

The City of Joy....  
**Kolkata**



In the late 17th century, the villages that predated Calcutta were ruled by the Nawab of Bengal during which the British East India Company increasingly fortified it into a Trading Post & in 1793 the Company assumed its full sovereignty.

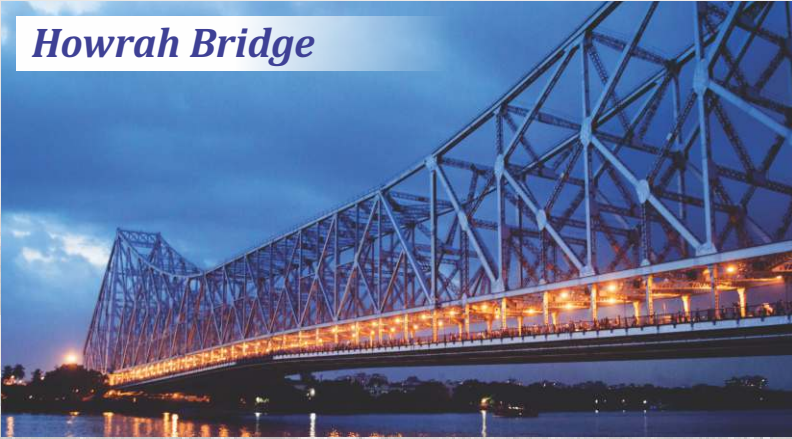
Under the company rule and then later under the British Raj, Calcutta served as the **Capital of British India** until 1911

Located on the **Hooghly River**, the Port of Kolkata is India's **oldest operating port**. The city is the primary business, commercial, and financial hub of Eastern India and the main port of communication for North-East India, as well as having the 3rd largest urban economy of India.



A demographically diverse & vastly populous city, its features multiple Institutions, atleast Four Nobel Laureates & Two Nobel Memorial Prize winners are associated with it. Though home to the World famous Eden Gardens Cricket Stadium; Kolkata differs from other Indian cities by focusing on Football too.

## Howrah Bridge



The **longest cantilever steel bridge in the World** that connects Howrah to Kolkata.

Located in the heart of Kolkata, the exquisite Victoria Memorial is a memorial to the famous British Queen & is made of white marble.



## Victoria Memorial

Named after King William III; Fort William is a fort in Hastings, locality it extends over an area of **70.9 hectares**.



## Fort William

Started in 1902, the tram system started by Calcutta Tramways Company is the **oldest existing tram network in Asia**.



## Tram

## Situation :

The Ganges flows over 2,500 kilometres through the plains of India collecting the waste from the **half a billion people** (*it is estimated that 6614 MLD of waste water with an organic pollution load of 426 TPD is discharged*) & Industries to become **one of the most polluted rivers in the**



**world** even before it reaches Kolkatta - already one of the most populous cities in the world..!

The Indian Central Pollution Control Board (CPCB) says only a **tenth** of the sewage produced along the main stream of the Ganges is treated at all.

At its worst in West Bengal, the river contains 160,000 faecal coliform bacteria per 100 ml, a clear sign of human excreta (*the World Health Organisation puts the safe limit at 1,000 per 100 ml*).



## Why 2nd generation of Submersible Sewage pumps?

The **1st generation** submersible non clog pumps used in India were designed for European conditions - however the operating conditions in Kolkata (*or at most place in India*) are drastically different (*much harsher on pumps*), hence their performance in India was below the mark.

Condition	Effect of Pump	Result
Poor Electrical Supply	Motor Insulation Stressing	Premature motor burnout
Higher Ambient Temperature		
Poor liquid level sensing & operation by often unskilled staff leading to frequent Dry Running	Excessive heating leading to motor insulation burn out, bearings grease leakage & possibly seizure; mechanical seal overheating	Immediate motor, bearing & mechanical seal failure
Poor or defunct Solid Screening leading to high concentration of solids, especially fibrous ones.	Dangerous cocktail of large solids & fibrous waste plait up & choke conventional non clog impellers leading to motor stall	Immediate Motor Insulation burnout
Higher content of sand, silt & ash in sewage	accelerated erosive wear of impeller Leakage Clearance	Drop of pressure & efficiency

Aqua's engineers were amongst the first to realize this mismatch between design & operating conditions - hence the concept of ANS was born.

