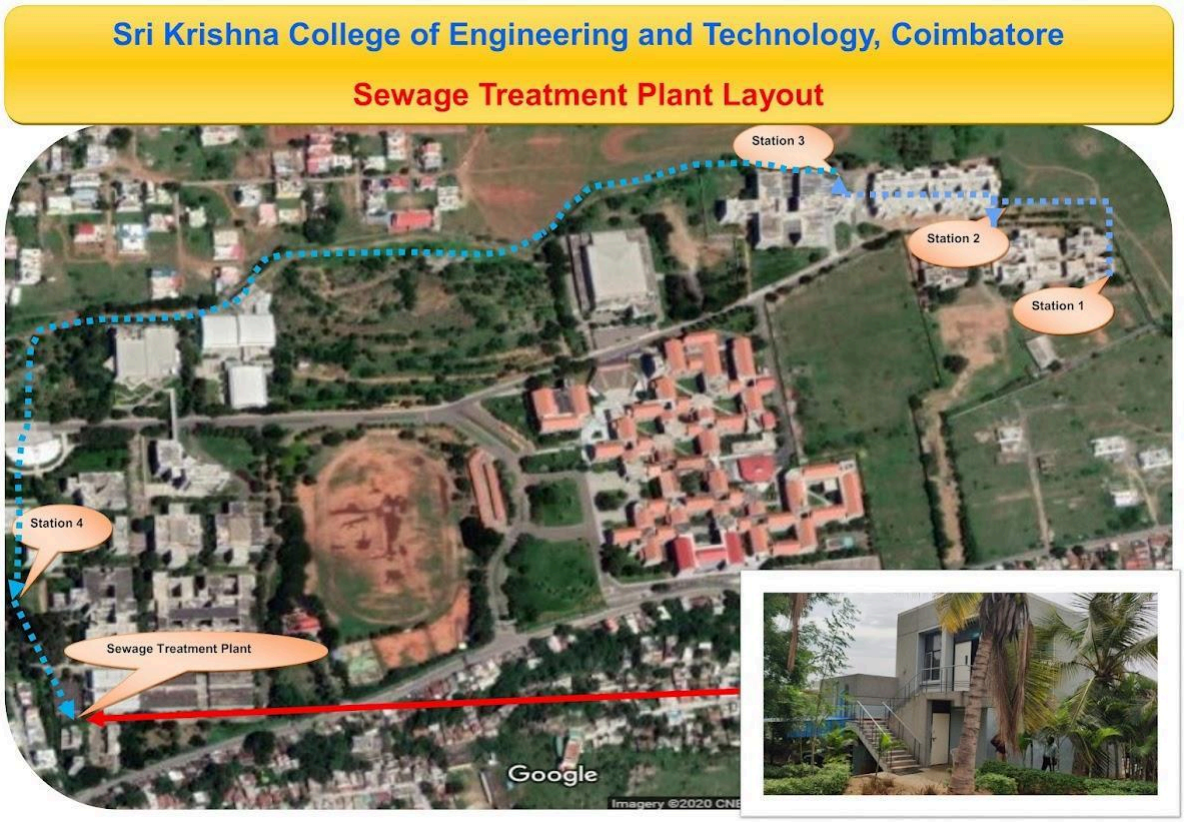
6.3.1 WASTEWATER TREATMENT

6.3.1 Waste water treatment

Process in place to treat waste water

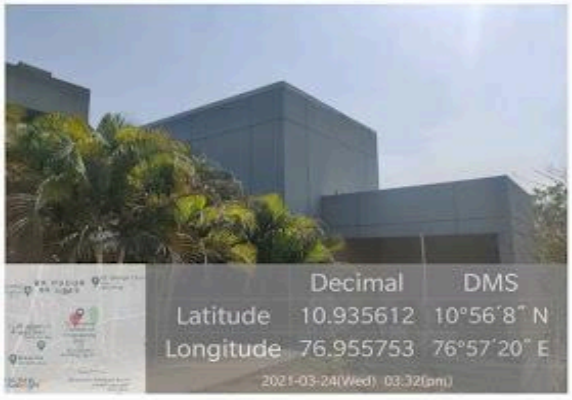
A 450 KLD sewage treatment plant is situated on campus to recycle the wastewater that is released from the canteen, restrooms, and laundry facilities. The treated wastewater is reused for gardening, toilet flushing, and vehicle cleaning.

The on-campus Sewage Treatment Plant (STP), situated behind the laboratory block, treats the liquid waste generated by the canteens, mess, and restrooms. The recycled water, which is enhanced with nutrients that promote plant development, is used for gardening purposes.



