

2022



TELEMACHUS HIGH TECH PRIVATE LIMITED

(WE TREAT WASTEWATER WITH PRIDE)



- Indian Subsidiary of Telemachus Global Inc . based in Texas, USA.
- Our technology is approved by CPHEEO, MoHUA and CPWD, India.
- R&D collaboration with CSIR- Indian Institute of Toxicology Research.
- Marketing tie-up with Engineering Project India Limited (EPIL).



Rajesh Ramlal Pandey

CHAIRMAN

“

I am Rajesh Ramlal Pandey Chairman of Telemachus High Tech Private Limited. We have come up with a long-term vision, strategy, and action plan for urban wastewater management. I hereby proud to introduce a novel solution for urban wastewater management is namely “ISR (Inert Solid Removal) sewage wastewater Treatment” technology for small, medium towns, and large cities. It is a modular-based technology that can install on drains/buildings.

ISR technology treats nallah wastewater (24x7) and produces clean water within 1-2 hours under NGT norms. ISR technology doesn't need infrastructure like a centralized system, a simplified sewer system is sufficient to install an ISR treatment system (within 3 to 4 weeks) by this it can be applied on a cluster level and also can serve rural regions or local communities thereby it reduces the burden and working load of the government.

”

There is no need for introduction to the compulsion to address urban wastewater and sanitation in India. The crisis of urban sanitation is manifested by primary septic tank based sanitation systems, which outnumber the coverage of homes provided by the centralized sewage treatment based system.

Centralized sewage treatment systems and sewerage networks are the standard approaches recommended for urban wastewater management, however, not even an Indian city has a 100 percent centralized sewage system. Generally, it is introduced from the Western world after World War II, has been heavily invested in the development of Indian cities for the past five decades. Nevertheless, it has been very expensive to build, operate, and maintain a centralized system in cities. Furthermore, the implementation of centralized-based solutions for small, local clusters is not only sustainability-wise but also long-term and financially not feasible. The indiscriminate adoption of such management bodies and their relevance of them to India is systematically questioned.

The CPHEEO manual, Part A, preamble, page 1-2 states: The practice of collecting sewage by pipe is inherited from developed countries with high water usage, which allows for adequate slushing velocities. Whereas, in the Indian context, individual water supply is low and asymmetrical in many cities and this causes night soil in the sewers, chocking, gasification etc. It necessitates very often extreme remedies to access and break pipes, cut open roads, repair and more.

Out of the 7,935 towns, according to the 2011 census, only 465 towns had a population above 100,000. These numbers will increase in 2022. Only few of cities can afford to invest Rs. 100 crore for a centralized sewerage & wastewater treatment system.

The state of our polluted groundwater, surface water and aquifers, and the ever increasing thirst of our cities and towns for clean water is a testimony to this. In the future, we may run out of clean water, unless without a concerted effort and innovative sewage treatment technology to suit the Indian environment in order to reduce wastewater footprint.



Sankhan Chatterjee
Director

Head of communications, public relations, and public affairs in our organization. Responsible for communications to a wide range of stakeholders, including employees, shareholders, media, bloggers, influential members of the business community, the press, the community, and the public.

He develops and executes sophisticated strategies across multiple channels. He has a highly strategic mindset. His network extends broadly throughout the company and the industry.

It also extends into other industries giving him a wide perspective and range of resources upon which to draw. He partners with other teams members in the organization to communicate with investors, analysts, customers, and company board members. He ensures to create some consistency of message, brand, and overall communication to the outside world.

Has obtained B-Com Honors, M-Com, MBA, and Masters in Journalism and Mass Communications.



Rajeev Tiwari
Director (Legal)

Mr. Rajeev Tiwari is a Director (Legal) and advocate at Supreme Court of India for over last 20 years. He is LL.B and LL.M from the University of Delhi. He has vast experience of effectively handling corporate and legal matters in various High Courts and forum of the country.

He is an important part of the management of the company and looking after the company's legal matter including, contract and statutory compliance of the company.



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Let's Plan to Execute!



About Company

Introduction:



Telemachus High Tech is one of the leading world class water management company, providing water treatment, domestic and industrial wastewater treatment and zero liquid discharge solutions at minimal cost.

Telemachus is led by **Mr. Rajesh Ramlal Pandey, CEO** of the company, he has extensive experience in Wastewater Treatment Sector, Indian Pharmaceutical Sector, Real Estate, Infrastructure Sector and Government business, of over 30 years.

Under his leadership a team of experienced and highly skilled professionals with IIT background, Domain Experts, Technicians and vendors in Water and Wastewater Treatments, Bioremediation, infrastructure developments are functioning.

Telemachus team provides state-of-the-art technology to achieve a greener environment, develop sustainable wastewater treatment designs and build infrastructure, improve the existing treatment process, and provide high quality solutions to eliminate pollution

Telemachus providing cutting edge technologies for wastewater treatment and environmental management solutions for all sectors, such as infrastructure, industry, institutions, municipal, homes and communities, urban and rural.



Telemachus providing solutions to municipalities and industrial customers in order to protect and improve the world's most fundamental natural resource: water. Telemachus High Tech has installations across prime locations in Uttar Pradesh treating millions of wastewaters prior to discharge into river bodies.

Telemachus providing eco-friendly, efficient, cost-effective and reliable water and wastewater treatment services in a manner that respects the natural environment. We protect public health and enhance the environment by collecting and treating wastewater while recycling valuable resources for India.

Our Projects

PROJECT – 1

Plant: Bioremediation mediated ISR modular Sewage Treatment Plant on drain.

Location: Lucknow

Capacity: 2.5 MLD

Year of Commissioned: 2019

PROJECT – 2

Plant: Bioremediation mediated ISR modular Sewage Treatment Plant on drain.

Location: Pratapgarh

Capacity: 2.5 MLD

Year of Commissioned: 2020

PROJECT – 3

Plant: Bioremediation mediated ISR modular Sewage Treatment Plant on drain.

Location: Chhattarpur

Capacity: 2.5 MLD

Year of Commissioned: 2022

Currently Working on



RIVER REJEVUNATION



Experience of success



Under the leadership of our Hon'ble PM Shri Narendra Modi Ji, great progress has been made under the flagship programmed like The Swachh Bharat Mission and Namami Gange – National mission for Clean Ganga. Hon'ble Finance Minister Ms. Smt Nirmala Sitharaman has introduced Swachh Bharat 2.0, emphasizing the need to further strengthen the “Swachhata” (Cleanliness) campaign in Urban India. It features include complete fecal waste management and wastewater treatment, waste segregation and single-use plastic reduction”. ***We TELEMACHUS HIGH TECH started with an aim to restore natural water resources and sacred rivers and to make as a pollution-free India.***

Current Scenario



Your Challenges

The population of India is projected close to 1.38 billion or 1,380 million or 138 crore people in 2020. The total population in India is estimated at 1.366 billion or 1,366 million or 136.6 crore people in 2019. It is now estimated that by 2027, India will most likely overtake China to become the most populous country in the world with 1.47 billion people. And by 2059, India will cross a billion milestones and it is expected to reach its peak in 2059 with 1.65 billion people.

India is facing immense challenges arising from rapid population growth and intense urbanization, where about 45% of the population now live in towns and cities, and the population densities are much higher than in other parts of the world. Due to rapid urbanization, human activities have had a significant impact on the ecological environment. Owing to the huge discharge of municipal wastewater and urban drainage into river basins, the effect is more pronounced in the water quality in these areas. The impact of population on the ability of water sources to meet the demands placed on them by society is paralleled by the effects of population on the quality of water resources.

India is rich in surface water resources. The average annual precipitation is nearly 4000 billion cubic meters, and the average flow in the river system is estimated to be 1869 cubic Km. Because of the concentration of rains in the three monsoon months, the utilizable quantum of surface water is about 690 BCM. However, conditions vary widely from region to region. Whereas some regions are drought affected, others are frequently flooded.

In India also, with the rapid increase in the population, the demand for irrigation, human and industrial consumption of water has increased considerably, thereby causing depletion of water resources.

In urban areas, water is tapped for domestic and industrial use from rivers, streams, lakes, ponds, wells, etc. Nearly 80% of the water supplied for domestic use passes out as wastewater. In most cases, this wastewater is let out untreated and causes large scale pollution of the surface water. Rapid urbanization in India during the recent decades has given rise to a number of environmental problems such as water supply, wastewater generation and its collection, treatment and disposal.

The treated water from the conventional STPs does not meet the re-use standard. Most of it discharged into river or mixed with untreated effluents from communities which are not connected to the sewerage network. The root problems are both programme – river cleaning and city infrastructure parts of the world. In October 2017, the Centre planned to move from conventional STPs to bioremediation technologies for cleaning Ganga at 54 new sites.

In-situ treatment is simple and easy-to-operate and does not require major modification of the drain. Hence, the Centre understood that the centralized system is not the only solution and it can be supplemented by decentralised techniques. Government of India looking at the long time period of implementation of STPs and their development, the ministry is interested now in such decentralised innovative technologies.

On the other hand, in India an exorbitant amount of freshwater consumed for the domestic, industrial and irrigation needs of a growing population. In India, increasing pollution in water bodies affects the sustainable supplies of potable water. Uncontrolled exploitation of surface and groundwater in urban and rural part creates, water levels lowering, reduce the availability of potable water, creates environmental imbalances, sewage wastewater production and water pollution etc.