*"Aqua's ANS is the First 2nd generation of Submersible Sewage pump specifically upgraded for real life Indian operating conditions..."*

*P. M. Shah*  
V. P. Technical

### Solution :

**Ganga Action Plan (GAP Phase-I)** was launched in **1985** to improve the water quality of river Ganga.

## KOLKATA METROPOLITAN WATER AND SANITATION AUTHORITY

Later on, **GAP Phase II** was launched in **2001** in West Bengal to reduce the pollution of the river by means of Sewage Interception **SPS** & Diversion; Sewage Treatment Plants **STP** under which STP cumulating to capacity of **1092 mld** (GAP-I: 869 mld, GAP-II: 223 mld) have been created so far at an expenditure of INRs. **950 crore**.



National Ganga River Basin Authority  
Central Pollution Control Board

A **National Ganga River Basin Authority (NGRBA)** was constituted in **2009** under "**Mission Clean Ganga**" as an coordinating authority with the objective to ensure effective abatement of pollution and conservation of the river.



The procedure is to intercept the sewage and then divert the same to STP for treatment and then discharging into the River Hooghly vide numbers of Lifting Stations and STPs.

**More than 450 Aqua Sewage Submersible Pump's are working round the clock since 2005 in Kolkatta.**

**Brief Reference List of Aqua Submersible Sewage Pumps in Kolkatta**

Location	User	Qty.
Kalyani UGD	KMDA	2
MPS Konnagar	KMWSA	4
8.33 MLD STP GAYESPUR	KMWSA	3
Bhatpara Municipal Town	KMDA	3
"MPS,LS,STP, Sewerage Network Scheme, Budgebudge"	KMDA	3
Kalyani UGD	KMDA	2
Uttarpara	KMDA	3
		2
		2
		3
BARRACKPORE	KMDA	3
M.P.S-II Halishar	KMWSA	4
STP Behala	KEIP / KMC (ADB Proj)	4
Bhatpara Municipal Town	KMDA	2
8.33 MLD STP GAYESPUR	KMWSA	3
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
Bhatpara Municipal Town	KMDA	3
Kalyani UGD	KMDA	2
		6
L.S-III Tolly Nallah	KMWSA	4
		7
L.S. Rishra	KMDA	3
		5
		3
MPS Baidyabati	KMDA	3
Gayeshpur Town	KMWSA	3
		3
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
Bhatpara Municipal Town	KMDA	3
		3
Gayeshpur Town	KMWSA	2
L.S-III Uttatpara	KMWSA	3
Bhatpara Municipal Town	KMDA	5
		2
Gayeshpur Town	KMWSA	3



Location	User	Qty.
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
		4
	KMDA	2
Kalyani UGD	KMDA	3
		6
		2
		4
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
Bhatpara Municipal Town	KMDA	3
Kalyani UGD	KMDA	3
Gayeshpur Town	KMWSA	3
L.S. Baidyabati	KMDA	3
		2
		3
		2
		2
		2
LE130089 - Bhatpara Sewar Network and WWT	KMDA	2
		3
		2
		3
Bhatpara Municipal Town	KMDA	2
		4
Kalyani UGD	KMDA	2