SEWAGE TREATMENT PLANT


Decimal DMS
Latitude 10.936942 10°56'12" N
Longitude 76.956851 76°57'24" E
2021-03-24(Wed) 03:32(pm)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Longitude 76.955753 76°57'20" E
2021-03-24(Wed) 03:32(pm)


SEWAGE
TREATMENT PLANT
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Longitude 76.955564 76°57'20" E
2021-03-24(Wed) 03:33(pm)


Decimal DMS
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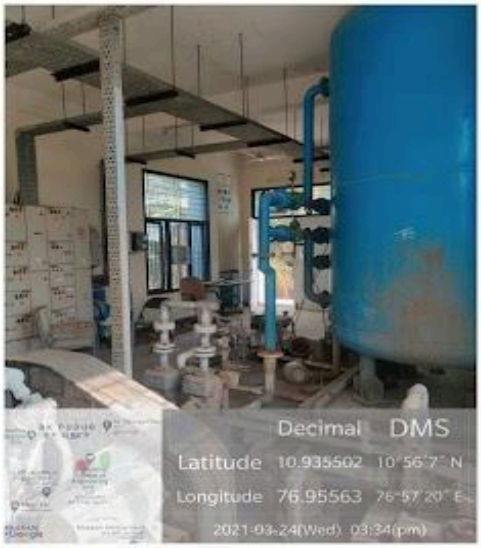
2021-03-24(Wed) 03:33(pm)


Decimal DMS
Latitude 10.935502 10°56'7" N
Longitude 76.95563 76°57'20" E
2021-03-24(Wed) 03:34(pm)

Sri Krishna College of Engineering and Technology, Coimbatore

Collection Station Pictures

Collection Station 1 (10° 56' 21.3648" N, 76° 57' 43.6716" E)
Located beside the Hall of Residence Men (E-block)

Collection Station 2 (10° 56' 23.4024" N, 76° 57' 41.31" E)
Located adjacent to the Hall of Residence Men (B-block)

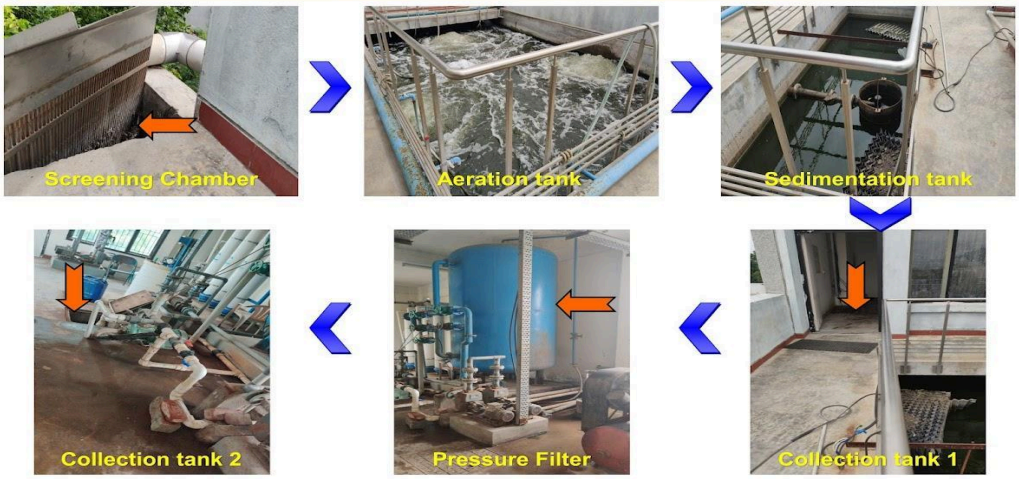
Collection Station 3 (10° 56' 24.6984" N, 76° 57' 37.0872" E)
Located backside of the Hall of Residence Men (Mess block)

Collection Station 4 (10° 56' 10.9248" N, 76° 57' 19.3752" E)
Located backside of the C3 block men's restroom

The treatment process involves several stages:

