



S u s t a i n   w a t e r

**CLARIFICATION**

[www.tikal-co.com](http://www.tikal-co.com)



## Mission

Preserve water resources from waste, non-use and pollution by providing innovative and affordable water treatment and irrigation systems that are more up-to-date with technology.



## Vision:

Empowering our region to become a global role model in water resource protection by strategically addressing physical, chemical, and biological gaps.



## Company overview

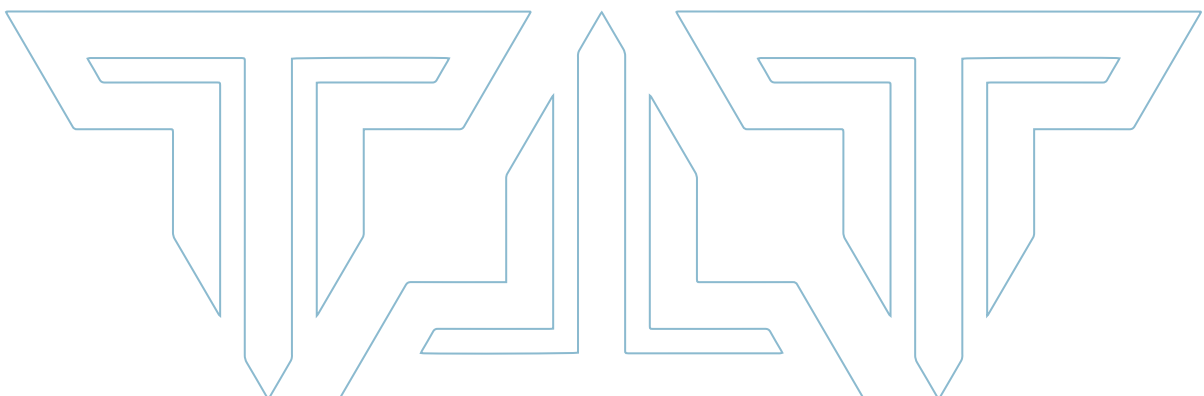
At Tikal Water & Irrigation Systems, we hold the belief that everyone deserves a sustainable environment free from pollution and resource wastage.

Tikal was Founded in 2019 by a group of engineers driven by initiative, innovation, and renewal, it was established to address the pressing challenges of untreated water, and unsustainable irrigation practices.

Our concern is to provide a range of integrated solutions and services that play a crucial role in physical, chemical, and biological challenges, and apply them through Vital national projects.

Tikal also attaches special importance to small communities by designing customized and intelligent solutions that allow using modern technologies and meet all needs and standards.

At Tikal, we aim to preserve and sustain water resources and are committed to delivering the latest solutions and services to our clients. To achieve this, we invest in research and development to enhance access to modern technologies and making a positive impact on the world.





# Tikal Water Solutions

## A. Utilities

«Through its water solutions, Tikal Company aims to simplify the process of preserving and benefiting from water resources by providing comprehensive and integrated solutions for most vital processes in water treatment, Through (Headworks) Tikal aims to provide Primary treatment one of the urgent roles in wastewater treatment, (Clarification) Our solution to remove of SS, Colloidal Particles, and impurities from raw water, Followed by )Filtration) to achieve the desired level of purity, and for Treatment and dispose of Sludge (Sludge treatment).

Tikal else provides physical solutions through (Pump Station) To prevent some harmful phenomena." these solutions have more than 71% coverage of basic water treatment processes and we aim to be up-to-date continuously.»



## B. Small Communities:

TikalOne™, a pioneer division within our corporate framework, is strategically poised to revolutionize water treatment for small communities, ranging from 500 to 50,000 residents.

Born out of a commitment to excellence and guided by the principles of precision and innovation, TikalOne™ offers a visionary approach to integrated water solutions.

At its core, TikalOne™ is not just a brand; it's a scientific breakthrough in water treatment. Embracing the concept of modular intelligence, our bespoke systems, include Sea Water Reverse Osmosis (SWRO), Brackish Water Reverse Osmosis (BWRO), Munacibile water treatment (MW), MBBR (Moving Bed Biofilm Reactor), and SBR (Sequential Batch Reactor).

These units are designed to the distinctive characteristics of each water source. with cutting-edge, adaptable approach allows TikalOne™ to transcend traditional water treatment models. With a palette of technological sophistication and an unwavering commitment to sustainability,

TikalOne™ aspires to be the hallmark of professional water management, setting new standards for efficiency, reliability, and environmental consciousness.



**TikalOne™**



# Clarification Process in Water Treatment.

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# Clarification Process in Water Treatment:

The clarification process is a critical step in water treatment that focuses on the removal of suspended solids, colloidal particles, and impurities from raw water. The primary objective is to produce clarified water with reduced turbidity and improved clarity, setting the stage for subsequent treatment processes such as filtration and disinfection. The clarification process typically involves physical and chemical mechanisms to facilitate the settling and removal of particles. Below are detailed aspects of the clarification process:

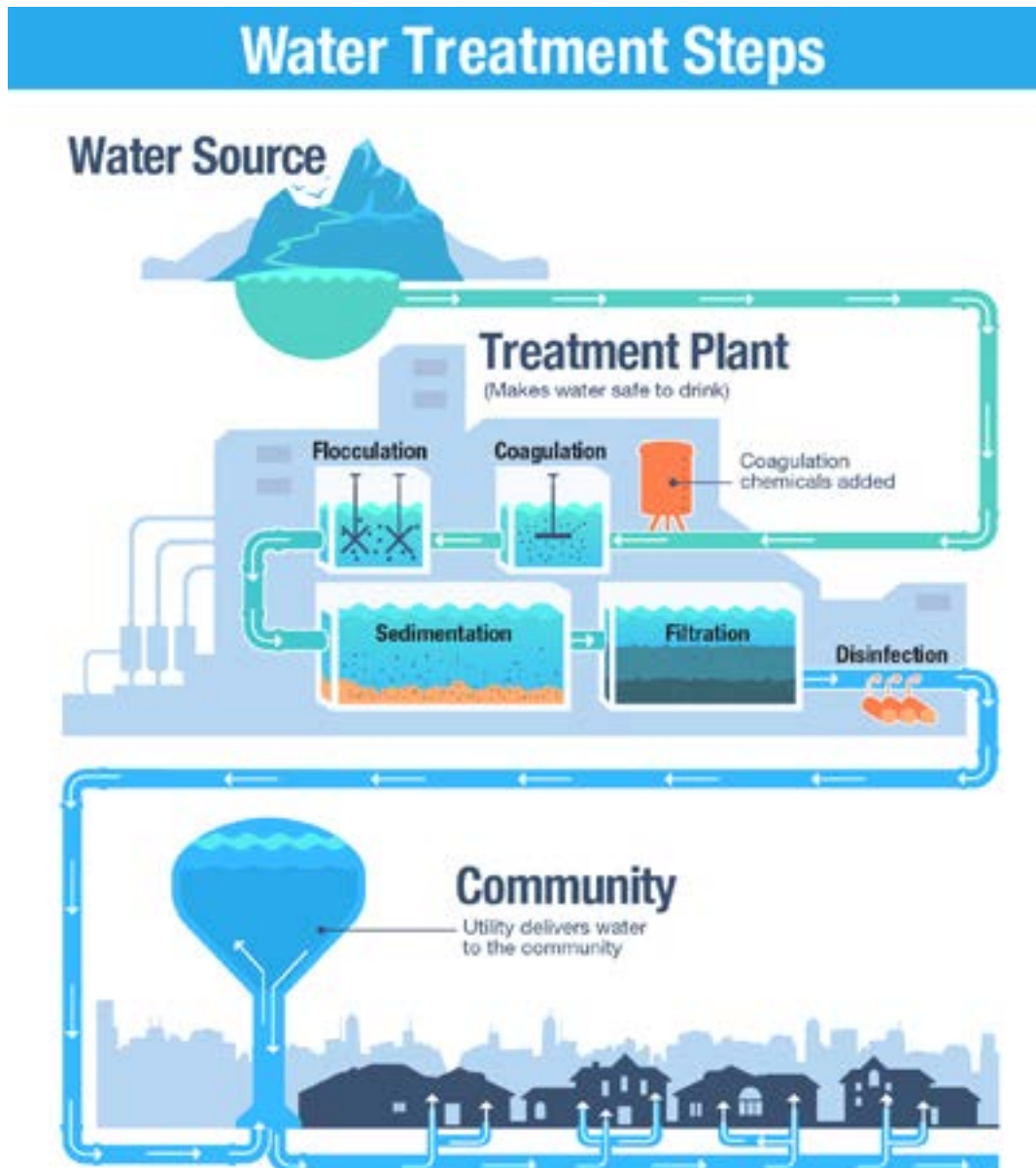
## 1. Coagulation

## 2. Flocculation

## 3. Sedimentation

## 4. Clarifier Design

## 5. Effluent Collection





# Tikal Systems

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## 1. Coagulation

### **Tikal Coagulation Process in Potable/Municipal Water Treatment Plants:**

The coagulation process is a pivotal step in municipal water treatment, ensuring the production of potable water. It involves adding chemical coagulants to raw water, destabilizing and aggregating colloidal and suspended particles for removal in subsequent processes.



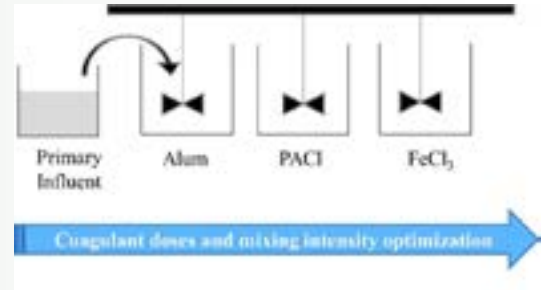
## • Components and Materials Needed for the Coagulation Process:

### 1. Coagulants:

- Aluminum-Based Coagulants (Alum): Aluminum sulfate (alum) is a commonly used coagulant in water treatment. It dissociates in water to form aluminum hydroxide, which acts as a coagulant.

