PRESENTATION ON REHABILITATION, UPGRADATION AND EXPANSION FROM 22.5 MLD TO 27.5 MLD AT TALOJA CETP MIDC TALOJA

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DATED 6TH AUGUST 2020

CETP TALOJA

- This is in continuation with earlier presentations submitted to NGT Monitoring Committee
- It is intended here to present the status of various civil units and equipment along with comparison of old and new photographs

- By
- Aquachem Enviro Engineers Pvt Ltd
- Part of KDC Aqua (JV)

CURRENT STATUS

- At present phase I and II commissioned and running smoothly
- All the time CETP was in running condition in spite of lockdown
- For a brief period of initial lockdown, the spare parts and services of critical equipment were mot available
- After little opening up, we called the technicians and the plant is now running smoothly giving desired results
- Balance work consists of cable connections, piping & valves
- We are going to take up plantation this month

BACKGROUND

- Taloja CETP was built in phases as the industrialization and hence the effluent generation increased gradually
- In 1994 / 1995 it was considered that the generation of the effluents was of the order of 2 to 3 MLD
- However careful study indicated much higher quantity and the phase I was constructed / commissioned in 1999 for 10 MLD

BACKGROUND

- As the effluent quantity increased, phase II of capacity of 12.5 MLD CETP was constructed and commissioned in 2008
- Thus the CETP was of 22.5 MLD capacity before upgradation taken up by MIDC in 2018 Nov
- MIDC floated tenders and finalized the contract for
- - rehabilitation of existing RCC structures
- - replacement of old equipment with new SS equipment
- - MIDC has also finalized the work order of new 10,000 m3 RCC holding tank for emergency holding
- - Augmenting the capacity of the CETP to 27.5 MLD
- - Meeting new CETP standards on BOD / Nitrogen

BACKGROUND

- **- MIDC has also finalized the work order of new 10,000 m3 RCC holding tank for emergency holding**
- **-MIDC also has finalized consultant for obtaining EC for pipeline tender**
- **Augmenting the capacity of the CETP to 27.5 MLD**
- **- Meeting new CETP standards on BOD / Nitrogen**

BACKGROUND

- However, use of the equipment over a period of time depreciated the assets
- There was corrosion of the MS materials
- The RCC tanks were more less intact but peeling of plaster and paint was observed and needed rehabilitation
- Therefore MIDC floated tender for the rehabilitation of existing civil units, replacement of old equipment with new modern equipment with corrosion proof materials

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ACHIEVEMENTS SO FAR

- No smell is observed at CETP premises
- Pilot plant stabilized and giving desired results on
- continue bases
- MSEB power sanctioned 3000 KVA
- Phase – I – Sludge from all tanks has been removed and
- rehabilitation/commissioned completed and it is
- operational from – 20th July 2019.
- Phase - II–Sludge from all tanks has been removed and
- rehabilitation /commissioned completed it is / operation
- from – 30th Dec 19.

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ACHIEVEMENTS SO FAR

- Quantity of Sludge –
- About 5400 MT sludge removed and sent to MWML
- Inlet and Out COD and BOD is achieved as per prescribed
- limit of MPCB-

- EC received
- Consent to operate received
- Online monitoring system established at the inlet / outlet
- Flow meter provided at V notch
- Laboratory established with proper manpower

OLD RESULTS

- CETP outlet parameter is taken from MPCB website for the month of November 2018. Below are the same. As per Pre- bid queries reply response dated 08/02/2018. (Enclosed copy of same)

Dec 2017 as per MPCB website		
Parameter	Inlet	Outlet
pH	6.1	6.8
TSS	180	176
TDS	6381	7076
COD	6120	5880
BOD	2800	2500

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PILOT PLANT

Aeration Tank					Secondary Settling Tank		
pH	DO (mg/lit)	SVI (%)	MLSS (mg/lit)	MLVSS (mg/lit)	pH	TSS (mg/lit)	COD (mg/lit)
7.8	3	62	2680	1660	7.7	84	185

Pilot plant Treated effluent being used for centrifuge washing

PROJECT TIMELINE

- Commercial part of Tender opened on 20th March 2018
- Society NOC received 13th Oct 2018
- Work order received on 29th Oct 2018
- Project Started from 1st Nov 2018
- **Initial schedule -9 Months + 4 months**
- **stabilization that is up to Nov 2019**
- **NGT Monitoring Committee recommended extension up to April 2020 due to heavy rains and other issues**
- **- COVID 19 has affected the work and revised bar chart is attached**