Sri Krishna College of Engineering and Technology, Coimbatore

Sewage Treatment Plant Layout



6 CLEAN WATER AND SANITATION

Stage 1: Screening Chamber

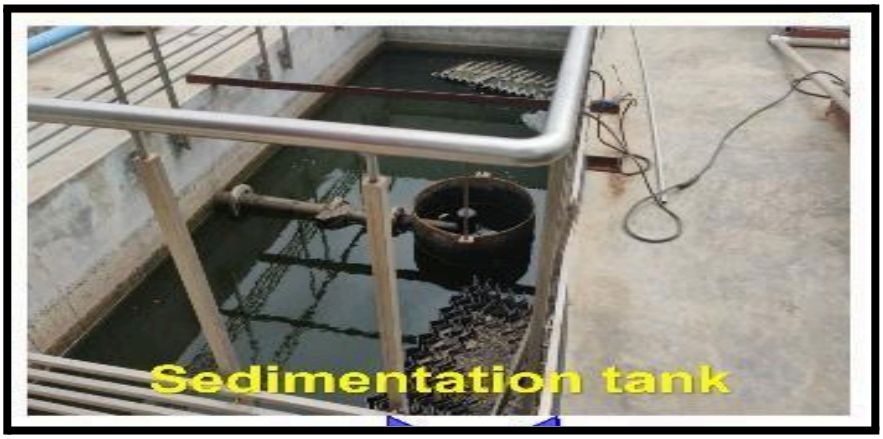
Screening chamber is the first unit operation used at STP. Screening removes objects such as rags, paper, plastics, and metals to prevent damage and clogging of downstream equipment, piping, and appurtenances. The screened wastewater then flows to an aerated grit chamber. Some modern wastewater treatment plants use both coarse screens and fine screens.

Stage 2: Aeration Tank

Waste water ***Aeration*** is the process of adding air into wastewater to allow aerobic bio-degradation of the pollutant components. It is an integral part of most biological wastewater treatment systems. Unlike chemical treatment which uses chemicals to react and stabilize contaminants in the wastewater stream, biological treatment uses microorganisms that occur naturally in wastewater to degrade wastewater

contaminants.

Stage 3: Sedimentation Tank



Sedimentation tank allows the particles in suspension in water to settle out of the suspension under the effect of gravity. The particles that settle out from the suspension become sediment, and in water treatment this residue is known as sludge.

Stage 4: Collection Tank 1

Collection tank 1 collects the aerated water flowing from the aeration tank. This collection tank 1 acts as a storage reservoir of the water which is to be fed into the pressure filter.

Stage 5: Pressure Filter

A ***Pressure filter*** is a closed tank with a single or a combination of filter media for removal of one or several contaminants. Sand-bed filters are operated under pressure in closed vessels to give high-capacity service.

Stage 6: Collection Tank 2

Collection tank 2 collects the filtered water flowing from the Pressure Filter. This collection tank 2reserves the treated water which will be supplied for campus re-use in Gardening, Vehicle Washing and Rest rooms (Toilet Flushing).

TREATED WASTE WATER QUALITY TEST REPORT

Greenlink Analytical and Research Laboratory (India) Private Ltd.
S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate,
Civil Aerodrome Post, Coimbatore - 641 014. Tamilnadu, INDIA.
Tel : +91 422 2401999 | Mob : +91 95245 81999, +91 95249 81999
Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO/IEC 17025:2017 | ISO 9001:2015

TEST REPORT

Report No.	GLARL/STP/2204	Date	01-04-2024

Details of Customer

Customer Name and Address	SRI KRISHNA COLLEGE OF ENGINEERING & TECHNOLOGY Kuniyamuthur, Coimabtore – 641 008.
Customer Reference	HAYMAN ENVIROMENTAL ENGINEERING PVT LTD

Details of Sample

Sample Received Date	01-04-2024	Sample By	Customer
Nature of Sample	STP – Treated water	Description	Clear – mild turbid appear
Sample Code	B	Received Condition	Packed in a PET bottle
Analysis Started on		Analysis Completed on	

Result of Analysis

S. No	Parameter	Test Method	Unit	Results	Standard
1.	pH @ 25°C	Standard. Methods 23rd Ed.4500 H^+ B	-	7.42	5.5-9.0
2.	Total Suspended Solids	Standard. Methods 23rd Ed.2540 -D	mg/L	28	30
3.	Biochemical Oxygen Demand (3 days @ 27°C)	IS 3025 Part 44-1993 (RA 2009)	mg/L	14	20
4.	Chemical Oxygen Demand	Standard. Methods 23rd Ed.5220 -B	mg/L	88	100
5.	Phosphate (as PO_4)	Standard. Methods 23rd Ed.4500 P -D	mg/L	0.412	1.0
6.	Total Nitrogen	Standard. Methods 23rd Ed.4500 N	mg/L	1.92	15