- Polyaluminum Chlorides (PAC): PACs are aluminum-based coagulants that offer advantages over alum, including a higher charge density and efficiency at lower doses.

- Ferric Salts: Ferric chloride and ferric sulfate are examples of iron-based coagulants used in water treatment.

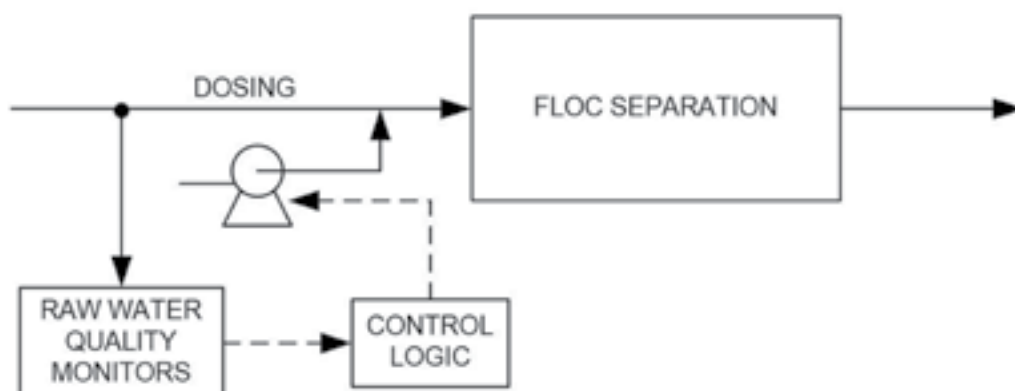


### 2. Mixing Equipment:

- Flash Mixers: These are mechanical mixing devices used to rapidly disperse the coagulant into the water. Flash mixers provide intense, short-duration mixing, while flocculators provide longer-duration, gentler mixing for optimal coagulation.

### 3. Dosage Control System:

- Chemical Feed Systems: Systems for precise dosing of coagulants into the water. This ensures that the right amount of coagulant is added to achieve effective coagulation without overdosing.





# Coagulation Process:

**2. Rapid Mixing  
(Flash Mixing)**

**4. pH Adjustment  
(If Necessary)**



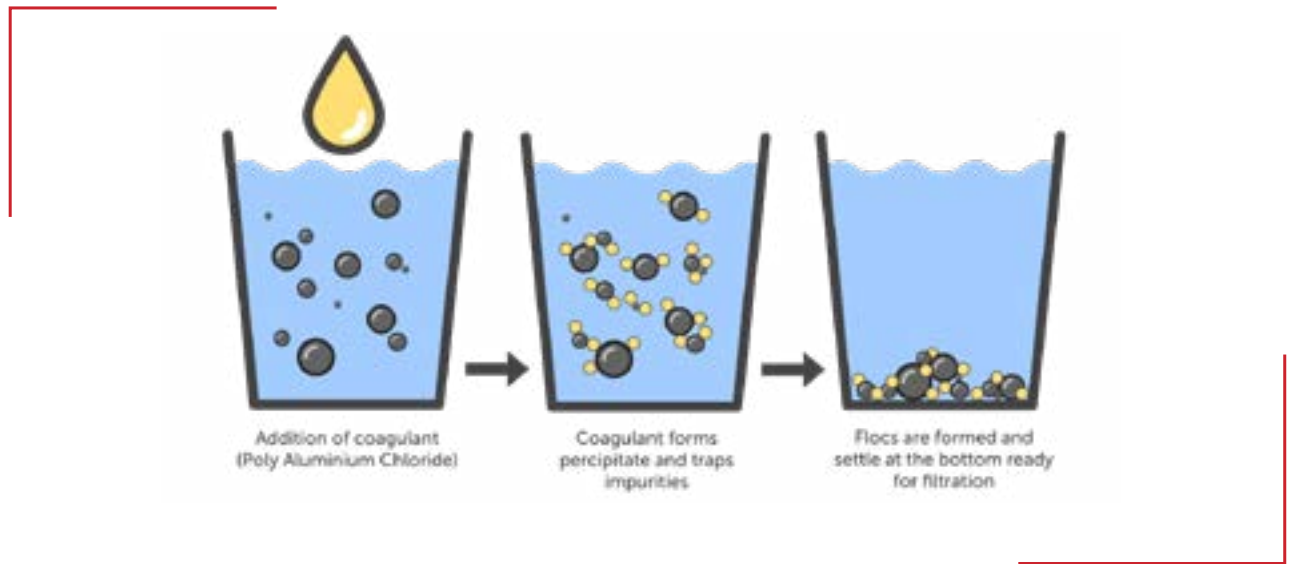
**1. Chemical Addition**

**3. Flocculation  
(Optional)**



## • Factors Influencing Coagulation Effectiveness:

1. Coagulant Type and Dosage.
2. pH
3. Water Temperature
4. Mixing Intensity and Duration

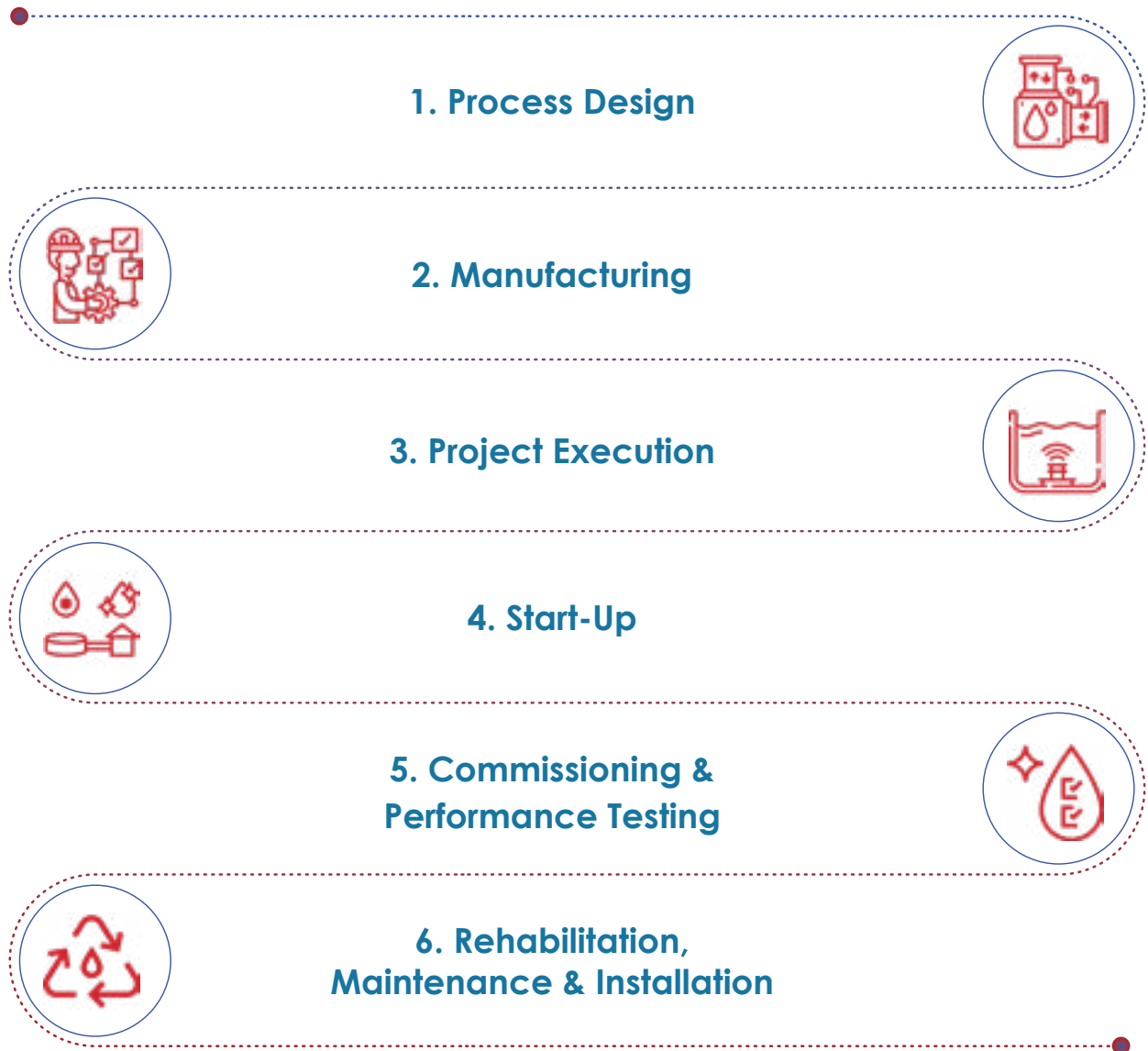


## • Importance of Coagulation:

1. Particle Destabilization.
2. Floc Formation
3. Improved Settling
4. XEnhanced Filtration



# Coagulation Service | Product Offering



## Product

Coagulants (Alum, PAC, Ferric Salts), Mixing Equipment (Flash Mixers)



# Tikal Systems

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## 2. Flocculation

**Flocculation Process in Potable/Municipal Water Treatment Plants:**

Flocculation, following coagulation, involves gentle stirring to encourage the formation of larger flocs from destabilized particles. It aims to enhance agglomeration for improved settling during sedimentation, contributing to further water clarification.

The primary objective of flocculation is to enhance the agglomeration of particles, making them larger and more easily settleable during sedimentation. This process is crucial for achieving further clarification of the water before it undergoes additional treatment steps.