Location	User	Qty.
Kalyani UGD	KMDA	3
		3
		3
		3
Gayeshpur Town	KMWSA	3
		2
		2
		2
		2
"MPS,LS,STP Sewerage Network Scheme, Halisahar"	KMDA	16
M.P.S-I Khardah	KMWSA	5
Bhatpara Municipal Town	KMDA	5
		2
Kalyani UGD	KMDA	3
STP	Ceidic Village	2
STP JOKA	GNEXX Valley	4
Bhatpara Municipal Town	KMDA	4
BARRACKPORE 18 & 6 MLD STP	KMDA	3
		1
		2
		2
		5
Bhatpara 13 & 31 MLD	KMDA	2
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
		3
		3
		2
Bhatpara Municipal Town	KMDA	5
Kalyani UGD	KMDA	2
		3
		3
		3
		3
LE130089 - Bhatpara Sewar Network and WWT	KMDA	3
		2
Kalyani UGD	KMDA	3
		3
		2
		3
		3
M.P.S-II Rishara	KMDA	3
LE130089 - Bhatpara Sewar Network and WWT	KMDA	2
		2
		2
		3
Bhatpara Municipal Town	KMDA	5
		5
Kalyani UGD	KMDA	2
		2
		2
		2
Gayeshpur Town	KMWSA	3
		2
		2
8.33 MLD STP GAYESPUR	KMWSA	3
		3
		10



Location	User	Qty.
L.S. Rishara	KMDA	5
STP Durgapur	Bengal Ambuja	4
		7
Bhatpara 13 & 31 MLD	KMDA	2
LE130089 - Bhatpara Sewar Network and WWT	KMDA	2
Kalyani UGD	KMDA	2
Kalyani UGD	KMDA	3
		2
		3
STP Burdwan	Bengal Ambuja	10
		2
STP Avisikta	Bengal Peerless	6
STP Chak Garia	BENFISH	8
Bhatpara 13 & 31 MLD	KMDA	2
		2
LE130089 - Bhatpara Sewar Network and WWT	KMDA	2
		2
Kalyani UGD	KMDA	2
		2
		2
8.33 MLD STP GAYESPUR	KMWSA	3
		3
		5
L.S.	Swabhumi	2
<b>Total</b>		<b>453</b>

# Unique Advantages of Aqua's ANS

ANS Pumps are specially designed (as an upgrade over the 1st generation of submersible non clog pumps) to withstand the harsh operation conditions (encountered in sewage pumping) in developing countries.

- VFD compliant Inverter duty motors.
- Tolerates wide Electrical supply fluctuations.
- Pumps factory tested on Full Scale TestBed equipped with VFD up to 1180kW.
- Wide range of Hydraulic designs allow Clogless handling of sewage at optimal efficiency.
- High pump efficiency is sustainable over longer periods due to Smart Set hydraulics.



