**

Bore Holes helps to pick the **Underground Water**

Underground Water must need **Water Treatment Process**

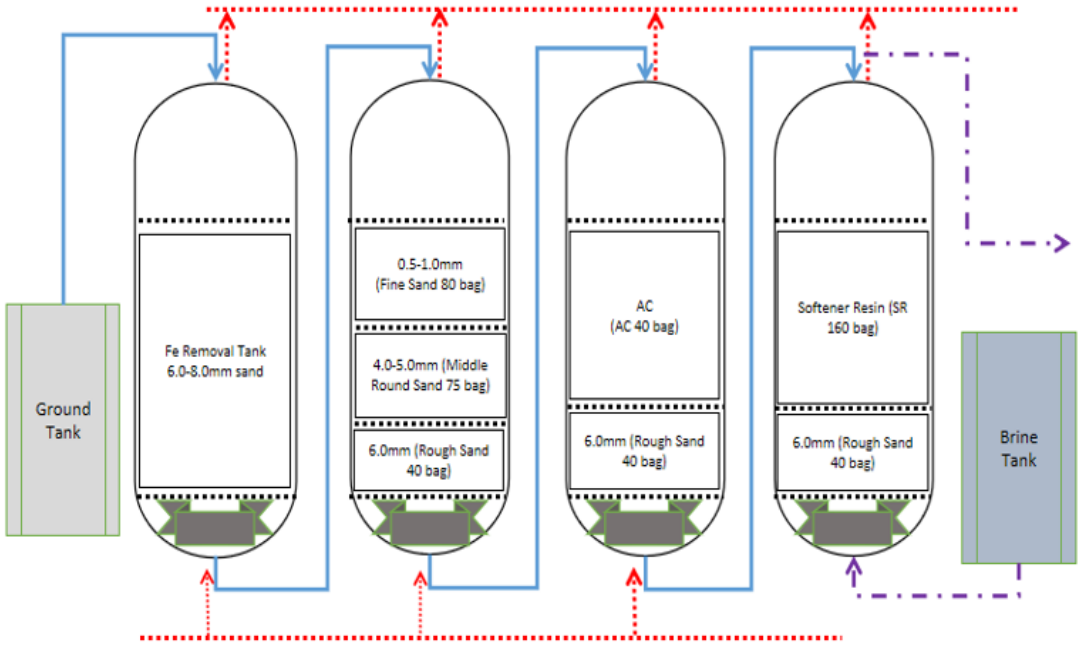

Figure: Water Treatment (Industrial Type)

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Why Industrial WTP is needed?

Why Industrial WTP is needed?

- To kill all Pathogenic Germs [Harmful to human health]
- To remove unpleasant taste & odor
- To remove dissolved gas, color of water
- Make Water Fit for Domestic, Industrial & Commercial Use
- To remove Micro-organism & Colloidal Matters

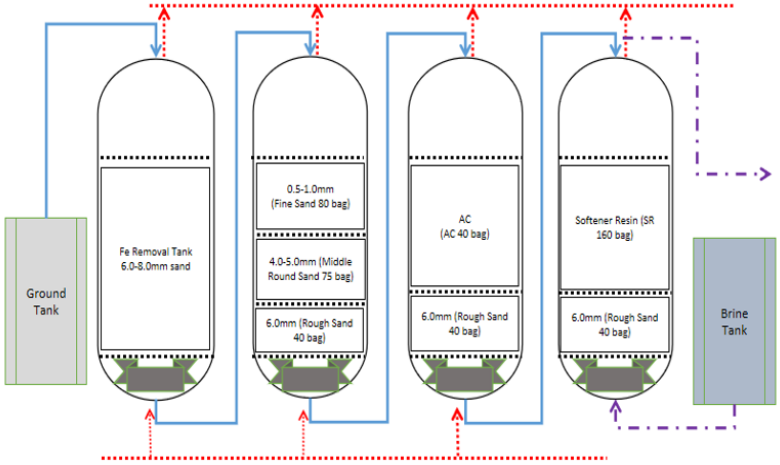

Figure: Water Treatment (Industrial Type)
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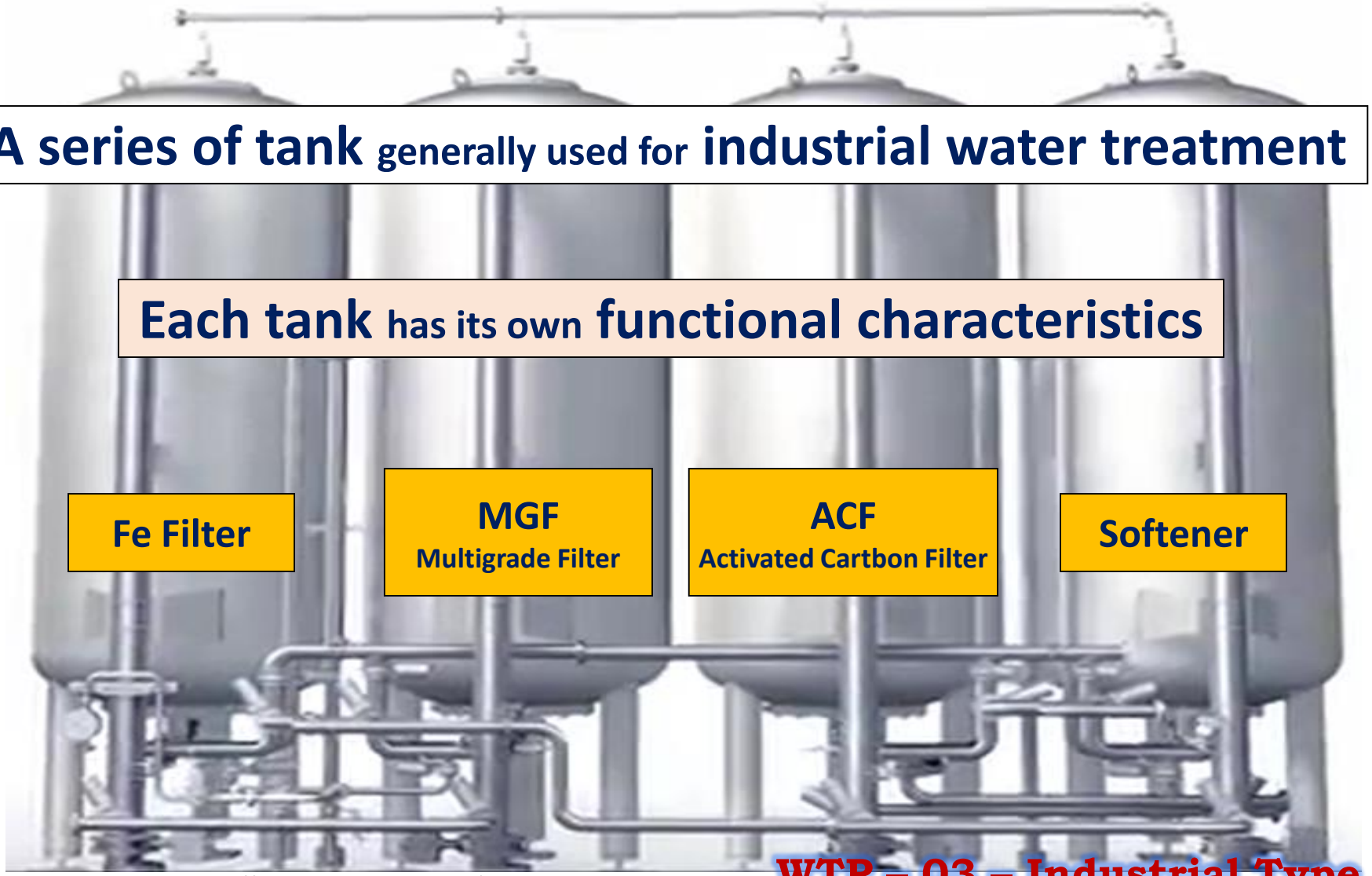
WTP - Industrial