## • Components and Materials Needed for the Coagulation Process:

### 1. Flocculation Tanks or Basins:

- Description: Flocculation tanks or basins provide the environment for the gentle mixing required for floc formation.
- Material: Tanks are typically constructed from materials resistant to corrosion and suitable for contact with treated water, such as concrete or coated steel.

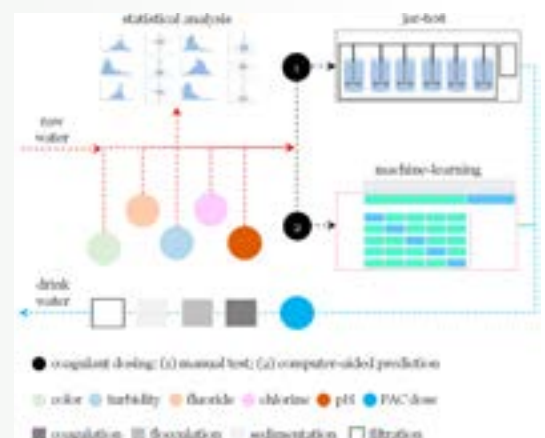


### 2. Mixing Equipment:

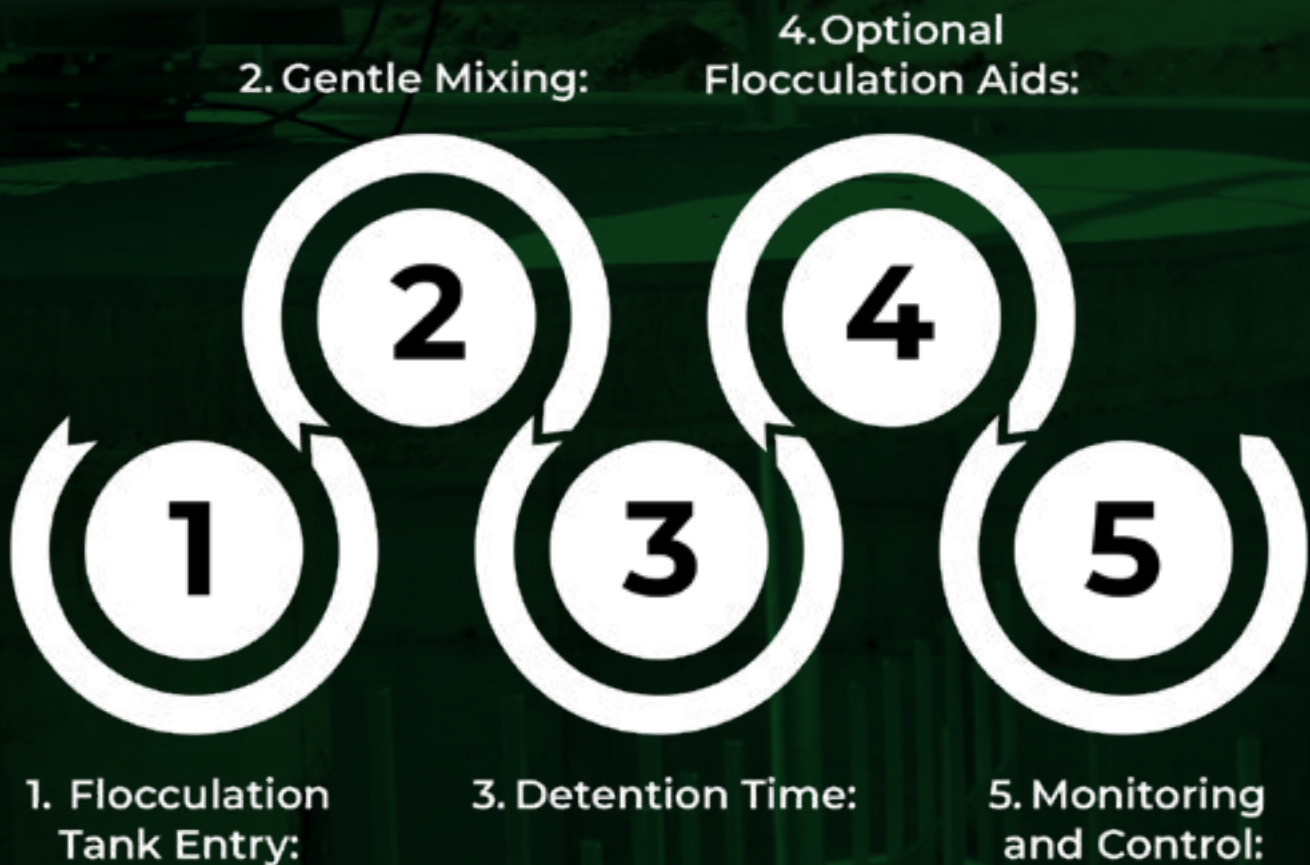
- Gentle/Slow Mixer: Flocculators are mechanical devices or paddles designed to gently mix the water in flocculation tanks. They provide the necessary energy for floc growth without breaking up the larger particles.
- Material: Mixing equipment is often made from corrosion-resistant materials such as stainless steel.

### 3. Monitoring and Control Systems:

- Flow Measurement and Control: Systems for monitoring and controlling the flow of water through the flocculation tanks to ensure the desired detention time.
- Material: Control systems include instrumentation made from materials suitable for water treatment environments.



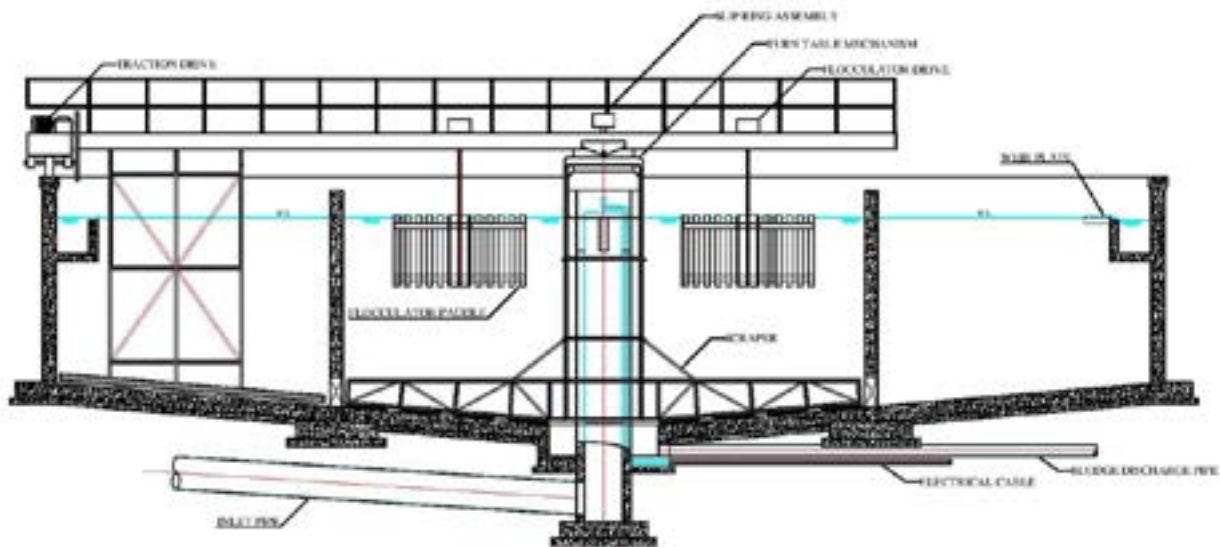
# Flocculation Process:



## • Factors Influencing Flocculation Effectiveness:

1. Intensity and Duration of Mixing
2. Detention Time
3. Presence of Flocculation Aids
4. Water Temperature

## • Importance of Flocculation:



### 1. Floc Formation:

- Flocculation encourages the formation of larger flocs, which are essential for efficient sedimentation in the subsequent clarification process.

### 2. Settling Enhancement:

- Larger and denser flocs settle more readily during sedimentation, improving the overall removal of particles from the water.