**Low Life Cycle Costs (LCC)**



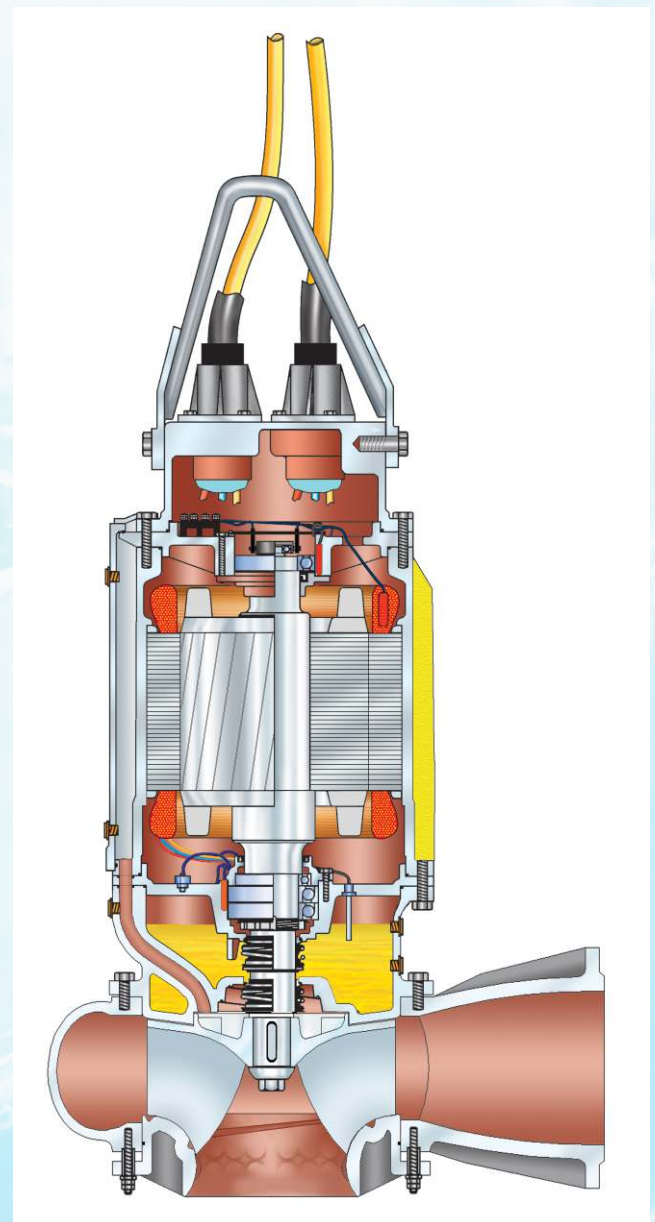
**Robust & Reliable**



**Zero Maintenance**



**tolerates upto 55°C ambient temperature**



**KOLKATA METROPOLITAN WATER AND SANITATION AUTHORITY**  
 32, B. B. D. BAG (SOUTH) KOLKATA-700 001  
 Tel. : 248-2346/47, 248-9815, 248-9528  
 OFFICE OF THE EX.ENGINEER (E/M)GAP-II, 1/425, Gariahat Rd. (S), Kol-68

TO WHOM IT MAY CONCERN

This is to certify that 3 nos non-clog submersible sewage pump motor sets having capacity of 163 LPS, 8M head, 22 KW and 2 nos non-clog submersible sewage pump motor sets having capacity of 82 LPS, 8M head, 11 KW manufactured by M/s Aqua Machinerics Pvt Ltd., Plot No.3821 GIDC Phase-IV, Vatva, Ahmedabad are installed and commissioned at L.S-3, Tolly's Nullah near Sashi Sekhar Bose Road.

The project is under GAP Phase-II and the aforesaid pumps running successfully since December 2005.

*(Signature)*  
 15/6/16  
 ( A. K. BISWAS )  
 Executive Engineer (E/M)GAP-II

*More than 450 (Aqua Sewage Submersible) pumps are running round the clock (many of them since 2005) at various locations in Kolkata with good performance & excellent long term reliability.*

  
**THE KOLKATA MUNICIPAL CORPORATION**  
 OFFICE OF THE EXECUTIVE ENGINEER (ELECTRICAL) / S & D  
 SEWERAGE & DRAINAGE DEPARTMENT  
 KUDGHAT UNIT  
 Kolkata-700 093

Reference No: SD/C/K-82/2015-2016      Dated: 15/01/2016

To Whom It May Concern

This is to certify that 04 (Four) nos. non clog submersible sewage pump motor sets having capacity of 625m<sup>3</sup>/Hour, 7m head, Model: ANS 2542 DLO40, Make: Aqua Machinerics Private Limited of Plot no 3821, GIDC, Phase-IV, Vatva, Ahmedabad - 382445 has been installed and commissioned at South Suburban (East) Keorapukur STP under Contract package no- KEIP/LCB/SD25/2006-07 of KEIP through M/s Voltas Limited.

The project was completed on 04/11/2009, taken over to KMC on 05/08/2010 and the aforesaid pumps are running.

Certificate is issued against request letter no AMPL/ROK/15-16/102 dated 06/01/2016 by Aqua Machinerics Private Limited.

*(Signature)*  
 15/01/16  
 Executive Engineer (E)  
 S & D. Deptt.  
 K.M.C.



*Mr. Prasenjit Das*  
 SE (E&M), Municipal Authority

*Mr. Sampad Biswal*  
 Project Mgr,  
 Simplex Infrastructures

*Mr. S N Bhaduri*  
 Sr Mgr,  
 Aqua Machinerics Pvt Ltd.

## Aqua Machinerics Private Limited

[www.aquapumps.com](http://www.aquapumps.com)

Registered Office & Manufacturing Plant

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[marketing@aquapumps.com](mailto:marketing@aquapumps.com)