A new innovative technology is needed to fix the wastewater problem and balance the sustainable supply of clean water for our development.

Our Solutions

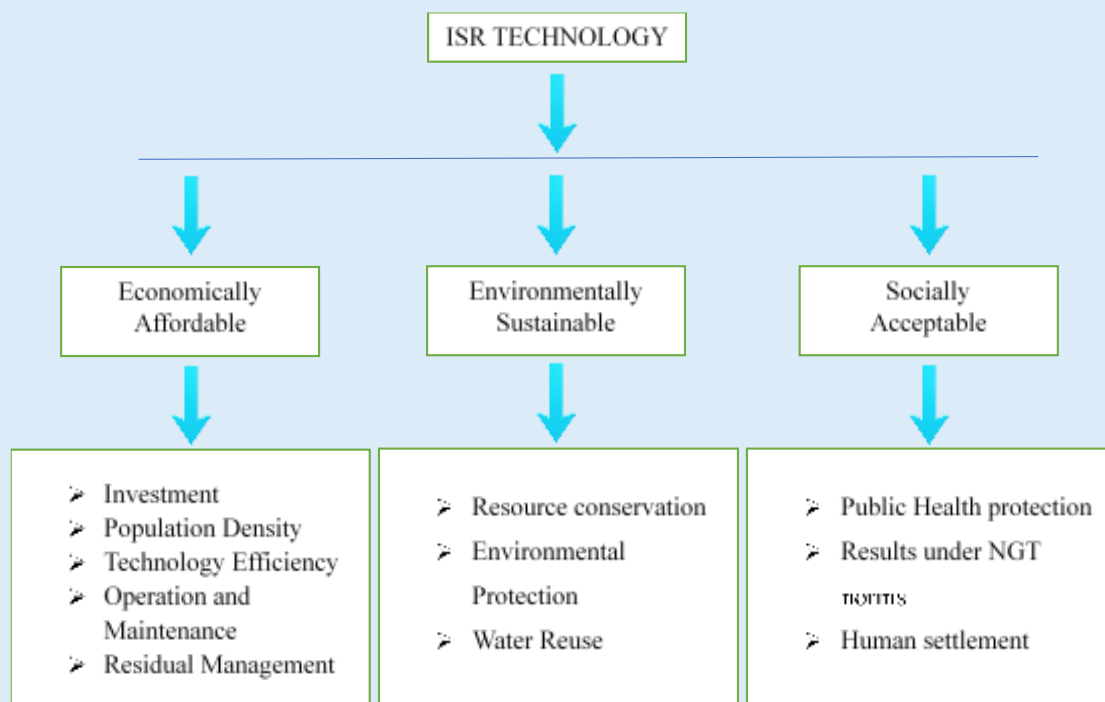


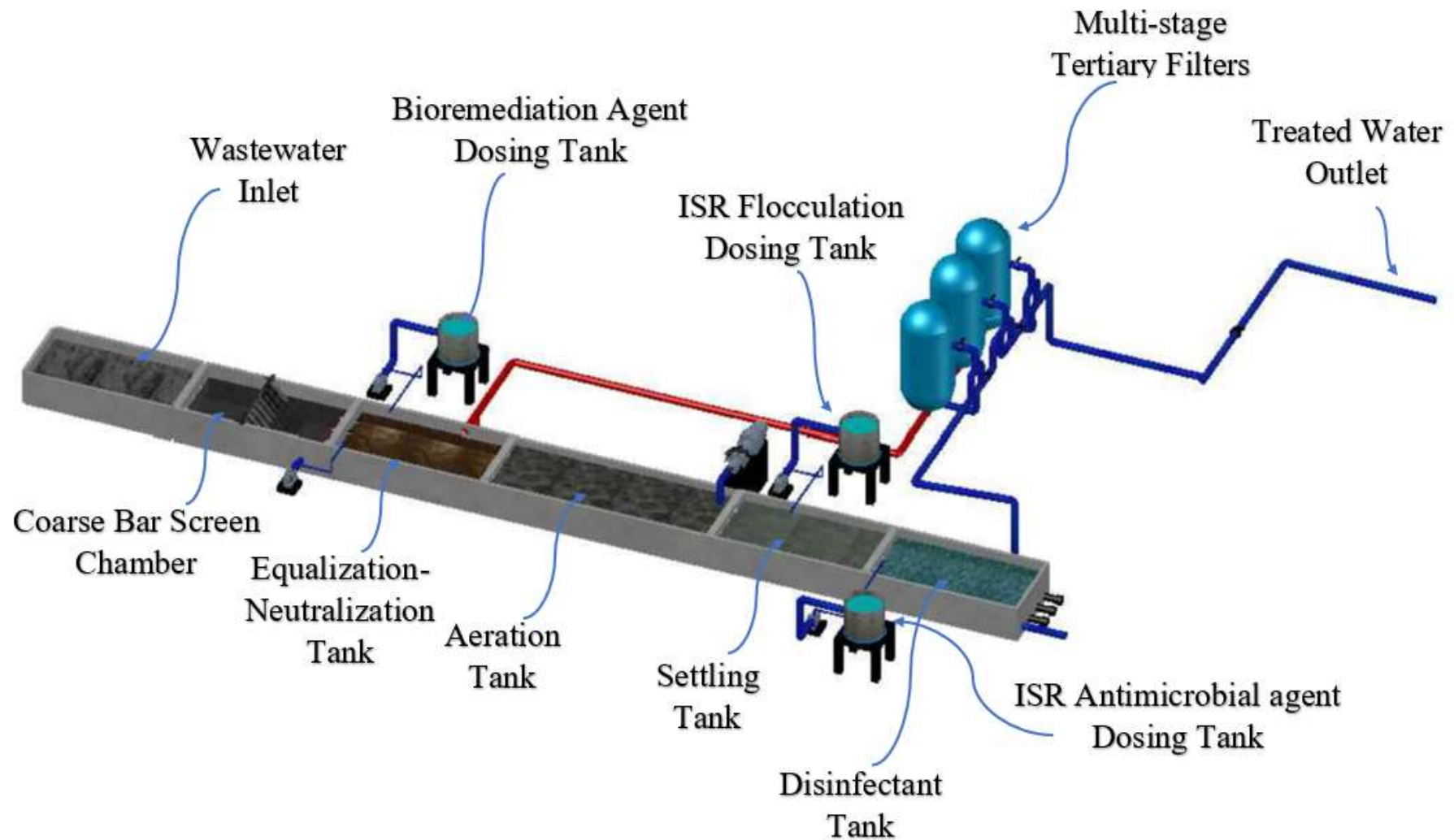
Our Solutions

Telemachus High-Tech provides solutions in the form of Bioremediation mediated ISR modular sewage wastewater treatment plant. These ISR modular treatment systems are practiced in India. It is suitable for densely populated areas and can efficiently handle the high volume of wastewater than other technologies. Moreover, the ISR modular treatment system provides a solution that is simpler and less expensive for large residential areas with high population densities.

BIOREMEDIATION MEDIATED ISR MODULAR SEWAGE TREATMENT PLANT

ISR modular Sewage Treatment Plant encompasses an approach, not just a technical hardware package, i.e., besides biological and engineering aspects, the specific local economic and social situation are taken into consideration. ISR technology is economically affordable, environmentally sustainable and socially acceptable.