A series of tank generally used for **industrial water treatment**

Each tank has its own **functional characteristics**

- **Fe Filter**
- **MGF**
  Multigrade Filter
- **ACF**
  Activated Cartbon Filter
- **Softener**

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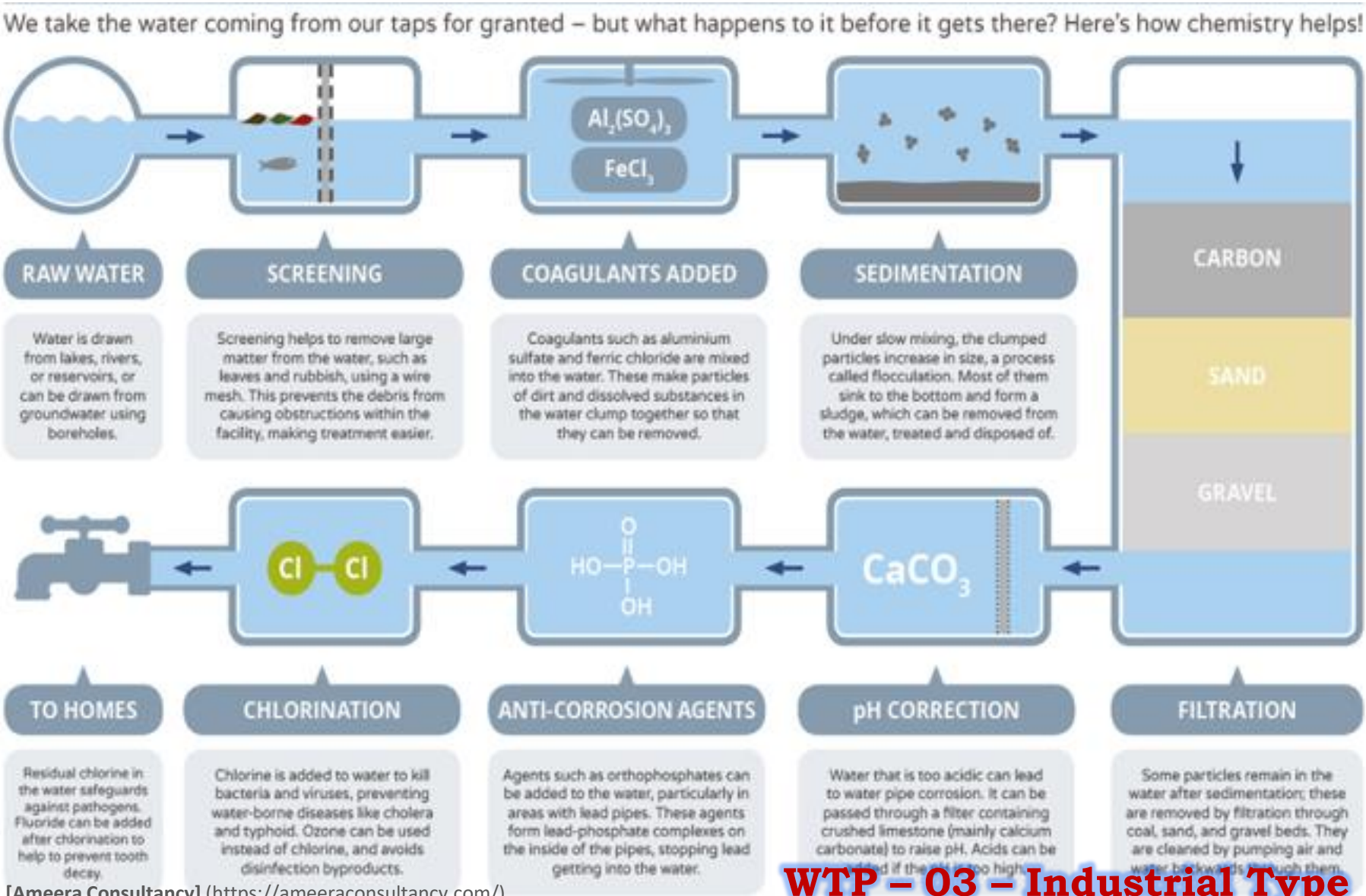
Introduction



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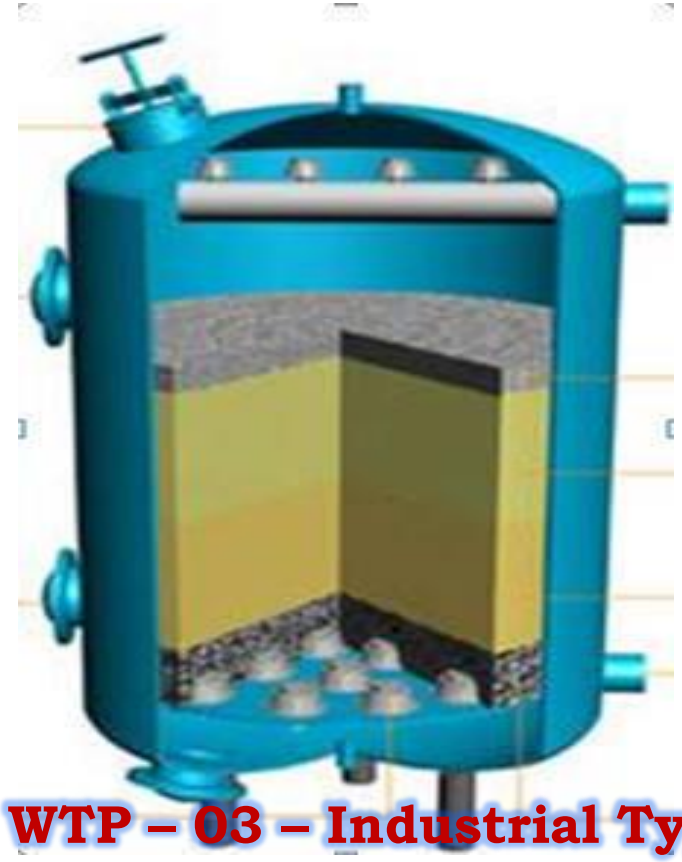
Fe Filter [Iron Filter]

Fe Filter [Iron Filter]

Multi Media Filter is best for **Fe removing**

Helps to remove **Iron, Turbidity, Bad Odors, Suspended Solid, Microbes**



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Fe Filter [07 Ways to Remove Iron form Water]

07 Ways to remove Iron from Water

Iron Removal Filter
Water Softener
Chemical Oxidation
Oxidation Filtration
Shock Chlorination
Catalytic Filtration
Phosphate Treatment

Fe Filter **Takes the Iron** and transform it into **Ferric Iron or Rust**

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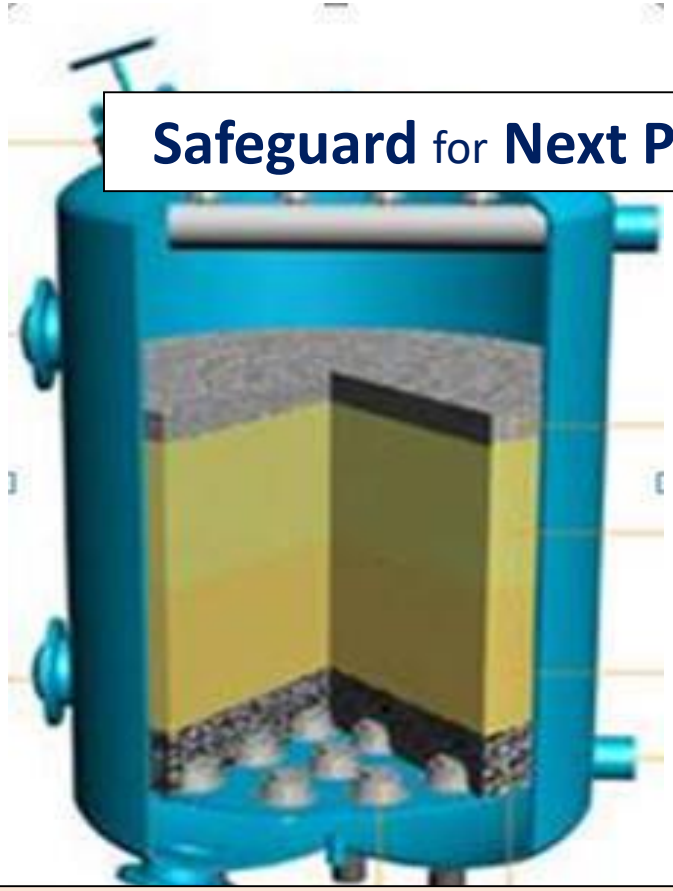
Fe Filter [Merits of Fe Filtration]