### 3. Clarification Improvement:

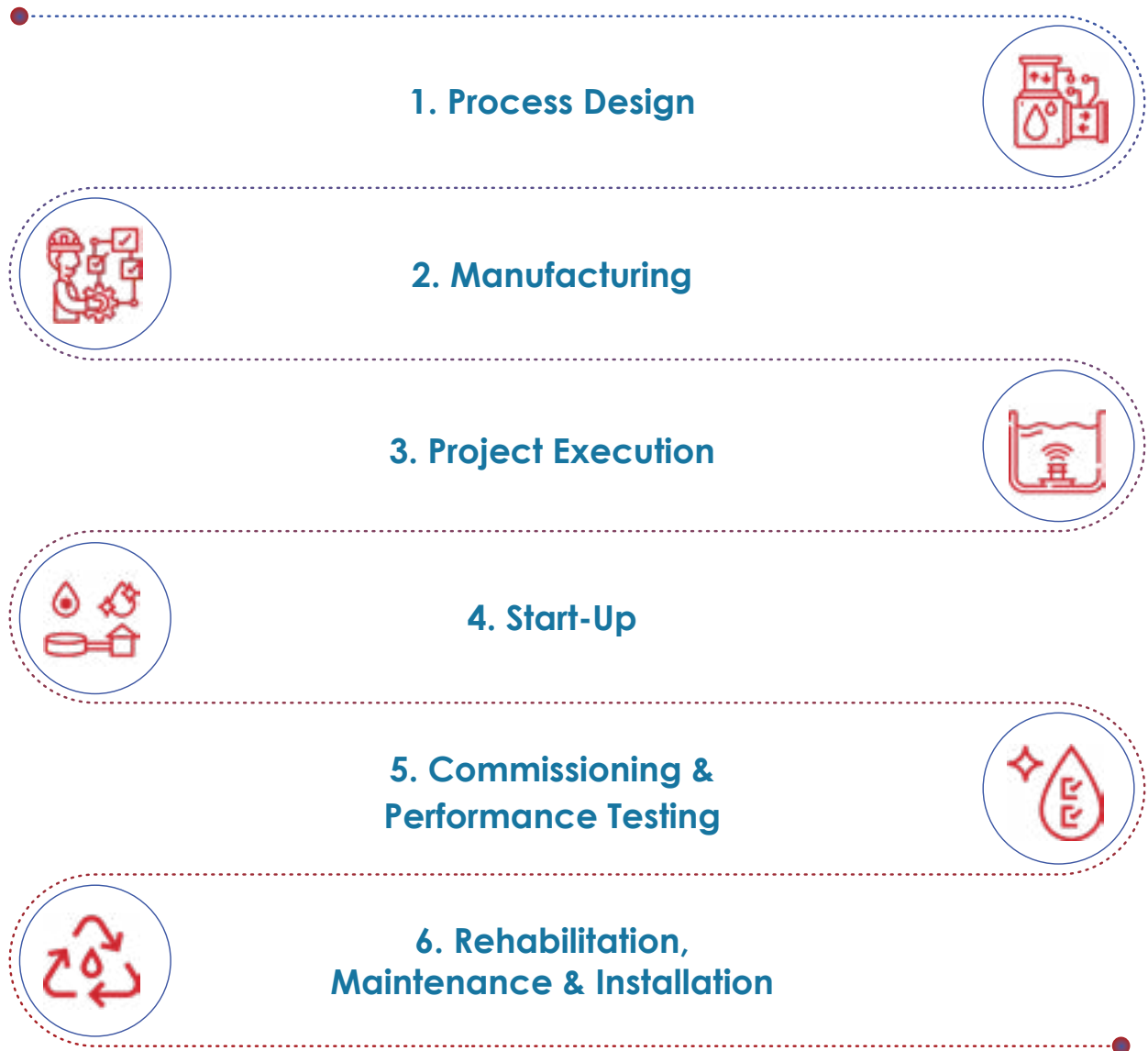
- Effective flocculation contributes to the production of clearer water, setting the stage for subsequent treatment steps such as filtration.

### 4. Filtration Efficiency:

- By promoting the formation of settleable flocs, flocculation enhances the efficiency of downstream filtration processes.

# Flocculation

## Service | Product Offering



### Product

Mixing Equipment (Gentle/Slow Mixer)







# Tikal Systems

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## 3. Sedimentation

Optimizing Clarity: The Essence of Sedimentation

### Sedimentation Process in Water Treatment Plants:

The sedimentation process in potable water treatment is a physical water treatment step that follows coagulation and flocculation. It involves allowing water to rest in large basins or tanks, promoting the settling of suspended particles, flocs, and other impurities to the bottom. The clarified water is then collected from the top, providing a clearer water that is ready for further treatment.

## • Significance of Sedimentation:

### 1. Particle Removal:

- Sedimentation removes settleable particles and flocs, reducing turbidity and improving water clarity.

### 2. Clarification:

- The process contributes to water clarification, providing a clearer liquid for subsequent treatment stages.

### 3. Sludge Separation:

- Sedimentation facilitates the separation of sludge, preventing its accumulation in the water distribution system.

### 4. Enhanced Filtration:

- By reducing particle loads, sedimentation enhances the efficiency of downstream filtration processes.

### 5. Pathogen Removal:

- Sedimentation can contribute to the removal of certain pathogens and microorganisms that may be associated with suspended particles.

## • Factors Influencing Sedimentation Effectiveness:

### 1. Detention Time:

- Tikal's adept handling of detention time ensures a symphony of effective settling, where time becomes a silent maestro.

### 2. Baffle Design:

- Well-designed baffles control flow patterns, prevent short-circuiting, and enhance the efficiency of particle settling.

### 3. Particle Characteristics:

- The nature and characteristics of particles, including size, density, and shape, influence their settling behavior.

### 4. Hydraulic Loading Rate:

- The rate at which water is introduced into the sedimentation basin affects the settling process. Optimal hydraulic loading rates ensure effective particle settling.

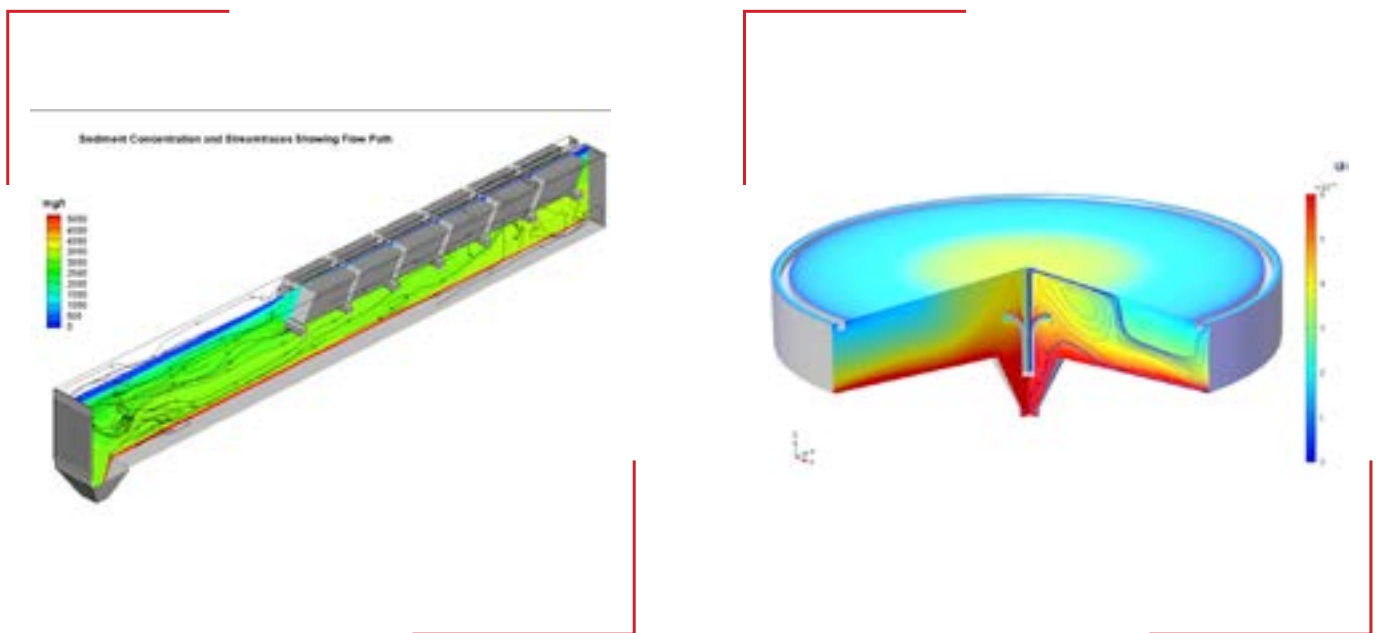
One modern technology that has been employed to improve sedimentation quality in water treatment processes is the use of inclined plate settlers or...



## A. lamella Sheets:

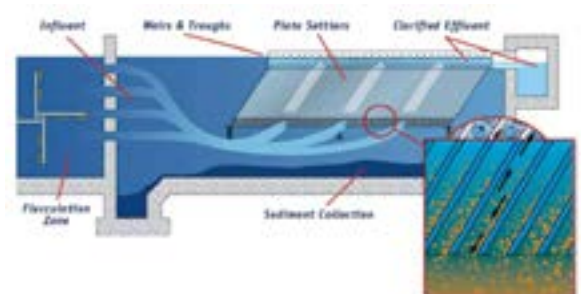
### Lamella

Lamella clarifiers enhance the traditional sedimentation process by incorporating inclined plates or tubes, providing a larger effective settling area within a compact footprint. This technology is designed to improve particle settling efficiency and optimize the use of space in sedimentation basins.



### • Tikal Design and selection Considerations:

1. Flow Rate and Capacity
2. Particle Size Distribution
3. Temperature and Chemical Compatibility
4. Loading Conditions
5. Material Compatibility
6. Modularity and Retrofitting
7. Tube Spacing and Diameter



If retrofitting into an existing sedimentation basin is required, the modularity of the tube settler design should be considered for ease of installation.



- **Between Several designs, Tikal recommend.**

## 1. **Parallel Plate Settlers:**

• parallel plate settlers compose a symphony of closely spaced, inclined plates. Laminar flow enriches the settling area, creating a crescendo of efficiency.

Plates are set at a precise inclination angle, typically ranging between **45 to 60 degrees**, ensuring optimal particle settling and water drainage.

### **Surface Area Optimization:**

• The surface area for settling is maximized through the careful arrangement of closely spaced plates.

• Our PPS units provide up to **2--3 times** the settling surface area compared to traditional sedimentation tanks.

• Achieve hydraulic loading rates range from **1 to 5 m<sup>3</sup>/m<sup>2</sup>.hr**, showcasing exceptional efficiency.





## 2. Hexagonal Tube Settlers:

- Tubes arranged in a hexagonal pattern, engage in a ballet of space optimization, amplifying settling efficiency within a compact footprint.

### Hexagonal Configuration for Superior Efficiency:

- Tikals Hexagonal Tube Settlers feature a unique arrangement of tubes, forming a hexagonal pattern that maximizes the settling surface area.
- Achieve a **30% increase in settling surface area** compared to traditional square or circular tube settler designs.

### hydraulic loading rates

#### 1. Low to Moderate Loading Rates:

- For applications where a high degree of solids removal is required, such as in drinking water treatment plants, hydraulic loading rates in the range of 1 to 3  $\text{m}^3/\text{m}^2\cdot\text{hr}$

#### 2. Moderate to High Loading Rates

- goal is to achieve a certain level of solids removal without compromising flow capacity, hydraulic loading rates in the range of 3 to 5  $\text{m}^3/\text{m}^2\cdot\text{hr}$  or higher may be employed.