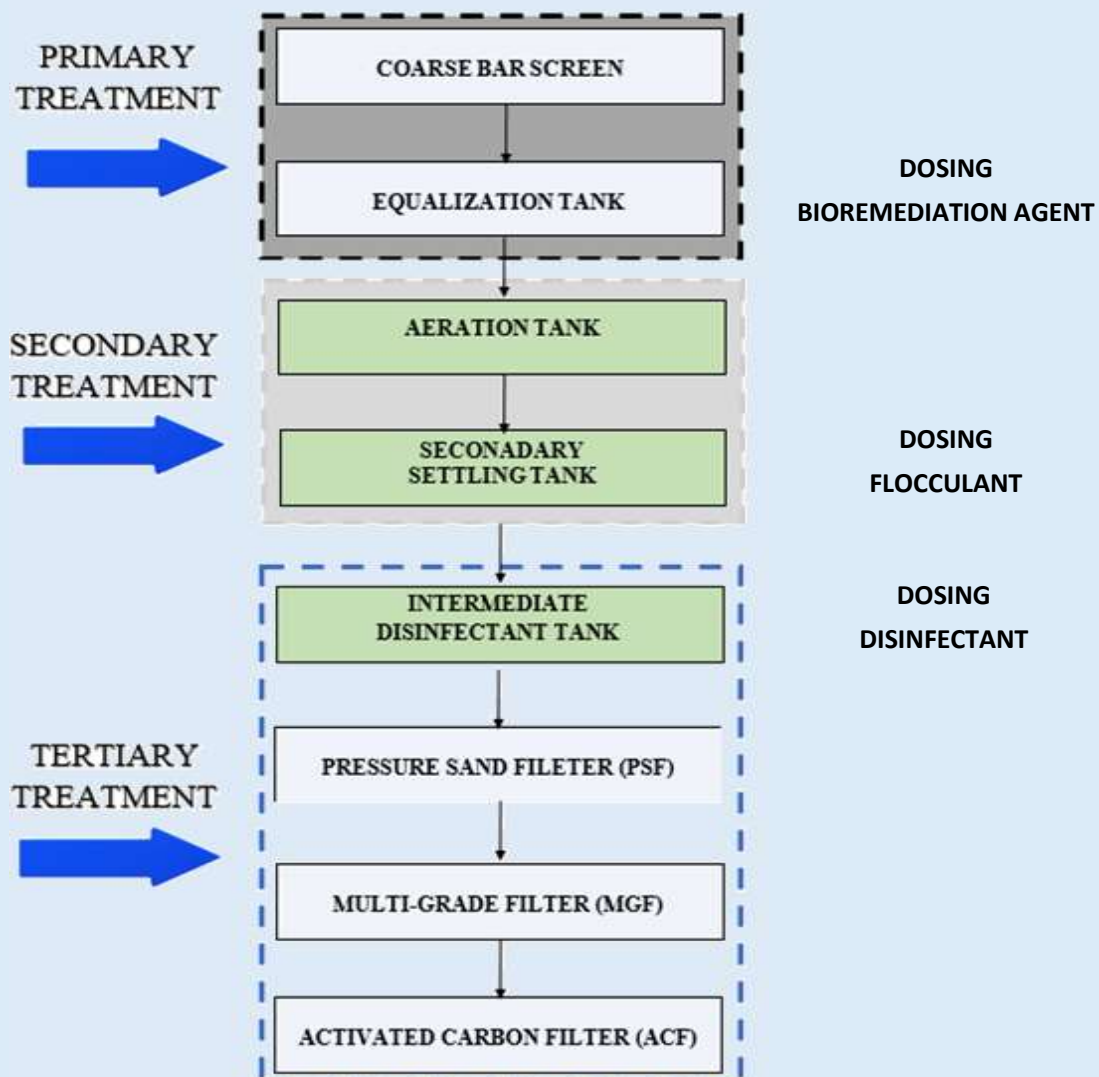


Nallah based Bioremediation mediated ISR modular Sewage Wastewater Treatment

Our Solutions

ISR technology ensure the protection of environmental quality, the conservation of resources, and the reuse of water as well as the recycling of nutrients. The technology selection is accomplished by site evaluation process, it determines the carrying capacity of the receiving environment.

ISR modular STP designed to function on “The principles of Bioremediation” at 3-stage operations, namely, primary, secondary and tertiary treatment of wastewaters. The following treatment systems are in modular manner as described below:



**FLOW CHART OF BIOREMEDIATION MEDIATED
ISR SEWAGE WASTEWATER TREATMENT PLANT FOR DRAIN**

What processes does ISR technology provide in the drain?

The following treatment steps in a modular manner:

PRIMARY TREATMENT

Untreated Wastewater passed through a screen in order to removal of debris and solid waste like plastic, metal etc. It equipped with Equali-Neutralization tank turns homogeneous wastewater into heterogeneous and neutralize the inert compounds.

SECONDARY TREATMENT

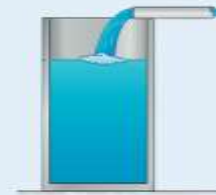
Secondary treatment processes use bioremediation agents to biologically remove inert solid contaminants and separate degraded solid phase from liquid phases via gravitational settling.

TERTIARY TREATMENT

The tertiary treatment provides disinfection along with filtration. It improves the wastewater quality and provides a high degree of purification. It is also called "wastewater polishing".

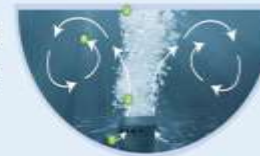
Primary Screening

Remove large solids such as plastic, stones or wood, rags, debris, etc.



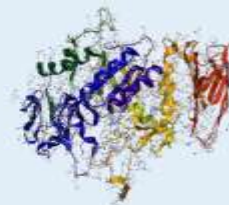
Equalization

Ensure the constant rate of flow, neutralize pH, remove odour, minimize temperature variation, etc.



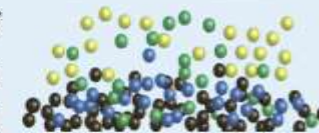
Secondary Aeration

Patented product OSE II (Bioremediation agent) dosed to enhance the Degradation of organic and inorganic substances in wastewater.



Secondary Settling

Produce minimal quantity of biodegradable sludge, solid-liquid separation process via gravitational settling, separate inert solids, heavy metals, etc.



Intermediate Disinfectant

Inactivate disease-causing pathogens, bacteria, and viruses by using organic-based ISR antimicrobial agents.



Tertiary Filtration

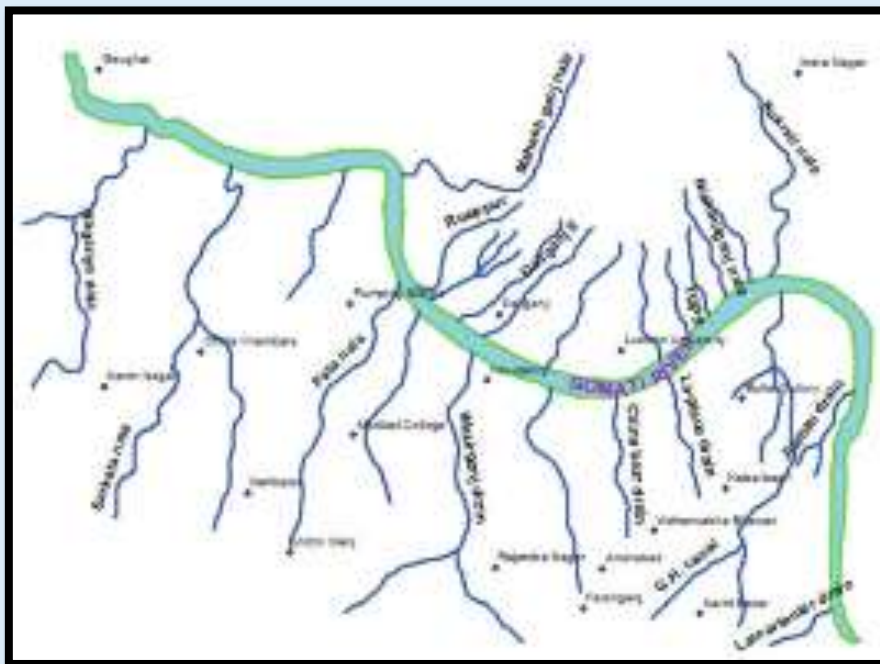
PSF, MGF, ACF, and High Pneumatic high-pressure filter provides a higher degree of purified water.



Our Contribution on River Rejuvenation

Gomti River

Gomati River is a life line for the millions of people living in the Central Ganga Plain. After approximately traveling 240 km distance from its origin, the Gomati River enters Lucknow, through which it meanders. Lucknow is situated on $26^{\circ} 52' N$ latitude and $80^{\circ} 56' E$ longitude and above 124 m from mean sea level. The urban center covers an area of about 250 km^2 , which is expanding year after year at an exponential rate. As it enters Lucknow, water is lifted from Gomati River at Gaughat pumping station for the city's water supply.



The Gomati River is the main source of water supply to the Lucknow urban centre. At Lucknow, the available discharge in the Gomati River is around 500 MLD during lean period, while in the monsoon period; the discharge reaches around 55,000 MLD. For most part of the year, the discharge on an average is around 1500 MLD only.

Lucknow urban area has around 407 tube wells (Uttar Pradesh Jal Nigam, 2005). These 407 tube wells produce around 190 MLD of water. Various private colonies and institutions have installed about 100 tube wells to fulfill their water requirements. As many as 33+ city drains in the Lucknow area drain untreated sewage water into the Gomati, thereby badly polluting it.

The river, which is a major source of drinking water for the people of Lucknow, is polluted the most owing to the daily discharge of millions of liters of untreated domestic waste. Beside Lucknow, the river also supplies drinking water to 14 other towns located on its banks including Lakhimpur Kheri, Sultanpur and Jaunpur.

Daulatganj STP situated at
Lucknow outer

Arts College drain
(Ganda Nallah)

Polluting Gomati River

Distance = 5 km.

Interception and diversion of drain is the burden
for Government

Heavy investment is required to
construct & transport wastewater
from drain to treatment plant

Image © 2021 Maxar Technologies



Our Solutions

In our first attempt, Telemachus High-Tech has installed a 2.5 MLD capacity ISR modular STP in Arts College drain situated at Mankameshwar Ghat on the bank of the Gomati River in Lucknow.

Our first ISR Modular STP was established in Lucknow in 2018 and has been operating successfully to date. This modular STP located on the drain prevents river pollution and treats untreated wastewater at its source. On the other hand, it prevents the accumulation of solid waste along the river, thus controlling human-to-human transmission of diseases and protecting the environment.



For the last 2 years, our ISR module STP at Arts College Drainage, Mankameshwar Ghat, Lucknow has been preventing pollution of Gomati River, the untreated wastewater from the urban integration area of "Daliganj" is treated in a drain and discharged into the Gomati River.