Merits of Fe Filtration



- **Removal** of **Iron from water**
- **Safeguard** for **Next Process [Prevents Blocking** or **RO Safety]**
- Removes **Turbidity**
- The process is **Cost Effective**

Fe Filter takes the Iron and transform it into Ferric Iron or Rust

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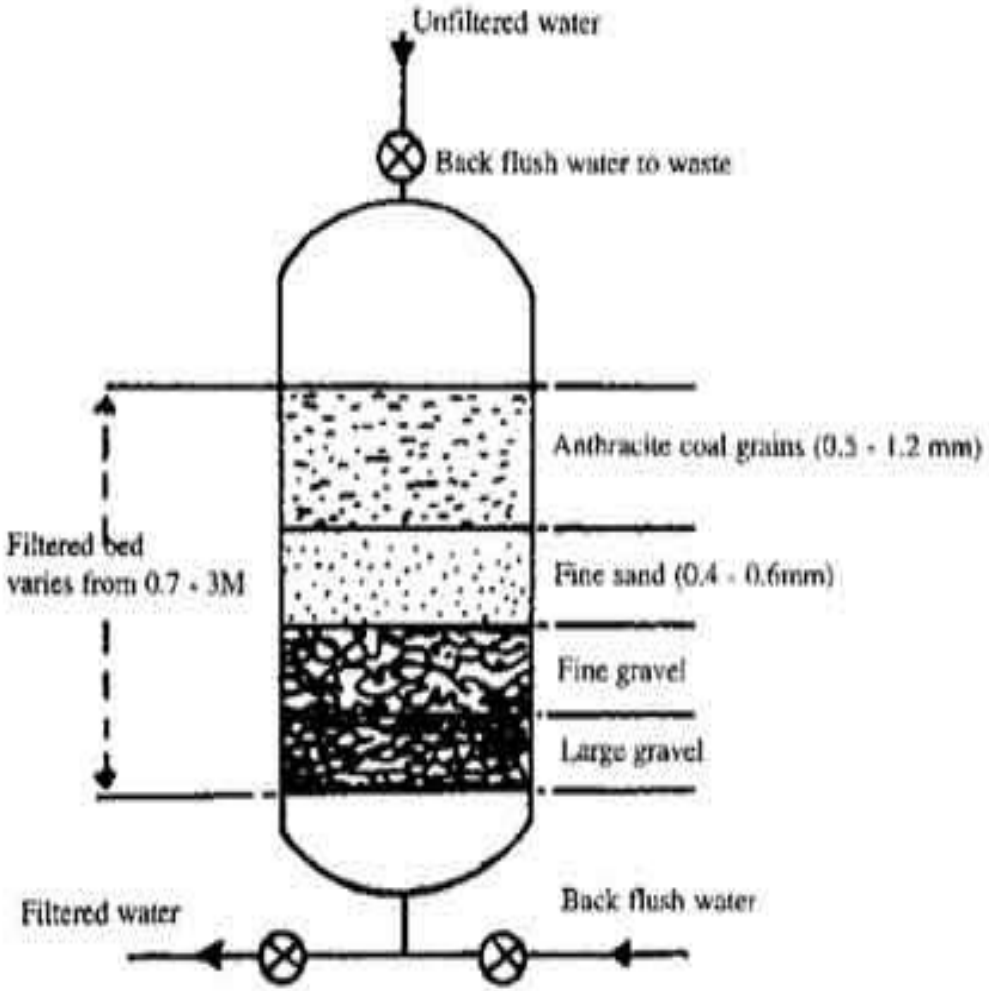
MGF [Multi Grade Filter]



MGF is **cost effective.** Work under **High Pressure/Specific Flow**

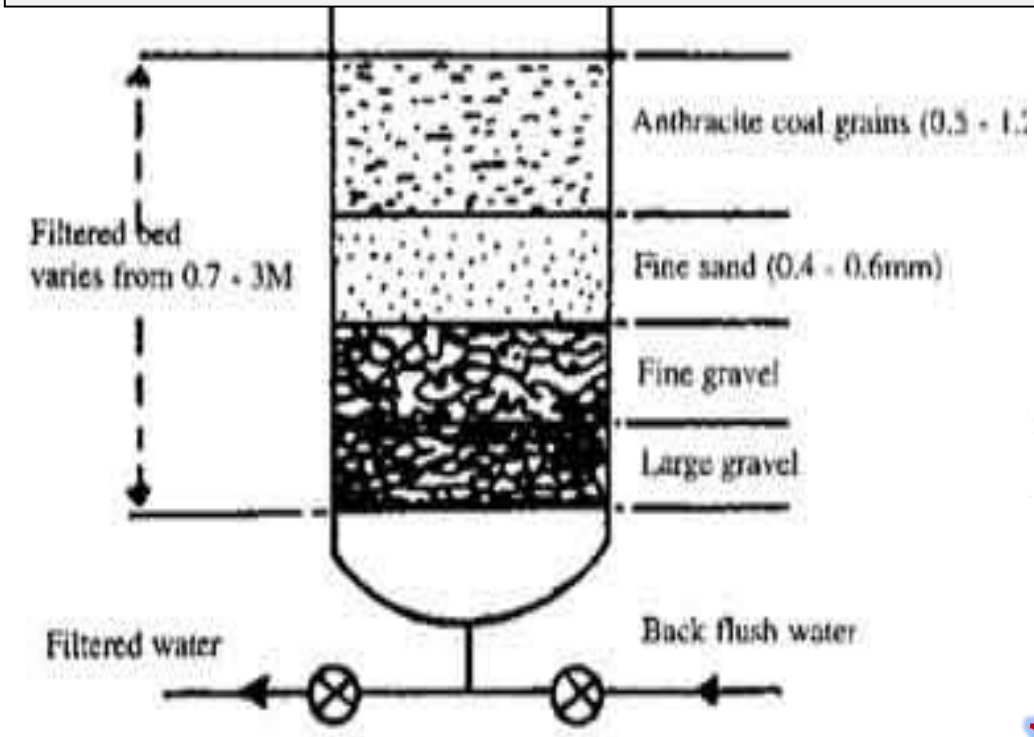
MGF [Multi Grade Filter]

MGF [Multi Grade Filter]