### Tube Inclination and Spacing:

- Specific data: Inclination angles ranging from 55 to 60 degrees and precise tube spacing ensure an unmatched settling performance.



### 3. Chevron Tube Settler:

- An innovative design, a choreography that optimizes settling efficiency.

#### Technical Excellence:

#### 1- Optimized Tube Configuration:

- Tikals Lamella Tube Settlers feature a strategic arrangement of tubes, providing a substantial surface area for particle settling.



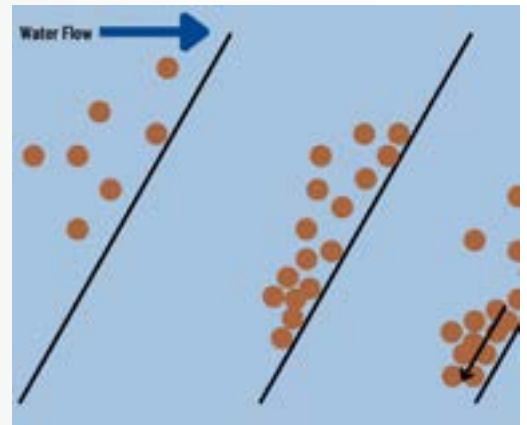
#### 2- Tube Inclination for Enhanced Performance:

- Tubes are set at a precise inclination angle, optimizing gravitational forces for efficient solids removal.
- Tubes are inclined at an angle to promote the settling of particles. Common inclination angles range from 45 to 60 degrees, ensure optimal particle sliding and water drainage.



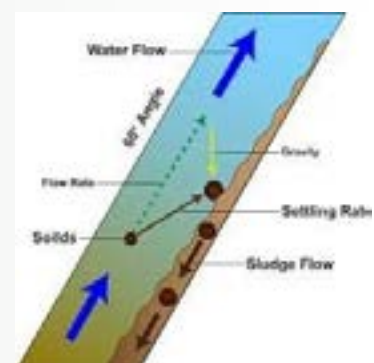
#### 3- Hydraulic Efficiency:

- The hydraulic design of our Tube Settlers ensures uniform flow distribution, maximizing particle-surface contact for enhanced settling.
- The hydraulic loading rate, It represents the flow rate per unit area through the settling tubes. Optimal rates depend on specific design considerations and may range from 6 to 13 m<sup>3</sup>/m<sup>2</sup>.hr its selected by application and solids removal is required.



#### 4- Particle Size Handling:

- Lamella Tube Settlers are effective in handling a wide range of particle sizes. They can efficiently settle particles as small as 20 micrometers.



## 5- Solids Removal Efficiency:

- Tikals Lamella Tube Settlers consistently deliver exceptional solids removal rates across diverse influent conditions.
- The efficiency of Lamella Tube Settlers in removing suspended solids is typically high. Solids removal efficiencies can range from **70% to 90%**, depending on the influent characteristics and design parameters.



## 6- Footprint Efficiency:

- One of the advantages of Lamella Tube Settlers is their compact design, resulting in significant space savings compared to traditional sedimentation tanks. The space reduction can range from **20% to 50%**.



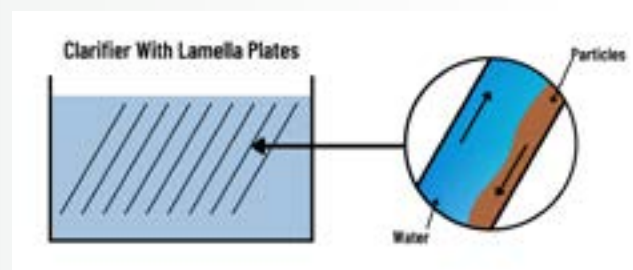
## 7- Energy Consumption:

- Lamella Tube Settlers operate under gravity-driven conditions, minimizing the need for external energy sources. This results in **lower energy consumption compared to some alternative technologies**.



## 8- Biosolids Concentration:

- The dewatered sludge from Lamella Tube Settlers can achieve solid concentrations suitable for reuse or disposal. Concentrations can vary, but achieving solids concentrations of **2--5%** in the dewatered sludge is common.



If retrofitting into an existing sedimentation basin is required, the modularity of the tube settler design should be considered for ease of installation.

# Lamella System Advantages:

## 1. Expanded Settling Stage:

- Tikal's design maximizes the surface area, elevating particle removal efficiency to a standing ovation.

## 2. Efficiency Crescendo:

- An ensemble of inclined plates fosters collision and aggregation, ensuring a heightened settling efficiency performance.

## 3. Spatial Ballet:

- Tikal's settlers offer efficiency in spatial dimensions, a dance in perfect harmony with space-constrained environments.

## 4. Turbulence Waltz:

- Laminar flow conditions hush turbulence, ensuring settled particles remain undisturbed—a stable settling waltz.

## 5. Seamless Installation Minuet:

- Modular design ensures an effortless installation dance, whether in a new water treatment plant or a retrofitted basin.

## 6. Maintenance Nocturne:

- A melody of minimal maintenance, Tikal's settlers resist clogging, ensuring a straightforward cleaning encore.

## 7. Particle Removal Symphony:

- Prolonged settling path and laminar flow dynamics—an opulent symphony of particle removal efficiency.

## 8. Design Flexibility Waltz:

- Tailorable design meets plant-specific needs, offering flexibility in system design.

## 9. Footprint Minuet:

- A compact design contributes to a reduced footprint, a valuable asset in urban or confined settings.

## 10. Operational Control Sonata:

- Advanced control systems fine-tune the sedimentation process, optimizing performance and averting operational hitches.

## Conclusion:

Lamella Tube Settlers by Tikal leverage these technical and numerical considerations to provide a highly efficient solution for water sedimentation. The specific values may vary based on the model and design specifications, and for precise data, it is recommended to refer to Tikal's product documentation or consult with their technical experts.

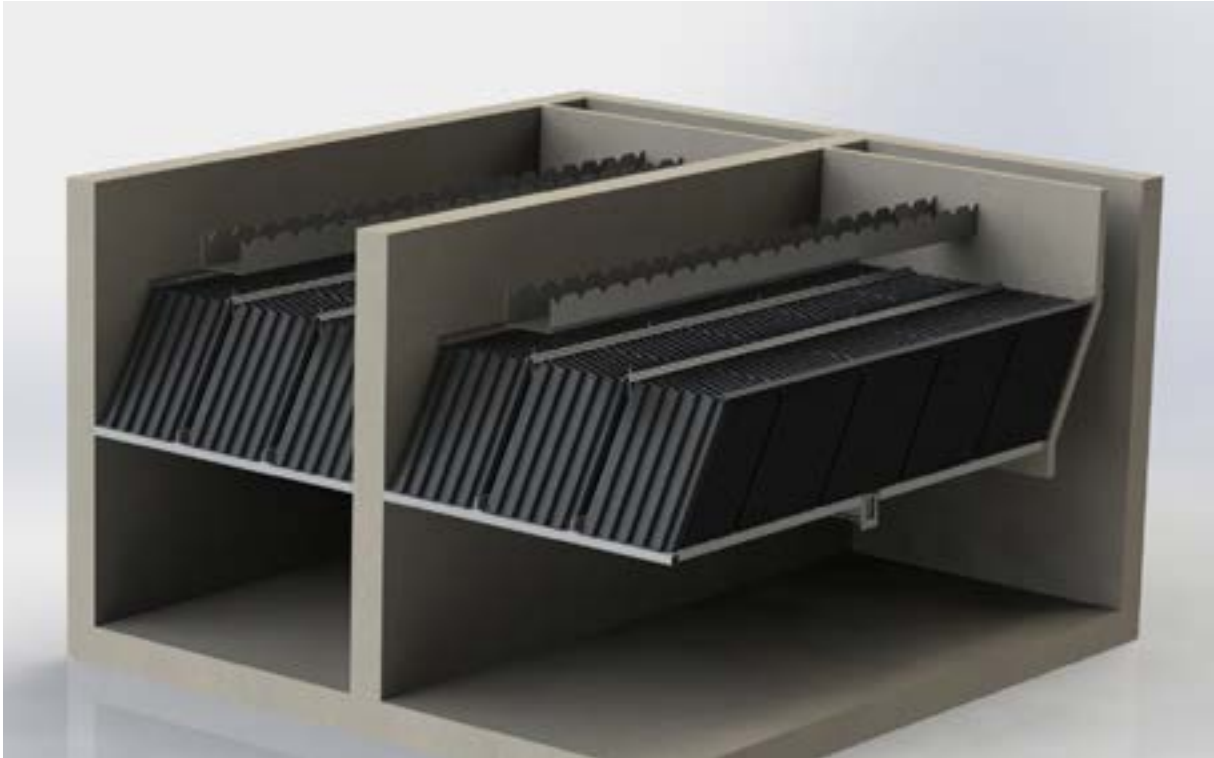


• Next data reflect approximate result of Tikal lamella types and every project have special case and technical study.

| DESCRIPTION                     | Parallel Plate  | Hexagonal   | Chevron  |
|---------------------------------|---|---|--|
| <b>Slope</b>                    | 90 to 45 degrees  | 55 to 60 degrees                                      | 45 to 65 degrees   |
| <b>Surface Load</b>             | 15-30 m <sup>3</sup> /m <sup>2</sup> /hr.                             | 10-20 m <sup>3</sup> /m <sup>2</sup> /hr              | 5-15 m <sup>3</sup> /m <sup>2</sup> /hr                            |
| <b>Sedimentation Efficiency</b> | 40-60%  | 50-70%  | 50-95%   |
| <b>Footprint Reduction (%)</b>  | 60-80%  | 40-60%  | 20-40%   |
| <b>Particle Size Removal</b>    | 50-100 microns  | 20-50 microns   | 5-20 microns   |
| <b>Material</b>                 | Steel, plastic, fiberglass  | PVC, polypropylene                                    | PVC, polypropylene   |
| <b>Maintenance</b>              | Easy to clean, access for inspection                                  | Moderate, may require tube cleaning                   | More challenging   |
| <b>Applications</b>             | Primary clarification, pretreatment, high flow rates, large particles | Secondary clarification, polishing, medium floc sizes | Tertiary clarification, polishing, fine particles, high efficiency |



## Applications:



### 1. Potable Water Treatment:

Tikal's settlers elevate water clarification, preparing a pristine canvas for subsequent treatment steps.