BEFORE INSTALLATION



AFTER INSTALLATION



ISR TECHNOLOGY 2.5 MLD PLANT LUCKNOW

Sample Inlet	Sample Outlet
BOD 125 mg/L	BOD 8.5 mg/L
COD 312 mg/L	COD 23 mg/L
TSS 169 mg/L	TSS 18 mg/L



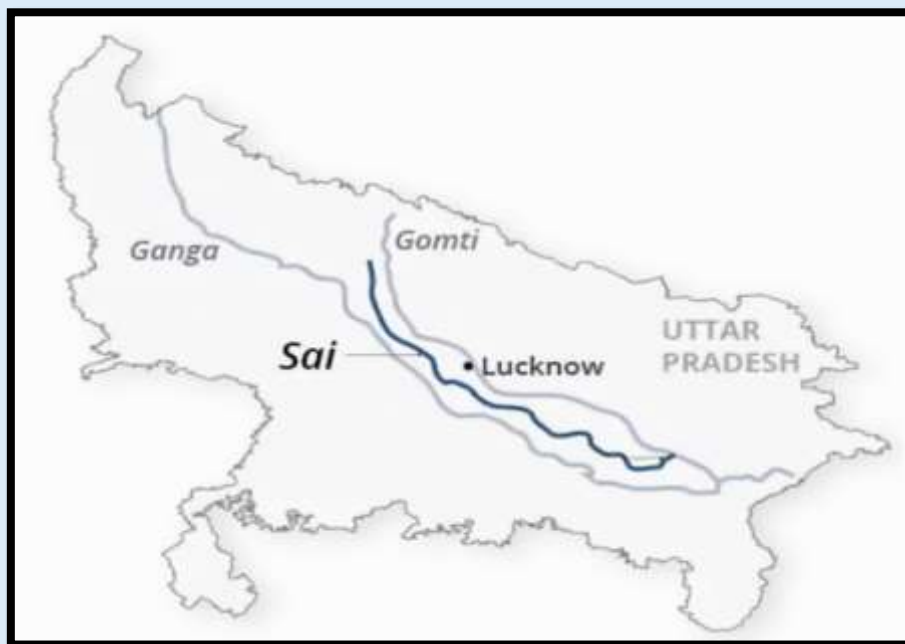
The ISR treated water contains BOD<10 – 20 mg/L, COD<30 mg/L and TSS<50 mg/L, and it yields a low volume of sludge and no extra land is needed for sludge disposal.



In Mankameshwar Ghat, ISR modular STP operates with low manpower and negligible power consumption, so the operation and maintenance cost of this treatment system is low when compared to centralized systems. ISR purified water meets the latest NGT regulations, which can be reused for groundwater recharge, agriculture, horticulture, toilet flushing, fire protection and more. Currently, ISR treated water is being discharged into the Gomati River and further purifying the river water.

Sai River

The Sai River, also referred to as the Adi Ganga, is a tributary of the Gomti River in the Indian state of Uttar Pradesh. River Sai rises from a pond in village Bijgwan near Pihani in district Hardoi and travel about 600 km to form district boundary between Lucknow and Unnao. After passing through Hardoi, Raebareli and Jaunpur district where it finally joins the Gomati River at Rajepur in Jaunpur district ($25^{\circ}39'8.63''\text{N}$, $82^{\circ}48'5.00''\text{E}$).



Therefore, the total length of River Sai from its origin point to its confluence with Gomti River at Jaunpur is approximately 750 kms which included 594 kms of polluted stretch identified under Priority-V of list of rivers for their rejuvenation and restoration. In Hardoi local call the stretch as “Jhabar” from where a river called Bhainsta take shape. The river flows 10 kms before getting it more popular name Sai. The area under study is a part of the Indo-Gangetic Plains, which lies between the latitude $27^{\circ}42'22.52''\text{N}$ to $25^{\circ}39'44.86''\text{N}$ and the longitude $80^{\circ}8'34.27''\text{E}$ to $82^{\circ}46'45.10''\text{E}$ in various districts of Uttar Pradesh.

The Sai catchment is bounded in north by Ghaghara catchment while in south by Ganga catchment. Throughout its journey Sai river travel in the alluvial terrain and transports the sediment derived from Himalayan terrain. In its long journey, the river receives water from other streams also namely Bhainsta, Loni, Sakarni and Bakulahi rivers.

As per the report, 94 nallas of four districts push dirt in Sai. This includes 18 nallas of Hardoi, 24 nallas of Pratapgarh, 39 nallas of Rae Bareli and 13 nallas of Jaunpur. In Pratapgarh district, the pollution of Sai river receives considerable amounts of wastewater every day generated from various anthropogenic, which leads to deterioration of its water quality.

BELA PRATAPGARH CITY

Polluting Sai River

Belha Drain (Ganda Nallah)

Conventional STP at
Pratapgarh
(Not functional)

Interception and diversion of drain is the burden
for Government

Heavy investment is required to
construct & transport wastewater
from drain to treatment plant

Belha Devi

© 2021 Google
Image © 2021 Maxar Technologies



Imagery Date: 3/31/2019 25°55'58.44" N 82°00'23.15" E elev 92 m eye alt 423 m

Our Solutions

The Telemachus High-Tech has installed a 2.5 MLD capacity ISR module STP in Belha Nallah situated near Belha Devi Temple on the bank of the Sai River in Bela Pratapgarh.

Our Second ISR Modular STP was established in Bela Pratapgarh in 2020 and has been operating successfully till date. This modular STP located on the drain which is near the Belha Devi Temple which is prevents river pollution and treats untreated wastewater at its downstream and thus allow the Belha Devi pilgrim to do the sacred rites in River Sai. Moreover, it prevents the accumulation of solid waste along the river bank side, thus controlling human-to-human transmission of diseases and protecting the environment.



For the last 1 year, our ISR modular STP at Belha Nallah near Belha Devi Temple at, Bela Pratapgarh has been preventing pollution of Sai River, the untreated wastewater from the "Pratapgarh City" is treated in a City drain and discharged into the Sai River. The ISR modular STP installed in the drain which is adjacent to the buildings, so it does not occupy any spaces in the area and thus reducing the odour from the

drain in the community area and prevents germs, flies carrying pathogens and mosquito breeding on drain and its outlet. The rate of spread of disease to community is highly reduced.

BEFORE INSTALLATION



AFTER INSTALLATION



ISR TECHNOLOGY 2.5 MLD PLANT PRATAPGARH

Sample Inlet	Sample Outlet
BOD 140 mg/L	BOD 9.2 mg/L
COD 352 mg/L	COD 27.1 mg/L
TSS 156 mg/L	TSS 16 mg/L



The ISR STP producing treated water with BOD<10 – 20 mg/L, COD<30 mg/L and TSS<50 mg/L, and it yields a low volume of sludge and no extra land is needed for sludge disposal.



ISR TURNS BELHA NALLAH WASTEWATER INTO CLEAN WATER, BELA PRATAPGARH

In Bela Pratapgarh, ISR modular STP operates with low manpower and negligible power consumption, so the operation and maintenance cost of this treatment system is low when compared to centralized systems. ISR purified water meets the latest NGT regulations, which can be reused for groundwater recharge, agriculture, horticulture, toilet flushing, fire protection and more.