Consist of **Vertical or Horizontal Sand Filters**

Having **Multiple layer** of **Coarse & Fine Sand [Pebbles & Gravels]**

Having Adequate **Pore Dimension** for entrapping **SS, Un-dissolved impurity**



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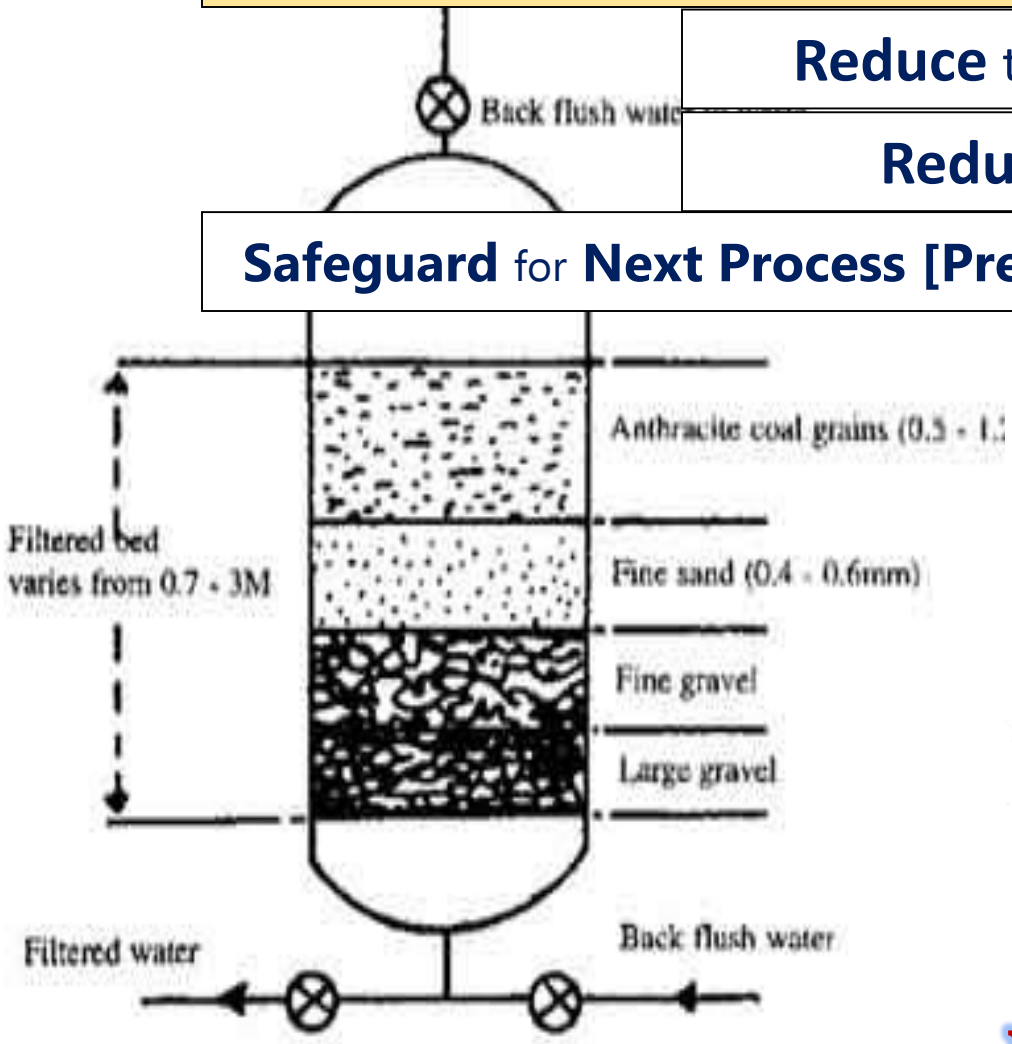
MGF [Merits of MGF]

Merits of MGF [Multi Media Filter]

Reduce the level of **Suspended Solids**

Reduce some **Un-dissolved Solids**

Safeguard for **Next Process [Prevents Blocking** or **RO Safety]**



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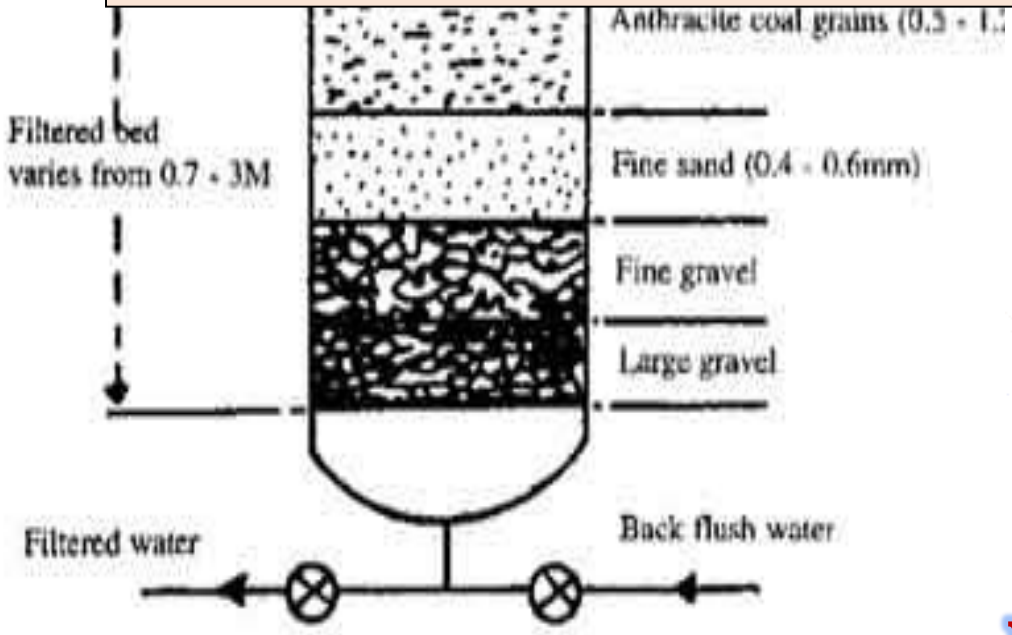
MGF [Application of MGF]

Application of MGF [Multi Grade Filter]

- Treatment of **Underground Water**
- Treatment of **Waste Water**
- **While Production** of **Drinking Water**
- **Pre-Filtration Process** for **RO System**



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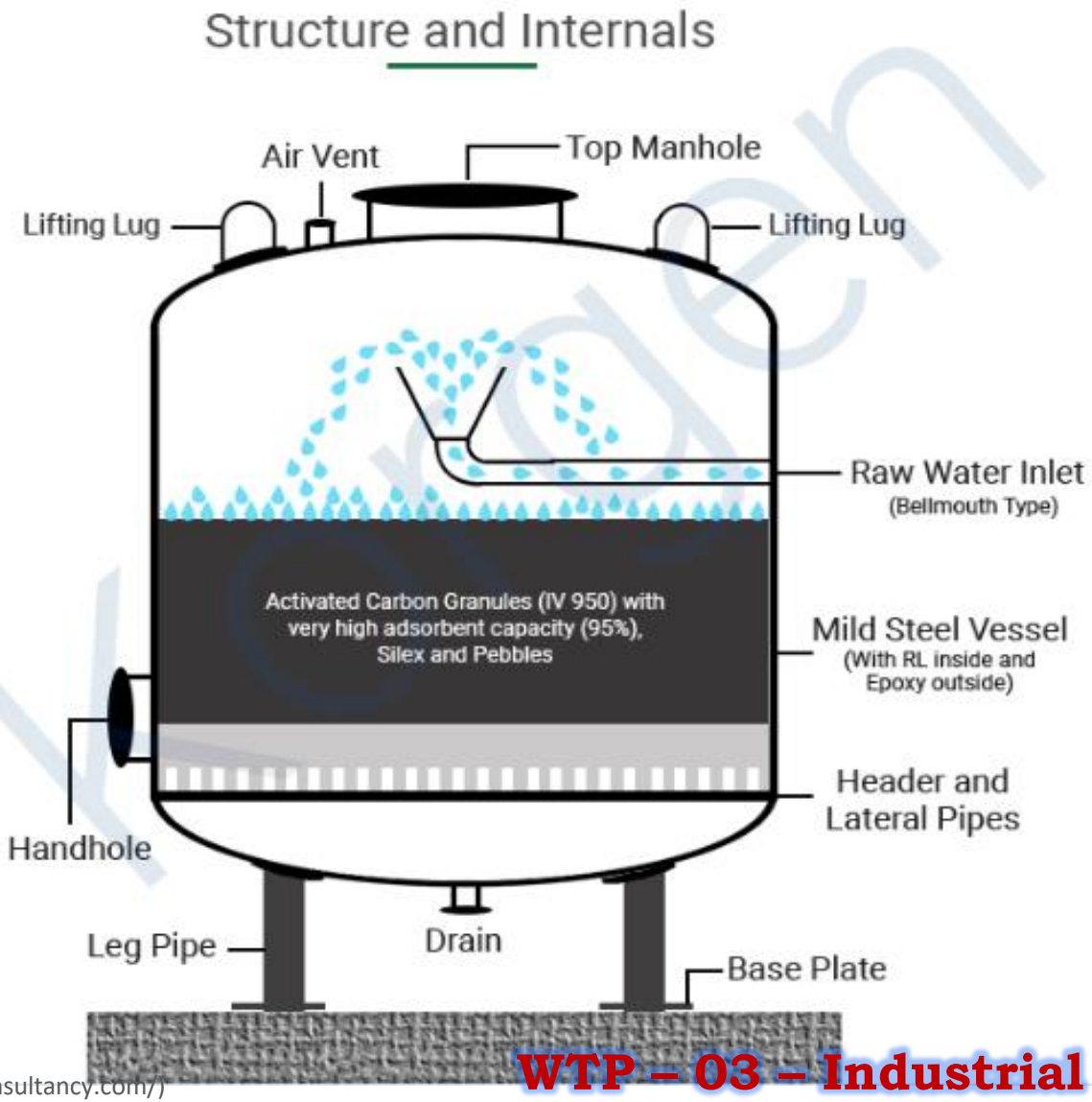
ACF [Activated Carbon Filter]