### 2. Wastewater Treatment:

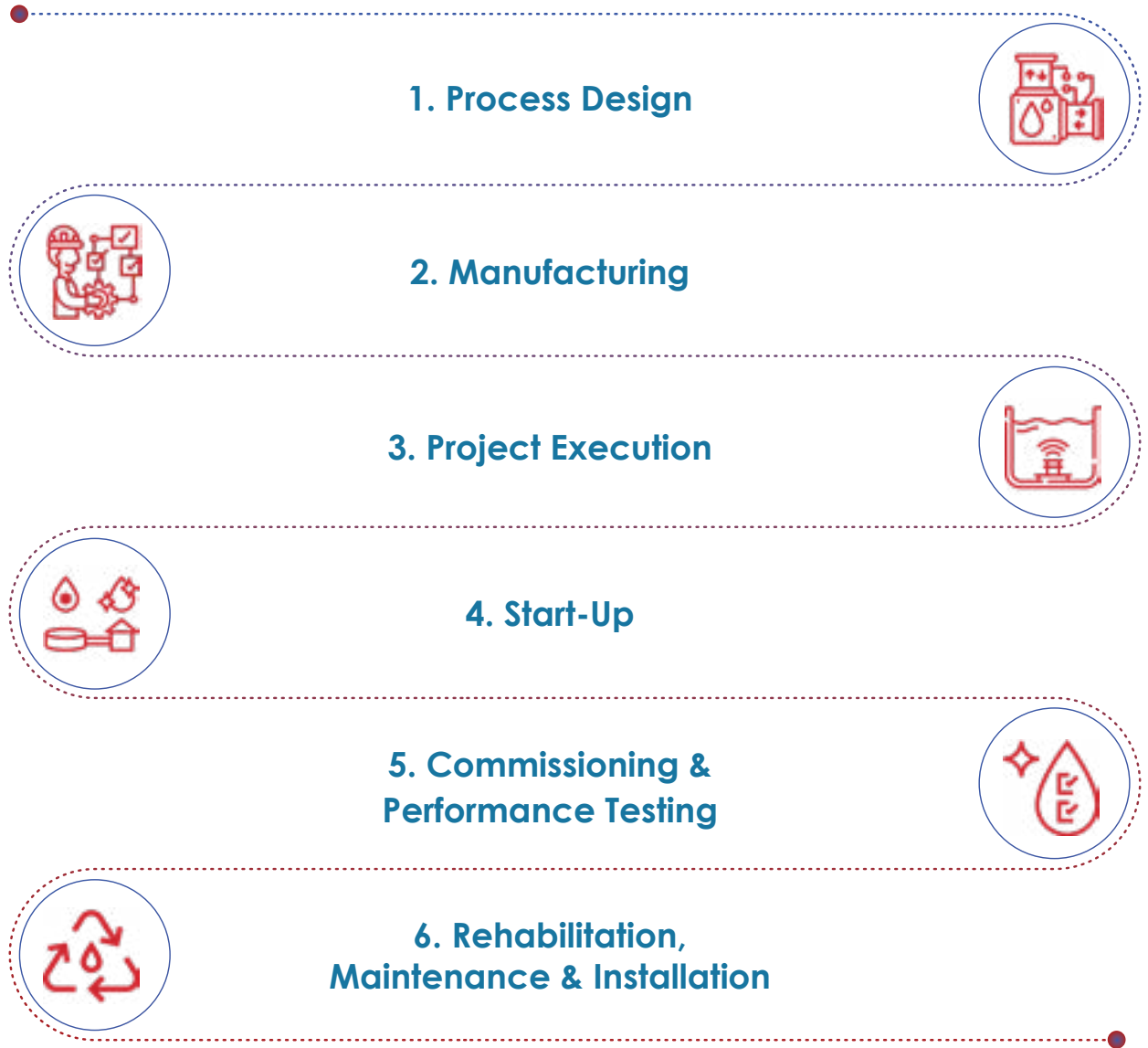
Allies in segregating solids from wastewater, Tikal's settlers heighten the efficiency of clarification and sedimentation.

### 3. Industrial Water Treatment:

Applied across diverse industrial processes necessitating water clarification for process water or discharge compliance.

### 4. Stormwater Treatment:

Employed in stormwater treatment systems, Tikal's settlers elegantly excise suspended particles, refining water quality prior to discharge.



**Product**

Tube Settler, lamella Supports, Washing System.



## B. Lamella Clarifier:

### Tikal Lamella Clarifier: Elevating Water Treatment Excellence

#### Innovative Water Treatment Technology:

Tikal Water Systems takes pride in pioneering advancements in water treatment technology. Our Lamella Clarifier Unit stands at the forefront of this commitment, embodying efficiency, sustainability, and space optimization in cutting-edge water treatment solutions.

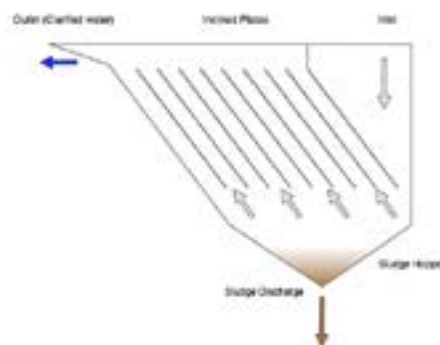


#### Lamella Clarifier Overview:

The Lamella Clarifier, or lamella separator, is a water treatment marvel designed for the efficient separation and removal of suspended solids from water. It utilizes a revolutionary approach with inclined plates or tubes, creating an expansive settling area within a remarkably compact footprint. This technology finds extensive applications in both potable water treatment and wastewater treatment processes.

#### • Key Components of Tikal's Lamella Clarifier Unit:

1. Inclined Plates or Tubes
2. Frame Structure
3. Inlet and Outlet
4. Sludge Collection Hopper
5. Effluent Weir





## • Dimensions Ranges:

• Length: 2- 10 meters

• Width: 1- 5 meters

• Height: 2- 4 meters

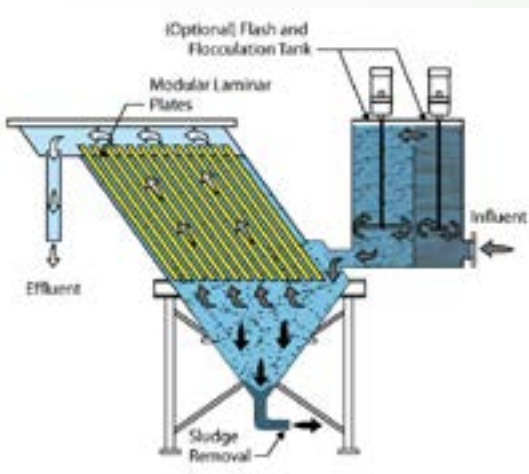
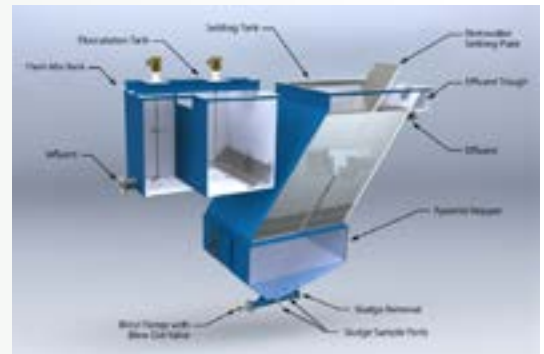
• Lamella Spacing: 40- 60 mm

• Settling Area: 10- 50 m<sup>2</sup>/m

## • How Tikal's Lamella Clarifiers Work:

### 1. Influent Introduction:

• Water designated for clarification enters the lamella clarifier, typically following chemical coagulation and flocculation to encourage particle aggregation.



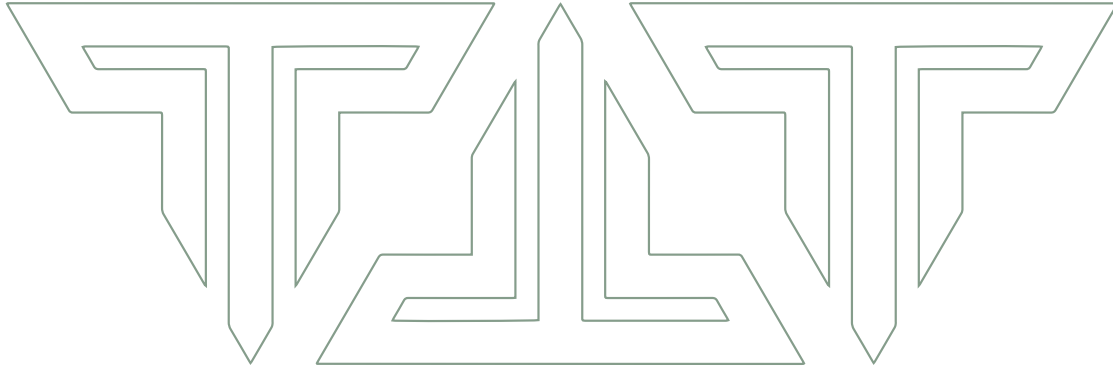
### 2. Flow through Inclined Plates:

• The water flows through the inclined plates or tubes, allowing particles to settle on the plate surfaces under the influence of gravity. The inclined arrangement creates a longer settling path, significantly enhancing process efficiency.