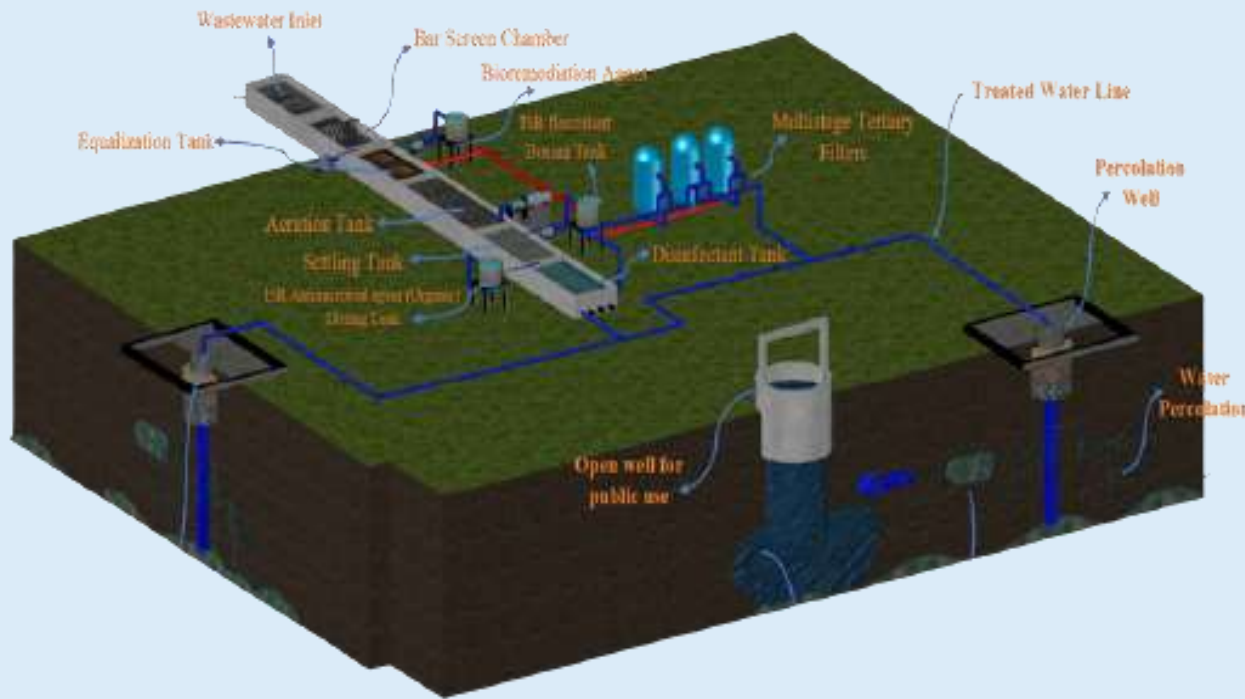
Area of the Application

APPLICATION	DESCRIPTIONS
Small isolated clusters (Slum areas)	ISR treatment systems can serve small isolated clusters (slums), and it will thus reduce the government burden.
Housing colonies, Apartments, Institutions	ISR treatment systems can provide wastewater treatment for housing colonies and apartments with space limitations.
Hospitals	Hospital wastewaters can be handled by the ISR treatment system and can use the treated water for toilet flushing and cleaning purposes, thus avoiding freshwater consumption.
Commercial Buildings such as Malls, Multi-complexes, Natural reserves, and Resorts.	Because of regular and numerous visitors, high discharge of wastewater flows into water bodies. ISR treatment system will reduce this potential or ongoing water environment pollution in these areas.
Metropolitan Cities	ISR technology can provide treatment at the source (wastewater generation). Thus, it can reduce wastewater transportation from one area to the treatment site.
Urban Areas	In Urban areas, the ISR treatment system can serve communities, public buildings, etc. The ISR-treated water can reuse for secondary purposes and groundwater recharging.
Rural Level	ISR treatment can serve as a small-scale level in a rural area, and ISR treated water can reuse toilet flushing (Toilets developed for villagers under the Swachh Bharat Mission) and irrigation.
Developing Towns or (Small Towns)	Small towns or developing cities are below the city level and above the village level. ISR technology can serve developing cities to reduce the management burden of the city government.

How we can Help You!

We Telemachus' high-tech, has introduced an innovative technology called ISR in the form of a modular treatment plant to treat wastewater in the drain and for high-rise buildings. It is a novel, in situ technology, based on highly advanced bioremediation principles operating with fully organic-based products to avoid chemical-based products which can cause serious threats to the eco-system. It has capable of treating wastewater generated in metropolitan cities, and taller buildings such as apartments and malls. Due to the lack of spaces to treat the sewage generated in the metropolitan areas, large sewer pipes are installed and the sewage is transported out of the city for treatment. In Urban Local Bodies (ULB's), various local, social, and operational issues, they discharge directly the sewage wastewater into the drains without being fully treated and finally reach the natural water bodies. To overcome these problems, we have introduced ISR technology for drains to treat wastewater by using the existing infrastructure of drains.

In the ISR modular sewage treatment system, the highest removal of pollutants from wastewater is achieved together with zero odor emission and minimal sludge production. In the proposed system, the use of OSE II, an organic-based bioremediation product contains a composition of effective microorganisms' enzymes with nutrients for the efficient degradation and removal of organic, inorganic, and



In our integrated approach ISR treated water transmit directly through the percolation well.

Integrated ISR treatment with percolation pond/percolation well is very effective in recharging the aquifer compared to other water management.

The cost of artificial recharge will be less than the cost of equivalent surface water reservoirs.

The aquifers serves as an even natural distribution system and the reduce the transmission pipelines or canals for surface water.

AN INTEGRATED APPROACH OF ISR TECHNOLOGY WITH GROUNDWATER RECHARGE

xenobiotic compounds are being used in the primary treatment process.

In Conventional wastewater treatment the use of coagulant, flocculant, and disinfectant, etc. are purely based on inorganic chemicals. These chemicals react with Natural Organic Matter (NOM) present in the wastewater and form hazardous substances which are more toxic to human health and disposal problem. But, the proposed ISR modular sewage treatment plant is completely based on organic products, namely, Plant Seed Flocculants (PS-FL) which react with inert compounds present in the secondary wastewater and forms a minimal quantity of easily biodegradable substances namely, “sludge” which will protect human health and environment.

On the other hand, organic disinfectants, namely, neem seed and neem leaf extracts are used in the tertiary treatment of the proposed ISR modular sewage treatment plant to achieve zero balance of microbial load including human pathogens.

Moreover, ISR modular STP requires minimal space and consumes low electrical energy when compared to conventional treatment systems. low electrical energy in comparison to conventional treatment systems. Optimization of processes in ISR modular STP is simple and does not need a high operation and maintenance and the treated wastewater recorded a low level of BOD<10, COD<30, and TSS<20 as per National Green Tribunal (NGT) norms.

ISR modular treatment plant is a cost effective, eco-friendly and bioremediation-based technology. It can be easily scalable based on community requirements which can expand or reduce and can quickly installable with minimal space where wastewater generates.



**ISR TECHNOLOGY IN THE DRAIN TURNS WASTEWATER
INTO CRYSTAL CLEAR POLLUTION-FREE WATER**

The ISR treated water can be reused as a new source of water to promote agricultural and aquaculture production, industrial uses, reclamation, irrigation, vehicle exterior cleaning and toilet flushing, recreational purposes, and mainly groundwater recharge.

***ISR – An Innovative Solution to Reduce Your Burden
NOW & FOREVER!***

- + ISR modular STP *can treat wastewater with high organic load and metal pollutants.***
- + ISR STP can be installed on existing drain.**
- + *No need for periodic sludge removal from the drains.***
- + It can be expanded or reduced according to the structure of natural drains.**
- + It can treat the sewage wastewater in a continuous manner throughout the year.**
- + 1, 1.5, & 2.5 MLD modules easily scalable**
- + Low power consumed.**
- + ISR STP can be installed on existing drain.**
- + ISR STP treated wastewater BOD <10-20 mg/L and COD <30 mg/L, respectively.**
- + The treated water can be discharged or further use for secondary purposes.**
- + *ISR STP is stable and effective over a wide range of pH & temperature.***
- + ISR modular STP yield low or nil volume of sludge.**
- + Requires less time of commissioning of the project.**
- + Easy to operate and maintain.**
- + Utilization of ISR STP treated wastewater can improve the quality of life in urbanized areas – located near rivers, lakes and coastal zones.**

Comparison

Bioremediation technologies in India



Bioremediation mediated ISR (Inert Solid Removal) Wastewater Treatment Plant

CAPEX

ISR modular STP CAPEX = 3.00 – 3.50 Cr./MLD

OPEX

ISR Modular STP OPEX = Rs. 1 – 5 paise/liter

- It can be installed in low and high flow drains and buildings.
- ISR treatment system can install in the drain or buildings within less than a month.
- It requires minimal space (100 – 250 sq. m.) than conventional technologies.
- It convert the drain wastewater into clean water within 1 – 2 hr.
- It can expand or reduce according to the structure of natural drains.
- It cannot affect by seasonal conditions.



Phytoremediation

Phytoroid Tech. CAPEX = 5.75 Cr./MLD,
OPEX = 20 Lakh/MLD

RENEU Tech. CAPEX = 8.35 Cr./MLD,
OPEX = 2.55 Cr./MLD

- It can be installed in low flow drains only.
- Phyto. can install in the drain or buildings within less than a month.
- It requires more space for plantation.
- It requires to convert the drain wastewater into clean water 7 – 8 days.
- Need more plantation to expand or reduce according to the structure of natural drains.
- It can affected by seasonal conditions.



Constructed Wetland System

● CWS. CAPEX = 6.4 Cr. /MLD
OPEX = Vary

- It cannot be installed in drain, need large area to implement.
- CWS not fit for drains/building and requires long commissioning time.
- It requires more space for wastewater treatment.
- It requires to convert the drain wastewater into clean water more than 20 hours.
- It cannot be expand or reduce according to the flow.
- It can affected by seasonal conditions.

COMPARISON OF BIOREMEDIATION MEDIATED ISR STP WITH OTHER WASTEWATER TECHNOLOGY

Bioremediation mediated ISR modular Technology	Bio-granulation Plant for Sewage Treatment	Wet Land Literature (Ghoga Drain Pilot Project)	Jalopchar (An Eco-Friendly Wastewater Treatment Technology)
Designed to function on "Bioremediation" followed by a 3-stage operation say, primary, secondary and tertiary treatment.	Designed to function on Aeration.	Designed to function on chamber-wise Constructed wetland.	Designed to function on plant-microbe-media interactions
HRT = 1 – 2 hours (Rapid Treatment)	–	HRT = 24 hours	HRT = < 1 day to around 2 days
CAPEX = 2.75 – 3.00 Cr. per MLD, OPEX = Rs. 1.1 paise per litre	Cost estimate for 1.5 MLD plant is 4 to 5 Cr.	–	CAPEX = Rs. 50 to 60 Lakhs per MLD. OPEX = Rs. 60 paise per Kilolitre, KL)
<ol style="list-style-type: none"> <u>Quick installation requiring limited space (100 to 250 sq.m per 2.5 MLD)</u> <u>Can be installed on existing drains at their outlet.</u> Can be installed @ per MLD in any residential area / colony / society of 4-5 k persons. BOD well below 10 – 20 and COD well below 30 as per NGT norms. Low Sludge generation & rapid treatment time. <p>Low Power consumption with Easy to Operate and Easy to Maintain.</p>	<p>It is felt than many of the medium sized towns which have sewage system drains opening into rivers can possibly benefit using this technology.</p> <p><i>*Note - About 20% additional expenditure is required for integrating with BARC developed ultra-filtration system, which makes water potable.</i></p>	<p>In order to achieve the waste water quality parameter as per the new norms setup by Hon'ble NGT for treated effluent, a pressure Sand Filter (PSF) and Activated Carbon Filter (ACF) have been installed at outlet of Ghoga Wet Land System as a secondary mechanism of treatment</p>	<p>➤ High Land Requirement ranges from <u>2 sq. m per Kilolitre</u> to <u>12.16 sq. m per Kilolitre</u></p> <p>➤ <u>Cannot be installed on existing drains</u></p>