BDL- Below Detectable Level *DL-Detectable Level*

****End of Report****

CBE - 14

Authorized Signatory
(M.Anusavenl)
Technical Manager

Verified
Adhuey
3/4/24

6 CLEAN WATER AND SANITATION

RAW WASTE WATER QUALITY TEST REPORT

Greenlink Analytical and Research Laboratory (India) Private Ltd.
S.F. No. 414/1, Tex Park Road, Opp. Good Luck Syndicate,
Civil Aerodrome Post, Coimbatore - 641 014. Tamilnadu, INDIA.
Tel : +91 422 290 1999 | Mob : +91 95245 81999, +91 95249 81999
Email : enquiry@greenlinklabs.com, info@greenlink.in

NABL ISO / IEC 17025:2017 | ISO 9001:2015

TEST REPORT

Report No.	GLARL/STP/2204	Date	27-03-2024

Details of Customer

Customer Name and Address	SRI KRISHNA COLLEGE OF ENGINEERING & TECHNOLOGY Kuniyamuthur, Coimabtore – 641 008.
Customer Reference	HAYMAN ENVIROMENTAL ENGINEERING PVT LTD

Details of Sample

Sample Received Date	27-03-2024	Sample By	Customer
Nature of Sample	STP – Raw water	Description	White, turbid liquid
Sample Code	A	Received Condition	Packed in a PET bottle
Analysis Started on		Analysis Completed on	

Result of Analysis

S. No	Parameter	Test Method	Unit	Results	Standard
1.	pH @ 25°C	Standard. Methods 23rd Ed.4500 H+ B	-	7.29	-
2.	Total Suspended Solids	Standard. Methods 23rd Ed.2540 -D	mg/L	174	-
3.	Biochemical Oxygen Demand (3 days @ 27°C)	IS 3025 Part 44-1993 (RA 2009)	mg/L	92	-
4.	Chemical Oxygen Demand	Standard. Methods 23rd Ed.5220 -B	mg/L	288	-
5.	Phosphate (as PO_4)	Standard. Methods 23rd Ed.4500 P -D	mg/L	4.91	-
6.	Total Nitrogen	Standard. Methods 23rd Ed.4500 N	mg/L	50	-