PROJECT PROGRESS

- Original work order is for Rs 73,65,90,000/-
- Rupees Seventy Three Crores Sixty Five Lakh Ninety Thousand Only
- So far the KDC Aqua JV has billed Rs 59.8 Cr to MIDC
- However, there are retentions against commissioning as per terms of payment in the tender (almost 20%)
- Deducting 20% from the tender value, almost all supply and installation is over
- Therefore we can say that the site work is almost complete say about 95% which is basically cabling and piping , that too only connecting, as supply is over and commissioning is balance

OLD STATUS OF THE CETP

A few old photographs

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AERATION TANK

OVERALL OLD VIEW

CORRODED HANDRAILS

WORK UNDER PROGRESS

- Work progress photographs

SLUDGE LYING ON BEDS

DRIED SLUDGE

EQ TANK OF 10,000 M3 TANK DE-SLUDGING

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Primary Tank

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Aeration Tank

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Secondary Tank

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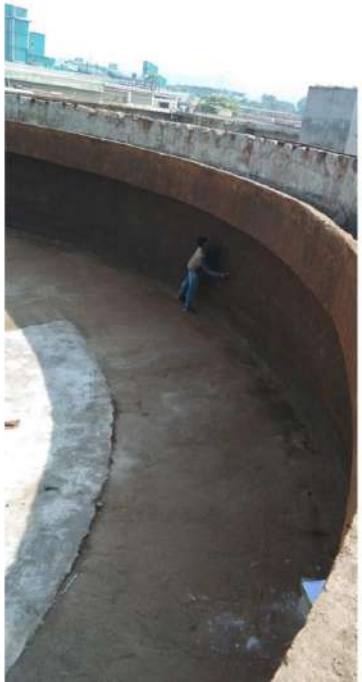

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Aeration Tank

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Aeration Tank

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OVERALL LAYOUT

NEW EQUIPMENT

- A few photographs

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ELECTRICAL PANELS

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PANELS

DIFFUSED AERATION

FLASH MIXER AND CLARIFIER

PLC BASED CENTRIFUGE

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STATE OF THE ART AIR BLOWERS

AERATION

SLUDGE THICKNER

CLARIFIER

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TRANSFORMER

AERATION TANK PHASE III

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SECONDARY CLARIFIER PHASE- III