Our achievements

Dr. M. Dhinadhayalan

Adviser (PHEE),

CPHEEO

Tel.(O) : 91-11-23061926

Fax : 91-11-23062559

E-mail : adviser-phee-muha@gov.in



सत्यमेव जयते



भारत सरकार
आवासन और शहरी कार्य मंत्रालय
निर्माण भवन

GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
NIRMAN BHAWAN

नई दिल्ली-110011, तारीख 20
New Delhi-110011, dated the 20

D.O. No. Z.16025/3/2016-CPHEEO
Dated 25.01.2021

Dear Sir/Madam,

As you are aware, due to rapid urbanization, the problems associated with sanitation has increased manifold. The existing sewage treatment capacity in the country is about 40% and the rest of the sewage is being discharged with partial/no treatment. Similarly, the existing treatment capacity of municipal solid waste is about 68%. The Ministry of Housing & Urban Affairs is committed to help States/UTs and cities/towns across India to make sustained progress in management of waste and wastewater. As a part of its efforts, Ministry has published Manuals on Sewerage and Sewage Treatment Systems, Part A: Engineering, Part B: Operation & maintenance and Part C: Management in 2013 and the Municipal Solid Waste Management (Part A, Part B and Part C) in 2016 to guide the States/UTs & ULBs with various treatment technologies and best practices.

2. With the passage of time, the technologies and innovations in the sanitation sector have grown up. In continuation to this, Ministry has received few latest technologies in the waste and wastewater treatment from Government and Private Organisation and the same have been reviewed by CPHEEO/Expert Committee, constituted by the Ministry. This will help ULBs to improve their sanitation status and adhere to standards notified by State Pollution Control Board/Pollution Control Committee and Central Pollution Control Board.

3. The detailed guidelines/description of the following technologies are enclosed herewith

- I. Jalopchar: An Eco-Friendly Wastewater Treatment Technology developed by Indian Council of Agriculture Research (ICAR), New Delhi.
- II. Ghoga Drain Pilot Project designed and implemented by Irrigation & Flood Control Department, Govt. of NCT of Delhi.
- III. Waste Water & Sludge Treatment and Biomethanation by Department of Atomic Energy.
- IV. Bioremediation Mediated Inert Solid Removal (ISR) modular wastewater Treatment Plant developed by M/s. Telemachus High Tech Private Limited.

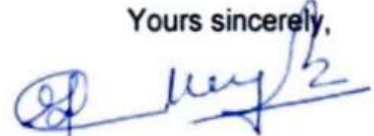
....contd.

4. These technologies are cost effective and can be implemented in a decentralised manner and some of which may be suitable for implementation in major drains. The States and ULBs are advised to set up these plants at a small scale in few cities/towns and assess the performance and scale up after assessing the efficacy of these technologies. The selection of these technologies may be made on competitive tendering keeping in view the techno-economic analysis, actual ground condition, capital cost, availability of land, O&M cost, climatic condition, quantity and characteristics of sewage/municipal solid waste generated or treated.

5. I, therefore, request you to take advantage of these low cost, low energy and eco-friendly municipal solid waste & sewage treatment technologies and improve the sanitation services in the States/UTs/cities.

With warm regards,

Yours sincerely,



(Dr. M. Dhinadhayalan)

Encl : As above

To

- (i) Principal Secretary/ Secretary, In-charge of UD/PHED/Water Supply and Sanitation Departments-All States/UTs.

Copy to:

- I. Addl. Secretary (D, UT & SBM), MoHUA for kind information to AS (D, UT & SBM).
- II. Joint Secretary (AMRUT), MoHUA for kind information to JS(AMRUT).
- III. Dr. Ravinder Kaur, Principal Scientist, Water Technology Center (WTC), former Project Director, WTC & Officiating Director Indian Agricultural Research Institute, New Delhi.
- IV. Mr. Nikhil Kumar, IAS, Secretary, Irrigation & Flood Control Department, Govt of NCT of Delhi.
- V. Director, Waste Water & Sludge Treatment, Department of Atomic Energy
- VI. MR. Rajesh R. Pandey, CEO, M/s Telemachus High Tech Private Limited, Lucknow.



भारत सरकार
केन्द्रीय लोक निर्माण विभाग
कार्यालय अपर महानिदेशक (क्षेत्र 0)
चतुर्थ तल, केन्द्रीय भवन, सेक्टर-एच, अलीगंज लखनऊ-226024
टेलीफोन : 0522-2324544 फैक्स : 0522 - 2745704
ई-मेल : adgnr2.cpwd@gov.in

ई-मेल / डाक द्वारा



पत्रांक :- 3(7)/अ0म0नि0 (क्षेत्र 0)/1419
सेवा में,

दिनांक : 06.04.2021

- | | |
|--|--|
| 1. मुख्य अभियन्ता-लखनऊ
के.लो.नि.वि., केन्द्रीय भवन,
सेक्टर-एच, अलीगंज,
लखनऊ-226024 | 2. मुख्य अभियन्ता - जयपुर
के.लो.नि.वि., निर्माण भवन,
सेक्टर-10, विद्याधर नगर,
जयपुर-302023 |
| 3. मुख्य अभियन्ता(रा0रा0क्षेत्र 0)
पूर्वी खण्ड-1, तल संख्या-3
आर.के.पुरम, नई दिल्ली-110066 | 4. अधीक्षण अभियन्ता,
इलाहाबाद परिमण्डल
केन्द्रीय सदन प्रथम तल, 34-ए
एम.जी. मार्ग सिविल लाइन
के0लो0नि0वि0, प्रयागराज-211001 |
| 5. अधीक्षण अभियन्ता
जोधपुर, परिमण्डल
जोधपुर | 6. अधीक्षण अभियन्ता,
आगरा, के0लो0नि0वि0,
ब्लाक-63/4, प्रथम तल,
संजय प्लेस, आगरा-282002 |

विषय : Use of ISR Modular Technology by Telemachus High Tech Pvt. Ltd. for Sewage Treatment with Bio-remediation.

Telemachus High Tech Pvt. Ltd. has requested for Use of their ISR Modular Technology in Sewage Treatment with Bio-remediation process, अतः यदि किसी Site/क्षेत्र में उपरोक्त Sewage Treatment Technology की आवश्यकता है तो Telemachus High Tech Pvt. Ltd. की Services ली जा सकती है।

ISR Modular Waterwaste Technology have been reviewed by CPHEEO, Ministry of Housing and Urban Affairs & found to be cast effective and can be implemented in a decentralized manner. Selection of technology are to be made keeping in view techno-economic analysis actual ground condition, capital cost, availability of land, O&M cost, climatic condition and quantity and characteristics of sewage to be treated. Assessment report serving sanitary copex, opex and space requirement for one MLD plant is enclosed for guidance.

Regarding this field staff is required to ensure that Sewage Treatment Technology / Material used for Sewage Treatment were is as per & approved specifications.

Accordingly technology may be used based on the report of CPHEEO and Capex & Opex parameters described in the reply.

Performance Report may be send to this office .

यह पत्र अपर महानिदेशक (क्षेत्र 0) महोदय के अनुमोदन से जारी किया जाता है।

(अरविन्द कुमार)

कार्यपालक अभियन्ता (यो.)

प्रतिलिपि : Sh. Rajesh R. Pandey, Telemachus High-Tech Pvt. Ltd., 309, 3rd Floor, Damji Samji Trade Centre, Vidyavihar(W), Mumbai-400086 (Email: Telemachus.in@gmail.com).

कार्यपालक अभियन्ता (यो.)

To whomsoever it may concern

M/s Telemachus High Tech Private Limited (THPL), Mumbai, installed a sewage treatment plant at Arts College, Lucknow drain using bioremediation process in October, 2018. This was to treat the domestic/ waste water coming through this drain before being discharged into the river Gomti. CSIR-IITR performed on sponsorship basis the water sample analysis of inlet and outlet for physico-chemical parameters (BOD, COD, DO, TSS, Total Nitrogen, and Total Phosphate) as well as bacteriological parameters (Total Coliforms and Faecal Coliforms) from May 13-27, 2019 on daily basis and also on June 4, 2019. As per the analysis reports, it was found that there is an improvement in the quality of outlet water in comparison with the inlet water.

Subsequently, THPL approached CSIR-IITR, Lucknow and signed a Memorandum of Agreement (MoA) on September 5, 2019, for providing technical consultancy in optimizing process of existing treatment for different drains including the drain near Arts College, Lucknow as per the individual characteristics of each drain. CSIR-IITR would like to continue the association with THPL in this regard.