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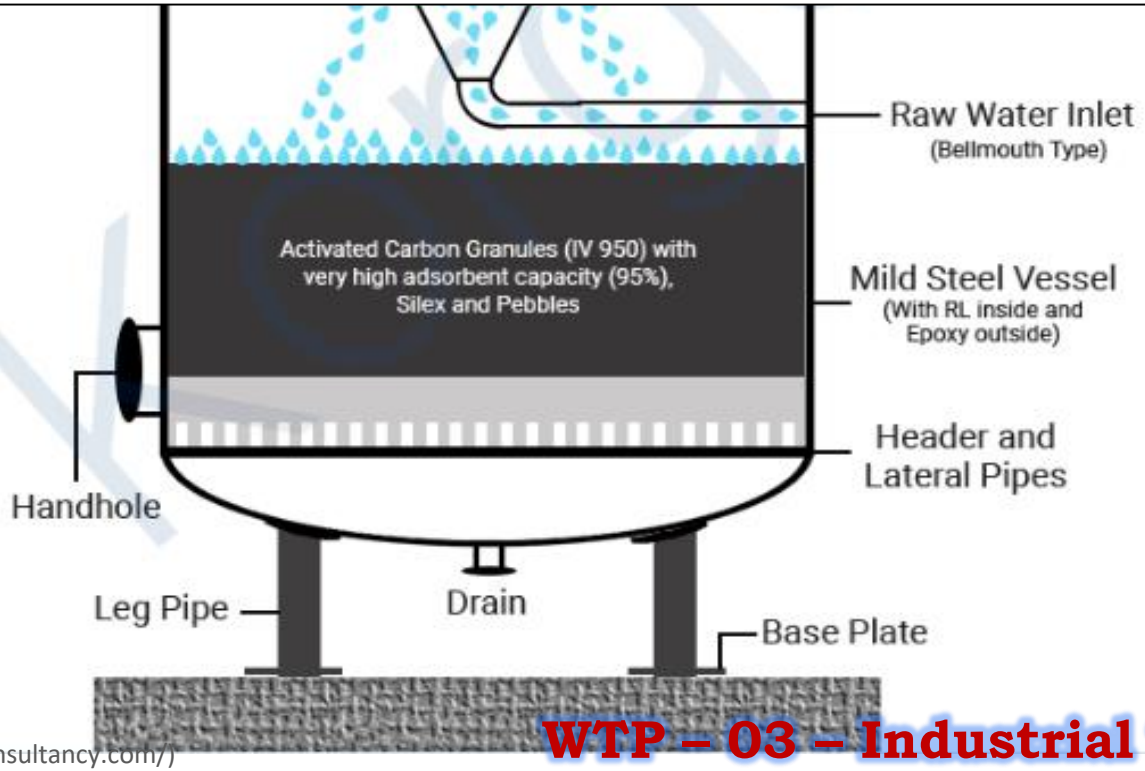
ACF [Activated Carbon Filter]

ACF [Activated Carbon Filter]

Widely chosen for **Water Treatment Plant**

ACF Helps to **Remove Excess Chlorine, Bad Odors**

Safeguard for **Next Process [Prevents Blocking** or **RO Safety]**



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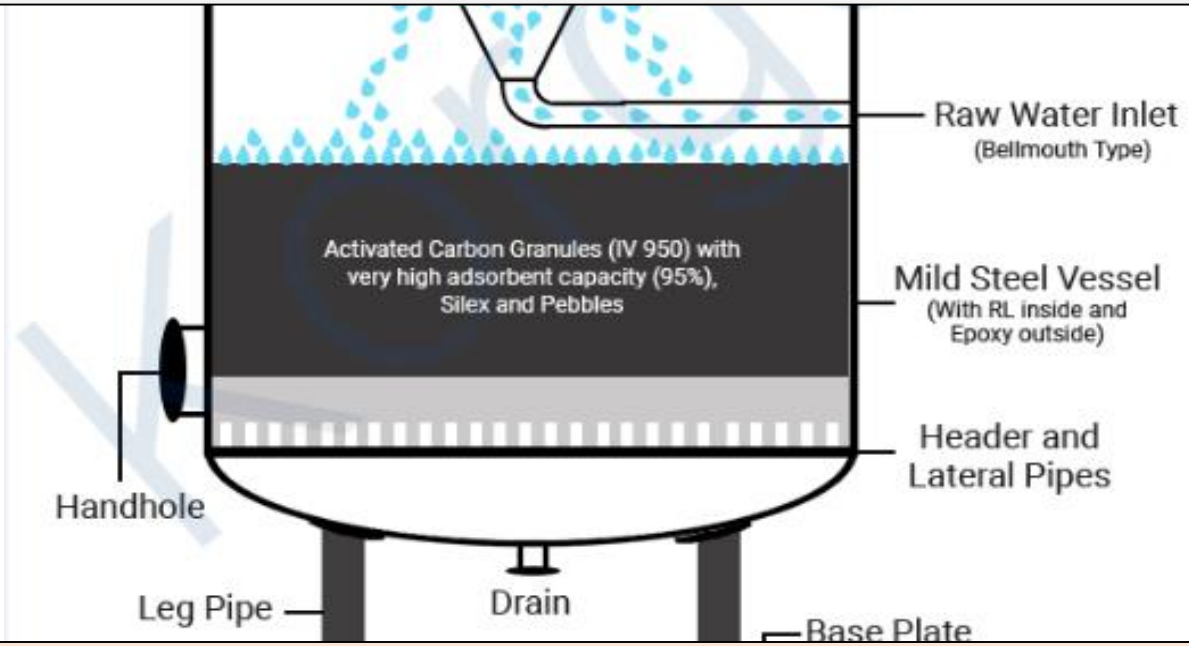
ACF [Function of ACF]