BDL- Below Detectable Level *DL-Detectable Level*

****End of Report****

CBE - 14

Authorized Signatory
(M.Ameerali)
Technical Manager

Verified
Radhika
5/9/24

SEWAGE TREATMENT PLANT DETAILS

Treatment Plant Capacity = 450 KLD

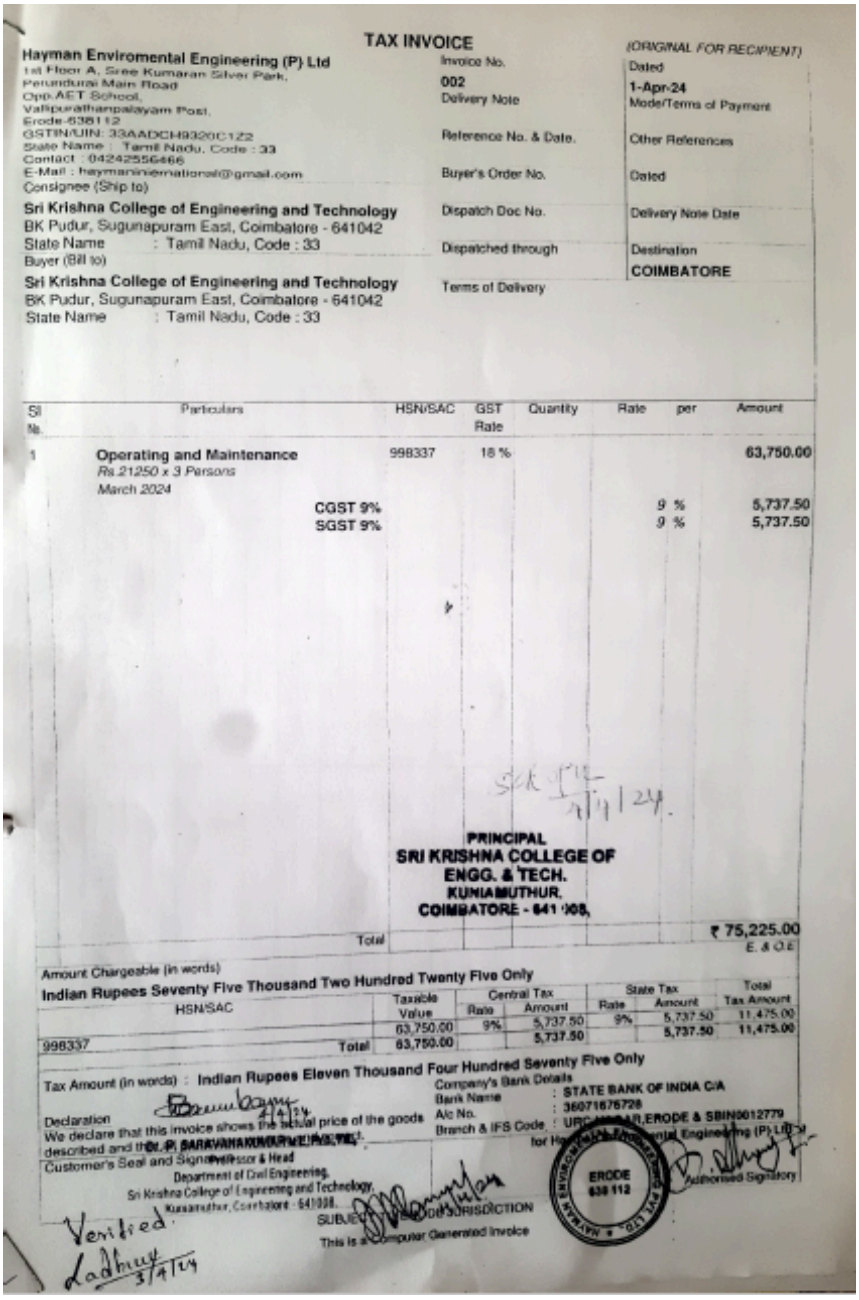
6 CLEAN WATER AND SANITATION

Total Quantity of sewage water at inlet of aeration tank = 20500 litres / hour

Total plant operation hours = 20 hours

Total treated quantity/ day = 410 KLD

STP OPERATING AND MAINTENANCE INVOICE



TAX INVOICE

(ORIGINAL FOR RECIPIENT)

Hayman Enviromental Engineering (P) Ltd
1st Floor A, Sree Kumaran Silver Park,
Perundurai Main Road
Opp.AET School,
Vallipurathanpalayam Post,
Erode-638112
GSTIN/UIN: 33AADCH8320C1Z2
State Name : Tamil Nadu, Code : 33
Contact : 04242556466
E-Mail : haymaninternational@gmail.com
Consignee (Ship to)
Sri Krishna College of Engineering and Technology
BK Pudur, Sugunapuram East, Coimbatore - 641042
State Name : Tamil Nadu, Code : 33
Buyer (Bill to)
Sri Krishna College of Engineering and Technology
BK Pudur, Sugunapuram East, Coimbatore - 641042
State Name : Tamil Nadu, Code : 33

Invoice No. 002
Delivery Note
Reference No. & Date.
Buyer's Order No.
Dispatch Doc No.
Dispatched through
Terms of Delivery
Dated 1-Apr-24
Mode/Terms of Payment
Other References
Dated
Delivery Note Date
Destination COIMBATORE

Sl No.	Particulars	HSN/SAC	GST Rate	Quantity	Rate	per	Amount
1	Operating and Maintenance Rs.21250 x 3 Persons March 2024	998337	18 %				63,750.00
	CGST 9%					9 %	5,737.50
	SGST 9%					9 %	5,737.50
	Total						₹ 75,225.00

E. & O.E

PRINCIPAL
SRI KRISHNA COLLEGE OF ENGG. & TECH.
KUNIAMUTHUR,
COIMBATORE - 641 008.

Amount Chargeable (in words)
Indian Rupees Seventy Five Thousand Two Hundred Twenty Five Only

HSN/SAC	Taxable Value	Central Tax Rate	Central Tax Amount	State Tax Rate	State Tax Amount	Total Tax Amount
998337	63,750.00	9%	5,737.50	9%	5,737.50	11,475.00
Total	63,750.00		5,737.50		5,737.50	11,475.00

Tax Amount (in words) : Indian Rupees Eleven Thousand Four Hundred Seventy Five Only

Declaration
We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

Company's Bank Details
Bank Name : STATE BANK OF INDIA C/A
A/c No. : 36071676728
Branch & IFS Code : [illegible],ERODE & SBIN0012779

for Hayman Enviromental Engineering (P) Ltd

Customer's Seal and Signature

Professor & Head
Department of Civil Engineering,
Sri Krishna College of Engineering and Technology,
Kuniamuthur, Coimbatore - 641008.

ERODE 638 112

Authorised Signatory

SUBJECT TO ERODE JURISDICTION

This is a Computer Generated Invoice

Verified
Ladhuu 3/4/24