(Head-RPBD)

Date: July 17, 2020

Place: CSIR-IITR, Lucknow

डॉ० के० सी० खुल्बे/Dr. KC Khulbe
प्रमुख, अनुसंधान योजना एवं व्यापार विकास विभाग
Head, Research Planning & Business Development Division
सीएसआईआर-भारतीय विषविज्ञान अनुसंधान संस्थान
CSIR-Indian Institute of Toxicology Research
विषविज्ञान भवन 31, महात्मा गांधी मार्ग, लखनऊ-226001 भारत
Vishvigyan Bhawan 31, Mahatma Gandhi Marg, Lucknow-226001 INDIA

ISR TECHNOLOGY IS UNDER PROCESSING FOR PATENT

Controller General of Patents, Designs & Trade Marks



सत्यमेव जयते

G.A.R.6
[See Rule 22(1)]
RECEIPT



Docket No 47500

Date/Time 2020/08/14 19:34:01

To
Rakesh Singh

UserId: telemachus

548 CHA/88 DAUDA KHERA MANAK
NAGAR LUCKNOW

CBR Detail:

Sr. No.	Ref. No./Application No.	App. Number	Amount Paid	C.B.R. No.	Form Name	Remarks
1	202021035159	TEMP/E-1/39040/2020-MUM	47200	21956	FORM 1	ISR MODULAR SEWAGE WASTEWATER TREATMENT SYSTEM: A NOVEL, INNOVATIVE, ORGANIC BASED BIOREMEDIATION IN

Telemachus High Tech: Bringing the Change in the Wastewater Industry



Rajesh Ramlal Pandey,
CEO

With each passing day accessibility of fresh water is decreasing at a rapid rate in India. Not only there is a growing scarcity of fresh water but the quality of the existing fresh water available is also deteriorating. This deterioration can be attributed to the massive amount of discharge from the factories, urban drainage and municipal wastewaters. With the growing population, India is facing immense challenges to cater clear freshwater to its people. Not only human beings, but as a matter of fact, this huge discharge of municipal wastewater and urban drainage into the river basins is also affecting aquatic lives, therefore, creating an imbalance in the whole ecosystem.

An immediate change is needed in the wastewater industry and wastewater management, implementing easy water treatment solutions that are reliable, achievable and afford-

able has become paramount for industries. Telemachus High Tech is one of the leading water management companies that not only provides high end water treatment and hazardous waste disposal solutions but also makes sure the whole project gets done at a minimal cost. The idea is to provide natural wastewater treatment to the customers. The company is trusted by thousands of customers by contributing to protecting the environment and our natural water resources for the upcoming generations.

Advanced Water Management Technology

'We have done rigorous R&D for two years and have come up with a groundbreaking wastewater management technology that can be fit into any drain which is flowing into the rivers,' says Rajesh Ramlal Pandey, CEO, Telemachus High Tech.

Traditionally small drains used to be converted into bigger drains to connect them with the rivers. This process involved a lot of man power, infrastructural support and time. To solve this issue Telemachus has come up with a groundbreaking plant that can be installed in any drain to achieve freshly treated water. The treated water quality that one can receive with the help of this plant has the potential to meet the latest government norms. The treated water can be reused for flushing, agriculture, road cleaning and similar purposes.

Telemachus is providing a Bioremediation mediated ISR modular sewage wastewater treatment plant. The treatment plant is made up of advanced high-end technology that can cater for densely populated areas by handling wastewater on a large scale. The proposed ISR STP is designed to work on Bioremediation followed by three-step operation- primary, secondary and tertiary treatment. Bioremediation means natural or biological processes for treating wastewater. What they do in the beginning is filter out all kinds of inert solid waste materials like plastics and other inorganic waste. Next, a particular type of enzyme named OSE II (Oil spill eater II) is mixed with the sludge water for effective degradation of organic and inorganic waste material into H₂O and CO₂.


'We import the OSE II enzyme from Texas USA, which is a patent product and use it in our water treatment process to increase the surface area of the substratum thereby facilitating the biochemical reaction of BOD & COD in the treated wastewater according to NGT norms', he adds.



The company is keeping no stone unturned to achieve a greener pollution-free environment and provide high-end solutions to eliminate pollution from the environment.

The Crucial Objective

The company's main objective is to treat wastewater without the use of any harmful or toxic technology. The natural water treatment technology is saving fresh water for both the present and future generations. In addition to this Telemachus is also looking forward to making its own OSE II enzyme here in India to become self-sufficient.

The company is keeping no stone unturned to achieve a greener pollution-free environment and provide high-end solutions to eliminate pollution from the environment. 



WATER MANAGEMENT COMPANIES 2022

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*Through this Award, we acknowledge and applaud the company's myriad solutions,
and their ingenuity to leverage the best practices in presenting unique
methodologies to address complex business demands.*




Emmanuel Ovelti Das
Managing Editor

NEW DELHI PWD AWARD LETTER – TO INSTALL ISR MODULAR STP IN CHATTARPUR

By Speed Post

कार्यपालक अभियंता,
दक्षिण रोड 1
सुखदेव विहार, मथुरा रोड,
नियर ओखला फ्लाई ओवर,
नई दिल्ली-110025



EXECUTIVE ENGINEER
SOUTH ROAD-1, PWD (GNCTD),
Sukhdev Vihar, Mathura Road,
Near Okhla Flyover,
New Delhi-110025

Phone: 26923612 E-mail: gepwwdelhi1@gmail.com

No. 54/467/EE/SOUTH ROAD-1/PWD/2021-22/ 1254 Date: 19/08/21

AWARD LETTER

To,
M/s Telemachus High Tech Private Limited,
Ashwani Sadan, 2/327,
Vivek Khand, Khand-2,
Gomti Nagar, Lucknow 226010

Name of Work:- Construction, installation & commissioning and there after Operation & Maintenance for Five Years of Bio-remediation waste water treatment plant using Inert Solid Removal (ISR) technology of capacity 2.5 MLD and construction of under Ground Water Tank of capacity 15 lakh Ltr. at 100 Foota Road Chhattarpur, New Delhi under jurisdiction of Sub-Division South Road-12 (ID: 1187).


Reference:-

1. Performance Guarantee submitted by you vide your letter no. nil dated 11.08.2021 for the above work. (i) FDR No. EM/TDR/0/No. 970644 dated 11.08.2021 an amounting to Rs. 10,23,727/- issued by Union Bank of India, valid Upto 11.10.2022. (ii) FDR No. EM/TDR/0/No. 970643 dated 11.08.2021 an amounting to Rs. 10,23,727/- issued by Union Bank of India, valid Upto 11.04.2027.
2. This office letter of intent/acceptance of tender no. 54(467)/का.अभि./मं.द.रोड-1/लो.नि.वि./2021-22/1185 दिनांक 04/08/2021

Dear Sir(s),

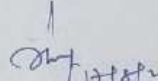
1. You are requested to contact the ASSISTANT ENGINEER SR-12, PWD, SSN Marg, Chhattarpur, New Delhi-110074 for taking possession of site and starting the work at once.
2. In continuation to the letter referred above, you are requested to attend this office to complete formal agreement within 7 (Seven) days from the date of this letter.

संलग्न:- करार की सत्यापित प्रति


Yours Sincerely,

Executive Engineer
(For and on behalf of President of India)
CRMD-South Road-1
Sukhdev Vihar, New Delhi-110025

मूल प्रति पर नहीं-
प्रतिलिपि प्रेषित:-

- 1 मुख्य अभियंता, (दक्षिण) एम, लो०नि०वि०, एम.एस.ओ. भवन, 7वां तल, नई दिल्ली को सूचनार्थ हेतु प्रेषित।
- 2 अधीक्षण अभियंता, दक्षिण, लो.नि.वि. सिविल, (दि०स०) सुखदेव विहार, मथुरा रोड, नियरओखला फ्लाई ओवर, नई दिल्ली-110025
- 3 कार्यपालक अभियंता (डै), लो०नि०वि० दक्षिण विद्युती (एम). मंडल (एम-453), नई दिल्ली को सूचनार्थ एवं आवश्यक कार्यवाई हेतु प्रेषित।
- 4 कार्यपालक उपश्रम कल्याण आयुक्त, (के.) क्षेत्र-5 भारत सरकार, कें०लो०नि०वि०, कमरा सं० 337, 339 विद्युती भवन नई दिल्ली 110001.
- 5 आयकर अधिकारी, ठेकेदार सैल, सी.आर. बिल्डिंग आई.पी.इस्टेट, नई दिल्ली-110002।
- 6 रोजगार अधिकारी, रोजगार कार्यालय, 14 दरियागंज, दिल्ली-1
- 7 श्रम अधिकारी, दिल्ली सरकार, 5 शामनाथ मार्ग, दिल्ली।
- 8 सहायक अभियंता (योजना) शाखा, दक्षिण रोड 1, लो.नि.वि.(दि.स.), नई दिल्ली।
- 9 सहायक अभियंता- 12 लो.नि.वि. दक्षिण रोड 1/दि.स./नई दिल्ली। आपको निर्देश दिया जाता है, सभी आवश्यक कार्य रजिस्ट्रारों की सूची पत्र प्राप्त होने के तीन दिन में इस कार्यालय को भेजें, ताकि इस कार्यालय द्वारा शीघ्र-अतिशीघ्र जारी किये जा सकें। कार्य में यदि कोई भी विचलन अतिरिक्त मर्दाने व स्थानापन्न मर्दाने कराना आवश्यक हो तो बिना सक्षम अधिकारी की पूर्वानुमति के न करायें। (संलग्न:- करार की सत्यापित प्रति)
- 10 प्रति करार 06/EE/CRMD/SOUTH-ROAD-1/PWD/2021-22.
- 11 रोकड़िया, दक्षिण रोड 1, लो.नि.वि. (दि.स.), नई दिल्ली।


कार्यपालक अभियंता
मं० दक्षिण रोड 1, लो.नि.वि.
(दि०स०), नई दिल्ली।

NEW DELHI PWD ACCEPTANCE LETTER – TO INSTALL ISR MODULAR STP IN CHATTARPUR

<p>कार्यपालक अभियंता, मडल दक्षिण रोड-1, लो.नि.वि. सुखदेव विहार, मथुरा रोड, नियर ओखला फ्लाई ओवर, नई दिल्ली-110025।</p>		<p style="text-align: center;">By Speed Post & Email:- telemachus.in@gmail.com</p> <p>EXECUTIVE ENGINEER Divn. South Road-I, PWD (GNCTD). Sukhdev Vihar, Mathura Road, Near Okhla Flyover, New Delhi-110025. E-mail:- eeawddelhi1@gmail.com Phone:- 26923612</p>
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सं० 54(467) / का०अभि० / म०द०रोड-1 / लो.नि.वि. / 2021-22 / 1155 दिनांक :- 04/08/21

ACCEPTANCE LETTER

To,

M/s Telemachus High Tech Private Limited,
Ashwani Sadan,
2/327, Vivek Khand, Khand 2,
Gomti Nagar, Lukhnow 226010.