ACF - Function

ACF main function is **Absorption & Adsorption**

AC derived from **Coconut Shell, Bituminous Coal, Lignite etc.**

Carbon gets **Activated on 1000 – 1100 C temp** in **Anaerobic Condition**



AC Regeneration done by applying Steam Sterilization as Back Wash

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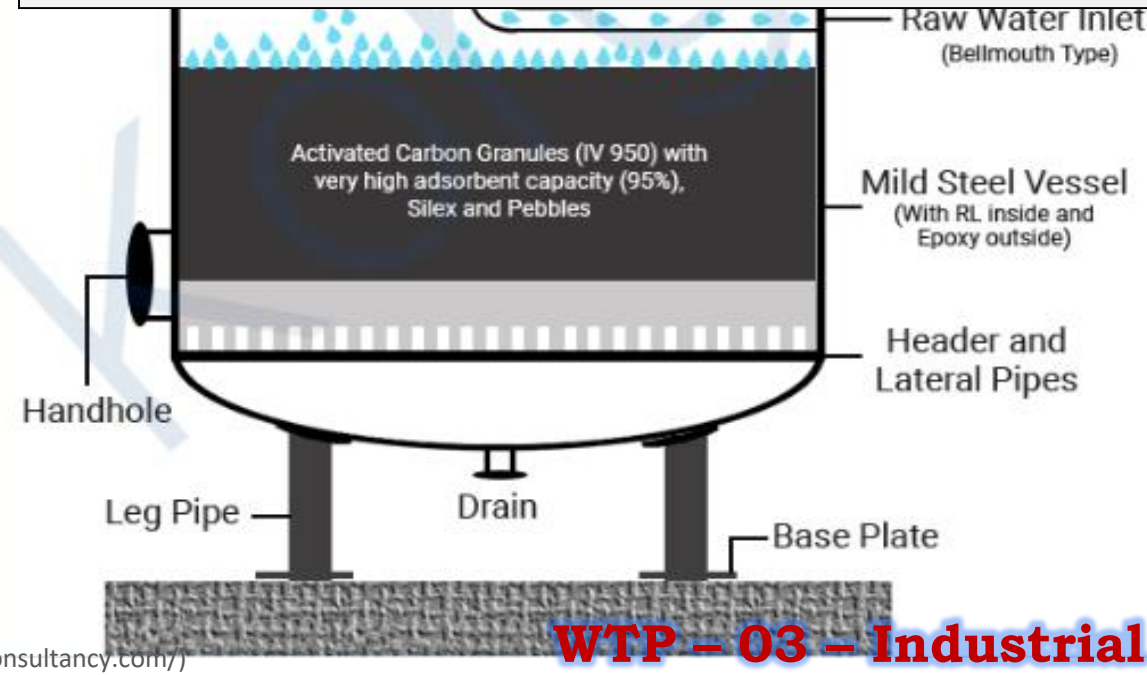
ACF [Merits of ACF]

Merits of ACF [Activated Carbon Filter]

- Removes **Chlorine, Bad Odors** in **Effective Way**
- **Absorbing Efficiency** Rating is **92%**
- **Filter Replacement** is **not** so **Frequent**
- **The process** is **Cost Effective**



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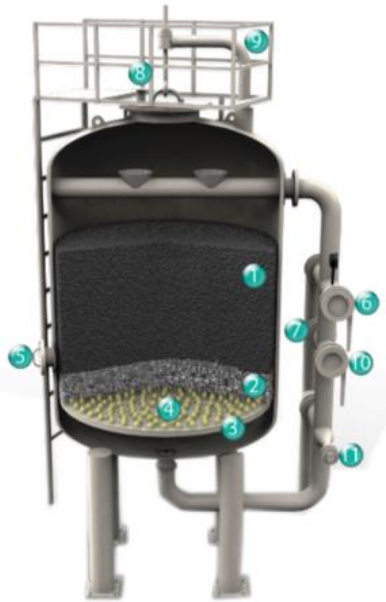
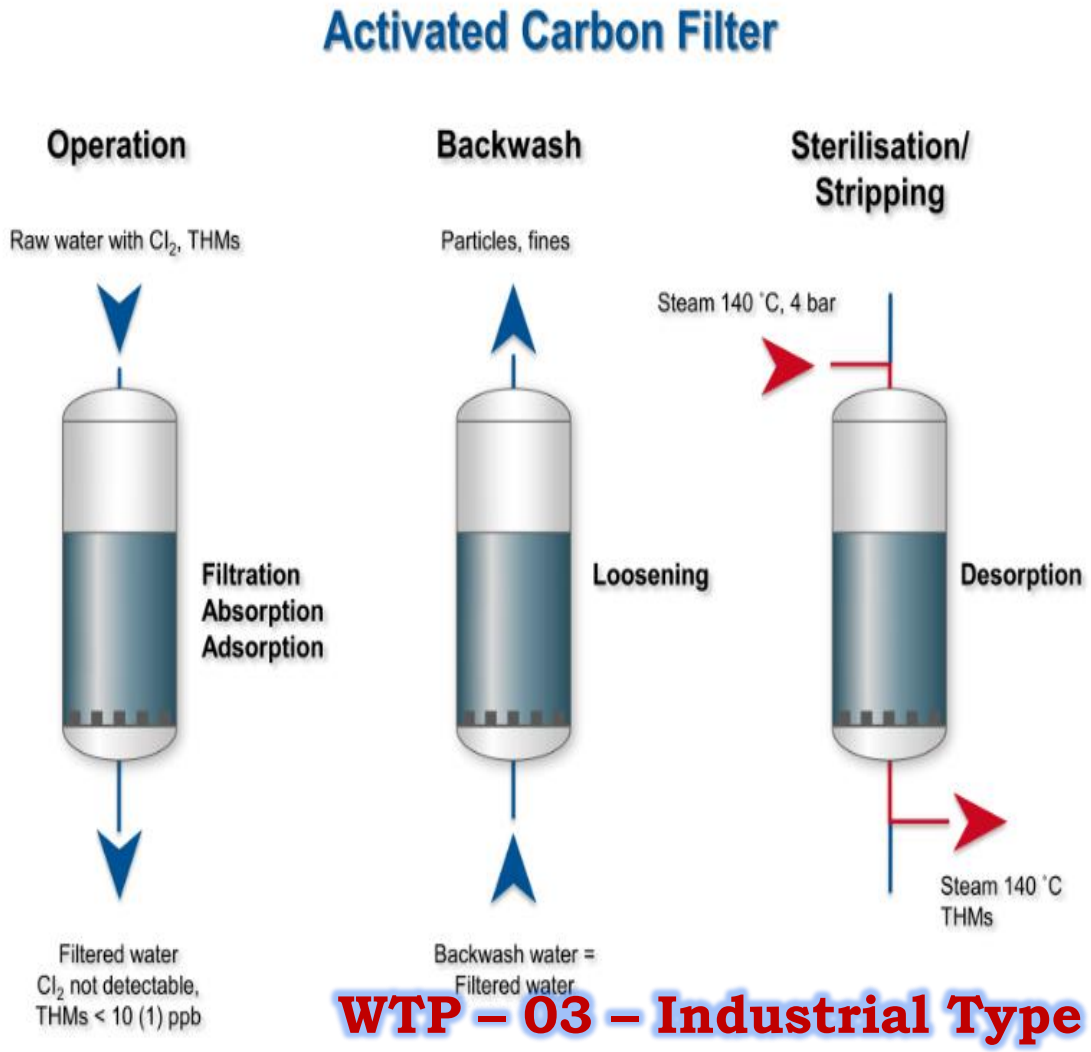
ACF [Activated Carbon Filter]

ACF Operation, ACF Backwash, ACF Sterilization



1. Carbon
2. Gravels & Pables
3. Strainer Plate
4. Strainers
5. Hand hole
6. Service Inlet
7. Service Outlet
8. Air vent
9. Davit Arm
10. Backwash Inlet
11. Air Scoring

