

Wastewater Treatment

Open Sewage Canal

Pandharpur, India

Background

The city of Pandharpur is situated along the banks of the Bhima river in Maharashtra, India. More than a million religious pilgrims travel to Pandharpur each year to bathe in the Bhima River.



Increasingly, city administrators are focusing their attention on the water quality in the river. Untreated sewage and domestic waste from Pandharpur is funneled into three canals through a system of gutters and drains. The open canals flow through the city and the wastewater usually remains untreated before being discharged into the river, along with other industrial and agricultural pollutants. This untreated wastewater causes foul odors, flies, and other potential health and environmental issues for people in Pandharpur, as well as for aquatic life in the Bhima River. Water-borne pathogens can also cause health problems for the pilgrims bathing in the river.

Objectives

BW-Indah partnered with Pandharpur Municipal Council to treat sewage in the city's canal. The objectives of the project were to:

1. Improve the quality of wastewater, measured in terms of Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)
2. Reduce odor and flies coming from the wastewater in the open canals and ditches
3. Improve overall aesthetics in the canal and river system

BiOWiSH™ Aqua Benefits

- Reduces Odor and Volatile Organic Compounds (VOCs)
- Reduces Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Dissolved Solids (TDS)
- Simple and easy to apply
- 100% natural, certified organic, and non-toxic

Available Sizes

- 3.5oz/100g
- 2.2lb/1kg
- 11lb/5kg



Solution

BW-Indah and Pandharpur Municipal Council identified BiOWiSH™-Aqua as the product best suited for the project. BiOWiSH™ Aqua is a novel composite biocatalyst consisting of microorganisms, enzymes, and cofactors.

This product reduces odor, BOD, COD, and Total Dissolved Solids (TDS). BiOWiSH™ Aqua is also 100% natural and non-toxic to the environment.

Implementation Program

Two kilograms of BiOWiSH™ Aqua was mixed with 1000 L of water in a plastic drum and left to activate for 24 hours. The activated solution was then applied directly at the opening of one of the canals. BiOWiSH™ was also dosed about 2 km from the canal opening and in an open ditch that receives sewage. The sewage in the ditch is high in sludge and is the source of many complaints about odor and appearance.



Dosing Station 1:
Canal Opening



Dosing Station 2:
2km from Canal Opening



Dosing Station 3:
Open Sewage Ditch

Flow of the open canal was measured by taking the volume and velocity of wastewater, which was found to be about 2.5 MLD at the second dosing station. To measure improvement in wastewater quality, samples were taken at 0.75km and 2.0km from origin.

Results

After treatment, at a distance of about 2km, BiOWiSH™-Aqua significantly improved the quality of wastewater discharging into the river, with a 65% reduction in BOD and 42% reduction in COD. Because the river currents spread the beneficial BiOWiSH™ microorganisms, the benefit is seen well past the dosing location. Decreased BOD and COD indicate increased availability of oxygen in the canal, which is a key measure of aquatic health.

Effect of BiOWiSH™ Aqua on Wastewater		
KPI	Measure Point 1 (0.75km from origin)	Measure Point 2 (2 km from Origin) 50%
pH	7.7	7.3
COD (ppm)	435	255
BOD (ppm)	190	67
TDS (ppm)	1245	1325
Hardness (ppm)	310	285

Anecdotal evidence from people in the area indicated that applying BiOWiSH™ Aqua to the open sewage ditch also resulted in some major improvements, including:

1. A reduction in odor and flies in relation to years past
2. An improvement in overall cleanliness, hygiene, and aesthetics
3. A reduction in the turbidity of wastewater in the open canal

Conclusion

BiOWiSH™ technology offers the City of Pandharpur a simple, cost effective, and environment friendly way to treat sewage in its open canals. BiOWiSH™ Aqua significantly improved the quality of water in the canal system and also reduced odors and flies. Implementation required a simple drum, valve and hose system, making BiOWiSH™ Aqua an extremely economic way to improve water quality and overall human health conditions.

Testimonial

“My office is very close to one of the biggest open canals that was treated with BiOWiSH™. I am very impressed with the odor elimination and improvement in overall cleanliness. I have got very good feedback from majority of residents, regular visitors to my office, and shopkeepers. Today, we can breathe properly and BiOWiSH™ has very positively affected the quality of our lives”

– Mr. Dipak Wadadekar, Chairman of Sanitation and Water Supply, City of Pandharpur

Contacts

BiOWiSH Technologies

Email: wastewater@biowishtech.com

BW-Indah

Klaus W. Voss

Cell: +1 239 249 2295 (US)

Cell: +91 8482 988011 (India)

Email: KlausVoss@BW-Indah.com



Biological Help for the Human Race™