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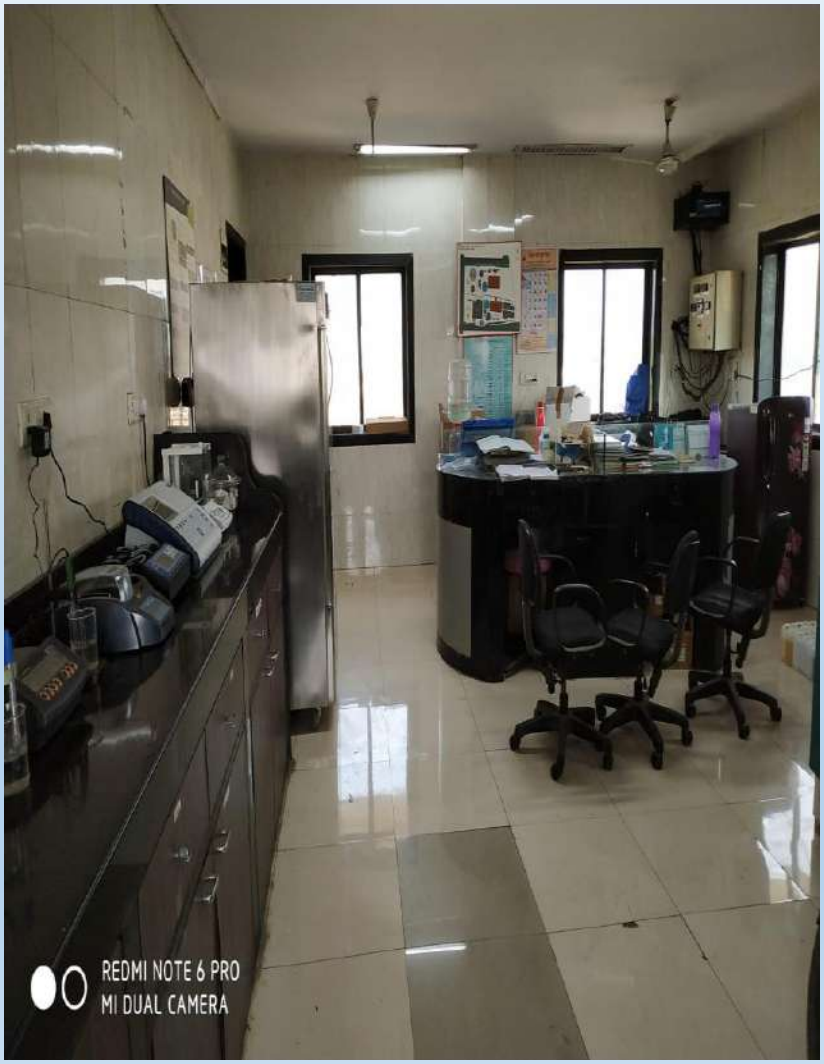
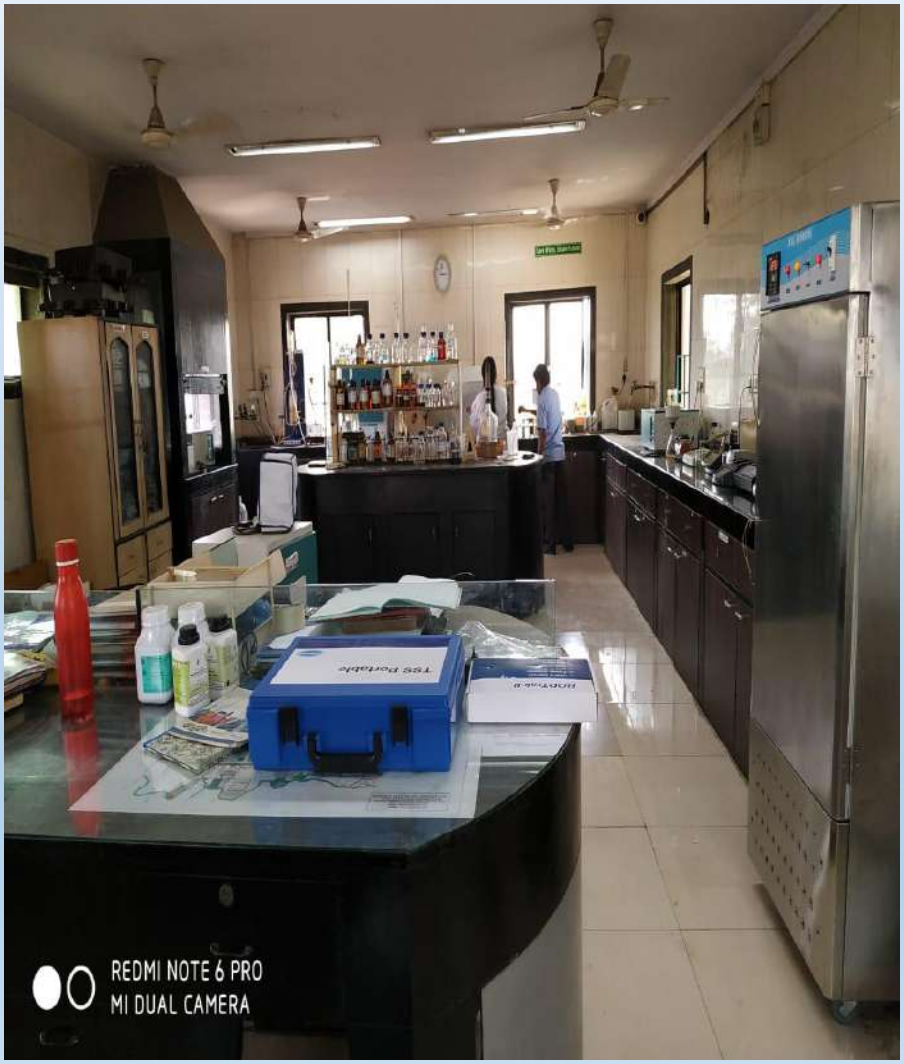
CETP LABORATORY EQUIPPED WITH NEW INSTRUMENTS





DESIGN INLET PARAMETERS

Table 1-1 Influent Characteristics of CETP

Parameters	Values*	Unit
pH	6.0-9.0	
Wastewater Temperature (Min)	20	Deg C
Wastewater Temperature (Max)	45	Deg C
Biochemical Oxygen Demand	1000	mg/l
Chemical Oxygen Demand	2500	mg/l
Total Suspended Solids (TSS)	600	mg/l
Total Dissolved Solids	< 4000	mg/l
Total Phosphorus	20	mg/l
Total Kjeldahl Nitrogen (TKN)	100	mg/l
Oil & Grease (Free oil)	20	mg/l
Phenolic compounds	5	mg/l