### 3. Formation of Flocs:

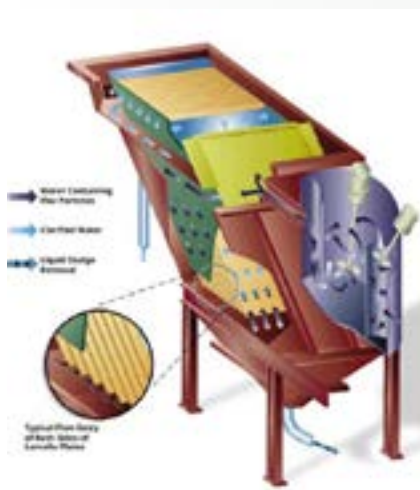
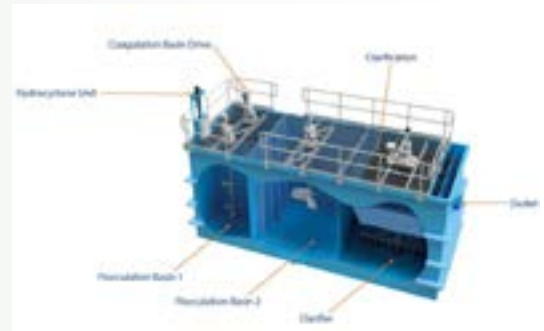
• Inclined plates play a pivotal role in fostering the formation of flocs—larger, heavier particles resulting from the aggregation of suspended solids. Flocs settle more rapidly than individual particles.





#### 4. Clarified Water Collection:

- Clarified water ascends to the top of the inclined plates and is collected near the outlet. This clarified water is then directed for further treatment or distribution.



#### 5. Continuous Process:

- The inclined plates facilitate a continuous flow path for water, ensuring uninterrupted clarification. This stands in stark contrast to traditional sedimentation basins, where settling occurs in a quiescent (non-flowing) environment.

#### 6. Sludge Removal:

- Settled solids, or sludge, accumulate at the bottom in the sludge collection hopper. Periodic removal of sludge maintains optimal unit performance.



## • Tikal Lamella Units characteristics:

1. Flow Rate: 1 to 20 m<sup>3</sup>/h (smaller units), Maximum Range: Up to 100 m<sup>3</sup>/h (larger units)
2. Surface Loading Rate: **10 to 40** m<sup>3</sup>/m<sup>2</sup>/h
3. Hydraulic Retention Time (HRT): **30 to 90** minutes
4. Solids Loading Rate: **10 to 40** kg/m<sup>2</sup>/d
5. TSS Removal Efficiency: **80 to 95%**
6. BOD Removal Efficiency: **50 to 80%**
7. Lamella Plate Angle: **45 to 60** degrees
8. Lamella Plate Material: PVC, PP, stainless steel
9. Sludge Concentration in Hopper: **2 to 5%**
10. Backwash Frequency: Every **1 to 4** hours (depending on solids loading)

1. Space Efficiency

2. Enhanced Settling Efficiency

3. Flexibility and Modularity:

4. Reduced Chemical Usage:

5. Ease of Maintenance:

6. Suitability for Various Applications:

## Products

Lamella Clarifier System, exclusively crafted by Tikal Water Systems.

# Applications: \_\_\_\_\_



## **1. Potable Water Treatment Plants:**

Ensuring the removal of suspended solids before subsequent treatment.

## **2. Wastewater Treatment Plants:**

Separation and removal of solids, contributing to the overall treatment process.

## **3. Industrial Water Treatment:**

Treatment of process water, aiding in the removal of contaminants and suspended solids.

## **4. Stormwater Treatment:**

Application in stormwater treatment systems to remove sediment and pollutants from stormwater runoff.





# Tikal Systems

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## 4. Scraper Bridge:

Tikal Scraper Bridge: Precision Sludge Removal for Optimal Clarifier Performance

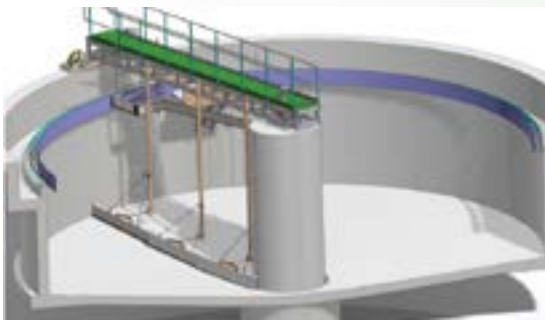
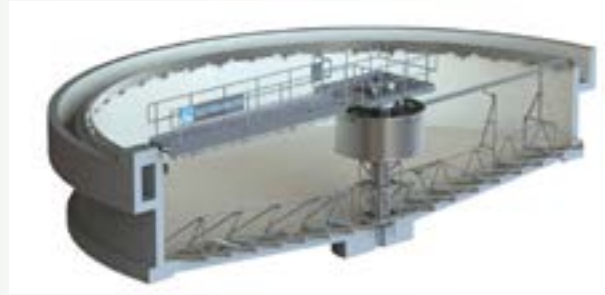
The Scraper Bridge, a pivotal mechanical component in water treatment, is deployed for the efficient removal of settled solids, sludge, or scum from sedimentation basins or clarifiers.

At Tikal Water Systems, we recognize the critical role clarifiers play in water treatment processes, and our Scraper Bridge stands as a testament to our commitment to seamless and effective clarifier operation.

## • Types of Scraper Bridges:

### 1. Full-Bridge Clarifier:

- Ideal for larger basins, the full-bridge design spans the entire width of the clarifier, ensuring comprehensive sludge removal.



### 2. Half-Bridge Clarifier:

- Suited for smaller basins or where center access is unnecessary, the half-bridge design covers only half of the clarifier's width.

### 3. Travelling Bridge Clarifier:

- Travelling bridge clarifiers move along rails or tracks installed on the periphery of the clarifier. This design provides flexibility in the positioning of the sludge removal equipment.



### 4. Clariflocculator Bridge Clarifier:

- is a combination of a clarifier and a flocculator within a single unit. This specialized structure is designed to efficiently perform both clarification and flocculation processes, thereby optimizing the removal of suspended particles and impurities from water.

## • Tikal Design and selection Considerations

### 1. Clarifier Size:

- The size and diameter of the clarifier influence the type and design of the clarifier bridge needed. Larger clarifiers may require full-bridge designs or rotating bridges for comprehensive sludge removal.

### 2. Access Requirements:

- The need for access to the center of the clarifier or specific areas may influence the choice between full-bridge and half-bridge designs.

### 3. Drive Mechanism:

- The selection of the drive mechanism depends on factors such as basin size, power requirements, and operational preferences. Electric motors and hydraulic systems are common drive options.

### 4. Peripheral or Center Drive:

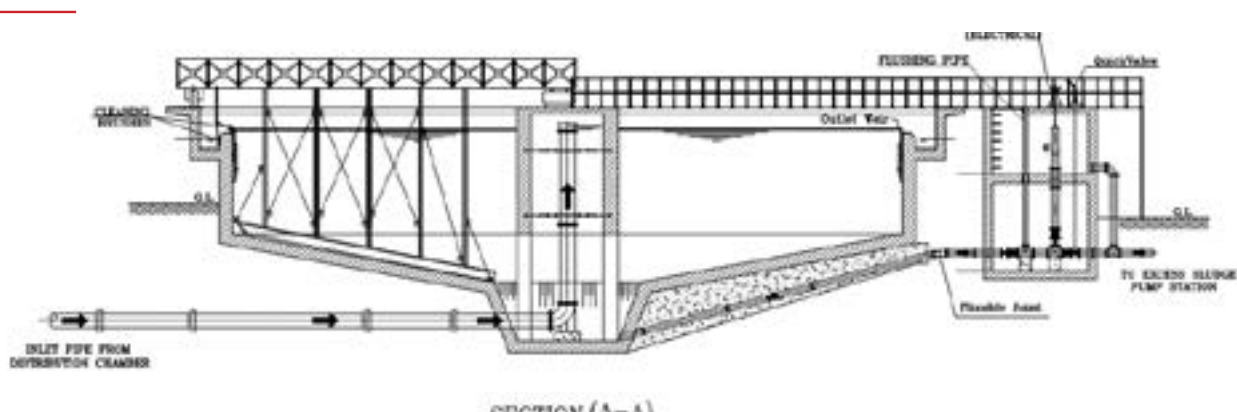
- The decision to use a peripheral or center drive depends on the clarifiers size and the desired access to the center of the basin.