Activated Carbon Filter



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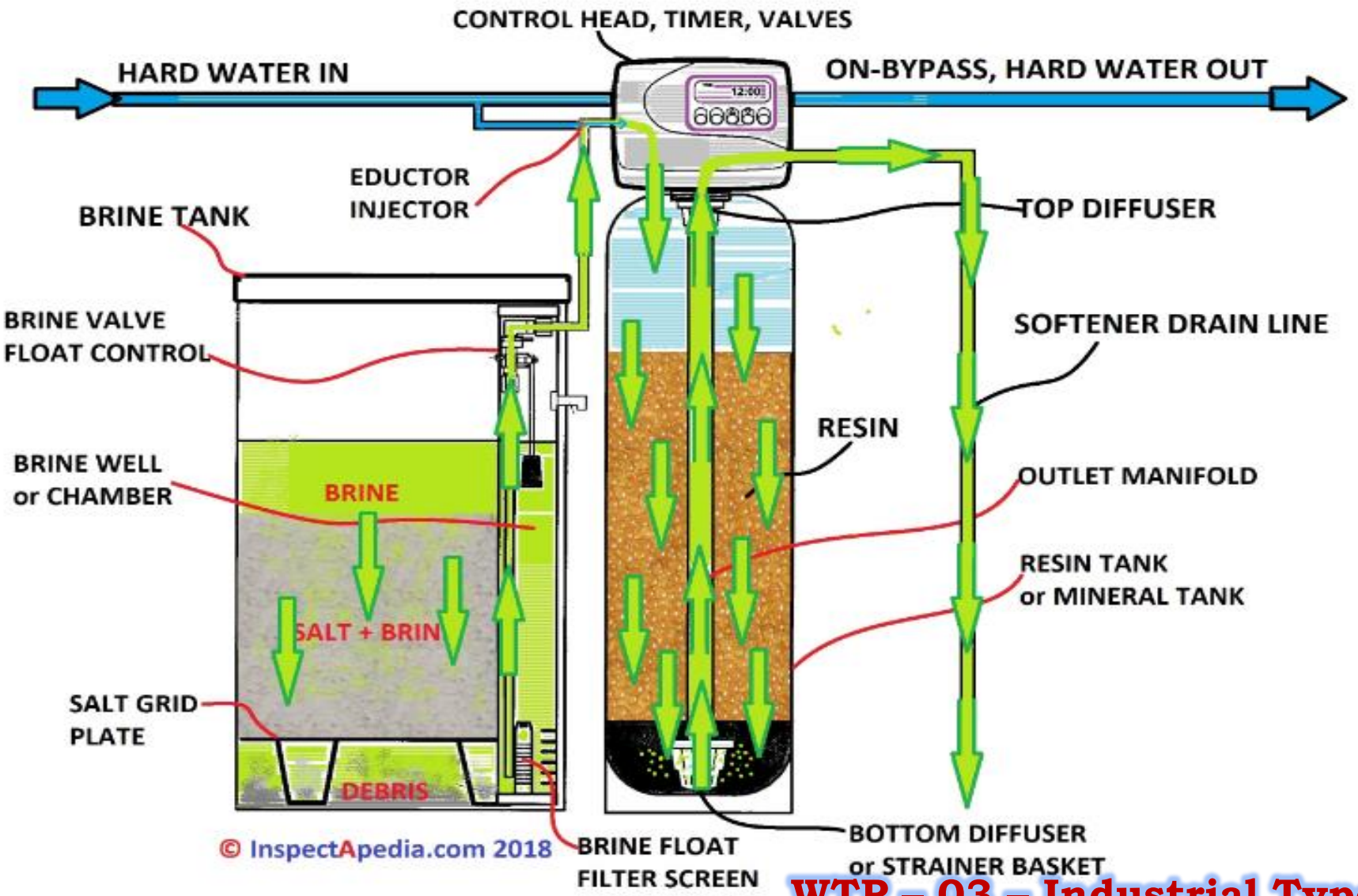
Softener



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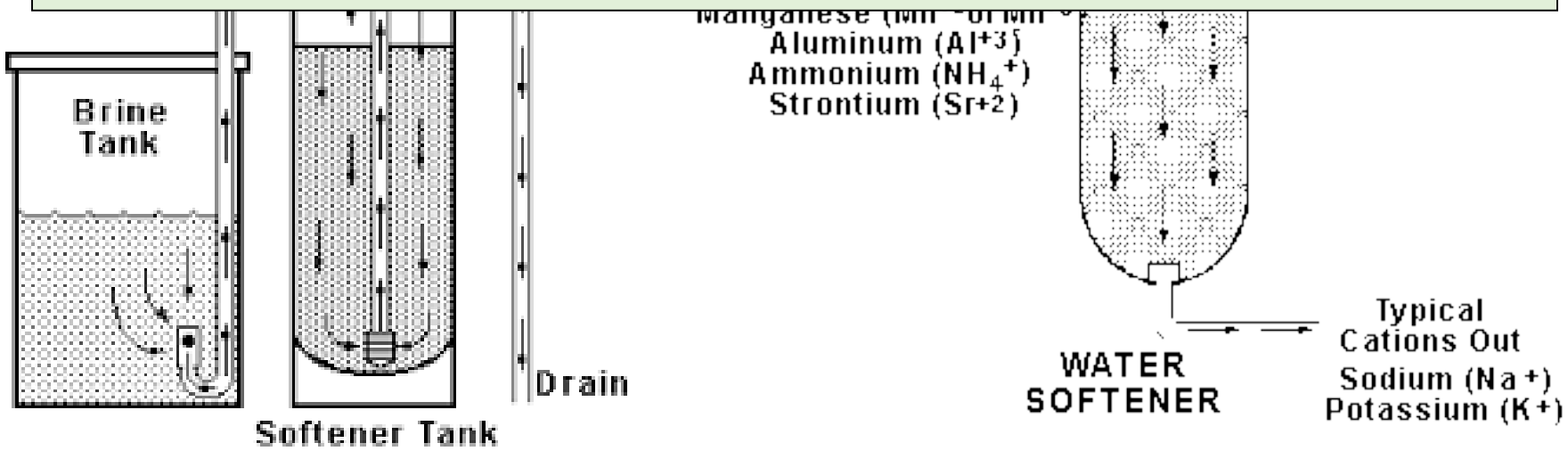
Softener

Softener

- **Removes Hardness** from water **[Hardness = Calcium, Magnesium]**
- **Safeguard** for **Next Process [Prevents Blocking or RO Safety]**
- **Consist** of **Ion Exchange Resin Beads [Negatively Charged]**



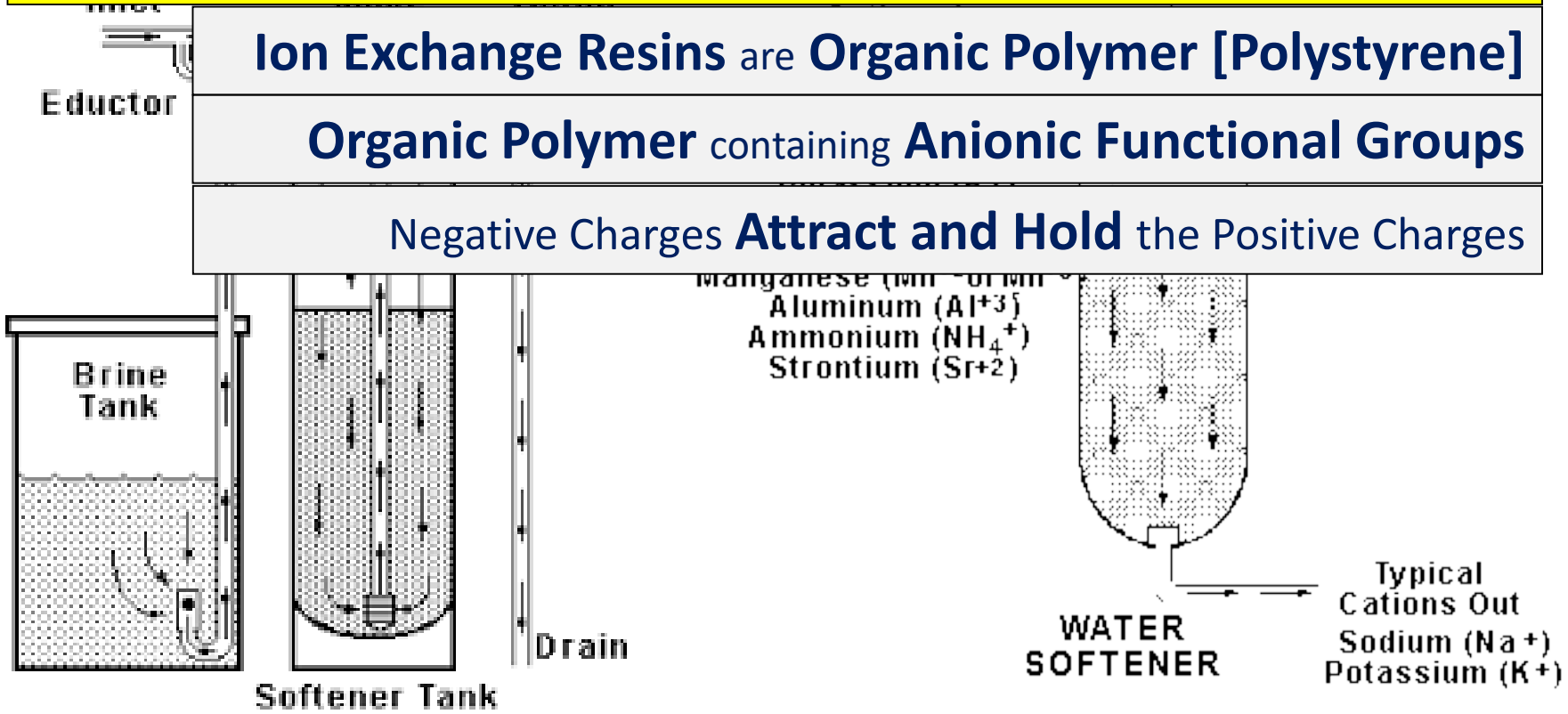
Softener [Function]