Sub:- Construction, installation & commissioning and there after Operation & Maintenance for Five Years of Bio-remediation waste water treatment plant using Inert Solid Removal (ISR) technology of capacity 2.5 MLD and construction of under Ground Water Tank of capacity 15 lakh Ltr. at 100 Foota Road Chhattarpur, New Delhi under jurisdiction of Sub-Division South Road-12 (ID: 1187).
SE NIT No:- 01/SE/PWD South Circle/2021-22
EE NIT No:- 01/EE/PWD Divn. South Road-I/2021-22

Sir,

Your Percentage Rate tender for the work mentioned above has been accepted on behalf of the President of India at your Tendered Amount of Part-I Construction, installation and commissioning cost ₹ 3,89,08,702/- (Civil Component ₹ 2,84,77,274/- + Electrical Component ₹ 1,04,31,428/-) & Part-II Operation & Maintenance Cost for 5 years ₹ 2,93,39,762/- Total Aggregate quoted Tendered Amount of ₹ 6,82,48,464/- (Rupees Six Crore Eighty Two Lakh Forty Eight Thousand Four Hundred Sixty Four Only) which is 6.050% (Six Decimal Zero Five Zero Percent) above the Estimated Cost of ₹ 6,43,54,987/- put to tender.

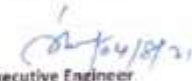
1. You are requested to submit the Performance Guarantee of ₹ 20,47,454/- (Rupees Twenty Lakh Forty Seven Thousand Four Hundred Fifty Four Only) within 10 (Ten) days of issue of this letter. The Performance Guarantee shall be in any of the prescribed form as provided in Clause-1 of the General Condition of Contract 2020 Construction works for CPWD. 50% of Performance Guarantee i.e. ₹ 10,23,727/- shall remain valid for a period of 01 year & 02 months and remaining 50% of Performance Guarantee i.e. ₹ 10,23,727/- shall remain valid for a period of 5 years & 8 months from the date of issue of this letter. The Performance Guarantee should be deposited in favour of Executive Engineer, PWD, M-441(GNCTD), New Delhi.
2. On receipt of the prescribed Performance Guarantee, necessary letter to commence the work shall be issued and site of work shall be handed over to you thereafter.
3. Please note that the time allowed for carrying out the work as entered in the tender is 05 (Five) Months for Part-I for construction, installation & commissioning Plus Part-II 5 years Operation & Maintenance after commissioning will be reckoned from 15 (Fifteen) days from the date of issue of this letter.

Contd. P-2

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4. This acceptance letter is issued with the approval of Chief Engineer, (South) conveyed vide U.O No.23(28)/EE(P)/ Pr. CE South (M)/PWD/1983 dated 29.07.2021 which shall be part of the agreement.

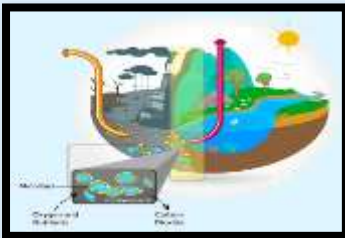
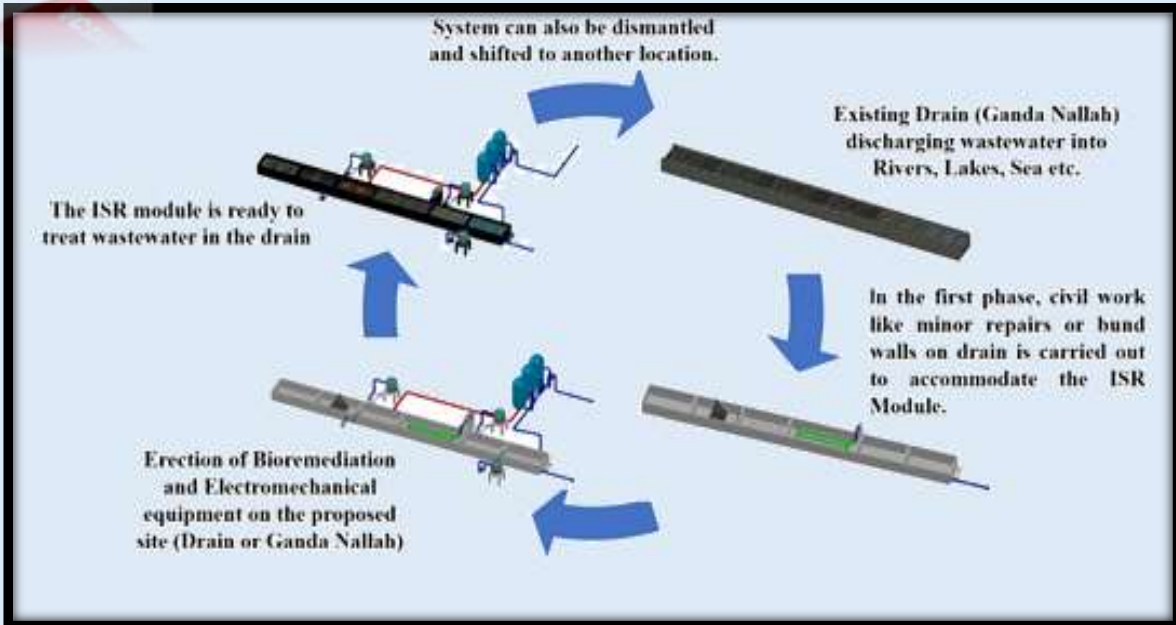
Yours Sincerely,


Executive Engineer
(For and on behalf of President of India)

Let's Plan to Execute!



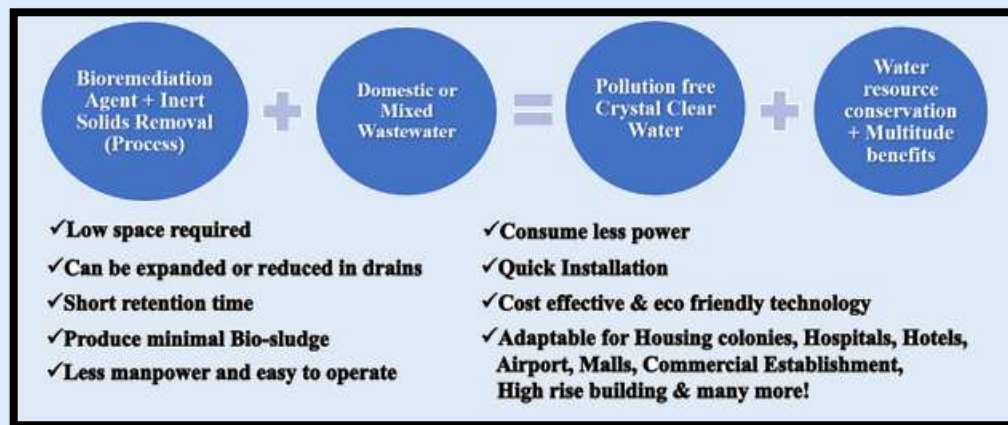
Planning and Execution



- A vast network of Nallah drains originally formed for Stormwater, which carries sewage generated from various urban and rural parts.
- ISR modular wastewater treatment will be carried out using the existing infrastructure facilities of the drains before the wastewater is discharged into the natural water bodies.
- Screening and disposal of solid wastes, such as plastic, metals, etc., appropriately in the drain.
- Carry out Bioremediation and Inert Solids Removal processes in existing infrastructure.
- ISR modular treatment of wastewater in the drain yield crystal clear water with BOD < 10-20 mg/L, COD < 30 mg/L.



Modularized ISR treatment system is designed to encourage the development of URBAN, RURAL, and DEVELOPING AREA, low-cost technology, capable of treating wastewater closer to the point of generation, enables more effective water reuse for groundwater recharge and secondary purposes.



In this context, the ISR modular wastewater treatment system can handle wastewater generated from large cities, small towns, and rural areas. It produces treated water containing BOD<10-20, COD<50, and TSS<20 which comes under NGT norms. We are looking forward to working hand in hand with State and Central Governments of India in the fight against water pollution to restore natural water resources and sacred rivers and to make a pollution-free India.



In India, an exorbitant amount of freshwater is consumed for secondary such as toilet flush, cleaning the exterior of the vehicle, irrigation purposes. ISR treated wastewater can reuse for groundwater recharge and secondary purposes and thus can avoid large freshwater consumption and wastewater production.



Thank you!

Telemachus High Tech Private Limited

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