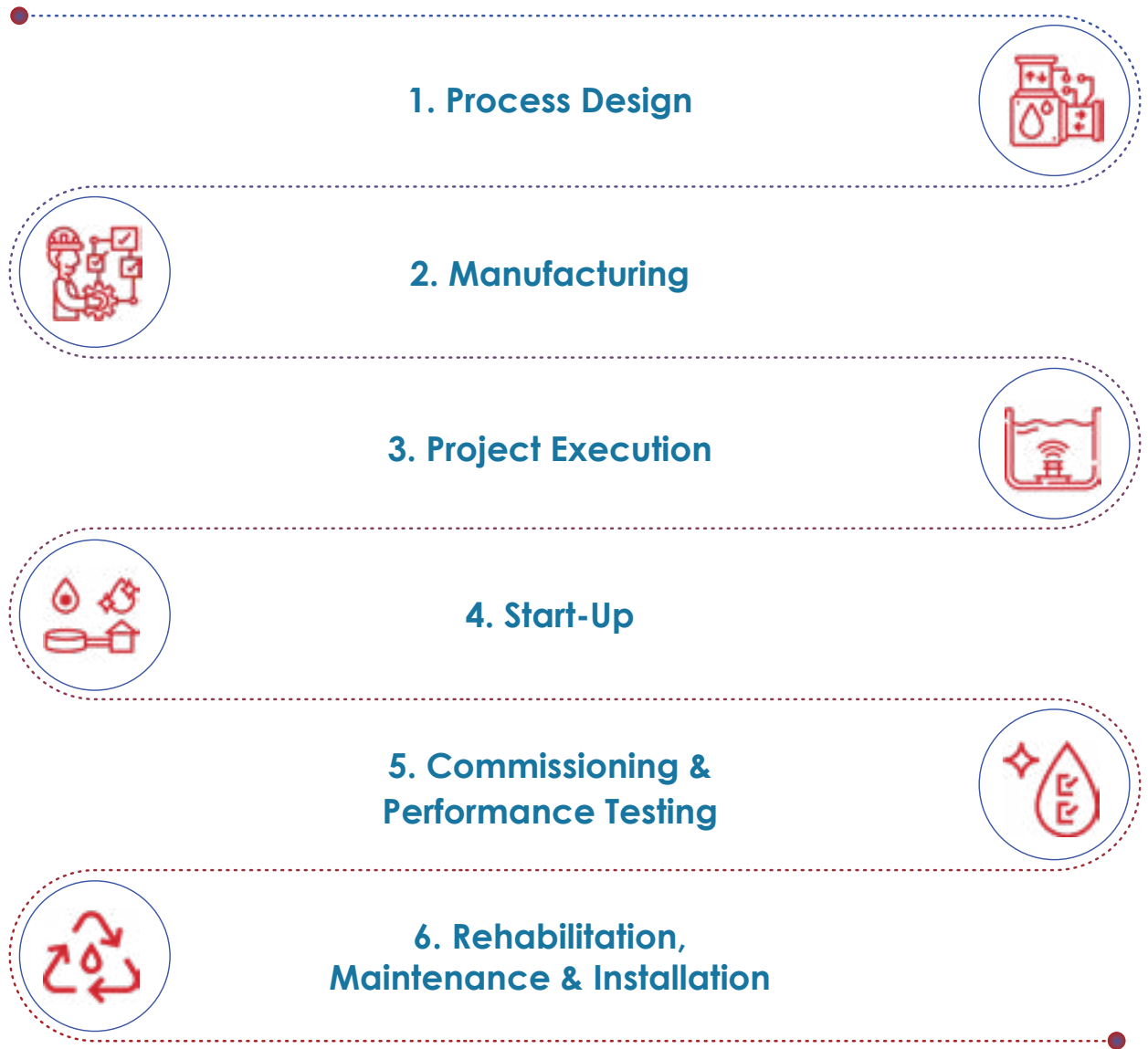
### 5. Maintenance Considerations:

- Ease of maintenance is an important consideration. Designs that facilitate access for inspection and maintenance of the bridge components contribute to the overall efficiency of the clarifier.

### 6. Operational Flexibility:

- The operational flexibility of the clarifier bridge, including its ability to adapt to varying clarifier loadings and influent characteristics, is a crucial consideration in selecting the appropriate design.





**Product**

Full/Half Bridge, Clariflocculator, Rotating, Traveling Bridge.





# Tikal Systems

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## 5. Effluent Collection

**Tikal Effluent Collection Solutions: Ensuring Precision and Efficiency**

The effluent collection is a pivotal stage in water treatment, marking the culmination of the treatment process.

The term «effluent» generally refers to the liquid discharged from a treatment process, and the effluent collection stage is a critical step in ensuring the efficient management and utilization of the treated water.

Tikal Water Systems takes pride in offering versatile effluent collection solutions that cater to diverse treatment needs, ensuring the seamless management and utilization of treated water.

## • Types of Scraper Bridges:

### 1. Effluent Weirs:

- Ideal for larger basins, the full-bridge design spans the entire width of the clarifier, ensuring comprehensive sludge removal.



### 2. Baffles.

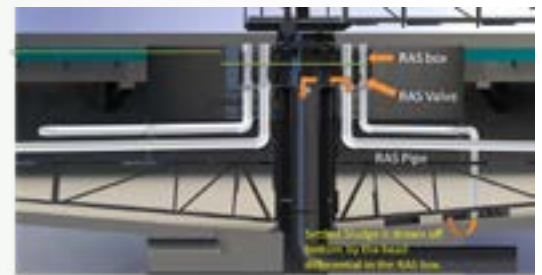


### 2. Effluent Channels:

- Effluent channels are open channels or conduits that direct the flow of treated water from one point to another. These channels may be lined with materials resistant to corrosion and erosion, ensuring the integrity of the effluent collection system.

### 3. Effluent Piping Systems:

- In many water treatment processes, especially in advanced treatment stages or when dealing with specific treatment units, effluent is collected through a network of pipes. These pipes are strategically designed to carry the treated water from one unit to another or to a storage facility. The use of piping systems provides flexibility in directing the flow of effluent.



### 4. Underdrain Systems:

- Launder systems are channels or troughs designed to carry the effluent away from the treatment unit. They are often used in settling tanks or clarifiers and provide a controlled pathway for the clarified water to move from the treatment unit to the next stage or facility.

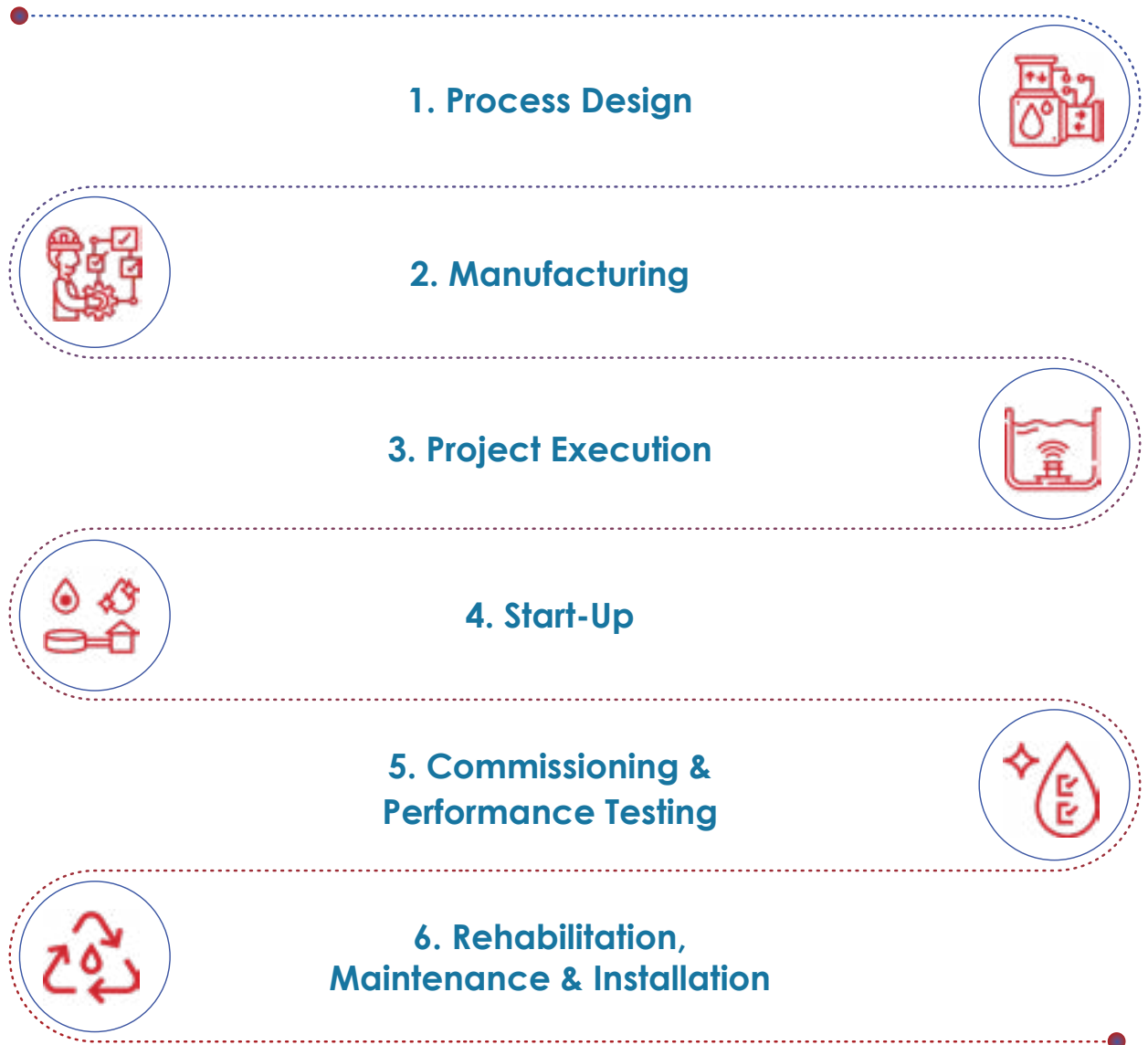
# Effluent collection systems find application in various scenarios, including:



## • Materials for Effluent Collection Systems:

The choice of materials depends on factors such as application, treated water nature, and environmental conditions. Tikal offers systems in materials like:

1. Intensity and Duration of Mixing
2. Detention Time
3. Presence of Flocculation Aids
4. Water Temperature



**Product**

Weirs, Piping Systems, Launder Systems, Channels





# Why Choose Tikal?



## • Innovation:

Embracing cutting-edge technology in design and execution.



## • Safety:

Implementing features to prevent equipment failure and operational risks.



## • Reliability:

Ensuring robustness through redundant systems.



## • Efficiency:

Optimizing energy usage and overall operational costs.

# Tikal other Solutions?



**Your Challenges Are Our Concerns.**

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