Softener [Function]

Ion Exchange Resins are **Organic Polymer [Polystyrene]**

Organic Polymer containing **Anionic Functional Groups**

Negative Charges **Attract and Hold** the Positive Charges



Softener [Regeneration]

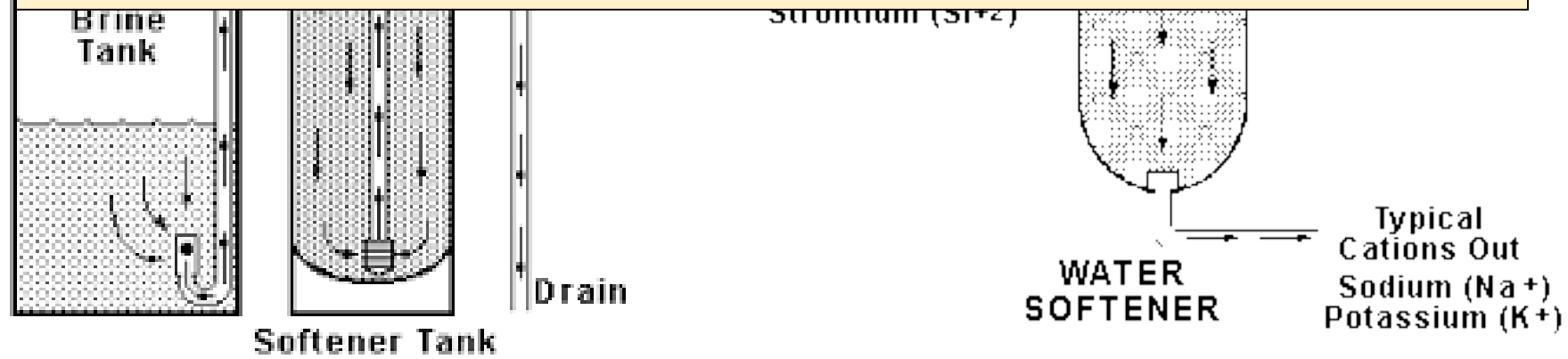
Softener [Regeneration]

A process to **Re-store Softener Functionality**

Brine Rinsing is the **Forwarding Flow** System of **Brine Solution**

NaCl conc. is **used 35 – 40%** or as per **Designer Recommendation**

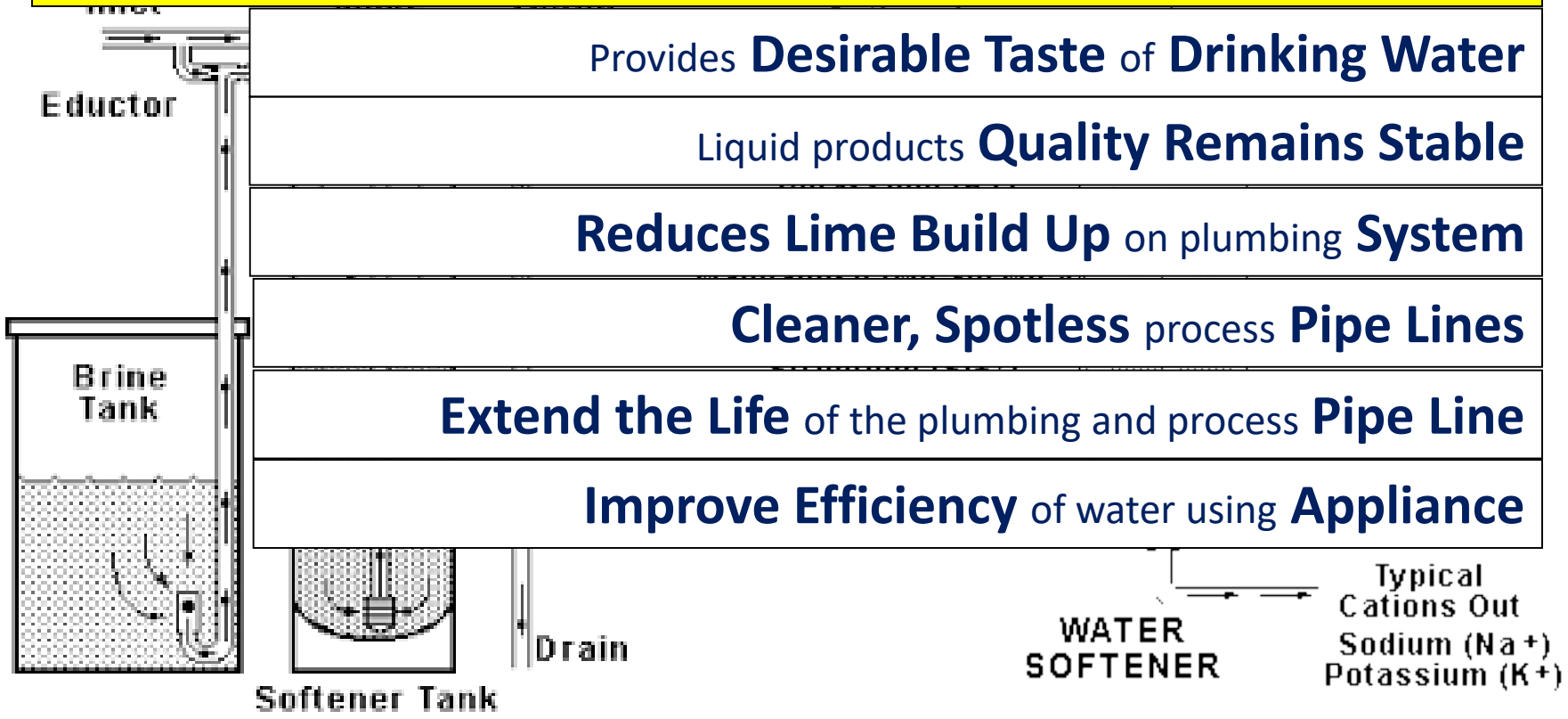
Brine Rinsing can continue for about **30 – 100 minutes**



Softener [Merits of Softener]

Softener [Merits of Softener]

- Provides **Desirable Taste** of **Drinking Water**
- Liquid products **Quality Remains Stable**
- **Reduces Lime Build Up** on plumbing **System**
- **Cleaner, Spotless** process **Pipe Lines**
- **Extend the Life** of the plumbing and process **Pipe Line**
- **Improve Efficiency** of water using **Appliance**



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