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DESIGN OUTLET PARAMETERS

Table 2-3: CETP Treated Effluent Characteristics

Parameters	Discharge Limit	Unit
pH	6.0-9.0	
Biochemical Oxygen Demand (BOD_3)	≤ 30	mg/l
Chemical Oxygen Demand (COD)	≤ 250	mg/l
Suspended Solids	≤ 100	mg/l
Total Dissolved Solids	≤ 4000	mg/l
Temperature	Shall not exceed more than 5 Deg C above ambient water temperature	
Oil and Grease	≤ 10	mg/l
Ammonical Nitrogen	≤ 50	mg/l
Total Kjehldal nitrogen	≤ 50	mg/l
Nitrate Nitrogen	≤ 10	mg/l
Phosphate as P	≤ 5	mg/l
Chlorides	≤ 1000	mg/l
Sulphate (as SO_4)	≤ 1000	mg/l
Fluoride	≤ 2	mg/l
Sulphides (as S)	≤ 2	mg/l
Phenolic compounds (as C_6H_5OH)	≤ 1	mg/l
Total Residual Chlorine	≤ 1	mg/l
Zinc	≤ 5	mg/l

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TYPICAL SAMPLES UNTREATED, PRIMARY TREATED AND TREATED

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BALANCE ACTIVITIES

PROGRAMME OF BALANCE WORK							
	Name of the Employer	MIDC					
	Contractor:	M/s. KDC- Aqua (JV)					
	Consultant	CH2M Hill India/Jacobs					
	Name of Project :	27.5 MLD Taloja CETP					
Sr. No	Description	Months					
		Aug		Sep		Oct	
	Phase I and Phase II in operation Earlier effluent quantity was 16 to 18 MLD Currently receiving 19 to 20 MLD						
	A. CIVIL WORK						
	Construction of Overhead tank						
	Rehabilitation of existing building						
	Minor finishing /Back filling/Leveling etc						
	Road/Drainage/Pathway etc						
	B. PHASE III COMMISSIONING						
	Phase III equipment commissioning						
	Commissioning of New electrical system All panels are installed, cabling under progress Switching over from existing 1000 KVA to new 3000 KVA being planned in association with MSEDCL						
	Cable laying MCC /PLC and Individual Equipment's						
	C. ELECTRICAL SYSTEM						
	Balance cabling and switch over to new electrical system under progress						
	New piping / valves under progress						
	Phase-I,II and III synchronize						
	PREPARED BY : LHP	CHECKED BY : MAN					

PANEL WORK IN FINAL STAGES

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HT CONNECTIONS 1011

MSEDCL CONNECTIONS

OUTSIDE HT CONNECTIONS

THANK YOU

Aquachem Enviro Engineers Pvt Ltd

Part of KDC Aqua (JV)

Taloja

MIDC industrial area

KDC-AQUA (JV).

REGD. OFFICE: B/501, SUNVISION CLASSIC, OPP. ING VYASYA BANK, HANUMAN ROAD, VILE PARLE (EAST),
MUMBAI - 400 057 • TEL.: 2611 9768 / 82 26101217 • FAX : 2610 3618
PAN No.: AAFAK5296A GST: 27AAFAK5296A1ZN
E-Mail : kdc.aquajv@gmail.com

PILOT PLANT running successfully for more than a year

A) Mechanical Screen and Screen Chamber

B) Distribution Chamber:

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PHASE - I

1. Collection Tank

1. Flash Mixer with flocculator

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2. Primary Clarifier

3. Chemical Preparation Tank

4. Anoxic tank and Aeration Tank

5. Blower Room with turbo blowers

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6. Sludge Thickener

7. Secondary Clarifier

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8. Decanter Room

Phase-II

1. Collection Tank

2. Equalization Tank

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3. Flash Mixer with flocculator

4. Primary Clarifier Tank

5. Chemical Preparation Tank

6. Aeration Tank

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7. Blower Room

8. Secondary Clarifier

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9. Sludge Thickener

10. Chemical Room

11. Decanter Room

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12.Biological Pit

13.Metering Room

14.MCC Panel Room

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15. Transformer with Bus duct

C) MSEDCL-GOD Connection

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16.DG of 750 KVA

17.Plant Return sump

Phase-III

1. Aeration Tank

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2. Blower Room- III

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Blowers for Phase- III

3. Secondary Tank- III

4. Secondary Clarifier- III

5. Chemical Room

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D)-V-notch chamber

D) Pilot Plant

Full fledge Laboratory

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